SELNAT - ANNEXES

Work package 1:

Identification of bottlenecks for nature conservation and Natura 2000

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ABBREVIATIONS

SCI	Site of Community Importance
SAC	Special Area of Conservation
SPA	Special Protection Area
SBZ-H	Speciale Beschermingszone onder de Habitatrichtlijn (= SAC)
SBZ-V	Speciale Beschermingszone onder de Vogelrichtlijn (= SPA)
ANB	Agentschap voor Natuur en Bos (Flemish Agency for Nature and Forest), combination of the former Afdeling Natuur and Afdeling Bos en Groen
VLM	Vlaamse Landmaatschappij
IN	Instituut voor Natuurbehoud (Institute for Nature Conservation), is now part of the INBO
INBO	Instituut voor Natuur- en Bosonderzoek (Institute for Nature and Forest Research), a combination of the former IN and the IBW
IBW	Instituut voor Bos en Wild (Institute for Forest and Wildlife), is now part of the INBO

1. Introduction

The main aim of the SELNAT project, like stated in the project proposal, is to perform **a multifunctional effectiveness analysis of the management of Natura 2000**. **The leading question is how to make NATURA 2000 work properly**? In order to be able to evaluate this effectiveness, we need to define this aim precisely. “Working properly” means the **development of efficient management strategies for nature areas that contribute to sustainable development**.

The central hypothesis is: *An external approach based on the integration of ecological, economical, legal and social aspects is necessary to design management strategies for large nature areas that will create a favorable conservation status and reach N2000 objectives in a robust way*.

The directive aims at knitting a coherent network under the name of Natura 2000, to protect the unique European natural heritage. The general framework and the general goals for the European important habitats and species (Favorable State of Conservation, FSC) were developed at European Level. In 1992 the European Commission has adopted the Habitat Directive. The practical implementation of this legislation is the task of the Regions.

Besides the translation of the European legislation in there own legislation, the regions had to select some areas as Natura 2000 areas. In most of the European countries these steps are taken. Before 2010 the regions have to develop conservation goals for the different habitats and species. This process is running at the moment. An important issue for the future is then the concrete implementation of the developed conservation goals.

In WP 1 the current legal, economic, ecological and social problems with the planning and implementation of the Natura 2000 legislation in general (and in the Walloon and Flemish region in concrete) will be assessed. This integrated analysis gives an overall image of the current situation in a ‘historical’ context (of developing legislation, defining policy development schemes, …). The goal is to deeper the interdisciplinary understanding within the research team of the problems that rise during the implementation of the Natura 2000 policy and this in relation with the historical development of it. In a first step each team has made a disciplinary analysis of the current Natura 2000 policy. The second step contains an integrated analysis.

2. General views

2.1. Sustainable development

2.1.1. Sources

Basically, the sustainable development concept[1] was born from the double report that the ecosystems and the biosphere have a limited capacity of reception[2] and are ecologically interdependent[3]. It is based on the recognition that the survival and the wellbeing of the mankind, all confused generations, depend on the long-term maintenance of the ecosystems within the biosphere and that there are certain ecological limits with the economic growth. These limits are reflected by the objective concept of sustainability[4], which presents similarities with that of integrity of the ecosystems.

In its first meanings, the durable development was thus heard as the process of development whose total objective is of tending towards the durability to the ecological direction of the term. This design is reflected in the first references, formal or implicit, with the concept of development durable, namely in the Declaration of Stockholm (1972)[5], in the world conservation Strategy (WCS, 1980) and in the world Charter of the Nature of 1982[6]. To arrive to this objective, the above mentioned texts recommended an *integrated approach of the stock management and planning of the development*[7].

2.1.2. Definition

The concept of development durable evolved substantially since 1987, following the publication of the famous report "Our common future" of the Brundtland Commission. This one is defined there as "*a development that meets the needs of the present without compromising the ability of future generations to meet their own needs* [8]". The Brundtland report specifies that two concepts are inherent in this definition:

- the concept of needs, and more particularly of the most stripped essential needs for, "*to which it is appropriate to give the greatest priority*"; essential, this concept translates the idea that the development must be limited to what is necessary to meet the needs for the sociaty - that it is appropriate to evaluate with precision considering limited character of

[1] On this concept and its economic and ethical dimension, see TILMAN, 1998.
[2] World charter of Nature, Preamble; World conservation strategy, section 1, Introduction.
[3] According Rio declaration, « (…)he integral and interdependent nature of the Earth, our home, » (préambule). Principle 25 « *Peace, development and environmental protection are interdependent and indivisible.*». In the same sense, see art. 4 du Draft convention on the environment and the development (1995-2004); Principle 7 Déclaration de principes du droit international en matière de développement durable adoptée par l'ILA à New Delhi en avril 2002 (Résolution 2002/3, 70ème session, 2-6 avril 2002).
[4] On this notion see IUCN, WWF, UNEP, *Caring for the Earth. A Strategy for Sustainable Living*, 1991, p. 43.
[5] See principles 2 to 7, which impose to the member States to safeguard the natural resources of the world, the capacity of the earth to produce vital renewable resources and the heritage of wildlife and its habitat. Principles 8, 11, 13, 14 et 15 contain already references expresses to the two other components (social and economic) of the durable development. This text is the first instrument of world range apprehending, certainly without integrating them by name in only one concept, the various facets of the durable development.
[6] See § 4, 6, 8 à 10.
[7] See principle 13 Stockholm Declaration, § 7 de la Charte mondiale de la nature, and section 9 de la WCS.
[8] COMMISSION MONDIALE SUR L'ENVIRONNEMENT ET LE DEVELOPPEMENT, *Notre avenir à tous*, Montréal, Editions du Fleuve, 1988, pp. 10-11.

the resources and the necessity to satisfy the needs for the future generations - and does not constitute an end in itself;

- "*the idea of the limitations that the state of our techniques and our social organization forces on the capacity of the environment to meet the needs present and to come*".

In other words, to be "sustainable", the development must take care, on the one hand, not to exceed the ecological limits of the capacity of the ecosystems[9] and, on the other hand, to allow the satisfaction of the requirements in natural resources for the future generations. These two fundamental objectives form the substance of the concept of development durable. With the ecological dimension of durability, is added a dimension ethical, namely *equity inter and intra-generational*[10]. Confining with the slogan, this very fuzzy definition was a success fulgurating near the political world[11]. Each one can, altogether, find its account there. It remains, therefore, always of topicality[12].

Reflection of the difficult compromises between the interests of the countries of North and the South, the Declaration of Rio affirms, in its Principle 4, that "*In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it*". The *principle of integration*, in question hereafter, sees kind of granting it a central place in the speech on the sustainable development, of which he becomes the instrument privileged to establish the bonds necessary between his three dimensions economic, social and environmental[13]. The objective of "sustainability" heard as an ecological limit with the development yields little by little the place to an objective vaguer of "balance", "conciliation", or of "reconciliation" between the concerns economic, social and environmental, now omnipresent in the political speeches on the sustainable development.

2.1.3. Principles

Being based on the study of the various nonconstraining texts and the agreements concluded in the wake from the Declaration from Rio and Diary 21, several groups of experts are leaning on the various principles which form the hard core of the sustainable development[14]. Premise of a coding of these principles in the current state of the international law, the Declaration of New Delhi of the ILA (2002) drew up the list of the fundamental principles to respect to reach the sustainable development. They are, according to this Declaration, seven, namely:

1. the duty of States to ensure sustainable use of natural resources
2. the principle of equity (inter-[15] et intra-generational[16]) and eradication of poverty
3. the principle of common but differentiated responsabilities[17]

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[9] The report specifies that this definition means that the control of the various policies must "with the bare minimum... not endanger the natural systems which make us live, the alive atmosphere, water, grounds and beings" (p. 53).

[10] This dimension was already germinates about it in the Declaration of Stockholm (Principles 2 et 5).

[11] SHEATE, 2003, p. 220.

[12] This one is registered at the head of the Strategy of the European Union in favour of the durable development suggested by the Commission in 2001 (COM (2001)264/2) (p. 2).

[13] It is reaffirmed with multiple recoveries in the Plan of implementation of Johannesburg and in a multitude of texts of international law of the environment (*cfr. infra*).

[14] See Experts report XXXXX1995 ; ILA, 2004 ; IUCN, 2004. The doctrines also attempted to define these principles (voy. BOYLE et FREESTONE, 1999, pp. 8-16 ; BIRNIE et BOYLE, 2002, pp. 86-95 ; SANDS, 2003, pp. 256-266).

[15] The right of future generation to enjoy a fair level of the common patrimony (para. 2.1).

[16] The right of all peoples within the current generation of fair access to current generation's entitlement of the Earth's natural resources (para. 2.1).

[17] States and other relevant actors have common but differentiated responsibilities. All States are under a duty to co-operate in the achievement of global sustainable development and the protection of the environment. International organizations, corporations (including in particular transnational corporations), non-governmental organizations and civil society should

4. the principle of the precautionary approach to human health, natural ressources and ecosystems
5. the principle of public participation and access to information and justice
6. the principle of good governance [18], and
7. the principle of integration and interrelationship, in particular in relation to human rigths and social, economical and environmental objectives[19].

The principles thus recognized can be distributed in two categories. On the one hand, the sustainable development implies to respect certain principles of substantial nature - the principles 1 to 3 -, which constitute, to some extent, the normative expression of the objective of "sustainability" as well socio-economic as environmental which any development should persue to be able to be described as sustainable. In addition, the "balanced" and "integrated" implementation of these objectives would require the respect of other principles, of procedural nature - principles 4 to 7 - within the framework of any decision-making process.

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co-operate in and contribute to this global partnership. Corporations have also responsibilities pursuant to the polluter-pays principle.
Differentiation of responsibilities, whilst principally based on the contribution that a State has made to the emergence of environmental problems, must also take into account the economic and developmental situation of the State, in accordance with paragraph 3.3.

[18] The principle of good governance is essential to the progressive development and codification of international law relating to sustainable development. It commits States and international organizations:
(a) to adopt democratic and transparent decision-making procedures and financial accountability;
(b) to take effective measures to combat official or other corruption;
(c) to respect the principle of due process in their procedures and to observe the rule of law and human rights; and
Exact contours this principles are however very difficult to encircle and the drafting of the Declaration on these points is not very precise.

[19] Principles 1 à 7 Declaration of New Delhi. SANDS recognizes five principal elements in the durable development, namely the need for preserving the natural resources with the profit of the future generations (principle of intra-generational equity), the objective to exploit the natural resources in a durable way (principle of sustainable use), the equitable use of the natural resources (principle of equitable use, or intra-generational equity), the need for ensuring that the environmental considerations are integrated in the plans, programs and economic and of development projects, and that the needs for the development are taken into account in the application for the environmental objectives (principle for integration) finally that need for interpreting and for observing the rules of the international law in an integrated and systematic way (SANDS, 2003, p. 266). BOYLE et FREESTONE add the right to the development and the procedural laws (participation, access to information and justice), and include in the durable principle of use that of precaution (BOYLE et FREESTONE, 1999, pp. 9-16).

2.2. Ecological theory

2.2.1. Biodiversity

DEFINITION

Biodiversity is a contraction of 'biological diversity' and is defined as **"the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species** (genetic diversity)**, between species** (species diversity) **and of ecosystems** (ecosystem diversity)**"** (Millennium Ecosystem Assessment: Mace *et al.* 2005).

The term biodiversity is used in different ways, leading to ambiguities and misunderstandings. Mayer (2006) distinguishes three groups of thought styles with different uses of the term biodiversity:

- Natural history perceives biodiversity as biotic elements of nature that can be described and classified.
- Science considers biodiversity as a measurable parameter that is relevant for ecosystem processes and functions.
- In environmentalism, biodiversity is used in the context of concerns about species extinctions and habitat destructions.

Therefore, Mayer (2006) outlines in a coherent concept the way biodiversity should be understood (see appendix 1).

IMPORTANCE (CHAPIN ET AL. 2000, MACE ET AL. 2005)

Biodiversity plays an important role in the way ecosystems function and in the services they provide.

Ecosystem services are the benefits obtained by people from ecosystems (Fig. 1 & 2). The local loss of an essential species can disrupt ecosystem services for a long time.

Biodiversity also (mostly positively) affects regulating services that regulate ecosystem processes, climate, floods, disease, and water quality (Figure 2). For instance,

- The preservation of the number, types, and relative abundance of resident species can enhance resistance of a wide range of natural and semi-natural ecosystems against *invasive species* (see paragraph 1.2.3) or pests (e.g. Knops *et al.* 1999, Hector *et al.* 2001).
- There is a positive relationship between species richness or composition and ecosystem processes like productivity (Hector *et al.* 1999, Fridley 2001, Tilman *et al.* 2001, Rajaniemi 2003), nitrogen cycling (Mulder *et al.* 2002, Scherer-Lorenzen *et al.* 2003, Symstad & Tilman 2001), stability (Valone & Hoffman 2003, Wardle & Grime 2003) or drought resistance (Symstad & Tilman 2001).
- Biodiversity, in particular the diversity of plant forms and the distribution of landscape patches, influences climate at local, regional, and global scales. Thus changes in land use and land cover that affect biodiversity can in turn affect climate. Some components of biodiversity affect carbon sequestration and thus are important in fighting *climate change* (see paragraph 1.2.2).

For a detailed synthesis on the current knowledge of the relationship between biodiversity and ecosystem functioning: see Hooper *et al.* (2005).

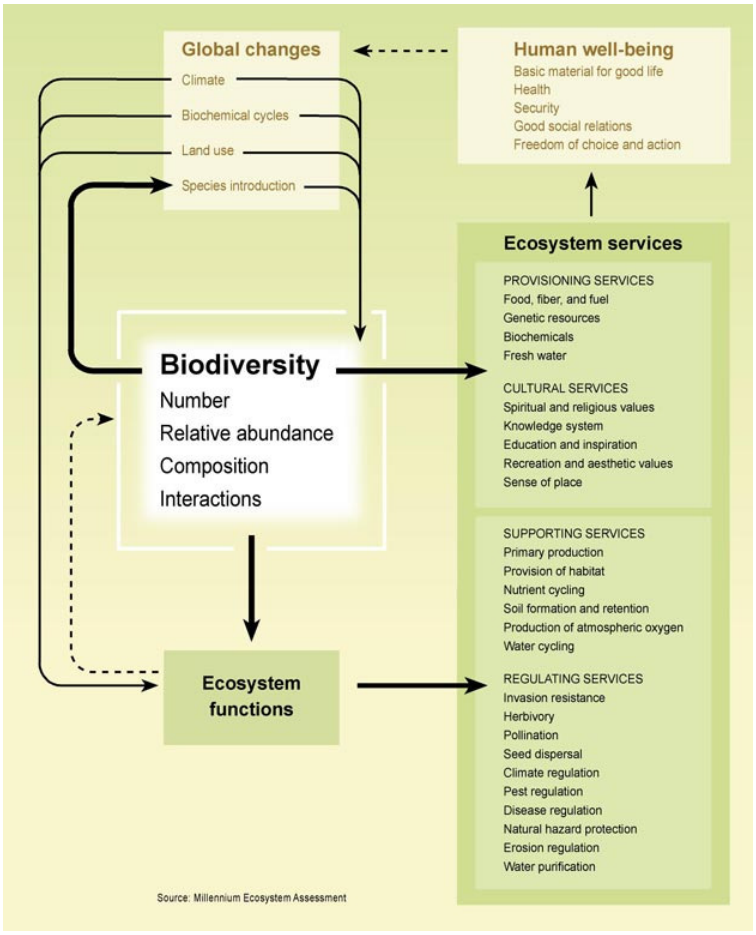

Figure 1. Biodiversity is both a response variable affected by global change drivers and a factor modifying ecosystem processes and services and human well-being. On land, biodiversity affects key ecosystem processes such as the production of living matter, nutrient and water cycling, and soil formation and retention. All of these govern and ensure supporting services that are necessary for the production of all other ecosystem services. Differences between regions in terms of ecosystem processes are driven mostly by differences in climate, in resource availability, and in other external factors, and not by differences in species richness. Though losses of biodiversity may have only small impacts on an ecosystem in the short term, they may reduce its capacity to adjust to changing environments in the future. From: Mace *et al.* (2005).

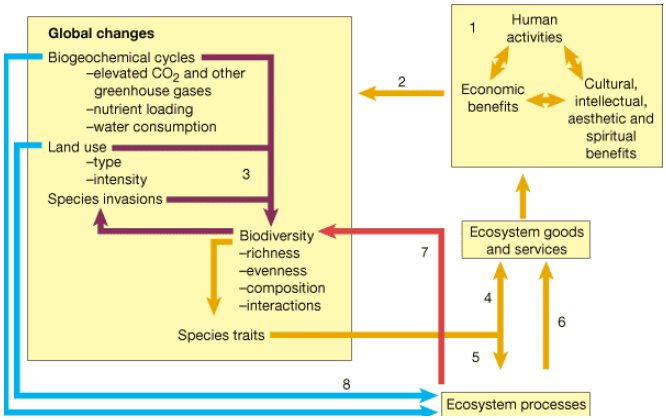

Figure 2. Human activities that are motivated by economic, cultural, intellectual, aesthetic and spiritual goals (1) are now causing environmental and ecological changes of global significance (2). By a variety of mechanisms, these global changes contribute to changing biodiversity, and changing biodiversity feeds back on susceptibility to species invasions (3, purple arrows). Changes in biodiversity, through changes in species traits, can have direct consequences for ecosystem services and, as a result, human economic and social activities (4). In addition, changes in biodiversity can influence ecosystem processes (5). Altered ecosystem processes can thereby influence ecosystem services that benefit humanity (6) and feedback to further alter biodiversity (7, red arrow). Global changes may also directly affect ecosystem processes (8, blue arrows). Depending on the circumstances, the direct effects of global change may be either stronger or weaker than effects mediated by changes in diversity. We argue that the costs of loss of biotic diversity, although traditionally considered to be 'outside the box' of human welfare, must be recognized in our accounting of the costs and benefits of human activities. From: Chapin *et al.* (2000).

MEASURING BIODIVERSITY: INDICATORS (BEGON ET AL. 1996, MACE ET AL. 2005)

The definition of biodiversity emphasizes the many dimensions of it. Every biota can thus be characterized by not only its taxonomic (e.g. species number) diversity, but also by its ecological (e.g. nitrogen-fixing plants) and genetic diversity and even their distribution, function and interactions among species affecting their dynamics and function (like predation or parasitism). Furthermore, the way these dimensions of diversity vary over space and time is a key feature of biodiversity. Thus only a multidimensional assessment of biodiversity can provide insights into the relationship between changes in biodiversity and changes in ecosystem functioning and ecosystem services.

However, it is in most cases not possible to measure biodiversity in this multidimensional way because the data are lacking (Orr 2003). Even for the taxonomic component of biodiversity, where information is the best, considerable uncertainty remains about the true extent and changes in taxonomic diversity (e.g. 'Estimating the size of the world's threatened flora': Pitman & Jørgensen 2002, 'The taxonomic bottleneck': Kim & Byrne 2006). Moreover, several taxonomic groups are only poorly investigated (Figure 3).

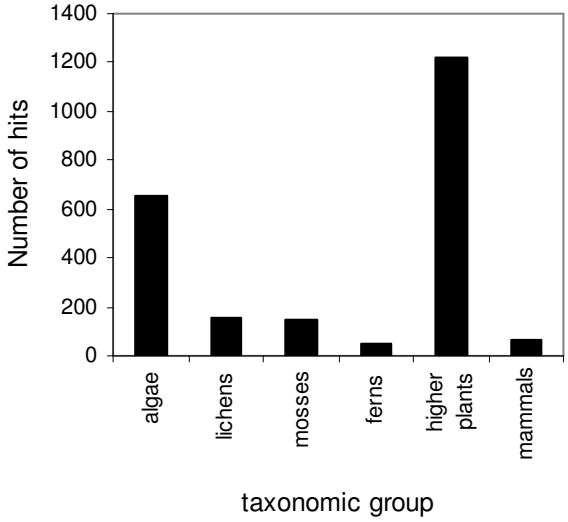

Figure 3. Comparison of the number of hits in the Web of Science - Science Citation Index Expanded – 1972 to present (ISI Web of Knowledge: URL: http://portal.isiknowledge.com/) for the following search strings: mosses: "taxonomy AND (moss OR bryophyte)"; lichens: "taxonomy AND lichen"; higher plants: "taxonomy AND plant"; ferns: "taxonomy AND fern"; algae: "taxonomy AND (alga OR algae)"; mammals: "taxonomy AND mammal".

As a result, a variety of surrogate or *proxy measures* are often used. Ecological indicators are thus scientific constructs that use quantitative data to measure aspects of biodiversity, ecosystem condition, services, or drivers of change, but no single ecological indicator captures all the dimensions of biodiversity. However, there is a need for more integrated indicators (see appendix 2).

Species richness (Mace et al. 2005)

The most common ecological indicator is *total species richness* (TSR). However, TSR only partially captures ecosystem services for several reasons, e.g., what constitutes a species is sometimes not well defined and the value of TSR depends on the definition of the area over which it was measured and may scale neither to smaller nor to larger areas (for a full discussion: see appendix 3).

Local species diversity indices (Begon et al. 1996)

Biologists trying to understand community structure often use a diversity index, instead of TSR. Diversity indices are mathematical measures of species diversity in a community, taking into account the relative abundances of different species.

Consider two communities of 100 individuals each and composed of 10 different species. One community has 10 individuals of each species; the other has one individual of each of nine

species, and 91 individuals of the tenth species. Which community is more diverse? Clearly the first one is, but both communities have the same species richness. By taking relative abundances into account, a diversity index depends not only on species richness but also on the evenness, or equitability, with which individuals are distributed among the different species.

In order to measures of species diversity and equitability, dozens of indices have been introduced (see Hubalek 2000 for a critical review). The two most common used ones are the Simpson's and Shannon Wiener diversity index (for a discussion: see the appendix 4).

Measuring biodiversity over spatial scales: α, β and γ diversity (Whittaker 1972, In: Loreau 2000, Gering & Crist 2002)

To investigate trends of biodiversity in space, three diversity indices have been developed: the diversity of species found *within* homogeneous sampling units (habitats) or **α-diversity,** the component of the total diversity which can be attributed to differences in species compositions between ecosystems or **β-diversity** and the regional diversity or **γ-diversity** (for a full discussion: see appendix 5).

Genetic diversity

Like biodiversity at other levels, genetic diversity within a species can be measured in many different ways, for a discussion of which we refer to p. 95 of Mace *et al.* (2004).

2.2.2. Threats to biodiversity

Biodiversity is currently degrading at a catastrophically high rate (Pimm & Raven 2000, Novacek & Cleland 2001). Direct destruction of habitats evidently is the most drastic threat to biodiversity (Hermy *et al. in press*). In Europe for instance, land use intensified drastically with the industrial revolution (1850) and again after the Second World War (1950). The introduction of machines, fertilizers and wire fencing, the conversion of natural areas into agricultural land and the increased scale of agricultural holdings have led to a huge degradation of nature values. Here, as in other places in the world, the remaining habitats suffer from increased fragmentation, overexploitation and pollution. Furthermore, the arrival of exotic, invasive species, as a result of increased anthropogenic mobility, puts an extra stress on vulnerable ecosystems.

In addition, one is now increasingly becoming aware of the global impact of nitrogen deposition and climate change on biodiversity (Novacek & Cleland 2001). While human-induced habitat fragmentation and invasive species are particular threats to biodiversity in the short-to-medium term, the effects of climate change are likely to become increasingly prominent relative to other factors (Thuiller 2007).

In this chapter, we critically asses the literature concerning these main threats to biodiversity, while the following chapters will discuss the paradigms dealing with the conservation of our degrading biodiversity like the small population paradigm, the equilibrium theory of island biogeography or ETIB, the metapopulation theory and ecological networks. Figure 4 gives an indication of the research effort paid since 1972 to these topics or paradigms.

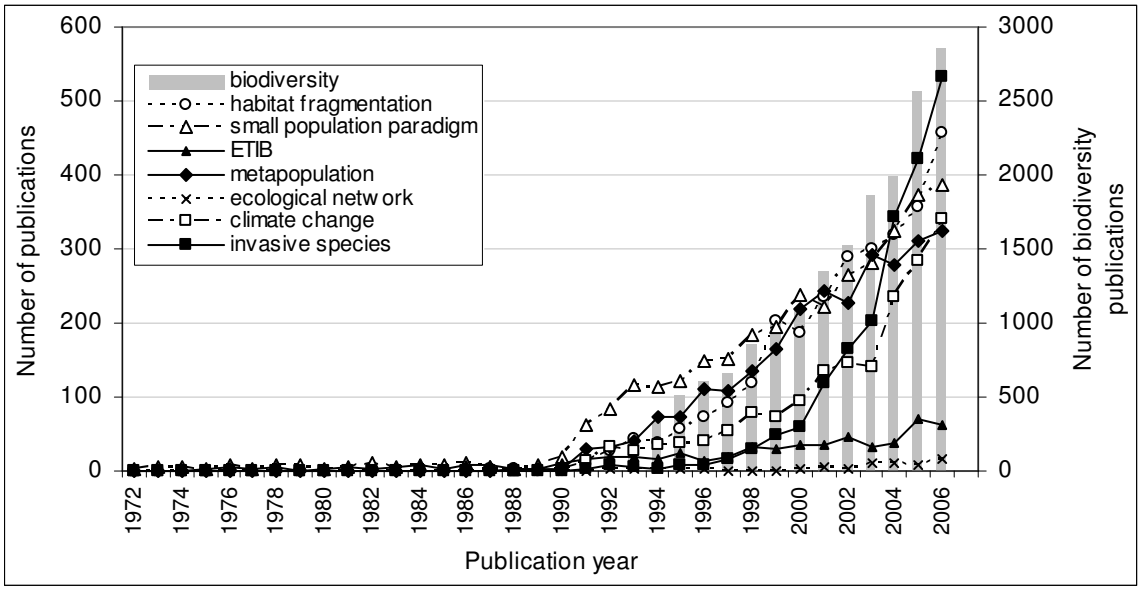

Figure 4. Comparison of the number of hits (for biodiversity on the right-hand axis) in the Web of Science - Science Citation Index Expanded – 1972 to present (ISI Web of Knowledge) for the following search strings: for biodiversity: *biodiversity*; for habitat fragmentation: *"habitat fragmentation" OR "fragmented habitat" OR "fragmented landscape" OR "habitat fragments"*; for small population paradigm: *extinction vortex OR "small population paradigm" OR "population viability" OR "minimum viable population" OR "demographic stochasticity" OR "inbreeding depression"*; for ETIB: *"island biogeography" OR "MacArthur & Wilson" OR "island biogeography theory" OR "island assembly theory" OR "MacArthur-Wilson theory" OR "island theory"*; for the metapopulation theory: *metapopulation*; for ecological networks: "ecological network"; for climate change: *("climate change" AND diversity) OR ("climate change" AND biodiversity) OR ("global warming" AND biodiversity) OR ("global warming" AND diversity) OR ("global warming" AND extinction) OR ("climate change" AND extinction)* and for invasive species: *invasive species*.

2.2.2.1. Habitat fragmentation

Habitat fragmentation, or habitat sub-division, is the subdivision of continuous habitat into multiple patches (Fahrig, 2003).

Landscape fragmentation results from patch conversion and development of sites, e.g., into urban settlements or intensively used areas, and from linkage of these sites via linear infrastructure such as motorways, railways or others (Harris, 1984; Saunders *et al.* 1991; Forman 1995; Jaeger, 2000; Clergeau & Désiré, 1999). Landscape fragmentation also comprises natural barriers to animal dispersal such as rivers. This is defined here as *geogenic fragmentation* (Jaeger, 2000).

RESEARCH HISTORY

Habitat fragmentation has become a major research theme in conservation biology (Haila, 2002; Fazey *et al.* 2005). It is considered as a severe threat to global biodiversity (Sala *et al.* 2000; Foley *et al.* 2005), and is believed to negatively affect virtually all taxonomic groups including birds and mammals (Andrén, 1994; Recher, 1999), reptiles (Gibbons *et al.* 2000), amphibians (Stuart *et al.* 2004), invertebrates (Didham *et al.* 1996) and plants (Hobbs & Yates, 2003). Although 'fragmentation' has become a major research theme, progress in the field has been hampered by overly restrictive, conceptual paradigms (Haila, 2002) and the imprecise or inconsistent use of important terminology (Bunnell, 1999; Fahrig, 2003).

The focus of previous studies was often on the fragmentation of forests, an important subtopic of landscape fragmentation. Studying the relationships between structural and functional consequences of landscape fragmentation offers insight into the more general question of how landscape patterns and processes are correlated (Forman & Godron 1986; Turner 1989; Turner & Gardner 1991). In particular, the comparison of anthropogenic and geogenic fragmentation effects and of their spatial and temporal scales provides fruitful research opportunities (Jaeger, 2000).

In literature, many threshold values for habitat connectivity can be found, for example, for fragmented forests and forest plant species (e.g. Butaye *et al.* 2001; Honnay *et al.* 2002).

PROCESS

Habitat fragmentation does not only characterize the structural *state* of a landscape, but it is also understood to be a *process* (Forman, 1995) that results in the disruption of existing ecological connections between spatially separated elements of landscapes (Haber, 1993 *in* Jaeger, 2000).

Habitat fragmentation essentially encompasses three major components:

- pure loss of habitat,
- reduction of individual patch size and
- increase of spatial isolation of the remnant patches (Andren, 1994)

STAGES OF FRAGMENTATION

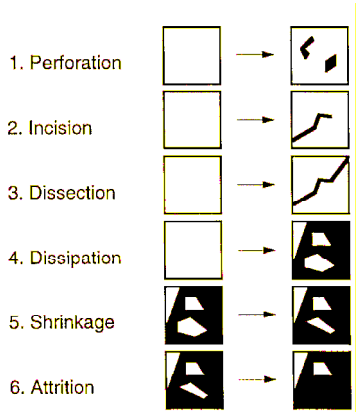

Figure 5. Stages of the fragmentation process, distinguished according to geometric characteristics (Forman, 1986).

Habitat fragmentation shall be used as a comprehensive notion integrating all six stages (Figure 5). The dissipation phase (4) can be represented as a combination of dissection (3) and shrinkage (5). Nevertheless it is considered as an extra phase because of its different genesis compared to phases (3) and (5) in real landscapes, i.e., when dissection and shrinkage take place at once and cannot be regarded as separate processes. Further, an *incision* phase is distinguished from the dissection phase A critical remark we can make is that these depictions distinguish only between two types of areas. Their application to a landscape includes a decision about which landscape elements are supposed to be involved by the fragmentation process, and depends on the system property of interest (Li & Reynolds, 1995; Gustafson, 1998). Examples are the distinction between habitat and uninhabitable area (depending on the organism of interest) or between forested and non-forested area (Jaeger, 2000).

DIRECT EFFECTS ON THE LANDSCAPE

Habitat fragmentation produces a series of more or less isolated segments of habitat, ecosystem, or land use type, which are surrounded by a matrix of more intensive land use and lines which modify the ecological interrelations between the segments, e.g., acting as barriers against the dispersal of animals (Jaeger, 2000).

According to Fischer and Lindenmayer (2007), binary classification of land into habitat (native vegetation) and non-habitat (other land cover) ignores habitat suitability gradients and differences between species with respect to what constitutes suitable habitat for them. So, habitat fragmentation should be used only in a single-species context.

EFFECTS AT THE SPECIES LEVEL

A. Smaller habitat patches

Since smaller patches generally support smaller populations, a decrease in patch area may lead to increased extinction risk due to decreasing resistance against stochastic extinction events, typically affecting small populations (Shaffer, 1981; Lande, 1988) (See further: Small populations paradigm, paragraph 1.3). It is theoretically expected that a small population size increases the risk of erosion of genetic variation and of inter-population genetic divergence due to increased random genetic drift, elevated inbreeding, accumulation of deleterious mutations, and reduced gene flow (Young *et al*., 1996).

B. Increased edge effects

Edge effects are changes in physical and biological conditions at an ecosystem boundary or within adjacent ecosystems. Abiotic edge effects refer to changes in physical variables such as radiation, moisture, temperature, humidity, wind speed and soil nutrients (Chen *et al.* 1990; Matlack, 1993; Weathers *et al.* 2001). Biotic edge effects are changes in biological variables such as species composition of plants and animals, or patterns of competition, predation and parasitism (Malcolm, 1994; Robinson *et al.* 1995; Lahti, 2001; Valladares *et al.* 2006).

C. Spatial isolation

Besides patch size, spatial isolation or the degree of connectivity between patches is another important feature of fragmented habitats (Butaye *et al*, 2005). In small patches that are also spatially isolated, extinction probabilities are expected to further increase through a reduction of colonization events, hampering the 'rescue' of the population by the inflow of new individuals (Brown & Kodric-Brown, 1977) or genetic material. Indeed, the hypothesis that plant pollinator interactions may be disrupted by habitat fragmentation became a major topic in conservation biology, with the growing consciousness that habitat fragmentation seriously affects plant fitness and reproductive success (Wilcock & Neiland, 2002; Goverde *et al.* 2002). Pollination in particular can limit seed production

in habitats that became more isolated than the foraging distance of the pollinator;
in habitat patches that are too small to support a viable pollinator population or
when pollinators avoid small relic populations (Kearns *et al.* 1998; Kwak *et al.* 1998)

Also, in spatially isolated patches, recolonization after species extinction is less probable (Hanski, 1999).

Habitat isolation can negatively affect day-to-day movements of a given species (e.g., for birds, between nesting and foraging resources; Saunders, 1980; Luck & Daily, 2003). Habitat isolation may also negatively affect the dispersal of juveniles (Cooper & Walters, 2002). Metapopulations, i.e. (set[s] of local populations which interact via individuals moving between local populations) sometimes develop as a result of habitat isolation (Hanski & Gilpin, 1991 – see further for more information) Habitat isolation may negatively affect large-scale movements of species such as seasonal migration or range shifts in response to climate change (Soulé *et al.* 2004 *in* Fischer & Lindenmayer, 2007). Steffan-Dewenter and Tscharntke (1999) showed for *Sinapis arvensis* and *Raphanus sativus*, two annual crucifers, that increasing isolation of experimentally established small calcareous grassland fragments resulted in decreasing numbers of pollinators and lower seed set of the two crucifers.

INDIRECT EFFECTS AT THE COMMUNITY LEVEL

The ultimate consequence of reduced population viability is local extinction, leading to disappearance of the species from the fragment and consequently to decreased species richness and altered community composition.

Butaye *et al.* (2005) showed that there is no obvious relation between the size of calcareous grassland fragments and overall species richness, species richness at different spatial scales and abundance of some typical invader species or species characteristic of semi-natural grasslands.

Often species-area relations are used to describe species richness of fragmented habitats (Butaye *et al.* 2005). A positive species-area relationship may result from one of the two following ecological hypotheses. First, there is the habitat heterogeneity hypothesis which predicts higher species numbers because of higher habitat heterogeneity in larger fragments. The second hypothesis, the so called equilibrium hypothesis, considers increasing species numbers with

increasing patch area independent of habitat heterogeneity (Rosenzweig, 1995). In the latter case, small habitats contain fewer species than larger habitats because population size in small habitats is restricted and because small populations are more extinction prone (Butaye *et al.* 2005). Both hypotheses have been tested by Krauss & *al.* (2004) for calcareous grassland fragments in Germany. These authors found evidence for the habitat heterogeneity hypothesis, but not for the equilibrium hypothesis. Many calcareous grassland species are long-lived perennials that form remnant populations by prolonged clonal growth (Sammul *et al.* 2003). The result of this persistence is that current patch occupancy patterns of most clonally propagating species may be not in equilibrium with the present degree of habitat fragmentation (Eriksson & Ehrlén, 2001). We are so dealing with a so called *extinction debt* (Tilman *et al.* 1994). Moreover, since species of different trophic levels are differently affected by habitat fragmentation it is likely that also other biotic interactions are altered (Steffan-Dewenter & Tscharntke, 2002). Generally the trophic-level hypothesis of island biogeography states that species of higher trophic levels are more prone to the effects of fragmentation than species of lower levels (Holt *et al.* 1999). Empirical evidence for this hypothesis was found by Kéry *et al.* (2001), who showed that reduced reproduction of *Gentiana cruciata* in small and isolated calcareous grassland fragments was offset by decreased herbivory by its specialised herbivore, *Maculinea rebeli*. Colling and Matthies (2004) came to similar conclusions and argued that habitat fragmentation may release plants from parasites and pathogens, which may mask the direct negative effects of habitat fragmentation on plant fitness (Butaye *et al.* 2005).

Groppe *et al.* (2001), finally, investigated the relation between *Bromus erectus* and the pathogen, *Epichloë bromicola*, with respect to small scale habitat fragmentation. These authors related increased disease frequency at the level of the host plant and/or the fungus to a higher degree of habitat fragmentation.

2.2.2.2. Climate change

Currently, evidence is accumulating that biodiversity is affected by a global phenomenon called *climate change*. This refers to statistical significant variation in the Earth's global climate or in regional climates that persist for an extended period, typically decades or longer (IPCC 2001).

The Earth's energy balance and climate have always been subject to changes resulting from processes internal to the Earth or external forces like variations in sunlight intensity (Calow 1998). However, since the industrial growth (1750), the Earth's climate has changed as a result of human activities, e.g. by the emission of greenhouse gases (CO_2, CH_4, N_2O, O_3). There is currently strong evidence that these human activities have resulted in *global warming*: by 2100, global temperatures are predicted to rise by up to 4°C, with associated alterations in precipitation patterns (Thuiller 2007).

The scientific world now also agrees that anthropogenic global warming in the 20th century has affected Earth's biological systems. The ranges of species are generally shifting towards the poles and upward in the mountains (Parmesan 2004). Each 1°C of temperature change moves ecological zones on Earth by about 160 km (Thuiller 2007). On the one hand, warm-adapted communities are expanding (IPCC 2001, Parmesan 2006). On the other hand, species of which the entire habitat disappears, or the ones which cannot follow the 'movement' of their habitat quickly enough, are the most extinction-prone (such as range-restricted species like those inhabiting tropical coral reefs). Thomas *et al.* (2004) predict that 15 to 37 % of the taxa in their sample regions (covering 20% of the Earth's terrestrial surface) will be 'committed to extinction' until 2050. Further, an advance in the timing of flowering may cause disruptions in the interaction with pollinators (and may thus affect fruit harvesting, Parmesan 2004). Climate change may also lead to community restructuring, for instance in Polar regions (e.g. Aanes *et al.* 2002) and arid ecosystems (Brown *et al.* 1997).

Furthermore, there is little evidence that the predicted species extinctions will be prevented by genetic adaptation of these species to the changing environment (Parmesan 2006). Anthropogenic climate change and the associated global warming is thus the major threat to biodiversity at the moment.

2.2.2.3. Invasive species

While anthropogenic global change has negatively impacted some species, others have thrived and proliferated, sometimes with dramatic impacts on biodiversity. Such species are referred to as "invasive". The spread of alien species into native ecosystems and habitats is believed to be the second largest cause of current biodiversity loss worldwide, after habitat destruction (Vitousek et al., 1997).

Most definitions of "invasive" consider a combination of criteria: (1) being an exotic (species, subspecies or lower taxon, introduced outside its natural past or present distribution); (2) reproduce and increase its range in its new environment; (3) have an important impact on this new environment (Vanderhoeven & al., 2006).

Exotic species are characterized by different degrees of potential for naturalization and invasiveness. Only a small fraction of exotics become invasive, and even a small part of those are considered, based on rather subjective criteria, as troublesome or nuisance. For most species the process of invasion is rather poorly documented (Vanderhoeven & al., 2007).

Richardson *et al.* (2000) describe the process as an introduction-naturalisation-invasion sequence. The invasive process requires a taxon to overcome various abiotic and biotic barriers: geographic, environmental, reproductive and/or dispersal barriers. The status of taxa evolves after each barrier coped with. Invasion requires for introduced plants also to overcome barriers to dispersal within the new region and to cope with the abiotic environment and biota in the general area: in a first stage disturbed habitats and later more natural habitats.

The impacts of invasions are direct or indirect and may be classified in three categories (Vanderhoeven & al., 2007):

- environmental impacts (genetic impacts, impacts on populations, communities and/or ecosystems)
- economic impacts with direct (yielding decreasing, management cost) or indirect costs (species richness decrease…)
- impacts on public health (Vanderhoeven & al., 2007).

So, in addition to the threats for biodiversity, the direct costs of Invasive Alien Species are huge. It is difficult to estimate precisely the economic losses resulting from biological invasions. They include the impact of weeds on crop production, the increased costs of control, the decreased water supply, the management costs of reducing the alterations of protected areas, the impact of introduced pathogens affecting wildlife and public health, the impact of marine organisms transported by ships (mainly ballast water and hull-fouling)... Based on data obtained in the US, the UK, Australia, India, South Africa and Brazil, the economic costs generated by the biological invasions would represent approximately 5 % of the world economy (Pimentel *et al.*, 2000).

2.2.3. Problems of small populations

Because many species can no longer survive in our man-dominated landscapes, increasing effort is being paid by conservationists to protect reserves of relatively undisturbed habitat. Therefore, a predictive understanding of the relationship between population size and its chances of extinction, is indispensable (Shaffer 1981).

The small population paradigm (*sensu lato*, see Hedrick *et al.* 1996) or the conservation genetics paradigm (Ouborg *et al.* 2006) deals largely with the population genetics and population dynamics problems faced by a population at risk of extinction because its numbers are small, comparable to a population on a small island, or its analogue in a zoo. As discussed above, the main causes for this are loss of habitat, habitat fragmentation, introduction of species, overexploitation, environmental pollution and climate change.

At least part of the processes which are induced when a population decreases in size are depicted in Figure 6, the so-called *extinction vortex*.

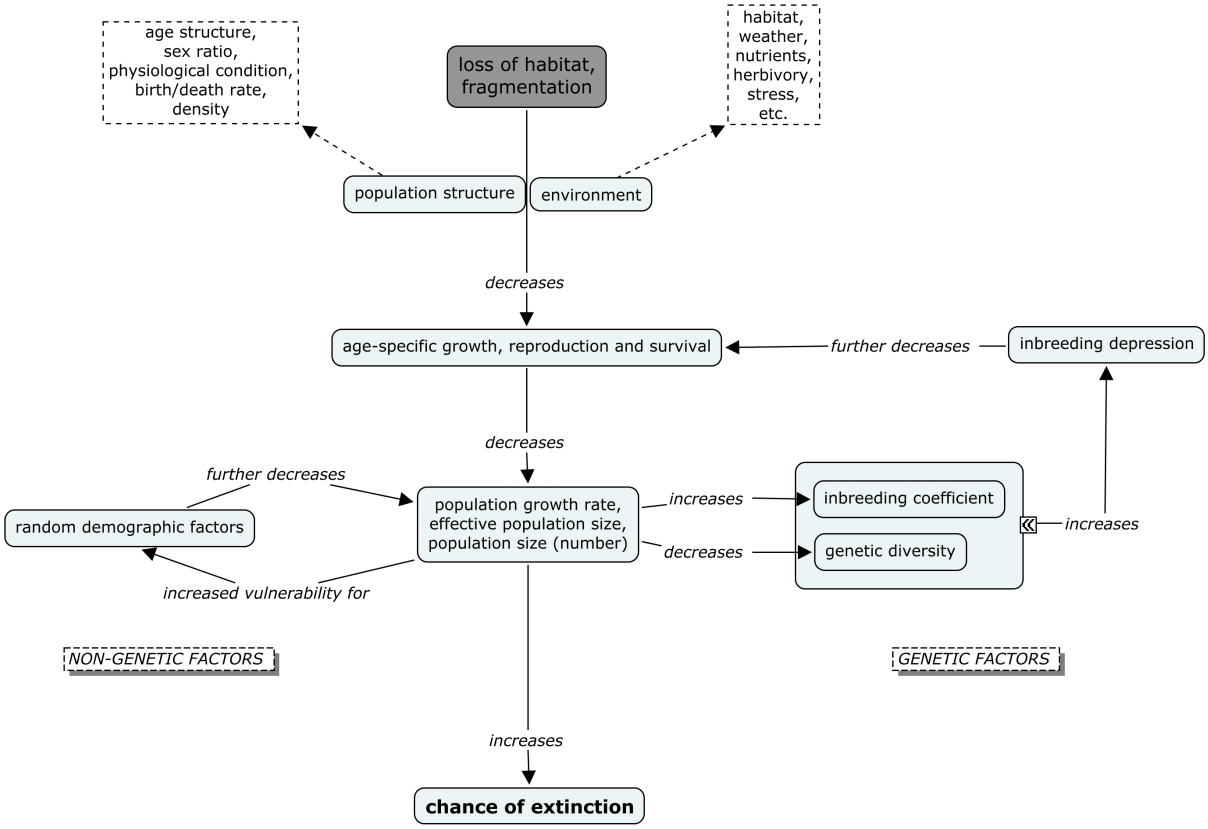

Figure 6. The extinction vortex (adapted from Buiteveld & Koelewijn 2006).

Small-sized populations become more susceptible to stochastic (or chance) events like demographic, environmental and genetic stochasticity as well as Allee and edge effects (Lande 1998), in turn leading to smaller population sizes.

Demographic stochasticity is the variation in population dynamics owing to chance events *affecting individuals* and it increases extinction risks in small populations only (Menges 2000, Ouborg *et al.* 2006). In a very small population of mammals, for instance, if a female produces male offspring for three consecutive years and then dies herself, the population may die out (Caughley 1994). Simulation studies have shown that demographic stochasticity is only relevant in very small plant populations (N < 50; Oostermeijer *et al.* 2003).

Environmental stochasticity is the variation in demographic parameters caused by environmental variation (competitors, disease, weather, herbivory, pollinator availability, etc.) *affecting whole populations*. Increasing environmental stochasticity increases extinction risk (Menges 2000, Ouborg *et al.* 2006). For instance, edge effects, which increase in importance as habitat becomes more fragmented, will magnify environmental stochasticity (Caughley 1994, Oostermeijer *et al.* 2003). Environmental stochasticity is believed to be more important than demographic stochasticity and populations need to be larger to be buffered against environmental stochasticity. In particular, catastrophes, i.e., environmental stochasticity with high impact and low frequency, may easily cause local extinction. Catastrophes involve extreme natural events such as floods, but we may also place high-impact anthropogenic accidents with local reserve management or road works in this category.

In the ‘extinction vortex’ (Figure 7), two positive ‘feedback loops’ may be discerned. These non-genetic and genetic feedback-loops may also enhance each other.

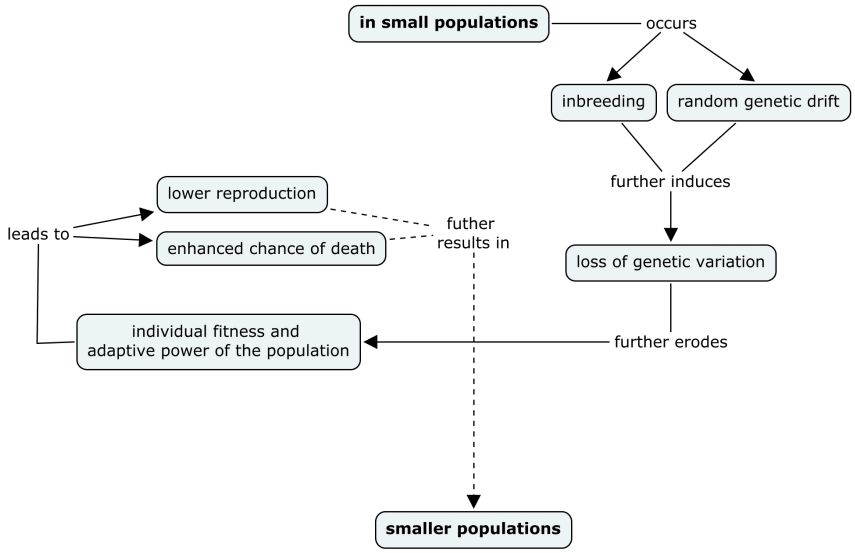

Figure 7. The genetic, positive feedback loop in detail (adapted from Buiteveld & Koelewijn 2006).

Genetic variation is indispensable for populations to adapt to changing conditions and a loss of it is mostly translated into altered birth and death rates and thus the long-term survival. The two processes underlying loss of genetic variation in small populations are (Figure 7 and see Ouborg *et al.* 2006):

- **Genetic stochasticity** or **genetic drift** involves the random loss of genetic variants (alleles) from small populations due to the fact that not all of them are represented in the new generations. In the absence of mutation, in a smaller population, the chance that beneficial genetic variants, e.g. resistant genes, disappear by accidence is several times higher than in large populations. This even increased in isolated populations where migration is much less probable than in non-isolated populations. For plants, loss of genetic variation by drift is then not compensated for by immigration of seeds or pollen from other populations. This leads to increased genetic differentiation among populations. It has recently been established that gene flow has significant effects on population fitness (Newman & Tallmon 2001, Tallmon *et al.* 2004). In years with for instance extreme drought, loss of genetic variation may occur and the population may genetically be completely different from the previous year. In large populations, this risk is much smaller. The probability that genetic drift will fix a given allele is dependent upon its initial frequency (the chance of being lost is, of course, greater for rare alleles) and the size of the population.
- **Inbreeding** (mating between close relatives) is obviously much more likely in small populations than in large ones. This does not lead to a loss of alleles, but rather redistributes alleles from heterozygous to homozygous combinations. This may then result in the expression of vulnerable, recessive alleles in the offspring, which are masked in previous, heterozygous state. Inbreeding may result in lower fitness (decreased vitality and fertility) of the offspring and in decreased total population viability and fitness, called inbreeding depression (Crnokrak & Roff 1999). For instance for plants, inbreeding may result in significantly reduced seed quality, which is expressed in lowered germinability, small seedling size and higher mortality (Oostermeijer 2003). Inbreeding effects are more predictable and directional than the effects of genetic drift and genetic drift may be generally more significant.

The importance of anthropogenic, ecological and genetic factors affecting population dynamics can simultaneously be evaluated through the use of **population viability analyses (PVA)**. PVA extrapolates from field-collected demographic data in order to understand the health and functioning of populations and to model extinction scenarios (Boyce 1992). By correlating

habitat characteristics and management regimes with population survival estimates based on PVA, one can then identify site management strategies that enhance the likelihood of long-term population survival (Menges & Dolan 1998, Menges 2000). However, studies that integrate all of these variables in a single PVA are still very scarce, so identifying the exact causes of species decline and proposing management guidelines to alleviate these threats, remains often challenging (for plants: Oostermeijer 2003, Oostermeijer *et al.* 2003, Hermy *et al.* 2007). Furthermore, some authors argue that the estimates of extinction risk are usually too imprecise to be worthwhile (Ellner *et al.* 2002), while others underline its value as the best tool available in many circumstances (Brook *et al.* 2002).

A closely related concept is **minimum viable population (MVP) analysis**, an estimate of the minimum number of organisms of a particular species that constitutes a viable population (Boyce 1992), i.e., a population that has a good chance of surviving for some relatively long period of time, for instance, a 95% chance of surviving for at least 100 yr.

2.2.4. The spatial structure of populations

Traditionally, conservation efforts promoted a '*species approach*', by implementing measures mainly aiming at protecting areas with populations of particularly vulnerable or threatened species (Primack 1998). This approach resulted in the design of nature reserves, devoted to the protection of biodiversity with little attention paid to other parts or aspects of the territory or landscape matrix (e.g., Myers *et al.* 2000). In that period the linkage between protected sites did not seem to be crucial.

This method is now recognized as being largely insufficient to preserve biodiversity in a sustainable way, as reserves represent only a negligible part of the earth's surface (and hence a low portion of global biodiversity) and because of the additional effects of habitat fragmentation (Burkey 1989). The emergence of new scientific paradigms has allowed the identification of the shortcomings of a strategy solely based on preservation of nature reserves. Natural scientists have approached the problem of habitat fragmentation for the past 25 years largely within the framework of two key theoretical developments in community and population ecology: the theory of island biogeography and metapopulation dynamics. From these theoretical paradigms, a new territorial planning strategy emerged in the beginning of the eighties (Figure 4): the ecological network, which will be discussed in paragraph 1.5.

2.2.4.1. The equilibrium theory of island biogeography (Hermy 1986; Begon et al. 1996)

The equilibrium theory of island biogeography (ETIB, often referred to as 'island theory') was elaborated by MacArthur and Wilson (1963, 1967) to explain the observed lower species diversity of animal communities on oceanic islands than in apparently comparable pieces of mainland.

They proposed that **the number of species on any island** (i.e. the equilibrium number; Figure 8) **reflects a balance between immigration** (the rate at which new species colonize it) **and extinction** (the rate at which populations of established species become extinct).

Four assumptions were made:

- **The immigration rate decreases with isolation of the island** (Figure 8) since colonizers have a greater chance of reaching an island the closer it is to the source pool. The curve will always reach zero at the same point (when all members of the pool are resident); but, it will generally have higher values on islands close to the source of immigration than on more remote islands.
- **Extinction rates are higher on small than on large islands** (Figure 8) since population sizes will typically be smaller on small islands.
- **The rate at which new, unrepresented species could become established, is initially very high, but inevitably declines as the number of resident species rises.** The immigration rate reaches zero when all species from the 'source pool' (i.e. from the mainland or from other, nearby islands) are present on the island in question.
- **The rate at which species might become extinct on the island increases with the number of resident species.** When an island is nearly empty, the extinction rate is necessarily low because few species are available to become extinct. However, as the

number of resident species rises, the extinction rate is assumed by the theory to increase, probably at a more than proportionate rate since the resources of an island are limited (due to competitive exclusion).

Furthermore, **this balance is dynamic**, with species continually becoming extinct and being replaced (through immigration) by the same or by different species. The rate at which additional species will establish populations will be high when the island is relatively empty, and the rate at which resident populations go extinct will be high when the island is relatively full. Thus, there must be a point between 0 and the number on the mainland, where the two rates are equal - where input from immigration balances output from extinction. That equilibrium number of species would be expected to remain constant as long as the factors determining the two rates did not change. But the exact species present should change continuously as some species go extinct and others invade (including some that have previously gone extinct), so that there is a steady turnover in the composition of the fauna and flora (Ehrlich *et al.* 1988).

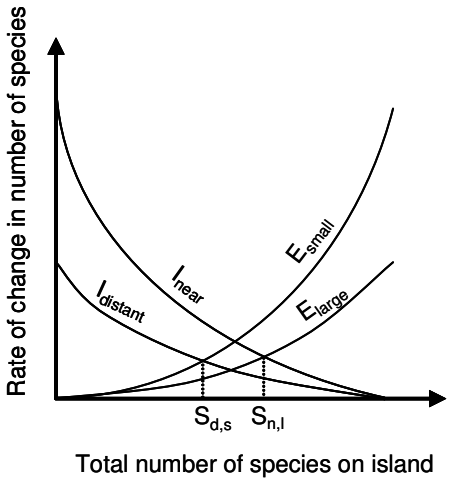

Figure 8. The equilibrium theory of island biogeography (ETIB) of MacArthur and Wilson (1967): I = immigration rate, E = extinction rate. Islands close to a mainland would likely have higher immigration rates than more distant islands, while large islands would likely have lower extinction rates than small islands (Simberloff 1976). Thus, large islands close to continents are predicted to have a higher number of species ($S_{n,I}$) than small islands more distant from continents ($S_{d,s}$).

The authors suggested that while this theory focused on species diversity on oceanic islands, the predictions may be consistent for plant and animal communities inhabiting terrestrial 'islands' (MacArthur & Wilson 1967).

The Equilibrium Theory represented a great conceptual advance over the theories that dominated island biogeography in the mid-20th century. At the time of publication of this new theory, insular community structure was considered static, resulting from unique immigration and extinction. It thus represented a novel, even revolutionary, unifying theory that stimulated many hundreds of studies on patterns in species richness of a great variety of ecosystems and biotas (Lomolino 2000a). Hence, MacArthur and Wilson's ETIB quickly became the paradigm of the field in the 1960s and has strongly influenced this and other disciplines of ecology and conservation biology for the past decades (Hanski & Simberloff 1997, Hanski 1999, 2004).

CRITICISM REGARDING THE ETIB

Recently, however, a growing number of ecologists have begun to question whether the theory remains a useful paradigm for modern ecology. In short, the theory has not kept pace with advances in ecological theory and our growing appreciation for the complexity of nature, especially with empirical findings that species diversity on many islands is:

- not in equilibrium;
- influenced by differences in speciation, colonization, and extinction among taxa; and
- influenced by differences among islands in characteristics other than area and isolation.

Hermy (1986, based on Pielou 1979) summarized these critics into eight categories, which are discussed in appendix 6.

Because of these critics, it is now argued that the theory needs re-evaluation (Lomolino 2000a, 2000b; Brown & Lomolino 2000; Fox & Fox 2000; Heaney 2000; Ward & Thornton 2000; Whittaker 1998, 2000; Drake *et al.* 2002).

ETIB AND NATURE CONSERVATION: THE SLOSS DEBATE (WHITTAKER 1998)

Within a few years after the publishing of the ETIB, its application to the field of conservation biology had been realized and was being vigorously debated in ecological circles. This led to the debate known as Single Large or Several Small (SLOSS), described by writer David Quammen as 'ecology's own genteel version of trench warfare'. The SLOSS debate was a debate in ecology and conservation biology during the 1970s and 1980s as to **whether the choice of a single large or several small (SLOSS) reserve(s) with the same total area was a superior means of conserving biodiversity in a fragmented habitat**.

If a reserve is created by clearance of surrounding habitat, then it follows that on initial isolation the immigration curve should be depressed. The contiguous area of habitat is also reduced and thus extinction rate should increase. At the point of creation, therefore, the habitat island contains too many species, it may even gain fugitive, displaced populations, and the result is that it becomes *supersaturated*. The ETIB then predicts that it should in time undergo *'relaxation'* to a lower species number (thus lose species), a new equilibrium point.

Given a finite total area which can be set aside for conservation as a natural landscape is being converted to other uses, what configuration of reserves should conservationists advocate? Following the island analogy, Diamond (1975) and later the IUCN (1980) favored larger rather than smaller refuges, short rather than long inter-reserve distances, circular rather than elongated reserves (minimizing edge effects), and the use of corridors connecting larger reserves where possible (Figure 9).

Indeed, large reserves have several advantages:

- larger chance of conserving whole ecosystems
- lower impact of predation and competition
- decreased edge effects
- lower risk of local extinctions
- higher local genetic diversity

The view that large reserves should be the norm in reserve design (which is particularly true when conserving larger species), was popularized by many other ecologists, and has been incorporated into most standard textbooks in conservation biology, and was used in real-world conservation planning.

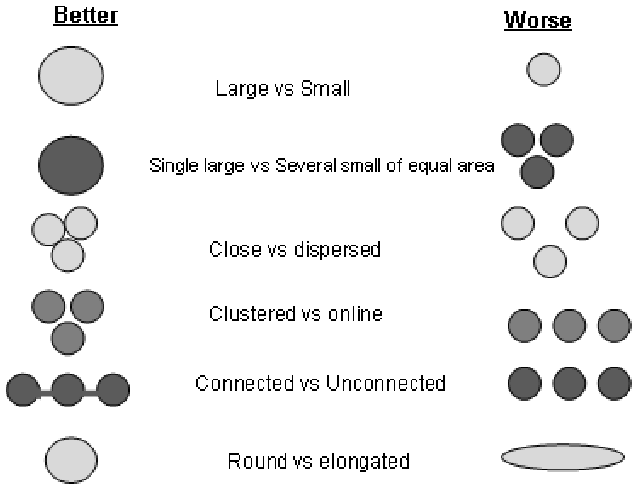

Figure 9. The suggested geometric principles for the design of nature reserves which were supposedly derived from island biogeographic studies, and which were at the centre of the so-called SLOSS debate (redrawn after Diamond 1975). These 'principles' have been challenged on both theoretical and practical criteria.

The suggestions of Diamond were, however, challenged by among others, Wilson's former student Daniel Simberloff, who considered this to be an unproven over-simplification that would damage conservation efforts. Much of the debate hangs on the validity and interpretation of the ETIB, on which these recommendations are based (see appendix 7). One of the issues under

discussion is that oceanic islands fundamentally differ from habitat islands ('islands in a sea of habitats modified by man'), see, for instance, Boecklen (1997). There is increasing recognition that the matrix in fragmented landscapes can potentially influence species abundance or composition in the embedded patches (for animals: e.g. Ricketts 2001 and a recent review by Watling & Donnelly 2006 and for plants: e.g. Cook *et al.* 2002 and a recent review by Murphy & Lovett-Doust 2004).

Advantages of several small reserves over single large ones may be:

- they may serve as 'stepping stones' between larger entities
- a large set of smaller reserves may be more buffered against extinction, predation and catastrophes
- regional species diversity and regional genetic diversity may be increased by conserving several small refugia instead of only one large refugium.

Most commentators regard these theoretical debates as **having contributed little of direct practical value to conservation**. It is now recognized that the answer to the question whether a large or several small reserves is the best option, depends on several criteria, such as the ecology of the species (It might, for instance, be possible to keep the highest diversity of butterfly species by means of a number of small reserves, each targeted to provide particular key habitats) or the trophical level and body size (top carnivores, such as big cats, need large territories incorporating both good and poor habitat), competition, which may lead to the exclusion of species of similar niches within the same reserves, epidemiological risk (having 'all your eggs in one basket'), overriding practical considerations, the physical consequences upon fragmentation or edge effects.

CONCLUSION: THE APPLICATION OF THE ETIB AS A CONSERVATION TOOL?

The ETIB has lead to a more integrated vision of nature conservation where space has become more heterogeneous and where natural patches are separated by intensive agricultural zones, urban zones or barriers like communication and transport infrastructures. The reduction of extinction rates and the maintenance of immigration possibilities became thus objectives of nature conservation. Models based on this theory have allowed the delineation and the spatial distribution of nature reserves (Shafer 1990).

To conclude, the application of ETIB is not recommended in nature conservation (and other fields like town and country planning). The risks to give wrong (or in the best case, incomplete) advice for the choice and construction of nature reserves are higher than the chances for good recommendations (Hermy 1986).

Although the ETIB remains controversial, it has stimulated several concepts that need to be considered for a sound conservation practice. Thus from the point of view of maximization of species number and ensuring persistence several ecological factors should be considered, including distribution of the fragments across environmental gradients, intrinsic patchy nature of habitats, area requirements, dispersal ability and sensitivity of constituent species to fragmentation.

2.2.4.2. The metapopulation theory

The waning of the ETIB as a dominant conservation paradigm in the late 1980s coincided with the burgeoning interest among biologists in the metapopulation concept (Hanski & Simberloff 1997). The ETIB was originally developed to explain patterns at large spatial scales and dealt with species richness of communities, whereas the metapopulation concept applies to populations in fragments (patches) of our landscapes.

A *metapopulation* (MP) can be defined as a set of local populations (subpopulations) of the same species within a larger area, where migration of one subpopulation to at least one or several other suitable patches (already or not occupied by local populations) is possible. A *patch* may then be defined as a continuous area with all necessary resources for the subpopulation, separated from other patches by an unsuitable habitat. The *metapopulation structure* is then the network of different patches, occupied by a MP. This is featured by (i) a specific spatial occupancy of the patches and (ii) specific interpatch migration rates.

In MP biology, the population concept (a population is a group of interacting individuals of a species in a certain place and at a certain time) at *local scale* is thus abstracted to a higher level, namely the *regional scale*. The population dynamics at local scale are largely determined by birth and death rates, while at the level of the MP, mainly dispersal and migration play an important role. The dynamics of the MP, i.e. the shifting occupancy of suitable patches, is mainly determined by colonization and extinction.

Although the MP concept has a history going back to the early part of the 20th century (Hanski & Simberloff 1997), the term "*metapopulation*" was introduced by Levins in 1969 (Levins 1969, 1970) in order to describe and predict the population dynamics of species occupying naturally patchy habitats, such as mountaintops and to gather more insight into the dynamics of biological plagues. Levins' work laid the basis for modern MP theory. After the publication of the Levins (1969) model, it lasted for another twenty years before the concept broke through in population biology (see Hanski & Simberloff 1997). The classic MP concept of Levins (1969, 1970, Figure 10), which assumes a large number of small and hence extinction-prone local populations connected by not-too-much migration occupying equally connected patches (see appendix 8), is now seen as a special case, possibly an uncommon special case (Hastings & Harrison 1994, see appendix 8 for an in-depth discussion).

Because of the large interest of ecologists for metapopulations during the past 20 years, the MP concept has been extended in order to encompass a wider class of population structures (Harrison & Taylor 1997, Hanski & Gilpin 1997, Hanski 1999, Elmhagen & Angerbjörn 2001), **whereby not the dynamics of extinctions and colonization is put central, but the interactions between local populations via migration or dispersal of individuals**.

For this reason, the empirical studies were reviewed and several alternative models were proposed (e.g. Harrison and Taylor 1997). It was assessed that **true** metapopulations range between *classic* and *source-sink* with *mainland-island* in between (Hanski & Simberloff 1997).

- Classic metapopulations: a network of sites, with local dynamics occurring at a much faster timescale than MP dynamics; all populations have a significant extinction risk.
- Mainland-island MP (Figure 10): one large permanent population (the mainland) acts as source from where other smaller populations (islands) are (re-) colonized. Dispersal is thus unidirectional.
- Source sink: where some sites have a negative growth rate at low density in the absence of immigration and in others the growth rate at low density is positive; the latter support the former through emigration.

Thus a system tends more towards a source-sink MP as the contribution of immigrants to the population becomes more unequal among the sites (Bullock *et al.* 2002).

Regional dynamics other than metapopulations include *patchy populations* (Harrison and Taylor 1997) and *non-equilibrium* or *remnant systems* (Eriksson 1996, Harrison and Taylor 1997).

- Patchy populations (Figure 10): where there is a single population distributed among sites in a region; these show no independent dynamics and dispersal among sites is very high, so extinction of local populations is very rare. In essence, it is one spatially structured population.
- Non-equilibrium or remnant systems (Figure 10), where populations are independent and there is no, or extremely little, migration among sites. As a result, local extinctions are not balanced by (re-)colonizations and non-equilibrium metapopulations are instable in time.

Freckleton and Watkinson (2002), in addition, proposed a classification of spatial dynamics from regional to local dynamics, specifically for plants (classic MP, mainland-island MP, shifting cloud or remnant, island, patchy and extended local populations).

The MP concept has thus been broadened to recognize that all species have local and regional dynamics. However, some authors caution against encapsulating all regional dynamics within the MP family, because it assumes that MP theoretical predictions and modeling approaches are valid in all cases (e.g. Bullock *et al.* 2002).

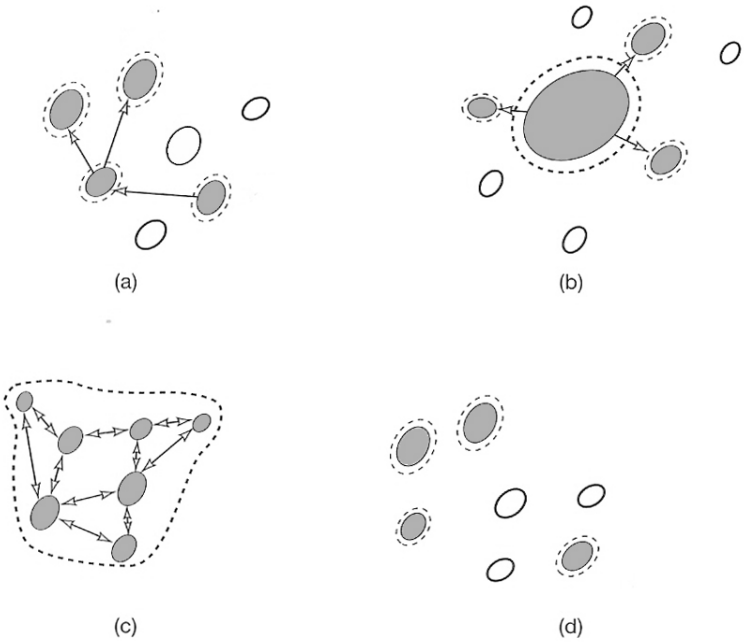

Figure 10. Different kinds of metapopulations. Closed circles represent patches of habitat; filled = occupied; unfilled = vacant. Dashed lines indicate the boundaries of 'populations'. Arrows indicate migration (colonization). (a) Classic MP; (b) Mainland-island MP (common); (c) Patchy population; (d) non-equilibrium MP (differs from a in that there is no recolonization), often occurring as part of a general regional decline. Modified from Harrison (1991).

CRITICISM REGARDING THE MP THEORY

Although the MP concept is now the dominant paradigm in population ecology, it is not undisputed in the literature. A few of the critics are summarized in the appendix 9.

Furthermore, it is not clear what role the MP theory has to play in plant ecology. While the MP concept has been extremely influential and is mostly developing in the study of animal populations (Hanski 1999), less empirical studies of plants have addressed its predictions (Husband & Barrett 1996, Eriksson 1996, but see for instance Bossuyt & Honnay 2006). Plants differ from animals in many respects (see appendix 9). As a result, there is a growing body of literature questioning the applicability of the MP concept for plant populations (Husband & Barrett 1996, Bullock *et al.* 2002, Freckleton & Watkinson 2002, Ehrlén & Eriksson 2003, Freckleton & Watkinson 2003).

MP THEORY AND CONSERVATION BIOLOGY

For many species in man-dominated landscapes, natural habitats occur in small, spatially separated fragments and the species that inhabit these fragments may function as metapopulations. Therefore, MP theory has come to lend ideas on how to manage populations in fragmented habitats and how to design reserve systems (Caughley 1994, Hanski 1999). Operational concepts for conservation biology that have been derived from MP theory are the **minimum amount of suitable habitat** (**MASH**) necessary for MP persistence (Hanski *et al.* 1996), the **minimum viable metapopulation size** (**MVMP**) or the minimum number of interacting local populations necessary for the long-term persistence of the MP (Hanski *et al.* 1996), the **metapopulation capacity** of a landscape, which predicts the persistence of a given species in a given landscape according to the biological properties of the species (Hanski & Ovaskainen 2000) and more recently the **patch quality value** (Hanski & Ovaskainen 2003).

In practice, however, the use of these concepts may degenerate into specious 'magic numbers'. A more constructive approach is to use MP models to rank alternative scenarios of landscape change in terms of persistence of a focal species. One may ask, for instance, whether the entire removal of one large habitat patch is more detrimental to a MP than reducing the areas of several patches (note the connection to the SLOSS rule). The ETIB inspired the rules of refuge design discussed above. Analogously, the MP theory led to predictions about the relative performance of particular species in particular fragmented landscapes based on relatively simple

but spatially realistic models. There are reasons to expect the latter sorts of predictions to be more helpful than the island biogeographic rules of refuge design (see appendix 10).

To illustrate: the proportion of occupied patches by a MP increases according to dispersal and migration facilities between the different patches. For species persistence at the landscape scale, the colonization rate must be higher or at least equal to the extinction rate. If the *isolation* of the different populations is high, the patch area must be increased to lower the extinction rate. If, in contrast, the *patch area* is small, the extinction rate will be high and thus the connectivity of sites (corridors, see below) must be increased to increase the colonization rate (Hanski & Simberloff 1997).

The general effect of the use of MP theory in conservation biology has thus been to draw attention to landscapes and networks, as opposed to individual reserves in isolation, for which the island metaphor of island biogeographic theory is appropriate. The rise of the MP concept has served and continues to serve a useful function by forcing conservation biologists to gather data that are important to effective conservation strategies of individual species – movement rates from site to site, relative reproduction and mortality rates at different sites, and the like (Hanski & Simberloff 1997).

For a more detailed comparison of the MP theory to ETIB, we refer to appendix 11.

2.2.5. Ecological networks

The former practice of nature conservation focusing on individual sites and managing them in respect of their unique communities has been abandoned. From the theoretical ecological paradigms described above, a new territorial planning strategy emerged in the beginning of the eighties: the ecological network. This strategy is considered as a response to the effects of habitat fragmentation. Nature conservation should be thought not only as species protection and site protection, but also as the management of coherent spatial structures (Jongman, 1995). Today, it is clearly evident that biodiversity can only be preserved by a global management of the territory. Hence, the crucial task is to attain a functional connectivity maintained by biological and geophysical interrelations (Endels, 2006).

According to Opdam (2006), an ecological network is a set of ecosystems of one type, linked into a spatially coherent system through flows of organisms, and interacting with the landscape matrix in which it is embedded. Hence, the ecological network is a multi-species concept, linking ecosystems, whereas the term habitat network as defined by Hobbs (2002) and Opdam (2002) refers to the habitat of a single species.

When we consider the superposition, at a regional scale, of several ecological networks defined for several species and habitats, we can talk about a kind of “metanetwork”, with a dynamic structure (some habitats can disappear while others appear). Globally, at the biogeographical region scale, this metanetwork must keep its coherence and quality, which are evaluated by the evolution of habitat quality and target species population number (Dufrêne, 2000).

An ecological network may be single purpose (Jongman, 1995) or multipurpose, in term of species and/or habitats, but the term itself implies that the network coherence is based on ecological processes (Opdam, 2006).

UTILITY AND FUNCTIONS

With respect to species diversity, a landscape is ecologically functional if two conditions are met. First, the spatial pattern of the landscape should support the ecological processes required for resilient populations of a selection of target species, and the spatial scale that is ecologically relevant to that target. Second, the changes that are associated with evolution of the spatial configuration of the landscape do not push the long-term persistence probability of the target populations to an unacceptably low level. Thus, with respect to species diversity, sustainable development of landscapes should comply with these two conditions. A third condition is related to the transfer of knowledge : local and regional actors deciding about landscape and land use changes should be able to apply these conditions in a complex planning and design process, even in the absence of expert knowledge about ecological processes (Opdam, 2006).

The concept of ecological networks appears as a functional response to habitat fragmentation effects on species communities. In this way, it is considered as a framework of ecological components, e.g. core areas, corridors and development zones, which provide the physical conditions necessary for ecosystems and species populations to survive in a human-dominated landscape (Jongman et Pungetti 2004).

The size of habitat patches is of major importance. Indeed, a large surface guarantees the local population viability and can improve possibilities for dispersion of specimens between the populations (Endels, 2006). One may say that in ecological networks local risks are spread over the whole network (Opdam, 2006). Planning is the key factor to establish ecological networks, since creating ecological networks requires an established planning system, be it regional or local (Endels, 2006).

2.2.5.1. Configuration and structure of ecological networks

The concept of ecological networks is rather considered as a territorial planning tool aiming at partitioning the landscape in objective zones. In general, at least three types of zones corresponding to three functions are considered:

- The **central zones** are zones containing species populations and habitats of high patrimonial value with a high conservation status, where preservation of biodiversity should be the top priority. These zones deserve a strong conservation status;
- The **development zones** (or associated zones) are zones of lower biological value but containing an important potential for biodiversity. These zones need a priori a lower level of protection than central zones. In these zones the coexistence between different objectives is possible;
- The **ecological corridors** are different landscape structures, with variable form and size (linear or tortuous, large or narrow) corresponding to structural links which, penetrating the landscape, maintain or restore the natural connectivity (see below).

The protection of habitats and species, however, is affected by many factors interrelated with each other. Environmental variations can be influenced not only by planning, but also by administrational decisions, community values, environmental attitudes, political and economic situations (Endels, 2006).

A key feature of ecological networks is that they can have different configurations and still serve the same goal. This is due to the variation in four physical features of ecological networks: total network area, quality, network density and permeability of the matrix (Opdam *et al.* 2003). Together, these features constitute the spatial cohesion of the landscape. Opdam *et al.* (2003) argued that this parameter is a useful indicator for the ecological sustainability of landscapes to species. In planning, these four features can be used as four spatial strategies to design ecologically sustainable landscapes. (Opdam, 2006)

Another key feature is that ecological networks can be delineated at any spatial scale. Species differ with respect to the spatial dimensions of their networks (Vos *et al.*, 2001*)*. For small species, sustainable ecosystem networks have a local to regional spatial scale. Larger species need ecological networks on larger spatial scales, which may encompass several countries. Also, disturbances are scale dependent, with resilience to climate change demanding cohesion on the biogeographical scale (Opdam & Wascher, 2004).

To conclude, the development of ecological networks ultimately aims at nature conservation; the former is only a tool to reach the latter. Ecological networks are one of the possible measures to tackle the decline of species and habitats. Hence, a combination of several measures is the best practise for ensuring alternative solutions to the problem of environmental fragmentation (Jongman & Pungetti, 2004).

2.2.5.2. Specific attributes of corridors: the corridor theory

One approach to solve the problem of fragmentation is to establish ecological corridors that link various critical habitats and facilitate the movement of species between them (Pirot *et al.*, 2000). Foppen *et al.* (2000) propose to define corridors as “a setting in chain of the habitats and resources of a species, which are composed of landscape structures different from the matrix,

outcome for positive purposes from the point of view of the exchange of the propagules of the species (individuals, seeds, genes)"

Ecological corridors, such as linear patches of some habitat types joining greater areas of those habitats or small patches acting as stepping-stones, play a fundamental role in the dispersal and the genetic and demographic connectivity of metapopulations of some species and may thus contribute very substantially to their survival. (WECI, 2000).

Corridors are linear elements of which physiognomy differs from adjacent environment: the matrix. They permit dispersion of animal and plant species between two habitat patches (Clergeau & Désiré, 1999). Corridors can be natural (rivers, peaks, passages of animals,…) or artificial (roads, high voltage lines, hedges, ditches,…). Most of them are organised in networks and their linearity confers them a particular role in the circulation of flows of substances or organisms. Forman (1995) gives five main functions for corridors: habitat, conduit, filter, sink and source.

Corridors are supposed to facilitate dispersal between patches through surrounding matrix landscape and thus to reduce isolation (e.g. Saunders & Hobbs, 1991; Aars & Ims, 1999; Burel, 1996; Gilbert *et al.* 1998; Haddad, 1999b). This concept became one of the most important battlegrounds in conservation (Mann & Plummer, 1995). The functional definition of the term corridor (e.g. Merriam, 1991) differs from structural definitions (see Forman & Godron, 1986; Baudry & Merriam, 1988), which are widespread in corridor literature. It can be assumed, that corridors are more important for less mobile species than for species with high vagility (Burbrink *et al.* 1998). We can also assume, that corridors are more important for habitat specialists, than for generalists (fragmentation sensitive species) (Beier & Noss, 1998). It can been concluded, that functional definitions of the term corridor depend on properties of the species and are thus species specific (Burbrink *et al.* 1998).

The overall management objective in a corridor is the maintenance of ecosystem structure, function and integrity. Most of the time corridors are part of a larger landscape structure : an ecological network. In this network, the matrix, in liaison with the ecological corridor, can also permit the connection between critical habitats. The corridors usually require special protection and management to ensure that the linkages are maintained (Pirot *et al.* 2000).

The tacking into account of biological connection zones, recognised for their functional value, and also for their landscape aesthetic quality, appears currently as a goal for the territory management. It should guide the management of complex spaces, by limiting the need of compensation measures in the future (Clergeau & Désiré, 1999).

CONFIGURATION AND STRUCTURE

Corridors are landscape elements, among matrix and patches of target habitat (Forman & Godron, 1986). They are features that connect core areas like "bridges", enabling species to migrate and communicate. Ecological corridors can be very diverse: linear forested ecosystems associated to water courses, roads, railways or field borders, but also small patches of natural or semi-natural habitats found in agricultural land or even cultures where rotation periods or lack of intensive management makes them apt to maintain a wide away of wild species. We recognize three structural types of corridors:

- Linear corridors – continuous elements distinctively different from the surrounding nature parts and not intensively used (rivers, tree lines, hedges, etc.);
- Landscape corridors – landscape belts connecting core areas;
- Stepping stone corridors – not continuous in structure but enabling ecological network to function (system of water habitat types important for migratory birds etc.) (SINP, 2004)

One may classify methods of design of ecological corridors in two main categories, which rise from convergent interest of two large branches of ecology for the nature conservation problem: the landscape ecology, on one hand, and the animal and behavioural ecology, on the other hand. For the specialist of the last, each landscape portion may operate as a corridor for one given species insofar as it presents a sufficient degree of environmental quality to permit some individuals of this species to take it during its dispersion (Corsi *et al.* 2002)

The role played by a corridor depends of its structure, its place in the landscape and the biological characteristics of the concerned species. This role also depends of its place in the network of linear elements. This network is characterised by its linearity, the number and quality

of their connections, and the quality of their elements. The whole of these elements defines the different possible ways to go from one point to another point, and thus probabilities of individual movements. (Burel, 2000)

Hindmarch and Kirby (2002) distinguish 3 functional types of corridors :

- Simple dispersion corridors, which are particularly used by young vertebrates and imply permanent movement from one zone to another;
- Reproduction corridors, which are habitat segment of sufficient quality to permit reproduction of species inside corridors linking one habitat network to another;
- Area expansion corridors, which are large surfaces of continuous natural habitat permitting an evolutionary area expansion, for example in the case of a climate change.

Certainly, any strip of land that has the same habitat properties as the species' usual habitat should enhance gene flow between two larger areas, as the species in question will simply use the corridor for living and reproduction as any other habitat (e.g. Ims & Andreassen, 1999). However, corridors are often considered to be linear (one dimensional) structures (line corridors) (Forman & Godron, 1986). Unfortunately, some species are sensitive to edge effects and thus a strip of habitat may lose its habitat function if it becomes too narrow. Landscape elements serve as corridors, when they increase exchange rates between habitat patches (Haddad, 1999b). One-dimensional landscape elements without habitat properties could thus be functional corridors, when movements are increased compared with extra-corridor movements (Beier & Noss, 1998). This is well known for animals with high mobility like birds or mammals (e.g. Andreassen *et al.* 1998; Brooker & Brooker, 1999; Skagen *et al.* 1998), using linear structures as orientation cues or shelter (Butterweck, 2000).

SCIENTIFIC BASIS

Dawson (1994) suggests that the corridor concept emerged from numerous ecological theories such as ecological niches, insular biogeography, metapopulations theory, source and sink theory, and lately, landscape ecology.

Such as for the metapopulations paradigm, the ecological corridor concept has conducted scientists to the development of numerous models, but field data are still very scarce (Simberloff, 1992).

However, studies comparing invertebrate movement along corridors with movements in arable land are rare (e.g. Haddad, 1999b). The results with Abax parallelepipedus (Coleoptera Carabidae) indicate that a corridor increases movement out of the habitat and thus serves as a means for migration. For plants, corridor effectiveness is quite variable among the studied taxa and it is dependent on the dominating dispersal strategy of the species. For the dispersal of forest species, a broad continuous hedgerow, directly attached to the old habitat complex is surely more favourable (Glück & Kreisel 1988; Burel, 1989; Burel & Baudry, 1990; Charrier *et al.* 1997)

CRITISCISM

The success of the corridor concept lays mainly in that it stimulated reflexion about environmental conservation methods (Soulé, 1991). So, we may be surprised to note that there is no agreement about the possible configuration and the operation of these corridors, and that growing doubts seem to appear about their scientific basis (Dawson, 1994; Beier & Noss, 1998). This situation is unfavourable for the scientific research and slows down, in an important way, the development of sustainable ecological policies. Thus, it is urgent to clarify the range and the definition of corridors, like it's interest on the conservation point of view.

There are few theoretical or experimental data showing that habitat patches linked by corridors operate differently compared to habitat patches that are distinctively isolated from each other by the landscape matrix. This poses a problem from the point of view of the validity of the corridor as ecological conduit. In spite of scientific uncertainties and logics relating to it, the corridor concept is integrated perfectly into traditional approaches of the regional planning and meet the approval of ecologists (Hindmarch & Peinkowski, 2000).

EFFECTS ON SPECIES

These corridors play a role in the biological exchanges between habitat patches, for a considered species or group of species. Indeed, structural elements which are used as corridors by large mammals are not used in the same way by small rodents or insects. In function of their movement capacity (mode of locomotion or speed) and their habitat constraints (such as moisture for batrachians), species can use different kinds of corridors (Clergeau & Désiré, 1999). Corridors can be habitats for some species, while they may act as barriers for others (Paillat & Butet, 1994). So, one same geographical reality can take different values according to species; the concept of corridor has more a functional than structural dimension (Clergeau & Désiré, 1999).

Precise knowledge about relations between corridor and organisms are restricted to populations or individuals of some species, and there is no empirical study which assess the effects of corridors on the biodiversity in its whole. However, even if a landscape is managed for the conservation of one single species, we have to keep in mind the complexity of its organisation (Diamond, 1976; Soulé, 1991).

Some habitats or landscape features that act as corridors for some invertebrate species, may act as barriers or filters for the dispersal of other species, so a policy to maintain those landscape features should not be exclusive, aiming at the maintenance, restoration or building-up of mosaics of different habitat types, with great habitat diversity and corridor diversity (WECI, 2000).

For birds, the concept of corridor seems to be less pertinent because these species are very mobile. They need adequate habitat patches distributed on their axes of flight, more than really linear corridors. For this group, it is necessary to recognize the importance of habitat mosaics from the point of view of their functional needs (Hindmarch & Kirby, 2002).

Table 1. Pro- and contra-arguments for ecological corridors (EC) (cfr. Burel, 2000).

Advantages of EC	**Disadvantages of EC**
• Improve movements of individuals in a fragmented landscape • Increase immigration rate to isolated habitat patches • Facilitate the continuity of ecological processes • Are used as habitats by a lot of animal and plant species • Render services for the operation of ecosystems	• Can facilitate dispersion of undesirable species, diseases or genes • Increase the exposition of animals and plants to predators, competitors and parasites • Play a sink role for some species • Facilitate propagation of perturbations

PERSPECTIVES

The conclusions of the Workshop on the Ecological Corridors for Invertebrates (2000) were that ecological corridors should be integrated into conservation policies alongside with protection of hot-spots for biodiversity. Ecological corridors are necessary but not enough for the conservation of many invertebrate species. Ecological corridors need to be also integrated in other sectoral policies, in particular agricultural policies, forestry, transport and spatial planning. The maintenance of traditional landscape features should be given priority to the creation of new corridors. Active habitat restoration of corridors needs to be properly regulated and integrated in legislation, both in the general framework of ecological networks and in agroenvironmental policies or ecological compensation. policies following negative developments. Agriculture areas, particularly in zones of intensive agriculture should be priority target areas for restoration of corridors. It is suggested that at least 5 to 7 % (depending on the region) of agricultural areas - if possible 5 to 7 % of each farm - be restored for conservation of agro-biodiversity, so that those areas may gain in habitat diversity and serve as refuge for e.g. invertebrates. Action for restoration of corridors needs to be properly negotiated with the people that will be involved in their setting up and management (in particular farmers). Maintenance of natural ecological succession should be part of the management of some ecological corridors. Some areas of intensive agriculture need to be made more permeable to some species of invertebrates. More information and research is needed for the setting up of ecological networks, but this should not be an excuse for not acting now. Many natural corridors that are now blocked by infrastructures (dams, roads, railroads, canals, etc) should be properly adapted to recover their lost functions.

For invertebrate species, priority should be given to the setting up of corridors at the local and regional scale, as well as in transfrontier areas. (WECI, 2000)

SOME TYPES OF CORRIDORS

Hedges and fields borders.

In the west of France and in England, hedges networks have been widely studied for a large number of animals and plants. Hedges are the habitat of a large number of forest organisms (Pollard *et al.* 1974; Forman, 1984). Some reptile species are even exclusively found in the hedges of the west of France (Saint-Girons, 1976). They are sources of seeds for the recolonisation of abandoned crops (Baudry *et al.* 1993), filters for the movement of beetles between fields (Frampton *et al.* 1995), seasonal shelters for numerous insects (Lefeuvre *et al.* 1976), barriers against material flows (Burel *et al.* 1993) or wind-dispersed insects (Brunel, 1979). Their conduit role was showed for forest beetles (Petit, 1998a), little mammals (Paillat, 1997), and also for water and nutrients flows (Burel, 2000).

Roads and road verges

Roads and road verges play at the same time the role of barrier, shelter, and conduit for a large number of invertebrates. Mader (1988) has showed that even paved roads of low width can constitute a barrier for a Lycosidae (spider). This effect is less strict when the road centre is grassed. Munguira *et al.* (1992) have showed in Dorset and Hampshire, in England, that road edges and central bands accommodate a large diversity of diurnal butterflies and zygenes. The richness, density and diversity of populations depend of the diversity of reproduction sites, of the berm width and of the abundance of nectariferous plants. In the Netherlands, Eversham & Tefler (1994) have showed that regularly mown road edges, with a mosaic of naked soil and first stage vegetation, although isolated since 50 years from heathland patches, contain more beetle species than current abandoned relict heathland zones. The road verges contain not only the current heathland species, but also rare species. They play two functional roles, that of corridor for movements, and that of shelter zone (Burel, 2000).

River banks

River banks also form corridors, strongly marked in the agrarian landscape, as well by the presence of running water as by the specific vegetation of the river bank, the alluvial zone and its borders. Debinski (1994) has showed, for an endemic butterfly of mountains zones in the USA, of which local populations tend to rarefy, that genetic distance between populations is all the more weak as those are localised along corridors consisted by rivers (Burel, 2000).

Greenways

Greenways are linear landscape structures for multipurpose use, including nature conservation and aesthetics, and recreational and cultural purposes, but exclusively contain linear elements. (Ahern, 2002)

2.3. Social Theory

2.3.1. Introduction and definition

Principally the policy and the management of nature (including biodiversity) have to deal with the relation between man (the human/socio-economic subsystem) and nature (the ecological subsystem). Man (The socio economic system) is an important driver for the development/decline of nature values. Nature in Europe has been transformed by centuries of social practice. Many of the habitat types with high biodiversity, which are considered typical for Europe and are sometimes unique to our continent, are closely connected with traditional social practices concerning the management of land. But society is present even in 'wilderness': the main causes of biodiversity decline (habitat loss, habitat fragmentation, pollution and overexploitation) are a direct result of social processes (Gilbert & Hulst 2006). On the other hand man is highly dependable of nature (ecological subsystem). For this reason society (man) takes measures for the management of nature (defined as policy, actions, …) , like the development of a Natura 2000 policy and network. 'The man' doesn't exist (Idiosyncrasy). In society different images exist of the relation between man and nature and the way this relation has to be managed by society. Problems encountered while implementing the Habitat and Birds Directives and various national legislations has shown that the implementation of biodiversity and ecosystem management policies frequently requires changes in societal systems and structures. They involve a wide variety of stakeholders whose understanding and appreciation of biodiversity is as diverse as Europe's cultural and social matrix. Conservation policies are the product of human decision-making processes.

Social sciences have a lot to offer in support of biodiversity and ecosystem management. The management of biodiversity and ecosystems was traditionally considered to be the exclusive domain of ecologists. But the current biodiversity crisis is a direct result of the way in which society has chosen to interact with its natural environment. If the causes of the problem are social, it stands to reason that the policies striving to solve the problem will need to be based on a solid understanding of social structures and processes, if they are to have any effect. **This sub study wants to give an overview of human/sociological factors that are important for the 'proper' management of Natura 2000 sites in Belgium or could be used for a deeper understanding of current problems with the implementation of the EU directives.**

Different perspectives on different scales can be used to assess the relation between man and nature (individual vs society, local vs global, …). The definition of biodiversity and the understanding of it by man, takes place at a higher general scale. Together with the definition of biodiversity, the goals in relation to biodiversity are set at a global level. These elements are written down in global, border crossing strategies, conventions and agreements (for example The Convention on Biological Diversity, The Millenium Ecosystem Assessment, Ecosystem Approach,…). The translation of these global definitions and goals in legislations and management tools takes place at national/regional level. Legislation is on the one hand based on general (scientific) information. On the other hand, it is effected by a local context, where different actors play different roles. On the most local level, different kinds of situational factors play an important role. Local participation and organization of management are of great importance for the successfulness of the N 2000 network. Some problems, like conflicts on land use, manifests themselves at local scale, while others occur at a higher scale.

We assume that social aspects that operate at a higher scale (Belgium, Europe or global level) also have an influence on the local level. It is important to take into account the links between the different scale levels. The translation of these general aspects to the local level can differ from place to place: available space is for example a more urgent problem in Flanders then in regions with more open space like France or the Walloon region.

In order to be able to give a comprehensive overview of social factors related to biodiversity, we linked the different social aspects to the stages in the policy cycle.

Policy stage	Research focus
Agenda setting	Impact of demographic changes on biodiversity
	Large scale patterns and variations in attitudes and behaviour towards biodiversity between countries/cultures/religions
	Analysis of biodiversity discourse: biodiversity as a topic of public debate
Policy formation	Assumption about the public in the acquisition and use of scientific knowledge by experts
	Interaction between science and policy; effect of new ideas in ecology and social sciences on policy
Policy implementation	The dynamics of decision making processes and conflicts concerning the management of biodiversity
	Public understanding of, and participation in, biodiversity policies and management, including variations in attitudes and behaviour towards biodiversity among stakeholder groups, different social and cultural groups
	Diffusion of innovations, reactions of stakeholder groups towards new methods and ideas concerning land use and biodiversity management
(Policy evaluation)	(Evaluation of biodiversity policies and action plans)

In this chapter we want to explore the different social aspects in relation with biodiversity in general. So far, biodiversity analysis and indicator development have mainly focused on the bioscience aspect, while the causes for the loss of biodiversity have mainly been social and economic.

The questions we want to answer in this chapter are:

- Which social and cultural elements and processes have an impact on biodiversity?
- What does biodiversity mean from a social point of view and what is the state of the current public debate on biodiversity?
- What does the public expect of nature, biodiversity and ecological networks and what is the social valuation of nature and biodiversity?
- What is the knowledge, attitudes and behavior of the public towards biodiversity?

2.3.2. Social and cultural factors influencing biodiversity

We can distinguish social dynamics and processes of change, which have an impact on biodiversity and nature conservation on different scales (global, regional, local). The main causes of the decline of biodiversity are the (indirect) result of social and cultural processes. Social changes and societal conditions that induce biodiversity loss are often the result of social, ideological and technological modernization processes.

We can make a distinction between demographic, economic, sociopolitical and cultural and religious drivers of change. Examples of indirect economic drivers of change are globalization, trade, market… Examples of cultural and religious drivers are beliefs, consumption choices,… Indirect drivers like population, technology and lifestyle affect biodiversity through direct drivers like for example the catch of fish or the application of fertilizers. Changes in the indirect drivers can lead to changes in the direct drivers, and can lead to changes to ecosystems and the services they provide. On their turn these changes can affect human well-being. These interactions can take place at more than one scale, cross scales and time-scales.

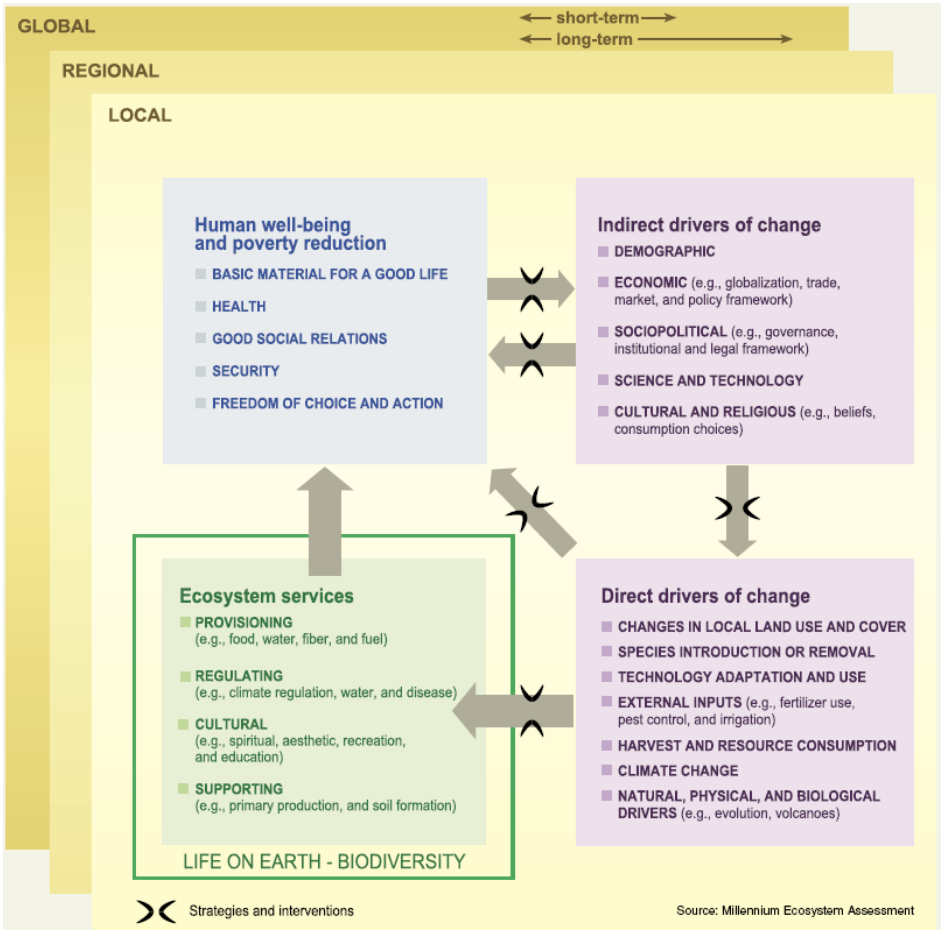

Figure 11 Conceptual framework of interactions between biodiversity, ecosystem services, human well-being and drivers of change.

The most important anthropogenic pressure factors that have a negative impact on biodiversity are:

- Increase of mobility and transport;
- Increase of tourism;
- Less border control, especially within the EU;
- Increase of the offer of goods and products;
- Loss of contact with nature;
- Available means for investigation have been low for a very long time, especially the means for investigating the social aspects related to biodiversity;

The most important dynamics and processes that lie at the origin of the pressure factors are:

- Economic mechanisms as a consequence of liberalization of the world market;
- Demographic changes such as migration, obsolescence of the population,…
- Social processes, patterns on big scale and variations in attitudes and behavior related to biodiversity between countries, cultures, religions;
- Cultural changes like the changes in value-assessment and appreciation of nature and biodiversity;
- Changed dynamics of global – local interaction: the non-stop process of worldwide change led to the arise of new configurations and interactions between global and local institutions and social processes;

Underneath the most important processes and dynamics are reviewed more deeply.

2.3.2.1. Impact of demographic changes on biodiversity

There are many different anthropogenic pressures on biodiversity and the driving forces causing these pressures are diverse. Demographic changes can be identified as a driving force causing anthropogenic pressure on biodiversity. Biodiversity models exhibit a wide range of assumptions concerning population development but the exact contribution of demographic changes have been investigated but there is no consensus yet about the impact of demographic changes on the maintenance of biodiversity. Below the most remarkable demographic processes are reviewed.

The exponential growth of the world population is a first process of demographic change, which has an impact on biodiversity. Demographic changes lead to overexploitation of land (intensive land use) due to intensive agriculture, infrastructure construction for housing, production and mobility. The demands of an increasing human population are responsible for diversion of water, wilderness destruction, water quality problems, and accumulations of pesticide residues. Habitat loss is generally greatest where population density is highest. A study of biodiversity data from 102 countries found that in the most densely populated 51 countries (averaging 168 people per square kilometer), 5.1 percent of bird species and 3.7 percent of plant species were threatened. In the 51 less densely populated countries (averaging 22 people per square kilometer), the proportions of threatened species were only half as high at 2.7 percent and 1.8 percent respectively (United Nations Population Fund (UNFPA), Population and Sustainable Development: Five Years after Rio, 1997).

A second worldwide process is the ongoing rural flight and urban sprawl. Today, for the first time in history, more people live in cities and towns than in rural areas and by 2050 two-third of the world's population will live in cities (UNDP, 2005). These processes have an impact on landscapes, ecosystems and biodiversity because of changed land use and a concentration of people on certain places. A third process of demographic change is the migration on big scale which has increased during the last centuries. Due to an increased mobility more and more people are able to travel around the world and transport goods and services.

In the Western word the ageing society is also a process which has consequences for the existence of ecosystems and biodiversity. In some western countries this trends goes in pairs with a decline of population, individualization and heterogenisation. In the densely populated, industrialized and wealthy Flanders the competition for space is big The score of Flanders of the surface of actual protected Habitat areas is low compared to the Walloon region and Brussels (Natuurrapport, 2007: 173). Compared to the Walloon region, the Flemish region is more densly populated.

2.3.3. Societal valuation and image-forming of biodiversity

The way in which society deals with biodiversity and pays attention to it, influences the attitude of people towards biodiversity and more in detail NATURA 2000 areas. Moreover, the societal appreciation of biodiversity is of importance for the acceptation of certain measures and possible restrictions.

Different aspects have an impact on the concept setting around and the appreciation of biodiversity. Examples of these aspects are:

- Availability of information;
- Perception of nature and nature images;
- Media,…

The social intercourse with biodiversity can be investigated by taking measurements of the societal appreciation en image forming of biodiversity. This appreciation and image forming are influenced by the public biodiversity discourse, the level of knowledge en de acquaintance of knowledge of citizens with relation towards biodiversity.

The biodiversity discourse gives insight in the way society looks at biodiversity. This is determinated by media-news, the public debate, political attention… The last decade there has been a growing concern over the protection and sustainable use of natural resources, most biodiversity is unlikely to survive without receiving more concrete and effective protection. There is a general support for protecting biodiversity and its many components among the public. At a smaller geographical scale, support for protecting biodiversity is heavily influenced by more immediate economic and social impacts of land management decisions on people's live (Bright, 2005). Besides, the level of knowledge of individuals determines their attitude towards biodiversity. Different persons have different ground attitudes towards nature and in addition different perceptions of nature. These differences in perception of nature can be translated in nature images.

In an investigation of the University of Louvain in 1999 in order of the Federal Council for Sustainable Development in Belgium, 33,8% of the respondents declare they have already heard of the concept of biodiversity, 66,2 % never heard of the concept. When we compare Dutch speaking and French-speaking respondents, 28% of the Dutch speaking respondents declare they have heard of the concept 'Biodivesity', compared to 42% of the French speaking respondents (CFDD-FRDO (KUL, ULB) 1999). When we compare the numbers of 1999 with those of 2002 we can state that there is a positive evolution in the awareness on the concept of Biodiversity among the public: +16% French speaking +11% Dutch speaking respondents declare they have already heard of 'biodiversity' (CFDD-FRDO, 2002). In 2005 there was a new Inquiry of sustainable development but the question if the respondent has heard of the concept 'biodiversity' was not queried.

2.3.3.1. Analysis of the biodiversity discourse: biodiversity as topic of public debate

The loss of biodiversity was for a long time a neglected subject in the public debate. Nature conservation and biodiversity have for a long time received less attention then other nature and environmental themes like climate change or small dust particles. Society doesn't experience the loss of biodiversity as an urgent problem and almost never places it in the actual context, but always further away, as well in place as in time. This gave and still gives the loss of biodiversity a minor position on the ranking of important threats for society.

Despite the fact that the loss of biodiversity was a neglected subject for a long time, nature conservation was not a disputed subject in society. Everyone from ecologists to the Conservative camp of politics shared the view that it made sense to protect nature for its own sake. These days, rather than being a point of agreement, nature conservation is riddled with conflict. The reasons for conflicts can partly be explained through social-psychological perspectives (Stoll-Kleemann, 2001). Deeply rooted social-psychological processes are at work in shaping attitudes and behaviour towards protected area management. The major driver that leads to opposition to protected areas are group processes encouraging social identity together with communication and perception barriers which mutually cause and reinforce each other. These core factors are also influenced by emotional and cultural drivers. Examples of cultural drivers are the impression of facing restrictions on day to day decisions due to nature conservation regulations and cultural drivers, such as the challenge to traditional values and habitats (Stoll Kleemann, 2001).

The societal appreciation of nature conservation and biodiversity has grown slowly. From the eighties on often conflicts have arisen between the economic use and the protection of natural resources, by which the public participation en active agitation increased. Since the nineties the public awareness of the need to protect biodiversity strongly increased. In addition to this several international conventions are drawn and engagements have been taken to put a stop to the loss of biodiversity. 'The convention on biodiversity' (Rio de Janeiro, 5 june 1992) probably is the most famous one.

It still is a real challenge to create appreciation and joined responsibility and sensitize the general public about the value and need to protect biodiversity. Communicating about nature and nature conservation is not easy. This has on the one hand to do with the message and the complexity of the message (nature policy, biodiversity,…), and on the other hand also with the sender (the government, the nature organization,…), the receiver (different 'external' partners) and the relation between sender and receiver.

The concept of 'biodiversity' is known by and used by all actors within the nature sector. Also the concept of 'ecological networks' (a crucial concept when talking about Natura 2000) is nowadays widely accepted within the nature conservation sector as the appropriate policy for the conservation of biodiversity. In most European countries it became the leading principle of nature conservation policy (Jongman & Kristiansen, 1998). On the other hand the public is not familiar with the term 'biodiversity'. This is partly due to the complexity of the investigation of biodiversity and the demand of extreme high input of scientific knowledge. Besides this, different dimensions in the concept of biodiversity can be distinguished. There are different possible definitions of the concept of biodiversity, as a result of which unequivocality is absent. Also (policy) goals related to biodiversity aren't always clear and sometimes differ for different regions and areas. Also the identity of the messenger isn't always clear (from who the message come from?): the European Commission, the Flemish or Walloon government, local nature organisations…

Moreover, the receiver isn't unequivocal, but exist out of different target groups, which have different nature images. The receiver isn't always that positive towards nature conservation or nature organisations. Great parts of the population are indifferent towards nature. The opponents and advocates are only small groups in society.

The socio-scientific biodiversity discourse is dominated by political science and ethics. Latter concentrate on the formulation of arguments for an ethical relevance of biodiversity protection. Social and political scientific analyses are primarily focused on the Convention on Biological diversity and its social implications. The concept of biodiversity is analyzed on the basis of different sociological and political scientific theories. Central issues are the enrichment of nature by its social and cultural meanings as well as the politicization and economization of an ecological concern: the concept of biodiversity is defined as the result of a specific socialization of nature in a politically determined environment stamped by power relations and negotiation mechanisms (Artner, A. and Siebert, R. 2006).

2.3.3.2. Knowledge, attitudes and behavior towards biodiversity

Acquisition and use of knowledge by the public

The way in which knowledge is acquired and spread is determing for the valuation and image forming of biodiversity.

- Information: quantity, quality and availability;
- Education;
- Media.

There is an obvious lack of knowledge among the public about biodiversity related issues. Furthermore, increased knowledge about a biodiversity issue does not necessarily translate into a more positive attitude toward protecting biodiversity (Bright, 2005). Knowledge, attitudes and values vary among different groups of people. Several factors such as age, sex, place of residence, education and income can play a role in determining these things.

Education and information are important for the valuation of nature and biodiversity since they educate people about these concepts. One can however question what people do with this knowledge. On the other hand we can question or and which presumptions experts make about the public in the use and the spread of scientific knowledge. The media plays an important role in

the creation of nature images by the general public. Research has indicated that information about biodiversity and nature in general is gained through the traditional media channels.

Attitudes and behaviour

Public support seems critical in the efforts to halt the loss of species. Based on Stern, Dietz and Guagnano's (1995) hierarchical model of environmental concern the objective was to identify the public's environmental values and personal motives for biodiversity conservation. In a questionnaire survey, including 271 persons, three motives were identified: human-well being and recreation, human survival and respect for nature. In multiple regression analyses a biospheric value orientation could partly predict respect for nature, an egoistic value orientation to some extent predicted human survival, whereas only a tendency to explain human well-being was identified. In turn the three motives predicted 39% of the attitude towards conservation of the local biodiversity. It is suggested that the promotion of policies and actions for conservation of individual biotopes and species could benefit from being formulated according to the identified motives (Johansson, 2005 Local People's Motives for Biodiversity Conservation).

The valuation of nature by an individual is mainly influenced by his attitude towards nature. This attitude is affected by the nature perception of people (in relation to the socio-cultural context), the public debate, the media, education and information, … Attitudes and values are two of the most frequently examined human dimensions topics. Differences in attitudes and behavior towards biodiversity are expressed in differences in nature perception. Perception is influenced culturally and preferences on nature and its conservation are partly social. The historical grown society's linkage of nature and homeland as well as the strong bipolarity between productive land and conservation areas reflect the resistance of traditions point of views towards nature. The behavior in relation to nature, which links usages to motivations and behaviors behind hasn't been investigated strongly until now.

2.3.3.3. Perception and ground attitudes

The perception of the stakeholders of nature and nature conservation highly determines the attainability and the management of ecological networks and biodiversity.

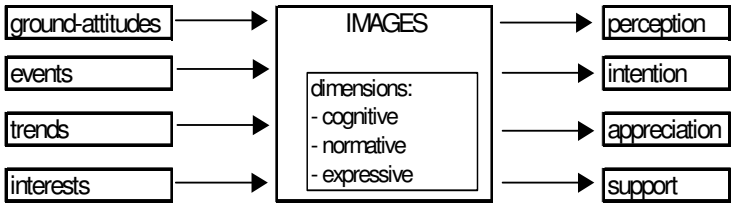

Figure 12 Perception: basic influential factors and effects

Jacobs et al., (2002) give a practical model that reflects the above **theory of perception** as a result of a filtered interaction with the environment (Figure 1). According to Jacobs et al., perception (of nature, organization, …) can be seen as one's position or attitude[20] towards a specific object (e.g. nature conservation measure, organization, …), existing in the empirical world. Man's perception is a result of many aspects. 'Events', or impact/effects as a consequence of change, are one type of these determining factors. Another important influencing aspect of someone's perception is his or her '**ground-attitude'**. The so-called '*ground-attitude'* or *fundamental attitude* of a person can be defined as his or her general view on things. This fundamental attitude of a person is quite stable compared to, for instance, perception, as it is

[20] Attitude is an important thing that helps people to frame their social world and reduce complexity. It helps us to define how we perceive and think about others, as well as how we behave towards them. Given the theory of cognitive dissonance, the relationship between attitudes and behaviour becomes questionable. Nevertheless, attitudes still are one of the strongest indicators for possible future behaviour.

mainly formed through long-term socialization and learning processes and the specific personality of each individual.

A number of environmental philosophers elaborated on the **description of ground-attitudes towards nature**. De Groot (in Jacobs et al., 2002) made a classification of four different ground-attitudes with respect to the relation between man and nature:

- Man as dominant master of nature: people have the right and the knowledge to dominate nature; without people, nature is of no value;
- Man as nature's guard or manager: nature in itself is valuable, but is also – and especially – a resource for people, who therefore must manage nature well;
- Man as nature's companion: nature is 'something else', outside of people, something you may know and with which you can build a respectful and reciprocally equivalent relationship;
- Man as participant to nature: nature is superior to people. Human beings, as being a component of nature, cannot decide on nature affairs.

2.3.3.4. Nature images

Looking at nature and nature management can be described using nature images. "*Images"* can be seen as the vision of individuals or groups on how an object should look like and on what feelings are associated with certain states or forms of the object. Images are concerned with the meaning people put on objects and serve as frameworks that direct and structure the perception and appreciation of an object in cognitive, normative and expressive respect.[21]

Nature images are flexible, not only within social groups, but also within one person. Citizens can, for example, prefer untouched nature, but only within certain circumstances. Research points out that people have an ambivalent attitude towards nature. There is a certain esteem for nature, but at the same time there is a anxiety for nature.

Nature images arise from out a certain perspective or a frame of reference. A frame of reference is composed out of different aspects:

- Values and norms (what does one really thinks is important, behavior rules,…);
- Interests: these are economic interests, but also social and emotional interests;
- Convictions and visions (often implicit);
- Knowledge (on the base of stories, images, associations,…)

In most of the cases these aspects are interrelated. For example, we select information which corresponds with the things we do and value. The way people handle information is thus very flexible (Aarts, 2004).

2.3.3.5. Link between ground attitudes and nature images

Aarts (1998) configured a direct link between ground-attitudes and existing nature (conservation) images. For instance, regarding the nature-image of dominant masters, nature is a robust system, which will always recover spontaneously. These 'masters' are not interested in nature in itself. Guards of nature are afraid of nature. Hence, nature must be controlled. Companions of nature want to protect nature because of it's vulnerability; while participants to nature believe that nature is robust, can develop on it's own, but still needs protection (wild nature). Other research (Filius et al., 2000; Jacobs et al., 2002; de Boer et al., 2002) tried to link nature-images to specific stakeholders. Depending on the ground-attitudes towards nature, the nature-image(s) and the context (e.g. events, trends, …), people will perceive nature somehow or

[21] The cognitive dimension is concerned with the question of how people define the object. The normative dimension is concerned with the question of how to act in respect to the object. The expressive dimension is concerned with the question of what people perceive as beautiful. (Jacobs et al., 2002).

other. Buijs et al. (in Bogaert, 2004) identified the following perceptions of nature: 'nature disserves protection', 'nature is for recreational use', 'nature is beautiful', 'nature is impressive', 'nature is a counterweight for society', 'nature is a source of food and medication'.

2.3.3.6. Conclusion

In conclusion it can be stated that '*the*' nature does not exist. 'Nature' has a different meaning for different people. These differences deserve particular attention when implementing nature conservation strategies, e.g. restoring and maintaining biodiversity.

Although nature conservationists seem to agree on the concept of ecological networks as the leading principle of nature conservation, the conceptualisation and (views on the) practical implementation of these networks did develop differently throughout Europe, as a result of different geographical, natural, economic, political and social conditions. Different definitions of ecological networks can be found in the scientific literature[22]. The named objectives of ecological networks differ from purely ecological reasons (to conserve nature, to protect certain species, ...), to landscape conservation and even recreational or cultural reasons (Jongman & Kristiansen, 1998). The survey of Rientjes et al. (2003) further shows that there is no consensus on the necessity of having corridors, stepping stones and buffer zones within an ecological network. Related to this, nature conservationists also have different opinions concerning the (juridical) implementation of an ecological network (Resource Analysis, 2003; Rientjes et al., 2003).

The perception of social systems, and of their members or participants, can be characterized in the same way as the perception of the organic environment (e.g. nature). In the case of the implementation of an ecological network, these kinds of perceptions may be as important as the perception of nature or nature conservation in itself.

We illustrate this conclusion with the VEN (Flemish Ecological Network) process in Flanders. It is remarkable that most nature organization as well as most agricultural organizations find the fencing of the areas of the VEN fitting within their goals, to the extend the fencing of the ecological structure also leads to the reservation of the agraric structure, and thus results in a greater legal security. The communication around the VEN should take the organization of the whole area as a common goal of the process. The organizations that find the fencing off as fitting within their goals can be identified as 'co-deciders'. The organizations that find the fencing off the VEN-areas conflicting with their objectives are mainly organizations with relative little importance in the rural area (the 'economic' sector) or organizations that hasn't been involved in the process. For this last group informing and participation can certainly avoid conflicts (Resource analysis, 2003).

Nature management doesn't only comprise the management of nature but also the collaboration between people. That's why the processes between the different stakeholders are of great importance for the success of the management. Next to the perception local actors have of nature and nature conservation, the 'coloured' perception actors have of each other (for example farmers versus nature managers and otherwise) plays a prominent role in the feasibility and management of ecological networks. This observation determines partly the attitude and willingness of different stakeholders to work together. Precisely this public involvement and support are necessary conditions for sustainable ecological networks (which cover multifunctional land use) and for the balance between local interests on short term and collective interests on a long term.

➔ [22] In the special issue on ecological networks of the journal "*De levende natuur*" (104, n° 6), an ecological network is defined as "an unbroken system of areas, where nature can develop and plants and animals can thrive without disturbance".

2.4. Legal framework of the use of the soil

Ground as well as the vegetation (on foot) which develops on it are parts of the things in the trade. The ecosystems are considered in right as goods, at least in their physical and vegetable part (Article 518, 520 and 521 C civ.).

The goods can be distributed between the goods belonging to the private individuals (people of private law), and the goods belonging to the moral people of public law (State, areas, communities, provinces, communes, etc). The first have in theory the free provision of their goods, in accordance with the rules of the civil law, while the seconds can manage and have their goods only in accordance with the administrative law (Article 537 C civ.). [23]

The real goods in the trade are the subject of rights in rem, of which most complete is the right of ownership. This one is defined like "the right to enjoy and have the things of the absolute manner, provided that one does not make of it a use prohibited by the laws or regulations" (Article 544 C. civ.).

It thus arises from article 544 and article 537 above mentioned of the Civil code that the occupation and the use of a ground in Belgium are free in the chief of its owner, but subject to all the restrictions that the legislator judges good to impose on the exercise of this right, in order to preserve the general interest (one speaks about "legal constraints of public utility"[24]).[25]

It should be noted that the deprivation of the right of ownership - recognized in international law and by our Constitution (Article 16) as a basic right - can be imposed to an owner only with the help of the respect of the procedures of expropriation, and the payment of a "Juste and preliminary allowance" (Article 16 of the Constitution). On the other hand, it is not the same for the restrictions brought to this right, which should be the subject of compensation only when the legislator envisages it. [26]

The intervention of the authorities to influence the land use is exerted in the compliance with the rules of distribution of the competences fixed by the special law of August 8, 1980. A significant part of their intervention on the land use lies within the scope of administrative police forces like the right of land use planing, environment and the nature conservation regional planning. Among the legal instruments likely to be used by the authorities: the instruments forcing, of which legal constraints of public utility (the statute of site Natura 2000 or the natural zone in the plan of sector); inciting and economic instruments (taxes, subsidies, fiscal measurements); land instruments (expropriation, right of pre-emption, exchange property, regrouping); instruments of sensitizing; instruments of management of the public goods (forest regime, management of the rivers, of the roadway system). [27]

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[23] C.-H. BORN, Le droit de la conservation de la nature, Région wallonne, UCL, SERES, 2006-2007, p. 29.

[24] Legal constraints of public utility are « *les charges imposées, soit par la loi ou le décret, soit en vertu de ceux-ci, à des propriétés dans un but d'intérêt général* » (B. PAQUES, *L'expropriation pour cause d'utilité publique*, Bruxelles, Larcier, 2001, p. 51).

[25] X., Feasability of ecological networks : ecological, economic, social and legal aspects, Bruxelles, Belgian Science Policy, 2005, p. 39.

[26] Recently, this « principle of not compensation of the legal constraints of public utility» seems however called into question by the doctrines and the jurisprudence, which, less categorical, tend to prefer with this principle that of the "right balance" (proportionality) between the requirements of the general interest (nature conservancy) and the right of ownership. See M. PÂQUES, « Propriété et zonage écologique, compensation et indemnisation », *Le zonage écologique*, Bruxelles, Bruylant, 2002, p. 239 et s.

[27] D. TYTECA, M. HERMY, G. MAHY, K. VERHEYEN, F. HAUMONT, Feasability of ecological networks : ecological, economic, social and legal aspects, Bruxelles, Belgian Science Policy, 2005, p. 40.

2.5. Structure of the economic analysis of natural assets

2.5.1. Economic aspects of biodiversity

The value of environmental goods can be decomposed into several components. We can distinguish the use value and non-use value:

- Use value: it incorporates the direct usages (medicinal plants, tourism, minor products …) and indirect usages, such as services of ecosystems (see ecological part), water and oxygen regulation (see ecological part; Costanza et al., 1997), …. Such usages can be present or future. Finally, we distinguish the option value: it comes from the fact that the goods can be available for a future usage, apart from the use value expected. It is a potential benefit.
- Non-use value: we distinguish the existence value and the bequest value. The existence value comes from the fact that the species exist and will continue to exist in the future without consideration of its actual or future utility. The bequest value it is the value of option used by the descendants.

Note that when property rights are vague, usage values have less chance to be materialized because we cannot exclude an improper exploitation making their use non optimal.

We can define the Total Economic Value (TEV) as the use value + the non-use value. The following figure (Figure 11) illustrates the different components of value.

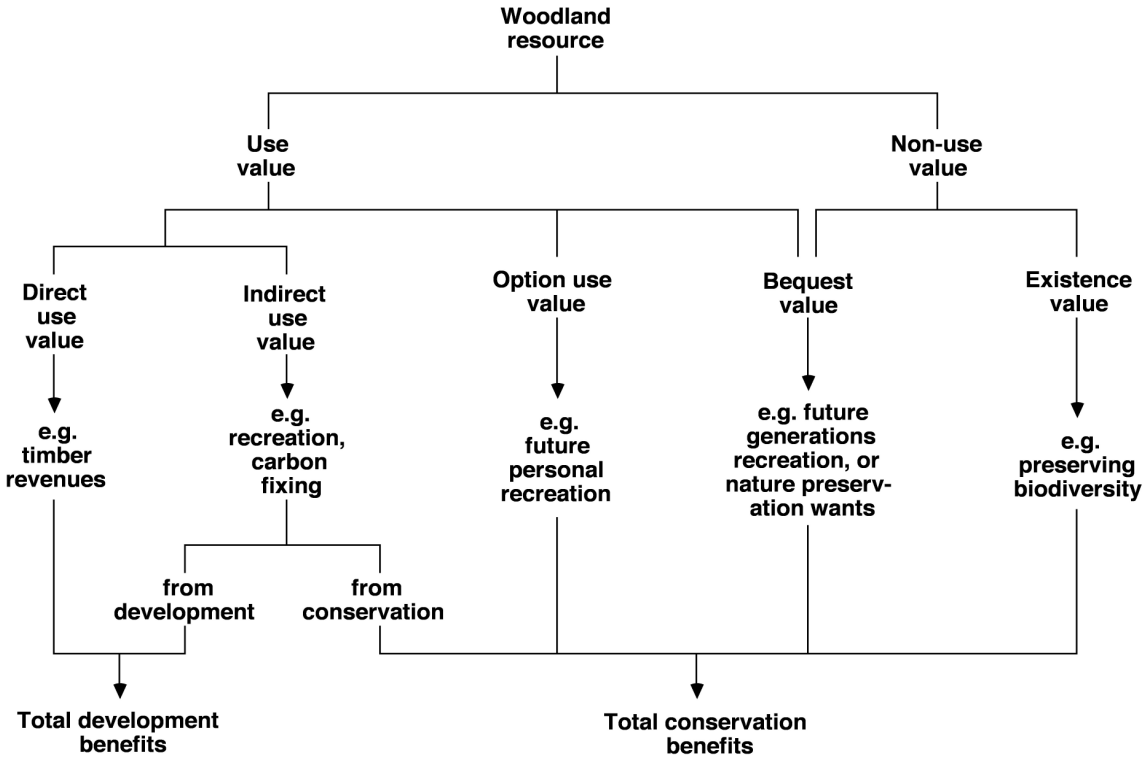

Figure 13. Total Economic Value. Source: Turner R.K., Pearce D. & Bateman I., *Environmental economics. An elementary introduction*, The John Hopkins University Press, Baltimore, 1993.

Because Natura 2000 is a particular implementation of an ecological network, we consider the costs components that were identified in the scope of the ECONET research. The text below is built on the ECONET report, with some specific additions relative to the Natura 2000 network and some more focus on the Walloon situation.

2.5.2. The nature of costs and benefits

Ecological networks allow for the improvement of surfaces and connectivity of natural areas (see ecological part). This has a positive effect on biodiversity and ecosystem functioning. Indeed, ecological networks improve the viability of the populations that constitute the ecosystems. They contribute to enhance their stability and functions, and therefore, they allow improving the services rendered and the benefits provided by ecosystems (Jongman & Pungetti 2004).

Implementation of ENs also has a significant socio-economic impact, in terms of land use and activities that can be developed.

We will present the costs and benefits of ecological network implementation taking the standpoint of society as a whole[28].

2.5.2.1. Costs

2.5.2.1.1. Implementation and direct costs

Direct costs are supported by landowners, which may be a public authority, an organization or a private owner. In the latter case, compensations and subsidies, can be perceived to cover incurred costs. Costs of EN implementation can be divided into four categories, corresponding to the four phases of EN installation[29] .

1. PREDESIGNATION PHASE

The constitution of ENs is preceded by scientific studies to designate and delimitate the sites that will make part of the network. This preliminary diagnostic phase will also serve to define management objectives of the site. The costs linked with this phase are essentially salary costs as well as cost of the material that will be used by the researchers. Obviously they are dependent upon the quantity of work accomplished as well as duration of the research; therefore, they may vary from site to site.

In the Walloon Region, these costs will be at charge of the regional or communal budget.

2. MANAGEMENT PLANNING AND ADMINISTRATION

This phase is essentially administrative. It is necessary to prepare and examine the projects and strategies and to define management plans of the sites. Next comes the work necessary for consulting and meetings with public authorities and municipality representatives. Those costs are essentially due to salary, representation, meetings, etc. As for the first phase, they vary from case to case, depending on the progress of research, areas to be covered, etc.

The costs of those first two phases correspond to non-operational charges, i.e., salary, scientific personnel, office material, etc. Their assessment is difficult, due to the diversity of stakeholders, actions to be taken and material to be purchased, and depend on the actual situation. However, they can be estimated to lie between 10 and 25 % of the global implementation cost[30].

Appendix 1 includes a table with the different activities linked with the designation and the management of Natura 2000 sites.

3. IMPLEMENTATION OF THE EN

This represents the most important costs for the community. It includes the financing of maintenance and restoration measures of the various zones of the EN. Generally speaking, management is accomplished by the owner of the land, who bears the costs and signs a management contract with authorities. Such a contract incorporates the tasks to be accomplished

[28] We envisage all costs incurred or supported, and all benefits perceived, independently of who bears or receives them

[29] From the final report on Natura 2000 Financing, by the Task Group on article 8 (November 2002).

[30] COLAS S., HERBERT M., *Le coût de la gestion courante des principaux milieux naturels ouverts*, Espaces Naturels de France, 2 février 2002, p. 1.

by both parties, as well as financial support granted to the owner (i.e., subsidies). When public authorities are the owner, they will incur the financing of the project.

The work activities to be conducted in those zones are of two types: conservation and restoration.

Conservation of the zones

This approach consists in maintaining the natural and semi-natural habitats in their present state.

The maintenance of Natura 2000 zones is one of the most expensive activities in the implementation, at least during the first years of the project . Indeed, it is a hard and continuous work, which requests qualified labour and appropriate machinery. Generally this maintenance is performed by the owner of the site who has to pay the costs and who engages himself in the management contract with the authority. This contract defines the task to accomplish by the two parts (the owner and the authority) to maintain the zone in ideal conditions and the financial help (some from the regional authority, other from the EU) granted to the owner. When the authority is the owner, it will have to care for the management and bear the costs.

Restoration of the zones

In some cases the habitats can be in an unfavourable state of conservation state and must be restored. The costs generated by such a restoration are often important at the start. However, in subsequent phases, costs tend to decrease since after restoration everything that is required is site management.

This phase of restoration is only possible with the agreement of the owner. In the case where it is necessary to intervene and that the owner is opposed, the regional authority can decide to buy the site to manage it correctly[31].

In the Walloon Region (WR), for the period 1997-2001, an average of 107 ha of plot was bought per year for a mean value of 4653 €. The areas owned by the WR, especially affected to nature conservation, represent around 7000 ha. The purchase of sites for natural reasons is also made by associations like Natagora or by the municipalities. They obtain subsidies from the WR by contract. From 1995 to 2001, 1 355 741 € have been allocated to the concerned beneficiary. These amounts permitted to cover, at the rate of 50 % of the exposed price, the acquisition of 680 hectares of sites (most of them have been erected in natural reserves. For 2003, the budgets of the Walloon Region were around 914 000 € instead of the 2 219 000 € requested to buy plots.

Table 2 below gives a general survey of the amounts spent by the WR on the sites they bought.

Table 2. Coûts d'entretien et de restauration des terrains achetés (Cordonnier A., Note de synthèse, MRW/DGATLP/DNF, 2007)

Année	Entretien/Gestion courante (€/ha)	Restauration/Aménagement (€/ha)	Matériel/Equipement (€/ha)	Surface en RND
1999	30,6	20,1	1,2	5775 ha
2000	59,8	20,8	2,1	6411
2001	69,8	37,5	50,4	6453
2002	109,39	282,39	18,82	6542
2003	77,38	125,42	6,88	6567
2004	110,93	98,10	18,87	6626
2005	96,83	116,17	5,90	6847
2006	106,34	78,98	5,68	6865
2007	98,75	85,50	9,18	6865
moyenne	70,91	91,69	12,21	

Some costs must be added for the implementation of corridors. If these zones are present, they only need to be maintained. If not, they have to be created. We have to think of the best way to allow the species to move. It is possible to create bridges or tracks to allow for free circulation,

[31] In the Walloon Region, around 150 ha have been bought by the WR in 2002 (in Brisack D., *Impacts économiques de la mise en place des réseaux écologiques*, Louvain-la-Neuve, 2003 (mémoire de licence, inédit), p. 48.

which has a cost. It is also needed to intervene on land belonging to farmers or particulars who have to be compensated. Their plots could as well be bought by the regional authority. Finally, it is sometimes necessary to install wire fencing or plant hedges. It is possible to compensate these costs with subsidies (cf. infra).

4. "OCCASIONNAL" MANAGEMENT COSTS

Those costs cover situations that were unforeseen in management and expense planning. They would be incurred by owners or by public authorities. Their importance varies from place to place; however, they only represent a small part of total costs.

Costs of phases 3 and 4 are not easy to estimate because they depend on the biotope concerned, the state of the land, available material, etc. They can be assessed through reference to other similar projects or previous studies. Care must be taken to make the characteristics of existing projects correspond to those of the new project to be evaluated (in terms of biotope and required measures).

2.5.2.1.2. Negative impacts – indirect costs

Account must be taken of the loss of revenues linked with the forsake of particular activities which are judged incompatible with the implementation of an EN, such as intensive farming, polluting industrial activities, unsustainable forest management, etc. This has consequences on employment and economic development of the region under concern.

We can estimate those costs using the opportunity cost method (i.e., considering the revenue that will be lost due to the cessation of those activities), or through the amount of compensation that should be paid for this sake, or by calculating the loss of real estate value of the field.

2.5.2.1.3. Conclusion

We can say that the costs related with the implementation of ENs are mainly of two types: administrative costs and those due for restoration and management of the sites. Administrative and restoration costs are those that will require the most important budget at the outset, but these costs will tend to decrease as the implementation of the network progresses. Indeed, as soon as the EN is implemented, the management costs will be the most significant to incur. Below, we present a recapitulative table (Table 3) with the different costs associated to ENs in the Walloon Region. We see the situation from the standpoint of expenses made by the Region; this is why the acquisition costs and the premiums granted are taken into account.

Type de dépenses		**Terrains et différentes zones (ZC, ZL, ZD)***	**Forêt**	**Agriculture**
Frais de recherche, cartographie,…		Elevés au départ, tendent à diminuer. Les montants varient au cas par cas, en fonction des zones, du temps,…		
Investissement – Acquisition		En 2002, le total des investissements en achats de terrains s'est élevé à environ 1 million d'euros (achats de la RW et des associations).		
Exploitation	**Restauration - Entretien**	D'après les chiffres de la RW, ces frais s'élèveraient à 1,15 millions d'euros en 2002.		
	Compensations	Au cas par cas	En 2002, pour les propriétaires publics et privés, les subventions se sont élevées à 1,97 millions d'euros.	Pour 2002, le montant des primes agri-environnementales allouées s'est élevé à 8,226 millions d'euros en Région Wallonne.
Coûts socio-économiques		Au cas par cas, en fonction du type de terrain, des possibilités perdues,…		

* ZC = Zone Centrale, ZL = Zone de Liaison and ZD = Zone de Développement

Table 3. Les différents coûts de la mise en place des réseaux écologiques. (MRW, rapport d'activité de la DGA, 2001).

From this table one can notice that the most significant costs are thus those relative to land exploitation, which includes maintenance but mainly the compensations paid by the Walloon Region, which are indeed the most significant expenses incurred by the Region (see below). The land purchase costs will go on decreasing, because the number of fields to be acquired will

diminish, at least in the long term. On the contrary, the conservation costs are expected to go on increasing in the short term, due to increase in the surface area to manage, but will tend to stabilise in the long term. Those figures must be considered carefully, although they provide us with a rough estimate of the budgets that will need to be devoted to ecological networks.

2.5.2.2. Benefits

2.5.2.2.1. Socio-economic, direct benefits

Socio-economic benefits of a particular site are not restricted to the site itself; they are also a source of profit for the local and regional economy. Indeed, the expenses of a local economy beneficiate to many persons through the purchase of goods and services. A study was undertaken by the European Commission in the scope of the Natura 2000 network (Institute for European Environmental Policy – IEEP, 2002), to assess the types of benefits or opportunities that can be derived from the implementation of ENs. Hereafter we present a non-exhaustive overview of that study.

1. EMPLOYMENT LEVEL

A non-negligible number of employments can be created through the installation of an EN[32]. The creation of new work positions is more a social benefit; however it implies strong economic repercussions as well. Employment opportunities include those that are **directly linked** to site management, such as guardians, the personnel in charge of conservation, and educators.

Other examples are the people who take in charge the management of the site, its protection and the improvement of the quality. We have also to add the nature guides, who will guide and inform the public.

Those jobs may also incorporate the work connected with agriculture and land production, fisheries, as well as the workforce in charge of services on the site, such as hotels, guest houses, restaurants. In this case, we do not obtain a direct monetary value, but instead, a number of job positions created, which is a good indicator of the surplus transmitted to the region by the project.

The number of jobs created varies clearly from one country to another but also in function of the nature of the activities and the size of the network. It depends also of links existing between, on the one hand, the regional and local economies and the tourist planning, and on the other hand, on initiatives from local actors to achieve the opportunities inherent to environment.

Indirect jobs are also induced as a consequence of tourists' exepnditures. For example we have the case of a society that delivers marketing services for the producers of local goods. The earnings constituted with the salary of these employees will be directly, or indirectly, spent in the local economy, which implies additional jobs[33].

2. INVESTMENTS AND EXTERNAL FUNDS

The ecological network can be a key tourist attraction bringing external funds and in favour of the diversification of the local economy. Indeed, the management and the development of sites are supported by local, regional or national funds and investments as well as European programs funds. On the one hand, such investments can include equipments related to visitors (such as centers who promote the consciousness-raising on environmental questions and encourage tourism), pedestrian ways and cycle lanes or other investments related to the offer of goods & services (local products, hotels or guided visits). All those investments concern the local amenity and global interest of the zones. On the other hand, there are the benefits coming from the intrinsic investments which include the management and the protection as well as the conservation or restoration works.

3. TOURISM

[32] European Conference: "Promoting the Socio-economic Benefits of Natura 2000", Brussels, 2002.

[33] Some have called this phenomenon the multiplicator effect because it is amplified in relation to the initial impact.

Quite viable tourism activities are compatible with the management of most nature protection sites[34]. Tourism can generate high revenues and employment in the region. Generally, secondary benefits have a stronger economic impact than the benefits obtained directly from management of the site. This can be explained for example by the expenses made by the tourists outside of the site (hotels, transportation, food, other goods and services). Of course, this depends on each particular site, on its location and attractiveness, etc. All of those opportunities for additional revenues provide local populations with economic incentives, in such a way as to enable them to implement nature management practices that are more favourable to local flora and fauna.

Those benefits can be estimated in comparison with those generated by existing projects of tourism-related exploitation of natural sites, or through simulation of the number of entrances as function of the fee.

Nevertheless, some practices are harmful for the nature so it is important to make these actions of promotion with care because in the extreme, they can imply negative impacts for the ecological aspects.

4. PRODUCTS AND LOGOS

A lot of benefits can come from products of the conservation of natural zones. The consumers are ready to pay for products that have a particular identity or to which a story is attached. It goes very well with products or marks directly associated to a region. We may think of quality labels, regional products, and biological products as opposed to products of intensive agriculture. For example, in Belgium, the turnover resulting from biological agriculture is estimated at 62.5 million Euros per year. The number of biological farmers is continuously growing as well. The surface area occupied by biological agriculture, even if still limited, shows significant increase (500 ha in 1985, 5 000 ha in 1996, 18 000 ha in 1999, 21 000 ha in 2002 and around 22 500 ha in 2005)[35] [36].

5. PRODUCTION AND EXPLOITATION

The majority of benefits result from exploitation of resources of the network as such (Moons et al. 2002). Depending on the situation, they originate from agricultural or forest exploitation, fishing, or hunting. Indeed, among the main advantages of ENs is the fact that many human activities are still perfectly compatible. Due to the diversity of EN components, it is certainly not possible to give a comprehensive view of all such activities. In the next sections we will, among other, concentrate on two of those aspects, i.e., agriculture and forestry[37].

What must be assessed is the revenue increase allowed by EN implementation. Substantial benefits can be derived from natural sites conservation.

2.5.2.2.2. Environmental, indirect benefits

Indirect benefits pertain to goods and services provided by ecosystems (see ecological part). These are the functions fulfilled by ecosystems that allow for the maintenance of life on Earth and sustain economic activities such as thermal regulation, climatic regulation, oxygen regulation, water cycle, etc. Implementation of ENs contributes to quality and quantity improvement of natural ecosystems and thus allow for improving the benefits associated with those. Such indirect benefits exert their effects on the (very) long term and participate in the increase of the quality of life of the whole Planet. Beneficiaries are therefore society in general, at the world level and on the long term.

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[34] European Conference: "Promoting the Socio-economic Benefits of Natura 2000", Brussels, 2002.

[35] For more details, see Appendix 9 of the Econet report.

[36] Cellule Etat de l'Environnement Wallon, *Rapport analytique sur l'état de l'environnement wallon 2006-2007*, MRW – DGRNE, Namur, 2007, p. 56.

[37] Those two sectors represent the highest proportion among the various components of the network. For example, only in the Walloon Region, forest areas (32%) and useful agricultural surface (45%) account together for 77% of the territory[37].

Advantages of ENs can be quantified by using direct valuation methods such as contingent valuation, in order to perceive how much people would be willing to pay to maintain or improve the services rendered by natural habitats and ecosystems[38].

Another method consists in considering as benefits the costs avoided as a result of measures taken to prevent a pollution or loss of habitat. As a final alternative, for each considered ecosystem, one can attempt to identify the services they provide for, in order to adopt appropriate methods and to estimate their monetary value increase linked with EN implementation[39].

2.5.2.2.3. Conclusion

The benefits associated with EN implementation will be perceived mainly on a mean to broad scale: the region in the case of socio-economic (direct) benefits and the world's society in the case of environmental (indirect) benefits. The difficulties to estimate such benefits should be stressed: no single universal evaluation method exists; instead, choices and assumptions must be made for every particular situation. Only after performing the case study we will be able to know which category of benefit is predominating; there exists no a priori method to detect this beforehand.

We should bear the attention to the fact that the list of benefits such as we established is certainly not exhaustive and reflects only a part of the value that we can attribute to environmental goods. Indeed, we account herein mainly for direct and indirect use value but we omit or under-estimate the option and non-use values (bequest and existence).

Finally, we have to add that in the long term, there is a difference between costs and benefits. Often, the costs will be huge and incurred immediately. Conversely, the benefits will only be perceptible in the future. This delay may be a barrier for the local actors to invest time and money in the Natura 2000 project. That is why it is so important to draw attention on the benefits.

2.5.3. The Discount problem

After all components of costs and benefits have been evaluated, we can compute the Net Present Value (NPV) of the project, i.e., over an adequate time horizon, we sum up the net yearly benefits (benefits minus costs), each multiplied by the appropriate discount factor.

Discounting is necessary for homogeneity of economic valuation. It allows for putting at the same level present and future amounts of money. The discount rate represents the social preference with respect to time: the higher the discount rate, the most important is the depreciation of the future. The general formula of the NPV is as follows:

$$NPV = \sum_{t=1}^{n} \frac{B_t - C_t}{(1+r)^t}$$

- C_t , B_t – marginal costs and benefits associated with EN implementation, with respect to the initial situation;
- r – discount rate;
- n – number of years.

Discounting is often criticized in environmental management. Indeed, when the rate value is high, the result is to strongly decrease the present value of future amounts. A high discount rate discourages investment, especially when it implies high initial expenses, while benefits would occur only after some years. Expenses made in the scope of environmental conservation purposes, because they would have their positive effects only in the long term, would thus be discouraged.

One can assume that public authorities, who would subsidise a given project, would expect a return at least equivalent to other alternative investments. The interest rate on financial markets is

[38] This method, however, entails several biases and limits. See Appendix 2 of the Econet report.

[39] Costanza et al. (1997) have developed a methodology that allows calculating the average annual specific (i.e., per ha) values for several types of ecosystems, accounting for the services they render, cf. infra.

often taken as a reference towards discounting[40]. However, a commonly advocated drawback of the interest rate is that it only reflects the preferences of present generations with respect to time. Therefore it can be reasonably admitted, for public projects, to take into consideration a lower discount rate that will account more adequately for general long-term welfare[41].

2.5.4. The situation of target actors

We can also add some financial elements that are not incorporated in the previous enumeration of costs and benefits. These elements constitute a cost for one actor and a benefit for another one. We cannot include them in our previous analysis; otherwise it would imply double accounting of certain elements[42]. However, those elements are of major importance when seen from the standpoint of a particular actor. In the following, we discuss elements and for each, we will identify to whom it beneficiates and to whom it costs.

2.5.4.1. Subsidies

Premiums are a cost for public authorities who pay them. In Belgium, those who pay and manage such premiums are the Regions. They are a financing source for the beneficiaries (farmers, forest owners, local authorities, etc). Indeed, if we wish to favour management and operation measures that are more oriented towards environmental conservation, this often implies profitability loss for the owner. This loss is compensated by the system of premiums. Among these, in the Walloon Region, are agri-environmental measures[43], premiums granted in the scope of sustainable forest management[44], and other operations and decisions in the Region[45].

2.5.4.2. Expropriation

In cases where it is absolutely essential (from an ecological standpoint) to intervene on a given area, whereas the owner shows strong opposition, public authorities may decide to buy the land in order to manage it appropriately. This thus implies a cost for public authorities and a revenue for the owner.

2.5.4.3. External funds

Site management and development are supported by local, regional or national funds and investments, but also by European funding programmes. These are thus a financing source for site owners and managers, but a cost for the paying authority or organism.

2.5.4.4. Synthesis

To evaluate the economic situation of EN implementation from the standpoint of a target actor, we would have to consider all costs and benefits that have significance for him/her, and thereafter calculate the net present value for that actor. In summary,

- Direct costs: land owner, public authorities who deal with the project;
- Indirect costs: land owner, residents (local economy);
- Direct benefits: owner, residents (local economy);
- Indirect benefits: society as a whole;
- Premiums: cost for public authorities, benefit for owners;
- Acquisition: cost for public authorities and organisations, benefit for the owner;
- External funds: cost for paying organisation, benefit for the owner.

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[40] Hanley et al., op. cit., p.16.
[41] Hanley et al., op. cit., pp.129-130.
[42] For example, premiums are granted to compensate management and restoration costs.
[43] See Appendix 1 of this report.
[44] Ministère de la Région Wallonne - Direction de la Nature et des Forêts and see Appendix 2 of this report.
[45] Ministère de la Région Wallonne – Direction des ressources naturelles et de l'environnement and see Appendix 10 of Econet report.

2.6. The value of nature

From particular to general we will see in this section different ways of valuating the diverse components of biodiversity.

2.6.1. Value per species

As we have already said, there is an economic problem to evaluate biodiversity. Most of human activities are priced while we are tempted to ignore species conservation values due to the non-existence of prices. Dangerous sentence by Jakobsson and Dragun: "No price means no value![46]". Is it right?

The challenge for the economist is to establish how such species value might be identified and compared with the value of other human activities which harmfully affect the survival of those species. We have to value species for a variety of uses and reasons and at last the combination of both use and non-use value will constitute the total economic value.

The problem is that even if individual species create huge benefits to society, those benefits are rarely reflected in the market or in government policies with a suitable rate of wildlife resource use (whenever there is no overexploitation of wildlife resources).

The progress in economic theory permits now to place monetary values on benefits which are not exchanged in markets. There are a lot of valuation methods but one is more accurate in appropriate contexts, i.e., the contingent valuation method, which can estimate non-use values. This method is simple in its principles, i.e., we have to question people about their values for environmental goods through surveys and direct questioning.

In 1996, a study was conducted by Jakobsson and Dragun in Australia with the contingent method. They asked the population about their willingness to pay for the conservation of about 700 species (estimated number of all endangered species of flora and fauna from Victoria). Three methods[47] were used to estimate the mean and median willingness to pay and the aggregate results are as follows:

Household	**Aggregation**	**Individuals**	**Aggregation**
Minimum	Maximum	Minimum	Maximum
$ 160 million	$ 386 million	$ 340 million	$ 821 million
($ 118/household)	($284/household)	($ 118/individual)	($ 284/household)

Table 4. Aggregate mean estimates for protection of all flora and fauna using discrete choice valuation data ($ per year). Jakobsson & Dragun, 2001, p. 221.

Fortunately for nature, the figures from Table 4 show a strong interest in the conservation of endangered species. It could mean that an increase in expenditure on species conservation is possible.

Some people added comments to their questionnaires and it showed that the respondents were conscious of the existence of other species, environmental issues and social problems that also need expenditures. They took these points into account to determine their willingness to pay. What is more, about half the respondents made comments such as "all species should be protected, not just one" and "concerned with conservation as a whole so it is difficult to value species individually" (Jakobsson & Dragun, 2001).

Nevertheless we have to be careful with the results because respondents were not particularly presented with substitutes for the goods to be valued in the survey. So, it is possible that there was an overestimation of true willingness to pay.

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[46] JAKOBSSON K. M. & DRAGUN A. K., *The Worth of a Possum : Valuing Species with the Contingent Valuation Method*, Environmental and Resource Economics, Vol. 19, 2001, p. 211.

[47] First method: The Henemann formulae, second method: integrate the cumulative distribution function of the probability of saying 'yes' to the given discrete choice amount and third method was the non-parametric method devlopped by Kriström. For details see JAKOBSSON K. M. & DRAGUN A. K., *op. cit.*, p. 217-223.

2.6.2. Value of ecosystem services

After the species level, we go to a higher level, the value of ecosystem services. Ecosystem services contribute to human welfare, directly and indirectly and for that reason they correspond to a part of the total economic value of the planet. Because they are not completely 'captured' in commercial markets or adequately quantified in terms comparable with economic services and manufactured capital, policy decisions often attribute a too low weight to them. In the long term, such a negligence may compromise the sustainability of humans in the biosphere.

In one sense we can say that the total value of the services to the economy is infinite because without them humanity cannot survive.

In 1997, Costanza and coworkers performed a synthesis of diverse studies on valuation of ecosystem services and from this synthesis, they estimated values for ecosystem services per unit area by biome, and then multiplied by the total area of each biome and summed over all services and biomes (Costanza et al., 1997). We can say that these estimations represent a minimal value, which is most likely to increase. For the analysis, the experts grouped ecosystem services into 17 main categories. We can find these groups in a table which includes only renewable ecosystem services, excluding non-renewable fuels and minerals and the atmosphere. The table summarizing the ecosystem services and functions used in the study can be found in Appendix 3.

What are exactly ecosystem services? They consist of :

"*flows of materials, energy and information from natural capital stocks which combine with manufactured and human capital services to produce human welfare. […] we can consider the general class of natural capital as essential to human welfare. Zero natural capital implies zero human welfare because it is not feasible to substitute, in total purely 'non-natural' capital for natural capital. Manufactured and human capitals require natural capital for their construction. Therefore, it is not very meaningful to ask the total value of natural capital to human welfare, nor to ask the value of massive, particular forms of natural capital. It is trivial to ask what is the value of the atmosphere to humankind, or what is the value of rocks and soil infrastructure as support systems. Their value is infinite in total. However, it is meaningful to ask how changes in the quantity or quality of various types of natural capital and ecosystem services may have an impact on human welfare. Such changes include both small changes at large scales and large changes at small scales*" (Costanza et al., 1997) (see ecological part).

More concretely for the estimation of the total value of ecosystem services, the authors needed estimations of the total global extent of the ecosystems themselves; then they made an aggregated classification scheme with 16 primary categories as shown in Table 2 to represent current global land use (See Appendix 3).

As a synthesis from those computations, the experts (Costanza et al., 1997) estimated that at the current margin, ecosystems services provide a value of at least US$ 33 trillion dollars[48] annually. The majority of the value of services they could identify is currently outside the market system, in services such as gas regulation (US$ 1,3 trillion yr^{-1}), disturbance regulation (US$ 1,8 trillion yr^{-1}), waste treatment (US$ 2,3 trillion yr^{-1}) and nutrient cycling (US$ 17 trillion yr^{-1}). About 63 % of the estimated value is supplied by marine systems (US$ 20,9 trillion yr^{-1}). Most of this comes from coastal systems (US$ 10,6 trillion yr^{-1}). About 38 % of the estimated value comes from terrestrial systems, mainly from forests (US$ 4,7 trillion yr^{-1}) and wetlands (US$ 4,9 trillion yr^{-1}). […]. Table 2 from Appendix 3 reports only the average values.

The attempt to estimate the total current economic value of ecosystem services is limited for some reasons presented in the document. It is not the place to discuss them here but one them deserves to be mentioned: "if we actually lived in a world that was ecologically sustainable, socially fair and where everyone had perfect knowledge of their connection to ecosystem services, both market prices and surveys of willingness-to-pay would yield very different results

[48] For the entire biosphere, the value (most of which is outside the market) is estimated to be in the range of US$ 16-54 trillion (10^{12}) per year, with an average of US$ 33 trillion per year. Because of the nature of the uncertainties, this must be considered a minimum estimate. Global gross national product total is around US$ 18 trillion per year.

than they currently do, and the value of ecosystem services would probably increase" (Costanza et al., 1997)….as already said.

In the light of these figures, it is clear that ecosystem services present a significant fraction of the total contribution to human welfare on the Earth. That is why we have, at this stage, to give the natural capital stock that produces these services adequate weight in the decision-making process. If not, current and future human welfare may drastically suffer. Furthermore, we can see that additional research is needed in this study area.

2.6.3. Value per ecosystem

To continue our analysis of the value of biodiversity, this section will go through the value of the habitats examined by Balmford and other experts in a summary of different studies (Out of the 300 studies considered initially, the article only retains five of them, based on some criteria that ensure, among others, that private benefits of conversion of natural habitats for human use are not neglected).

The two first studies (on tropical forests in Malaysia) permit us to make this first observation: in total, the total economic value (TEV) of forest was some 14 % greater when placed under more sustainable management (at ~ $ 13 000 compared with $ 11 200 ha^{-1}).

Other studies allow drawing conclusions in the same sense for different habitats, sometimes with even higher benefits generated by sustainable management. There are presented in Appendix 4 with more details and figures. From this article two messages can be derived. Firstly, the paucity of empirical data on the central question of the changes in delivery of goods and services arising from the conversion of natural habitats for human use and secondly, we can find that in every case examined, the loss of nonmarketed services outweighs the marketed marginal benefits of conversion, often by considerable amounts (Balmford et al., 2002).

Moreover, with data from the FAO and the WWF, the experts found that five of the six biomes (temperate/boreal forest, seagrass, tropical forest, marine, freshwater, mangroves) measured have experienced net losses since the Rio summit, with the mean rate of change across all measured biomes running at -1,2 % per year, or - 11,4 % over the decade (see Figure 12 below). Therefore, the ability of natural systems to distribute goods and services upon which we depend is decreasing obviously.

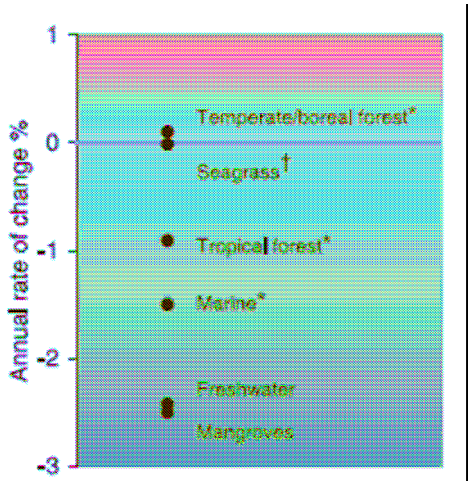

Figure 14. Recent global estimates of the annual rate of change in area or the abundance of associated vertebrate populations for six biomes. Note that the biomes that have declined deliver valuable ecosystem services.
For Temperate/boreal forest, Tropical forest and Marine, values plotted are the mean of habitat and population-based estimates. Finally, note that little confidence can be attached to the value of Seagrass (Source: Balmford et al., 2002).

From the same the studies we can say that a single year's habitat conversion costs the human enterprise of the order of $ 250 billion that year, and every year in the future, and that in net terms. Despite the overall of benefits for society the planet is continuing to lose natural ecosystems. There are three main reasons to that.

Firstly, there are lacks of information to better inform policy decisions as already said above. Secondly, findings in the studies highlight the fundamental role of market failures in driving habitat loss. Therefore, conserving the habitats in a relatively intact state will often need compensatory mechanisms to mitigate the impact of private, local benefits foregone, especially in developing countries. And finally, the private benefits of conversion are often exaggerated by intervention failures.

We agree with the fact that to safeguard relatively intact ecosystems and habitats, we have to maintain the remaining habitats in protected areas and we know too that it costs money. As mentioned by Balmford, the world spends (in 2000 US$) ~$ 6,5 billion each year on the existing reserve network[49]. The experts calculated the costs of properly managing existing terrestrial protected areas and expanding the network to cover around 15 % of land area in each region. They found that a globally effective network would necessitate an approximate annual expenditure of between ~$ 20 billion and $ 28 billion and the estimated mean total cost of an effective, global reserve program on land and at sea is some $ 45 billion per year. In return, the hypothetical global reserve network would ensure the delivery of good and services with an annual value (net of benefits from conversion) of between ~$ 4400 billion and $ 5200 billion, i.e., more than 100 times more than the cost (Balmford, 2002).

2.6.4. Value of a nature-reserve in the local context

Value of a nature reserve – as habitat – is relatively difficult to assess. There are a lot of studies in the literature but it often considers tropical species and habitats, not those located in Europe or nearby the ecological network concerned. Moreover, most of the ecosystem valuation is performed through assessment of the corresponding services. Concerning forests, a lot of studies are talking about exotic essences from other continents.

Nevertheless some information can be found. Often, to assess habitats and reserves, experts use people's willingness to pay to maintain habitats in healthy condition. In a study made in Australia with the willingness to pay, the next statements were observed: "Interestingly, the willingness to pay for scrubland turned out to be quite similar to the current market price for land of that type. The market price really represents the consumer's willingness to pay to use land for productive agriculture – it is the opportunity cost of preserving the habitat. But South Australians were not willing to pay the market price for grassy woodlands habitats. Willingness to pay for wetlands is more difficult to assess, as there is a limited market value for wetlands[50]".

As we can see, interesting findings can be made with the WTP method. However, we have to be careful because the given value will depend on gender, age and family situation of the respondents. Moreover, the data and method used to set up the model is important. "There are cases where it is really inappropriate, in circumstances that are highly emotive for example, because then you're measuring people's emotional responses to something that's very important to them – or belief systems. You don't ask people to trade-off something that is incredibly important to them[51]".

To conclude this part, we will add a comment that will permit to go deeper in our thoughts on biodiversity assessment. This comes from a recent article (Courchamp, 2006) from the University of Paris.

As we know,

"*overexploitation of living species (i.e., human exploitation exceeding the species' regeneration capacity) is a major threat to biodiversity, yet theory predicts that economic extinction (exploitation cessation) will usually precede ecological extinction (population disappearance). As populations become more sparse, it is increasingly costly to exploit them, and*

[49] Yet, half of this is spent in the United States alone. Globally, despite increased expenditure since the Rio Summit by both international institutions and private foundations, available resources for existing reserves fall far short of those needed to meet basic management objectives. Moreover, terrestrial and marine reserves currently cover only around 7,9 % and 0,5 % of Earth's land and sea area, […], well below the minimum safe standard considered necessary for the task of maintaining wild nature into the future (Balmford, 2002).

[50] PEDDIE C., *How do locals value their habitat?*, Ecos, 127, 2005, p. 24.

[51] PEDDIE C., *op. cit.*, p. 25.

exploitation ceases to be beneficial. In the absence of natural extinction risks at low population size (e.g., demographic stochasticity), exploitation cessation allows for the species' recovery. However, less-abundant species could suffer disproportionately from exploitation if their rarity makes them systematically more valuable. We postulate that because rarity makes living species attractive, their (over)-exploitation can remain profitable, rendering such species even rarer, and driving them to extinction.

This human-generated feedback loop is similar to the Allee effect, an important process in basic ecology and applied conservation biology. […]. Therefore, human activities cannot create an Allee effect; at most, they can push species into density ranges where their natural Allee effect will be expressed. On the contrary, we show here that humans can induce a purely artificial Allee effect in rare species through the 'paradox of value'. We call it the anthropogenic Allee effect (AAE). Although familiar to economists, the paradox of value – also called the 'water and diamonds paradox' (water has much value in use but none in exchange, while the opposite is true for diamonds) – is absent from ecological theory" (Courchamp, 2006).

Some examples explaining this theory are presented in Appendix 5.

3. Natura 2000

3.1. Framework of the Bird and the Habitat Directives

A result obligation

The European Union has set itself the target in 2003 to halt biodiversity decline in Europe until 2010 (Göteborg summit). The declining biodiversity is mainly the result of the loss or decreasing quality of territories of species.

At EU level, this task has been performed by the so-called 'Birds Directive' (Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds) and the so-called 'Habitats Directive' (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

The Birds Directive aims at the total protection of all the birds living at the wild state on the territory of the European Union (except Greenland) with some exceptions strictly defined and subjected to the control of the Commission. It comprises a series of appendices. The first enumerates the 181 species and subspecies threatened of disappearance or vulnerable because either of their restricted geographical distribution, or of their weak population. These birds enjoy a reinforced protection : the Member States have to ensure that they do not make the object of direct attacks but also to ensure the perenniality of their habitats (Article 4) [52]. The safeguarding of the habitats appearing essential achieving this goal, the directive states an obligation for the Member States to take "measures of special conservation" for the habitats of the 175 species, considered as most vulnerable of Europe and recoveries in appendix I, for purposes "to ensure their survival and their reproduction in their surface of distribution". The States must in particular classify in special protection areas (SPAs)"the territories most adapted in a number and surface with the conservation" of these species. They must take similar measures with regard to the migrating species whose arrival regular is not taken again with appendix I, in order to protect as well their surfaces from reproduction as of moult and wintering or the zones of relay in migration (Article 4.1 and 4.2).

The avifauna not being the only one to undergo an accelerated decline, the Council adopted in 1992 one second directive, whose object is " contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora (...)" (Article 2, § 1st). It prescribes the obligation for the Member States, "to maintain or restore, at favourable conservation status, natural habitats[53] and species of wild fauna and flora of Community interest[54]" (Article 2, § 2). Conscious of the stakes in question, the directive envisages however that the measurements taken under the terms of the directive must however hold account "of the economic, social and cultural requirements, as well as regional and local characteristics" (Article 2, § 3).

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[52] C.-H. BORN et F. LAMBOTTE, « La conservation de la nature en Région wallonne », chapitre de l'ouvrage collectif L'urbanisme et l'environnement*, v°du R..P.D.B., *sous la dir. de B. JADOT et F. HAUMONT, à paraître (automne 2006).

[53] "*Natural habitats means terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural*" (art. 1, b, Habitats directive).

[54] The concepts of habitats and species of community interest are defined by art. 1st, c) and g) of the Habitats directive. All these habitats and species appear in the appendices of the directive, or are likely to appear in it. Some are regarded as "priority", taking into account the fact that a great part of their surface of natural distribution is located on the European territory of the Community (article 1st, d) and h)). They are indexed by an asterisk in the appendices. Their protection is stricter (*cfr. infra*).

Article 3 (92/43/EEC)
1. A coherent European ecological network of special areas of conservation shall be set up under the title Natura 2000. This network, composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range.
The Natura 2000 network shall include the special protection areas classified by the Member States pursuant to Directive 79/409/EEC.

The strategy selected consists in setting up, on a European scale, a "coherent ecological network[55]" called "Natura 2000"[56]. It is composed, on the one hand, of the special protection areas (SPAs) envisaged by the Oiseaux directive, and, on the other hand, of a new type of protected surface, the special areas of conservation (SACs), intended to protect the types of natural habitats and the habitats of animal and vegetable species of Community interest aimed by the Directive "Habitats". The space configuration of the network and measurements of conservation which are carried out there are a function above all the ecological requirements of these species and these habitats, which constitute the criteria of selection of the zones[57] and dictate measurements of conservation to be taken within these last. These requirements are evaluated by "biogeographic area" in order to guarantee the ecological coherence of the network[58]. Contrary to what is the case for the SPAs, the procedure of designation of the SACs is not only national, the selections being controlled the Commission and of an ad hoc Committee - the Committee "Habitats"[59].

The ecological network aims thus "to ensure bio-diversity through the conservation of natural habitats and of wild fauna and flora on the territory of the Member States"[60]. More specifically, the directive "Habitats" states that "measurements aim to ensure to maintain or restore, at favourable conservation status, natural habitatsand species of wild fauna and flora of Community interest. (Article 2, § 2) This objective constitutes a result obligation[61] in the chief of the Member States (Article 2 of the Birds directive; art. 2, § 2, and 3, § 1, of the Habitats directive). That implies the

[55] On the concept of ecological coherence of the network Natura 2000, see C.-H. BORN, "La cohérence écologique du réseau Natura 2000", in COLL., *Natura 2000 et le droit, Aspects juridiques de la sélection et de la conservation des sites Natura 2000 en Belgique et en France*, actes du colloque de Louvain-la-Neuve du 26 septembre 2002, Bruxelles, Bruylant, 2004, pp. 163 et s.

[56] Article 3, §1st, of the Habitats directive.

[57] Voyez, Ch.-H. BORN « La marge d'appréciation des Etats membres lors de la procédure de désignation des zones spéciales de conservation », note sous C.J.C.E., 7 novembre 2000, *Amén*., 2001, p. 60

[58] The European Community counts, since widening, nine biogeographic areas. The Walloon Region is situated on the biogeographic, continental (in the south of the Sambre-and-Meuse furrow) and the Atlantic (in north) area. A chart and information on these areas are available on http://europa.eu.int/comm/environment/nature/home.htm.

[59] Currently, the lists of sites of Community importance were adopted for the areas macaronesian, alpine, Atlantic and continental. See for these two last, decisions 2004/798/CE and 2004/813/CE from December 7th 2004 (*J.O.U.E*., L 382, 28/12/2004 et L 387, 29/12/2004). The Walloon Region is thus entirely covered by a list of SCI. It will be noted that these lists are not complete for certain types of habitats or certain species. They will thus be supplemented in the future.

[60] COMMISSION EUROPEENNE, *Gérer les sites Natura 2000 – Les dispositions de l'article 6 de la directive «Habitats» 92/43/CEE*, Luxembourg, Commission européenne, 2000, p. 18.

[61] About the notion of result obligation, see the directive definition in the EC Treaty: « A directive shall be binding, as to the result to be achieved, upon each Member State to which it isaddressed, but shall leave to the national authorities the choice of form and methods. » (art. 249 ECT).

obligation to seek and deploy all the means - legal but also technical and financial - that are at disposal to reach the ecological result concerned. [62]

Favourable conservation status

The concept of favorable conservation status is capital in the Natura 2000 structure. It constitutes at the same time the objective to be reached on each site for the species and habitats natural for which it was selected, and the reference to determine if the obligations envisaged in the law are respected (in particular as regards prevention of deteriorations and the disturbances, and as regards active management). [63] It is an objective and scientific concept, which cannot be the subject of an arbitrary interpretation. It differs according to whether it acts of the state of conservation of a natural habitat or a species.

Being the subject of a precise definition in the directive Habitats[64], the conservation statuts can be defined, in a simplified way, as the *effect* on a species or a type of natural habitat of the influences - biotic, abiotic or human - which act on a habitat or a species and which can affect their long-term distribution and their survival in Europe. It is regarded as favorable if a whole of objective elements indicate that the surface of distribution and the surfaces covered by the habitat or that the dynamics of population of the species are stable or progress, and that the conditions for their long-term maintenance are met[65]. This means more than only to avoid the extinction of the species: it is necessary that the species / the habitat is "in good health" in the geographical surface considered[66].

The applicability of the concept of state of conservation favorable to the birds is not envisaged directly by the Habitats directive. They are the concepts of "survival" and "reproduction" (as well as the "needs for protection" of the sites of reproduction and migration of the migrating species) which are used by the Birds directive. We think that, in order to simplify the concepts, it would be good to also use the concept of conservation status for the birds, but by adapting it, if necessary, with specificities of the avifauna.

This scientific and nonarbitrary concept must be determined, according to the Commission, on the basis of best knowledge available and best judgement of the experts. It recommends establishing, on this basis, measurable values of reference of the favorable state of conservation (surfaces minimum of habitats, minimum level of total population, etc), in order to be able to evaluate if the situation of the species or the habitat is stable or improves compared to this situation of reference[67]. The evaluation of the conservation status is thus purely scientific and

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[62] C.-H. BORN, « La transposition et l'application du régime Natura 2000 en Région wallonne : entre espoir et déconvenues », in, J. DUBOIS et S. MALJEAN-DUBOIS (dir.), *Natura 2000 : de l'injonction européenne aux négociations locales*, Paris, La Documentation française, 2005, p. 73.

[63] C.-H. BORN, *Guide juridique des zones protégées en Wallonie*, Jambes, Ministère de la Région wallonne, 2005, p. 183.

[64] See art. 1, e and i, Habitats directive.

[65] See art. 1er bis, 6° and 10°.

[66] On this notion see COMMISSION EUROPEENNE, *Assessment, monitoring and reporting of conservation status – Preparing the 2001-2007 report under Article 17 of the Habitats Directive (DocHab-04-03/03 rev.3)* en ligne sur internet ; COMMISSION EUROPEENNE, *Guidance document on the strict protection of animal species of community interest provided by the 'Habitats' Directive 92/43/EEC Draft Version 4*, novembre 2005, p. 11.

[67] For more detail on the way of evaluating the favorable conservation status and in particular the space scale to take into account see COMMISSION EUROPEENNE, *Gérer les sites Natura 2000 – Les dispositions de l'article 6 de la directive «Habitats» 92/43/CEE*, Luxembourg, Commission européenne, 2000, pp. 18-19 et 27-29. For a more detailed and scientific explanation of the indicators of the state of conservation, see RAMEAU J.-C., GAUBERVILLE C. & DRAPIER N., *Gestion forestière et diversité biologique. Identification et gestion intégrée des habitats et espèces d'intérêt communautaire*. M.R.W., Namur, 2000, pp. 28 et s.

must be justified compared to these indicators and with the contribution of the site to the ecological coherence of the network Natura 2000.[68]

Like confirmed by the Commission[69], the obligation to reach the favorable conservation status can imply in certain cases for the Member State to have to take measurements of improvement and restoration in order to reach these values of reference if the species or the habitat is currently in an unfavourable conservation status.[70]

The conservation regime

Article 6 of the directive "Habitats" constitutes the heart of the conservation regime of the Natura 2000 sites. It founds the protection regime which must prevail in the "special areas of conservation" (SACs), and, under certain aspects, in the "special protection areas" (SPAs). [71]

The §1er of this provision states the obligation for the Member States to adopt active, positive measures of conservation (active management of the sites by measurements such as the mowing, the extensive pasture, etc.) in the SACs. The obligation is not applicable in the SPAs, which have their own regime on this point[72], appreciably comparable. These measurements must at least include lawful, administrative or contractual measurements. They can also include, "if necessary", management plans. The whole structure must in any event fulfill the ecological requirements of the species and the habitats for which the site was indicated[73].[74]

The § 2 of article 6 imposes the adoption by these same States, in the SACs as in the SPAs, of suitable measurements to avoid the deterioration of the habitats and the significant disturbance of the species for the protection of which the zones were indicated ("negative" measurements).

The § 3 and 4 of article 6, applicable in SPAs[75] as in SACs, define the conditions under which a plan or a project can derogate from the protection regime: any plan or project “likely to have a significant effect” on a declared site of Community importance[76] (and not connected to its management) must be the subject of a “appropriate assessment of its implications” on the conservation status of the site. Whatever are the form and the author, the assessment must be"appropriate as regard with the site’s conservation objectives[77]", which necessarily implies that it is justified scientifically compared to these objectives.

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[68] C.-H. BORN, *Guide juridique des zones protégées en Wallonie*, Jambes, Ministère de la Région wallonne, 2005, p. 183.

[69] COMMISSION EUROPEENNE, *Assessment…*, p. 9

[70] It will be considered that the restoration is the conversion of a habitat not noted by the Habitats Directive into a natural habitat or of Community species of interest, the improvement being the passage of an existing habitat of Community interest of a state of conservation given towards a more favorable state of conservation.

[71] See C.-H. BORN, « Les problèmes liés à la transposition de l’article 6 de la directive ‘Habitats’ », Observations sous C.J.C.E., 6 avril 2000, aff. C-256/98, Commission c/ République française, *Amén.*, 1/2001, p. 22

[72] See article 4, § 1and 2, of the directive 79/409/CEE of the Council, 2nd april 1979, on the conservation of wild birds (J.O.C.E., L 103, 25.4.1979) (Birds directive)

[73] See for exemple N. de SADELEER et C.-H. BORN, *Droit international et communautaire de la biodiversité*, Paris, Dalloz, 2004, p. 511 et s.

[74] C.-H. BORN, « Plans de gestion des sites Natura 2000 Rapport belge », actes du colloque de Volos des 19-20 mars 2004, Bruxelles, Bruylant, à paraître (2006)

[75] Article 7 Habitats directive.

[76] The sites are declared of Community importance when they are taken as such by the Commission in the list which it made in agreement with the Member States under the terms of article 4, § 2, of the directive "Habitats". The mode of prohibition and exemption (within the meaning of article 6, § 2, 3 and 4 of the directive "Habitats") applies as of the publication of the list from the Official Journal, and thus before the site is the subject of a designation like SAC (Article 4, §5, of the directive "Habitats").

[77] On the concept, contents and the fixing of the objectives of conservation, see C.-H. BORN, « Quelques réflexions sur le mécanisme de protection des sites Natura 2000 contre les incidences des plans et projets », in COLL., *Mélanges en l’honneur de Michel Prieur*, Paris, Dalloz, à paraître (2006)

If the conclusions of the assessment are negative, the plan or project must be rejected[78] by the competent national authority, except in case of "imperative reasons of overriding public interest" (and in the absence of alternative solutions[79]).[80]

Article 6.3, second sentence of the Habitats directive requires that the authority has “ascertained” of the absence of significant effect[81] of the plan or the project on the site, and thus establishes a substantial standard of protection of the sites Natura 2000 to strictly frame its *discrétionnaire* capacity[82]. If the evaluation is not able to prove the absence of risk for the site, the authority has only the following choice: either the project or the plan must be refused, delocalized or together with conditions likely to guarantee that no attack with the integrity of the site will take place[83]; either an exemption, in conformity with article 6.4 of the directive Habitats, must be requested. The *discrétionnaire* capacity of appreciation of the authority is thus closely bound[84] by the conclusions of the assessment of implications, if at least this one is "appropriate".[85]

The direct effect of this provision was confirmed by the ECJ (at least article 6.3) [86] and by the Council of State (Article 6.2 to 4) [87]. The authorities are thus held to respect these provisions. This protection does not involve however direct obligations for the private individuals.

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[78] Article 6, § 3, « In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned (…) ». The wording of the article implies, according to us, that the plan or project, if it is likely to have significant effects on the site, must be approved or authorized expressly by the proper authority, this, even if the legislation in force as regards authorization to exploit does not envisage it. The correct transposition of article 6, § 3, of the directive "Habitats" thus imposes, according to us, with the Member States to envisage, for these plans and projects, a system of authorization or approval express (specific or not: a modification of the legislation as regards authorization to exploit can be enough) in more of the system of evaluation of the incidences. In this sense see N. de SADELEER, op. cit., p. 629.

[79] See C.-H. BORN, « La notion de « solutions alternatives » dans l’article 6, §4, de la directive Habitats », observations sous CJCE, 26 octobre 2006, aff. C-239/04, Commission c/ République portugaise.

[80] See C.-H. BORN, « Quelques réflexions sur le mécanisme de protection des sites Natura 2000 contre les incidences des plans et projets », in COLL., *Mélanges en l’honneur de Michel Prieur*, Paris, Dalloz, à paraître (2006)

[81] On the concept of significant effect and attack to the integrity of the site, see C.-H. BORN, « Quelques réflexions sur le mécanisme de protection des sites Natura 2000 contre les incidences des plans et projets », in COLL., *Mélanges en l’honneur de Michel Prieur*, Paris, Dalloz, à paraître (2006)

[82] For an analysis in the same direction of the two directives, see conclusions of Mrs. prosecuting attorney KOKOTT in a business relating to a site sheltering a population of Corncrake (aff. C-209/04, conclusions deposited on October 27, 2005, items 61-62).

[83] In a number of cases, the imposition of measurements of attenuation of the impact in the shape of condition or specifications to respect by the applicant of the licence or the promoter of the plan is capable to make possible the exercise of the activity considered, in so far as their scientific relevance can be shown by the applicant. With defect, the doubt will oblige the authority to refuse the licence or the plan or to grant an exemption. One should not however confuse measurements of attenuation - which aim at limiting the impact of the activity in order to make it nonsignificant - with measurements of compensation - which intervene as soon as deterioration is caused with the site -, under penalty of seeing authorizing plans and projects of purely deprived or minor interest in violation of article 6.4, Habitats directive.

[84] On the dependent competence of the authority within the framework of the suitable evaluation see BORN, C.-H., « Observations sur l’arrêt ‘Râle des genêts’ de la Cour de justice du 29 janvier 2004 », *Amén*., 2004/3, p. 155-159

[85] See C.-H. BORN, « Quelques réflexions sur le mécanisme de protection des sites Natura 2000 contre les incidences des plans et projets », in COLL., *Mélanges en l’honneur de Michel Prieur*, Paris, Dalloz, à paraître (2006)

[86] C.J.C.E., 7 septembre 2004, “mer de Wadden”, point 69. In the sites suggested by the Member States at the Commission but not yet retained like SCI, the Court judged that this provision was not applicable for them, in accordance with what provides article 4, § 5, of the directive (C.J.C.E., 13 janvier 2005, aff. C-117/03, *Societa Italiana Dragaggi SpA et al.,* point 30). Taking into account the decisions of the Commission adopting the list of SCI for the continental and the atlantic areas, this jurisprudence will have only one null range in Belgium (entirely covered by the list of SCI), except if sites were still to be added.

[87] C.E., 4 avril 2001, n° 94.527, *asbl L’Erablière et crts.*

Critical analysis

Natura 2000 is conceived to promote the *conservation* of biodiversity, while integrating human activities from the viewpoint of sustainable development. Therefore, it aims at sustainable conservation of habitats and species of community importance, taking account of (i) economic, social and cultural requirements and (ii) regional and local circumstances. The same protection regimes are applicable in SACs and SPAs (Kuindersma *et al.* 2004). Art. 6 of the HD describes the main protection formulas for these Natura 2000 sites: in general, only activities may be performed which can have no significant impact on the natural values of the sites.

From an ecological point of view, the HD and BD may be very powerful means to preserve populations of rare and endemic species. Moreover, the Natura 2000 network can provide all Europeans with basic environmental services, such as clean water and air. Within Europe, these directives are the strongest intruments for nature conservation (shown by the fact that the European Commission takes Member States to Court if they do not meet the obligations).

Under pressure of the European court of Justice, the member states have proceeded to implement these nature conservation goals into their national legislation (although in some places these have still not been sufficiently transposed yet, see WWF 2006). However, the directives contain open, still unclear criteria and only a few member states have established a number of interpretation guidelines. A more detailed definition of for instance “favorable conservation status”, adding more to the already existing definitions of the HD itself, can hardly be found (Neven *et al.* 2005).

The selection of Natura 2000 sites has to be primarily made on scientific (ecological) basis. However, this has caused several problems and uncertainties (pers. comm. N. Boone, L. De Beck & D. Paelinckx, *INBO*), for instance:

- Habitat types as defined by Europe (Annex I) are not always unambiguously to interprete: species composition may vary considerably between the member states. This problem is partly solved by the distribution of the “Interpretation manual of European Union Habitats” (e.g. European Commission 1996)
- Several vegetation types are not included in the European list of habitat types (Annex I). For instance, *calthion palustris* was taken out of the list because of large opposition by the agricultural sector in France and the UK. In Flanders, this vegetation type is therefore indicated as ‘Regionally important biotope’.

In theory, only when there are equivalent possibilities from the ecological point of view, a decision may be based on e.g., economical or societal grounds (see below for an in-depth discussion of these issues in Belgium).

> Article 10 (92/43/EEC)
> Member States shall endeavour, where they consider it necessary, in their land-use planning and development policies and, in particular, with a view to **improving the ecological coherence af the Natura 2000 network**, to **encourage the management of features of the landscape** which are of major importance for wild fauna and flora.
> Such features are those which, by virtue of their **linear and continuous structure** (such as rivers with their banks or the traditional systems for marking field boundaries) or their function as **stepping stones** (such as ponds or small woods), are **essential for the migration, dispersal and genetic exchange** of wild species.

A negative aspect of the delineation of sites at the national level is the discontinuity in many cases of what is intended to be a network. Indeed, the Natura 2000 sites are meant to be the core areas of a coherent Europe-wide ecological network, ensuring ecological connectivity from Russia to the Atlantic and from the North Cape to the Mediterranean (Rientjes 2005). The HD itself points out the importance of connectivity between sites (Art. 10 of HD), but the EC has so far given priority to the designation process over the issue of connectivity. Moreover, there is no explicit reference in the HD to ‘*spatial* coherence’ of the Natura 2000 network and ‘coherence’ is interpreted differently by the EC, the member states and NGOs (Zwaan 2004). At the moment, the EC regards ‘coherence’ merely as including all relevant habitat and species in protected sites.

In addition, the designation of sites is treated as a statistical and scientific process rather than a planning process, concerned with the quantity rather than the connectivity of sites (Zwaan 2004).

However, Article 10 is gaining more attention (Zwaan 2004), there are several cross-border Natura 2000 sites (like 'de Vallei van de Grensmaas' between Flanders and the Netherlands and 'La Vallée de l'Attert' between Wallonia and Luxembourg) and an increasing number of Member States or regions is working on the development of national ecological networks (e.g. The Netherlands, Flanders, Germany). But, there is a need for cross-border cooperation and coordination in order to achieve an ecologically 'sound' network (Figure 13; Zwaan 2004, Leibenath *et al.* 2005, Lintz & Leibenath 2005, Rientjes 2005).

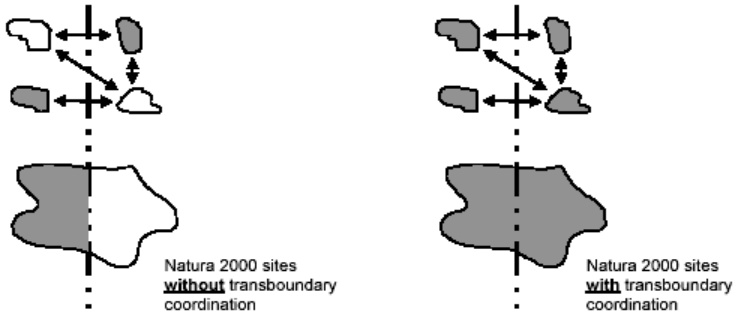

Figure 15. Coordinated designation and management of Natura 2000 sites across borders (From Lintz & Leibenath 2005).

As stated by the WWF (2006) "the major achievement of the BD and HD is that Europe now has a huge common network of protected areas, with common goals and procedures to achieve them, in a unique and unprecedented attempt to work together to achieve nature conservation and sustainable development at a continental scale: Natura 2000" (although site designation has not been completely fulfilled yet, see below and WWF 2006). However, the mere delineation of Natura 2000 sites hasn't stopped biodiversity to decline in Europe. For instance, in the period since the application of the BD to Flanders until 2000, three of the Annex I breeding birds in Flanders, needing protection, had become extinct (Symens 2000 and see also Martens 2002). The next task is thus to put in place regulations by each Member State in order to ensure the survival of habitats and species. Major gaps had been found by a survey by the WWF (2006, using over 30 questions for assessing the implementation status of each country) in the overall context of management issues, such as "elaboration of adequate management plans, species conservation measures and plans, and sufficient consideration of Article 6 assessments for plans and projects".

A positive aspect of the application of the BD and HD in Europe, is that the need for reporting to the EC has given rise to more monitoring programs (see for instance Martens 2005 for an status of the bird populations in Flanders). In addition, the obligation of the implementation has enabled all Europeans to recognize the value of conserving our natural heritage (WWF 2006).

In the following paragraph, a chronological overview is given of the process of delineation of the Natura 2000 network in Belgium, in order to unravel the field of tension between ecological targets and socio-economic purposes.

3.2. Transposition of the directives into regional law

3.2.1. Site selection and designation

3.2.1.1. Legal procedure

3.2.1.1.1. Sélection

L'initiative de créer un réseau européen de zones protégées a été prise au départ par la Communauté européenne, en 1979 (directive Oiseaux), puis reprise et améliorée en 1992 (directive Habitats). Le régime Natura 2000, en tant qu'obligation de droit communautaire, s'impose donc à tous les Etats membres, dont la Belgique. Les Régions étant compétentes en matière de conservation de la nature, il leur appartient de transposer et d'appliquer les directives Oiseaux et Habitats.[88]

Le législateur wallon a confié la charge de sélectionner et de désigner les sites Natura 2000 (ZPS et ZSC) au Gouvernement wallon (art. 25, § 1 et 2, de la loi du 12/7/1973).

La Wallonie est à cheval sur les régions biogéographiques atlantique (nord du sillon Sambre-Meuse) et continentale (sud du sillon Sambre-Meuse). Sur les 200 types d'habitats naturels repris dans l'annexe I de la directive Habitats, 44 sont présents en Région wallonne, dont 10 sont reconnus comme prioritaires. La Wallonie compte par ailleurs 63 espèces d'oiseaux reprises dans l'annexes I de la directive Oiseaux (dont deux sont classées prioritaires – ce que ne prévoit pas la directive -, à savoir le Butor étoilé et le Râle des genêts). Sur les 200 autres espèces animales et 500 espèces végétales figurant dans l'annexe II de la directive Habitats, seules 31 sont présentes en Région wallonne (dont la Loutre, plusieurs espèces de chauve-souris, quelques libellules, le Triton crêté, le Lucane cerf-volant, la Moule perlière d'eau douce, le Flûteau nageant et le Brome épais). Aucune n'est prioritaire. C'est sur base de ces données que 239 sites ont été sélectionnés par le Gouvernement wallon et transmis à la Commission, les 26 septembre 2002 et 4 février 2004. Leur surface totale est de 220.000 hectares environ, ce qui correspond à un peu moins de 13 % du territoire wallon. [89]

Deux procédures[90] distinctes de désignation comme site Natura 2000 sont prévues, sur base de différents critères :

- l'une relative aux habitats d'oiseaux (art. 25, § 2, de la loi du 12/7/1973)
- l'autre relative aux types d'habitats naturels et aux habitats d'espèces autres que les oiseaux (art. 25, § 1er, de la loi du 12/7/1973).

1. CRITERES DE SELECTION

A. Habitats d'oiseaux :

Le Gouvernement est tenu de désigner comme site Natura 2000 les territoires les plus appropriés en nombre et en superficie au regard des besoins de conservation des oiseaux que l'on rencontre sur le territoire de la Région wallonne, figurant à l'annexe XI, ainsi qu'au regard des besoins de protection des oiseaux migrateurs dont la venue est régulière en Région wallonne, figurant également à l'annexe XI, en ce qui concerne leurs aires de reproduction, de mue et d'hivernage et les zones de relais dans leur aire de migration.

B. Types d'habitats naturels

Le Gouvernement est tenu de faire figurer dans sa proposition une liste de sites susceptibles d'être identifiés comme « sites d'importance communautaire » conformément à l'article 4, § 1er, de la directive Habitats (art. 25, § 1er, de la loi du 12/7/1973). Un site d'importance communautaire (SIC) est un site qui, dans la ou les régions biogéographiques auxquelles il appartient :

- contribue de manière significative à maintenir ou rétablir dans un état de conservation favorable un habitat ou une espèce protégé et

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[88] C.-H. BORN, *Guide juridique des zones protégées en Wallonie*, Jambes, Ministère de la Région wallonne, 2005, p. 187.

[89] C.-H. BORN et F. LAMBOTTE, « La conservation de la nature en Région wallonne », chapitre de l'ouvrage collectif *L'urbanisme et l'environnement*, v°du R..P.D.B., sous la dir. de B. JADOT et F. HAUMONT, à paraître.

[90] Sur la sélection des sites dans cette région, voy. ORBAN DE XIVRY, E., « La procédure de sélection des sites en Région wallonne », *in* X., *Natura 2000 et le droit…*, *o.c.*, p. 117-139 ; BORN, C.-H., *Guide juridique…, o.c.*, p. 187 et s.

- peut contribuer de manière significative à la cohérence du réseau Natura 2000 et/ou contribue de manière significative au maintien de la diversité biologique dans la ou les régions biogéographiques concernées (définition plus complète, voir art. 1bis, 13°, de la loi du 12/7/1973).

La sélection initiale des sites abritant ces habitats doit être faite obligatoirement et uniquement sur la base des critères scientifiques. Ceux-ci sont établis dans l'annexe X de la loi.

2. MARGE D'APPRECIATION DU GOUVERNEMENT[91] :

Ainsi que l'a confirmé la jurisprudence, la marge d'appréciation du Gouvernement pour sélectionner les sites Natura 2000-ZSC[92] ou ZPS[93] est de nature strictement scientifique. Aucune considération socio-économique (affectation au plan de secteur en zone urbanisable, propriétaire privé influent, projet immobilier,…) ne peut en principe justifier l'exclusion du réseau Natura 2000 d'un site correspondant aux critères ZPS ou à ceux de l'annexe X.[94]

Le Gouvernement dispose cependant d'une certaine marge d'appréciation dans l'application même des critères scientifiques de sélection des futures ZPS[95] ou de l'annexe X de la loi et dans la prise en considération des « informations pertinentes ».

3.2.1.1.2. Désignation

Tous les sites Natura 2000 « sont désignés par un arrêté du Gouvernement », appelé « arrêté de désignation » (art. 25, § 1 et 2 et art. 26, § 1er, de la loi). Chaque arrêté concerne donc un seul site, et lui est spécifiquement adapté. Cet arrêté est un document central, dont dépend en grande partie la réalisation des obligations de résultat qui pèsent sur la Région wallonne. Aucune modalité de participation autre que des mesures d'information de nature générale sur Natura 2000 n'est prévue quant au contenu même de l'arrêté : aucune enquête publique ni aucune consultation des communes et des administrations concernées n'est prévue explicitement.

L'arrêté contient obligatoirement :

1. le nom propre du site;
2. les types d'habitats naturels d'intérêt communautaire que le site abrite et pour lesquels le site est désigné, en précisant, le cas échéant, les habitats naturels prioritaires présentes dans le site ;
3. les espèces d'intérêt communautaire que le site abrite et pour lesquelles le site est désigné, en précisant, le cas échéant, les espèces prioritaires présentes dans le site[96];
4. les critères scientifiques ayant conduit à la sélection du site;
5. la localisation géographique exacte du site (avec les numéros de parcelles cadastrales), ainsi que des principaux types d'habitats naturels qu'il abrite[97], reportée sur une carte au 1/10.000ème;

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[91] Sur ces questions, voyez C.-H. BORN, « La marge d'appréciation des Etats membres lors de la procédure de désignation des zones spéciales de conservation », Observations sous C.J.C.E., 7 novembre 2000, aff. C-371/98, The Queen & Secretary of State for the Environment, Transport and the Regions, *ex parte* First Corporate Shipping (« Estuaire de Severn »), *Amén.*, 1/2001, p. 57.

[92] C.E., 4 avril 2001, n° 94.527, *ASBL L'Erablière & Commune de Nassogne* ; 1er juin 2001, n° 96.097, *ASBL L'Erablière et crts.* Voy. aussi *Doc. Parl. W.*, 250 (2000-2001), n° 1, *Exposé des motifs*, p. 17. Au niveau communautaire, voy. notamment C.J.C.E., 7 novembre 2000, aff. C-371/98, « Estuaire de Severn », publié sur http://curia.eu.int/fr/content/juris/index.htm).

[93] Voy. notamment C.J.C.E., 11 juillet 1996, aff. C-44/95, *Regina & Secretary of State for the Environment, ex parte Royal Society for Protection of Birds*, « Lappel Bank » , *Rec.*, 1996, I, p. 3805.

[94] C.-H. BORN, *Guide juridique des zones protégées en Wallonie*, Jambes, Ministère de la Région wallonne, 2005, p. 193-194-195.

[95] C.J.C.E., 19 mai 1998, aff. C-3/96, *Commission c/ Pays-Bas*, *Rec.*, I, p. 3031, point 61.

[96] LAMBOTTE et NEURAY considèrent que la confidentialité de ces données eût été préférable dans certains cas, comme l'autorise notamment la Convention d'Aarhus du 25 juin 1998 sur l'accès à l'information, la participation du public au processus décisionnel et l'accès à la justice en matière d'environnement (art. 4, § 4, al. 1er, h) (F. LAMBOTTE et J.-F. NEURAY, « Le décret Natura 2000 », in COLL., *Actualité du cadre de vie en Région wallonne. Aménagement du territoire et urbanisme, évaluation des incidences sur l'environnement, Natura 2000*, Actes du colloque de Namur des 17 et 18 octobre 2002, Bruxelles, Bruylant, 2003, pp. 321-372, p. 337, note 75).

6. les interdictions particulières applicables dans ou en dehors du site ainsi que toute autre mesure préventive à prendre dans ou en dehors du site conformément au régime préventif à mettre en place ;
7. les objectifs du régime de gestion active à mettre en place ;
8. les moyens proposés pour atteindre les objectifs du régime de gestion active ;
9. la commune concernée;
10. la commission de conservation concernée.

Le Gouvernement peut, après l'avis de la commission de conservation concernée, revoir les prescriptions visées aux points 6 (interdictions et mesures préventives), 7 (objectifs de gestion active) et 8 (moyens proposés pour la gestion) en fonction de l'évolution des connaissances scientifiques, des techniques de gestion ou de l'état de conservation du site (art. 26, § 1, dernier al., de la loi). L'arrêté de révision est soumis aux formalités de publicité de la désignation et, le cas échéant, à la procédure de concertation avec les propriétaires et occupants prévue lors de la fixation du contenu du régime de gestion active.

Les prescriptions visées aux points 5 (localisation / périmètre du site et des principaux habitats qu'il abrite), 6 (interdictions et mesures préventives) et 7 (objectifs de gestion active) précités de l'arrêté de désignation reçoivent, à l'instar des prescriptions des plans de secteur, une valeur réglementaire (art. 26, § 1, al. 2, de la loi) [98], et sont donc obligatoires pour tous[99], y compris toute autorité statuant sur une demande d'autorisation individuelle. Les autres prescriptions (notamment les habitats et espèces que le site abrite et les moyens de gestion proposés) ont valeur individuelle.[100]

L'arrêté de désignation doit être publié intégralement au Moniteur belge (y compris les cartes délimitant le site et localisant les habitats)[101], et notifié par lettre recommandée à la poste au collège des bourgmestre et échevins de chaque commune concernée[102] dans les deux mois qui suivent la publication de l'arrêté. Dans les deux mois de la notification de l'arrêté aux communes concernées, la désignation du site (et non l'arrêté tout entier) doit être:

- notifiée par lettre recommandée à la poste aux propriétaires et occupants concernés[103]. Cette notification est faite par le directeur du Centre extérieur de la DNF ou son délégué[104] ;
- annoncée par voie d'affiches aux endroits indiqués dans l'arrêté de désignation et à l'administration de chaque commune concernée.

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[97] A priori, les termes « habitats naturels » ne visent pas que les habitats naturels d'intérêt communautaire présents sur le site, mais aussi les autres habitats naturels au sens de la définition de l'article 1bis, 2°, de la loi.

[98] Sur la question de savoir s'il est opportun de donner une valeur réglementaire aux objectifs de gestion active, voy., pour une réponse négative, B. JADOT, « Mise en place du zonage écologique et coexistence de législations distinctes », in C.E.DRE (dir.), *Le zonage écologique*, actes du colloque de Gembloux du 29 mars 2001, Bruxelles, Bruylant, p. 215, note 26. Pour une réponse plus nuancée, voy. P.-Y. ERNEUX, « La gestion active des sites », in COLL., *Natura 2000 et le droit, Aspects juridiques de la sélection et de la conservation des sites Natura 2000 en Belgique et en France*, actes du colloque de Louvain-la-Neuve du 26 septembre 2002, Bruxelles, Bruylant, 2004, p. 242.

[99] *Doc. Parl. W.*, 250, 2000 – 2001, *Avis du Conseil d'Etat*, n° 1, p. 115.

[100] Sur la nature de l'arrêté de désignation, voyez F. LAMBOTTE et J.-F. NEURAY, « Le décret Natura 2000 », in COLL., *Actualité du cadre de vie en Région wallonne. Aménagement du territoire et urbanisme, évaluation des incidences sur l'environnement, Natura 2000*, Actes du colloque de Namur des 17 et 18 octobre 2002, Bruxelles, Bruylant, 2003, p. 343.

[101] La Cour de justice a considéré que la publication au Moniteur belge des cartes délimitant les ZPS (et donc *a priori* des sites Natura 2000 en général) était indispensable pour donner aux périmètres une « force contraignante incontestable » (C.J.C.E., 27 février 2003, aff. C-415/01, Commission c/ Belgique, points 22-24).

[102] C'est-à-dire sur le territoire de laquelle s'étend tout ou partie d'un site Natura 2000 (art. 1er bis, 22°, de la loi).

[103] C'est-à-dire respectivement tout titulaire d'un droit de propriété sur un bien immobilier présent dans le site, et tout titulaire d'un droit d'usufruit, d'emphytéose de superficie, d'usage, d'habitation, de concession, d'un bail à date certaine ou d'un bail à ferme relatif à un bien immobilier présent dans un site Natura 2000 (art. 1er bis, 25° et 26°, de la loi).

[104] Art. 2, § 1, de l'AGW du 20 novembre 2003 relatif aux modalités de la concertation préalable à l'élaboration des contrats de gestion active et à la constatation de l'inexécution des mesures de gestion active.

L'arrêté de désignation (en entier) doit être transcrit, à l'initiative et à la charge de la Région wallonne, sur le registre du conservateur des hypothèques dans l'arrondissement duquel il est situé. Aucun délai de transcription n'est fixé.

3.2.1.2. Scientific criteria

The selection of Natura 2000 sites is primarily made on scientific (ecological) basis. Only when there are equivalent possibilities from the ecological point of view, a decision may be based on e.g., economical or societal grounds.

In Belgium, the Regions (Walloon, Flemish and Brussels Capital) are authorized for nature conservation, except if it considers the North Sea, for which the Federal Government is responsible.

Furthermore, Belgium lies in two biogeographic zones: the Atlantic zone (the main part) and the continental zone (Figure 14). For Flanders, only *Voeren* (*Les Fourons*) belongs to the Continental zone.

In Table 5, an overview is given of the procedure prescribed by the European Commission (Article 4 of HD) for the demarcation of the Natura 2000 network. Reference is also made to specific additions to this procedure in the Walloon and Flemish nature legislation. One big difference between Wallonia and Flanders is that the first has not demarcated SPAs and SACs but only 'Natura 2000' sites.

In the next paragraphs, we describe the scientific 'red lines' which were followed by the Walloon and Flemish nature administration in order to make a list of proposed Sites of Community Importance (pSCIs).

Table 5. Procedure for the demarcation of Natura 2000 sites with reference to specific articles from the HD. For Flanders this can be found in Chapter 5 of the Flemish Natuurdecreet (Anonymous 2002): Art. 36bis

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Article 4 of HD	***Flanders***
Proposal of sites 'eligible for identification as Sites of Community Importance' *Art. 4 (1)* ***On the basis of the criteria set out in Annex III (Stage 1) and relevant scientific information****, each Member State shall propose a list of sites indicating which natural habitat types in Annex I and which species in Annex II that are native to its territory the sites host. For animal species ranging over wide areas these sites shall correspond to the places within the natural range of such species which present the physical or biological factors essential to their life and reproduction. For aquatic species which range over wide areas, such sites will be proposed only where there is a clearly identifiable area representing the physical and biological factors essential to their life and reproduction. Where appropriate, Member States shall propose adaptation of the list in the light of the results of the surveillance referred to in Article 11.* ***ANNEX III (92/43/EEG)*** *CRITERIA FOR SELECTING SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE AND DESIGNATION AS SPECIAL AREAS OF CONSERVATION* *STAGE 1: Assessment at national level of the relative importance of sites for each natural habitat type in Annex I and each species in Annex II (including priority natural habitat types and priority species)* *A. Site assessment criteria for a given natural habitat type in Annex I* *(a) Degree of representativity of the natural habitat type on the site.* *(b) Area of the site covered by the natural habitat type in relation to the total area covered by that natural habitat type within national territory.* *(c) Degree of conservation of the structure and functions of the natural habitat type concerned and restoration possibilities.* *(d) Global assessment of the value of the site for conservation of the natural habitat type concerned.* *B. Site assessment criteria for a given species in Annex II* *(a) Size and density of the population of the species present on the site in relation to the populations present within national territory.* *(b) Degree of conservation of the features of the habitat which are important for the species concerned and restoration possibilities.* *(c) Degree of isolation of the population present on the site in relation to the natural range of the species.* *(d) Global assessment of the value of the site for conservation of the species concerned.* *C. On the basis of these criteria, Member States will classify the sites which they propose on the national list as sites eligible for identification as sites of Community importance according to their relative value for the conservation of each natural habitat type in Annex I or each species in Annex II.* *D. That list will show the sites containing the priority natural habitat types and priority species selected by the Member States on the basis of the criteria in A and B above.*	by the Institute for Nature Conservation (*Instituut voor Natuurbehoud*) ↓ Provisional establishment: '*Vastleggingsbesluit*' **(§1)** ↓ Public enquiry by the Flemish Government within 30 days **(§2-5)** ↓ Collection of the advices, remarks and objections by the administration authorized for nature conservation, followed by a motivated advice by this administration to the Flemish Government. This advice includes advice of the IN concerning the proposed changes. ↓ Definitive establishment: '*Vastleggingsbesluit*' within 60 days **(§6)** = '*Aanwijzingsbesluit*' for SPA ↓ Publication in the State Journal within 30 days **(§7)**
Submission of the list of 'proposed SCIs' (pSCIs) to the EC **+ Publication of a reference list with the present habitats of Annex I and species of Annex II per member state.** This list will serve as basis to assess if the list of sites 'eligible for identification as sites of community importance' proposed by the member states is representative for the occurring habitats and species. If necessary, the member states are asked to propose additional areas. *Art. 4 (1) The list shall be transmitted to the Commission, within three years of the notification of this Directive, together with information on each site. That information shall include a map of the site, its name, location, extent and the data resulting from application of the criteria specified in Annex III (Stage 1) provided in a format established by the Commission in accordance with the procedure laid down in Article 21.*	**§8**

Article 4 of HD	***Flanders***
Art. 4 (4) Once a site of Community importance has been adopted in accordance with the procedure laid down in paragraph 2, the Member State concerned shall designate that site as a ***special area of conservation (SAC)*** *as soon as possible and within six years at most, establishing priorities in the light of the importance of the sites for the maintenance or restoration, at a favourable conservation status, of a natural habitat type in Annex I or a species in Annex II and for the coherence of Natura 2000, and in the light of the threats of degradation or destruction to which those sites are exposed.*	↓ Designation of the sites of this Community list as SAC by the Flemish Government within 3 months (in total within 6 years after the notification of the directive): '*Aanwijzingsbesluit*' **(§9)** ↓ Publication in the State Journal **(§9)** ('*Aanwijzingsbesluit*' for SAC-H replaces '*Vastleggingsbesluit*' **§10**)

Figure 12. The Belgian territory belongs to two Biogeographic Zones: the Atlantic and the Continental ones. The lists of proposed Sites of Community Interest (pSCIs), as delivered by the Member States to the EC, are evaluated per Biogeographical Zone, in the light of the reference list of habitats and species of these zones.

3.2.1.2.1. Scientific procedure in the Walloon region

Most of the information is based on Dufrêne *&* Gathoye (2004a).

The mission of identification and cartography of all the sites which were likely to be eligible for the Natura 2000 network was entrusted at the end of March 2002 to the *Centre de Recherche sur la Nature, la Forêt et le Bois* (CRNFB – administrative service), in order to supplement the surfaces already indicated in June 2001 to the European Commission by the Walloon Region. The time was very short (deadline: end of June 2002) because of the slowness of politicians for decision making.

The criteria to be taken into account are defined in the two Directives concerned. They are based on lists of habitats and species of community interest for which the Member States must indicate sites in a sufficient number to guarantee their good state of conservation and the operation of the network. Two types of criteria are thus used: biological criteria like lists of habitats and species, and structural criteria to evaluate the coherence of the network.

A. BIOLOGICAL CRITERIA

The Walloon Region had to identify all the sites that include priority habitats of community interest.

For the species of the HD, the measures to be taken had to relate to, at the same time, the areas of reproduction, the areas of feeding as well as the possible areas of migration. In certain cases, the populations are limited to precise sites. In other cases, such as for example bats, the species use various elements of the landscapes and the ecosystems during their life, which singularly complicates the identification of perimeters of Natura 2000 sites.

Designations for the species of the BD had to relate to at the same time areas of nesting and areas which shelter the species migrating and/or wintering.

The HD in addition defines in its Appendix III a series of criteria to identify the eligible sites to the Natura 2000 network. These criteria utilize the percentage of surface occupied by the targeted habitat on the site, the percentage of surface compared to total surface or % of the regional population, the degree of conservation of the habitats and habitats of species, the degree of insulation of the population... So a whole series of criteria which aims at being ensured

of the coherence of the Natura 2000 network for the contribution to the maintenance of the biodiversity by the conservation of the natural habitats as well as fauna and flora (Article 2, the EEC 92/43).

B. STRUCTURAL CRITERIA

For an ecological network to be effective, it should allow for the persistence of the populations of species or the operation of the ecosystems concerned. That supposes important surfaces of cores areas (what limits the rate of extinction) or a strong connectivity between these cores areas (what allows the recolonisations). It is this subtle balance between surface and connectivity that should be defined according to the biological aims targeted and to the socio-economic constraints.

In Wallonia, except for some cases like the 3 or 4 large forest solid masses or the 3 large military camps, the biodiversity of high interest occupies very limited and largely dispersed areas. To maintain a certain functional connectivity is thus essential and this connectivity must be articulated around the most natural topographic structures.

It was decided to base itself on the oro-hydrographic network to define the principal structure of Natura 2000 network because, if the ways of dispersion of genes and individuals are multiple, topography and relief (broad plains, valleys, deep valleys, cirques of the sources, cols and undulations of the top-plates) are landscape structures largely used in an active or passive (wind) way by the species to disperse. In addition, a great part of the biodiversity is distributed along the hydrographic network and the relief that it generates with initially the zones of sources, which ensure connectivity between various oro-hydrographic basins, the riverine zones along the valleys and the strong slopes generated by the relief. Lastly, the wet environments are among the most threatened areas in Wallonia and must be protected because many species and habitats targeted by the European Directives are related to these wet environments.

C. IDENTIFICATION OF PROVISIONAL CONTOURS

The ideal step would imply a systematic cartography of the territory to identify all the sites and the potential zones that shelter the habitats and the habitats of species. Considering the deadlines to be respected, another approach was implemented. Provisional contours are identified on the basis of all the data bases available to the *Centre de recherche Nature, Forêt et Bois* (CRNFB) and knowledge of the network of naturalists mobilized through the activities of the *Observatoire de la Faune, de la Flore et des Habitats* (OFFH).

All the available digitised cartographic supports (protected zones, data bases of the Sites of High Biological Interest (*Sites de Grand Intérêt Biologique* – SGIB), ecological networks, cartography of the sensitive habitats in the ZPS, detailed data bases of the species targeted by the Directives (butterflies, dragonflies, amphibians, fish, bats) and sometimes on paper supports (biological evaluation maps, soils maps, *Plans Communaux de Développement de la Nature* (PCDN) not digitalized) were used to define provisional contours.

For the birds, a specific work of synthesis was made to identify all the sites which contain species of the BD or important during the migration.

D. SUBDIVISION INTO SITES

For Natura 2000, one privileges the definition of great geographical entities which offer many advantages related on management (sufficient size to mobilize human or material resources to develop the activities of concerted management, to have much more flexibility of management in the site) and to the possibilities of sensitization and local appropriation (implementation of LIFE projects, Rural Development Plan (*Plan de Développement Rural* – PDR)...). The cutting of a more or less continuous network in "sites" is rather arbitrary. One chose to base oneself on the oro-hydrographic basins to define homogeneous entities, but that is not an absolute constraint when for example well-defined forest solid masses occupy the heads of sources of several oro-hydrographic basins. The administrative limits (municipalities, quarterings...) pose real problems of management because historically, the rivers often were at the origin of these administrative limits (right-of-way on the bridges) and from a biological point of view, it would be aberrant to manage in a not concerted and not integrated way the two sides of the same river. The logic of

the oro-hydrographic basins will ensure also certain coherence with other environmental policies like obviously the management of water for the implementation of the "Water" Framework Directive.

E. FIELD'S CHECKING AND DIGITALIZATION

A checking on the field has been quickly carried out to confirm the presence of habitats answering the criteria of the HD and to modify initially definite contours so that they correspond at best to the objective targeted.

During the fieldwork, one had identified:

- **Major zones** which correspond to habitats or habitats of species in good condition of conservation;
- **Potential zones to restore** either to reach a sufficient critical size, which ensures the long-term maintenance of the state of conservation, or to ensure an important connectivity between major zones;
- **Zones with constraints** which by their localization will automatically undergo constraints of use or positive measures of management because they are inserted into the heart or too close to major or potential zones and that certain work which could be carried out there will have an effect automatically;
- An **operational perimeter** that is based on objective elements of structure of the landscapes so that the limits of the site are most objective possible.

The perimeters are then digitalized on numerical support (1/10.000 scale) and are confronted with different other sources of information like the "sector plan" (*Plan de secteur*) or the air photographs to specify contours and to identify the possible problems which ask complementary field work, for example when the assignment in the sector plan is contradictory with the statute of Natura 2000 site.

F. ANALYSIS OF THE NETWORK SPATIAL COHERENCE.

A first analysis of the coherence of the network is carried out to evaluate how are distributed the habitats and the habitats of species in the oro-hydrographic basins by crossing the perimeters with the biological data available. Another analysis is carried out on a regional scale to check the general coherence of the network, connections between the 3 major hydrographic basins (the Scheldt, the Meuse and the Rhine), connections between the under-basins (Ourthe, Lesse, Amblève,...).

G. DEFINITION OF LEVELS OF PRIORITY

According to the presence of priority habitats or presence of populations of species, various levels of priority are identified in the sites. One distinguishes:

- **Zones of very high biological interest** (thus of very high priority) which include the priority habitats, surfaces of the habitats or the habitats of species in good condition of conservation or minimal areas to restore and areas protected by other legislations;
- **Zones of high biological interest** (thus of high priority) which include habitats or habitats of species in an average state of conservation but necessary to ensure the coherence of the short-term network or to reach a sufficient critical size or areas of connection of strong biological potential;
- **Zones of average biological interest** (thus of average priority) which shelter habitats and habitats of species already well represented, important areas of connection in the long-term, areas of potential constraints or buffer zones.

H. LIMITS OF THE IMPLEMENTED APPROACH

Without detailed cartography of the habitats or precise inventory of the populations of species, nor evaluation of the potentialities for restoration, it is impossible to immediately complete a work of irreproachable scientific quality.

A priori, the production of final perimeters should result from a detailed analysis of existing, potential, biological constraints and certain socio-economic constraints to define realistic biological objectives. And it is from these precise biological objectives that the actions to

implement, perimeters which should profit from it, and indicators of adequate monitoring should be derived. This procedure required many long-term jobs impossible to implement with the means and the time that were available. The goal of the mission entrusted to the CRNFB was thus to define best possible Natura 2000 sites perimeters on the basis of existing information. A priori, these perimeters should be more specified throughout the procedure leading to the drafting of the designation decrees.

In the HD, the procedure of identification of the sites does not envisage consultation of the landowners/sites managers to obtain their agreement. It is first a scientific inventory of the sites which could be the subject of a designation. In addition, considering the time limits, it was impossible to consult all the people who have information. It is already a very broad diversity of collaborators who could and knew mobilize themselves to complete this enormous work.

3.2.1.2.2. <u>Scientific procedure in the Flemish region</u>

The delineation of SPAs was based on the best available information at that time concerning the presence of 27 breeding bird species of Annex I of BD and important concentrations of migratory or overwintering birds (Van Vessem & Kuijken 1986). Maps were made by the administration for spatial planning and environment *('Administratie Ruimtelijke Ordening en Leefmilieu' - AROL*).

The demarcation of SACs was conducted in two phases. In first instance, these delineation were followed:

- For this proposal, the *IN* gathered available data from a.o. *Afdeling Natuur* (*AMINAL*).
- Based on the "Interpretation manual of European Union Habitats" (European Commission 1996) and the comparison of the habitat types occurring in Flanders with the CORINE habitat types (Hermy 1993)
- The basic principle was to include sites which contained at least one well developed form of a habitat type of Annex I and/or which were representative for Flanders, or containing several habitat types. The total surface was aimed to consist for more than 80% of habitat types of Annex I (Martens 2001).
- As far as possible, the proposed delineation took account of the proposed delineation for the ecological network aimed at in Flanders: *de Groene Hoofdstructuur* and the *Biologische waarderingskaart* (*BWK*) (Martens 2001).
- Due to the highly fragmented character of nature in Flanders, often complexes of sites were proposed instead of big habitat entities: with a rather similar habitat type and within the same geographical entity or when the sites are more broadly related to each other like the midstream of rivers (Martens 2001). In these complexes, point-shaped, and scattered habitats of *Triturus cristatus* and line shaped habitats of freshwater fish were combined with proposed sites.
- Recommendation to not include sites with species of Annex II of which the viability could not be proved (single observations by just one person): e.g. *Vertigo moulinsiana* and the moss *Drepanocladus vernicosus*.
- Exact procedure: see Anselin & Kuijken (1995), based on Hermy & Kuijken (1993, 1994).

In second instance, after the *met redenen omkleed advise* of the EC, the completion and adaptation of the delineation proposals of 1996 was primarily intended for the habitat types and species for which the evaluation had proved 'insufficient'. At the same time, one aimed at the amelioration of the cover of a number for Flanders very valuable habitat types and species and at increasing chances for sustainable protection and management. This was to be achieved by more connected units and ecologically related systems and the inclusion of buffer zones against external influences. A number of criteria were established for formulation and evaluation of the proposals (Martens 2001).

In this second stage of this delineation process, more consultation of (or even interference with) other sectors may be discerned. The main reason may be that only at this stage, the implications of Natura 2000 were increasingly being understood by policy makers after problems in the ports of Antwerp (Deurganckdok, see for instance Meire *et al.* 1998) and Zeebrugge.

Scientific procedure applied for the preparation of this second list of proposed sites (Anselin *et al.* 2000, Heutz & Paelinckx 2005):

- Habitat types (of Annex I) in the "Interpretation manual of European Union Habitats" (European Commission 1996) were compared with the habitat typology of the *Biologische Waarderingskaart* (*BWK*) (1st version: De Blust *et al.* (1985); 2nd version: Paelinckx *et al.* (*in prep.*)). In addition, old forest sites were identified by comparing de location of current forests with old maps (Ferraris). The *IBW* set up a methodology to allocate the Flemish forest vegetation to one of the habitat types of Annex I (Vandekerkhove & De Keersmaeker 2000). Per habitat type (of Annex I), selections were made of the recent digital *BWK* (2nd version). For these habitat types for which no recent *BWK* map was available, or for which a 'translation' to the *BWK* was impossible, or which corresponded to more than one *BWK* code, additional information was sought within the *IN* and *AMINAL*.
- The presence of species (of Annex II) and their populations was assessed using data of fauna and flora databases, local information, publications and expertise of *Afdeling Natuur* (*AMINAL*) and several external specialists.
- For more details about the exact procedure, we refer to Anselin *et al.* (2000).

A 'system approach' was carried out: not only present habitats, but also potential habitats (after restoration or appropriate management) were included. Furthermore, an overlay was made with digital aerial photographs (1999) in order to achieve a logical delineation. As a result, concentrations of buildings, built-on lots, subsectors with building licences, roads, etc. were not included into the delineation, as far as possible (Martens 2001 and for an illustration: see Box 1). The intended buffer zones were, however, only minimalistically delineated (Martens 2000, WWF 2000).

BOX 1. Illustration of the efforts made during the second stage of the process in order to achieve a 'logical' delineation.
During the delineation procedure of the pSCIs, there has been no official contribution of the *VLM*. In spite of that, there are several lines of evidence proving a direct or indirect input from the *VLM*:
Informal consultation has had place in several regions, as a result of which pieces of land were omitted from or included in the second list of sites eligible as SCIs, or as a result of which border corrections were made. For instance, in the land consolidation project ('*ruilverkavelingsproject*' - *RVK*) 'Grootloon', a big part of the surface of the first delineation was omitted from the second delineation, in order to safeguard land destinated for agricultural landuse against orders or prohibitions which are inevitably linked with the SAC-H status. However, another part was just included because it was meant for creation of 'new nature' in the *RVK*.
In other cases, where there had not even been informal consultation, it was clear that *ANB* had used the data gathered by inventarisations of the *VLM* in the framework of *RVK* projects. For instance, a part of the area involved in the *RVK* project 'Sint-Lievens-Houtem' was included as site eligible as Sites of Community Importance (SCI) in 2002 (and not in 1996) without informal consultation. However, overlaying this map with the detailed map of the *RVK*, one can see that the area included as site eligible as SCI, corresponds exactly with the area set free for nature in the *RVK* project. The other way around, areas have been omitted from the list of sites eligible as SCIs because thorough inventarisation of nature values in the framework of a Nature arrangement plan ('*Natuurrichtplan – NIP*') prove that the sites were not as important for inclusion (e.g. the *NIP* 'Meetkerkse Moeren')
However, in a few rare cases, discrepancies between the RVK and the SCIs have been created, by a lack of cooperation (e.g., the *RVK* 'Weelde-Zondereigen' where 6 ha of land set for agriculture has been assigned as SCI).

Recognized, terrain acquiring organizations were asked by Afdeling Natuur to do suggestions, although the timespans were too short for sound scientifical foundations. NGOs, among which the WWF have proposed extra sites on their own initiative. De cooperation with NGOs may be considered as relatively good (WWF 2000).

For this list, the objective was to include minimum 25% of the total area/number of populations of a specific habitat/species in the member state and the specific biogeographical region. A comparison of these percentages with these of the first delineation were indicated in a matrix, so as to indicate the improvements in the reviewed proposal of sites (pers. comm. Els Martens).

The delineation of this second list of proposed sites was more detailed than the first list of 1996. The areas digitalized in 1996 at 1/50.000 were re-digitalized at 1/10.000, thereby performing necessary border corrections in order to avoid discussions about the delineation.

3.2.1.3. Review of what happened

In what follows, we describe the procedure followed by the Flemish and Walloon governments to implement the BD and HD and to delineate the Natura 2000 network. In appendix, this is described for the Brussels Capital Region and the North Sea.

3.2.1.3.1. Steps taken in the Walloon region

Between 1987 and 1989, 13 Special Protection Areas (SPAs) were initially indicated, in application of the BD, that is to say 468.000 ha of which 180.000 ha of sensible areas for the protection of 52 species of the BD in Wallonia. But there was no juridical protection of these 13 SPAs, because they were not published in the State Journal (*Moniteur*) (Anonymous, ?). 101 species of the BD are present in Wallonia of which 2 priority species : the Great Bittern (*Boraurus stellaris*) and the Corn Crake (*Crex crex*) (Dufrêne *&* Gathoye, 2004a).

The HD was implemented in the Walloon law by the 6th December 2001 Decree, which modified the Law on Nature Protection of the 12th July 1973. In Wallonia, a great number of the natural and semi-natural habitats with high patrimonial value, present on the territory, are targeted by the HD. 44 habitats of community interest, of which 10 are priority habitats, are present. They cover practically all the types of environments and ecological situations (Dufrêne *&* Gathoye, 2004a). 31 species of the directive Habitats are present in Wallonia. The biological groups are diversified and representative of different environments, complementary to the habitats (Anonymous, 2007d).

A. RESULTS OF THE SCIENTIFIC SELECTION

Initial selection on exclusively scientific basis covered a surface of 281.346 hectares (either 16,6% of Wallonia). Following some inter-cabinets discussions, some parts were withdrew from the sites for socio-economic considerations (Born, ?).

For example:

- Several sites were withdrawn for the interest of the quarries sector: calcareous grasslands, calaminarian grasslands, sandpits...;
- Some municipalities, e.g. in Walloon Brabant, had “good contacts” with the regional authorities and answered to withdrawn all Natura 2000 sites present on their territory;
- Some private areas were withdrawn in the interests of influential real estate agents;
- Areas were withdrawn because of projects of public infrastructures such as motorways…

B. THE WIDE LIST OF NATURA 2000 SITES.

At the end of June 2002, a wide list of sites covering a surface initially of 223.000 ha, and then supplemented to reach approximately 230.000 ha, has been given by the cabinet to the Walloon Government for evaluation and analysis. These 230.000 hectares were added to the 58.000 hectares already indicated (Dufrêne *&* Gathoye, 2004a).

At the beginning of July, an analysis site by site was carried out with an evaluation of the potential economic impact of designations. It was then requested from the CRNFB to establish a classification of the various sites. A fast analysis has led to establish a classification in three categories (A = 160.000 ha, B = 59.000 ha and C = 55.000 ha) (Dufrêne *&* Gathoye, 2004a).

It is in particular on the basis of this classification that the Walloon Government commits itself, on July 18, 2002, on a list of sites and a surface ranging between 215.000 and 220.000 ha (Dufrêne *&* Gathoye, 2004a).

C. SUBMISSION OF A LIST OF PSCIS TO THE EUROPEAN COMMISSION.

On September 26, 2002, the Walloon Government makes the decision to define a list of 231 sites covering 217.672 hectares (either 12,7 % of the Walloon territory). On the basis of this decision, the CRNFB has geographically prepared the most coherent possible network cutting in the most homogeneous units and a new coding of the sites (Dufrêne & Gathoye, 2004a).

Complements are brought on February 3, 2004 to answer insufficiencies identified by the European Commission. This decision relates to a surface of 3500 ha (Anonymous, 2007d).

The Natura 2000 network counts therefore 239 sites then covering 220.828 ha (either almost 12,9 % of the Walloon territory). On December 7, 2004, the European Commission adopts the list of the sites concerning the Atlantic and Continental biogeographic areas. None of the Walloon proposals is rejected. The decision relates to the sites indicated under the terms of the Directive Habitats. The SPA’s are directly integrated into the Natura 2000 network (Anonymous, 2007d).

A last decision, bearing on a surface of 100 ha, is made on March 24, 2005. The Natura 2000 network currently counts 240 sites that represent 220.944 ha (either 13% of the regional territory) (Anonymous, 2007d).

D. CRITICAL POINT OF VIEW OF NGOS ABOUT THE DELINEATION

Some NGOs gave critical opinions about the way the first steps of N2000 have been implemented.

- Within the framework of the implementation of the HD, the perimeters of the SPAs are re-examined. More than 154.000 ha of significant zones previously inventoried were taken again whose more than 114.000 ha overlap the proposed pSCId for the HD. The revision of the 13 framework perimeters and the cores and sensitive zones that they contain is carried out in a nontransparent way and within the framework of the application of another directive. This revision in addition involved the disappearance of considerable significant zones and cores. These invaluable zones are thus found without statute of protection.
- There is confusion in the cartography of the SPAs and pSCIs. (Anonymous, ?)
- Throughout process of designation, the Walloon Region showed no transparency. The interval of time between the declaration of September 26, 2002 and the transmission of the Natura 2000 cards at the Commission left time for the Region to re-examine the contents and the cartography of the sites without any visibility (Anonymous, ?).
- For the part of the Walloon Region located in Continental zone, the list of the sites suggested is overall satisfactory, except for 3 habitats (xeric sands calcareous grasslands (6120), calaminarian grasslands (6130), mixed forests with oaks and alders (91F0)) and for a species (*Triturus cristatus*). The case of the bats should be better studied in regard to the lack of designation of sites of reproduction (majority of the sites of wintering having been taken again) (Anonymous, ?).
- For the part of the Walloon Region located in Atlantic zone, considerable sites disappeared in particular in the Dyle valley, the Scheldt basin and the area in the south of Binche. An insufficiency is noted for the designation of sites for the alluvial forests (91E0), the crested triton and a fish (bitterling). A detailed analysis should be carried out for the *Nardus* grasslands (6230) and a fish (chub) (Anonymous, ?).

All these remarks were submitted to the Commission in the name of environmental associations: RNOB, Aves, IEW and WWF. With regard to the designation of the pSCIs, these remarks were defended during the biogegraphic meeting organized by the European Commission in Brussels Tuesday May 13, 2003.

3.2.1.3.2. <u>Chronology of the steps taken in the Flemish region</u>

All area calculations are based on Van Reeth & Goethals (2006).

A. DELINEATION OF SPECIAL PROTECTION AREAS OR SPAS IN FLANDERS

Based on: NARA 1999 (Anselin *et al.* 1999), Symens 2000, NARA 2003 (Tack *et al.* 2003), NARA 2005 (Van Reeth & de Bruyn 2005), Overview of species per SPA (Anonymous 2005b) and Van Reeth & Goethals (2006).

<u>* 02/04/1981</u>

The BD is applicable in Flanders.

<u>* 1986</u>

Proposal of the Institute for Nature Conservation (*Instituut voor Natuurbehoud – IN*) to the Belgian Government concerning delineation of SPAs (Van Vessem & Kuijken 1986).

* There has been no formal consultation for this delineation, only interadministration and intercabinettary consultation (pers. comm. Els Martens, *ANB*).

<u>* 17/10/1988</u>

Decision of the Flemish Executive ('*Besluit van de Vlaamse Executieve – B.Vl.Ex.*' (B.S. 29/10/1988): Anonymous 1988): designation of SPAs ('***Aanwijzingsbesluit***') following Art. 4 of

BD: **23 sites** covering **97.272 ha**. Flanders was one of the first regions to designate SPAs (Natura 2000 barometer: EC 1996).

- made for **27 bird species of Annex I** (of which 8 important species were put on a list of 'prioritary' species, which was compiled for selection of projects for co-financing) and **20 species of Annex II** occurring in Flanders.
- 4 of these sites were indicated in 1984 as Ramsar sites

* 20/09/1996

Decision of the Flemish Government ('*Besluit van de Vlaamse Regering – BVR*' (B.S. 12/10/1996)) adding another site to the '*non-integrally protected*' SPAs: '*poldergraslanden en hun microreliëf*' (no additional surface).

* 23/06/1998

Decision of the Flemish Government (B.S. 25/07/1998) for developments in the port of Antwerp: 507 ha deleted from SPA and compensated with a new SPA site of 740 ha ➔ total surface = (97.272 – 507 + 740) ha = **97.505 ha**.

* 17/07/2000:

Decision of the Flemish Government (B.S. 31/08/2000) for developments in the port of Zeebrugge: 282 ha deleted from SPA and compensated to the same SPA site for 520 ha ➔ total surface = (97.505 – 282 + 520) ha = **97.743 ha**, round up to 97.745 ha.

* 24/01/2001

The European Commission approved the sixth Environment Action Programme (*'Milieuactieprogramma' – MAP*) which laid down that the member states had to establish a management plan for every SPA at the very latest in 2004. In Flanders, this was interpreted by indicating the establishment of Nature Objectives Plans (*Natuurrichtplannen*) for all SACs in the *Wijzigingsdecreet*.

* 22/07/2005

Decision of the Flemish Government (B.S. 12/09/2005): adding a new SPA: 'Kustbroedvogels te Zeebrugge-Heist': 498 ha ➔ total surface = (97.745 + 498) ha = **98.243 ha** = 7.3 % of the total area of the Flemish Region (13.522 km²).

For an overview of the habitats and species per site: see Anonymous (2005b).

Remark: the Decision of the Flemish Government of 1988 for the designation of SPA makes a distinction between 7 *integral* and 16 *non-integral* SPAs. According to Art. 36bis, § 13 of the *Natuurdecreet* (Anonymous 1998, 2002), the total area within the perimeter of the integral sites is indicated as SPA. In contrast, in the non-integral sites, only the green destinations on the regional spatial zoning plan (*gewestplan*) and a number of specific habitat types (indicated per site), have SPA status (Art. 1, § 3 of the *BVR* of 17/10/1988), but according to Art. 36ter, the total area of all SPA have to be taken into account for project assessments (pers. comm. E. Martens).

At the moment, a lot more information is available about the presence and abundance of bird species in the Flemish Region than there was in 1988, when the SPAs were designated. The last inventory of 'important bird areas' of Birdlife International indicated that in Flanders several 'important bird areas' fulfill all the criteria for delineation as SPA (Symens 2000). Because the BD states that all relevant sites have to be indicated, it is highly possible that extra sites will be indicated in the future (Decleer 2007).

B. DELINEATION OF SPECIAL AREAS OF CONSERVATION (SACS)

Based on Anselin *et al.* (1999) for a review of the first stage of delineation of proposed Sites of Community Interest or pSCIs and De Roo (2001) and Tack *et al.* (2003) for the review of this list (from 2000 onwards).

* 21/05/1994

The HD is applicable in Flanders.

* 1995

Proposal of the *IN* to the Flemish Region concerning inventarisation and delineation of pSCIs (Anselin & Kuijken 1995). This proposed delineation included **40 sites**, covering **59.480 ha**.

* 12/07/1995

The Flemish Council for Nature Conservation (*Vlaamse Hoge Raad voor Natuurbehoud*) unanimously approved the proposal of the *IN*.

*** 14/02/1996**

Decision of the Flemish Government: first list of pSCIs (**40 sites** with a total area of **70.069 ha**) approved.

- 73% of the total area was located in the provinces of Antwerp and Limbourg
- Ca. half of the area corresponded with a green destination on the Flemish spatial zoning plan
- Ca. 30.000 ha thereof was also indicated as SPA (source: answer of the Minister of Environment to a question of J. Malcorps in the Flemish Council: *Vlaamse Raad – Vragen en Antwoorden*).
- In this *BVR*, no surfaces of the sites were published. When re-digitalising these sites, the surface was recalculated and assessed to cover **70.069 ha** (Van Reeth & Goethals 2006).
- designated for **44 habitat types of Annex I (of which 8 priority habitats)** and **20 species of Annex II** occurring in Flanders
- A number of territories of fish and bat species which were proposed (as points and lines) by Anselin and Kuijken (1995) were not withdrawn in this principal decision of the Flemish Government.

* 25/04/1996

Announcement of the names and data of the Flemish sites to the permanent representative of Belgium.

* 29/05/1996

The complete files were sent by the Belgian permanent representative to the appropriate services within the European Commission (Databank Natura2000, Instituut voor Natuurbehoud, 1996), together with the data concerning 3 Brussels, 58 Walloon and 1 federal site(s).

* May 1998

Formal approval of the EC regarding the reference list of habitats and species for both the Atlantic and Continental Biogeographic regions of Belgium (Anselin & Dufrêne 1998).

* 1999

Scientific evaluation by the ETC-NC in Paris during the seminar for the Atlantic biogeographic region.

* 23/07/1999

'proof of default' ('*ingebrekestelling*') by the European Commission (by letter) directed upon the Belgian Government (ref. 20.1299/XI/016513 – DG ENV.D.2) because of insufficient submission (mainly in Wallonia, Tack *et al.* 2003): insufficient surface of the habitats (especially forest and valley grasslands) and an insufficient number of populations of species in Flanders (for an overview of these: see De Roo 2001, p. 390-391).

* Sept. 1999

Demonstration of the results of the scientific evaluation by the ETCNC: each member state received a list of habitats and species of which the area or the number of populations, respectively were insufficient in the first list of pSCIs to the commission:

- Less than 20% of the total area/number of populations of a specific habitat/species in the member state and the specific biogeographical region was viewed a problematic
- Between 20 and 60% was further discussed case-by-case during the biogeographical seminars
- More than 60% was considered as sufficient

* 10/02/2000

met redenen omkleed advice (*'met redenen omkleed advies' – MROA*): Concerning BD (source: coordinated answers of the Flemish Ministres to a question of C. Decaluwe in the Flemish Council: *Vlaamse Raad – Vragen en Antwoorden*):

- conversion of Art. 4: status of the designated SPAs
- inadequate transposition of HD and BD in the Flemish legislation: see De Roo (2001): especially Art. 6 of HD.
- conservation goals (Art. 6) in the domain 'Zwarte Beek'
- lacune in the federal legislation concerning the protection of exotic species (for which a slight adaptation of the Flemish rules was necessary)

- no official notification of the sites to the Flemish citizens by a publication in the State journal ('*Staatsblad*') (De Roo 2001).

* 17/07/2000

Decision of the Flemish Government for expansion of an industrial zone in Oostende (Plassendale): 17 ha dropped and compensated for 76 ha ➔ total surface = (70.069 – 17 + 76) ha = 70.128 ha.

* 09/2000:

Press release in which was announced that Belgium would be summonsed to appear in European Court of Justice (De Roo 2001).

* 06/11/2000

Additional 'proof of default' ('*ingebrekestelling*') by the EC upon the Belgian government (see De Roo 2001, p. 390-391): this and not the former proof of default, was the most important for Flanders because this proof of default specifically indicated shortcomings.

- For 15 habitat types and 9 species of Annexes I and II, respectively, additional area had to be designated: e.g. habitat types 2110, 2310, 2330, 6430, 7110 and species: several bat species and *Triturus cristatus* (see Martens 2001).

* March 2000

Start-up of the administrative preparation phase for the review of the pSCIs, under authority of the Minister of Environment. Under coordination of Els Martens (*AMINAL*, *Afdeling Natuur*), the authorities in charge of the management of the sites and having information about habitats and species, were brought together: *AMINAL*, *Afdeling Natuur* and *Afdeling Bos & Groen*, the Institute for Nature Conservation (*IN*) and the Institute for Forest and Wildlife (*IBW*). These authorities discussed during several meetings on this topic.

* Sept. 2000

Finalization of the administrative preparation phase: a list, including maps (1/10.000), of the total reviewed sites (including the existing sites proposed in 1996 as reviewed when necessary and the additional sites) was made up (Anselin *et al.* 2000) and presented to the Flemish Minister of Environment, Vera Dua (*Agalev*, 1999-2004): **45 sites**, covering **108.738 ha** (Anselin *et al.* 2000).

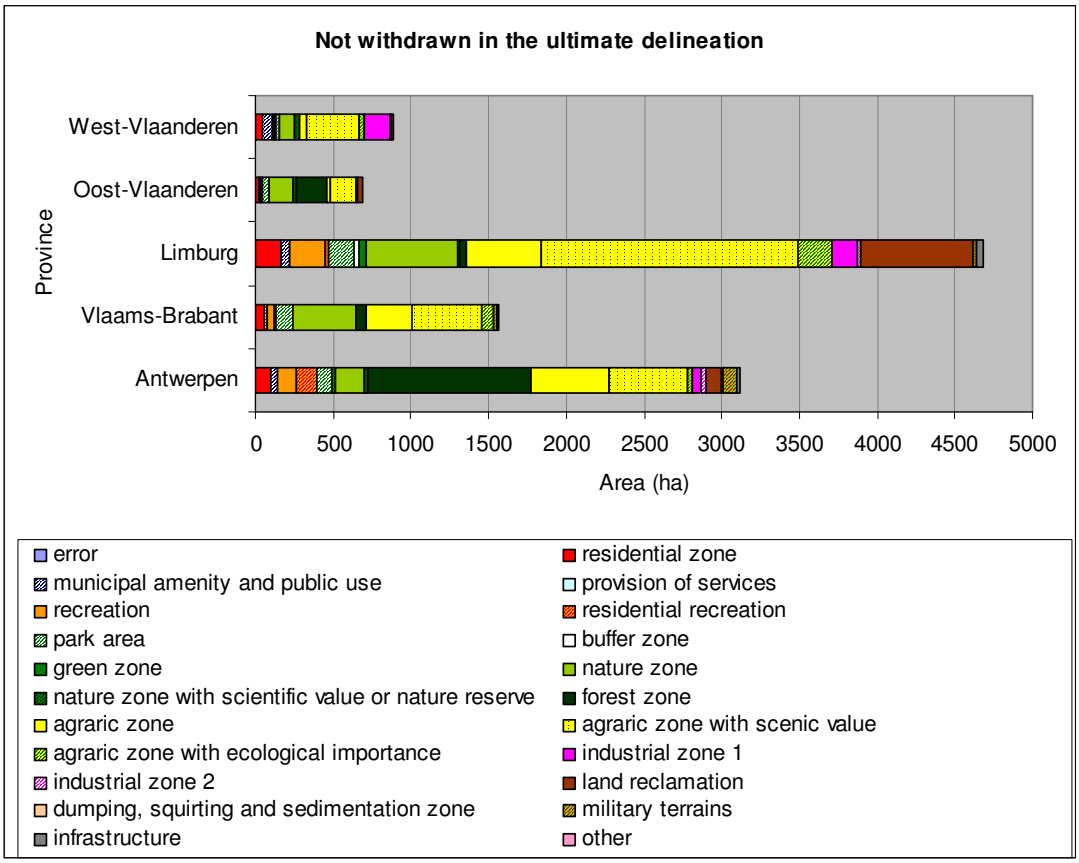
* End 2000

A 'consultation board' group ('***klankbordgroep***') was established at two levels (given in order of chronology).

- Level 1: '***Ontwerpbesprekingen***': discussion of this proposed list of sites within an administrative working group ('*Administratieve werkgroep*'): the steering committee of the strategic project '*Verweving en Afbakening - VER-AF*', in which the administrations of forest and horticulture (*Afdeling Bos & Groen*, *Afdeling Land*, *Administratie Land- en tuinbouw - ALT*) and the '*Vlaamse Landmaatschappij*' (*VLM*), the coordinators of *VER-AF*, were involved. The strategic project *VER-AF* was erected under the cabinet of the Minister of Environment, in order to demonstrate that the pSCIs laid within the planned nature and forest structure (*Vlaams Ecologisch Netwerk* or *VEN* and *Verwevings- en Ondersteuningsnetwerk*, *IVON*), thus that the Natura 2000 delination was well-found.
- Level 2: **Inter-cabinettary consultation** (*interkabinettaire werkgroep – IKW*, which precedes the decision making of the Flemish Government and in which, in principle, all political parties are represented at each level, e.g. agriculture, …): During this process, several administrations were consulted (*administratie Natuurlijke Rijkdommen en Energie*, *administratie Waterwegen en Zeewezen*, *administratie Wegen en Verkeer*, *afdeling Ruimtelijke Planning* of the *Administratie Ruimtelijke Ordening, Huisvesting en Monumenten en Landschappen - AROHM*).

Under the legislature of Dua as Minister of Environment, **another 'consultation group'** was set up, including representatives of agriculture, nature, environment and industrial associations (e.g., the '*Boerenbond*', '*Natuurpunt*'), but also local land owners (which united them in the association '*Landelijk Vlaanderen*'). This group was informatively consulted in order to discuss bottlenecks, under the form of information sessions and there was also a consultation with the Flemish Environment & Nature Council (*MINA-raad*).

a)



b)

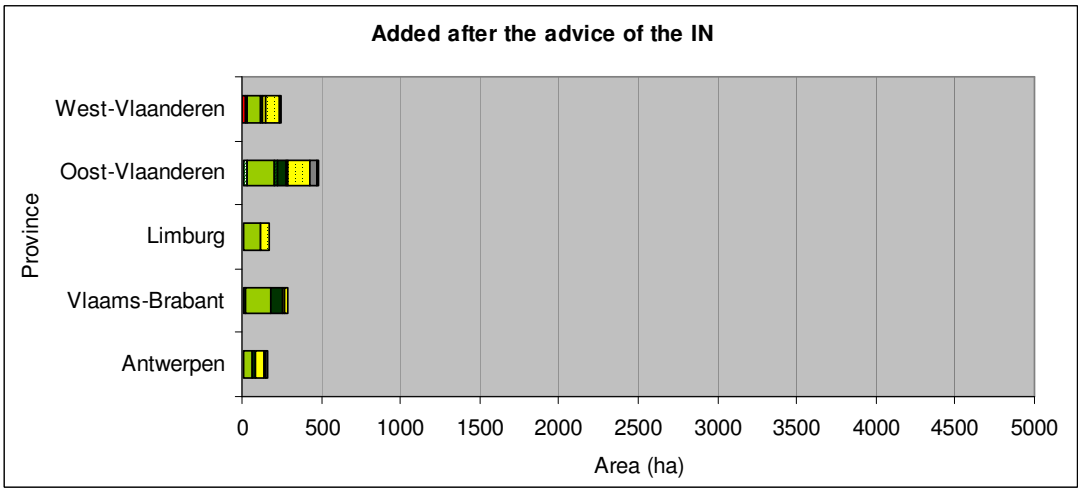


Figure 13. Structures taken out from (a) or added to (b) the proposal of pSCIs by the Institute for Nature Conservation (*IN*), obtained by a comparison of the advice by the IN in 2000 with the final delineation of pSCIs in 2001 and laid over Flemish the spatial zoning plan.
'Residential zone' = codes 01**; 'municipal amenity and public use' = 02**; 'provision of services' = 03**; 'recreation' = 04**, except for 'residential recreation' = 0402 & 0403; 'park area' = 05**; 'buffer zone' = 06**; 'green zone' = 0700, 0731, 0733, 0734, 0735; 'nature zone' = 0701, 0710, 0730, 0732, 0736-0740; 'nature zone with scientific value or nature reserve' = 0702; 'forest zone' = 08**; 'agraric zone' = 0900, 0916, 0930, 0931; 'agraric zone with scenic value' = 0901, 0911-0915; 'agraric zone with ecological importance' = 0910; 'industrial zone 1' = 10**; 'industrial zone 2 (small companies)' = 11**; 'land reclamation' = 12**; 'dumping, squirting and sedimentation zone' = 13**; 'military terrains' = 1400; 'infrastructure' = 15**; 'other' = 16**, 17** and 777*.

As a result of these consultations, a number of specific structures were taken out from the proposed delineation (Figure 15):

- agricultural areas which were not concerned as 'habitat-worthy', were not withdrawn in the delineation proposal, in general, the administrations involving agriculture were not very happy to see the Natura 2000 network covering yellow agriculture destinations: *Afdeling Land* and *ALT* set conditions for their acceptance of this list: some areas should be assigned to *IVON* instead of *VEN* (De Roo 2001). However, also through the nitrate directive, there was a growing realisation that agriculture also had to care of the environment;
- there was (hard) opposition of *Afdeling Bos & Groen* to agree with the surface of forests included in the delineation;
- 'hard' destinations (houses in nature areas, industrial area, …) near the edges of the sites were taken out from the maps (*pers. comm.* E. Martens, *ANB* and N. Boone, *IN*), but this does not mean that no hard structures are still included in the Flemish Natura 2000 network, for instance, areas with high nature potential, but which were not yet built-on or for which no building licenses were approved, were still included in the list if it could not be proven that already enough surface of the specific habitat type was already included.

At the insistence of the Flemish Government, it was decided to request for an **independent 'peer review'** by a scientific commission of external experts (superseded by Prof. Dr. R. Verheyen – UA, organized by *Afdeling Natuur* and performed in parallel with the IKW). This peer review had to give an answer to the question if (a) the applied method was scientifically sound and (b) enough sites were selected for a possible approval by the EC. In fact, the scientific basis and interpretation used by the *IN* was questioned by other administrations (pers. comm. K. Sannen, *ANB*). For this peer review, all possible scientific information was consulted. The answers were positive, which was unexpected and not desired by some authorities. This peer review even advised to extend the delineation in order to create more clarity for the people in the field, e.g. extend sites up to river borders or the other way around, omit small areas devided by a waterway or a railway from the core area (pers. comm. E. Martens, *ANB*).

Besides the consultations listed above there was **no formal overall public consultation** (pers. comm. E. Martens, *ANB*).

*** 04/05/2001**

Decision of the Flemish Government ('*Beslissing van de Vlaamse Regering*'): approval of the complete list of pSCIs (reviewed and additional sites) and submission of this list to the European Commission. This list included **38 sites** with a total area of **101.891 ha** (Overview of species per BD site, Anonymous 2005a).

DG Environment had set the deadline for this second submission at July 2000; the Flemish Government had delayed this deadline to early April 2001 (within the framework of the approval of the Rural Development Programme 2000-2006, which was in Wallonia related to the delineation of Natura 2000 sites).

- designated for **44 habitat types of Annex I (of which 8 priority habitats)** and **22 species of Annex II** occurring in Flanders
- 101.891 ha = 7.5 % of the total area of the Flemish Region (13.522 km²)
- Compared to the first list of sites from 1996, 10.000 ha were omitted (mainly because of corrections from the adaptation of the scale from 1/50.000 to 1/10.000) and 42.000 ha were added (see De Roo 2001, p. 389).
- Analogous maps at 1/20.000 were distributed to the local authorities.
- Inclusion of the deletion and compensations in the site 'Schelde- en Durmeëstuarium van de Nederlandse grens tot Gent' because of the building of the Deurganckdok: 4149 ha in 1996 and 60.007 ha in 2001 (Van Reeth & Goethals 2006).
- 36.635 ha is delineated as SPA and as pSCI, therefore, the total area indicated for Natura 2000 is 163.040 ha.

*** 24/05/2002**

Formal Decision of the Flemish Government concerning the proposed sites **= '*Vaststellingsbesluit*'**, including the names of sites, location, habitats and species for which the site is designated and overview maps

This decision came nearly two years later than the date planned (July 2000) for definitive approval of this Decision by the Flemish Government (decided by the Flemish Government after the MROA of the EC concerning publication of the SPA maps, see De Roo (2001)).

* 17/08/2002

Publication of the '*Vaststellingsbesluit*' of May 2002 in the State journal, together with the maps of the proposed sites (merely to indicate to the EC that they have been made public): '*Besluit van de Vlaamse regering tot vaststelling van de gebieden die in uitvoering van artikel 4, lid 1, van Richtlijn 92/43/EEG van de Raad van de Europese Gemeenschappen van 21 mei 1992 inzake de instandhouding van de natuurlijke habitats en de wilde flora en fauna aan de Europese Commissie zijn voorgesteld als speciale beschermingszones*'.

Maps at scale 1:20.000 have been passed on to the provinces and town councils. For an overview of the habitats and species per site: see Anonymous (2005a).

*** 07/12/2004**

Evaluation of the proposed sites by the EC and **approval of these sites as SCIs** (Eur-Lex Publication L382 of 28/12/2004 and L387 of 29/12/2004).

The deadline for the list of SCIs was first set at October 2000 and later September 2001.

The sites, approved by the EC as sites of community importance (SCIs) thus do not yet have the status of special areas of conservation (SACs) in Flanders. The decision of the Flemish Government which has to definitively assign these sites as SACs ('*Aanwijzingsbesluit*') is still under preparation.

Although Art. 36ter §§ 2-4 (*Natuurdecreet* – Anonymous 1998, 2002) already apply to these SCIs (preventive conservation measures and appropriate assessments in case of plans of projects) as stated in Art. 36bis § 15, it would be a tremendous improvement for the users and all administrations concerned with these SCIs if an '*Aanwijzingsbesluiten*' would be published. For instance, the positive and pro-active conservation measures (Art. 36ter § 1) still do not apply to third persons (private owners).

Therefore, *ANB* is now preparing a '*Procedurebesluit*', which would establish the procedure for indication ('*aanwijzing*') of the sites as SPAs, the drawing up of conservation goals ('*instandhoudingsdoelstellingen*' – *IHDs*, see below) and the way they should then be published with the objective to publish a decision for each site and not for the whole list together as originally indicated in the Decree for Nature Conservation.

3.2.1.4. The resulting Natura 2000 network in Belgium

In Table 6 and 7, we give an overview of the European habitat types and species for which Special Areas of Conservation had to be delineated in Belgium.

3.2.1.4.1. Analysis of the network in Wallonia

Currently, 120.000 hectares (60%) of the 199.757 hectares identified like ZSC correspond to habitats of Appendix 1 of the HD. Only 30% of these 120.000 hectares are considered as being in a good state of conservation. The other zones correspond either to habitats of species (including the Birds), or to zones necessary for the spatial structure of the network to ensure a certain continuity or minimum size of certain zones (to be maintained or restore), or to zones of production isolated in the Natura 2000 sites (Dufrêne *&* Gathoye, 2004b).

The forests dominate in the Natura 2000 sites. More than 70% of the network consists of forests of which two thirds are occupied by leafy trees (116.000 hectares) and a third is dominated by coniferous trees (43.000 hectares)! That accounts for 30% of the total Walloon forests (Dufrêne *&* Gathoye, 2004b).

The other major soil occupations are agricultural land (11,4%) and grasslands (8,1%). Peatlands (2,1%), transition vegetations (1,7%), urbanised areas (1,6%), shrubs and heathlands (1,3%), marshes (0,3%), stagnant and running waters (0,3%), semi-natural grasslands (0,3%) and quarries (0,1%) are less represented (See graph in appendix) (Anonymous, 2007d).

The biggest part of existing peatlands and semi-natural grasslands in Wallonia are included into Natura 2000 areas. Natura 2000 involves less than 60% of the area of existing marshes and

heathlands. Quarries and agricultural land are not very concerned (less than 5%) (See graph in appendix) (Anonymous, 2007d).

The analysis of the distribution of the different zones of the sector plan in the Natura 2000 network show us that, logically, the rural zones dominate in the Natura 2000 sites with approximately more of two thirds of forests and 15% of agricultural zones. More than 32.000 hectares of agricultural zones profit from the statute of Natura 2000 sites, which represents less than 4% of the whole of the agricultural zones existing in Wallonia. The 8479 hectares assigned to the public services represent in fact the various army grounds of which three larger (Elsenborn, Marche-en-Famenne and Stockem-Lagland) are biologically remarkable sites. Lastly, the urbanisable zones (economic, habitats, leisure and extraction zones) represent 1778 hectares together. These zones were generally selected because of their high biological interest and because they were either under very difficult ecological conditions (strong slopes, alluvial beds of rivers), or that the economic speculation is abandoned or was already carried out (old quarries), or that the site profits already from a statute of protection (natural reserves, wetlands of biological interest or underground cavities of scientific interest) (Dufrêne *&* Gathoye, 2004b).

The first report about the conservation status of community interest habitats present in Wallonia has been established during 2007. It specifies that almost all these habitats are in a very bad, unfavourable state of conservation, except for inland dunes (2330), some rivers (3260 and 3270), xerothermophilous formations with *Buxus* (5110) and caves (8310) (Dufrêne & Delescaille, 2007).

3.2.1.4.2. Analysis of the network in Flanders

In general, Flanders has to a great extent accepted and applied the ecological principles of the HD. This is illustrated by the fact that Flanders has also included into the network sites 'potentially' including a Natura 2000 habitat type. This may be the result of the fact that (pers. comm. G. Raeymaekers, *FOD Veiligheid Voedselketen, Volksgezondheid en Leefmilieu*):

- annex III of the HD was interpreted in a very strict sense (while other countries did not make a total assessment
- one was planning the Flemish Ecological Network (*Vlaams Ecologisch Netwerk – VEN*).

As a result, many proposed LIFE projects could be carried out in Flanders.

In summary, Flanders has delineated sites for following habitats and species:

- 44 habitat types of Annex I of the HD (Annex I of the Flemish Nature Decree or *Natuurdecreet*, Anonymous 2002).
- 18 animal and four plant species of Annex II of the HD (Annex II of the *Natuurdecreet*, Anonymous 2002).
- 66 bird species of Annex I of the BD (Annex IV of the *Natuurdecreet*, Anonymous 2002).

Furthermore, the Flemish government needs to protect 30 animal and four plant species of communautary importance of Annex IV of the HD (Annex III of the *Natuurdecreet*, Anonymous 2002).

3.2.1.4.3. Continuity of the network

Since in Flanders, the delineation of sites was prepared by the INBO at the province-level, this might have caused some discontinuities at the province borders. For instance, because Vlaams-Brabant has relatively large forest complexes, smaller forest fragments were not included in the list in this province, while in e.g. West-Vlaanderen fragments of this size were included (pers. comm. N. Boone, *INBO*). Also in Wallonia, delineation differs considerably from one region to the other (e.g…..).

Despite advice of the *INBO* to the Walloon government in order to join cross-border pSCIs, the result is a large discontinuity across the language border. The reason may be that Wallonia has plenty of large forests more to the South (pers. comm. De Beck, *INBO*).

The consultation of neighboring countries for the delineation of the network, has been minimal (pers. comm. D. Paelinckx, *INBO* and WWF 2006).

In appendix 16, an overview is given of the status of the Natura 2000 network in our neighbouring countries.

Table 6. The European habitat types (Annex I) present in Belgium. W = the Walloon Region, F = the Flemish Region, Br = the Brussels Capital Region, Fed = the Belgian Federal State (authorized for the North Sea). C = Continental Biogeographic zone, A = Atlantic zone. A part of Wallonia, only is Atlantic, while in Flanders, only the region of *Voeren* (*Les Fourons*) belongs to the Continental zone (Figure 14). The surfaces are from Dufrêne & Gathoye (2002a) for Wallonia, INBO (2007) for Flanders, Gryseels (2002) for the Brussels Capital Region and Decleer (2007) for the North Sea. The indication of the major threats is taken from Sterckx *et al.* (2007) and from "*les Cahiers d'habitats Natura 2000 de la Région wallonne*" (unpublished, CRNFB, 2006).

N°	Prioritary?	Surface (ha)						Name as published in the Official Journal (Eng)	Some threats
		W-C	W-A	F-A	F-C	Br (A)	Fed (A)		
1110		-	-	-	-	-	x	Sandbanks which are slightly covered by sea water all the time	water pollution, port infrastructure, disturbance of birds, sand extraction, intensive fishery
1130		-	-	638,0	-	-	-	Estuaries	erosion, dredging, urbanisation, water pollution
1140		-	-	808,8	-	-	x	Mudflats and sandflats not covered by seawater at low tide	water pollution, disturbance by e.g. recreation, beach heightening, erosion resulting from dredging, exotic species
1310		-	-	62,0	-	-	-	Salicornia and other annuals colonizing mud and sand	port extension and dredging works, increased sedimentation and decreased inundation dynamics
1320		-	-	9,7	-	-	-	Spartina swards (*Spartinion maritimae*)	out-competition of *Spartina maritime* with *Spartina townsendii*, loss of ecotope, erosion by e.g. waterway deepening
1330		-	-	478,8	-	-	-	Atlantic salt meadows (*Glauco-Puccinellietalia* maritimae)	port extension and dredging works, disturbance of birds, changes in natural dynamics
2110		-	-	3,7	-	-	-	Embryonic shifting dunes	hard coast defence constructions, intensive beach cleaning, high recreation pressure, artificial sand fixation
2120		-	-	485,8	-	-	-	Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")	habitat fragmentation, over-recreation, nitrogen deposition increasing fixation, hard coast defence constructions, heightening of the beach with coarse-grained sand
2130	*	-	-	784,8	-	-	-	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	intensive trampling or grazing (rabbits), eutrophication, desiccation
2150	*	-	-	37,4	-	-	-	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)	lack of management, eutrophication, over-recreation, overgrazing, intensive agricultural use
2160		-	-	635,3	-	-	-	Dunes with *Hippophae rhamnoides*	spontaneous succession to dune forest, invasive exotic species
2170		-	-	3,7	-	-	-	Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)	*Hippophae* dominance, desiccation, long-term inundation
2180		-	-	635,3	-	-	-	Wooded dunes of the Atlantic, Continental and Boreal region	intensive recreation and forest exploitation, planting of exotic trees, competition with other exotic species (from e.g. gardens)
2190		-	-	37,4	-	-	-	Humid dune slacks	*Hippophae* or *Salix* dominance, desiccation, long-term inundation, dune fragmentation or fixation, over-recreation, eutrophication
2310		< 50	15-20	667,6	-	-	-	Dry sand heaths with *Calluna* and *Genista*	nitrogen deposition, lack of wind dynamics by forest plantations, habitat fragmentation, intensive recreation, urbanisation
2330		< 50	50	1719,9	-	-	-	Inland dunes with open Corynephorus and Agrostis grasslands	nitrogen deposistion, lack of management resulting in spontaneous forestation, over-recreation, fragmentation, urbanisation
3110		< 5	5 ?	476,3	-	-	-	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	Eutrophication

N°	Prioritary?	Surface (ha)						Name as published in the Official Journal (Eng)	Some threats
		W-C	W-A	F-A	F-C	Br (A)	Fed (A)		
3130		< 50	5 ?	782,4	-	-	-	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	Eutrophication, physical destruction, bank rectification, draining, disturbance of water supply, fill, pollution
3140		150	?	27,4	-	-	-	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	Eutrophication, trampling, disturbance of water supply, draining, darkness, pollution, reshaping
3150		150	250	402,0	-	-	-	Natural eutrophic lakes with Magnopotamion or Hydrocharition – type vegetation	Eutrophication, silting, pollution, fill, draining, disturbance of water supply
3160		50	-	-	-	-	-	Natural dystrophic lakes and ponds	Eutrophication, silting, pollution, fill, draining, disturbance of water supply
3260		> 500	-	91,9	15,9	-	-	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	Homogenisation, pollution, disturbance of water supply, bank reshaping, river rectification, cleaning out, invasive species
3270		50	< 10	-	-	-	-	Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation	Homogenisation, pollution, disturbance of water supply, bank reshaping, cleaning out, river rectification, invasive species
4010		2000	10	1499,6	-	-	-	Northern Atlantic wet heaths with Erica tetralix	abandonment, spontaneous forestation, plantations, draining, eutrophication, urbanisation, fire
4030		2500	100 ?	7799,8	-	<1	-	European dry heaths	abandonment, spontaneous forestation, plantations, eutrophication, urbanisation, fire
5110		500	1	-	-	-	-	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	Evolution to the forest, excessive deforestation
5130		50-100	-	1,3	-	-	-	Juniperus communis formations on heaths or calcareous grasslands	closing of the environment, deficit of regeneration, over-grazing, excessive wood harvesting, excessive fire
6110	*	200	1	-	-	-	-	Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi	Direct destruction, urbanisation, road making-up, over-frequentation, closing of the environment, natural forestation, exotic invasive species
6120	*	20	-	-	-	-	-	Xeric sand calcareous grasslands	Direct destruction, urbanisation, road making-up, over-frequentation, manuring, closing of the environment, natural forestation, exotic invasive species, compressing
6130		350	-	-	-	-	-	Calaminarian grasslands of the Violetalia calaminariae	Direct destruction, urbanisation, fill, moto-cross
6210	(*)	8004	< 5	64,3	31,8	-	-	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	Habitat fragmentation, abandonment, closing of the environement, coniferous plantation, natural forestation, agricultural intensification, extraction activities, urbanisation, invasion by social *Poaceae, eutrophication, bad management, insive species*
6230	*	1000	< 10	112,8	-	-	-	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	Abandonment, natural forestation, coniferous plantation, agricultural intensification, ploughing, sowing, fertilizing, invasion by social *Poaceae*
6410		> 500	< 5	134,6	-	-	-	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	agricultural intensification (fertilizing, eutrophication, grazing, draining), urbanisation, direct destruction, abandonment, natural forestation, plantations
6430		> 5000	< 100	2236,4	31,8	7	-	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	Eutrophication and pollution of rivers, draining, bank reshaping, cleaning out, ruderalisation, invasive species, total abandonment (natural forestation)
6510		5-10.000	?	1028,4	47,8	<1	-	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	Excessive fertilizing, grazing, excessive mowing, abandonment, natural forestation, coniferous plantation
6520		1000		-	-	-	-	Mountain hay meadows	Excessive fertilizing, grazing, excessive mowing, abandonment, natural forestation, coniferous plantation

N°	Prioritary?	Surface (ha)						Name as published in the Official Journal (Eng)	Some threats
		W-C	W-A	F-A	F-C	Br (A)	Fed (A)		
7110	*	5005	-	27,8	-	-	-	Active raised bogs	Human activities, peat extraction, draining, coniferous plantation, invasion by *Molinia caerulea*, trampling, fire, atmospheric deposition of nitrogen, climate warming, hydrological perturbation
7120		> 2500	-	8,0	-	-	-	Degraded raised bogs still capable of natural regeneration	Human activities, peat extraction, draining, coniferous plantation, invasion by *Molinia caerulea*, trampling, fire, atmospheric deposition of nitrogen, climate warming, hydrological perturbation
7140		250	-	188,3	-	-	-	Transition mires and quaking bogs	Human activities, peat extraction, draining, coniferous plantation, invasion by *Molinia caerulea*, trampling, fire, atmospheric deposition of nitrogen, climate warming, hydrological perturbation
7150		10	± 10	114,8	-	-	-	Depressions on peat substrates of the Rhynchosporion	Human activities, peat extraction, draining, coniferous plantation, invasion by *Molinia caerulea*, trampling, fire, atmospheric deposition of nitrogen, climate warming, hydrological perturbation
7210	*			51,4	-	-	-	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	
7220	*	20	-	14,1	-	<1	-	Petrifying springs with tufa formation (Cratoneurion)	disturbance of water supply, modification of physico-chemical quality of water, eutrophication, silting, trampling
7230		1006	-	99,1	-	-	-	Alkaline fens	draining, conversion into crops or intensive pastures, poplar plantation, natural forestation, peat extraction, flooding, fill, rubbish dump, disturbance of water supply, abandonment, trampling
8150		100		-	-	-	-	Medio-European upland siliceous screes	Direct destruction, stone extraction, peripheric plantations, road construction (scree fixation)
8160	*	> 100		-	-	-	-	Medio-European calcareous scree of hill and montane levels	Direct destruction, stone extraction, peripheric plantations, road construction (scree fixation)
8210		200		-	-	-	-	Calcareous rocky slopes with chasmophytic vegetation	Direct destruction, stone extraction, peripheric plantations, road construction, eutrophication
8220		> 100		-	-	-	-	Siliceous rocky slopes with chasmophytic vegetation	Direct destruction, stone extraction, peripheric plantations, road construction, eutrophication
8230		50		-	-	-	-	Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii	Direct destruction, stone extraction, peripheric plantations, road construction, eutrophication, trampling
8310		-	-	66,0	-	-	-	Caves not open to the public	habitat destruction, disturbance by recreants
9110		26.000	?	8,3	159,2	-	-	Luzulo-Fagetum beech forests	Conversion into resinous plantations, deer over-density, excessive wood exploitation, soil compressing, lack of dead wood, lack of old trees, problems of natural regeneration
9120		?	± 1500	6929,2	-	-	-	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	Conversion into resinous plantations, deer over-density, excessive wood exploitation, soil compressing, lack of dead wood, lack of old trees, problems of natural regeneration, urbanisation, over-frequentation, invasive species

N°	Prioritary?	Surface (ha)						Name as published in the Official Journal (Eng)	Some threats
		W-C	W-A	F-A	F-C	Br (A)	Fed (A)		
9130		< 4500	± 150	1882,8	31,8	195	-	Asperulo-Fagetum beech forests	Conversion into resinous plantations, deer over-density, excessive wood exploitation, soil compressing, lack of dead wood, lack of old trees, problems of natural regeneration
9150		20007	30	19,8	1,6	3,8	-	Medio-European limestone beech forests of the Cephalanthero-Fagion	Conversion into resinous plantations, deer over-density, excessive wood exploitation, soil compressing, lack of dead wood, lack of old trees, problems of natural regeneration, exploitation of quarries
9160		> 40.000	< 500	1938,5	31,8	290,8	-	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	Conversion into resinous plantations, deer over-density, excessive wood exploitation, soil compressing, lack of dead wood, lack of old trees, draining
9180	*	20008		-	-	-	-	Tilio-Acerion forests of slopes, screes and ravines	trampling, climbing, forestry, clear-cutting, exploitation of quarries, road constriction
9190		?	< 300	1767,5	-	21,7	-	Old acidophilous oak woods with Quercus robur on sandy plains	Conversion into resinous plantations, deer over-density, excessive wood exploitation, soil compressing, lack of dead wood, lack of old trees, draining, clear-cutting, invasive species
91D0	*	2000	< 50	43,0	-	-	-	Bog woodland	draining, disturbance of the water supply, plantation or regeneration of conifers, pollution, fill
91E0	*	2500	± 500	4488,5	31,8	46,2	-	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	soil compressing, draining, habitat fragmentation, surfrequetation, bank management, disturbance of the xater supply, poplar or conifer plantation, invasive species, fill
91F0		5009	-	0,6	-	-	-	Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ulmenion minoris)	soil compressing, draining, habitat fragmentation, surfrequetation, bank management, disturbance of the xater supply, poplar or conifer plantation, invasive species, fill

Table 7. Presence of the Annex II species in Belgium: W = the Walloon Region, F = the Flemish Region, Br = the Brussels Capital Region, Fed = the Belgian Federal State (authorized for the North Sea). C = Continental Biogeographic zone, A = Atlantic zone. A part of Wallonia, only is Atlantic, while in Flanders, only the region of *Voeren* (*Les Fourons*) belongs to the Continental zone (Figure 14). Presence/absence data are taken from Dufrêne & Gathoye (2002b) for the Walloon Region, Decleer (2007) for the Flemish Region and the North Sea and Gryseels (2002) for the Brussel Capital Region.

	N°	Prioritary?	W-C	W-A	F-A	F-C	Br (A)	Fed (A)	Name (Lat)	Naam (Ndl)	Nom (Fr)
Mammals	1303		x	x					*Rhinolophus hipposideros*	Kleine hoefijzerneus	Petit rhinolophe
	1304		x	x	x	x			*Rhinolophus ferrunequinum*	Grote hoefijzerneus	Grand rhinolophe
	1308		x	x	x		x		*Barbastella barbastellus*	Mopsvleermuis	Barbastelle commune
	1318		x	x	x		x		*Myotis dasycneme*	Meervleermuis	Vespertillon des marais
	1321		x	x	x	x	x		*Myotis emarginatus*	Ingekoven vleermuis	Vespertillon à oreilles échancrées
	1323		x	x	x				*Myotis bechsteini*	Bechsteins vleermuis	Vespertillon de Bechstein
	1324		x	x	x	x	x		*Myotis myotis*	Vale vleermuis	Grand murin
	1337		x	(x)	x				*Castor fiber*	Europese bever	Castor européen
	1349							x	*Tursiops truncatus*	Tuimelaar	Grand dauphin
	1351							x	*Phocoena phocoena*	Bruinvis	Marsouin commun
	1355		x	x	x				*Lutra lutra*	Otter	Loutre d'Europe
	1361								*Lynx lynx*	Lynx	Lynx
	1364							x	*Halichoerus grypus*	Grijze zeehond	Phoque gris
	1365							x	*Phoca vitulina*	Gewone zeehond	Phoque commun
Amphibians and reptiles	1166		x	x	x	x			*Triturus cristatus*	Kamsalamander	Triton crêté
Fish	1095							x	*Petromyzon marinus*	Zeeprik	Lamproie marine
	1096		x	x	x				*Lampetra planeri*	Beekprik	Lamproie de Planer
	1099				x				*Lampetra fluviatilis*	Rivierprik	Lamproie de rivière
	1103							x	*Alosa fallax*	Fint	Alose feinte
	1106							x	*Salmo salar*	Atlantische zalm	Saumon atlantique
	1134		x	x	x		x		*Rhodeus sericeus amarus*	Bittervoorn	Bouvière
	1145		x	x	x				*Misgurnus fossilis*	Grote modderkruiper	Loche d'étang
	1149			x	x				*Cobitis taenia*	Kleine modderkruiper	Loche de rivière
	1163		x	x	x	x			*Cottus gobio*	Rivierdonderpad	Chabot
Insects	1042				x				*Leucorrhinia pectoralis*	Gevlekte witsnuitlibel	Leucorrhine à gros thorax
	1041		x						*Oxygastra curtisii*	Bronslibel	Cordulie à corps fin
	1044		x						*Coenagrion mercuriale*	Mercuurwaterjuffer	Agrion de Mercure
	1074		x						*Eriogaster catax*	Bosrandspinner	Laineuse du prunellier

	N°	Prioritary?	W-C	W-A	F-A	F-C	Br (A)	Fed (A)	Name (Lat)	Naam (Ndl)	Nom (Fr)
	1060		x						*Lycaena dispar*	Grote vuurvlinder	Cuivré des marais
	1065		x						*Eurodryas aurinia*		Damier de la succise
	1078	*							*Callimorpha quadripunctaria*	Spaanse vlag	Ecaille chinée
	1083		x	x	x	x	x		*Lucanus cervus*	Vliegend hert	Lucane cerf-volant
Molluscs-gastropoda	1014			x	x		x		*Vertigo angustior*	Nauwe korfslak	Vertigo angustior
	1016		x	x	x				*Vertigo moulinsiana*	Zeggekorfslak	Vertigo moulinsiana
	1029		x						*Margaritifera margaritifera*	Beekparelmossel	Moule perlière
	1032		x						*Unio crassus*	Bataafse stroommossel	Mulette épaisse
	4056								*Anisus vorticulus*	Platte schijfhoren	Anisus vorticulus
Mosses and lichens	1393		x	x	x				*Hamatocaulis vernicosus*	Geel schorpioenmos	Hypne brillante
	1381		x						*Dicranum viride*	Beukengaffeltandmos	Dicrâne vert
Higher plants	1614				x		x		*Apium repens*	Kruipend moerasscherm	Ache rampant
	1831		x	x	x				*Luronium natans*	Drijvende waterweegbree	Flûteau nageant
	1882		x						*Bromus grossus*	Zware dreps	Brome épais
	1903		x	x	x				*Liparis loeselii*	Groenknolorchis	Liparis de Loesel

3.2.2. Protection and management regime

3.2.2.1. Régime de gestion active

3.2.2.1.1. Principes

Le régime de gestion active[105] est défini comme l'ensemble des mesures mises en place pour maintenir ou rétablir, dans un état de conservation favorable, les types d'habitats naturels et les espèces pour lesquelles le site a été désigné (art. 1er bis, 20°, de la loi du 12 juillet 1973).

La mise en œuvre[106] de ce régime de gestion active doit permettre d'atteindre les objectifs de gestion active prescrits dans l'arrêté de désignation (point 7°) pour les habitats et espèces protégés pour lesquels le site a été désigné.

Ces objectifs, de nature purement écologique, sont constitués par :

- pour les sites Natura 2000 amenés à devenir des ZSC : les exigences écologiques des types d'habitats naturels de l'annexe VIII et des populations des espèces de l'annexe IX présents sur le site ;
- pour les sites Natura 2000 amenés à devenir des ZPS : la survie et la reproduction dans leur aire de distribution des oiseaux rencontrés dans le site, la protection des aires de reproduction, de mue et d'hivernage et les zones de relais dans l'aire de migration des oiseaux migrateurs dont la venue est régulière dans le site (art 26, § 1er, al. 2, 7° de la loi du 12 juillet 1973).

Concrètement, les objectifs de gestion active consistent en l'état physico-chimique et biologique qui doit être maintenu ou rétabli sur le site de façon à satisfaire les exigences écologiques précitées des espèces et habitats pour lesquels le site a été désigné.[107]

L'établissement des objectifs de gestion active doit guider la définition des mesures techniques de gestion scientifiquement appropriées (travaux ordinaires de gestion et travaux de restauration éventuels, tels que opérations de fauche, de pâturages, de débroussaillage, de gestion au niveau d'eau,…) à prendre pour atteindre ces objectifs.[108]

Le régime peut être mis en œuvre par une série de moyens, de nature juridique cette fois, proposés dans l'arrêté de désignation en fonction des exigences économiques, sociales et culturelles ainsi que des particularités locales (art. 26, § 1er, al. 2, 7° et 8°, de la loi du 12 juillet 1973). Il s'agit en d'autres termes des instruments juridiques encadrant la mise en œuvre des travaux de gestion et de restauration. Ces moyens peuvent consister notamment dans :

- l'élaboration d'un contrat de gestion active ;
- la réforme des mesures de gestion des sites dont la Région assure directement ou indirectement la gestion ;
- la mise sous statut de réserves naturelle ou forestière ;
- l'adoption par le Gouvernement de mesures particulières de gestion active (art. 26, § 1er, al. 2, 8°, de la loi du 12 juillet 1973).

Le contrat de gestion active est une sorte de contrat administratif[109] multipartite ou « collectif » par lequel le Gouvernement et une série de propriétaires et occupants s'accordent sur la nature, la programmation et le financement des travaux d'entretien, d'amélioration et de restauration à réaliser pour atteindre les objectifs de gestion active.[110]

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[105] Sur ce régime, voyez C.-H. BORN, « Plans de gestion des sites Natura 2000 Rapport belge », actes du colloque de Volos des 19-20 mars 2004, Bruxelles, Bruylant, à paraître (2006)

[106] Sur le champ d'application dans le temps, voyez art. 25, § 1er, al. 3 et art. 25, § 2, al. 2, de la loi du 12 juillet 1973)

[107] En ce sens, voy. COMMISSION EUROPEENNE, *Gérer les site Natura 2000*…, op. cit., p. 54.

[108] C.-H. BORN, *Guide juridique des zones protégées en Wallonie*, Jambes, Ministère de la Région wallonne, 2005, p. 203.

[109] En ce sens, P.-Y. ERNEUX, « La gestion active des sites », in COLL., *Natura 2000 et le droit*, Bruxelles, Bruylant, 2004, p. 266.

[110] On notera qu'au départ, il était question de qualifier le contrat de gestion active de « plan de gestion du site », ce qui situe mieux la nature du contrat de gestion active. Le projet de décret « Natura 2000 » a préféré l'expression « *contrat de gestion active* » à l'expression « *plan de gestion* » entre autres « *pour éviter tout risque de confusion avec les plans de gestion élaborés pour les réserves naturelles* » et « *mettre l'accent sur la coopération entre, d'une part, les propriétaires et occupants concernés et, d'autre part, la Région* » (Doc. Parl. W., Exposé des motifs, session (2000-2001) 250, n° 1, p. 22).

3.2.2.1.2. Etapes de la mise en place du régime de gestion active

A. PREMIERE ETAPE : L'ADOPTION DE L'ARRETE DE DESIGNATION

La première étape de la mise en place du régime de gestion active consiste dans la définition des objectifs du régime de gestion active (OGA) applicables au site, et plus particulièrement aux différentes unités de gestion (UG). Ceci implique l'adoption formelle de l'arrêté de désignation et sa notification aux propriétaires et occupants (art. 26, § 3, de la loi).[111]

B. DEUXIEME ETAPE : CONCERTATION SUR LES MOYENS (JURIDIQUES) DE GESTION ACTIVE

Les partenaires et acteurs de la gestion active du site ont donc le choix entre divers moyens juridiques de gestion active. Plusieurs moyens différents peuvent être utilisés pour la gestion d'un même site.[112] Le choix des moyens s'opère au terme d'une procédure de concertation avec les propriétaires et occupants concernés, en tenant compte des exigences économiques, sociales et culturelles et des particularités locales (art. 26, § 3, al. 3, de la loi du 12 juillet 1973).

L'AGW du 20 novembre 2003 relatif aux modalités de la concertation préalable à l'élaboration des contrats de gestion active et à la constatation de l'inexécution des mesures de gestion active organise la procédure en plusieurs étapes :

- le directeur du Centre de la DNF invite les propriétaires et occupants concernés par le site à une réunion de concertation ;
- lors de cette réunion, le directeur vérifie que tous les propriétaires et occupants concernés par le site sont présents ou valablement représentés, et acte, le cas échéant, tout accord sur le choix des moyens de gestion active proposés. Il n'y a accord que si :
  - tous les propriétaires et occupants concernés sont présents ou valablement représentés
  - ET que le choix des moyens recueille l'assentiment unanime de ceux-ci ;
- En cas d'accord, les propriétaires et occupants désignent de commun accord un notaire chargé, par le directeur, notamment de l'élaboration d'un projet de contrat de gestion active. Le notaire convoquera le directeur, les propriétaires et occupants concernés et un représentant de la commission de conservation à une réunion de négociation ;
- En cas de défaut d'accord, lors de la réunion de concertation, celui-ci est acté par le directeur. Le Gouvernement est dès lors habilité à prendre certaines mesures.

La loi définit la portée de la concertation : « la concertation a pour objet d'identifier, parmi les moyens proposés par l'arrêté de désignation (…) et compte tenu des exigences, économiques, sociales et culturelles ainsi que des particularités locales, les moyens appropriés à mettre en œuvre dans le site pour atteindre les objectifs du régime de gestion active du site (…) » (art. 26, § 3, al. 3, de la loi du 12 juillet 1973).

Globalement, l'ensemble des moyens juridiques proposés est approprié pour atteindre les objectifs de gestion active. Mais en tenant compte des particularités locales et autres exigences, certains moyens seront vraisemblablement plus appropriés que d'autres. La concertation doit permettre de faire cette sélection de manière efficace.

La concertation a donc pour objectif de localiser les moyens juridiques de gestion active, c'est-à-dire d'identifier parcelle par parcelle ou par groupe de parcelles quel est in concreto le moyen juridique le plus adapté.

C. TROISIEME ETAPE : NEGOCIATION DU CONTRAT DE GESTION ACTIVE

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[111] Si en théorie la loi n'interdit pas de mettre en œuvre des mesures de « gestion active » avant la désignation des sites par un arrêté de désignation (par ex. au travers de MAE), il semble difficile d'envisager en pratique la conclusion formelle d'un contrat de gestion active (au sens de la loi) avant cette désignation. Formellement, la loi prévoit en effet que le mécanisme des réunions de concertation et de négociation ne s'enclenche qu'à partir de la notification de la désignation du site aux propriétaires et occupants concernés (art. 26, § 3, de la loi). En outre, c'est l'arrêté de désignation qui définit les objectifs du régime de gestion active, qui pour rappel, constituent le cadre juridique et technique qui va guider la définition des mesures techniques (travaux) de gestion. A défaut, le directeur ne dispose pas des informations scientifiques nécessaires pour proposer un projet de contrat.

[112] P.Y. ERNEUX, *op. cit.*, p. 243 ; Ch.-H. BORN, *Guide juridique …*, p. 204.

Si le contrat de gestion active est choisi comme moyen juridique de gestion active, une réunion de négociation est organisée par le notaire au plus tard trois mois après la réunion de concertation. La procédure est la suivante :

- Le notaire soumet à l'accord des propriétaires et occupants concernés et du directeur un projet de contrat de gestion active rédigé à partir des données scientifiques transmises par le directeur (art. 2, § 4, al. 3 de l'AGW du 20 novembre 2003) ; ils peuvent proposer des amendements sur les mesures techniques (art. 3, § 1, al. 2 de l'AGW du 20 novembre 2003) ;
- Il n'y a accord sur le projet de contrat que si :
  - tous les propriétaires et occupants concernés sont présents ou valablement représentés
  - ET que le projet emporte l'adhésion de tous les propriétaires et occupants concernés (art. 2, § 2, al. 2 et 2, § 5, a contrario de l'AGW du 20 novembre 2003).
- En cas d'accord, le notaire dresse un acte authentique et le transcrit à la conservation des hypothèques
- A défaut d'accord, une procédure de médiation est organisée. Si au terme de celle-ci aucun accord n'est obtenu, le notaire acte ce défaut, le Gouvernement est dès lors habilité à prendre certaines mesures.

Le contrat doit au moins contenir, entre autres (art. 27, § 1er, de la loi du 12 juillet 1973 ; AGW du 20 novembre 2003 relatif au contenu du contrat de gestion active) :

- 5° la description des travaux de gestion ordinaire du site et des subventions qui s'y rapportent ;
- 6° la description des éventuels travaux extraordinaires de restauration et d'amélioration à réaliser et des subventions qui s'y rapportent ;
- 7° un programme indiquant la nature, la localisation des interventions et les délais d'exécution ;
- 8° la répartition des travaux entre les propriétaires, les occupants et éventuellement la Région wallonne (…)

Une question importante concerne la marge de manœuvre dont disposent les partenaires pour établir le contenu technique du contrat de gestion active, en particulier la nature des travaux, leur programmation dans le temps et les techniques nécessaires pour les réaliser.

L'élaboration de ces éléments, cœur du régime de gestion active, doit se faire à partir des données scientifiques transmises par le directeur. La marge d'appréciation du directeur et donc du notaire pour définir les mesures techniques est limitée par le contenu des objectifs de gestion active définis dans l'arrêté de désignation, qui ont valeur réglementaire et s'imposent à ces personnes. L'obligation de résultat de la Région wallonne implique que ces mesures techniques soient organisées de façon à atteindre ces objectifs de gestion active. L'espace de négociation s'en trouve dès lors réduit au choix entre les alternatives techniques qui permettent d'atteindre un même objectif[113].

D. QUATRIEME ETAPE : MESURES PRISES PAR LE GOUVERNEMENT EN CAS DE DESACCORD LORS DE LA CONCERTATION ET/OU DE LA NEGOCIATION

La situation qui risque de se présenter le plus souvent dans le cadre de l'élaboration du contrat de gestion active est celle d'un désaccord soit lors de la concertation (ou d'absence ou non représentation d'au moins un propriétaire ou occupant) (art. 2, § 5, de l'AGW du 20 novembre 2003), soit lors de la négociation (art. 3, § 6, de l'AGW du 20 novembre 2003). Ce désaccord doit faire l'objet d'un acte formel (art. 2, § 5 et 3, § 6 de l'AGW du 20 novembre 2003). En outre, une médiation du président de la commission de conservation compétente peut être organisée par le notaire en cas de désaccord lors de la négociation (art. 3, § 2 de l'AGW du 20 novembre 2003).

Conformément à l'obligation de résultat qui pèse sur la Région wallonne, en cas de désaccord ou d'échec de la médiation, le Gouvernement est alors tenu de prendre les mesures appropriées pour atteindre les objectifs du régime de gestion active en cas de défaut d'accord acté d'un ou plusieurs propriétaires et/ou occupants sur le choix des moyens à mettre en œuvre ou sur le projet de contrat de gestion active (art. 26, § 4, de la loi du 12 juillet 1973 ; art. 4, al. 1, de l'AGW du 20 novembre 2003).

Le contenu des mesures n'est pas limitativement énuméré, ce qui laisse au Gouvernement une large marge de manœuvre. Parmi celles-ci figure la possibilité pour le

[113] Ch.-H. BORN, *Guide juridique des zones protégées en Wallonie*, op. cit., p. 208.

Gouvernement de conclure un contrat de gestion active avec les propriétaires et occupants qui se sont « majoritairement exprimés » en faveur d'un tel contrat lors de la réunion de concertation et de négociation. Les mesures que doit prendre le Gouvernement à l'égard des autres propriétaires et occupants qui ne sont pas « d'accord »[114] pourraient quant à elles consister en l'exécution des travaux prévus dans le contrat initial par la Région wallonne ou par un sous-traitant, la prise en location du bien par la Région wallonne, la mise à disposition du site à la Région wallonne ou à une association chargée de la gérer, la vente du bien, l'expropriation[115].

Des contraintes potentiellement très importantes pourraient donc être imposées à celui qui refuse de signer un contrat de gestion active ou de participer à tout autre moyen prévu lors de la concertation (agrément en réserve naturelle, …). En définitive, l'agriculteur se trouve face à une alternative, soit il entre dans une mécanisme contractuel, s'engage à gérer lui-même certaines parties du site et peut à ce titre bénéficier des avantages financiers qui pourront y être liés[116] (MAE et indemnités compensatoires pour le régime préventif) soit il refuse et risque dès lors de se voir imposer certaines mesures de gestion par voie unilatérale, sans incitant financier cette fois et avec le risque de perdre la maîtrise foncière sur certains terrains. Ceci pose question en ce qui concerne la nature véritablement contractuelle du contrat de gestion active[117].

3.2.2.2. Régime de protection[118]

3.2.2.2.1. Principes

Le régime préventif applicable aux sites Natura 2000 est défini comme l'ensemble des mesures, mises en place par ou en vertu des articles 28 et 29 [de la loi du 12/7/1973], pour prévenir la détérioration des habitats naturels, la perturbation significative des espèces pour lequel le site a été désigné, ou toute autre atteinte significative au site (art. 1er bis, 19°, de la loi du 12/7/1973). Il comporte trois volets :

- un régime préventif général, comportant lui-même deux types de mesures de prévention, principalement sous forme d'interdictions (art. 28 de la loi du 12/7/1973)
- un régime d'évaluation appropriée des incidences des plans et projets susceptibles d'affecter significativement le site (art. 29 de la loi du 12/7/1973)
- un régime de concertation pour corriger d'éventuelles incompatibilités entre l'arrêté de désignation du site Natura 2000 et les prescriptions à valeur réglementaire d'un ou plusieurs plans en vigueur.

Enfin, un régime strict de dérogation est prévu pour permettre, sous certaines conditions, l'adoption de plans ou l'autorisation de projets justifiés par des raisons impératives d'intérêt public majeur alors qu'ils portent atteinte à l'intégrité d'un site Natura 2000.

3.2.2.2.2. Quand le régime préventif entre-t-il en vigueur ?

En principe, le régime préventif prévu par les art. 28 et art. 29, § 2, de la loi (transposant respectivement les mesures générales de prévention (art. 6 §2 dir. Habitats) et le mécanisme d'évaluation appropriée des incidences (art. 6 §3 dir. Habitats)) s'applique seulement à partir de *la publication de l'arrêté de désignation comme site Natura 2000* (art. 25, § 1er, al. 2, et § 2, al. 2, de la loi du 12/7/1973). L'adoption de cet arrêté est donc capitale pour assurer la protection du site.[119]

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[114] C'est-à-dire non présents ou valablement représentés lors de la concertation ; pas d'accord sur le choix des moyens de gestion active ou pas d'accord sur le contenu du contrat proposé

[115] Voy. les exemples in *Doc. Parl. W.,* Rapport, session (2000-2001)250, n° 49, pp. 61-62.

[116] Art. 31 de la loi du 12/7/73.

[117] Voyez P-Y. ERNEUX, *op. cit.,* p. 266. L'auteur conclut par l'affirmative en considérant que les contrats de gestion active sont des contrats administratifs « synallagmatiques » et solennels.

[118] Voyez F. HAUMONT, « La protection des sites en Région wallonne », in COLL., *Natura 2000 et le droit. Aspects juridiques de la sélection et de la conservation des sites Natura 2000 en Belgique et en France*, Actes du colloque de Louvain-la-Neuve du 26 septembre 2002, Bruxelles, Bruylant, 2004

119 La loi prévoit que le régime de prévention s'applique aux sites désignés comme sites Natura 2000, même si ceux-ci ne sont pas ultérieurement reconnus comme SIC par la Commission (art. 25, §1er, al. 2, de la loi du 12 juillet 1973). Cette disposition est d'une utilité toute théorique dès lors qu'aucun des sites proposés par le Gouvernement et retenus comme SIC n'a encore fait l'objet d'un arrêté de désignation. C.-H. BORN, « Le régime

Dans l'attente de l'adoption des arrêtés de désignation, divers mécanismes et dispositions peuvent utilement être mis en œuvre aux fins pallier aux risques importants de dégradation qui menacent les sites Natura 2000.[120]

En tout état de cause, en dehors de ces mécanismes spécifiques, une autorité ne pourrait, à l'occasion de la délivrance de tout permis d'urbanisme ou de lotir, violer l'article 6, § 2 à 4, de la directive Habitats, qui a été reconnu comme ayant effet direct en Région wallonne suite à la jurisprudence « Tenneville » du Conseil d'Etat[121]. Pour rappel, la Cour de justice a confirmé la possibilité pour un juge national de vérifier le respect par un Etat membre du paragraphe 3 de l'article 6 précité à l'occasion de la délivrance d'autorisations[122] dans les sites retenus comme sites d'importance communautaire[123].

3.2.2.2.3. Régime préventif général

INTERDICTION GENERALE DE DETERIORATION OU DE PERTURBATION

« Dans les sites Natura 2000 », il est interdit à toute personne – de droit privé ou public – « de détériorer les habitats naturels et de perturber les espèces pour lesquelles les sites ont été désignés, pour autant que ces perturbations soient susceptibles d'avoir un effet significatif eu égard aux objectifs de la section 3 de la loi » (à savoir le maintien ou le rétablissement dans un état de conservation favorable des types d'habitats naturels et d'espèces protégés

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provisoire des futurs sites Natura 2000 en droit interne. Rapport belge », actes du colloque de Volos des 19-20 mars 2004, Bruxelles, Bruylant, à paraître (2006)

120 L'art. 84, § 1, al. 4, 12°, et 452/27 du CWATUP : il s'agit du principal mécanisme de protection provisoire, mais qui reste incomplet car il ne vise que les atteintes à la végétation.

Le défrichement et la modification de la végétation120 sont soumis à permis d'urbanisme (et donc, en Région wallonne, au système d'évaluation des incidences, lequel comprend désormais un volet Natura 200021) dans les « habitats naturels d'intérêt communautaire visés par l'article 1erbis de la loi du 12 janvier 1973 sur la conservation de la nature et proposés au sens de l'article 25, § 1er, de ladite loi, tant qu'ils ne sont pas couverts par un arrêté de désignation pris en application de l'article 26 de la même loi » (art. 84, § 1, 12°, et 452/27, nouveau, du CWATUP). Ce libellé ne vise donc a priori que les types d'habitat naturel d'intérêt communautaire, visés à l'annexe VIII de la loi (correspondant aux habitats de l'annexe I de la directive Habitats), mais pas les habitats d'espèces d'intérêt communautaire visées à l'annexe IX de la loi (annexe II de la directive Habitats) ni les habitats d'oiseaux visés à l'annexe XI de la loi (annexe I de la directive Oiseaux). La publication au Moniteur belge de la liste des sites proposés par la Région wallonne le 31 juillet 2004 a permis de résoudre le problème d'opposabilité qui risquait de se poser à l'égard des personnes à qui ladite liste n'avait pas été notifiée. L'identification des habitats eux-mêmes au sein du site, non publiée à ce jour, même sur internet, pourrait cependant poser des problèmes d'opposabilité dans les cas non évidents.

Voyez C.-H. BORN, « Le régime provisoire des futurs sites Natura 2000 en droit interne. Rapport belge », actes du colloque de Volos des 19-20 mars 2004, Bruxelles, Bruylant, à paraître (2006). Voyez également C.-H. BORN et F. LAMBOTTE, « La conservation de la nature en Région wallonne », chapitre de l'ouvrage collectif L'urbanisme et l'environnement, v°du R..P.D.B., sous la dir. de B. JADOT et F. HAUMONT, à paraître.

121 C.E., n° 94.527, ASBL L'Erablière & Commune de Nassogne, 4 avril 2001 ; n° 96.097, ASBL L'Erablière et crts, 1er juin 2001 (affaire « Tenneville »). Le premier arrêt a été confirmé au fond par l'arrêt C.E., n° 139.465, ASBL L'Erablière & Commune de Nassogne, 18 janvier 2005. Dans le même sens, voy. C.E., 30 juillet 2002, n° 109.563 , Apers et crts. Voyez C.-H. BORN, « Le régime provisoire des futurs sites Natura 2000 en droit interne. Rapport belge », actes du colloque de Volos des 19-20 mars 2004, Bruxelles, Bruylant, à paraître (2006)

122 C.J.C.E., 7 septembre 2004, aff. C-127/02, Landelijke Vereniging tot Behoud van de Waddenzee, Nederlandse Vereniging tot Bescherming van Vogels c. Staatssecretaris van Landbouw, Natuurbeheer en Visserij ("mer de Wadden"), point 70.

123 C.J.C.E., aff. C-117/03, 13 janvier 2005, Società Italiana Dragaggi SpA e.a. contre Ministero delle Infrastrutture e dei Trasporti, Regione Autonoma del Friuli Venezia Giulia („Dragaggi").

Il s'ensuit que, en Région wallonne :

- avant leur désignation comme site Natura 2000, les autorités sont déjà tenues d'éviter, dans les futurs sites Natura 2000 (ZPS et ZSC), toute détérioration d'habitats naturels ou toute perturbation significative d'espèces pour lesquelles le site est désigné (art. 6, § 2, de la directive). Cette obligation ne s'applique cependant pas directement aux particuliers, qui ne sont donc pas passibles de sanctions pénales en cas de détérioration ou de perturbation sur le site, sauf violation des articles 2 et 3 de la loi sur la protection des espèces ;
- l'évaluation appropriée des incidences doit être exigée pour tout plan ou projet non directement lié à la gestion du site et susceptible, individuellement ou en conjugaison avec d'autres plans ou projets, d'affecter significativement un site devant être désigné comme site Natura 2000 ;
- les autorités compétentes ne peuvent donner leur accord sur des plans ou des projets que si elles se sont assurées que ces plans et projets ne porteront pas atteinte à l'intégrité d'un site devant être désigné comme site Natura 2000.

Voyez C.-H. BORN, « Le régime provisoire des futurs sites Natura 2000 en droit interne. Rapport belge », actes du colloque de Volos des 19-20 mars 2004, Bruxelles, Bruylant, à paraître (2006).

sur le site) (art. 28, al. 1, de la loi). Les autorités et administrations sont tenues de respecter cette interdiction dans l'exercice de leurs prérogatives et la gestion des biens publics[124]. En revanche, selon l'exposé des motifs, pour des raisons de sécurité juridique, l'interdiction générale de détériorer les habitats (passible de sanction pénale) ne serait applicable, géographiquement, qu'aux activités exercées dans les sites Natura 2000[125]. Formellement, le texte de l'article 28, al. 1, de la loi, ne limite pourtant pas l'interdiction à ces seules activités[126]. Bien que l'articulation ne soit pas explicite, il faut considérer que la seule forme de dérogation possible à cette interdiction est celle prévue par l'article 29, § 2, de la loi.[127]

INTERDICTIONS PARTICULIERES ET AUTRES MESURES PREVENTIVES

Les arrêtés de désignation indiquent « les interdictions particulières applicables dans ou en dehors de chaque site ainsi que toute autre mesure préventive à prendre dans ou en dehors du site pour éviter la détérioration des habitats naturels et les perturbations significatives touchant les espèces pour lesquels le site a été désigné » (art. 28, al. 2, de la loi).

Le *champ d'application géographique* des interdictions particulières et autres mesures préventives appropriées peut donc s'étendre en dehors du site à l'égard d'activités qui risquent d'entraîner une détérioration ou une perturbation significative. Du point de vue des *destinataires* des interdictions et mesures préventives, celles-ci s'imposent, du fait de leur valeur réglementaire, non seulement aux particuliers, mais aussi à toutes les autorités et administrations dans l'exercice de leurs prérogatives et la gestion des biens publics.

Le *contenu* des interdictions et des « mesures préventives » particulières est susceptible de varier d'un site à l'autre – l'on peut parler d'un régime « à géométrie variable » –, en fonction des objectifs de conservation de chaque site. Celles-ci devraient donc être adoptées, en fonction à la fois des exigences écologiques de chaque espèce et habitat pour lesquels le site a été désigné[128], de leur état de conservation, de l'effet, le cas échéant cumulé, des activités considérées ainsi que des caractéristiques locales du site. Elles doivent toutefois tenir compte des « exigences économiques, sociales et culturelles ainsi que des particularités régionales et locales » (art. 2, § 3, de la directive Habitats) et donc être, selon nous, adéquates et *proportionnées* par rapport à l'objectif poursuivi.[129]

NOTION DE DETERIORATIONS ET DE PERTURBATIONS

Sans entrer dans le détail[130], selon la Commission européenne, les détériorations et les perturbations « *doivent être évaluées au regard des objectifs de la directive* » et, de façon

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[124] Ceci est particulièrement important pour toutes les activités à risque exercées par les pouvoirs publics qui ne nécessitent pas de permis, tels que le curage des rivières, les travaux publics non soumis à ou exonérés de permis, l'entretien des biens publics et de la voirie (y compris les épandages de sels de déneigement et la fauche des bords de route), la gestion et l'exploitation courantes des forêts domaniales ou communales, l'utilisation de produits toxiques dans le milieu naturel, la gestion hydraulique des rivières, les opérations de rempoissonnement, l'organisation de manifestations sportives ou culturelles, etc. La question de l'impact de l'interdiction sur l'exercice des activités militaires (de compétence fédérale) dans les sites désignés comme sites Natura 2000 n'est pas examinée ici. L'adoption de plans à valeur indicative (non soumis à l'évaluation Natura 2000) est à ce titre soumise à ladite interdiction (*Doc. Parl. W.*, session 2000 – 2001, 250, n° 1, *Exposé des motifs*, p. 11).

[125] *Doc. Parl. W.*, session 2000 – 2001, 250, n° 1, *Exposé des motifs*, p. 13 et p. 24.

[126] On devrait en effet l'interpréter comme limitant l'interdiction de détériorer des habitats d'intérêt communautaire aux seuls habitats présents dans les sites Natura 2000, l'interdiction ne portant pas sur des activités mais sur leur *effet*. Une interprétation conforme à l'article 6, § 2, de la directive Habitats semble appuyer cette interprétation. En ce sens, voy. F. HAUMONT, « La protection des sites en Région wallonne », in *Natura 2000 et le droit*, Actes du colloque de droit comparé organisé à Louvain-la-Neuve le 26 septembre 2002, Bruxelles, Bruylant, pp. 303-304. *Contra* : E ORBAN de XIVRY, *op. cit*., p. 136.

[127] Ch.-H. BORN, Guide juridique des zones protégées en Wallonie, op. cit., pp. 219-220.

[128] La littérature scientifique ainsi que diverses études spécifiques donnent des indications précieuses sur les exigences écologiques des espèces et habitats visés par Natura 2000. En particulier, voy. J.-C. RAMEAU, C. GAUBERVILLE & N. DRAPIER, *Gestion forestière et diversité biologique. Identification et gestion intégrée des habitats et espèces d'intérêt communautaire.* M.R.W., Namur, 2000.

[129] Ch.-H. BORN, Guide juridique des zones protégées en Wallonie, op. cit., pp. 220-221.

[130] Voyez Ch.-H. BORN, Guide juridique des zones protégées en Wallonie, op. cit., pp. 222-223. ; C.-H. BORN, *Natura 2000, Région wallonne*, v° du Guide de Droit immobilier, Diegem, Story-Sientia, 2005, 73 pp ; F. HAUMONT, « La protection des sites », *op.cit.*

plus précise, au regard « *de l'état de conservation des habitats et espèces concernés Au niveau du site, le maintien de l'état de conservation favorable doit être évalué à la lumière des conditions initiales fournies dans le formulaire standard de données Natura 2000*[131]*, au moment où le site été proposé en vue d'une sélection ou d'une désignation, compte tenu de la contribution du site à la cohérence écologique du réseau. Cette notion doit être interprétée d'une manière dynamique à la lumière de l'évolution de l'état de conservation de l'habitat ou des espèces »*[132]

3.2.2.2.4. Evaluation appropriée des incidences

Selon l'art. 29, § 2, de la loi, « tout plan ou projet soumis à permis, qui, au regard des prescriptions à valeur réglementaire de l'arrêté de désignation d'un site Natura 2000, est non directement lié ou nécessaire à la gestion du site mais est susceptible d'affecter ce site de manière significative, individuellement ou en conjugaison avec d'autres plans et projets, est soumis à l'évaluation des incidences prévue par la législation organisant l'évaluation des incidences sur l'environnement dans la Région wallonne, eu égard aux objectifs de conservation du site et selon les modalités fixées par le Gouvernement (…). L'autorité compétente ne marque son accord sur le plan ou le projet qu'après s'être assurée qu'il ne porte pas atteinte à l'intégrité du site concerné ».

Cette évaluation doit donc se faire dans le cadre de la législation générale organisant l'évaluation des incidences sur l'environnement en la Région wallonne, c'est à dire le Code de l'Environnement, le décret du 11 mars 1999 relatif au permis d'environnement et certaines dispositions du CWATUP relatives à l'évaluation des incidences des plans et schémas d'aménagement. Cette législation générale a été modifiée pour inclure un volet Natura 2000[133], mais n'est pas expressément articulée ou coordonnée avec la loi du 12 juillet 1973.

Nous décrivons dans cette section les exigences de la loi du 12 juillet 1973, nous reviendrons plus tard sur leur application dans la législation générale sur l'évaluation des incidences[134] et les interrogations que ce mécanisme suscite.

CHAMP D'APPLICATION

La loi vise « tout plan ou projet soumis à permis, qui, au regard des prescriptions à valeur réglementaire de l'arrêté de désignation d'un site Natura 2000, est non directement lié ou nécessaire à la gestion du site mais est susceptible d'affecter ce site de manière significative, individuellement ou en conjugaison avec d'autres plans et projets »

Un **plan** est défini comme la « décision qui fixe par des dispositions à valeur réglementaire l'affectation et les modes d'utilisation de parties déterminées du territoire wallon » (art. 1er bis, 27°, de la loi). Une liste indicative et non exhaustive de plans est donnée par cette disposition[135]. La référence aux seuls plans à caractère réglementaire, limite le champ d'application de l'article 29, par rapport au prescrit de l'article 6, § 3, de la directive Habitats, qui s'applique à « tout plan ».

La notion de **projet** n'est pas définie dans la loi. La loi restreint le champ d'application de l'évaluation appropriée aux seuls projets « **soumis à permis** ». La notion de permis est définie comme une autorisation individuelle accordée en vertu de la législation applicable en Région wallonne pour une activité, une exploitation, une construction ou un ouvrage (art. 1er

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[131] En Région wallonne, la fiche écologique publiée sur Internet avec les périmètres des sites proposés donne déjà des indications utiles. Voy. les explications relatives à ces fiches sur http://mrw.wallonie.be/dgrne/sibw/sites/Natura2000/formulaire.html.

[132] COMMISSION EUROPEENNE, *Gérer les sites Natura 2000…*, p. 26-27.

[133] En matière de planification, ce volet est prévu, s'agissant des plans réglementaires, aux art. 42, 5° et 50, § 2, 5°, du CWATUP. En matière d'autorisations, voy. le contenu minimum de la notice d'évaluation des incidences et de l'étude d'incidences prévu respectivement aux annexes I et II de l'AGW du 4 juillet 2002 organisant l'évaluation des incidences sur l'environnement dans la Région wallonne (*M.B.*, 21/9/2002) (« évaluation ») et le formulaire de demande de permis d'environnement ou unique (valant notice d'évaluation des incidences), prévu par l'AGW du 4 juillet 2002 relatif à la procédure et à diverses mesures d'exécution du décret du 11 mars 1999 relatif au permis d'environnement (*M.B.*, 21/9/2002) (« procédure »).

[134] Voyez Ch.-H. BORN, Guide juridique des zones protégées en Wallonie, op. cit., pp. 223-235.

[135] Sont compris dans la notion de plan : les plans d'aménagement du territoire (plans de secteur et plans communaux d'aménagement, à l'exclusion des schémas) ; les règlements (régionaux et communaux) d'urbanisme; les permis de lotir; la classification des terrils en vertu du décret du 9 mai 1985 concernant la valorisation des terrils ; la programmation des travaux effectués par les wateringues en vertu de la loi organique du 5 juillet 1956; la planification prévue par la législation relative au remembrement des biens ruraux.

bis, 28°, de la loi)[136]. L'on notera que la notion de « projet soumis à permis » visée par la loi exclut du mécanisme de l'évaluation appropriée les installations et activités de classe 3 (soumis à déclaration) en vertu du décret du 11 mars 1999 relatif au permis d'environnement. Cette exclusion paraît contraire à la directive Habitats, celle-ci visant « tout projet », sans distinguer s'il est ou non soumis à permis[137].

Le plan ou le projet doit être **non directement lié ou nécessaire à la gestion du site**. La gestion doit donc être entendue, en droit wallon, comme le régime gestion active du site, qui transpose cette disposition de la directive. Un plan ou un projet ne peut ainsi être soustrait au régime d'évaluation appropriée que s'il est directement lié ou nécessaire à la réalisation des objectifs de gestion active fixés pour le site.

Le caractère « **susceptible d'avoir un effet significatif individuellement ou en conjugaison avec d'autres plans ou projets** » a été interprété par la Cour de justice. Selon elle, un plan ou un projet non directement lié ou nécessaire à la gestion d'un site doit être considéré « comme susceptible d'affecter ce site de manière significative » lorsqu'il « risque de compromettre les objectifs de conservation de celui-ci ». « L'appréciation dudit risque doit être effectuée notamment à la lumière des caractéristiques et des conditions environnementales spécifiques du site concerné par un tel plan ou projet » [138].

FORME ET CONTENU[139]

L'évaluation appropriée de l'impact sur les sites Natura 2000 doit être intégrée, le cas échéant, au document d'évaluation requis par cette législation (formulaire de demande de permis d'environnement ou unique, notice d'évaluation des incidences, étude d'incidences, rapport sur les incidences environnementales,…) et donc être soumise aux formalités de procédure requises selon les cas. La législation générale applicable en matière d'évaluation des incidences a été modifiée pour comprendre un volet Natura 2000[140].

Bien que l'article 29, § 2, n'utilise pas ce terme, l'évaluation doit être « appropriée » eu égard aux « objectifs de conservation du site » concerné, ainsi que l'exige l'article 6, § 3, de la directive Habitats, directement applicable. L'évaluation appropriée « Natura 2000 » doit contenir une analyse spécifique de l'impact potentiel du projet ou du plan sur tous les sites Natura 2000 susceptibles d'être affectés. Elle doit être « appropriée » eu égard aux objectifs de conservation du site concerné (art. 6, § 3, de la directive Habitats ; art. 29, § 2, de la loi du 12/7/1973) [141], ce qui signifie qu'elle doit analyser spécifiquement les effets du plan ou projet sur chaque habitat et chaque espèce pour lesquels le site a été désigné et non de façon abstraite[142].

CONSEQUENCES SUR LA DECISION DE L'AUTORITE

L'article 29, § 2, de la loi instaure une obligation de conformité de la décision de l'autorité aux objectifs de conservation du site. L'autorité compétente ne peut en effet marquer son accord sur le plan ou projet soumis à l'évaluation qu' « après s'être assurée qu'il ne porte pas

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[136] Sont comprises notamment : les autorisations accordées en vertu de la loi du 28 décembre 1967 relative aux cours d'eau non navigables ; les permis de valorisation des terrils délivrés en vertu du décret du 9 mai 1985 concernant la valorisation des terrils ; les permis de recherche et les concessions de mines prévus par le décret du 7 juillet 1988 sur les mines ; les permis d'environnement et uniques ; les permis d'urbanisme. Il faut y inclure également les plans de réhabilitation des décharges. En effet, aux termes de l'article 42, § 1, al. 3, du décret du 27 juin 1996 relatif aux déchets, le plan de réhabilitation approuvé selon les modalités fixées par le Gouvernement vaut permis d'environnement et permis d'urbanisme (art. 1bis, 28°, de la loi).

[137] Sur cette question et les possibilités d'y remédier, voy. C.-H. BORN, *Guide juridique…, op. cit*., pp. 226-227.

[138] C.J.C.E., 16 septembre 2004, aff. C-192/02, « mer de Wadden » précité, point 49.

[139] Voyez C.-H. BORN, « Quelques réflexions sur le mécanisme de protection des sites Natura 2000 contre les incidences des plans et projets », in COLL., *Mélanges en l'honneur de Michel Prieur*, Paris, Dalloz, à paraître (2006)

[140] Voyez C.-H. BORN, *Guide juridique…, op. cit*., pp. 62-70.

[141] La Commission a donné des indications très utiles à ce sujet dans son commentaire de l'article 6 de la directive (COMMISSION EUROPEENNE, *Gérer les sites Natura 2000…, op. cit.*, p. 37 et s.) et dans son Guide méthodologique d'évaluation appropriée des incidences (COMMISSION EUROPEENNE, *Évaluation des plans et projets ayant des incidences significatives sur des sites Natura 2000…, op. cit.*).

[142] Selon la Cour de Justice, l'évaluation appropriée implique que « *doivent être identifiés, compte tenu des meilleures connaissances scientifiques en la matière, tous les aspects du plan ou projet pouvant, par eux-mêmes ou en combinaison avec d'autres plans ou projets, affecter les objectifs de conservation du site concerné* » (C.J.CE., 7 septembre 2004, aff. C-127/02, point 54.)

atteinte à l'intégrité du site concerné » (art. 29, § 1er, al. 3, de la loi)[143]. La Cour de justice a eu l'occasion de préciser ce critère dans son arrêt « mer de Wadden », relatif à un projet de pêche à la coque. Selon elle, « *les autorités nationales compétentes, compte tenu de l'évaluation appropriée des incidences de la pêche mécanique à la coque sur le site concerné au regard des objectifs de conservation de ce dernier, n'autorisent cette activité qu'à la condition qu'elles aient acquis la certitude qu'elle est dépourvue d'effets préjudiciables pour l'intégrité dudit site. Il en est ainsi lorsqu'il ne subsiste aucun doute raisonnable d'un point de vue scientifique quant à l'absence de tels effets* »[144].

Si l'évaluation n'est pas à même de prouver l'absence de risque pour le site, l'autorité n'a que le choix suivant : soit le projet ou le plan doit être refusé, délocalisé ou encore assorti de conditions de nature à garantir qu'aucune atteinte à l'intégrité du site n'aura lieu[145] ; soit une dérogation, conforme à l'article 6.4 de la directive Habitats, doit être sollicitée. Le pouvoir d'appréciation discrétionnaire de l'autorité est donc étroitement lié par les conclusions de l'évaluation des incidences, si du moins celle-ci est « appropriée ».[146]

3.2.2.2.5. Dérogations

Des dérogations au régime préventif applicable dans les sites Natura 2000 peuvent être accordées seulement sous certaines conditions. Celles-ci sont au nombre de trois et sont cumulatives.

ABSENCE DE SOLUTIONS ALTERNATIVES

La dérogation ne peut être accordée que s'il n'existe aucune solution alternative au plan ou projet, y compris les alternatives de localisation (les plus intéressantes), voire l'alternative « zéro ». Dans l'évaluation de l'existence de solutions alternatives, doit être privilégiée la conservation des habitats et espèces protégés sur le site concerné, et non les aspects socio-économiques, ce qui n'exclut pas, que soient pris en compte les coûts de la solution alternative, conformément au principe de proportionnalité et à l'obligation de tenir compte des exigences socio-économiques dans la mise en œuvre du réseau Natura 2000 (art. 2 de la directive Habitats)[147]. La Cour de Justice a confirmé qu'il appartient bien à l'autorité

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[143] Il est à noter que l'article 6, 3, de la directive Habitats ajoute que les autorités ne marquent leur accord sur le plan ou le projet que « (…) après avoir pris, le cas échéant, l'avis du public ». La procédure générale d'évaluation des incidences en Région wallonne, ainsi que les différentes procédures d'adoption de plan et de délivrance de permis prévoient, à quelques exceptions près, diverses mesures de consultation du public *a priori* suffisantes au regard de ce prescrit.

[144] C.J.C.E., 16 septembre 2004, aff. C-192/02, « mer de Wadden » précité, point 61. La Cour ajoute que « le critère d'autorisation prévu à l'article 6, paragraphe 3, seconde phrase, de la directive habitats intègre le principe de précaution (voir arrêt du 5 mai 1998, *National Farmers' Union e.a.*, C-157/96, Rec. p. I-2211, point 63) et permet de prévenir de manière efficace les atteintes à l'intégrité des sites protégés dues aux plans ou aux projets envisagés (…)» (point 58). Cette position de la Cour a aussi été affirmée, en termes moins explicites, dans son arrêt du 24 janvier 2004, aff. C-209/02, *Commission c/ Autriche* (« Râle des genêts »), *Amén.*, 2004/3, pp. XXX, obs. C.-H. BORN.

[145] Dans nombre de cas, l'imposition de mesures d'atténuation de l'impact sous la forme de cahier de charges ou de conditions à respecter par le demandeur du permis ou le promoteur du plan est à même de rendre possible l'exercice de l'activité envisagée, pour autant que leur pertinence scientifique puisse être démontrée par le demandeur. A défaut, le doute obligera l'autorité à refuser le permis ou le plan ou à octroyer une dérogation. Il ne faut toutefois pas confondre les mesures d'atténuation – qui visent à limiter l'impact de l'activité de façon à le rendre non significatif – avec des mesures de compensation – qui interviennent dès qu'une détérioration est causée au site –, sous peine de voir autoriser des plans et projets d'intérêt purement privé ou mineur en violation de l'article 6.4, de la directive Habitats.

[146] Voyez C.-H. BORN, « Quelques réflexions sur le mécanisme de protection des sites Natura 2000 contre les incidences des plans et projets », in COLL., *Mélanges en l'honneur de Michel Prieur*, Paris, Dalloz, à paraître (2006)

[147] La Commission estime que les critères économiques ne « peuvent être considérés comme ayant priorité sur les critères écologiques » (COMMISSION EUROPEENNE, *Gérer les sites Natura 2000, …, op. cit.*, p. 43). La Cour de Justice ne s'est pas prononcée sur cette question délicate. Cependant, son avocat général Mme Kokott semblait favorable, dans ses conclusions dans l'affaire C-239/04, Commission c/ République portugaise, à un test de proportionnalité, considérant que « *en ce qui concerne les alternatives ainsi sélectionnées, le choix ne doit pas obligatoirement se porter sur l'alternative qui affecte le moins l'intégrité de la zone concernée (…). Ce choix exige plutôt une mise en balance entre l'atteinte à l'intégrité de la ZPS et les raisons impératives d'intérêt public majeur pertinentes* ». Elle ajoute que « *c'est la question de savoir si des raisons impératives d'intérêt public majeur exigent précisément la réalisation de cette alternative [souligné par elle] ou si elles peuvent également être satisfaites par une autre alternative – plus respectueuse de l'intégrité de la ZPS – qui est décisive (…). Cette*

compétente d'apprécier la pertinence de ces solutions alternatives proposées, et de rechercher, le cas échéant, des solutions alternatives qui ne sont pas envisagées dans l'évaluation appropriée.[148]

RAISONS IMPERATIVES D'INTERET PUBLIC MAJEUR

Le plan ou projet doit se justifier par des « raisons impératives d'intérêt public majeur, y compris de nature sociale ou économique »[149], lesquelles incluent en tout cas la santé de l'homme, les conséquences bénéfiques primordiales pour l'environnement et la sécurité publique (art. 29, § 2, al. 5, de la loi). Elles peuvent aussi inclure d'autres motifs, y compris socio-économiques.

Le concept peut être circonscrit de la façon suivante :

- *impératifs* signifie que la réalisation du plan ou projet *s'impose*, au regard d'une mise en balance des intérêts liés à sa réalisation, d'une part, et des intérêts de la conservation du patrimoine naturel commun de l'Union européenne, d'autre part.
- d'intérêt *public* signifie à l'exclusion d'intérêts strictement privés, ne contribuant pas à l'intérêt général, par exemple un projet immobilier ou d'extraction local. Selon la Commission, les activités socio-économiques doivent viser l'accomplissement d'obligations spécifiques de service public[150].
- *majeur* signifie, *supérieurs* aux objectifs des directives Oiseaux et Habitats, à savoir préserver le patrimoine naturel commun de l'Union européenne. Selon la Commission, ne peuvent être majeurs que des intérêts *à long terme*[151].

Si le site concerné a été désigné pour assurer la conservation d'habitats et espèces prioritaires (mentionnés par un astérisque dans les annexes VIII (habitats) et I, IX et XI (espèces)), les conditions de dérogation sont plus strictes (art. 29, § 2, al. 5, de la loi). Ne peuvent être invoquées pour autoriser le plan ou projet que des raisons liées à la santé humaine, la sécurité publique (inondations menaçant la sécurité des personnes, risques d'incendies, etc.), des conséquences primordiales pour l'environnement ou toute autre raison impérative d'intérêt public majeur, *après avis de la Commission européenne*.

MESURES COMPENSATOIRES

Ces mesures revêtent deux caractéristiques essentielles :

- elles sont compensatoires, c'est-à-dire qu'il s'agit selon la Commission, de « mesures spécifiques d'un projet ou d'un plan qui viennent s'ajouter aux mesures normales prises pour mettre en œuvre les directives « nature ». Elles visent à contrebalancer les effets négatifs d'un projet et à assurer une compensation correspondant exactement aux effets négatifs sur l'habitat ou l'espèce en cause (…) »[152] ;
- elles doivent permettre d'*assurer la cohérence globale* du réseau Natura 2000 : selon la Commission européenne, à cet effet, les mesures compensatoires doivent « viser : a) dans des proportions comparables, les habitats et espèces ayant subi des effets négatifs, b) concerner la même région biogéographique et le même Etat membre c) assurer des fonctions comparables à celles qui ont justifié les critères de sélection du site concerné »[153].

3.2.2.2.6. <u>Concertation en cas d'incompatibilité avec des plans en vigueur</u>

« En cas d'incompatibilité » entre les prescriptions à valeur réglementaire d'un plan (au sens précité) en vigueur et celles d'un arrêté de désignation (notamment les interdictions

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comparaison implique que les différentes alternatives de la sélection restreinte soient examinées sur la base de critères scientifiques comparables en ce qui concerne leur impact sur la zone concernée et les raisons d'intérêt public pertinentes <u>respectives</u> (…) »

[148] C.J.C.E., 26 octobre 2006, aff. C-239/04, Commission c/ République portugaise, point 39.

[149] Sur cette notion, voy. COMMISSION EUROPEENNE, *Gérer les sites Natura 2000, …, op. cit.*, p. 44-45. Ni la Cour de justice des Communautés européennes, ni le Conseil d'Etat n'ont donné à ce jour une interprétation claire de cette notion.

[150] COMMISSION EUROPEENNE, *Gérer les sites Natura 2000, …, op. cit.*, p. 45.

[151] COMMISSION EUROPEENNE, *Gérer les sites Natura 2000, …, op. cit.*, p. 45.

[152] COMMISSION EUROPEENNE, *Gérer les sites Natura 2000, …, op. cit.*, p. 46.

[153] COMMISSION EUROPEENNE, *Gérer les sites Natura 2000, …, op. cit.*, p. 47. Pour plus de détails sur ce point, et sur la notion de cohérence écologique du réseau Natura 2000, voy. C.-H. BORN, « La cohérence écologique du réseau Natura 2000 », *op. cit.*, p. 193 et s.

particulières et les objectifs de gestion active qu'il prescrit), le Gouvernement est tenu d'organiser une *concertation* entre les « services concernés de l'administration régionale », selon des modalités qu'il doit fixer, le cas échéant, dans un arrêté (art. 29, § 1er, al. 1er, de la loi). La loi n'indique pas comment l'incompatibilité est constatée ni en quoi elle consiste exactement.

A l'issue de la concertation, une proposition de mesures destinée à garantir l'intégrité du site doit être adoptée. La proposition doit être transmise à la commission de conservation concernée pour avis. Aucun délai n'est prévu. Le contenu de la proposition n'est pas spécifié dans la loi, mais celle-ci doit en tout cas « *garantir l'intégrité du site* » (art. 29, § 1er, al. 3, de la loi).

Au terme de cette concertation, le plan concerné doit être soumis au régime spécifique d'évaluation appropriée des incidences des plans visé par l'article 29, § 2, de la loi dans trois hypothèses, à savoir quand :

- la commission de conservation concernée estime que la proposition de mesures correctrices qui lui a été soumise ne suffit pas pour garantir l'intégrité du site ;
- la commission de conservation n'a pas rendu l'avis requis dans les deux mois de la notification de la proposition de mesures ;
- aucune proposition de mesures n'a été transmise à la commission de conservation.

Les suites de l'évaluation ne sont pas expressément prévues.

3.2.2.3. Mise en œuvre et suivi

En ce qui concerne la mise en œuvre des régimes de protection et de gestion du réseau, la législation n'est guère développée. Force est de constater que la loi ne décrit que les grandes lignes des mécanismes de contrôle ou de management. A ce jour aucun arrêté d'exécution n'a pris le relais.

Ainsi elle ne se prononce pas sur la forme que prendront les mesures préventives, ni sur l'autorité qui sera en charge de ce régime.

En outre, en ce qui concerne le régime d'évaluation des incidences, on a vu que la problématique Natura 2000 était appelée à s'intégrer dans les mécanismes existants. Les législations en la matière n'accordent cependant que rarement un droit d'avis à l'administration compétente. Ainsi, tandis que la législation sur le permis d'environnement requière un avis de la DNF sur la complétude[154] des dossiers ainsi que sur l'opportunité[155] de certains projets, en matière de permis d'urbanisme ou de plan d'aménagement du territoire, le CWATUP ne prévoit pas de mécanisme similaire.

S'agissant du régime de gestion, la loi sur la conservation de la nature décrit le cadre juridique, les outils juridiques qui pourront être utilisés mais elle n'intègre pas de référence aux mesures et travaux techniques nécessaire au maintien ou à la réhabilitation des sites dans un état de conservation favorable. Si les objectifs de gestion active sont énumérés dans l'arrêté de désignation, la loi ne prévoit pas de plan de gestion global à l'échelle du site. Aucune autorité n'est par ailleurs désignée pour assurer le suivi et assumer la responsabilité de chaque site en particulier.

On peut supposer qu'une partie de ces questions seront réglées par le Gouvernement qui dispose en la matière de certaines habilitations, mais il semble qu'il eut été opportun voire nécessaire pour assurer la cohérence et l'effectivité de la protection et de la gestion des sites de compléter la loi.

En matière de suivi, si la directive « Habitats » impose une obligation de surveillance et de transmission des résultats des régimes de protection et de gestion[156], la loi sur la conservation de la nature ne semble s'être que peu préoccupée du suivi du réseau Natura 2000.

Ainsi, on ne trouve trace du suivi des sites que dans la définition de la mission des commission de conservation qui est de « *surveiller l'état de conservation des sites Natura 2000, afin d'assurer leur maintien ou leur rétablissement, dans un état de conservation favorable, en tenant particulièrement compte des types d'habitats naturels prioritaires et des*

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[154] Art. 3, al.2 de l'arrêté du Gouvernement wallon du 4 juillet 2002 arrêtant la liste des projets soumis à étude d'incidences et des installations et activités classées.

[155] Art. 2, §5 de l'arrêté du Gouvernement wallon du 4 juillet 2002 arrêtant la liste des projets soumis à étude d'incidences et des installations et activités classées.

[156] Art. 11 et 17 de la directive.

espèces prioritaires et en prenant en considération les exigences économiques, sociales et culturelles ainsi que les particularités locales. » (art. 30 de la loi) Leur composition reflète un diversité qui s'apparente plus à un souci de participation qu'à un réel suivi scientifique et le texte ne donne aucune indication sur les méthodes et moyens dont disposeront ces commissions pour s'acquitter de leur tâche.

3.2.2.4. State of the art

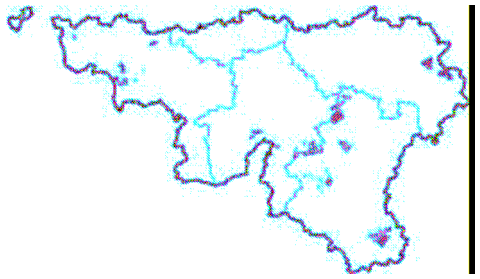
3.2.2.4.1. <u>In the Walloon Region: elaboration of designation decrees.</u>

A. PILOT SITES

The Walloon Region entrusted to several university teams the elaboration of pilot designation decrees. The work of these university teams was to enclose on May 1, 2004. It related to 20 pilot sites. So, 10.000 ha of "pilot sites" have already been the subject of inventories and for those, the designation decrees are being negotiated with the various actors of Natura 2000 (Anonymous, 2005c).

List of pilot sites

BE32002 Vallée de l'Escaut en aval de Tournai
BE32006 Bois d'Enghien et de Silly
BE32012 Bord nord du bassin de la Haine
BE32017 Vallée de la Haine en aval de Mons
BE33035 Plateau des Hautes-Fagnes
BE33037 Camp militaire d'Elsenborn
BE34003 Vallée de l'Ourthe entre Hotton et Barvaux
BE34008 Camp militaire de Marche-en-Famenne
BE34010 Plaine de Ny
BE34029 Haute-Wamme et Masblette
BE34036 Haute-Lesse
BE34037 Haute-Lomme
BE34057 Marais de la Haute-Semois et Bois de Heinsch
BE34058 Camp militaire de Lagland
BE34065 Bassin supérieur de la Vire et du Ton
BE34066 Vallée du Ton et Côte bajocienne de Montquintin à Ruette
BE35018 Bassin de l'Hermeton en aval de Vodelée
BE35034 Vallées des Ruisseaux de Rempeine et de la Scheloupe
BE35037 Vallée de la Wimbe
BE35038 Bassin de la Lesse entre Villers-sur-Lesse et Chanly



To carry out the whole of the inventories, the Walloon Region engaged in March 2005, 20 people in charge of the cartography of Natura 2000 areas. Currently, this cartography is in progress on 40.000 ha and should enclose during the end of 2007. The priority was given to sites most concerned by agriculture, in term of surface.

The 20 people were divided into 7 teams distributed on all the Walloon territory. For questions of organization and timing, there is no systematic making of contact with the farmers. Indeed, the passages of the scientists are rather fast and single: they draw up simultaneously the cartography and the state of conservation of the site.

The cartography of the totality of Natura 2000 areas is envisaged in the 6 to 8 next years. The deadline for the elaboration of the whole of designation decrees was the end of 2010 but that will not be already possible any more…

B. DIALOGUE WITH THE PARTNERS

Before the elaboration of designation decrees, the *Division Nature et Forêts* (DNF) does not contact directly the owners because of the problems encountered during the crossing between the *Plan de Localisation Informatique* (PLI) and N2000 and in order not to create inequality of treatment. In fact, the Walloon Region charged SRFB and NTF with sensitizing forests owners with N2000, and FWA with sensitising farmers.

On the initiative of the minister Lutgen and of the DNF, a series of meetings between the various N2000 partners was organised. The first meetings began on June 16, 2005 and various associations were involved: *Fédération Wallonne de l'Agriculture* (FWA), *Inter-Environnement Wallonie* (IEW), *Société Royale Forestière de Belgique* (SRFB), *Nature Terre Forêts* (NTF). The main discussed topics were:

- First project of Designation decree for the N2000 site of Lesse valley between Villers-sur-Lesse and Chanly
- Suggested management measures
- Notebooks of habitats and species

REMARKS

The implementation of the Natura 2000 network is a unique opportunity to define coherent objectives as regards to nature conservation and to identify and cartography the spinal column of what should be the Walloon ecological network.
However, Natura 2000 network does not have the ambition to cover the whole of the Walloon biological heritage. Other initiatives are necessary to supplement the inherent actions with Natura 2000 (local or sectoral), in particular for species and important habitats not identified as being of Community interest. The strategy of the nature conservation in Wallonia is not limited to Natura 2000 operation. It is on the level of other sectoral policies (the agricultural regroupings, the modes of subsidy in favour of agriculture, sylviculture, the management of the rivers, the rehabilitation of careers after exploitation, the management of the borders of communication infrastructures, the rehabilitation of the industrial waste lands...) that actions compatible with the nature conservation must also be implemented. It is because the legislation is defective or sometimes not respected in these various activity sectors, that the actors of the nature conservation try to take over but it is a solution that is neither sustainable, nor efficient if the managers directly concerned do not adhere to the actions to implement.

3.2.2.4.2. In the Flemish Region: Definition of conservation goals

Up till now, only for the sites where a Nature Objective Plan (*Natuurrichtplan* or *NRP*) has been performed (for six of the Flemish SCIs), the conservation objectives are formulated. In the meanwhile, decision makers make use of the reference work of Heutz and Paelinckx (2005) for assessment of the state of conservation and for setting the conservation goals.

In Flanders, the concept of NRPs has been disputed and the Flemish nature administration decided to not extend this procedure to all SCIs. One is now working hard to list the conservation goals for all SCIs before 2010 (pers. comm. K. Sannen, *ANB*).

3.3. Difficulties with the legal translation of scientific reality

3.3.1. Long-term evolution of the sites and the perimeters and measurements

Nature is the result of the biological evolution, started since several billion years and which produced, by complicated mechanisms and always very badly understood, million species with which we divide planet. It is this extraordinary diversity which the policy of nature conservation wants to maintain, not only in its current state, necessarily transitory since is to it a dynamic process, but also in its future state. To preserve nature, it is thus to preserve the existing inheritance and the conditions of the biological evolution.[157]

In law the technique of ecological zoning can be defined as the designation of zones to which various legal obligations favorable to the nature conservation or the management of the environment are assigned.[158]

However each environment has a proper structure and an irreplaceable role in natural balance that the traditional legal categories are not able always to apprehend. Ecology thus escapes by its dynamic and processual character from legal rationality, made of fiction, simplification and fragmentation.[159] Any strategy of conservation must be sufficiently flexible to adapt to the infinite variety of living and its evolution.

Once the Natura 2000 network set up, this one could not thus remain fixed. The ecological dynamics of the ecosystems hardly allows it, particularly in a context of climatic reheating, brought to cause important modifications in the surface of distribution of the species and the natural habitats of Community interest. With term, the relevance of designations of SPAs and SACs could for this reason be partially called into question. In a laconic way, the Habitats directive provides that "the Commission (...) carries out the periodic evaluation of the contribution of Natura 2000 to the achievement of the aims had to articles 2 and 3. (...)", this implies that an evolution of the network is possible.

Sites will thus be brought to be *added* to the network Natura 2000. 160 That can prove to be essential to ensure the achievement of the objectives of conservation of the two directives. In this respect, the Walloon law does not exclude that new sites Natura 2000 are indicated in the future, in so far as the procedure of designation envisaged is observed161.

Is the *withdrawal* of sites of the network possible?

Whereas the declassification of the SPAs does not make the object of any specific procedure, and is not allowed that in the conditions established by the Court of Justice in its stop "Leybucht"[162], the declassification of a SAC is apprehended expressly by the Habitats directive in its article 9, which provides that, in the context of the evaluation by the

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[157] E. SERUSIAUX, « La nature ? » in Ministère de la Région wallonne, *Le grand livre de la nature en Wallonie*, Tournai, Casterman, 1995, p. 21.

[158] D. MISONNE, « Le zonage en droit de l'environnement : inventaire et critères de désignation » in CEDRE, *Le zonage écologique*, actes du colloque de Gembloux du 29 mars 2001, Bruxelles, Bruylant, p. 13.

[159] N. DE SADELEER, « Introduction », in CEDRE, *Le zonage écologique*, actes du colloque de Gembloux du 29 mars 2001, Bruxelles, Bruylant, p. 5.

[160] Ainsi, bien qu'elle ne le prévoie pas expressément, la directive Oiseaux n'exclut pas qu'un Etat membre doive, suite à une évolution naturelle ou liée à l'état de conservation d'une espèce d'oiseau de l'annexe I, classer comme ZPS de nouveaux sites, compte tenu notamment « *des tendances et des variations des niveaux de population* » de cette espèce (art. 4, § 1, al. 3, de la directive Oiseaux). La directive Habitats prévoit expressément cette hypothèse, en disposant que les Etats membres « *suggèrent, le cas échéant, l'adaptation de [leur proposition de liste nationale] à la lumière des résultats de la surveillance visée à l'article 11* », laquelle porte précisément sur l'état de conservation des espèces et habitats naturels présents sur leur territoire.

[161] Le délai imparti pour désigner les sites correspondant aux ZPS (21 janvier 2003) (art. 25, § 2, de la loi) n'étant pas de rigueur, les désignations faites ultérieurement restent valables.

[162] Sur ce point, voy. E. ORBAN de XIVRY, « La procédure de sélection des sites en Région wallonne », in COLL., *Natura 2000 et le droit, Aspects juridiques de la sélection et de la conservation des sites Natura 2000 en Belgique et en France*, actes du colloque de Louvain-la-Neuve du 26 septembre 2002, Bruxelles, Bruylant, 2004, pp. 117 et svts.

Commission of the contribution of the network to the objectives of the directive, " *a special area of conservation may be considered for declassification where this is warranted by natural developments noted as a result of the surveillance provided for in Article 11*.". The directive thus excludes the withdrawal from sites for other reasons that ecological. The Walloon Region transposed this assumption expressly (Article 25, § 5, of the law of July 12, 1973). [163]

En région wallonne, en ce qui concerne les régimes de protection, la loi sur la conservation de la nature (art. 26, §1er, al. 4) prévoit que le Gouvernement peut, après l'avis de la commission de conservation concernée, revoir les prescriptions visées aux points 6 (interdictions et mesures préventives), 7 (objectifs de gestion active) et 8 (moyens proposés pour la gestion) en fonction de l'évolution des connaissances scientifiques, des techniques de gestion ou de l'état de conservation du site. L'arrêté de révision est soumis aux formalités de publicité de la désignation. En outre, la loi établit un mécanisme de révision du contrat de gestion active de façon à pouvoir revoir le contrat en fonction de l'évolution des mêmes éléments, ou si les objectifs de gestion active du site précisés dans l'arrêté de désignation ont été révisés pour les mêmes motifs. (art. 27 §4)

3.3.2. Incertitude scientifique et principe de précaution

« Politics is the art of taking good decisions on insufficient evidence » Lord Kennet.
Devoted by the Declaration of Rio from June 13, 1992, the principle of precaution states that the absence of certainty, taking into account scientific knowledge of the moment , should not delay or to be opposed to the adoption of measures intended to prevent a risk presenting certain liking of gravity for the environment.
The application of this principle is particulary important for the conservation of biodiversity because of the immense gaps characterizing current knowledge in this field. The irreversible character of certain effects of the human activities on biodiversity requires anticipatory measurements before the extent of the effects was proven. [164]

The scientists share this vision and make these difficulties one of the characteristics of the biology of the conservation. Thus Michael Soulé qualifies it "crisis discipline". Its intention is of saying that it acts of a discipline pressed by time and that "in such a discipline, it is often necessary to act without a total knowledge of the problems, because waiting to collect all the data before acting can appear disastrous. It is thus necessary to work with information available and the best possible intuition, while tolerating a great part of uncertainty ". [165]

The principle of precaution was expressly devoted in directive 92/43/CEE "Habitats", like by caselaw relative to this directive.

Thus, article 6.3 of the directive states « *Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public* ».

The term " *having ascertained* " used in article 6.3, has important legal consequences in what it obliges the authority to do a strict application of the *principle of precaution* in case of doubt as for the impact of the project or the plan. This situation is called, one imagines it, to frequently arise in the Natura 2000network, taking into account the incomplete character of knowledge on the ecology of the species and habitats of Community interest and on the impact of a number of human activities.

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[163] C.-H. BORN, « La cohérence écologique du réseau Natura 2000 », in COLL., *Natura 2000 et le droit, Aspects juridiques de la sélection et de la conservation des sites Natura 2000 en Belgique et en France*, actes du colloque de Louvain-la-Neuve du 26 septembre 2002, Bruxelles, Bruylant, 2004, pp. 192-193.

[164] N. de SADELEER, C-H. BORN, *Le droit international et communautaire de la biodiversité*, Paris, Dalloz, 2004, pp. 71-73.

[165] G.K. MEFFE, D. RONALD CARROL and al., *Principles of conservation biology*, Sunderland, Massachusetts, Sinauer associates Inc., 1997, pp. 22-23; G.K. Meffe, "Crisis in a crisis discipline", *Conservation Biology*, 2001, 15, pp. 303-304. Voyez également N. de SADELEER, C-H. BORN, *Le droit international et communautaire de la biodiversité*, Paris, Dalloz, 2004, pp. 19-20.

The Court of Justice did not hesitated to judge « The competent national authorities, taking account of the appropriate assessment of the implications of mechanical cockle fishing for the site concerned in the light of the site's conservation objectives, are to authorise such an activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects.» (nous soulignons)[166]. One notes the severity of this literal interpretation of the text of the directive: no "reasonable scientific doubt" can remain as for the impact of the project on the integrity of the site. It comes out from it, ultimately, that the burden of proof of harmlessness of a project or a plan rests if not on the applicant, at the very least on the competent authority to approve the plan or the authorization[167]. The obligation to hold account of the cumulative effects of the projects reinforces the difficulty in bringing this proof.[168]

[166] C.J.C.E., 7 septembre 2004, aff. C-127/02, « mer de Wadden », point 61. The Court adds that « *it is clear that the authorisation criterion laid down in the second sentence of Article 6(3) of the Habitats Directive integrates the precautionary principle (…)* » (point 58).

[167] The Court confirmed in its stop "Corncrake" of January 29, 2004 above mentioned. It condemned Austria to the reason that « *Having regard to the content of those expert's reports and in the absence of evidence to the contrary, the inevitable conclusion is that (…), the Austrian authorities were not justified in considering that the planned extension of the golf course in question in the present case (…), was not such as significantly to disturb the corncrake population in the Wörschacher Moos SPA and would not adversely affect the integrity of that SPA.* » (C.J.C.E., 29 janvier 2004, aff. C-209/02, Commission c. République d'Autriche, point 26)

[168] C-H. BORN, « Quelques réflexions sur le mécanisme de protection des sites Natura 2000 contre les incidences des plans et projets », in COLL., *Mélanges en l'honneur de Michel Prieur*, Paris, Dalloz, à paraître (2006). Voyez également C-H. BORN, *Guide juridique…* , *op. cit.*, p. 187-221-237.

3.4. Social dimensions

3.4.1. The primary sector: agriculture, forestry, extraction industry (landscape impacts, use of resources, impact on biodiversity and ecosystems)

We first speak about agriculture and then we will present some pieces of information for forestry. In general for this section we will refer to the Walloon situation taken as an example but in most cases it would be possible to extrapolate to the Flemish situation.

3.4.1.1. Agriculture

We first speak about agriculture and then we will present some pieces of information for forestry. In general for this section we will refer to the Walloon situation taken as an example but in most cases it would be possible to extrapolate to the Flemish situation.

Agriculture

One first remark to make is to note the difference between “cost for the agriculture” and “loss of earnings”. When a farmer has some costs, he has to spend this money, money goes out. Conversely when we speak about “loss of earnings” there is no real flow of money for the farmer, he does not win that money.

To write this section we will lean on a document “Piste pour l’indemnisation des exploitations agricoles touchées par Natura 2000” (DGA, 2006). This document presents some interesting figures based on a reference case , a farmer located in the Walloon average concerning the charge of livestock and mineral manure spreading (that is, 87,9 kg/ha of $N_{mineral}$ and 1,89 UGB/ha or 160,6 kg/ha of $N_{organic}$; this is what we can call the Walloon profile).

Note that if the farmer aims to get a compensation for the reduction of activity imposed on the Natura 2000 part of his land and in the same time raise activity on those that are not integrated in the zone, he has to make that in keeping the “Walloon profile” on the whole areas he manages[169].

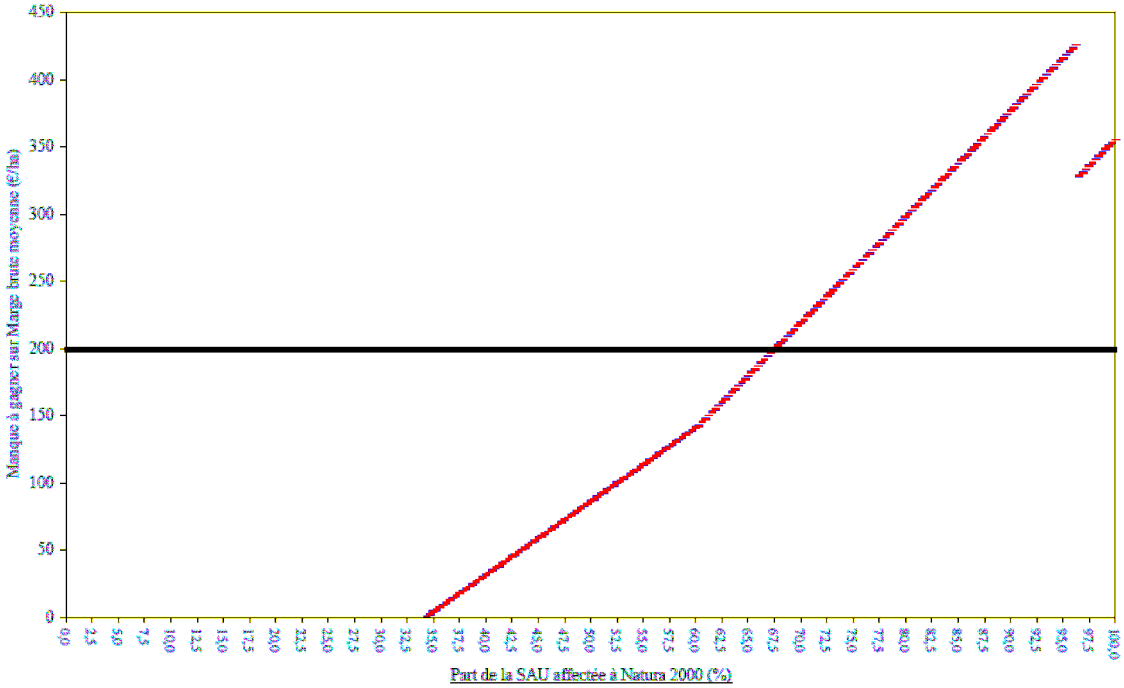
We can see on Figure 16 below the evolution of the loss of earnings (€/ha) in function of the fraction of lands integrated in Natura 2000. The horizontal line is the limit that the compensatory indemnity cannot overtake, that is 200 €.

As we can see the loss of earnings is globally a growing function[170] of the proportion of lands integrated in Natura 2000. This function is strictly monotonous on the gap going from 35 % to 96 %, which makes things easy. We can make some classes of proportions of SAU (Surface Agricole Utile – Useful Agricultural Surface) in Natura 2000 in the Table 8.

Figure 16: Evolution of the loss of earnings in relation to average rough margin (€/ha) in function of the SAU part integrated in Natura 2000

[169] In other terms, the farmer desintensifies in Natura 2000 and intensifies outwards of this zone to stick to the Walloon profile on the whole of the SAU he manages meanwhile respecting the norms of the PGDA (Programme de Gestion Durable de l’Azote). We can question the validity of such a procedure. The model of the Walloon agriculture aims to integrate agricultural production and in the same time environmental protection. By contrast, this approach dissociates the production from the environment to tend to a “Dutch type” agricultural model: on the one hand, intensively managed areas, and on the other hand, areas exclusively devoted to nature protection. Moreover, the pedo-climatic conditions of the Famenne limit the degree of intensification.

[170] Two models were established to obtain this function: (1) PheCFha = 663,39 + 269,08 UGB ha + 8,76 Nminha with a rate of rough margin estimated to 0,662 for the SAu part out of Natura 2000 and (2) $PheCFha_{min}$ = 470,20 + 167,72 UGB ha + 8,01 Nminha with a rate of rough margin estimated to 0,574 for the SAU part in Natura 2000.



Source: DGA, 2006.

Table 8: Single amount of the compensatory indemnity (proposition of the DGA)

% de SAU en Natura 2000	Indemnité compensatoire (€/ha)
Moins de 40 %	30
De 40 % à moins de 60 %	140
60 %[171] et plus	200

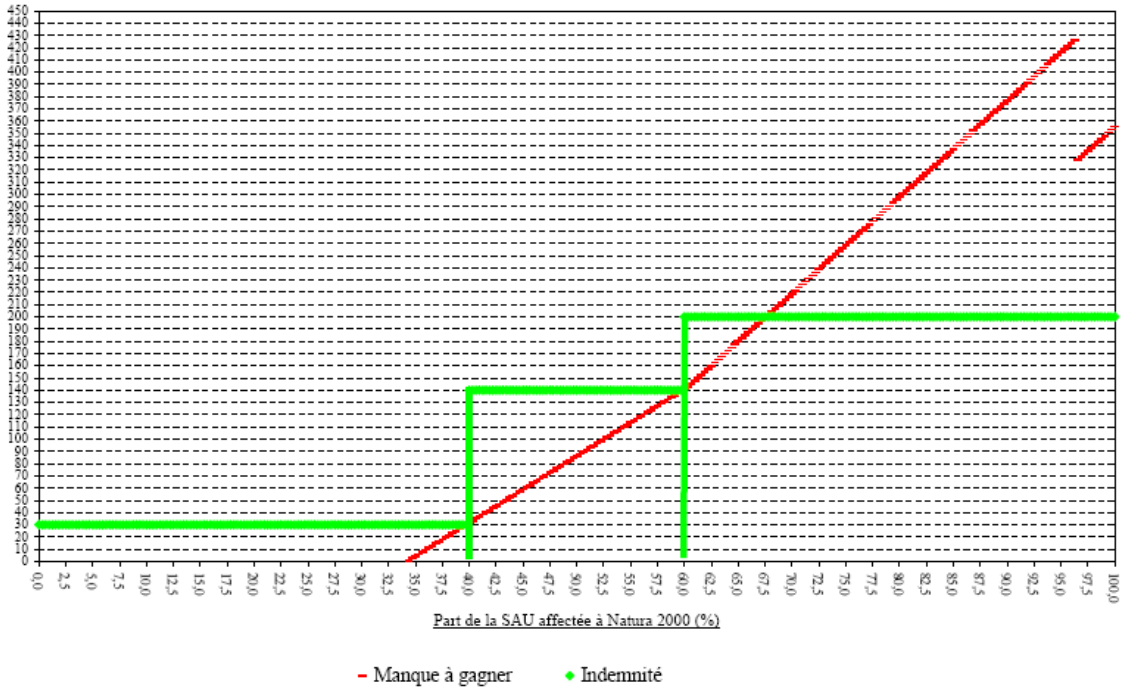
Source: Anonyme, 2006.

It would be interesting for those farmers, of whom more than 70 % of the SAU are in Natura 2000 to reduce the charge of livestock. This with the aim to have a density of livestock on all the area which permit to subscribe to the MAE 7 ("Maitien de faibles charges en bétail" – see Appendix 9 for more details). If we proceed in this way, the percentage of SAU in Natura 2000 from which the loss of earnings reached 200 €/ha goes from 70 % to 75%.
Concerning the first gap, we can observe as well that a compensation is planned for the farmer where it is not justified theoretically. A minimal amount of 30 € is proposed because some variables can make pressure on farmer's revenue and so, it is to be taken in account.

We can see on Figure 17 the loss of earnings and the compensatory indemnity on the same graph.

[171] On notera que la limite de classe de 60 % correspond à un point d'inflexion de la courbe. C'est à partir de là que, selon les hypothèses formulées, l'exploitation atteint le plafond PDGA pour l'azote organique sur la partie non Natura 2000 de ses terres.

Figure 17: Loss of earnings and compensatory indemnity (€/ha) according to the SAU part integrated in Natura 2000 (3 intervals of SAU)



Source: Anonyme, 2006.

For this part, we can add two remarks. **First**, as we can see on Figures 3 and 4, as long as the area integrated in Natura 2000 is lower than 35 % of the SAU, it is not theoretically necessary to give a compensation to the farmer in view of the fact that he would be able to compensate the loss of earnings in intensifying, in the limits of the licence, his activities on the part outside of Natura 2000[172]. On the other hand, beyond 70 % of SAU integrated in Natura 2000, the limit of the 200 €/ha of compensation for the loss of earnings is exceeded.

How many farmers are concerned, which SAU is touched? (figures for the Walloon Region)

- In total, about 5 000 farmers are concerned with the issue of Natura 2000. It represents a little more than 28 100 ha on the whole, of which approximately 25 300 ha are meadows.
- There would be roughly 4 500 farmers of which less of 35 % of the SAU is touched, that is, 90 % of the total of farmers concerned. The aforesaid farmers totalize 17 100 ha of SAU, which represents around 61 % of the total concerned SAU.
- Around 110 exploitations totalizing 3 120 ha, i.e., 2 % of the exploitants but 11 % of the SAU, would have 70 % and more of their SAU in Natura 2000.

If the more concerned farmers, namely the last one, would adopt the MAE n° 7, it would be from around 75 % of the SAU in Natura 2000 that the loss of earnings would cross the limit of 200 €/ha instead of the 70 % previously estimated. There would be only 90 exploitations totalizing around 2 550 ha, that is, 9 % of the SAU in Natura 2000.

The **second** remark is rather a warning. The maximal amount of the compensatory indemnity is about 200 €/ha and it is in all likelihood not sufficient for all the farmers. For some of them, it is even probable that the loss overcomes 400 €/ha, which is a serious issue.

We spoke about the MAE 7 to reduce this loss but this does not fully compensate; that is why we can think of some other instruments. Conversion to biological production for the most

[172] Note that the same remark as above for the intensification can be made. Moreover, the fact that the loss of earnings begins when we gain 35% of the SAU will exert a huge impact. For some farmers who own on the average 100 ha of land, it would mean that the loss of production on 35 ha of their exploitation doesn't hamper the economic viability of their exploitation. The validity of such an argument in questionable!

touched exploitations could be a solution. However we have to keep in mind that there is a risk to reach the upper limit of co-financement established by the European Commission, which for the agro-environmental payments (2nd pillar of the Common Agricultural Policy) include essentially the MAE and "bio" bonus, and which is fixed to 450 €/ha for meadows[173].

To close the analysis of the information proposed by the document "Piste pour l'indemnisation des exploitations agricoles touchées par Natura 2000" (2006) we present in the next table (Table 8) an estimation of the annual volume of Natura 2000 bonus for the agricultural sector in Wallonia for 2006.

Table 9:

% Natura 2000	Indemnity (€/ha)	Nbr of farmers	SAU in Natura 2000 (ha)	Approximate amounts (€) of indemnity	Total SAU of exploitations (ha)
< 40 %	30	4 570	18 400	552 000	297 500
From 40 % to < 60 %	140	200	4 800	675 000	10 000
60 % and more	200	160	4 900	981 000	6 400
Total		4 930	28 100	2 208 000	313 400

Source: « Piste pour l'indemnisation des exploitations agricoles touchées par Natura 2000 » (2006)

This gives an actual estimation of the "annual weight" of the Natura 2000 measure for the programming 2007-2013 of the PDR[174]. Nevertheless, this note of the DGA, does not take into account the fact that the under-using of the equipment and the infrastructures has a cost. Investments have been realized and we have to take them into account because the repayment has to be done, be it within or without Natura 2000.

The MAE

From the point of view of the agri-environmental measures, it is interesting to have a look at the costs of application of the MAE valorizing the ecological network. This point is presented in Appendix 10. Likewise, in the project Econet some measures were proposed. One of those measures was studied by a student. Her conclusions about *the transformation of a species-poor, intensively pastured and fertilized meadow, into a species-rich meadow* are presented in Appendix 11.

3.4.1.2. Forest

In 2006, the convention « Méthodologie d'évaluation du coût des mesures de gestion spécifiques aux habitats forestiers NATURA 2000 (Seconde convention) » made a study on the financial consequences of the implementation of Natura 2000.

Some measures that appear in the preliminary draft of the designation decree are restricting and cannot be considered as "bonnes pratiques sylvicoles" and they were assessed. These measures are the following:

- abattage précoce de peuplements exotiques (R 048)
- installation d'îlots de sénescence (R 056)
- conservation d'arbres « remarquables » (M 056)

Within the framework of the assessment of the financial loss at the scale of a site, it is the site "Bassin de la Lesse entre Villers-sur-Lesse et Chanly" that was choosen as a study case.

Table 9 below summarizes the loss in the management unit ("Unité de gestion UG") of the site of the Lesse.

Several hypotheses were made, some very maximalistical (implying that it probably induces an overestimation of the loss). On this basis and with some more realism, the total financial loss linked to the implementation of Natura 2000 in the forest habitats of the Lesse is estimated, all management units merged, at about 1 000 000 €, i.e., on the average, for the 1764 ha of forest habitats of the site, 575 €/ha. This estimation is for information only and

[173] It would be judicious to consider raising this barrier. This would allow enlarging the range of instruments to prevent the farmers mostly touched by Natura 2000 from being be excessively penalized.
[174] Rural Development Plan

could more or loss vary downwards in function of some parameters (See Appendix 12 for some explanations).

The second table (Table 10) is the same summary for the Walloon Region. We can see that, on a basis of a majority of maximal hypothesis, the loss on the Walloon scale is between 36 and 40 billion € for the 170 000 ha of forester habitats included in the Natura 2000 network, that is a mean cost of 210 to 240 €/ha. As for figures of the Lesse, change of hypothesis to have "minimalistical" hypothesis could vary downwards, probably of an half of the total loss.

Table 8. Results of the cost estimation of Natura 2000 actions in forests for the whole Walloon Region. Source: FUSAGx – Forêt, 2006, p. 54.

Echelle	**Coût (€)**	
	Minimum	Maximum
Coût total	20 000 000 €	40 000 000 €
Coût / hectare	120 €/ha	240 €/ha
Coût / ha / an	4 €/ha/an	8 €/ha/an

Note that to have these figures, we consider a period of time of 30 years.

3.4.1.3. Extraction industries

Some costs will certainly be supported for this type of activities but up till now, no study has been made. It will probably be easier to make an assessment when we will be further in the project.

Table 9. Synthese du préjudice dans les unités de gestion du site Bassin de la Lesse. Source: FUSAGx – Forêt, 2006, p. 40.

Mise en place d'îlots de sénescence									
Action et pourcentage d'îlots	Unité de gestion	Propriétaire	Surface feuillue	Chênaie et milieux assimilés	Hêtraie et milieux assimilés	Valeur marchande du bois	Perte de jouissance du fonds	Préjudice global	
R058 (3%)	A4	Indistincts	41,65 ha	100%	0%	4790€	725€	5516€	
R056 (10%)	C2	Rochefort	5,92 ha	100%	0%	2269€	333€	2602€	
		Tellin	1,11 ha	100%	0%	426€	62€	488€	
		Non identifié	5,38 ha	100%	0%	2062€	303€	2365€	
R056 (3%)	D2	Non identifié	3,11 ha	100%	0%	358€	52€	410€	
R056 (3%)	E1	Rochefort	534,85 ha	50%	50%	62836€	9026€	71862€ --> 13294€	
		Tellin	78,23 ha	66%	34%	9129€	1320€	10449€	
		Non identifié	198,61 ha	25%	75%	23580€	3352€	26931€	
R056 (3%)	E2	Rochefort	58,25 ha	100%	0%	6839€	983€	7682€	
		Tellin	103,21 ha	100%	0%	11870€	1742€	13612€	
		Non identifié	5,92 ha	0%	100%	710€	100€	810€	
R056 (95%)	E3	Rochefort	44,34 ha	0%	100%	16844€	1578€	18424€	
		Tellin	1,19 ha	0%	100%	452l€	424€	4944€	
		Non identifié	13,27 ha	0%	100%	5041O€	4727€	55137€	
M056 (10%)	E4	Rochefort	67,29 ha	80%	20%	9685€	1172€	10837€	
		Tellin	53,98 ha	80%	20%	7753€	940€	8694€	
		Non identifié	17,43 ha	75%	25%	2483€	304€	2787€	

--> Compte tenu des 13,06 ha de "non productif" qui devraient être consacrés à la mise en place d'îlots.

Abandon au TE et actions lisières				
Unité de gestion	Propriétaire	Surface	Essence	Valeur maximale du préjudice
A2	Rochefort	0,47 ha	Pin	400€
A3	Rochefort	4,03 ha	Douglas	2130€
	Tellin	1,80 ha	Pin	2207€
B1	Non identifié	0,11 ha	Pin	250€
C2	Indistincts	6,70 ha	Peuplier	12500€
	Indistincts	6,05 ha	Résineux (3/4 Epicéa)	13600€
D2	Indistincts	0,74 ha	Epicéa (80%) et Peuplier	1700€
E1	Rochefort	1,09 ha	Diverses	2230€
	Tellin	0,15 ha	?	340€
	Non identifié	3,42 ha	Diverses	7700€
E2	Indistincts	1,37 ha	Résineux (3/4 Epicéa)	2970€
E4	Rochefort	6,65 ha	Résineux (2/3 Pin)	9800€
	Tellin	5,63 ha	Pin	7850€
	Non identifié	9,03 ha	Diverses	10500 à 19000€

Abattage avant TE				
Unité de gestion	Propriétaire	Surface	Essence	Préjudice global
A5	Rochefort	65,91 ha	Pin	304224€
	Tellin	18,65 ha	Pin	
A6	Rochefort	52,44 ha	Pin	
	Tellin	8,16 ha	Pin	278231€
	Non identifié	4,28 ha	Pin	

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TOTAL : 1011687€

Table 10. Synthese du préjudice estimé à l'échelle de la Région engendré par la mise en œuvre de la directive Natura 2000. Source: FUSAGx – Forêt, 2006, p. 53.

Milieu	Action	Pourcentage d'îlots	Surface	Valeur marchande du fonds (VMF)	Proportion de forêts domaniales	Préjudice
Hêtraie	Îlots de sénescence	3%	34000 ha	2250 €/ha	10 %	13.380.000 € à 15.840.000 €
Chênaie			77000 ha			
Forêts alluviales		10%	1100 ha	1350 €/ha	10 %	430 000 €
Chênaies pédonculées		10%	2800 ha	1350 €/ha	10 %	189 000 €
Boulaies tourbeuses		100%	600 ha	/	/	0 €
Erablières		100%	900 ha	500 €/ha (si valeur vénale fonds [VVF] = 1000€/ha et VMF=50%*VVF)	0 %	1 077 000 €
Pineraie sur sol calcaire	Abattage précoce		100 ha	1800 €/ha	10 %	672 500 €
Résineux (pessières) sur sols tourbeux	Abattage précoce		1679 ha	2250 €/ha (classes 1 à 4) ou 1800 €/ha (classes 5 et 6)	45 %	5 164 000 €
Résineux (pessières) sur sols paratourbeux	Abattage précoce		1222 ha	2250 €/ha (classes 1 à 4) ou 1800 €/ha (classes 5 et 6)	45 %	4 538 000 €
	Abandon au TE		407 ha			
Résineux (pessières) sur sols alluviaux	Abandon au TE		1625 ha	2250 €/ha (classes 1 à 4) ou 1800 €/ha (classes 5 et 6)	0 %	2 108 000 €
Résineux (pessières) sur argile blanche	Abandon au TE		875 ha	2250 €/ha (classes 1 à 4) ou 1800 €/ha (classes 5 et 6)	14 %	12 590 000 €
	Abattage précoce		1750 ha			
	Pas de contrainte		875 ha	/	/	0 €
Forêts exotiques	Perte de jouissance du fonds à ne pas indemniser		2157 ha	2250 €/ha (classes 1 à 4) ou 1800 €/ha (classes 5 et 6)	24 %	2.331.000 € à 3.640.000 €
					Total:	36.508.500 à 40.277.500 €

3.4.2. The secondary sector: manufacture, transformation (use of resources, pollution)

Some costs will certainly be supported for this type of activities but up till now, no study has been made. It will probably be easier to make an assessment when we will be further in the project.

3.4.3. The tertiary sector (tourism, education, socio-cultural values)

Some costs will certainly be supported for this type of activities but up till now, no study has been made. It will probably be easier to make an assessment when we will be further in the project.

3.4.4. The consumers, tourists, landowners and hunters

In this section we will present some costs supported by people on a local view.

3.4.4.1. The hunters

For the years 2002-2003 there were 15 772 hunting permits for the Walloon Region and 2200 societies of hunting (Delwasse, 2004).

Doesn't hunt who wants!! The costs beared by the hunters are of two types: the occasional expenses and the recurrent ones.

We can see below a summary (Table 12) of the different recurrent expenses and a table with the economic impact of hunting in the Walloon Region is given in Appendix 13.

Table 11: summary of the different recurrent expenses. Source: Delwasse, 2004, p. 52.

Dépenses	**Proportion des chasseurs concernés**	**Budget annuel moyen (italique = budget median)**
Assurance RC "chasseur"	10-0 %	€ 5-0
Permis de chasse + taxe provinciale	10-0 %	€ 245,41
Participation dans une (des) société(s) de chasse	76,00 %	€ 2 70-0
« Chapeau » Munitions	10-0 % 10-0 %	€ 70-0 € 20-0
Entretien des armes	52,00 %	€ 14-0
Equipement vestimentaire Accessoires	10-0 % 10-0 %	€ 25-0 € 10-0
Carburant	10-0 %	€ 499,35
Chiens	49,00 %	€ 631,44
Hôtel Restaurant	31,11 %	€ 697,42 € 654,61
Vin et autres boissons	56,44 %	€ 458,83
Cadeaux Participation dans une (des) associations	56,82 % 80,89 %	€ 256,35 € 107,14
Livres et magazines	80,89 %	€ 124,94
Tir aux clays	33,78 %	€ 20-0
Chasse à l'étranger	51,00 %	?
Budget moyen total = pondéré par la proportion de chasseurs concernés par chaque poste de dépenses		€ 5 856,12
Budget moyen minimum = uniquement les dépenses exposées par tous les chasseurs		€ 2 044,76
Budget moyen maximum = toutes les dépenses		€ 8 015,49

We will see now what can change with the application of Natura 2000 and for what we have to pay attention.

The fragmentation of the territory and isolation of zones of huge ecological value are negative factors for the preservation of biodiversity. We can present the situation from two points of view. The hunters may be in favour of network and the absence of ecological network may be harmful.

The effects of the improvement of the ecological network will be double in fact. It permits to some endangered species (partridge, quail or hare) to find again a place in regions that

were favourable at the departure. Secondly, it allows raising the size of biotopes and populations of game species that are still present.

Conversely, the first bad impact of the absence of a network is the disappearance of a certain number of species. Secondly, the absence of network has the consequence that the hunters have to feed animals and that for two reasons:

- Complete the deficient alimentation of animals
- Move away the game from culture.

As we can see there are no ecological obstacles to improve an ecological network from a hunters' point of view. Nevertheless, there are some economical obstacles which can be easily overtaken with regional aids and agro-environmental bonus (bonus can cover the loss of productivity).

Hunters consider two other types of obstacles: practical obstacles and esthetical obstacle.

- *From the practical point of view* the best situation is the one where the hunter is the owner and the farmer of his hunting territory. If the hunter is not the owner of the territory on which he is the holder of the hunting right, he does not have a lot of means of pressure on the owner to make some works for the improvement of the network. The hunter has to convince the owner of the legitimacy of such things and that he will make the maintenance himself afterwards. We can see that it is better to be the owner of the territory to facilitate the implementation of the ecological network. Secondly, it is easier to adjust the territory if we are the farmer. If the farmer is himself hunter, he will have the willingness to make things right and the troubles caused by this will be more easily accepted. If the hunter is not the farmer it is impossible for him to make any transformations without the agreement of the farmer. The best situation is the one where the hunter is the owner who manages the territory. After that remains the question of who will be responsible of the maintenance of installations.
- *From an esthetical point of view* late mowing of roadside, hedges or maintenance of embankment can make problem. Some people prefer spaces well mowed than a lot of wild and untidy flowers. These kinds of practice are harmful for game. But it is certainly less important and it can be easily overcome.

To conclude this point we can say that a raise in the game population can lead to bigger economical impacts. Nevertheless hunting territory would not be bigger.

3.4.4.2. Tourists & consumers

Tourism will probably be touched by the implementation of Natura 2000. Costs are difficult to assess and up till now no study has been made.

Moreover, all economic actors surrounding consumers and tourists[175] will undergo some costs that will have impact on the well-being of the latter.

3.4.4.3. Landowners

See part "Loss of real estate"

3.4.5. Loss of real estate

In 2005, a student (F. Loozen[176]) made her dissertation on Natura 2000, in parallel with the ECONET project. Some observations were made by her about the loss of real estate.

The optimal scenario proposed by the ecologists planned, for Wallonia, the transformation of some agricultural lands into meadows. For the sample study site (zone of Nivelles), the economists evaluated the land area that underwent an assignment change with respect to the spatial zoning plan ("plan de secteur") as 5-8 ha. It appeared that the real estate values for these two categories of sites are different. From the information in 2003[177] concerning the property sales in Belgium, the mean price of an agricultural land was 1,64 €/m², while the mean price for a meadow was 1,44 €/m². From then on, the difference of real estate value

[175] See the system analysis to know the different actors involved.

[176] LOOZEN F., *Impacts de la mise en place des réseaux écologiques sur un acteur cible : les agriculteurs*, Louvain-la-Neuve, 2005 (mémoire de licence, inédit).

[177] Service Public Fédéral Economie, Direction Générale Statistique et Information Economique: http://statbel.fgov.be/pub/d4/p440y2003_fr.pdf

could be estimated to 0,2 €/m², that is 2000 €/ha. However, with the data for the zone of Nivelles, the mean sale value of an agricultural land was 1,89 €/m² and 1,80 €/m² for meadows. The proposed change by the ecologists lead from then on to costs of -9 €/m², that is 900 €/ha. On an area of 5-8 ha, the total cost would be of 900 €*5-8 = 45 072 €. We should be careful that this cost has to be distributed between several farmers.

At the same time (year 2004-2005), the student asked to some farmers the question about the loss of value of the real estate for lands situated on Natura 2000 sites. The answer is reported in Appendix 14. For the moment, we cannot say anything more but a study was initiated, in which we asked the opinion of some representative lawyers from the Walloon Region. The results could be discussed later and analyzed by the sociologic team.

4. Practice

4.1. Articulation and coordination with other policies

4.1.1. Les principles

4.1.1.1. The integration principle

Registered in several international, Community or national texts, the principle of integration constitutes the principal legal basis of the obligation of the States to hold account of biodiversity in their space planning.

The declaration of Stockolm precise in the 13th principle that "*In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population*". [178]

In Community legislation, it is new article 6 of the treaty that gives to him the character of general principle of Community legislation by prescribing that "*Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development.*"[179]

In national law, the legislation relating to the environmental impact assessment is generally presented like the mechanism of integration par excellence. And the Walloon decree of 27 May 2004 relating to the Book 1st of the Code of the Environment lays out in its D.2 article that "*the requirements {of safeguard and environmental protection} are integrated in the definition and the implementation of the other policies of the area*".

Concretely, the obligation of integration aims at the whole of the policies, strategies, actions and plans carried out by an authority. The regional legislations codifying the right of the environment (Flemish and Walloon Regions) stipulate indeed that the principle of integration aims the "*policies of the Region*"[180].

This integration must be carried out *at each stage of the « development process »* (Principle 4 of the declaration of Rio) or the "*national decision-making*" (art.10. a. of the CBD). The Community legislation is more precise: integration must have place on the level of the definition and the implementation of the Community policies and activities (Article 6 EC). Lastly, integration must be respected by all the competent authorities with one of the above mentioned stages of the decision-making process. No level of power - executive, legislative, legal - escapes from the obligation to integrate the environment, as well on the horizontal level as vertical.

With regard to the implementation of the principle, the authors agree to deduce from the principle of integration the obligation for the States to put all the means necessary so that the requirements of environmental protection are taken into account in an effective way through sectoral policies.

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[178] Principe 4 of the Rio declaration states that « *In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.* ». Article 10, a, of the CBD states that « *Each Contracting Party shall, as far as possible and as appropriate: (a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;* » (see also art. 6, b).

[179] On the jurisprudential level, the Court of Justice based, implicitly or explicitly, on the principle of integration, to recognize the possibility for the Community institutions of adopting measures having partially milked with the environment on a provision other than the article 175 CE. See CJCE, 29 mars 1990, aff. C-62/88, *Grèce c. Conseil*; 24 novembre 1993, aff. C-405/92, *Mondiet* (pêche maritime); 19 septembre 2002, aff. C-366/00, *Huber* (mesures agri-environnementales).

[180] Art. D.2, al. 3, du Livre Ier du Code de l'environnement ; art. 1.2.1, § 3, du décret du 5 avril 1995 contenant des dispositions générales concernant la politique de l'environnement.

In practice, one can affirm that the principle of integration contains two obligations of procedural nature at least:

- *to identify and assess the environmental impacts of the decisions concerned and to evaluate the extent to which they can compromise the achievement of the environmental objectives*. This double evaluation is done mainly by mechanisms of impact assessment of the policies, plans, programs and projects. It results from this a corollary obligation from motivation of the decisions taken with the glance of the incidences, in the body of the decision or the administrative file which accompanies it[181] ;
- to make so that, formally, *the environmental and socio-economic interests* are duly and equitably represented in the decision-making process specific to the sectoral policy concerned[182]. Even if a broad capacity of appreciation is left in the States to adapt this process, integration seems to necessarily have to take place:
    - on the one hand, by the establishment of *procedures of public participation* and/or *consultation of expert authorities as regards environment*;
    - on the other hand, by the adoption of mechanisms of *articulation* and *coordination of the decisions* at the same time vertical - i.e. between all the levels of capacity concerned - and horizontal - between the qualified administrations for each sector concerned, including the environmental protection. These mechanisms are very diverse. One distinguishes mainly:
        - mechanisms of *sectoral and intersector planning* (being used as reference common to the various administrations);
        - mechanisms of *articulation between decisions* (hierarchy of the standards, formal obligation of taking into account of the other decisions, etc.) ;
        - procedural mechanisms of *setting in conformity of the contradictory decisions*;
        - mechanisms of impact assessment;
        - *institutional mechanisms of coordination, co-operation and consultation;*
        - the *fusion of the instruments*[183].

In this direction, integration is initially *procedural and institutional*. But ultimately, the rigour of the measures adopted by the State within the framework of its policy of environmental integration *will rise initially from the obligatory function and ambitious of the environmental standards which must be the subject of an integration and not of the principle of integration itself.*

As regards must thus be integrated:

- all standards of environmental, ecological or landscape quality applicable in a site or a given landscape[184]. These standards of quality define a state of the environment or landscape which it is important to maintain or restore by directing the decision-making in all the activities sectors so that, individually or cumulatively, the decisions taken do not compromise the realization of these standards of quality;
- all standards of protection applicable to an element of biodiversity. In part the provisions of protection of the animal and vegetable species[185] as well as the regime

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[181] In the sense of an obligation of motivation, de SADELEER, 1999, p. 283.

[182] In this senss, see article 13.2 of the Draft Convention IUCN, stating that "*the Parties shall ensure that environmental conservation is treated as an integral part of the planning and implementing activities at all stages and at all levels, giving full and equal consideration to environmental, economic, social and cultural factors*". See also in community law, WASMEIER, 2001, p. 162 ; ALVES, 2003, p. 139.

[183] See as regards ecological zone, the inventory of the mechanisms of articulation in Walloon law established in JADOT, 2002.

[184] For exemple : qualitative aims of water surface fixed by the Walloon Government under the terms of art. D.156, § 1er, du Code de l'eau ou des objectifs de gestion active fixés dans les arrêtés de désignation des sites Natura 2000 (n° XXX).

[185] See in Walloon Region art. 2 et s. de la loi du 12 juillet 1973 sur la conservation de la nature.

applicable to all the zones protected under the terms of the legislation on the nature conservation, the water or the protection of the real inheritance.

4.1.1.2. Principle of articulation with orther legislations

There are number of landuses. And as much legislations which govern them. The law on the nature conservation is not indeed the only one to apply to the natural or semi-natural environments. Several administrative policies of planning or protection coexist thus on the same territories, in a way more or less coordinated by the legislator himself or general principles[186]. We synthesize the general principles organizing the interactions between legislation when there is no specific mechanism.

4.1.1.2.1. Hierarchy of the standards

Belgian legal scheduling is structured around a basic rule founded by our Constitution:

- any standard have to respect the Constitution
- any act with guiding value (for example a plan of sector) have to respect the laws and decrees (Article 159 of the Constitution)
- any decision of individual nature (for example a licence) must comply with the higher rules: laws, decrees and lawful acts, including when the individual act and the payment are founded on distinct legislations. [187]

4.1.1.2.2. Independence of administrative policies

In the absence of hierarchical relationship between the applicable legislations, jurisprudence devoted the principle of the absence of preeminence of one or the other of the legislations, each one remaining autonomous. [188] An authority can thus subject a land to a mode of zoning without being, in theory, braked neither by the existence nor by the application of another legislation. [189]

In theory thus, an authority could for example create a protected zone without taking account of the regulations already in force on the site, or adopting a plan without holding account of an existing protected zone. The specific temperaments and mechanisms make rather theoretical these two assumptions.

4.1.1.2.3. Administrative policies addition

From the point of view of management, all the constraints envisaged by the various legislations applicable to the site must be respected simultaneously. Concerning the protected zones, when two modes of zoning apply[190], they will be appropriate to respect the strictest mode of protection. If the obligations of the two modes are of the same hierarchical level, one will make a cumulated application of both. In the event of contradiction, it will be according to us necessary to revise one of the two modes. [191]

4.1.1.2.4. Temperaments

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[186] B. JADOT, « Mise en place du zonage écologique et coexistence de législations distinctes », in CEDRE, *Le zonage écologique*, actes du colloque de Gembloux du 29 mars 2001, Bruxelles, Bruylant, pp. 205 et s.
[187] On the difficulties in determining if act has an individual or lawful value, see B. JADOT, *op. cit*., pp. 212-215.
[188] C.E., 8 février 1974, n° 16.236, *Huriaux-Ponselet*.
[189] B. JADOT, *op. cit*., p. 207.
[190] Voyez C.E., 8 octobre 1993, n° 44.405, *SA Charbonnages du Bois-le-Duc* ; C.E., 27 novembre 1992, n° 41.210, *Van Der Linden d'Hooghvoorst et crts*.
[191] C.-H. BORN, *Guide juridique…, op. cit*., p. 45.

Several mechanisms, problems or principle come to moderate these general principles which one saw that the application was not always more obvious.

CONSTRAINING VS INDICATIVE

In the event of conflict between documents having indicative value and the acts in constraining matter, the latter carry it. The difference between the two decisions must however adequately be justified.

POSTÉRIOR DÉCISION

A posterior decision can implicitly repeal for the future a former decision of the same hierarchical or lower level. The cases of application can however only be rather rare. Indeed, it is necessary on the one hand that no mechanism of abrogation clarifies former decision exists and on the other hand the forms and procedures observed to allot the initial statute must be applied at the time of implicit abrogation. [192]

ASSET RIGTHS, LICENCE RÉVISION AND WITHDRAWAL

The question of the acquired rights occurs when a preexistent individual decision is contradictory and handing-over of cause by a mode of protection worked out subsequently and unilaterally by the Government.

On this assumption, the Council of State and the Supreme court of appeal present an opposite jurisprudence. The Council of State[193] devotes the principle of the intangibility of the individual situations and estimates that the individual authorizations remain and can be implemented. The Supreme court of appeal[194] judges for its part that the decree or the law, even posterior, applies and can prohibit the implementation of a licence.

In any event, the legislator can envisage specific mechanisms allowing, in certain circumstances, the revision or the abrogation of a validly delivered licence. He can also envisage mechanisms of transitory right. [195]

4.1.2. L'articulation et la coordination avec les autres politiques

4.1.2.1. Aménagement du territoire et permis d'environnement

Nous avons mentionné plus haut les principes qui régissent l'articulation de polices administratives. L'aménagement du territoire est le lieu où ces principes trouvent particulièrement application. Nous décrivons ici ces applications ainsi que les mécanismes spécifiques mis en œuvre par le droit de l'aménagement du territoire et le droit de l'environnement.

4.1.2.1.1. Zone de protection et plan

LE PLAN PRECEDE LE REGIME DE PROTECTION DE LA ZONE

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[192] B. JADOT, *op. cit*., pp. 216-218.

[193] C.E., 31 mai 1995, n° 53.462, *Longrie* ; C.E., 5 juin 2000, n° 87.749, *Van Geet*. (Ph. BOUVIER, *Eléments de droit administratif*, Bruxelles, De Boeck Universités, 2002, p. 112). Several time, the Council of State considered that a decree of classification like site does not make obstacle with the execution of a licence build delivered before, voy. C.E., 25 février 1992, n° 38.820, *SA Ismay* ; C.E., 30 avril 1992, n° 39.263 et 29 octobre 1992, n° 40.885, *asbl Croix-Rouge de Belgique et SA Hotel Clingendael Waldorf*.

[194] Cass., 5 octobre 1995, *Pas.*, I, p. 894 ; Cass., 11 juin 1998, *Arr. Cass.*, 1998, p. 669 ; *R.W.* 1998-1999, p. 406. See also in this sense, Corr. Louvain, 23 décembre 1974, *R.W.*, 1974-1975, col. 2145, note L.P.S. ; Cass., 1e février 1977, *Pas.,* 1977, I, p. 591 ; Cass. Ch. réunies, 19 mars 1980, *Arr. cass.*, 1979-1980, p. 894, concl. LIEKENDAEL; *Pas.*, 1980, I, p. 885.

[195] In Walloon Region for permis d'urbanisme, see art. 245, 2° du CWATUP ; for permis de lotir, art. 54, 1° du CWATUP ; for permis d'environnement ou unique, art. 65 du décret du 11/03/1999 et 132bis du CWATUP.

Les prescriptions des plans d'aménagement ont valeur réglementaire. Si l'acte créant la zone protégée a valeur individuelle, elle doit respecter celles-ci. Ceci ne s'oppose pas à la création d'une zone protégée dans une zone destinée à l'urbanisation, si ce nouveau statut n'empêche pas radicalement la réalisation de la destination de la zone.[196]

Exemple : la création d'une réserve naturelle agréée dans une zone agricole n'est pas exclue pour autant qu'elle ne s'oppose pas à tout type d'agriculture dans la périmètre protégé.

Si la décision de protection a valeur réglementaire, la règle du cumul s'applique au profit du régime le plus strict.

Exemple : la désignation d'un site Natura 2000 dans une zone de loisirs. Les actes et travaux autorisables ne pourront qu'être ceux qui respectent le dénominateur commun entre l'arrêté Natura 2000 et le plan de secteur.[197]

Notez que pour les sites Natura 2000, la loi sur la conservation de la nature (art. 29, §2) prévoit un régime spécifique de concertation entre les administrations en cas d'incompatibilité entre les dispositions à valeur réglementaire d'un arrêté de désignation et celles d'un plan d'aménagement en vigueur.

LA PROTECTION DE LA ZONE PRECEDE L'ADOPTION DU PLAN

L'élaboration des plans de secteur doit se fonder sur une analyse de la situation existante de droit et de fait, y compris donc les zones protégées. L'autorité qui adopte le plan doit donc motiver sa décision au regard de cette situation existante.

En ce qui concerne l'articulation des deux polices, on appliquera les principes généraux, si la destination de la zone inscrite au plan est compatible avec le régime de protection existant, les deux régimes se cumulent. Si le nouveau zonage est incompatible avec la protection de la zone, il ne pourra entraîner la suppression de la zone protégée que pour autant que la procédure à suivre pour la suppression de cette zone ait été respectée.

Exemple : l'inscription du tracé d'une voie de communication ou d'une nouvelle zone d'activité économique dans le périmètre d'une réserve existante ne pourra se faire qu'après la suppression de la réserve suivant la procédure de sa création.

En principe, l'évaluation des incidences des plans et des schémas d'aménagement du territoire devrait permettre d'éviter au maximum les incompatibilités.

A ce titre, le CWATUP stipule qu'une étude d'incidences doit être réalisée lors de toute adoption ou révision d'un plan de secteur ou d'un plan communal d'aménagement[198] (art. 42, al. 2, 46, § 1, al. 1, 50, § 2, al. 1 et 53).

S'agissant des aspects relatifs aux zones protégées, l'étude doit comprendre au minimum :

- une analyse des *« problèmes environnementaux liés à l'avant-projet de plan de secteur [plan communal d'aménagement] qui concernent les zones revêtant une importance particulière pour l'environnement telles que celles désignées conformément aux directives 79/409/CEE et 92/43/CEE* ». Ceci vaut pour toutes les zones protégées, y compris les sites Natura 2000, même si ceux-ci sont situés en dehors de l'aire couverte par le plan.
- Les objectifs de la protection de l'environnement pertinents et la manière dont ils sont pris en considération dans le cadre de l'élaboration du plan
- Les incidences non négligeables probables (effets secondaires, cumulatifs, synergiques, à court, à moyen et à long terme, permanents, temporaires tant positifs que négatifs sur l'environnement, y compris entre autres la diversité biologique, la faune, la flore, les sols, les eaux, les paysages et les interactions entre ces facteurs)
- Les mesures à mettre en œuvre pour éviter, réduire ou compenser les effets négatifs précités

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[196] C.-H. BORN, *Guide juridique…, op. cit*., p. 49.

[197] F. HAUMONT, « La protection des sites en Région wallonne », in COLL., *Natura 2000 et le droit, Aspects juridiques de la sélection et de la conservation des sites Natura 2000 en Belgique et en France*, actes du colloque de Louvain-la-Neuve du 26 septembre 2002, Bruxelles, Bruylant, 2004, p. 324.

[198] En principe, la révision d'un plan de secteur, ainsi que l'adoption ou la révision d'un plan communal d'aménagement sont dispensées, respectivement par le Gouvernement ou par le conseil communal, de faire réaliser l'étude d'incidences si ces plans projetés ne sont pas « *susceptibles d'avoir des incidences non négligeables sur l'environnement* ». Toutefois, est présumé avoir des incidences non négligeables sur l'environnement le plan projeté « *dans le périmètre duquel se situe une zone désignée conformément aux directives 79/409/CEE et 92/43/CEE* » (c'est-à-dire un site Natura 2000) (art. 46, § 2, al. 1 et 3, et 50, § 2, al. 4 et 5, du CWATUP).

- La présentation des alternatives possibles et de leur justification.

Le CWATUP exige par ailleurs un rapport sur les incidences environnementales lors de l'adoption ou la révision du schéma de développement de l'espace régional et des schémas de structure communaux (art. 14, § 1, al. 2, et 17, § 1, al. 2, et 18, al. 2 et s. du CWATUP, non encore entrés en vigueur ; art. 15 et 18, al. 1, du CWATUP). Son contenu est le même que pour l'étude d'incidences des plans.

4.1.2.1.2. Zone de protection et permis

LE PERMIS PRECEDE LE REGIME DE PROTECTION DE LA ZONE

Voyez 3.1.2.4.

LA PROTECTION DE LA ZONE PRECEDE L'OCTROI DU PERMIS

En application du principe de hiérarchie des normes, toute autorité statuant sur une demande de permis, décision individuelle, est tenue de respecter les dispositions légales et réglementaires existante.

Des mécanismes de consultation de certaines administrations permettent d'étoffer la protection.[199]

En outre, les demandes de permis doivent être accompagnées d'une évaluation des incidences sur l'environnement qui permettra à l'autorité de prendre sa décision en toute connaissance de cause et de la motiver.

S'agissant des aspects relatifs aux zones protégées[200] :

- Pour les projets soumis à permis d'environnement/unique, le formulaire de demande, qui vaut notice d'évaluation des incidences, comprend un volet Natura 2000 qui doit obligatoirement être rempli. Le formulaire de demande de permis unique impose en outre de relever la présence de biens classés et de zones écologiquement sensibles, et d'évaluer l'impact sur les habitats sensibles et sur le réseau écologique.
- Pour les projets soumis à notice d'évaluation des incidences (permis d'urbanisme, de lotir, etc.), celle-ci doit indiquer la présence de zones protégées et, pour certaines, évaluer leur qualité biologique, évaluer la compatibilité du projet avec leur régime, et décrire les mesures palliatives le cas échéant.
- Pour les projets soumis à étude d'incidences, celle-ci doit décrire le milieu biologique, évaluer l'impact sur celui-ci, ainsi que sur les réserves naturelles et forestières et sur les sites Natura 2000, esquisser les solutions alternatives et décrire les mesures palliatives le cas échéant.

Sous réserves des conditions liées à l'application du régime de protection des sites Natura 2000 développées dans un point précédent, l'autorité n'est cependant pas formellement liée par les conclusions (mêmes négatives) de l'évaluation des incidences, pour autant qu'elle motive adéquatement le permis au regard des incidences sur l'environnement et des objectifs du Code de l'environnement.

Dans le cadre des permis d'environnement et unique, l'imposition de conditions sectorielles et particulières[201] permet de réduire voire de supprimer les risques d'impacts sur les zones protégées. L'article 123 du CWATUP permet également l'imposition de conditions au permis d'urbanisme, sur avis du fonctionnaire délégué.

Enfin, le CWATUP prévoit des règles spécifiques, pour la zone forestière et la zone agricole au plan de secteur, qui doivent être respectées par l'autorité compétente lorsqu'elle délivre un permis. En particulier, il est prévu expressément que la préservation des caractéristiques d'un « *site voisin reconnu sur pied de la loi* » du 12/7/1973 « *ou des directives 79/409/CEE Oiseaux et 92/43/CEE Habitats* » (site Natura 2000) ne peut être mise en péril par la délivrance :

- en *zone agricole*, d'un permis d'urbanisme relatif au boisement, à la culture intensive d'essences forestières, à la pisciculture, aux refuges de pêche et aux activités récréatives de plein air ainsi qu'aux actes travaux qui s'y rapportent (art. 452/35, al. 2, du CWATUP)
- en *zone forestière*, d'un permis d'urbanisme relatif aux constructions indispensables à la surveillance des bois, à leur exploitation et à la première transformation du bois,

[199] Voyez C.-H. BORN, *Guide juridique…, op. cit*., p. 52 et 56-58.
[200] Pour le détail, voyez C.-H. BORN, *Guide juridique…, op. cit*., pp. 62-70.
[201] Art. 2 al. 4 ; 4, al. 1 ; 4 et 5, §2 ; 6 et 7, §2 du décret du 11 mars 1999.

à la pisciculture et aux refuges de chasse et de pêche (art. 452/42, al. 2, du CWATUP).

4.1.2.2. Eau

S'appliquant tant aux eaux intérieures de surface qu'aux eaux de transition, aux eaux côtières et aux eaux souterraines, la directive 2000/60/CE du Parlement européen et du Conseil du 23 octobre 2000 établissant un cadre pour une politique communautaire dans le domaine de l'eau[202] (ci-après directive cadre sur l'eau) vise à établir un cadre de protection qui « prévienne toute dégradation supplémentaire, préserve et améliore l'état des écosystèmes aquatiques ainsi que, en ce qui concerne leur besoin en eau, des écosystèmes terrestres et les zones humides qui en dépendent directement » (article 1, a).

L'un des éléments les plus remarquables de la directive-cadre[203] consiste dans l'obligation de conservation des écosystèmes aquatiques qu'elle prescrit aux Etats membres. D'une part, ceux-ci sont tenus de prévenir la détérioration de l'état de toutes les « masses d'eau » de surface – sauf exception prévue par la directive. D'autre part, ils doivent protéger, améliorer et restaurer toutes les masses d'eau de surface en vue d'atteindre un bon état chimique et écologique de l'eau au plus tard en 2015, sous réserve d'une série d'exceptions et sauf report des obligations prévues par la directive[204] [205].

De façon remarquable, la *directive-cadre sur l'eau* oblige les Etats membres à établir un système global de planification stratégique de la gestion intégrée des ressources en eaux de surface et souterraines, fondé sur une approche par bassin hydrographique à l'échelle du continent européen[206].

Tout le territoire européen se voit découpé, d'une part, en districts hydrographique – eux-mêmes le cas échéant divisés en sous-bassins hydrographiques – et, d'autre part, en « masses d'eaux » de surface et souterraines. C'est donc un véritable système de planification spatiale de la gestion et de la protection des ressources en eau que met en place la directive-cadre sur l'eau. La caractéristique de cette planification spatiale est d'être, d'une part, obligatoire et, d'autre part, de reposer sur des critères scientifiques.

Un *plan de gestion du district hydrographique* (article 13) doit être adopté au plus tard pour 2009. Il comporte une série d'éléments descriptifs[207], prescriptifs[208] et programmatiques[209]. C'est par le biais des *programmes de mesures* par bassin ou sous-bassin que les Etats membres devront définir les moyens concrets qu'ils mettront en œuvre pour atteindre les objectifs environnementaux de la directive (article 11)[210].

Le mécanisme instauré par la directive-cadre établit les bases d'une véritable « approche écosystémique » de la gestion des ressources en eau[211].

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[202] *J.O.C.E.*, n° L327, 22.12.2000. Sur la directive-cadre sur l'eau, voy. DROBENKO, 2000 ; GRIMEAUD, 2001 ; LEPRINCE, 2001 ; VANDERSTRAETEN, 2002 ; NAIM-GESBERT, 2002 ; GRIMEAUD, 2004 ; NEURAY, J.-F., 2005.

[203] NAIM-GESBERT, 2002, p. 14.

[204] Article 4, § 1er, a, i et ii, et § 7 de la directive-cadre.

[205] Le concept de bon état écologique de l'eau se définit par rapport à des paramètres non seulement physico-chimiques mais aussi biologiques et hydromorphologiques, englobant ainsi les principales composantes de l'écosystème aquatique. Le bon état écologique est atteint lorsqu'il présente « *de faibles niveaux de distorsion résultant de l'activité humaine* » qui « *ne s'écartent que légèrement* » du « *très bon état écologique* » (voy. le tableau 1.2. de l'annexe V). Le très bon état écologique est un état de référence défini par les scientifiques et qui correspond approximativement à l'état du cours d'eau, du lac ou des eaux côtières en conditions quasi naturelles.

[206] Sur la gestion par bassin hydrographique, voyez LEPRINCE et PAQUES, 2002.

[207] Le plan doit comporter une description générale des caractéristiques du district hydrographique, incluant notamment la description et la cartographie des masses d'eaux concernées dans le bassin sur la base d'une classification scientifique ; un résumé des pressions et incidences importantes de l'activité humaine sur l'état des eaux de surface et des eaux souterraines ; l'identification et la représentation cartographique des zones protégées (annexe VII, points 1 à 3).

[208] Le plan indique la liste des objectifs environnementaux fixés au titre de l'article 4 pour les eaux de surface, les eaux souterraines et les zones protégées, y compris, en particulier, l'identification des cas où des exemptions ou dérogations ou report dans le temps sont prévus (point 5).

[209] La plan indique un résumé du ou des programmes de mesures adoptés au titre de l'article 11, notamment la manière dont ils sont censés réaliser les objectifs fixés en vertu de l'article 4 (point 7).

[210] Chaque programme de mesures comprend les « mesures de base » et, si nécessaire, des « mesures complémentaires ».

[211] En ce sens DROBENKO, 2000, p. 388.

Ainsi, les plans sont spatialement élaborés sur une base scientifique et « écosystémique », à savoir le bassin hydrographique.

D'autre part, un mécanisme de réactualisation tous les six ans du plan de gestion et des programmes de mesures, sur la base d'une évaluation *ex post* et des programmes de surveillance de l'état des masses d'eaux (article 11.8 et 13.7 et annexe VII, B.2) concrétise la mise en œuvre d'une une gestion « adaptative » des ressources en eau en fonction des résultats obtenus lors du suivi.

Enfin, la directive-cadre prévoit d'importantes mesures en faveur d'une participation étendue du public au processus d'élaboration des plans de gestion de district hydrographique (article 14), le législateur ayant considéré que « *le succès de la [directive-cadre] requiert (…) l'information, la consultation et la participation du public, y compris des utilisateurs* »[212].

La directive-cadre constitue de surcroît un outil essentiel de mise en œuvre du réseau Natura 2000. Elle oblige en effet les Etats membres à intégrer les objectifs de conservation des sites Natura 2000 « aquatiques » parmi les objectifs environnementaux à atteindre à l'échelle du bassin hydrographique pour 2015[213]. Ceci permet d'améliorer l'efficacité des mesures de conservation prises dès lors qu'elles se fondent sur une approche par bassin versant et non sur une approche limitée au site à protéger. En outre, elle impose d'établir et de maintenir à jour un registre des zones protégées, et en particulier des sites Natura 2000. Les zones protégées doivent être cartographiées et inclues dans les plans de gestion hydrographiques. Enfin, le type et l'ampleur des pressions anthropogéniques importantes auxquelles les zones protégées sont soumises doivent être évaluées dans le cadre de l'étude d'incidences des activités humaines.[214]

4.1.2.3. Agriculture

Les interactions entre les activités agricoles et le réseau écologiques apparaissent principalement en ce qui concerne la préservation des prairies permanentes, de la qualité des cours d'eau ainsi que des éléments du maillage écologique. Il s'agit donc de contrôler les épandages d'engrais, l'utilisation de pesticides, le labour des prairies et les travaux sur les arbres et les haies.

En matière environnementale, les activités agricoles sont contrôlées via la nécessité d'obtenir des permis d'environnement ou d'urbanisme pour certaines installations ou activités, dont l'arrachage et la destruction de petits éléments du paysage, les rejets d'eaux usées ou les captages d'eau.[215]

On a rappelé plus haut que dans le domaine des autorisations d'environnement ou d'urbanisme, l'interaction avec le réseau Natura 2000 se fait via l'évaluation des incidences :

- pour les projets soumis à permis d'environnement/unique, le formulaire de demande, qui vaut notice d'évaluation des incidences, comprend un volet Natura 2000 qui doit obligatoirement être rempli. Le formulaire de demande de permis unique impose en outre de relever la présence de biens classés et de zones écologiquement sensibles, et d'évaluer l'impact sur les habitats sensibles et sur le réseau écologique ;
- pour les projets soumis à notice d'évaluation des incidences (permis d'urbanisme, de lotir, etc.), celle-ci doit indiquer la présence de zones protégées et, pour certaines, évaluer leur qualité biologique, évaluer la compatibilité du projet avec leur régime, et décrire les mesures palliatives le cas échéant ;
- pour les projets soumis à étude d'incidences, celle-ci doit décrire le milieu biologique, évaluer l'impact sur celui-ci, ainsi que sur les réserves naturelles et forestières et sur les sites Natura 2000, esquisser les solutions alternatives et décrire les mesures palliatives le cas échéant.

D'autres normes spécifiques s'adressent aux agriculteurs notamment en matière de pesticides ou de gestion durable de l'azote en agriculture. En dehors du Code de l'eau étudié supra, une loi du 11 juillet 1969 relative aux pesticides et aux matières premières pour

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[212] Considérant 14 du préambule.

[213] Elle exige des Etats membres de façon incontestablement impérative, qu'ils « *assurent le respect de toutes les normes et de tous les objectifs* » en ce qui concerne les zones protégées (lesquelles incluent les sites Natura 2000) endéans les quinze ans de l'entrée en vigueur de la directive *« sauf dispositions contraires dans la législation communautaire sur la base de laquelle les différentes zones protégées ont été établies »* (article 4.1, c).

[214] Commission européenne, « La nouvelle directive cadre de l'eau et ses implications pour Natura 2000 », Natura 2000, 14, avril 2001, Bruxelles.

[215] D. TYTECA, M. HERMY, G. MAHY, K. VERHEYEN, F. HAUMONT, *Feasibility of ecological networks : ecological, economic, social and legal aspects*, Brussels, Belgian science Policy, 2006, p. 47.

l'agriculture, l'horticulture, la sylviculture et l'élevage règle la matière. Elle est néanmoins trop peu restrictive que pour lutter efficacement contre les excès de pesticides[216] et ne prends pas en compte les exigences du réseau Natura 2000.

Particularité du milieu agricole, l'écoconditionnalité pourrait contribuer à y intégrer les préoccupations de conservation de la nature. Il s'agit d'un mécanisme en vertu duquel l'octroi d'un avantage est subordonné à l'observation de conditions environnementales déterminées. Sa force réside dans la nature économique de la sanction qu'il prévoit, à savoir la suppression dudit avantage.[217]

Depuis l'adoption du règlement 1782/2003, tout agriculteur percevant des paiements directs est tenu de respecter deux types d'exigences à caractère environnemental. D'une part les exigences réglementaires en matière de gestion telles que précisées à l'annexe III du règlement et d'autre part les bonnes conditions agricoles et environnementales telles que définies au niveau national ou régional par les Etats membres.

Si les directives Oiseaux et Habitats figurent à l'annexe III du règlement, en Région wallonne, la conditionnalité telle que définie l'article 7 de l'arrêté ministériel du 7 juillet 2006 portant application de la conditionnalité prévue par l'article 27 de l'arrêté du Gouvernement wallon du 23 février 2006 mettant en place les régimes de soutien direct dans le cadre de la politique agricole commune, de même que la « Note explicative du formulaire de déclaration de superficie » fournie aux agriculteurs ne reprennent que très partiellement les dispositions transposant ces directives. Seules six exigences y sont mentionnées, visant principalement les habitats. Il n'y figure notamment rien en ce qui concerne la protection des espèces sensibles, pas plus qu'une référence à l'interdiction générale de détériorer les habitats naturels et de perturber les espèces visées à l'article 28 de la loi sur la conservation de la nature.

Soulignons enfin qu'il existe un mécanisme d'aides spécifiquement destiné à l'environnement, il s'agit des mesures agri-environnementales inscrites dans le plan de développement rural cofinancé par l'Union européenne dans le cadre de la PAC. Ces aides pourraient être une des sources du financement de la gestion des sites Natura 2000.

Les primes agri-environnementales sont octroyées pour des engagements volontaires. Cela signifie concrètement que les primes ne pourront en aucun cas être attribuées pour le respect de dispositions imposant l'engagement en question

Un problème naît dès lors lorsqu'il s'agit de financer le coût de mesures préventives, c'est-à-dire des mesures de protection relatives aux habitats agricoles. Celles-ci sont en principe appelées à être imposées par la voie réglementaire, sous forme d'interdiction ou de soumission à autorisation. Or, il arrive souvent que les mesures préventives Natura 2000 constituent en même temps une ou plusieurs des conditions de la méthode agroenvironnementale, ce qui rend en principe leur octroi impossible pour les cofinancer, puisque leur mise en œuvre est imposée et non volontaire.

4.1.2.4. Sylviculture

En ce qui concerne les forêts, l'intégration de la biodivesrité passe principalement par des mesures telles que le maintien des peuplements feuillus indigènes, le développement d'îlots de sénescence, l'augmentation du volume de bois mort et la préservation de la quiétude. Actuellement, ces préoccupations ne sont que très peu prises en compte.

Le régime juridique de la gestion des bois et forêts en Région wallonne est principalement fonction de leur propriétaire. La plupart des bois appartenant à une personne de droit public est soumise au « régime forestier », régime de gestion particulier mis en œuvre par l'administration régionale via un plan d'exploitation, l' « aménagement forestier ». La forêt privée est gérée directement par le propriétaire dans le respect des règles édictées par le législateur et le Gouvernement, mais aucun plan de gestion n'est obligatoire.[218] En région wallonne, le Code forestier de 1854 reste d'application. Une profonde révision est actuellement en cours. En ce qui concerne la prise en compte de la biodiversité, les orientations sont les suivantes l'intégration de plusieurs mesures de police et de conservation des bois pour éviter toute dégradation écologique ou paysagère. Entre autre : limitation de la

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[216] Idem.

[217] N. de SADELEER, C-H. BORN, Le droit international et communautaire de la biodiversité, Paris, Dalloz, 2004, p. 646. Voyez les notes 70 et 71.

[218] D. TYTECA, M. HERMY, G. MAHY, K. VERHEYEN, F. HAUMONT, *Feasibility of ecological networks : ecological, economic, social and legal aspects*, Brussels, Belgian science Policy, 2006, p. 48.

surface des mises à blanc, adaptation des essences forestières aux conditions climatiques et pédologiques locales, limitation du drainage, modalités pour l'utilisation des amendements et des pesticides, interdiction de brûler des rémanents. En outre, le nouveau code réglementera de façon plus stricte la circulation en forêt ; il organise la procédure de constatation et de répressions des infractions, de même que la surveillance des propriétés privées par les agents de la Région wallonne. Enfin, en parallèle, la réforme prévoit l'exonération des droits de succession dus sur les forêts privées, l'objectif étant de favoriser le maintien des forêts et des arbres présentant un intérêt pour la gestion durable. Elle constituera, sans aucun doute, un incitant majeur à limiter les « mises à blanc » des parcelles boisées lors d'une succession.[219]

Signalons enfin que le Centre de Recherche de la Nature, des Forêts et du Bois et la Division Nature et Forêts de la Direction Générale des Ressources Naturelles et de l'Environnement ont réalisé un complément[220] à la circulaire 2619. Ce complément décrit les normes de gestion pour favoriser la biodiversité dans les bois soumis au régime forestier. Elle est de stricte application dans les forêts domaniales ; elle est proposée au travers des plans d'aménagement aux propriétaires publics non domaniaux.

[219] Note d'orientation relative à la modification du Code forestier présentée en Gouvernement wallon le 19 juillet 2007.
[220] http://environnement.wallonie.be/publi/dnf/normes.pdf

4.2. *Social analysis of the management of N 2000 sites*

4.2.1. Problem description: social aspects and processes in management of N-2000 sites

The basic question is which social and human related aspects play a role in the succeeding of the management of Natura 2000 sites on a local scale? Or, which social aspects are responsible for the difficulties in the process of implementation of Natura 2000 on the terrain? The social questions related to the management of biodiversity that shall be treated are the following:

- Which is the social situation on the terrain (actors, historic facts…) and what is the impact of the social situation for the succeeding of certain management measures?
- In which way and to which degree social processes like demographic changes, urbanization… plays a role in the succeeding of the management and does it differ between the Flemish and the Walloon region?
- Are there any differences in attitude and behavior between different groups, different degrees of involvement and co-responsibility?
- What are the power relations between the different actors? Does different parties have conflicting interests? Is there public support for management of the terrain? Are there any conflicts on the terrain?
- To which degree the principle of NIMBY (not in my backyard) occurs on the field?
- How is the management organized or how should it be organized from a social point of view?
- What is the support, co–responsibility for the management of Natura 2000 sites on a local scale and what is the form (co-operation in the management, impact on the implementation…)?
- What is the impact (the effects) of Natura 2000 on a local scale (actors – property situation)? On which time scale effects have to be expected? (Which effects?)
- Are there societal structures and systems like property rights, use rights, adapted local management?
- Are there much international pressure but little (national/local) political interest for nature conservation?

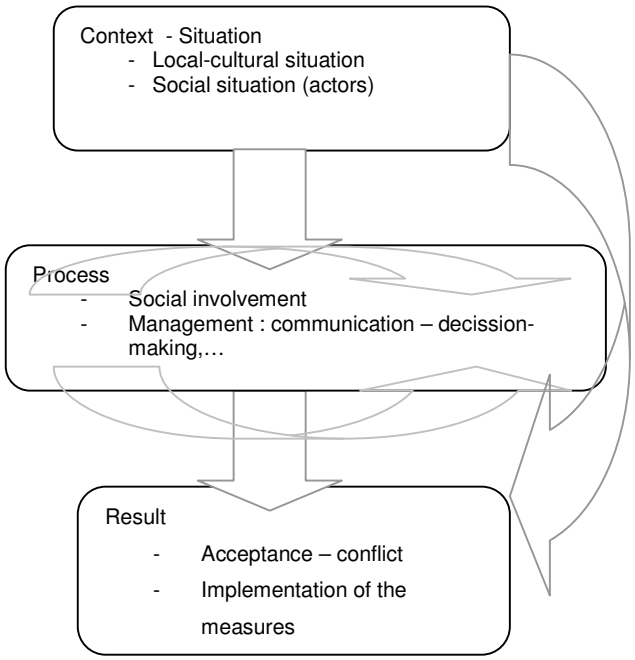
4.2.2. General overview of local aspects that influence the implementation of NATURA 2000

To answer the question why the implementation of Natura 2000 on the field doesn't work properly we have to look at several aspects. As well the context, as the processes, influence the process of implementing measures.

On the one hand we have to take the local context into account. This context is in the first place influenced by cultural, demographic and social factors. The implementation of measures always means a change of local context to a certain degree. This change can be accepted or can lead to a local conflict. The extend in which the measures are excepted will lead to a successful implementation of measures.

On the other hand we have to look at the processes, which play a role within this context. These are in the first place the social processes, which take place between the actors. Elements that shape these social processed are relational aspects, power balances, perception of each other… But also the process related to the measures and the management process, plays an important role for the implementation of measures. This process defines how measures arise, how decisions are made, how is communicated and how it can be better organized.

The different aspects are classified into three different groups: context, process and result. These aspects will be revieuwed one by one and examples will be discussed.



4.2.3. Local context

Category	Parameters
Social environment social situation	Diversity of local actors / groups lokale
	Level of education of the local population
	Employment
	Cohesion –individualism
	Open-Closed society
	Trust in the government
Environment N-2000 area Local – cultural context	Current use of the site
	Accesability of the site
	Ownership (sociale aspects)
	History – binding with the site – Area identity
	Local political context Political imbedding
	Other planning processes

4.2.3.1. Social environment

De implementatie van het Natura 2000 netwerk gebeurt niet alleen binnen een ecologische, economische en juridische context, maar eveneens binnen een sociale context waarin mensen leven, werken, recreëren en wonen. Deze mensen die samen de lokale bevolking vormen, bezitten bepaalde kenmerken die de lokale socio-economische context bepalen.

De samenstelling van de lokale bevolking en de heterogeniteit ervan kan worden uitgedrukt in de diversiteit aan actoren. We kunnen ervan uitgaan dat diverse actoren verschillende standpunten ten aanzien van natuur en natuurbeheer hebben.

De maatschappij is meer dan een verzameling van individuen, en een lokale gemeenschap is dit ook. Een lokale gemeenschap kan een zekere mate van cohesie of kan open of gesloten zijn en de lokale bevolking

De lokale socio-economische context wordt mede bepaald door het opleidingsniveau van de bevolking en de lokale werkgelegenheid. Deze factoren bepalen mee de financiële draagkracht van het gebied.

Voor de implementatie van een natuurgebied met een bepaald beheer is eveneens de houding van de burgers tegenover de overheid van belang.

Uit een onderzoek van Buijs & Volker (1997)221 dat het draagvlak van de Nederlandse bevolking voor natuur en natuurbeleid naging, komen een aantal interessante resultaten naar voor waarbij het draagvlakniveau wordt gekoppeld aan bepaalde bevolkingsgroepen.

Zo kan de bevolking ingedeeld worden in een viertal groepen wanneer naar hun mening wordt gevraag over het natuurbeleid:

- "Sympathisanten (46%): zij ondersteunen het natuurbeleid volledig, en willen vaak nog een stapje verder gaan. Deze groep bestaat vooral uit goed opgeleide stedelingen.
- Mensen die meer recreatieve natuur willen (25%): zij vinden natuur belangrijk, en willen vooral meer natuur voor de recreatie. Veel mensen uit deze groep zijn minder hoog opgeleid.
- Mensen die ene landbouwvriendelijker beleid willen (14%). Deze groep heeft de meeste kritiek op het huidige natuurbeleid. Zij willen minder aandacht voor natuur en meer aandacht voor landbouw. Een kwart van hen is potentiële actievoerder tegen natuurontwikkeling. Vooral boeren en ouderen hebben deze mening.
- Onverschilligen (14%): zij zijn niet geïnteresseerd in de natuur. Ze weten weinig over de natuur en gaan zelf ook weinig de natuur in." (Ibid).

Bewoners van stedelijke gebieden zeggen vaker dat er te weinig natuur in hun omgeving is. Vooral jongeren, maar ook hoger opgeleiden en mannen hebben behoefte aan meer natuur in de eigen woonomgeving.

De Nederlandse bevolking vindt het beschermen van zeldzame soorten en gebieden het belangrijkste doel van het natuurbeleid. Het omzetten van landbouwgrond in natuurgebieden zien zij als een belangrijke maatregel daarvoor. Vooral hoger opgeleiden zijn hier een voorstander van. Bewoners in het landelijk gebied kijken hier kritischer tegenaan, maar ook daar ondersteunt de meerderheid zulke maatregelen. Onteigening van grond als de landbouwer niet wil verkopen, kent weinig medestanders (10%).

Wanneer we bovenstaande onderzoeksresultaten van Buijs et al koppelen aan onze eigen persanalyse en de lezersprofielen, dan blijkt dat het grootste deel van de positieve berichtgeving rond het VEN, namelijk degene die verscheen in één van de drie nationale kranten, eigenlijk voor een groot deel verloren ging aan personen die reeds overtuigd waren van het nut van de implementatie van het VEN. Hun lezerspubliek bestaat immers uit een groot aantal hoogopgeleiden die dan ook nog eens in de meer stedelijke gebieden wonen. Dat is nu net de bevolkingsgroep die volgens de studie van Buijs et al het meeste draagvlak toont voor het natuurbeleid in Nederland. We nemen hierbij aan dat de resultaten ook transponeerbaar zijn naar Vlaanderen. Een groot deel van de negatieve berichtgeving kwam echter terecht bij net die mensen die in het algemeen al weigerachtig staan tegenover het natuurbeleid. Dit zorgde ervoor dat er een verdere dualisering kon optreden tussen voor- en tegenstanders van het VEN.

4.2.3.2. Environment N-2000 area

De locale context wordt niet alleen bepaald door mensen en de kenmerken van deze mensen, maar ook door de relatie van deze mensen met hun omgeving en deze omg

Huidig gebruik van het gebied

Toegankelijkheid van het gebied

221 Buijs, A.E. & Volker, C.M. (1997). *Publiek draagvlak voor natuur en natuurbeleid.* SC-DLO: Wageningen.

Eigendomssituatie

Identity of the area

In the course of their lives, people develop an intricate and rich cognitive structure that embodies their vision of what nature really is, and how it is related to humans. According to environmental philosophers such visions of nature can generally be classified along a continuum that ranges from anthropocentric to ecocentric. (Farmers and low-income groups have to be found to prefer managed natural landscapes with a high degree of human influence, while environmentalists and high-income groups have found to prefer unmanaged natural landscapes with a low degree of human influence (Van den Berg, 1999, images, values and landscape preference. Images of nature, environmental values and Landscape preference: exploring their interrelationships.

Political embedding

Protected areas and their management differ substantially in their autonomy vis-a-vis the political environment. Political autonomy here refers to the degree that a protected area management is the object of political interests and dependent on them. In a highly politicized environment, a protected area may frequently have to adapt to changing conditions. Generally, an enabling political environment is considered necessary for a protected area to function effectively and it can generally be contented that the more favorable the conditions within national and regional politics, the greater the protected areas autonomy, i.e. the lower the degree of its dependence on the political climate. (Stoll- Kleeman, 2006, p 20)

… The political area for protected areas is closely connected to other issues such as indigenous politics, rural development programmes, or industrial exploitation of natural resources. Together they may

Land use

Land ownership

Other planning processes

4.2.4. Process

Category	Parameters
Social process	Perception of actors of each other
	Differences between actors: Differences in attitude, perception, vision, power, complicity, responsability, interests…
	Mutual relations between actors: - Development of groupidentity? - Power relations between actors: do certain actors abuse their power?
	Sigmatization
	Ways of dealing with change in landuse, vieuw, identity…
	Co-responsability of citizens for nature. Development of public support for management and measures
Planning and organisational process	Participational character
	Complicity
	Expected role vs. effective role
	Way of decission taking
	Communication
	Organisation of the management
	Means
	Possible adaptation of social systems and structures

4.2.4.1. Social – relational process

Perceptions of actors of each other

Relations between actors

Power relations between actors

Differences between actors

Cultural drivers : ways of dealing with land use

Joined responsibiliy of citizens for nature/ Medeverantwoordelijkheid van burgers voor natuur

Betrokkenheid van burgers in het beheer van NATURA-2000 gebieden is een vorm van medeverantwoordelijkheid van burgers voor natuur.

We gaan even dieper in op het begrip medeverantwoordelijkheid. Er kunnen verschillende niveaus van medeverantwoordelijkheid onderscheiden worden. Medeverantwoordelijkheid kan gaan over het leveren van een financiële bijdrage voor natuur, maar kan ook gaan over stemgedrag, inspraak, directe verantwoordelijkheid voor een concreet plan of de inrichting of het beheer van het gebied. (Boek Medeverantwoordelijkheid voor natuur, p 57)

Er is een groot verschil tussen de natuuropvattingen die ten grondslag liggen aan het natuurbeleid en de bronnen voor individuele verantwoordelijkheid van burgers voor natuur. Het ecosysteemmodel dat ten grondslag ligt aan het beleid, is iets volledig abstracts en is een product van de wetenschap. Verantwoordelijkheid van burgers voor natuur komt daarentegen voort uit betekenissen die ontstaan in de alledaagse ervaringswereld van mensen. Men voelt meer voor de eigen tuin, de eigen kat,… dan voor een ecosysteem. De verantwoordelijkheid van burgers voor natuur is altijd gericht op iets concreets, terwijl het beleid en de wetenschap die eraan ten grondslag ligt abstract is. Het ecosysteemmodel is volledig theoretisch, terwijl handelingen van mensen juist erg praktisch zijn. Daarenboven willen burgers het resultaat van de eigen inzet direct aanschouwen. Het ecosysteemmodel, terwijl (50 boek).

De implementatie van beleid en management voor het behoud van biodiversiteit vergt verandering van bepaalde maatschappelijke systemen en structuren. Erg belangrijk is dat beleidsmakers niet vertrekken van de vraag ‘hoe kunnen we burgers bewegen tot het dragen van medeverantwoordelijkheid voor natuur?’ maar ‘Hoe kunnen bronnen van (bestaande) verantwoordelijkheid voor natuur worden aangegrepen in het bestaande natuurbeleid?’.
Mensen met andere natuuropvattingen dan deze van de overheid gaan immers niet vrijwillig meewerken aan het natuurbeleid. Indien het gewenst is dat particulieren – maatschappelijke groepen verantwoordelijkheid dragen (voor bepaalde) aspecten van het beleid, moet dit beleid aansluiten bij de opvattingen van deze particulieren.

Protected area management needs the support of the local and neighboring population. This requires a strong recognition of the diversity of views and interests involved and a disposition to follow the much more dynamic and hence less predictable road of collaborative management.

Meaningful involvement of local stakeholders towards the aim of increasing their commitment and ownership of the protected area implies that part of the decision-making power is indeed shared (Stoll-Kleeman, 2006).

The value that natural resource managers and the public place on biodiversity and related natural resources issues depend largely on the facts that exist within a specific context, the desired management objectives for a particular area, and the potential tradeoffs that must be considered for protecting biodiversity. A key question, then, is what does the public think,

know and understand about specific management methods that may have impacts on biodiversity (Bright, 2005).

4.2.4.2. Plan- and organizational process

Participation in biodiversity management / Participatie in biodiversiteitsmanagement

Effectief biodiversiteitsmanagement en ecosysteembeheer moet in staat zijn een antwoord te bieden aan een groot aantal veranderingen: demografische veranderingen, fysische veranderingen, culturele veranderingen,…

Publiek begrijpen van en participatie in biodiversiteitsbeleid en management, incl. variaties in houdingen en gedrag t.o.v. biodiversiteit onder verschillende stakeholdergroepen en verschillende sociale en culturele groepen

Participatie van verschillende actorengroepen in biodiversteitsmanagement, naargelang hun behoeften en de rollen die ze kunnen spelen in biodiversiteitsmanagement

biodiversiteitsmanagement heeft mogelijk een impact op bestaande structuren en kan de economische en sociale situatie in een regio veranderen.

traditionele praktijken met betrekking tot landgebruik

De mogelijkheden (het potentieel) van traditionele kennis voor biodiversiteitsmanagement.

Integratie van het gebruiksaspect binnen biodiversiteitsmanagement: recreationeel gebruik van natuurlijke hulpbronnen.

Verspreiden van innovaties, reacties van stakeholdergroepen t.a.v. nieuwe methodes en ideeën m.b.t. landgebruik en biodiversiteitsmanagement

A lack of participation during the processes of planning and implementing of nature conservation measures is an important factor that fuels opposition.

It is important not only to have people participating in management processes but also to respond to their livelihood needs. Stable livelihoods around a protected area are the best pre-condition for acceptance of use restrictions inside the park. (Stoll-Kleemann, 2006: 29).

Elements for decission making /Beslissingname

Management and governance are crucial to the success of protected areas. Protected area management is still largely the domain of public administrators and biological conservation professionals

Vanuit sociaal oogpunt staan de dynamiek van beslissingnameprocessen en conflicten betreffende biodiversiteitsmanagement centraal.

Sociale en culturele onderhandelingen beïnvloeden beleidsprocessen in termen van het ontstaan van belangen en machtsarrangementen.

De gelijke verdeling van macht tussen verschillende groepen actoren is van groot belang voor het goede verloop van beslissingnameprocessen en heeft een impact op de relaties en de onderhandelingen tussen de verschillende groepen.

Roles (expected roles vs. effective roles)

Management – management approaches (organization of the management)

Management and governance are crucial to the success of protected areas. Protected area management is still largely the domain of public administrators and biological conservation professionals.

Effective solutions for the management of protected areas lie in understanding how individuals, social networks or indigenous communities value these protected areas, especially those who have ownership of, and who directly utilize the living resources on which they depend.

Communication

Means for local management

Adjustment of social systems and structures

4.2.5. Result

Category	Parameters
Implementation of the measures	Degree of execution
	Degree of change
Social support for measures and management	Conflict
	acceptance

4.2.5.1. Implementation of the measures

The implementation of the selected measures is the result of the process of change and is expressed in the degree/ the extent of realization and changes.

The implementation can lead to a

4.2.5.2. Public support for measures

Public support for measures is on a local scale of great importance for the succeeding of management.

Het draagvlakconcept is op lokaal niveau van groot belang voor het al dan niet slagen van het beheer. Draagvlak is een begrip dat vele ladingen dekt en op verschillende niveaus in kaart gebracht en gemeten kan worden, maar op het lokale niveau het meest operationeel is. Draagvlak voor natuur uit zich in de mate waarin mensen bereid zijn maatregelen voor natuurbehoud te accepteren en bereid zijn (mede-)verantwoordelijkheid voor natuur op te nemen.

The public support for measures results in either acceptance of the measures or a conflict on local scale.

Acceptance

When the implementation of measures is supported by all involved actors and by the public in general, we can speak of acceptance. The extend of acceptance is expresssed in the responsibility people have

Conflicts

Conflicts arise from incompatibilities of interest and are part of every social system. The more individual interests and social values are affected, the more biodiversity becomes a source of conflicts, ranging from disputes between local actors to serious conflicts between nations. Het is in de eerste plaats op lokaal schaalniveau dat conflicten ontstaan omtrent de bescherming van bepaalde gebieden en het gebruik van deze gebieden.

The challenge for successful protected area management is peaceful conflict resolution. But a protected area is not a closed system where protected area managers and local population groups can progressively develop agreements on resource-use restrictions based on trust and past experience. Instead non-local actors with political and economic interests intervene in protected areas issues to defend their stakes.

Protected areas function as political arenas for pursuing diverse interests. This gives rise to conflicts with multiple actors and multiple issues, which can have paralytic effects.

Biodiversity conflicts can either focus on the differing preferences, values and objectives of actors, on the options and instruments they choose for action or on a combination of both. Conflicts can be found in a variety of actor relationships and in the pattern of linkages between managing institutions:

conflicts among actors (who holds the power, governance?)

conflicts with the local population (access and use of resources, use and property rights, tourism, ethnic groups,…)

Conflicts between the local population and protected area management or state authorities (conservation against resource-use activities like agriculture, poaching, logging, fishing or collection of medicinal plants);

Conflicts about the legal status and financial compensation; (Stoll –Kleemann, 2006).

De conflicten die kunnen ontstaan binnen NATURA-2000 gebieden hebben veelal betrekking op landgebruik en medegebruik. Conflicten kunnen eveneens betrekking hebben op verantwoordelijkheden inzake beheer. Er is reeds heel wat onderzoek uitgevoerd naar conflicten over natuurlijke hulpbronnen, de aanleidingen en vormen van conflicten.

Conflictbeheersingsmethodes /conflict management

The loss of biodiversity has a significant impact on the viability of socio-economic systems that depend on the various direct and indirect functions of biodiversity that are being harmed (direct, such as provision of food, or indirect, such as tourism). The more individual interests and societal values are affected, the more biodiversity becomes a source of conflicts, ranging from disputes between local actors to serious conflicts that can arise between nations. Actions and decisions are linked at different levels. For example, unbridled local action can create global problems. Similarly, good resource management at one scale may be dissipated by poor practices at another (O'Riordan and Church, 2001, in Stoll-Kleeman, 2006).

There are many different reasons for the rise of conflicts. In general conflicts arise from incompatibilities of interest and are part of every social system. Conflicts can either focus on the differing preferences, values, and objectives of actors, on the options and instruments they choose for action, or on a combination of both.

Conflicts can also be the result of human behavior. Shift attention from the issues and subject of the conflict to the human dynamic. This includes human behavior, the use of power and the process by which decisions are made. Conflicts can be found in a variety of actor relationships and in the pattern of linkages between managing institutions:

Conflicts between actors;

Conflicts within the local population (access and use of resources, use and property rights, tourism, ethnic groups,…);

Conflicts between the local population and protected area management or state authorities (conservation against resource-use activities like agriculture, poaching, logging, fishing, or collection of medicinal plants);

Conflicts due to overlapping or competing uses of resources can lead to opposition to nature conservation strategies. Another source of conflicts are the legal status and financial compensation. The incomplete knowledge or concern for the environmental benefits associated with natural area designation can be another reason. (73th eurosite workshop 'N 2000, conflict management and resolution'). Often there are conflicts between the N 2000 sites and human activities. There are different subjects of conflict:

boundary issues
changing agriculture
fishing
Forestry
Hunting
Recreation

Examples of local conflicts are: open protest and rallies against protected areas, attacks on park guards, poisoning of animals, deliberate burning of forests have become common in may countries. Since the establishment of protected areas often requires explicit restrictions, conflicts with local people can be found everywhere (Stoll-Kleemann, 2001, barriers to nature conservation in Germany).

- Mechanisms behind environmental conflicts:
- the role of information in conflicts;
- how people behave in uncertainty;
- the importance of good will – social capital;
- different ways of relating to stakeholders – who has decision making power and to what extend do they share it;

1. The role of information: Currently much of the decision making for the management of Natura 2000 sites is based on professional/scientific knowledge of habitats and the structures and functions of the site. This is usually seen from the perspective of expert scientific knowledge. There often has been placed a low value on local knowledge both of the habitat and also the social and economic context. This can lead to misunderstandings both of how human activities are carried out and the effect that it is having on Natura 2000 features.
2. People behavior in uncertainty: once people feel uncertain about what change is going to mean for them they feel threatened and take up negotiating position that they think will protect their needs and interests. Whilst people feel threatened they will not share information, communicate openly or think creatively. All essential ingredients for good communication and creative and co-operative conflict resolution.
3. The importance of good will and 'social capital': one of the problems with site designation is the site managers may not know themselves what the implications of the legislation are or how it will affect local stakeholders. Understanding can only develop through dialogue to find out what human activities happen and what effect they have on the features. Local stakeholders are more able to cope with this level of uncertainty if they have developed social capital with the site managers and know that they are of good intent and want to listen, understand and share decision-making.
4. Relations to stakeholders:
    - information giving
    - information gathering
    - consultation
    - shared decision making

One way of relating stakeholders is not better than another, as each has value when used at the right time and at the right way.

By creating the right conditions many seemingly intractable conflicts can be worked through to a mutually acceptable conclusion. Thus, the way that decisions are made affects the outcome.

The challenge for successful protected area management is peaceful conflict resolution. But a protected area is not a closed system where protected area managers and local population groups can progressively develop agreements on resource-use restrictions based on trust and past experience. Instead non-local actors with political and economic interests intervene in protected area issues to defend their stakes. Thus protected areas function as political arenas for pursuing diverse interests.

Because of the various conflicts regarding the implementation of nature conservation measures the main focus of social research lies on **acceptance issues**. This demands for

adapted forms of communication and participation. The integration of sustainable use requires adapted solutions that satisfy both man and nature.

To awaken the public opinion on biodiversity management issues communication and information strategies have to be developed.

In the 1990's just slowly the awareness of the interaction of man and nature as well as the role of society as crucial factor for success in implementing conservation policies has been arisen.

The enclosure or fencing off of areas has traditionally been a prominent approach to conservation but it has received vociferous criticism concerning its ethical assumptions and effects on social justice. However

Protected area implementation therefore entails resolving conflicts with local or non-locale resource users who are potentially affected by these new regulations.

The linkages between biodiversity conservation and local livelihoods are as divers as they are complex, and their framing at the policy level ranges from separation to competition to symbiosis between the two issues (Linking Governance and Management perspectives with Conservation Success in Protected Areas and Biosphere Reserves, Stoll – Kleemann, E.a. 2006).

Aanvaarden van natuurbehoud en beschermde gebieden door die groepen in de samenleving die er het meest door geraakt worden (onderzocht in D'land)
Het analyseren van de factoren achter deze aanvaarding
Publieksevaluatie
Evaluatie van biodiversiteitsbeleid en actieplannen

4.2.6. Conclusion

- Phase of planning (ecosystem approach)
    - Probleem met managementplan en onvolledigheid
    - Agenda setting
        - Knowledge of the interaction between social and cultural processes at a global scale and local biodiversity goals, is low.
        - The loss of biodiversity is mainly investigated from out the field of ecology then from sociology and economy, while causes for the loss of biodiversity and thus also the solutions have to be searched in the social and economical field.
        - Biodiversity is an ambiguous concept. It has several definitions and different stakeholders have different opinions on it. Biodiversity goals play a role on different levels in society.
        - There is a lack of knowledge among the public about biodiversity related issues. Furthermore, increased knowledge about biodiversity issues do not necessarily lead to a more positive attitude toward

protecting biodiversity. The result is that the call for action isn't high in every segment of society.

- Policy formation
  - The relation between the EU-directives and the impact for the local implementation isn't clear for everybody: knowledge about the EU institutions and instruments among stakeholders was low. Also the impact for the local implementation wasn't clear and under-estimated by different actors.
  - On a national scale the directive is often perceived as a threat.
  - The general public perceives the legislation as decided without any societal consensus. Politicians, stakeholders, who oppose the implementation of Natura 2000, strengthen this image.
  - Acceptance of the directive amongst landowners and political will for the national implementation is often lacking.

- Phase of implementation
  - Implementation
  - Local level
    - Local knowledge both on the subject and also the social and economic context is (often) undervalued.
    - The implementation of measures is focused strictly on nature conservation in Natura 2000 areas. Other activities that have socio-economic benefits (e.g. education action, economic activities,…) don't get a place in management plans.
    - The implementation of measures is also related to the relation between humans, especially in a local context.
    - The socio-economic benefits of preserving biodiversity and the local benefits for society are often unclear. Moreover, the implementation of measures threatens the 'private' sphere (e.a. property rights, rights of management, rights of access,…) It is important not only to have people participating in management processes but also to respond to their livelihood needs.

- Protected area management still is mainly the domain of public administrators and biological conservation professionals. A lack of participation during the processes of planning and implementing of nature conservation measures is an important factor that fuels opposition.
- Problem of uncertainty: one of the problems with site designation is the site managers may not know themselves what the implications of the legislation are or how it will affect local stakeholders.
- Once people feel uncertain about what change is going to mean for them they feel threatened and take up negotiating position that they think will protect their needs and interests. Whilst people feel threatened they will not share information, communicate openly or think creatively.

  Local stakeholders are more able to cope with this level of uncertainty if they have developed social capital with the site managers and know that they are of good intent and want to listen, understand and share decision-making. An important factor is then: time to negotiate.
- Power relations are different within the planning process and the decision process.

4.3. Economic instruments

This part is mainly based on the study of Bräuer et al. (2006). It is a European study from the Ecologic[222] - Institute for International and European Environmental Policy - so it is pertinent for our project. It deals only with the Market based instruments but there also exist regulatory instruments, which are complementary.

Note that most environmental law falls into a general category of laws known as "http://www.britannica.com/memberlogincommand and control." Such laws typically involve three elements: (1) identification of a type of environmentally harmful activity, (2) imposition of specific conditions or standards on that activity, and (3) prohibition of forms of the activity that fail to comply with the imposed conditions or standards223.

4.3.1. Introduction

Market based instruments (MBIs) are increasingly discussed in the political debate over future strategies for biodiversity conservation. The reasons for this are twofold. Firstly, MBIs offer policy-makers new ways to reach conservation objectives more cheaply, as MBIs use market forces to pass on incentives. Secondly, MBIs can complement traditional regulatory measures, for example, by generating revenue to fund public conservation management (Bräuer et al., 2006).

In 2006 a study has been conducted for the European Commission to analyse market based instruments for the preservation of biodiversity. The study distinguishes some different instruments such as:

- Taxes, fees and charges;
- Subsidies/support;
- Tradable permits;
- Eco-labelling;
- Financial mechanisms (e.g. green venture capital funds);
- Liability and compensation schemes.

The analysis shows that price-based MBIs are more common than quantity based ones. The most frequently applied instruments belong to [the first] group (taxes, fees and charges) followed by subsidies/support and tradable permits. In the majority of cases, MBIs are applied in the field of habitat and ecosystem conservation. Only one third of the examples are concerned with direct species conservation with a clear tendency toward preserving particular species of fauna rather than flora (Bräuer et al., 2006).

It is not easy to formulate clear recommendations about how to use MBIs because biodiversity is such a diverse good, and policies therefore require to be very much tailored to local needs.

In general MBIs of first category (taxes, fees and charges) can be seen as approaches that are useful to limit damage to existing biodiversity while MBIs of second category (subsidies/support) and fourth category (eco-labelling) foster the provision of increased protection to biodiversity or the enhancement of its quality. In some of these cases, MBIs act as a way of conserving the quality of biodiversity whilst generating income, with the acceptance of stakeholders, which can then be used to fund biodiversity management needs (Bräuer et al., 2006).

In addition to the theoretical considerations, experience in the US with using market based instruments over the past decade has shown that cost savings are present in practice[224]. For example, Carlson et al. (2000) estimate that the policy of the US Environmental Protection Agency to reduce SO_2 emissions by using allowance trading may save $700–800 million per year compared to a command and control programme based on a uniform emission standard (Bräuer et al., 2006).

In the next section, we will present every instrument and for each we will give some comments on the "where and when" to use them.

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[222] The study has been conducted for the European Commission (DG Environment) by Ecologic (Germany) in cooperation with the following institutes: IEEP (UK), GHK (UK)? IVM (NL) and CEI (Czech Republic).

[223] http://www.britannica.com/eb/article-224608/environmental-law (visited in July 2007).

[224] EPA (U.S. Environmental Protection Agency) EPA's acid rain program. Results of phase I. EPA 430-F01-022. Washington, 2001.

4.3.2. MBIs: use, advantages and disadvantages

First we can define what is Market Based Instrument. The EEA defines it as follows: "Market-based instruments seek to address the market failure of 'environmental externalities' either by incorporating the external cost of production or consumption activities through taxes or charges on processes or products, or by creating property rights and facilitating the establishment of a proxy market for the use of environmental service[225]". MBIs can be divided in two categories, price or quantity based instruments. The categories are illustrated in Appendix 6.

Furthermore, from the study, we remark that while price-based MBIs are well used, quantity based ones are much less common in Europe. Some countries do not use any MBIs for biodiversity conservation and others use them a lot[226]. There are some interesting observations, nevertheless this is not the purpose of this report so for more information, see the document The Use of Market Incentives to Preserve Biodiversity.

Before presenting the advantages/drawbacks of instruments, let us make a first comment. We have to explain how and when the use of a MBI is cost-effective. It will be reasonable to use MBIs instead of traditional command and control instruments only if the cost-effectiveness of the new alternative is higher and if this use improves the efficiency of the nature conservation policy. However, the effectiveness of the instruments has been insufficiently evaluated and the calculation of the true costs has rarely been carried out so limited information about the cost-effectiveness of the different measures is available.

[225] Source: http://glossary.eea.eu.int/EEAGlossary/M/market-based_instrument (August 2007).

[226] This despite the fact that they all run agri-environmental measures operated through European Funds. Ireland, France, Germany, Luxembourg, Spain, Cyprus, Slovakia, Slovenia and Latvia have no market based instruments which are used directly to preserve biodiversity included in the database.

Summary[227]

	Taxes, fees and charges	Subsidies/support, grants and funds	Tradable permits	Eco-labelling	Financial mechanisms	Liability and compensation schemes
Generalities	- Most common instrument used - simple concept - commonly applied, e.g. to extracting minerals from river beds (particularly in Eastern Europe), forestry activities, charges for hunting permits and agricultural use of pesticides and fertilizers	- after taxes, the most frequently used MBI - often the only measure that will work with existing property rights - used extensively in agricultural policy in the European Union but criticized for not being the most efficient use of the available money	- Have proven to be an effective MBI for species conservation - Most common use, internationally = tradable fishing quotas - Also been suggested for sport hunting and fishing	- Two groups are eco-labelled in the international agricultural market: food products and non-food agricultural products[228] - Also forest certification - A common problem is that there may be little monitoring to check what a label is certifying	- Increase in interest in recent years	- Liability regimes result in the internalisation of negative externalities - In general under liability regimes companies have to pay when they cause environmental damage, and so have an incentive to reduce risks - The **EU HD (92/43/EEC)** applies ex-ante i.e. before damage occurs - The **Liability Directive (2004/35/EC)** applies ex-post i.e. after damage occurs
Use	Important to set taxes at a sufficient level	Care has to be taken, however, that the actions carried out under payment actually translate into improvement of biodiversity	/	/	/	/
Advantages	- Should be simple to set up - fair – normally follows the polluter pays rule, tourism charges may be aimed at those who damage resources and should also be concerned with their	- Works well when there are clear objectives and adequate targeting which is area specific, realistic, quantitative and time delimited and flexible and when there is also good advice to participants and	- Tradable permits work well when protecting a single resource with few stakeholder groups who are interested in the resource for the same reason. They may introduce collective	- Potential to affect a whole economic sector with relative small investments, support innovation, proved to work in the organic sector - cost effective - increases consumer choice	- Way of integrating biodiversity concerns in "normal" business - Makes biodiversity-related business more financially attractive with low transaction costs (use of existing systems) - May promote	In general, threats of liability should mean that companies take care not to cause pollution. They may also have to have insurance to cover themselves and this can act as an incentive

[227] BRÄUER et al., *The Use of Market Incentives to Preserve Biodiversity*, Final Report, A project under the Framework contract for economic analysis ENV.G.1/FRA/2004/0081, July 2006, Section 6, p. 31-40.

[228] - food products: coffee, tea, cocoa, fruit & vegetables (fresh and dried) and juices, spices and herbs, nuts, oil crops and derived products (palmoil, sunflower etc.), honey, cereals and grain including rice, alcoholic beverages (wine etc.), sugar, meat, dairy products and eggs.
- non-food agricultural products: flowers, animal feeds (for production of organic meat, dairy products and eggs), grain seeds, natural pesticides and insecticides, cosmetics, textiles (cotton, leather and leather goods), cleaning and washing articles.

	protection	monitoring of effects. - Works well when there is a need to engage private sector actors (e.g. farmers and landowners) in provision of biodiversity public goods – in this case other instruments such as taxes are not appropriate. - It may be possible to tailor subsidies/support to particular conditions and make them at least partially dependent on outputs.	responsibility for stakeholders to comply; - may enjoy higher support than a tax and can allow for flexibility. - With wetland banking, they are likely to be viewed positively by business actors as they allow developments which would otherwise be banned. - For conservation organizations, they may be a means to integrate conservation aims into mainstream business which might otherwise not be allowed	- gives sustainable production methods a market advantage - may be an alternative to banning use of resources	innovation	(through differentiated premiums) to minimize risk. It can encourage the development of markets such as wetland banking
Disadvantages	- May not be cost effective - Need to set at right level - Ineffective if price inelastic (i.e. buying relatively unaffected by price change) - despite the simplicity of the concept, in some cases, charges in particular may need a high degree of monitoring and administration. - Generally very top-down and might not be supported by stakeholders. - May not trigger long term behavioural changes. - Maybe problems with the implementation due to political lobbying.	- Medium term benefit, but no long term security for biodiversity gains and may not change attitudes (e.g. when payments stop actors may well return to their previously damaging practice) - continuous funding and monitoring may be problematic - 100% has to be paid while other MBIs use the power of the market to multiply their investments - needs to be adequately targeted - despite the simplicity of the idea, procedures to distribute subsidies/support may be relatively complex and bureaucratic - relies on interest from stakeholders since not compulsory	- Tradable permits work badly when there are many uses for a resource which have different environmental impacts - Depending on their design, they may also have high transaction costs and inactive markets - substantial administrative and compliance costs in registering owners and keeping track of trades. - With wetland banking in particular, there are problems with defining equivalence of habitats	- Finally depends on consumer interest which often is not high, proliferation of labels, limited number of criteria that can be certified – hard to identify important criteria, difficult to extend to foreign suppliers (trade implications) - limited use in developing countries	- Limited scope due to smaller returns in comparison to other venture capital Investments - Banks may set loan conditions which do not take account of the long-term nature of biodiversity business development - Problems with reconciling public good aspect with commercial investment - Cost effectiveness as far as reaching actual biodiversity aims may be unclear	Taking companies to court is costly and risky. Deciding on the compensatory actions needed can also be difficult

Conclusion: From the examples identified in the study, there is no single type of MBI that should always be used in preference to others, but rather many different types that can work better or worse depending on the particular circumstances and the specific context. When properly designed and used in a suitable context, MBIs can be more cost-efficient than traditional CAC (Command and Control) approaches, due to the greater amount of flexibility allowed to the actors.

Nevertheless, the implementation of MBIs and the creation of a working market remains a challenge, not least for the administration bodies responsible, and they are often applied on a fairly small or local scale.

Many examples of MBIs show that they work best not as a substitute to regulatory approaches, but complementary to them. Given that this is the case, it is worth considering the various options and using some combination of MBIs and regulatory approaches to achieve the desired aims (Bräuer et al., 2006).

Finally, it is worth saying that incentive measures require to be planned with the specific characteristics and requirements of the individual communities and ecosystems targeted in mind. In this respect, some points are to be taken into account:

- setting clear objectives
- defining exactly the good
- considerate economic and social effects
- think about unexpected environmental effects
- take time to make things but not to much
- flexibility
- a good combination of the different types of incentives
- managing and monitoring (against cheating, …)
- make pilot studies
- be credible
- make evaluation of where we are
- have adequate information and effectiveness

4.3.3. Budget of the Walloon and the Flemish Regions

To finance these instruments money is needed. In this section, we consider the budget allocated by the Belgian Regions as well as other European countries for the conservation of biodiversity, especially in the scope of Natura 2000.

First of all, we can specify that according to a communication of the European Commission, the Natura 2000 network costs 6,1 billion € per year[229]. This is a big amount of money and we can assume that it will cost a lot in Belgium too.

4.3.3.1. Flemish Region

For this section, the Flemish Region was contacted, and the information obtained from Dr. Els Martens (Agentschap voor Natuur en Bos).

For the designation of Natura 2000, next to expenses for the staff of the Institute voor Natuur en Bosonderzoek (INBO) and the Agency of Nature and Forest (ANB), there were only internal costs for copies of maps and preparation of CDs sent to the municipalities. A public consultation is also possible for the new designation so there are costs for the publications in media, papers and also copies for the concerned municipalities. Moreover some documents were published: there was a project that developed a brochure on the BD (in 2000) and another with a brochure and a poster on Natura 2000 (in 2004 in cooperation with the WWF).

The personnel of the Agency is charged with several tasks for Natura 2000: they give notice on permits demand and water plan and on laying out plans of natural reserves. They intervene in the processus for the designation of spatial plans and the designation of the VEN (Vlaams Ecologisch Netwerk). They work also for the development of nature objectives plans for Natura 2000, and now for conservation objectives. On the average, there are three persons per province, on the whole 15 persons, but these are not only working for Natura 2000.

240 have a site or a part of site Natura 2000 on their territory. The number of people from the Institute with the expenses can be calculated with the same approach as above for the

[229] Source : www.aeidl.be/documents/euclide/fr/2005/hebdo627.htm (consulted in July 2007).

Agency. At INBO, there is one persone per province to give a scientific support for all the mentioned aspects.

It was not possible for Dr. Martens to give any accurate value because the costs for all activities are always integrated in other plans.

Until now there is no financial compensation, only incentives from the “Rural Development Plan” of the CE (but most of this money goes to agriculture or co-financement for project of the municipalities to fit out or restore Natura 2000 sites.

Another information could be taken from the report “Studie naar de financiële aspecten van de implementering van de Habitatrichtlijn voor het Vlaamse Gewest” but this document dates from 2001. We will not present any figures from it in this report because we think that most updated information exists. A note will be made later.

4.3.3.2. Walloon Region

For the Walloon Region some interesting information about budgets dedicated to Natura 2000 can be found in a note from the Walloon Government approved the 19th July 2007. The object of this note is the: “Information relating to the financing of the implementation of Natura 2000 in the WR between 2007 and 2009”. In 2001, a budgetary assessment has been made: the expenses and losses of revenue were estimated to 401 800 000 BEF (10 millions €) per year. These estimations were analyzed and it was concluded that it was not enough, so figures were reassessed. The budgetary impact is divided in twelve points presented in the note (see Appendix 7 – confidential note):

1. Real estate deduction presented as a loss of earnings for the WR
2. Inheritance rights presented as a loss of earnings for the WR
3. Preparation and elaboration of designation decree
4. Support to the ornithological society AVES
5. Secretariat – commission of conservation
6. Support mission of the implementation of Natura 2000 on the terrain
7. Incentives in forestry
8. Agricultural incentives for the RDP (Rural Development Plan) 2007-2013
9. Incentives for particular measures
10. Restoration in the PDR 2007-2013
11. Implications of Natura 2000 in the PDR: summary of budgets dedicated to Natura 2000 in the PDR
12. Educational notebooks

4.3.3.3. Other European countries

In this section we will only speak about the financial aspects of Natura 2000 but we find interesting to put a general analysis of the situation coming from a report of the WWF (WWF, 2006). A summary concerning the Walloon Region and the Brussels Capital-Region can be consulted in Appendix 8 (The Flemish Region wasn't contacted).

The financing situation for the different European members is as follows:

National budget for Natura 2000 (WWF, 2006)[230]

x: no (not sufficient)
± : inadequate or insufficient

✓ : yes/sufficient
? : no information

In general, it is rare that national funds are specifically earmarked for Natura 2000 in the EU Member States. Ten Member States do not dedicate specific national funds for the implementation of the HD. In some other countries like Estonia, Slovenia and Poland, some funds are reserved specifically for the implementation of Natura 2000, although these funds are very limited.

- In Finland funds are mostly lacking for species conservation measures, many of which fall under Natura 2000.
- In Latvia all Natura 2000 areas are nationally protected areas, therefore all budgets allocated to these areas can – to some extent – be earmarked for Natura 2000.
- In the same way, in Lithuania all funding for protected areas, including Natura 2000 is provided by state budget lines.
- Special funds for Natura 2000 are occasionally appropriated in Slovakia, but for specific measures in an unstrategic, ad hoc manner.
- In Denmark funds are only available for certain aspects of the implementation of Natura 2000, such as forest related issues, and finance laws make no mention of Natura 2000.
- In Greece, the State covers personnel costs as well as the salaries of some of the wardens, who are locally responsible for Natura 2000, as well as some activities in areas within Natura 2000 sites.
- In Italy, no specific funds are in place for Natura 2000, but national or regional funds for existing protected areas can be used for the management of Natura 2000 sites[231].

[230] Country acronyms: AT = Austria, BE = Belgium, BG = Bulgaria, CY = Cyprus, CZ = Czech Republic, DE = Germany, DK = Denmark, EE = Estonia, ES = Spain, FI = Finland, FR = France, GR = Greece, HR = Croatia, HU = Hungary, IE = Ireland, IT = Italy, LT = Lithuania, LU = Luxembourg, LV = Latvia, MT = Malta, NL = The Netherlands, PL = Poland, PT = Portugal, RO = Romania, SE = Sweden, SI = Slovenia, SK = Slovakia, TR = Turkey and UK = United Kingdom.

For the study of the WWF, no figures are available because the questionnaire consisted of 32 questions, asking for specific information and in most cases the answers were presented as an overall assessment based on multiple choices.

With more details, interesting values are presented in the "Final Report on the financing of Natura 2000" made by the work group on the Article 8 from the HD.

Firstly, there is a table (Table 5) summarizing different studies found in the literature. Values are presented in link with the size of the network.

Table 12. Updated Literature Review on Costs of Natura 2000. Source: European Commission (2002)

Literature	**Size of the network N2000 (ha)**[232]	**Cost (€/ha/year)**	**Total cost (€ billion/year)**
Goriup (1990)			
Gross ranges based on existing grant-aid provisions	60 500 000	56	3,4
		448	27,1 (max)
Habitat maintenance cost of function of site size	60 500 00	47	2,8
Habitat maintenance cost as function of habitat type	60 500 000	145	8,8
Stones T. et al (1999)			
Basic model	60 500 000	80	4,8
Refined model	60 500 000	85	5,1
Liederman E. (1996)			
	60 500 000	12,5	0,75 (min)
		125	7,5
Thauront M. (2002)	Total of sites		
	20 000	-	7,6

For more details see the Final report on Financing Natura 2000 (European Commission, 2002, p. 9-10)

These studies permit to draw some temporary conclusions (European Commission, 2002):

- Costs associated with sites are likely to be higher in the first few years following their establishment, and are likely to stabilize thereafter.
- Standard management costs tend to be relatively low, compared to land tenure and 'hard' restoration costs, and administration and financial management aspects, although this may be due to fact that the literature has not covered many standard management activities.
- In general, the bigger the area of the site, the lower the cost per hectare, although this will also depend on the types of activities and habitats under consideration.

The same group of experts made an enquiry with member states to obtain an estimation of the expenses that the States expect for the coming years within the framework of efficient management of the Natura 2000 network. The costs of Natura 2000 include not only the restoration and the designation of sites but also the planification and the execution of their management in the long term (Table 6).

While there is an element of uncertainty about these figures, they are likely to be an underestimate for a number of reasons (European Commission, 2002):

- The number and coverage of sites is likely to increase over the coming two years as Member States make further progress with their designation process.
- In the meantime, there are several potentially significant gaps in reporting on costs arising in relation to existing sites (e.g. marine sites) and estimates, e.g. agri-environment funding.
- The estimated costs have not been obtained, in general, from detailed planning on each site to reflect real ecological and socio-economic conditions. More detailed planning could be expected to result in higher estimates.

Over the next few years, EU enlargement is expected to have the effect of significantly increasing the number of areas in need of proper management, including areas facing severe problems due to abandonment or risk of intensification following accession. None of these sites are included in any of the estimates in this report. The data generated by the literature review was compared to and combined with the estimates generated from the Member State

[231] WWF, 2006, p. 25.

[232] Data on net coverage, obtained from the University of Leuven.

questionnaire. The result is a broad-brush range of average values for the cost of managing Natura 2000 in the EU-15 of between € 3,4 billion and € 5,7 billion per year233.

The above information dates from 2002. In 2004, the Commission published another Communication on the Financing of Natura 2000 with updated figures. Here is what is said: "In preparing the cost estimates below, the Commission has drawn on the Report of the Expert Working Group and a questionnaire completed by the Member States. The responses to this questionnaire led to a cost estimate of €3.4 billion per year for EU-15. This figure was extrapolated to calculate costs for the 10 Acceding Countries and resulted in total costs for EU-10 between € 0.63 billion and €1.06 billion per year, bringing the total cost estimate to €4.0 - €4.4 billion per year for the enlarged EU. However, the estimate for the new Member States is open to criticism, because of the assumptions used.

Given the questions about the reliability and comparability of the first estimates, a new questionnaire was sent to both Member States and Accession Countries in June 2003, requesting more detail and justification of the projected figures. Analysis of this information, led to a revised estimate of €6.1 billion per year for EU-25 (Table 3 in Annex 8). The €6.1 billion cost estimate is the most reliable estimation at the time for this Communication. It can and should be further refined. Member States will be asked to review their submissions on the basis of commonly agreed cost estimation methods. The anticipated progress in preparation of management plans in the coming years should provide a sound basis for improving these cost estimates234".

The Table 3 mentioned in this document is reproduced in Appendix 9.

For this section, we also contacted Mrs. Kaemena from the European Commission (DG Environment). She answered that a new enquiry will start at the end of this year and results will probably be available for summer 2008.

Table 13: Average cost per year and hectar (derived from Table 14)

Country	**Area covered by sites (ha)**	Total Cost for all Activities (€)	Cost €/year/ha
Austria	1 365 000	575,02	42,13
Belgium	220 000	158,30	71,95
Denmark	1 168 939	285,72 (224-347)	24,44
Finland	7 465 400	532,00	7,12
France	4 696 900	1 475,49	31,41
Germany	4 910 164	4 892,10	99,63
Greece	3 533 900	2 021,50	57,20
Italy	5 000 000	484,95	9,70
Netherlands	1 733 000	2 491,90	143,80
Portugal	1 956 993	268,52	13,72
Spain	11 811 474	13 00-0	11-6
Sweden	6 222 254	1 927,00	30,97
UK	1 311 500	503,91	38,42
TOTAL respondents	51 395 524	28 616,41	55,68
TOTAL EU-15	60 500 000	33 685,68	55,68

[233] European Commission, *Rapport final sur le financement de Natura 2000*, Groupe de travail de l'article 8 de la Directive « Habitats » (version anglaise et française), p. 12 of the English version.

[234] COMMISSION DES COMMUNAUTES EUROPEENNES, *Le financement de Natura 2000*, Communication de la Commission au Conseil et au Parlement Européen, COM(2004)431 final, 2004, p. 5-6 of the English version.

Table 134. Member States' Estimates: Anticipated Expenditure on Management of Natura 2000 Sites, Jan 2003 to Dec 2012 (European Commission, 2002)

Country (4)	**Number of Natura 2000 sites**	**Area covered by sites (ha) (1)**	**Costs in million Euro, total for 10 years**			
			Management Planning and Administration	**Ongoing Management Actions and Incentives (2)**	**Occasional Capital Investments**	Total Cost for all Activities
Austria	182	1 365 000	92,65	306,34	176,04	575,02
Belgium	243	220 000	18,20	87,60	52,50	158,30
Denmark (7)	254	1 168 939	8,67	208,73 (165-253)	68,32 (51-86)	285,72 (224-347)
Finland	1832	7 465 400	58,00	177,00	297,00	532,00
France (3) (5)	1226	4 696 900	618,72	271,77	585,00	1 475,49
Germany (3)	3994	4 910 164	932,00	2 699,50	1 260,60	4 892,10
Greece	346	3 533 900	142,30	1 761,50	117,70	2 021,50
Italy	2767	5 000 000	25,97	54,29	404,69	484,95
Netherlands	155	1 733 000	1,927	362,70	202,20	2 491,90
Portugal	89	1 956 993	15,25	113,00	14-0	268,52
Spain	1564	11 811 474	1 659,40	8 260,50	3 080,20	13 00-0
Sweden	3508	6 222 254	25,00	641,00	1 261,00	1 927,00
UK	800	1 311 500	59,39	305,03	139,50	503,91
TOTAL respondents	16 706	51 395 524	5 582,55	15 248,96	7 784,74	28 616,41
TOTAL EU-15		60 500 000 (6)				33 685,68
Average cost per year, in million Euro						3 368,57

Notes:
(1) Figures adjusted to remove double counting of areas covered by proposed Sites of Community Importance and SPAs, except in Denmark, Finland, Greece, The Netherlands and UK.
(2) Figures for France, Portugal, Spain, Sweden and UK do not include agri-environment costs, which may be significant.
(3) Figures for France and Germany do not include marine sites beyond territorial waters, as the area for these sites is currently unknown.
(4) Ireland and Luxembourg did not respond in time for this exercise.
(5) Figures do not include land purchase or fire prevention and control expenditure.
(6) Total EU-15 figures for total net coverage of Natura 2000 sites are provided by University of Leuven.
(7) Uncertainties in estimates reflected in presenting the dispersion in results. Cost in marine Natura 2000 areas not included.

(7) Uncertainties in estimates reflected in presenting the dispersion in results. Cost in marine Natura 2000 areas not included.

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Appendix

Appendix 1: Use of the term biodiversity

Mayer (2006) outlines in a coherent concept the way biodiversity should be understood. Three points describe a consistent use of the term biodiversity (Figure A-1):

- *Biodiversity per se* is a general concept, or metaconcept, which cannot be caught in numbers: *the variety of life on earth*. In this context, all different levels of biological classification, be they taxonomical, morphological, functional, or ecological, should be considered, but it does not mean that all biological objects have to be quantified.
- Specific *features* of biodiversity should be distinguished. Quantitative biodiversity assessments are restricted to these features. Features of biodiversity can be clearly defined by specific attributes (e.g. genes, individuals, populations, species arthropods, vascular plants, ecosystem types) and measures (e.g., species richness, evenness, number of individuals).
- Different *thought styles* and disciplines focus on different features of biodiversity, that is, they choose specific attributes and measures (Figure A - 1). It is evident that in zoology, mostly animals are investigated in biodiversity studies. In restoration ecology, plants are primarily the focus (Young *et al.* 2005).

In addition to thought styles, *values* affect the selection of biodiversity attributes, e.g., in a sense that highly valued organisms are more likely to be selected for biodiversity monitoring programs (Figure A - 1). Values play a strong role in some perceptions of biodiversity but are negligible in others. For example, in environmentalism, the primary driver for activity is the value of nature and not the quest for objective descriptions and explanations of natural phenomena. Much confusion arises from some people considering biodiversity as something valuable per se and others seeing it as a virtually value-free parameter for the description of ecosystems.

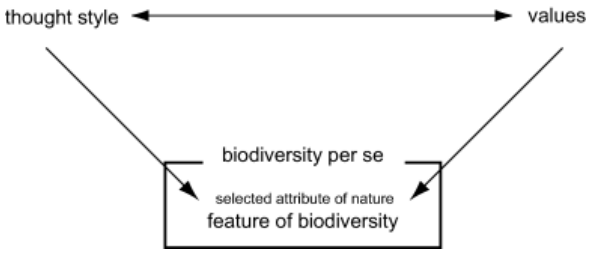


Figure A - 1. Features of biodiversity (e.g., species richness of vascular plants) are part of biodiversity per se, which is a general, unspecific concept. The selection of biodiversity features depends on thought style and values. From: Mayer (2006).

Because of different thought styles and values the term biodiversity should be used as a general concept, not as a specific element of nature. As discussed above, biodiversity is a framework for the variety of life on Earth and in this sense, is not measurable. However, specific features of biodiversity, e.g., the species richness of vascular plants, can be quantified (see above). The selection of these features depends on thought styles and values. This implies that "biodiversity as general concept" should be distinguished from measurable "features of biodiversity." Explicit declarations of selected biodiversity features, in every case quantities are in the focus, are inevitable for an unambiguous use of the term.

Appendix 2: Need for more integrated biodiversity indicators

Given the limitations of ecological indicators to serve as adequate indicators of biodiversity, work is urgently needed to develop a broader set of biodiversity indicators. With the exception of diversity indices based on taxonomic or population measures, little attention has been paid to the development of indicators that capture all the dimensions of biodiversity. An effective ecological indicator should:

- Provide information about changes in important processes
- Be sensitive enough to detect important changes but not so sensitive that signals are masked by natural variability
- Be able to detect changes at the appropriate temporal and spatial scale without being overwhelmed by variability
- Be based on well-understood and generally accepted conceptual models of the system to which it is applied
- Be based on reliable data that are available to assess trends and are collected in a relatively straightforward process
- Be based on data for which monitoring systems are in place
- Be easily understood by policy-makers

Appendix 3: Species richness as a measure for biodiversity

The most common ecological indicator is *total species richness* (TSR). However, TSR only partially captures ecosystem services because:

- what constitutes a species is sometimes not well defined
- it only measures taxonomic diversity, although taxonomically similar species may be ecologically quite distinct
- it does not differentiate among species in terms of sensitivity or resilience to change
- species vary extraordinarily in abundance; for most biological communities, only a few are dominant, while many are rare
- it does not distinguish between species that fulfill significant roles in the ecosystem (such as pollinators and decomposers) and those that play lesser roles. That is, all species are weighted equally, which can lead assigning equal values to areas that have quite different biota.
- it does not differentiate between native and non-native species, and the latter often include exotic, introduced, or invasive species that frequently disrupt key ecosystem services. Ecosystem degradation by human activities may temporarily increase species richness in the limited area of the impact due to an increase in exotic or weedy species, but this is not a relevant increase in biodiversity.
- although native species richness and ecosystem functioning correlate well, there is considerable variability surrounding this relationship
- the value of TSR depends on the definition of the area over which it was measured and may scale neither to smaller nor to larger areas.

Appendix 4: Local species diversity as measures for biodiversity

Simpson's diversity index (D) is the simplest mathematical measure that characterizes species diversity in a community. The proportion of species i relative to the total number of species (p_i) is calculated and squared. The squared proportions for all the species are summed, and the reciprocal is taken:

$$D = \frac{1}{\sum_{i=1}^{S} p_i^2}$$

For a given richness (S), D increases as equitability increases, and for a given equitability D increases as richness increases. Equitability (E_D) can be calculated by taking Simpson's index (D) and expressing it as a proportion of the maximum value D could assume if individuals in the community were completely evenly distributed (D_{max}, which equals S - as in a case where there

was one individual per species). Equitability takes a value between 0 and 1, with 1 being complete evenness.

$$E_D = \frac{D}{D_{max}} = \frac{1}{\sum_{i=1}^{s} p_i^2} \times \frac{1}{S}$$

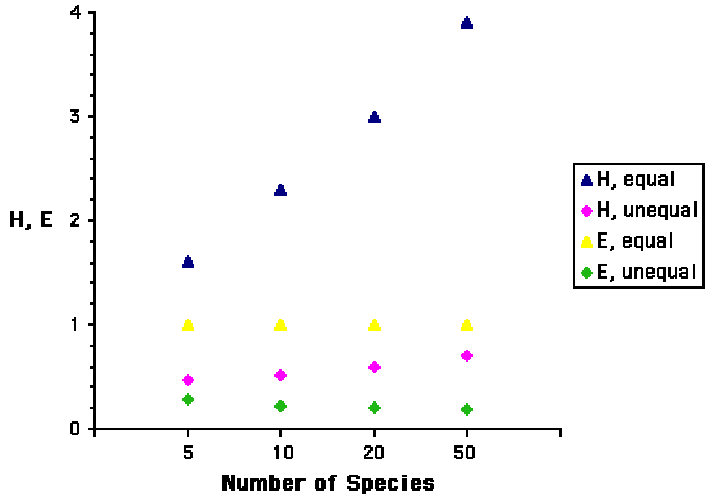
The Shannon diversity index *(H)* is another index that is commonly used to characterize species diversity in a community. Like Simpson's index, Shannon's index accounts for both abundance and evenness of the species present. The proportion of species *i* relative to the total number of species (p_i) is calculated, and then multiplied by the natural logarithm of this proportion ($\ln p_i$). The resulting product is summed across species, and multiplied by -1:

$$H = -\sum_{i=1}^{s} p_i \ln p_i$$

Shannon's equitability (E_H) can be calculated by dividing H by H_{max} (here $H_{max} = \ln S$). Equitability assumes a value between 0 and 1 with 1 being complete evenness.

$$E_H = H / H_{max} = H / \ln S$$

Example: The graph below shows H and E_H for four hypothetical communities, each consisting of 100 individuals. The communities are composed of 5, 10, 20 and 50 species, respectively. For each community H and E_H have been calculated for the case in which individuals are distributed evenly among the different species (i.e., each species makes up an equal proportion of S), and for the case in which one species has 90% of the individuals, and the remaining individuals are distributed evenly. For example, in a community with 10 species in which the species contain equal numbers of individuals, $p = 0.1$ for each species. In a community with 10 species in which one species has 90% of the individuals, $p = 0.9$ for the dominant species, and $p = 0.01$ for the other nine species. The diamonds represent H and $E_H$values for the first case (equal proportions), and the triangles represent values for H and E_H for the second case (unequal proportions).



For the first case, E_H is always equal to one (complete evenness, or equitability), but H increases dramatically as the number of species increases, as we would expect. For the second case, in which one species makes up 90% of the community, the picture is a little different. Here we can see that although H does increase with increasing numbers of species, it does so much more slowly than in the first case. Additionally, E_H decreases as species number increases (since one species always makes up 90% of the community in the second case of this hypothetical example, the remaining species make up some fraction of 10% of the community; as species number increases this fraction becomes smaller and evenness decreases). H and E_H clearly give more information about these communities than would species number (richness) alone.

Appendix 5: Measuring biodiversity over spatial scales: α, β and γ diversity

To investigate trends of biodiversity in space,

α-diversity is the **local diversity**, also called diversity of inventarisation: this is the component of the total (γ) diversity which can be attributed to the (average) number of species found *within* homogeneous sampling units (habitats). To calculate α, species richness or the above described species diversity indices can be used.

β-diversity is the ***between*** **habitat** diversity or **differentiation diversity**: this is the component of the total (γ) diversity which can be attributed to differences in species compositions between ecosystems or along a gradient. β is the result of environmental heterogeneity (in space, time or resources) and niche differences between species at that scale. Movements between spatial entities (dispersal, migration…) may act as homogenizing forces, tending to increase α and decrease β. In this respect, habitat isolation and heterogeneity may influence α and β in a landscape. To calculate β, a number of other indices were developed (like Sørensen's similarity index, Whittaker's index, the Jaccard index, … see Henderson & Seaby 2002).

γ-diversity is the **regional diversity** or **landscape diversity** (in which the landscape is considered as an island). γ is determined by the change in similar habitat types over broad geographic zones.

Appendix 6: Criticism on the Equilibrium Theory of Island Biogeography (ETIB)

Hermy (1986, based on Pielou 1979) summarized these critics into eight categories, questioning:

- The assumption of the model that the appearance of new species on an island is merely the result of immigration and not of indigenous evolution (see also Riddle 2005);
- The assumption of the model that the immigration rate decreases constantly with the number of species. However, the establishment rate of plants on new, mineral soils is initially usually lower than at later points in time;
- The assumption that immigration rate is merely dependent on the degree of isolation is a strong simplification of the reality. It is also likely (although not specified in the original formulation of MacArthur and Wilson's theory) that immigration rates will generally be higher on a large island than on a small island, since the larger island represents a larger 'target' for the colonizers. Also the orientation of the island to the migration of individuals or diaspores, needs to be taken into account;
- The assumption that extinction rate is merely dependent on the area of the island is simply not true. Immigration and extinction are interdependent;
- The assumption that the chance of extinction and immigration is the same for all species;
- The assumption that the number of species and species composition of islands is merely the result of population phenomena (and not of biotic interactions);
- The assumption that the relation between the number of species and the area of an island is independent of variation in habitat quality (heterogeneity);
- The fact that the theory and the literature confirming this theory are exclusively based on animal data (birds in particular).

Appendix 7: Criticism on the recommendations following from the ETIB regarding the design of nature reserves – the SLOSS debate

The suggestions of Diamond were, however, challenged by among others, Wilson's former student Daniel Simberloff, who considered this to be an unproven over-simplification that would damage conservation efforts. Much of the debate hangs on the validity and interpretation of the ETIB, on which these recommendations are based (see also Hermy 1986):

- The simplest criticism follows the lines that the ETIB has been refuted. Hence it provides no firm foundation for the development of conservation policy, except if these theories are adopted as providing formal rules.
- Furthermore, deployment of the ETIB often comes down to the use of species-area equations. Such an approach may give a rough idea of numbers of species on habitat islands, but not which habitats contribute most to richness, nor which species are most likely to be lost from the remnants. However, in planning nature reserves, one has to take into account criteria of rarity, level of naturality, representativity, environmental diversity, population size, conservation status and the availability of territories. Smaller reserves may indeed better respond to the question to conserve native species and unique habitats.
- In addition, Simberloff (1988) pointed out that the suggestions of Diamond relied on the assumption that smaller reserves have a *nested* species composition, i.e., no species occur in a small sample that do not also occur in larger samples. However, ETIB does not require that the species on small islands are a subset of those on large islands. In fact, in its strict interpretation, species on small islands are expected not to be subsets of the larger islands. If each of the smaller reserves had unshared species (no perfect nestedness), then it was possible that two smaller reserves could have more species than a single large reserve, even though each reserve would contain fewer species. Indeed, several empirical results have shown that the best option to maximize diversity is to combine several small reserves than single large areas covering the same total area (e.g., Lomolino 1994). Despite the uncertainties regarding the forces that promote nestedness in species distributions, the phenomenon of nestedness has recently generated much interest among conservation biologists and has, to a large degree, resurrected the SLOSS debate.
- There is now consensus that oceanic islands fundamentally differ from habitat islands ('islands in a sea of habitats modified by man'), see, for instance, Boecklen (1997). The utility of the application to anthropogenic (or natural) habitat patches rests upon the degree to which the basic premise of ETIB – namely, the existence of discrete habitat units spatially separated from sources of colonists – is realized. ETIB as applied to fragmented landscapes, assumes that the matrix separating habitat islands is inhospitable, much as the sea is to colonists of oceanic islands, and so does not contain species or processes relevant to the study at hand (Drake *et al.* 2002). However, there is increasing recognition that the matrix in fragmented landscapes can potentially influence species abundance or composition in the embedded patches (for animals: e.g. Ricketts 2001 and a recent review by Watling & Donnelly 2006 and for plants: e.g. Cook *et al.* 2002 and a recent review by Murphy & Lovett-Doust 2004).

Appendix 8: The classical metapopulation model

A *classic metapopulation* (CM) (or *Levins metapopulation*) is defined as (Husband & Barrett 1996, Hanski & Simberloff 1997, Harrison & Taylor 1997, Elmhagen & Angerbjörn 2001, Baguette 2004):

- a (single-species) 'population' consisting of many instable, local populations (Figure A - 2);
- occupying partly an infinite set of suitable habitat *patches* within an unsuitable, homogeneous environment, the matrix, which individuals can transverse but in which they cannot breed.
- where, at each generation, there is a ***turnover of populations***: local extinction of occupied patches and recolonisation (via dispersal of individuals moving in the matrix) of empty patches – equivalent to deaths and births, respectively, in traditional population dynamics.

The mathematical description of the metapopulation is then:

$$\frac{dp}{dt} = mp(1-p) - ep$$

where p is the proportion (fraction) of population centers (e.g., occupied habitat "islands" or patches), m is the migration (colonization) rate and e is the rate at which local populations go extinct. At equilibrium $p^* = 1 - e/m$. The metapopulation will persist (i.e., $p^* > 0$) only if $e < m$.

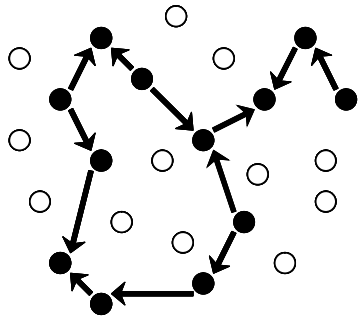


Figure A - 2: Metapopulation model of Levins (1970). Black: 'occupied' patches, white: 'unoccupied' patches

The classic metapopulation model makes a number of strict assumptions:

- All habitat patches are identical: they are all suitable to harbor a local population and are similar in size and degree of isolation. All occupied patches have a constant extinction rate, whereas all empty patches have a constant colonization rate and migration rates are the same between all patches.
- The dynamics of the local populations are not dependent from each other and more specifically, if there is a population, then it has reached its carrying capacity.
- Local dynamics occur at a much faster time scale than metapopulation dynamics, so migration does not influence local dynamics.

Furthermore, when assuming that

- the extinction rate decreases as a function of the areas of the sites with adequate habitats and
- the colonization rate decreases with the isolation of the different sites,

the Levins (1969) model predicts that the fraction of occupied patches at equilibrium decreases with decreasing mean size of the patches and with decreasing density of suitable patches in the matrix. Thus in the view of nature conservation, reserves may not be too small in order to not increase the chance of extinction and not too isolated, in order to not decrease the chance of colonization.

An essential feature of the classic metapopulation model of Levins (1969) is the balance between extinction and (re-)colonization of local populations at regional scale. Hence, the long-term persistence can only occur at the regional or metapopulation level and such metapopulations persist indefinitely because they are buffered against extinction by gene flow between local populations, rescue effects or recolonisation after local extinction.

Because the classic metapopulation theory considers that species persistence in the landscape depends on a high turnover of extinction-(re-)colonization of suitable habitat patches at each generation, the metapopulation dynamics are approximated by binary changes in the state of these individual patches. This approach has allowed rigorous mathemathical analyses of metapopulation dynamics (*metapopulation models*, Baguette 2004).

The metapopulation approach assumes that only those species whose regional distributions can be accounted for solely by extinction and colonization are true metapopulations. The study of metapopulation dynamics therefore demands that investigators study species in which these parameters can be measured. Especially the determination of extinctions of local populations may provide problems, for instance for plant species with a seed bank.

Although the assumptions of the model are very stringent and poorly realistic, a number of natural metapopulations have been demonstrated to behave according to the predictions of Levins (1969), while for many other species, the classic metapopulation model proved to be inadequate. For an overview, see Hanski (1997).

Appendix 9: Criticism regarding the metapopulation theory

Although the metapopulation concept is now the dominant paradigm in population ecology, it is not undisputed in the literature. Here, we summarize a few of the critics in a deliberate order:

- In many studies, systems are considered as (classic) metapopulations while violating the assumptions (Hanski 1997, Baguette 2004).
- Very few studies have really assessed interpatch movement of individuals, despite its importance. This deficiency limits the ability to understand the dynamics of spatially structured populations and to apply that knowledge to conservation efforts (Bowne & Bowers 2004).
- In metapopulation theory (just as ETIB), the landscape is assumed to be binary, i.e. consisting of patches of interest in an unsuitable habitat where species cannot breed. Terrestrial habitat patches, however, are often surrounded by a complex mosaic of other land cover types, which may differ in their resistance to the movement of individuals among the patches and thus the 'effective' isolation of the latter (Wiens 1997). There is now evidence that for some species, the matrix does matter and should not be ignored (e.g. Ricketts 2001). An integration of landscape ecology into metapopulation biology should therefore provide us with realistic models.
- The overall applicability of the metapopulation theory to predict the dynamics of metapopulations in the real, natural world is questioned (Baguette 2004).

Furthermore, it is not clear what role the metapopulation theory has to play in plant ecology. While the metapopulation concept has been extremely influential and is mostly developing in the study of animal populations (Hanski 1999), few empirical studies of plants have addressed its predictions (Husband & Barrett 1996, Eriksson 1996). Plants differ from animals in many respects, for instance

- the level of dispersal: more limited in plants (Eriksson 1996) and using other agents;
- the perception of the landscape: for plants, suitable habitat may be more difficult to define (plants rather respond to gradients of resource quality, thus properties of the patches, or the matrix per se, may be less important than the nature of the landscape mosaic, see Murphy & Lovett-Doust 2004);
- the existence of long-lived life cycle stages such as a seed bank or vegetative ramets, enabling migration not in space, but in time, meaning that a local population may persist for a long time even though the patch has become unsuitable (Eriksson 1996): a phenomenon called 'extinction debt' (Tillman *et al.* 1994).

As a result, there is a growing body of literature questioning the applicability of the metapopulation concept for plant populations (Husband & Barrett 1996, Bullock *et al.* 2002, Freckleton & Watkinson 2002, Ehrlén & Eriksson 2003, Freckleton & Watkinson 2003).

Appendix 10: Metapopulations and conservation biology

The metapopulation theory led to predictions about the relative performance of particular species in particular fragmented landscapes based on relatively simple but spatially realistic models. There are two reasons to expect the latter sorts of predictions to be more helpful than the island biogeographic rules of refuge design. First, the rules of refuge design are static, even those actually flowing from the theory. For example; the fundamental concept in the species-area relationship, which in applications is seen as meaning a fixed number of species in a fixed area. In contrast, the metapopulation predictions explicitly address the dynamics of species survival. Second, the rules of refuge design contrast fixed, general alternatives, whereas the spatially realistic metapopulation models practically force one to compare specific fragmented landscapes. Indeed, the implementation of ecological networks aims at achieving this subtle equilibrium between extinction and colonization rates. Technically, metapopulation capacity is the leading eigenvalue of an appropriate 'landscape' matrix. A species is predicted to persist in a landscape if the metapopulation capacity of that landscape is greater than a threshold value determined by the properties of the species. Therefore, metapopulation capacity can conveniently be used to rank different landscapes in terms of their capacity to support viable metapopulations (Hanski & Ovaskainen 2003).

Appendix 11: Metapopulation theory versus ETIB

The ETIB and metapopulation theory share some key underpinnings: the division of nature into discrete fragments of habitat, with movement of individuals among relatively unstable local populations and allowing for equilibrium at the regional scale. As we mentioned in the text, there are, however, also apparent differences (Hanski 1999):

- As the ETIB deals with communities of different species (its key statistic is species richness), metapopulation theory mainly applies to individual species.
- In ETIB, the mainland is the inexhaustible source of colonizing individuals, while in metapopulation theory, all local populations may act as sources of colonization (to different extents).
- ETIB focuses on processes occurring on one island, while the metapopulation theory considers the metapopulation as a whole.
- ETIB is based on an equilibrium model, while in metapopulation theory, most of the attention is paid to imbalances at local scale.

Much of the criticism of the ETIB could be directed, and has been directed against metapopulation theories, hence it is hard to imagine objective scientific reasons for accepting one while rejecting the other.

There are, however, certain important differences in the applications of these theories:

- Spatial scale: the ETIB was originally developed to explain patterns at large spatial scales, whereas the metapopulation concept is associated with fragmentation of our ordinary landscapes, with which the major part of biologists are more familiar. Metapopulation models of more or less isolated local populations connected by some migration then become the natural choice.
- Following ETIB, conservation planners need to focus on large areas. The main salvation of small sites was the shift by conservationists to the metapopulation paradigm (Hanski & Simberloff 1997).
- Extinction rates on the often large islands considered in ETIB are generally low and difficult to measure, while extinctions of small populations in fragmented landscapes are commonplace and relatively easy to document, providing a strong empirical basis for the metapopulation models.

At present, the metapopulation concept is used widely in conservation, to such a level that many authors see a potential danger in the widespread application of the metapopulation approach to species that might not be spatially structured in the way assumed by the models.

ETIB raised the SLOSS problem: should we aim at establishing a single large or several small reserves with the same total area to maximize the number of species preserved? In the metapopulation context, the question changes to one about persistence in different kinds of patch network. Can habitat subdivision increase, or does it reduce, the probability of long-term persistence? In the metapopulation theory, several of the prescriptions from ETIB are nuanced:

- The prescription that one large reserve is better than several small reserves: increasing subdivision leads to ever smaller populations with increased risk of local extinction, but this might be counteracted by increasing independence (asynchrony) in the dynamics of subdivided local populations enhancing recolonization. Whether habitat subdivision is benefical or not thus depends on how fast extinction risk increases with decreasing population size and on how much there is asynchrony in the dynamics of subdivided populations. We might expect subdivision to be especially beneficial in multispecies communities in which much of the variability in population sizes is generated by interspecific interactions.
- The clustering of reserves and the ‘construction’ of corridors may be beneficial. However, important side effects may be higher risk of spread of diseases, simultaneous extinctions in local populations, reduced habitat diversity and the erosion of genetic variation at regional scale (imagine populations which have been separated for ages and thus locally adapted to their habitat).

Appendix 12: Annex I Habitat types in Belgium

Table 14. European habitat types in Belgium: Natura 2000 code, indication of priority, definition and characteristic species. From: Interpretation Manual (Anonymous 1999 and 2003).

N°	Prioritary?	Definition - general description of the vegetation, syntaxa, abiotic features, origin	Characteristic species animal and plant key species including details of their occurrence on Annexes II and IV (* = priority; # = non-priority from Annex II and IV; + = Annex IV only)
1110		Sublittoral sandbanks, permanently submerged. Water depth is seldom more than 20 m below Chart Datum. Non-vegetated sandbanks or sandbanks with vegetation belonging to the Zosteretum marinae and Cymodoceion nodosae.	Plants: Zostera marina, free living species of the Corallinaceae family. In the Baltic Sea also Potamogeton pectinatus, Ruppia cirrhosa and Tolypella nidifica. Around Tenerife, Halophila decipiens communities Animals: Important wintering habitat for many bird species, in particular Melanitta nigra but also Gavia stellata and Gavia arctica. Resting places for seals. Invertebrate communities of sandy sublittoral (e.g. polychaetes).
1130		Downstream part of a river valley, subject to the tide and extending from the limit of brackish waters. River estuaries are coastal inlets where, unlike 'large shallow inlets and bays' there is generally a substantial freshwater influence. The mixing of freshwater and sea water and the reduced current flows in the shelter of the estuary lead to deposition of fine sediments, often forming extensive intertidal sand and mud flats. Where the tidal currents are faster than flood tides, most sediments deposit to form a delta at the mouth of the estuary. Baltic river mouths, considered as an estuary subtype, have brackish water and no tide, with large wetland vegetation (helophytic) and luxurious aquatic vegetation in shallow water areas.	Plants: Benthic algal communities, Zostera beds e.g. Zostera noltii (Zosteretea) or vegetation of brackish water: Ruppia maritima (= R. rostellata (Ruppietea)); Spartina maritima (Spartinetea); Sarcocornia perennis (Arthrocnemetea). Both species of fresh water and brackish water can be found in Baltic river mouths (Carex spp., Myriophyllum spp., Phragmites australis, Potamogeton spp., Scirpus spp.). Animals: Invertebrate benthic communities; important feeding areas for many birds.
1140		Sands and muds of the coasts of the oceans, their connected seas and associated lagoons, not covered by sea water at low tide, devoid of vascular plants, usually coated by blue algae and diatoms. They are of particular importance as feeding grounds for wildfowl and waders. The diverse intertidal communities of invertebrates and algae that occupy them can be used to define subdivisions of 11.27, eelgrass communities that may be exposed for a few hours in the course of every tide have been listed under 11.3, brackish water vegetation of permanent pools by use of those of 11.4. Note: Eelgrass communities (11.3) are included in this habitat type.	
1310		Formations composed mostly or predominantly of annuals, in particular Chenopodiaceae of the genus Salicornia or grasses, colonising periodically inundated muds and sands of marine or interior salt marshes. Thero-Salicornietea, Frankenietea pulverulentae, Saginetea maritimae. Sub-types 15.11 - Glasswort swards (Thero-Salicornietalia): annual glasswort (Salicornia spp., Microcnemum coralloides), seablite (Suaeda maritima), or sometimes salwort (Salsola spp.) formations colonising periodically inundated muds of coastal saltmarshes and inland salt-basins. 15.12 - Mediterranean halo-nitrophilous pioneer communities (Frankenion pulverulentae): formations of halo-nitrophilous annuals (Frankenia pulverulenta, Suaeda splendens, Salsola soda, Cressa cretica, Parapholis incurva, P. strigosa, Hordeum marinum, Sphenopus divaricatus) colonising salt muds of the Mediterranean region, susceptible to temporary inundation and extreme drying; 15.13 - Atlantic sea-pearlwort communities (Saginion maritimae): formations of annual pioneers occupying sands subject to variable salinity and humidity, on the coasts, in dune systems and saltmarshes. They are usually limited to small areas and best developed in the zone of contact between dune and saltmarsh. 15.14 Central Eurasian crypsoid communities : Sparse solonchak formations of annual grasses of genus Crypsis (Heleochloa) colonizing drying muds of humid depressions of the salt steppes and saltmarshes (15.A) of Eurasia, from Pannonia to the Far East.	Plants: 15.11 - Salicornia spp., Microcnemum coralloides, Suaeda maritima; 15.12 - Frankenia pulverulenta, Suaeda splendens, Salsola soda, Cressa cretica, Parapholis incurva, P. strigosa, Hordeum marinum, Sphenopus divaricatus; 15.13 - Sagina maritima, S. nodosa, Cochlearia danica, Gentiana littorale, Bupleurum tenuissimum; 15.14 - Crypsis spp, Cyperus pannonicus, Spergularia media, Spergularia marina, Salicornia spp., Lepidium latifolium, Chenopodium spp., Atriplex spp.
1320		Perennial pioneer grasslands of coastal salt muds, formed by Spartina or similar grasses. When selecting sites, preference should be given to those areas supporting rare or local Spartina. Sub-types 15.21 - Flat-leaved cordgrass swards: perennial pioneer grasslands of coastal salt muds, dominated by flat-leaved Spartina maritima, S. townsendii, S. anglica, S. alterniflora. 15.22 - Rush-leaved cordgrass swards: perennial pioneer grasslands of southern Iberian coastal salt muds, dominated by the junciform-leaved Spartina densiflora.	Plants: 15.21 - Spartina maritima, S. alterniflora; 15.22 - Spartina densiflora.

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1330		Salt meadows of Baltic, North Sea, English Channel and Atlantic shores. Aster tripolium can be present or abundant in most subdivisions.	Plants: 15.31 - Puccinellia maritima; 15.32 - Halimione portulacoides, Halimione pedunculata, Aster tripolium; 15.33 - Armeria maritima, Glaux maritima, Plantago maritima, Frankenia laevis, Artemisia maritima, Festuca rubra, Agrostis stolonifera, Juncus gerardii, Carex extensa, Blysmus rufus, Eleocharis spp.; 15.34 - Spergularia marina, Puccinellia distans, P. fasciculata, P. retroflexa, P. maritima, Triglochin maritima, Potentilla anserina, Halimione portulacoides; 15.35 - Elymus pycnanthus (= Agropyron pungens) or E. repens; 15.36 - Atriplex littoralis, A. hastata, Beta maritima, Matricaria maritima.
2110		Formations of the coast representing the first stages of dune construction, constituted by ripples or raised sand surfaces of the upper beach or by a seaward fringe at the foot of the tall dunes.	Plants: 16.2111 - Elymus farctus (Agropyron junceum), Leymus arenarius, Honkenya peploides; 16.2112 - Sporobolus pungens, Euphorbia peplis, Otanthus maritimus, Medicago marina, Anthemis maritima, A. tomentosa, Eryngium maritimum, Pancratium maritimum.
2120		Mobile dunes forming the seaward cordon or cordons of dune systems of the coasts (16.2121, 16.2122 and 16.2123). Ammophilion arenariae, Zygophyllion fontanesii.	Plants: 16.2121- Ammophila arenaria, Eryngium maritimum, Euphorbia paralias, Calystegia soldanella, Otanthus maritimus, Leymus arenarius; 16.2122 - Ammophila arenaria, Echinophora spinosa, Eryngium maritimum, Euphorbia paralias, Cutandia maritima, Medicago marina, Anthemis maritima; 16.2123 - Zygophyllum fontanesii, Euphorbia paralias, Polycarpaea nivea, Cyperus capitatus, Ononis natrix, *Convolvulus caput-medusae, Polygonum maritimum, *Androcymbium psammophilum.
2130	*	Fixed dunes, stabilised and colonised by more or less closed perennial grasslands and abundant carpets of lichens and mosses, from the Atlantic coasts (and the English Channel) between the Straits of Gibraltar and Cap Blanc Nez, and the shores of the North Sea and the Baltic. In the case of the thermo-Atlantic coast, it is logical to include Euphorbio Helichrysion (code 16.222 - thermo Atlantic as far as Brittany) and Crucianellion maritimae (code 16.223 - Strait of Gibraltar as far as the southern Atlantic near Cape Prior in Galicia). Sub-types 16.221 - Northern grey dunes with grass communities and vegetation from Galio-Koelerion albescentis (Koelerion albescentis), Corynephorion canescentis p., Sileno conicae-Cerastion semidecandri. 16.222 - Biscay grey dunes (Euphorbio-Helichrysion stoechadis): dunes on stabilised humus soil infiltrated by dwarf bushes, with Helichrysum stoechas, Artemisia campestris and Ephedra distachya. 16.223 - Thermo-Atlantic grey dunes (Crucianellion maritimae): suffrutescent communities on more or less stabilised soils low in humus of the thermo-Atlantic coasts with Crucianella maritima and Pancratium maritimum. 16.225 - Atlantic dune (Mesobromion) grasslands: various sandy coastal sites characterised by herbaceous vegetation in the form of calcicole mesoxerocline grasslands, poor in nitrogen, corresponding to the communities of Mesobromion found by the sea (penetration of aero haline species); dunal grasslands composed of species characteristic of dry calcareous grasslands (34.32). 16.226 - Atlantic dune thermophile fringes: Trifolio-Geranietea sanguinei: Galio maritimi-Geranion sanguinei, Geranium sanguineum formations (34.4) on neutro basic soils rich in calcium and poor in nitrogen. 16.227 - Dune fine-grass annual communities: sparse pioneer formations (35.2, 35.3) of fine grasses rich in spring-blooming therophytes characteristic of oligotrophic soils (nitrogen poor sand or very superficial soils, or on xerocline to xerophile rocks) (Thero-Airion p., Nardo-Galion saxatile p.,Tuberarion guttatae p.) The vegetation may be a closed cover of grassland, sparse annual grassland on sand or dominated by mosses and lichen; the content of limestone (Ca2+) may vary greatly and is generally diminishing with age and succession towards brown dune systems (dune heathland).	Plants: Aira spp., Anacamptis pyramidalis, Bromus hordeaceus, Carex arenaria, Cerastium spp., Corynephorus canescens, Erodium glutinosum, E. lebelii, Galium verum, Gentiana campestris, G. cruciata, Koeleria spp., Milium scabrum, Myosotis ramosissima, Ononis repens, Phleum arenarium, Polygala vulgaris var. dunensis, Silene conica, S. otites, Trifolium scabrum, Tuberaria guttata, Viola curtisii, V. rupestris var. arenaria; Mosses- Tortula ruraliformis; Lichens- Cladonia spp.
2150	*	Decalcified dunes of France, Belgium and Britain, colonised by heaths of the alliances Calluno-Genistion or Ulicion minoris, and of Iberia, colonised by heaths of the alliance Ericion umbellatae.	Plants: Calluna vulgaris, Carex arenaria, C. trinervis, Erica ciliaris, E. cinerea, E. scoparia, Festuca vasconcensis, Pseudoarrhenatherum longifolium (Arrhenatherum thorei), Ulex australis.
2160		Sea-buckthorn formations of forest colonisation in both dry and humid dune depressions.	Plants: Hippophae rhamnooides.
2170		Salix repens communities (Salicion arenariae), colonising wet dune slacks. Following the lowering of the ground water table or accumulation of drift sand, these communities may develop into mesophilous communities as the Pyrolo-Salicetum (with Pyrola rotundifolia, Viola canina, Monotropa hypopitys) or, into xerophilous Salix communities (with Carlina vulgaris, Thalictrum minus) or into Salix repens communities with Mesobromion elements.	Plant species: Salix repens ssp. argentea (i.e. Salix arenaria).

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2180		Natural or semi-natural forests (long established) of the Atlantic, Continental and Boreal region coastal dunes with a well developed woodland structure and an assemblage of characteristic woodland species. It corresponds to oak groves and beech-oak groves with birch (Quercion robori-petraeae) on acid soils, as well as forests of the Quercetalia pubescenti-petraeae order. Pioneer stages are open forests with Betula spp. and Crataegus monogyna, mixed forests with Fraxinus excelsior, Quercus robur, Ulmus minor and Acer pseudoplatanus or, in wet dune slacks, pioneer forests with Salix alba which develop into humid mixed forests or marsh forests. On southern atlantic coasts, it mainly corresponds to mixed Pinus pinaster-Quercus ilex forests, forests of Quercus suber and Quercus robur or forest stage with Quercus robur or Quercus pubescens. On Baltic coasts also pioneer forests of Alnus spp. or Pinus sylvestris.	Plant species are highly varied and depend on local site conditions
2190		Humid depressions of dunal systems. Humid dune-slacks are extremely rich and specialised habitats very threatened by the lowering of water tables. Sub-types : 16.31 - Dune-slack pools (Charetum tomentosae, Elodeetum canadense, Hippuridetum vulgaris, Hottonietum palustris, Potametum pectinati): fresh-water aquatic communities (cf. 22.4) of permanent dune-slack water bodies. 16.32 - Dune-slack pioneer swards (Juncenion bufonii p.: Gentiano-Erythraeetum littoralis, Hydrocotylo-Baldellion): pioneer formations of humid sands and dune pool fringes, on soils with low salinity. 16.33 - Dune-slack fens: calcareous and, occasionally, acidic fen formations (cf. 54.2, 54.4, in particular 54.21, 54.2H, 54.49), often invaded by creeping willow, occupying the wettest parts of dune-slacks. 16.34 - Dune-slack grasslands: humid grasslands and rushbeds (see 37.31, 37.4) of dune-slacks, also often with creeping willows (Salix rosmarinifolia, S. arenaria). 16.35 - Dune-slack reedbeds, sedgebeds and canebeds: reedbeds, tall-sedge communities and canebeds (cf. 53.1, 53.2, 53.3) of dune-slacks.	
2310		Dunes of the North Sea and Baltic plains, formed of quartzic sands originating in redeposited and reworked glacial drift and outwash. They are highly siliceous in the Netherlands, northern Belgium and north-western Germany, progressively slightly less oligotrophic and with a more continental species assemblage in north-eastern Germany, Poland and the eastern Baltic plain. The dune systems, particularly the large ones, harbour a unique ensemble of interacting communities and harbour many specialised and localised organisms. They have considerably regressed and the remaining examples are fragile and often threatened. Vegetation is dominated by heaths with Calluna and Genista.	Plants: Calluna vulgaris, Genista anglica, G. pilosa
2330		Open formations found on inland dunes with dry siliceous soils, of Atlantic, sub-Atlantic and Mediterraneo-montane distribution, often species-poor and with a strong representation of annuals. It includes formations of unstable Germano-Baltic fluvio-glacial inland sands with Corynephorus canescens, Carex arenaria, Spergula morisonii, Teesdalia nudicaulis and carpets of fruticose lichens (Cladonia, Cetraria) (64.11) and other grasslands of more stabilised Germano-Baltic fluvio-glacial inland dune systems with Agrostis spp. and Corynephorus canescens or other acidophilous grasses (64.12).	Plants: 64.11 - Corynephorus canescens, Carex arenaria, Spergula morisonii, Teesdalia nudicaulis, Cladonia, Cetraria; 64.12 - Agrostis spp., Corynephorus canescens.
3110		Shallow oligotrophic waters with few minerals and base poor, with an aquatic to amphibious low perennial vegetation belonging to the Littorelletalia uniflorae order, on oligotrophic soils of lake and pond banks (sometimes on peaty soils). This vegetation consists of one or more zones, dominated by Littorella, Lobelia dortmana or Isoetes, although not all zones may not be found at a given site.	Plants: Isoetes lacustris, I. echinospora, Littorella uniflora, Lobelia dortmanna, Deschampsia setacea, Subularia aquatica, Juncus bulbosus, Pilularia globulifera, #Luronium natans, Potamogeton polygonifolius; in the Boreal region also Myriophyllum alterniflorum, Drepanocladus spp., Warnstorfia spp. and Fontinalis spp.
3130		22.12 x 22.31 - aquatic to amphibious short perennial vegetation, oligotrophic to mesotrophic, of lake, pond and pool banks and water-land interfaces belonging to the Littorelletalia uniflorae order. 22.12 x 22.32 - amphibious short annual vegetation, pioneer of land interface zones of lakes, pools and ponds with nutrient poor soils, or which grows during periodic drying of these standing waters: Isoeto-Nanojuncetea class. These two units can grow together in close association or separately. Characteristic plant species are generally small ephemerophytes	Plants: 22.12 x 22.31: Littorella uniflora, #Luronium natans, Potamogeton polygonifolius, Pilularia globulifera, Juncus bulbosus ssp. bulbosus, Eleocharis acicularis, Sparganium minimum. 22.12 X 22.32 : #Lindernia procumbens, Elatine spp., Eleocharis ovata, Juncus tenageia, Cyperus fuscus, C.flavescens, C.michelianus, Limosella aquatica, Schoenoplectus supinus, Scirpus setaceus, Juncus bufonius, Centaurium pulchellum, Centunculus minimus, Cicendia filiformis.

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3140		Lakes and pools with waters fairly rich in dissolved bases (pH often 6-7) (21.12) or with mostly blue to greenish, very clear, waters poor (to moderate) in nutrients, base-rich (pH often >7.5) (21.15). The bottom of these unpolluted water bodies are covered with charophyte, Chara and Nitella, algal carpets. In the Boreal region this habitat type includes small calcareous-rich oligo-mesotrophic gyttja pools with dense Chara (dominating species is C. strigosa) carpets, often surrounded by various eutrophic fens and pine bogs	Plants: Chara spp., Nitella spp.
3150		Lakes and ponds with mostly dirty grey to blue-green, more or less turbid, waters, particularly rich in dissolved bases (pH usually > 7), with free-floating surface communities of the Hydrocharition or, in deep, open waters, with associations of large pondweeds (Magnopotamion).	Plants: Hydrocharition - Lemna spp., Spirodela spp., Wolffia spp., Hydrocharis morsus-ranae, Stratiotes aloides, Utricularia australis, U. vulgaris, #Aldrovanda vesiculosa, Ferns (Azolla), Liverworts (Riccia spp., Ricciocarpus spp.); Magnopotamion - Potamogeton lucens, P. praelongus, P. zizii, P. perfoliatus.
3160		Natural lakes and ponds with brown tinted water due to peat and humic acids, generally on peaty soils in bogs or in heaths with natural evolution toward bogs. pH is often low, 3 to 6. Plant communities belong to the order Utricularietalia.	Plants: Utricularia spp, Rhynchospora alba, R. fusca, Sparganium minimum, Sphagnum species. In the Boreal region also Nuphar lutea, N. pumila, Carex lasiocarpa, C. rostrata, Nymphaea candida, Drepanocladus spp., Warnstorfia trichophylla, W. procera. Animals: Odonata (dragonflies and damselflies)
3260		Water courses of plain to montane levels, with submerged or floating vegetation of the Ranunculion fluitantis and Callitricho-Batrachion (low water level during summer) or aquatic mosses.	Plants: Ranunculus saniculifolius, R. trichophyllus, R. fluitans, R. peltatus, R. penicillatus ssp. penicillatus, R. penicillatus ssp. pseudofluitantis, R. aquatilis, Myriophyllum spp., Callitriche spp., Sium erectum, Zannichellia palustris, Potamogeton spp., Fontinalis antipyretica.
3270		Muddy river banks of plain to submontane levels, with annual pioneer nitrophilous vegetation of the Chenopodion rubri p.p. and the Bidention p.p. alliances. During the spring and at the beginning of the summer, sites look like muddy banks without any vegetation (developes later in the year). If the conditions are not favourable, this vegetation has a weak development or could be completely absent.	Plants: Chenopodium rubrum, Bidens frondosa, Xanthium sp., Polygonum lapathifolium.
4010		Humid, peaty or semi-peaty heaths, other than blanket bogs, of the Atlantic and sub-Atlantic domains	Plants: Erica tetralix
4030		Mesophile or xerophile heaths on siliceous, podsolic soils in moist Atlantic and sub-Atlantic climates of plains and low mountains of Western, Central and Northern Europe. Sub-types: 31.21 - Sub-montane Vaccinium-Calluna heaths. Calluno-Genistion pilosae p.(Vaccinion vitis-idaeae p.):Vaccinio myrtilli-Callunetum s.l. i.a. Heaths rich in Vaccinium spp., usually with Calluna vulgaris, of the northern and western British Isles, the Hercynian ranges and the lower levels of the Alps, the Carpathians, the Pyrenees and the Cordillera Cantabrica. 31.22 - Sub-Atlantic Calluna-Genista heaths. Calluno-Genistion pilosae p. Low Calluna heaths often rich in Genista, mostly of the Germano-Baltic lowlands. Similar formations occurring in British upland areas, montane zones of high mountains of the western Mediterranean basin and high rainfall Adriatic influenced areas are most conveniently listed here. 31.23 - Atlantic Erica-Ulex heaths. Ulicenion minoris; Daboecenion cantabricae p.; Ulicion maritimae p. Heaths rich in gorse (Ulex) of the Atlantic margins. 31.24 - Ibero-Atlantic Erica-Ulex-Cistus heaths. Daboecenion cantabricae p.; Ericenion umbellatae p., Ericenion aragonensis; Ulicion maritimae p.; Genistion micrantho-anglicae p. Aquitanian heaths with rock-roses. Iberian heaths with numerous species of heathers (notably Erica umbellata, E. aragonensis) and brooms, rock-roses and often Daboecia. When the rock-roses and other Mediterranean shrubs become dominant they should be classified under sclerophyllous scrubs (32). 31.25 - Boreo-Atlantic Erica cinerea heaths	Plants: 31.21 - Vaccinium spp., Calluna vulgaris; 31.22 - Calluna vulgaris, Genista anglica, G. germanica, G. pilosa, accompanied by Empetrum nigrum or Vaccinium spp.; 31.23 - Ulex maritimus, U. gallii, Erica cinerea, E. mackaiana, E. vagans; 31.24 - Erica umbellata, E. aragonensis, E. cinerea, E. andevalensis, Cistus salvifolius, Calluna vulgaris; 31.25 - Erica cinerea.
5110		Stable xerothermophilous and calcicolous scrubs dominated by Buxus sempervirens, of hill and montane levels. These formations correspond to xerothermophilous Buxus thickets with their fringe associations of the Geranion sanguinei alliance on calcareous or siliceous substratum. They also constitute the natural woodland edge of calcareous dry forests rich with Buxus.In the euro-siberian region, the more open formations are rich in submediterranean plant species. Syntaxa: Berberidion p.p., Amelanchiero-Buxion	Plants: Buxus sempervirens, Prunus spinosa, Prunus mahaleb, Cornus mas, Crataegus spp., Berberis vulgaris, Ligustrum vulgare, Viburnum lantana, Amelanchier ovalis, Geranium sanguineum, Dictamnus albus.
5130		Formations with Juniperus communis of plain to montane levels. They mainly correspond to phytodynamic succession of the following types of vegetation: a) generally, mesophilous or xerophilous calcareous and nutrient poor grasslands, grazed or let lie fallow, of the Festuco-Brometea and Elyno-Seslerietea. b) more rarely, heathlands of the Calluno vulgaris-Ulicetea minoris (31.2).	Plants: Juniperus communis, Crataegus spp., Rosa spp., Prunus spinosa. For a) typical species of the Festuco-Brometea and Elyno-Seslerietea. For b) Calluna vulgaris, Vaccinium myrtillus, Empetrum nigrum, Erica tetralix, Deschampsia flexuosa, Nardus stricta.

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6110	*	Open xerothermophile pioneer communities on superficial calcareous or base-rich soils (basic volcanic substrates), dominated by annuals and succulents of the Alysso alyssoidis-Sedion albi Oberdorfer & Müller in Müller 61. Similar communities may develop on artificial substrates; these should not be taken into account.	Plants: Alyssum alyssoides, Arabis recta, Cerastium spp., Hornungia petraea, Jovibarba spp., Poa badensis, Saxifraga tridactylites, Sedum spp., Sempervivum spp., Teucrium botrys.
6120	*	Dry, frequently open grasslands on more or less calciferous sand with a subcontinental centre of distribution (Koelerion glaucae, Sileno conicae-Cerastion semidecandri, Sedo-Cerastion p.).	Plants: Allium schoenoprasum, Alyssum montanum ssp. gemelinii, Astragalus arenarius, Cardaminopsis arenosa, Carex ligerica, Carex praecox, Dianthus deltoides, Euphorbia seguieriana, Festuca psammophila, Gypsophila fastigiata, Helichrysum arenarium, Herniaria glabra, Koelerion glauca, Petrorhagia prolifera, Sedum reflexum, Silene chlorantha
6130		Generally open natural or semi-natural grasslands 1) on natural rock outcrops, rich in heavy metals (e.g. zinc, lead), 2) river gravels and shingles, 3) on old terrils or spoil heaps around mines. These open grasslands are characterised by a highly specialised flora, with subspecies and ecotypes adapted to heavy metals. The threatened endemic taxa are generally absent from the pioneer vegetation of younger terrils. This pioneer vegetation is not considered to be a priority.	Plants: Viola calaminaria and metallophyte races of Thlaspi caerulescens, Armeria maritima, Minuartia verna, Silene vulgaris, Festuca ophioliticola, Cochleria alpina sensu lato.
6210	(*)	Dry to semi-dry calcareous grasslands of the Festuco-Brometea. This habitat is formed on the one hand by steppic or subcontinental grasslands (Festucetalia valesiacae) and, on the other, by the grasslands of more oceanic and sub-Mediterranean regions (Brometalia erecti); in the latter case, a distinction is made between primary Xerobromion grasslands and secondary (semi-natural) Mesobromion grasslands with Bromus erectus; the latter are characterised by their rich orchid flora. Abandonment results in thermophile scrub with an intermediate stage of thermophile fringe vegetation (Trifolio-Geranietea). Important orchid sites should be interpreted as sites that are important on the basis of one or more of the following three criteria: (a) the site hosts a rich suite of orchid species (b) the site hosts an important population of at least one orchid species considered not very common on the national territory (c) the site hosts one or several orchid species considered to be rare, very rare or exceptional on the national territory.	Plants: Mesobromion - Anthyllis vulneraria, Arabis hirsuta, Brachypodium pinnatum, Bromus inermis, Campanula glomerata, Carex caryophyllea, Carlina vulgaris, Centaurea scabiosa, Dianthus carthusianorum, Eryngium campestre, Koeleria pyramidata, Leontodon hispidus, Medicago sativa ssp. falcata, Ophrys apifera, O. insectifera, Orchis mascula, O. militaris, O. morio, O. purpurea, O. ustulata, O. mascula, Polygala comosa, Primula veris, Sanguisorba minor, Scabiosa columbaria, Veronica prostrata, V. teucrium. Xerobromion - Bromus erectus, Fumana procumbens, Globularia elongata, Hippocrepis comosa. Festucetalia valesiacae: Adonis vernalis, Euphorbia seguierana, Festuca valesiaca, Silene otites, Stipa capillata, S. joannis. Animals: Papilio machaon, Iphiclides podalirius (Lepidoptera); Libelloides spp., Mantis religiosa (Neuroptera).
6230	*	Closed, dry or mesophile, perennial Nardus grasslands occupying siliceous soils in Atlantic or sub-Atlantic or boreal lowland, hill and montane regions. Vegetation highly varied, but the variation is characterised by continuity. Nardetalia: 35.1-Violo-Nardion (Nardo-Galion saxatilis, Violion caninae); 36.31- Nardion.Species-rich sites should be intrepreted as sites with are remarkable for a high number of species. In general, the habitats which have become irreversibly degraded through overgrazing should be excluded	Plants: Antennaria dioica, Arnica montana, Campanula barbata, Carex ericetorum, C. pallescens, C. panicea, Festuca ovina, Galium saxatile, Gentiana pneumonanthe, Hypericum maculatum, Hypochoeris maculata, Lathyrus montanus, Leontodon helveticus, Leucorchis albida, Meum athamanticum, Nardus stricta, Pedicularis sylvatica, Platanthera bifolia, Polygala vulgaris, Potentilla aurea, P. erecta, Veronica officinalis, Viola canina. Animals: Miramella alpina.
6410		Molinia meadows of plain to montane levels, on more or less wet nutrient poor soils (nitrogen, phosphorus). They stem from extensive management, sometimes with a mowing late in the year or, they correspond to a deteriorated stage of draining peat bogs. Sub-types : 37.311: on neutro-alkaline to calcareous soils with a fluctuating water table, relatively rich in species (Eu-molinion). The soil is sometimes peaty and becomes dry in summer. 37.312: on more acid soils of the Junco-Molinion (Juncion acutiflori) except species-poor meadows or on degraded peaty soils	Plants: 37.311 - Molinia coerulea, Dianthus superbus, Selinum carvifolia, Cirsium tuberosum, Colchicum autumnale, Inula salicina, Silaum silaus, Sanguisorba officinalis, Serratula tinctoria, Tetragonolobus maritimus; 37.312 - Viola persiciflora, V. palustris, Galium uliginosum, Cirsium dissectum, Crepis paludosa, Luzula multiflora, Juncus conglomeratus, Ophioglossum vulgatum, Inula britannica, Lotus uliginosus, Dianthus deltoides, Potentilla erecta, P. anglica, Carex pallescens.
6430		37.7 - Wet and nitrophilous tall herb edge communities, along water courses and woodland borders belonging to the Glechometalia hederaceae and the Convolvuletalia sepium orders (Senecion fluviatilis, Aegopodion podagrariae, Convolvulion sepium, Filipendulion). 37.8 - Hygrophilous perennial tall herb communities of montane to alpine levels of the Betulo-Adenostyletea class	Plants: 37.7 - Glechoma hederacea, Epilobium hirsutum, Senecio fluviatilis, Filipendula ulmaria, Angelica archangelica, Petasites hybridus, Cirsium oleraceum, Chaerophyllum hirsutum, Aegopodium podagraria, Alliaria petiolata, Geranium robertianum, Silene dioica, Lamium album, Lysimachia punctata, Lythrum salicaria, Crepis paludosa; 37.8 - Aconitum lycoctonum (A. vulparia), A. napellus, Geranium sylvaticum, Trollius europaeus, Adenostyles alliariae, Peucedanum ostruthium, Cicerbita alpina, Digitalis grandiflora, Calamagrostis arundinacea, Cirsium helenioides.
6510		Species-rich hay meadows on lightly to moderately fertilised soils of the plain to submontane levels, belonging to the Arrhenatherion and the Brachypodio-Centaureion nemoralis alliances. These extensive grasslands are rich in flowers and are not cut before the grasses flower and then only one or two times per year	Plants: Arrhenatherum elatius, Trisetum flavescens ssp. flavescens, Pimpinella major, Centaurea jacea, Crepis biennis, Knautia arvensis, Tragopogon pratensis, Daucus carota, Leucanthemum vulgare, Alopecurus pratensis, Sanguisorba officinalis, Campanula patula, Leontodon hispidus, L. nudicaulis, Linum bienne, Oenanthe pimpinelloides, Rhinanthus lanceolatus, Malva moschata, Serapias cordigera

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6520		Species-rich mesophile hay meadows of the montane and sub-alpine levels (mostly above 600 metres) usually dominated by Trisetum flavescens and with Heracleum sphondylium, Viola cornuta, Astrantia major, Carum carvi, Crepis mollis, C. pyrenaica, Bistorta major, (Polygonum bistorta), Silene dioica, S. vulgaris, Campanula glomerata, Salvia pratensis, Centaurea nemoralis, Anthoxanthum odoratum, Crocus albiflorus, Geranium phaeum, G. sylvaticum, Narcissus poeticus, Malva moschata, Valeriana repens, Trollius europaeus, Pimpinella major, Muscari botryoides, Lilium bulbiferum, Thlaspi caerulescens, Viola tricolor ssp. subalpina, Phyteuma halleri, P. orbiculare, Primula elatior, Chaerophyllum hirsutum and many others	Plants: Trisetum flavescens and with Heracleum sphondylium, Viola cornuta, Astrantia major, Carum carvi, Crepis mollis, C. pyrenaica, Bistorta major (Polygonum bistorta), Silene dioica, S. vulgaris, Campanula glomerata, Salvia pratensis, Centaurea nemoralis, Anthoxanthum odoratum, Crocus albiflorus, Geranium phaeum, G. sylvaticum, Narcissus poeticus, Malva moschata, Valeriana repens, Trollius europaeus, Pimpinella major, Muscari botryoides, Lilium bulbiferum, Thlaspi caerulescens, Viola tricolor ssp. subalpina, Phyteuma halleri, P. orbiculare, Primula elatior, Chaerophyllum hirsutum, Alchemilla spp., Cirsium heterophylum.
7110	*	Acid bogs, ombrotrophic, poor in mineral nutrients, sustained mainly by rainwater, with a water level generally higher than the surrounding water table, with perennial vegetation dominated by colourful Sphagna hummocks allowing for the growth of the bog (Erico-Sphagnetalia magellanici, Scheuchzerietalia palustris p., Utricularietalia intermedio-minoris p., Caricetalia fuscae p.). The term "active" must be taken to mean still supporting a significant area of vegetation that is normally peat forming, but bogs where active peat formation is temporarily at a standstill, such as after a fire or during a natural climatic cycle e.g., a period of drought, are also included.	Plants: Erico-Sphagnetalia magellanici- Andromeda polifolia, Carex pauciflora, Cladonia spp., Drosera rotundifolia, Eriophorum vaginatum, Odontoschisma sphagni, Sphagnum magellanicum, S. imbricatum, S. fuscum, Vaccinium oxycoccos; in the Boreal region also Betula nana, Chamaedaphne calyculata, Calluna vulgaris, Ledum palustre and Sphagnum angustifolium. Scheuchzerietalia palustris p., Utricularietalia intermedio-minoris p., Caricetalia fuscae p.- Carex fusca, C. limosa, Drosera anglica, D. intermedia, Eriophorum gracile, Rhynchospora alba, R. fusca, Scheuchzeria palustris, Utricularia intermedia, U. minor, U. ochroleuca; in the Boreal region also Sphagnum balticum and S. majus. Animals: Dragonflies- Leucorrhinia dubia, Aeshna subartica, A. caerulea, A. juncea, Somatochlora arctica, S. alpestris; Butterflies- Colias palaeno, Boloria aquilonaris, Coenonympha tullia, Vacciniina optilete, Hypenodes turfosalis, Eugraphe subrosea; Spiders- Pardosa sphagnicola, Glyphesis cottonae; Ants- Formica transkaucassia; Cricket/Grasshopper- Metrioptera brachyptera, Stethophyma grossum
7120		These are raised bogs where there has been disruption (usually anthropogenic) to the natural hydrology of the peat body, leading to surface desiccation and/or species change or loss. Vegetation on these sites usually contains species typical of active raised bog as the main component, but the relative abundance of individual species is different. Sites judged to be still capable of natural regeneration will include those areas where the hydrology can be repaired and where, with appropriate rehabilitation management, there is a reasonable expectation of re-establishing vegetation with peat-forming capability within 30 years. Sites unlikely to qualify as SACs are those that consist largely of bare peat, that are dominated by agricultural grasses or other crops, or where components of bog vegetation have been eradicated by closed canopy woodlands.	
7140		Peat-forming communities developed at the surface of oligotrophic to mesotrophic waters, with characteristics intermediate between soligenous and ombrogenous types. They present a large and diverse range of plant communities. In large peaty systems, the most prominent communities are swaying swards, floating carpets or quaking mires formed by medium-sized or small sedges, associated with sphagnum or brown mosses. They are generally accompanied by aquatic and amphibious communities. In the Boreal region this habitat type includes minerotrophic fens that are not part of a larger mire complex, open swamps and small fens in the transition zone between water (lakes, ponds) and mineral soil. These mires and bogs belong to the Scheuchzerietalia palustris order (oligotrophic floating carpets among others) and to the Caricetalia fuscae order (quaking communities). Oligotrophic water-land interfaces with Carex rostrata are included.	Plants: Eriophorum gracile, Carex chordorrhiza, Carex lasiocarpa, Carex diandra, Carex rostrata, Carex limosa, Scheuchzeria palustris, Hammarbya paludosa, #Liparis loeselii, Rhynchospora alba, R. fusca, Menyanthes trifoliata, Epilobium palustre, Pedicularis palustris, Sphagnum sp. (S. papillosum, S. angustifolium, S. subsecundun, S. fimbriatum, S. riparium, S. cuspidatum, Calliergon giganteum, Drepanocladus revolvens, Scorpidium scorpioides, Campylium stellatum, Aneura pinguis.
7150		Highly constant pioneer communities of humid exposed peat or, sometimes, sand, with Rhynchospora alba, R. fusca, Drosera intermedia, D. rotundifolia, Lycopodiella inundata, forming on stripped areas of blanket bogs or raised bogs, but also on naturally seep- or frost-eroded areas of wet heaths and bogs, in flushes and in the fluctuation zone of oligotrophic pools with sandy, slightly peaty substratum. These communities are similar, and closely related, to those of shallow bog hollows (51.122) and of transition mires (54.57).	Plants: Rhynchospora alba, R. fusca, Drosera intermedia, D. rotundifolia, Lycopodiella inundata.
7210	*	Calcareous or marly screes of the hill and montane levels extending into mountainous regions (subalpine and alpine), often in dry, warm stations in associations with Stipetalia calamagrostis. This habitat type should be clearly distinguished from 8130 - Western Mediterranean and thermophilous scree, a non-priority Annex I habitat type.	Plants: Achnatherum calamagrostis, Dryopteris robertiana (=Gymnocarpium robertianum), Galeopsis angustifolia, Petasites paradoxus, Rumex scutatus
7220	*	Hard water springs with active formation of travertine or tufa. These formations are found in such diverse environments as forests or open countryside. They are generally small (point or linear formations) and dominated by bryophytes (Cratoneurion commutati)	Plants: Arabis soyeri, Cochlearia pyrenaica (in sites with heavy metals), Pinguicula vulgaris, Saxifraga aizoides. Mosses: Catoscopium nigritum, Cratoneuron commutatum, C. commutatum var. falcatum, C. filicinum, Eucladium verticillatum, Gymnostomum recurvirostrum. In the Boreal region also Carex appropinquata, Epilobium davuricum, Juncus triglumis, Drepanocladus vernicosus, Philonotis calcarea, Scorpidium revolvens, S.cossoni, Cratoneuron decipiens, Bryum pseudotriquetum.

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7230		Wetlands mostly or largely occupied by peat- or tufa-producing small sedge and brown moss communities developed on soils permanently waterlogged, with a soligenous or topogenous base-rich, often calcareous water supply, and with the water table at, or slightly above or below, the substratum. Peat formation, when it occurs, is infra-aquatic. Calciphile small sedges and other Cyperaceae usually dominate the mire communities, which belong to the Caricion davallianae, characterised by a usually prominent "brown moss" carpet formed by Campylium stellatum, Drepanocladus intermedius, D. revolvens, Cratoneuron commutatum, Acrocladium cuspidatum, Ctenidium molluscum, Fissidens adianthoides, Bryum pseudotriquetrum and others, a grasslike growth of Schoenus nigricans, S. ferrugineus, Eriophorum latifolium, Carex davalliana, C. flava, C. lepidocarpa, C. hostiana, C. panicea, Juncus subnodulosus, Scirpus cespitosus, Eleocharis quinqueflora, and a very rich herbaceous flora including Tofieldia calyculata, Dactylorhiza incarnata, D. traunsteineri, D. traunsteinerioides, D. russowii, D. majalis ssp.brevifolia, D. cruenta, #Liparis loeselii, Herminium monorchis, Epipactis palustris, Pinguicula vulgaris, Pedicularis sceptrum-carolinum, Primula farinosa, Swertia perennis. Wet grasslands (Molinietalia caerulaea, e.g. Juncetum subnodulosi & Cirsietum rivularis, 37), tall sedge beds (Magnocaricion, 53.2), reed formations (Phragmition, 53.1), fen sedge beds (Cladietum mariscae, 53.3), may form part of the fen system, with communities related to transition mires (54.5, 54.6) and amphibious or aquatic vegetation (22.3, 22.4) or spring communities (54.1) developing in depressions. The sub-units below, which can, alone or in combination, and together with codes selected from the categories just mentioned, describe the composition of the fen, are understood to include the mire communities sensu stricto (Caricion davallianae), their transition to the Molinion, and assemblages that, although they may be phytosociologically referable to alkaline Molinion associations, contain a large representation of the Caricion davallianae species listed, in addition to being integrated in the fen system; this somewhat parallels the definition of an integrated class Molinio-Caricetalia davallianae in Rameau *et al.* 1989. Outside of rich fen systems, fen communities can occur as small areas in dune slack systems (16.3), in transition mires (54.5), in wet grasslands (37), on tufa cones (54.121) and in a few other situations. The codes below can be used, in conjunction with the relevant principal code, to signal their presence. Rich fens are exceptionally endowed with spectacular, specialised, strictly restricted species. They are among the habitats that have undergone the most serious decline. They are essentially extinct in several regions and gravely endangered in most	Plants: Schoenus nigricans, S. ferrugineus, Carex spp., Eriophorum latifolium, Cinclidium stygium, Tomentypnum nitens.
8150		Siliceous screes of hills of western and central Europe, with Epilobium collinum, Galeopsis segetum, Senecio viscosus, Anarrhinum bellidifolium, Cryptogramma crispa. Upland siliceous screes, often resulting from quarry activity, and colonised by very impoverished forms of the Alpine communities, usually rich in mosses, lichens and sometimes ferns, notably Cryptogramma crispa, are included, but should not be taken into account.	Plants: Epilobium collinum, Galeopsis segetum, Senecio viscosus, Anarrhinum bellidifolium, Cryptogramma crispa
8160	*	Calcareous or marly screes of the hill and montane levels extending into mountainous regions (subalpine and alpine), often in dry, warm stations in associations with Stipetalia calamagrostis. This habitat type should be clearly distinguished from 8130 - Western Mediterranean and thermophilous scree, a non-priority Annex I habitat type.	Plants: Achnatherum calamagrostis, Dryopteris robertiana (=Gymnocarpium robertianum), Galeopsis angustifolia, Petasites paradoxus, Rumex scutatus
8210		Vegetation of fissures of limestone cliffs, in the mediterranean region and in the euro-siberian plain to alpine levels, belonging essentially to the Potentilletalia caulescentis and Asplenietalia glandulosi orders. Two levels may be identified: a) thermo- and meso-Mediterranean (Onosmetalia frutescentis) with Campanula versicolor, C. rupestris, Inula attica, I. mixta, Odontites luskii; b) montane and oro-Mediterranean (Potentilletalia speciosae, including Silenion aurticulatae, Galion degenii and Ramondion nathaliae). This habitat type presents a great regional diversity, with many endemic plant species (indicated under point 2).	Plants: 62.11 - Western Mediterranean communities (Asplenion petrarchae): Asplenium petrarchae, Asplenium trichomanes ssp. pachyrachis, Cheilanthes acrostica, Melica minuta, Hieracium stelligerum, Erodium petraeum; Mesothermic shady fern groups of the supra-Mediterranean level (Polypodion australis): Polypodium cambricum ssp. australe, Saxifraga corbariensis, #Asplenium jahandiezii, Asplenium sagittatum, Pteris cretica, Asplenium trichomanes ssp. inexpectans. 62.12 - Central Pyrenean communities (Saxifragion mediae): Asperula hirta, +Androsace cylindrica, Asplenium celtibericum, Saxifraga media, S. longifolia, S. aretioides, Potentilla alchimilloides, P. nivalis, Ramonda myconi, Ptilotrichum pyrenaicum. 62.13 - Liguro-Apennine cliffs communities (Saxifragion lingulatae): Saxifraga callosae ssp. lingulata, Primula marginata, P. allionii, Phyteuma cordatum, Ballota frutescens, Potentilla saxifraga, Silene campanula, Phyteuma charmelii. 62.14 - Southern Italian communities (Dianthion rupicolae): #Dianthus rupicola, Antirrhinum siculum, Cymbalaria pubescens, Scabiosa limonifolia. 62.15 and 62.1B - Euro-Siberian communities and Mediterranean communities of the supra to oro-Mediterranean levels (Potentilletalia caulescentis): -shady communities : Cystopteris fragilis, Asplenium trichomanes, Asplenium viride. -xerophilous communities : Ceterach officinarum, Asplenium ruta-muraria, Draba aizoides, Kernera saxatilis, Biscutella laevigata. -alpine level communities : Androsace helvetica, Minuartia rupestris, Draba tomentosa. - Centre and Southern Italian communities (Saxifragion australis): Saxifraga australis, Potentilla

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			nebrodensis, Campanula tanfanii, Trisetum bertolonii. 62.16, 62.17, 62.18, 62.19 and 62.1A - Greek and Southern Italian calcareous cliff communities (Campanulion versicoloris, Cirsietalia chamaepeucis, Silenion auriculatae, Ramondion nathaliae). 62.1C - Boreal communities with Asplenium viride, Woodsia glabella.
8220		Vegetation of fissures of siliceous inland cliffs, which presents many regional sub-types, described under point 2.	Plants: 62.21 - Alpine siliceous cliff vegetation (Pyrenees and Alps) and of Hercynian system and its periphery (Androsacion vandellii): Androsace vandellii, Saxifraga retusa ssp. retusa, S. aspera, Phyteuma scheuchzeri, Primula hirsuta, Eritrichium nanum; Communities of montane level of Pyrenees and Cevennes (Asarinion procumbentis: includes 62.26): Asarina procumbens, Dianthus graniticus, Saxifraga continentalis, S. prostii, Anarrhinum bellidifolium; Saxicolous communities of the plain to hill levels under Middle European climate (Asplenion septentrionalis) and communities of the plain level under oceanic climate (Asplenion billotii-Umbilicarion rupestre: 62.29 is included): Asplenium septentrionale, A. adiantum-nigrum, A. billotii, A. foreziense, A. onopteris. - Hercynian serpentine cliffs (Asplenion cuneifolii): Asplenium cuneifolium, A. alternifolium, A. adulterinum. 62.22 - high altitude siliceous cliff vegetation of Iberian mountains: - Central Iberian mountains (Saxifragion willkommianae): Saxifraga willkommiana, S. orogredensis, Murbeckiella boryi; - Sierra Nevada (Saxifragion nevadensis): Saxifraga nevadensis. 62.23 - South-western Alpine siliceous cliff vegetation (Saxifragion pedemontanae): Saxifraga pedemontana, #S. florulenta, Galium tendae, Sempervivum montanum ssp. burnatii, Jovibarba allionii. 62.24 - Cyrno-Sardian siliceous montane cliff vegetation (Potentillion crassinerviae): Potentilla crassinervia, Armeria leucocephala, Silene requientii, Saxifraga pedemontana ssp. cervicornis. 62.25 - Northern Greek siliceous cliff vegetation (Silenion lerchenfeldianae): Silene lerchenfeldiana. 62.26 - see 62.21 62.27 - Western Iberian siliceous cliff vegetation of the submontane level (Cheilanthion hispanicae): Cheilanthes hispanica, C. tinaei. 62.28 - Provençо-Iberian siliceous cliff vegetation on rock faces rich in basic silicates (basalts and peridots), of the thermo to meso-Mediterranean levels (Phagnalo saxatilis-Cheilanthion maderensis): Cheilanthes maderensis, C. marantae, C. vellaea, Asplenium balearicum. 62.29 : see 62.21. 62.2A - Boreal siliceous cliffs (rapakivi cliffs)
8230		Pioneer communities of the Sedo-Scleranthion or the Sedo albi-Veronicion dillenii alliances, colonising superficial soils of siliceous rock surfaces. As a consequence of drought, this open vegetation is characterised by mosses, lichens and Crassulacea.	Plants: Sedo-Scleranthion: Sempervivum arachnoideum, Sempervivum montanum, Sedum annuum, Silene rupestris, Veronica fruticans; Sedo albi-Veronicion dillenii: Veronica verna, Veronica dillenii, Gagea bohemica, Gagea saxatiles, Riccia ciliifera; Plant species belonging to the two syntaxa: Allium montanum, Sedum acre, Sedum album, Sedum reflexum, Sedum sexangulare, Scleranthus perennis, Rumex acetosella. Mosses- Polytrichum piliferum, Ceratodon purpureus.
8310		Caves not open to the public, including their water bodies and streams, hosting specialised or high endemic species, or that are of paramount importance for the conservation of Annex II species (e.g. bats, amphibians).	Plants: mosses only (e.g. Schistostega pennata) and algal carpets at the entry of caves. Animals: Very specialised and highly endemic cavernicolous fauna. It includes underground relic forms of a fauna which has been diversified outside. This fauna is mainly composed of invertebrates which exclusively live in caves and underground waters. The cavernicolous terrestrial invertebrates are mainly coleoptera, belonging to the Bathysciinae and Trechinae families in particular, which are carnivorous and have a very limited distribution. Cavernicolous aquatic invertebrates constitute a highly endemic fauna, dominated by crustaceans (Isopoda, Amphipoda, Syncarida, Copepoda) and include many living fossils. Aquatic molluscs, belonging to the Hydrobiidae family are also found. With regard to vertebrates, caves constitute hibernation sites for most European bat species, among which many are threatened (see Annex II). Several species can live together in the same cave. Caves also shelter some very rare amphibious species like #Proteus anguinus and several species of the #Speleomantes genus

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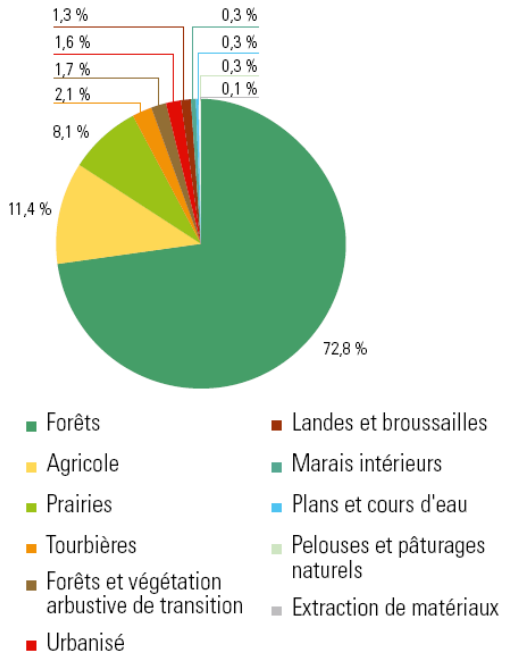
9110		Fagus sylvatica and, in higher mountains, Fagus sylvatica-Abies alba or Fagus sylvatica-Abies alba-Picea abies forests developed on acid soils of the medio-European domain of central and northern Central Europe, with Luzula luzuloides, Polytrichum formosum and often Deschampsia flexuosa, Calamagrostis villosa, Vaccinium myrtillus, Pteridium aquilinum. The following sub-types are included: 41.111 Medio-European collinar woodrush beech forests Acidophilous Fagus sylvatica forests of the lesser Hercynian ranges and Lorraine, of the collinar level of the greater Hercynian ranges, the Jura and the Alpine periphery, of the western sub-Pannonic and the intra-Pannonic hills, not or little accompanied by self sown conifers, and generally with an admixture of Quercus petraea, or in some cases Quercus robur, in the canopy. 41.112 Medio-European montane woodrush beech forests Acidophilous forests of Fagus sylvatica, Fagus sylvatica and Abies alba or Fagus sylvatica, Abies alba and Picea abies of the montane and high-montane levels of the greater Hercynian ranges, from the Vosges and the Black Forest to the Bohemian Quadrangle, the Jura, the Alps, the Carpathians and the Bavarian Plateau.	Plants: Fagus sylvatica, Abies alba, Picea abies, Luzula luzuloides, Polytrichum formosum and often Deschampsia flexuosa, Calamagrostis villosa, Vaccinium myrtillus, Pteridium aquilinum.
9120		Beech forests with Ilex, growing on acid soils, of the plain to montane levels under humid Atlantic climate. The acid substrate corresponds to alterations of acid rocks or to silt with flints more or less degraded or, to old alluvial deposits. The soils are of acid brown type, leaching or with an evolution towards podsol type. The humus is of moder to dysmoder type. These beech forests present different varieties: a) subatlantic beech-oak forests of the plains and hill levels with Ilex aquifolium b) hyper-Atlantic beech-oak forests of the plains and hill levels with Ilex and Taxus, rich in epiphytes c) pure beech forests or acidophilous beech-fir forests of the montane level, with Ilex aquifolium in the field layer.	Plants: Ilex aquifolium, Taxus baccata, Ruscus aculeatus, Deschampsia flexuosa, Hieracium sabaudum, H. umbellatum, Pteridium aquilinum, Vaccinium myrtillus, Lonicera periclymenum, Melampyrum pratense, Teucrium scorodonia, Holcus mollis.
9130		Fagus sylvatica and, in higher mountains, Fagus sylvatica-Abies alba or Fagus sylvatica-Abies alba-Picea abies forests developed on neutral or near-neutral soils, with mild humus (mull), of the medio-European and Atlantic domains of Western Europe and of central and northern Central Europe, characterised by a strong representation of species belonging to the ecological groups of Anemone nemorosa, of Lamiastrum (Lamium) galeobdolon, of Galium odoratum and Melica uniflora and, in mountains, various Dentaria spp., forming a richer and more abundant herb layer than in the forests of 9110 and 9120. Sub-types : 41.131 - Medio-European collinar neutrophilous beech forests Neutrocline or basicline Fagus sylvatica and Fagus sylvatica-Quercus petraea-Quercus robur forests of hills, low mountains and plateaux of the Hercynian arc and its peripheral regions, of the Jura, Lorraine, the Paris basin, Burgundy, the Alpine piedmont, the Carpathians and a few localities of the North Sea-Baltic plain. 41.132 - Atlantic neutrophile beech forests Atlantic beech and beech-oak forests with Hyacinthoides non-scripta, of southern England, the Boulonnais, Picardy, the Oise, Lys and Schelde basins. 41.133 - Medio-European montane neutrophilous beech forests Neutrophile forests of Fagus sylvatica, Fagus sylvatica and Abies alba, Fagus sylvatica and Picea abies, or Fagus sylvatica, Abies alba and Picea abies of the montane and high-montane levels of the Jura, the northern and eastern Alps, the western Carpathians and the great Hercynian ranges. 41.134 - Bohemian lime-beech forests Fagus sylvatica or Fagus sylvatica-Abies alba forests rich in Tilia spp., of the Bohemian basin. 41.135 - Pannonic neutrophilme beech forests Neutrophilous beech forests of medio-European affinities of the hills of the Pannonic plain and its western periphery.	Plants: Fagus sylvatica, Abies alba, Picea abies, Anemone nemorosa, Lamiastrum (Lamium) galeobdolon, Galium odoratum, Melica uniflora, Dentaria spp.

N°	Prioritary?	Definition - general description of the vegetation, syntaxa, abiotic features, origin	Characteristic species animal and plant key species including details of their occurrence on Annexes II and IV (* = priority; # = non-priority from Annex II and IV; + = Annex IV only)
9150		Xero-thermophile Fagus sylvatica forests developed on calcareous, often superficial, soils, usually of steep slopes, of the medio-European and Atlantic domaines of Western Europe and of central and northern Central Europe, with a generally abundant herb and shrub undergrowth, characterized by sedges (Carex digitata, Carex flacca, Carex montana, Carex alba), grasses (Sesleria albicans, Brachypodium pinnatum), orchids (Cephalanthera spp., Neottia nidus-avis, Epipactis leptochila, Epipactis microphylla) and thermophile species, transgressive of the Quercetalia pubescenti-petraeae. The bush-layer includes several calcicolous species (Ligustrum vulgare, Berberis vulgaris) and Buxus sempervirens can dominate. Sub-types : 41.161 - Middle European dry-slope limestone beech forests Middle European sedge and orchid beech woods of slopes with reduced water availability. 41.162 - North-western Iberian xerophile beech woods Fagus sylvatica forests of relatively low precipitation zones of the southern ranges of the Pais Vasco and of superficially dry calcareous soils of the Cordillera Cantabrica, with Brachypodium pinnatum ssp. rupestre, Sesleria argentea ssp. hispanica, Carex brevicollis, Carex ornithopoda, Carex sempervirens, Carex caudata, Cephalanthera damasonium, C. longifolia, Epipactis helleborine, Epipactis microphylla, Neottia nidus-avis	Plants: Fagus sylvatica, Carex digitata, C. flacca, C. montana, C. alba, Sesleria albicans, Brachypodium pinnatum, Cephalanthera spp., Neottia nidus-avis, Epipactis leptochila, Epipactis microphylla, Buxus sempervirens
9160		Forests of Quercus robur (or Quercus robur and Quercus petraea) on hydromorphic soils or soils with high water table (bottoms of valleys, depressions or in the vicinity of riparian forests). The substrate corresponds to silts, clayey and silt-laden colluvions, as well as to silt-laden alterations or to siliceous rocks with a high degree of saturation. Forests of Quercus robur or natural mixed forests composed of Quercus robur, Quercus petraea, Carpinus betulus and Tilia cordata. Endymion non-scriptus is absent or rare.	Plants: Quercus robur, Carpinus betulus, Acer campestre, Tilia cordata, Stellaria holostea, Carex brizoides, Poa chaixii, Potentilla sterilis, Dactylis polygama, Ranunculus nemorosus, Galium sylvaticum.
9180	*	Mixed forests of secondary species (Acer pseudoplatanus, Fraxinus excelsior, Ulmus glabra, Tilia cordata) of coarse scree, abrupt rocky slopes or coarse colluvions of slopes, particularly on calcareous, but also on siliceous, substrates (Tilio-Acerion Klika 55). A distinction can be made between one grouping which is typical of cool and humid environments (hygroscopic and shade tolerant forests), generally dominated by the sycamore maple (Acer pseudoplatanus) - sub-alliance Lunario-Acerenion, and another which is typical of dry, warm screes (xerothermophile forests), generally dominated by limes (Tilia cordata, T. platyphyllos) - sub-alliance Tilio-Acerenion. The habitat types belonging to the Carpinion should not be included here.	Plants: Lunario-Acerenion - Acer pseudoplatanus, Actaea spicata, Fraxinus excelsior, Helleborus viridis, Lunaria rediviva, Taxus baccata, Ulmus glabra. Tilio-Acerenion - Carpinus betulus, Corylus avellana, Quercus sp., Sesleria varia, Tilia cordata, T. platyphyllos
9190		41.51 - Acidophilous forests of the Baltic-North Sea plain, composed of Quercus robur, Betula pendula and Betula pubescens, often mixed with Sorbus aucuparia and Populus tremula, on very oligotrophic, often sandy (or moraine) and podsolized or hydromorphic soils; the bush layer, poorly developed, includes Frangula alnus; the herb layer is formed by Deschampsia flexuosa and other grasses and herbs of acid soils (sometimes includes Molinia caerulea), and is often invaded by bracken. Forests of this type often prevail in the northern European plain and occupy more limited edaphic enclaves. Syntaxa: Querco-Betuletum, Molino-Quercetum, Trientalo-Quercetim roboris. 41.54 - Forests of Quercus robur and, sporadically Quercus pyrenaica or hybrids, on podzols, with a herb layer formed by the group of Deschampsia flexuosa, with Molinia caerulea and Peucedanum gallicum. Syntaxa: Peucedano-Quercetum roboris.	Plants: Quercus robur, Betula pendula, B. pubescens, Sorbus aucuparia, Populus tremula.
91D0	*	Coniferous and broad-leaved forests on a humid to wet peaty substrate, with the water level permanently high and even higher than the surrounding water table. The water is always very poor in nutrients (raised bogs and acid fens). These communities are generally dominated by Betula pubescens, Frangula alnus, Pinus sylvestris, Pinus rotundata and Picea abies, with species specific to bogland or, more generally, to oligotrophic environments, such as Vaccinium spp., Sphagnum spp., Carex spp. [Vaccinio-Piceetea: Piceo-Vaccinienion uliginosi (Betulion pubescentis, Ledo-Pinion) i.a.]. In the Boreal region, also spruce swamp woods, which are minerotrophic mire sites along margins of different mire complexes, as well as in separate strips in valleys and along brooks. Sub-types : 44.A1 - Sphagnum birch woods 44.A2 - Scots pine mire woods 44.A3 - Mountain pine bog woods 44.A4 - Mire spruce woods	Plants: Agrostis canina, Betula pubescens, B. carpatica, Carex canescens, C. echinata, C. nigra, C. rostrata, Frangula alnus, Juncus acutiflorus, Molinia caerulea, Trientalis europaea, Picea abies, Pinus rotundata, P. sylvestris, Sphagnum spp., Vaccinium oxycoccus, V. uliginosum, Viola palustris; in spruce swamp woods also: Carex disperma, C. tenuiflora, Diplazium sibiricum, Hylocomium umbratum and Rhytidiadelphus triquetrus

N°	Prioritary?	Definition - general description of the vegetation, syntaxa, abiotic features, origin	Characteristic species animal and plant key species including details of their occurrence on Annexes II and IV (* = priority; # = non-priority from Annex II and IV; + = Annex IV only)
91E0	*	Riparian forests of Fraxinus excelsior and Alnus glutinosa, of temperate and Boreal Europe lowland and hill watercourses (44.3: Alno-Padion); riparian woods of Alnus incanae of montane and sub-montane rivers of the Alps and the northern Apennines (44.2: Alnion incanae); arborescent galleries of tall Salix alba, S. fragilis and Populus nigra, along medio-European lowland, hill or sub-montane rivers (44.13: Salicion albae). All types occur on heavy soils (generally rich in alluvial deposits) periodically inundated by the annual rise of the river (or brook) level, but otherwise well-drained and aerated during low-water. The herbaceous layer invariably includes many large species (Filipendula ulmaria, Angelica sylvestris, Cardamine spp., Rumex sanguineus, Carex spp., Cirsium oleraceum) and various vernal geophytes can occur, such as Ranunculus ficaria, Anemone nemorosa, A. ranunculoides, Corydalis solida. This habitat includes several sub-types: ash-alder woods of springs and their rivers (44.31 - Carici remotae-Fraxinetum); ash-alder woods of fast-flowing rivers (44.32 - Stellario-Alnetum glutinosae); ash-alder woods of slow-flowing rivers (44.33 - Pruno-Fraxinetum, Ulmo-Fraxinetum); montane grey alder galleries (44.21 - Calamagrosti variae-Alnetum incanae Moor 58); sub-montane grey alder galleries (44.22 - Equiseto hyemalis-Alnetum incanae Moor 58); white willow gallery forests (44.13 - Salicion albae). The Spanish types belong to the alliance Osmundo-Alnion (Cantabric atlantic and southeast Iberia peninsula)	Plants: Tree layer - Alnus glutinosa, Alnus incanae, Fraxinus excelsior; Populus nigra, Salix alba, S. fragilis; Betula pubescens, Ulmus glabra; Herb layer - Angelica sylvestris, Cardamine amara, C. pratensis, Carex acutiformis, C. pendula, C. remota, C. strigosa, C. sylvatica, Cirsium oleraceum, Equisetum telmateia, Equisetum spp., Filipendula ulmaria, Geranium sylvaticum, Geum rivale, Lycopus europaeus, Lysimachia nemorum, Rumex sanguineus, Stellaria nemorum, Urtica dioica.
91F0		Forests of hardwood trees of the major part of the river bed, liable to flooding during regular rising of water level or, of low areas liable to flooding following the raising of the water table. These forests develop on recent alluvial deposits. The soil may be well drained between inondations or remain wet. Following the hydric regime, the woody dominated species belong to Fraxinus, Ulmus or Quercus genus. The undergrowth is well developed	Plants: Quercus robur, Ulmus laevis, U. minor, U.glabra, Fraxinus excelsior, Fraxinus angustifolia, Populus nigra, P. canescens, P. tremula, Alnus glutinosa, Prunus padus, Humulus lupulus, Vitis vinifera ssp. sylvestris, Tamus communis, Hedera helix, Phalaris arundinacea, Corydalis solida, Gagea lutea, Ribes rubrum.

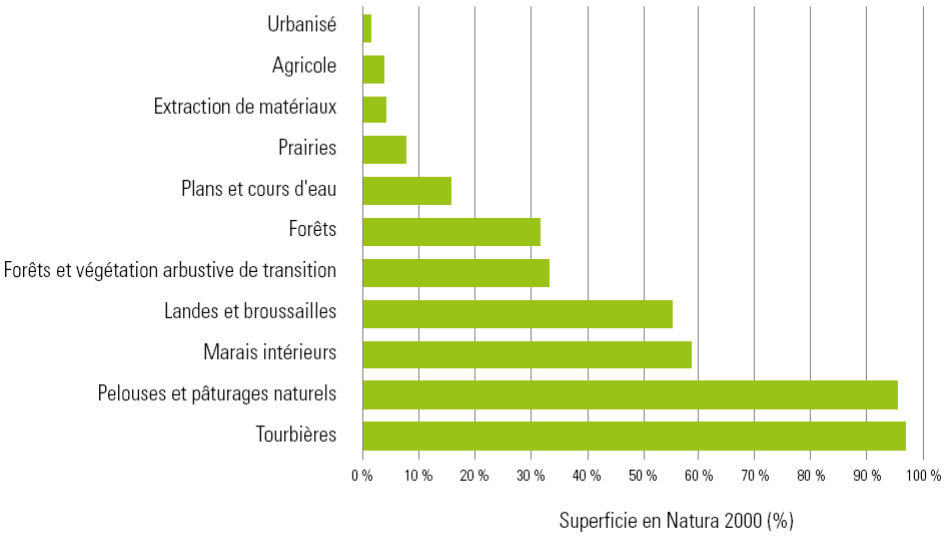
Appendix 13: Natura 2000 network composition in Wallonia

FIG FFH 6-5 *Répartition par catégorie d'habitats des sites Natura 2000 en Région wallonne(mars 2005)*



Sources : *MRW – DGRNE – CRNFB ; Corine Land Cover 2000*

FIG FFH 6-6 *Proportion de la superficie de chaque catégorie d'habitats sous statut Natura 2000 en Région wallonne (mars 2005)*



Sources : *MRW – DGRNE – CRNFB ; Corine Land Cover 2000*

Appendix 14: Delineation of the Natura 2000 network in the Brussels Capital Region

Delineation of Special Protection Areas or SPAs

The BD was implemented into the Brussels legislation on 29/08/91 and this ordonance was later revised (14/01/2000). However, the BD has no additional effect since all birds are protected in Brussels. Moreover, the Brussels Capital Region does not contain sites suitable for proposal as SPAs (Gryseels 2006).

Delineation of Special Areas for Conservation or SACs

The HD was implemented in the Brussels legislation on 26/10/2000. However, it is in the form of a Decision instead of an ordonance. This Decision has been revised twice since then: on 28/11/2002 and on 24/11/2005. Up to date, however, the HD is still not implemented correctly (in the form of an Ordonnance). The key elements are the bad interpretation of Art. 6 and the lack of procedure for the Designation Decisions and the management. A juridical consulting office is currently studying how to revise this Decision. The goal is now to revise it before 01/01/2008 (pers. comm. M. Gryseels & B. Van Der Wijden, *Brussels Instituut voor Milieubeheer – BIM* or *Institut Bruxelloix pour la Gestion de l'Environnement – IBGE*).

Based on: Gryseels (2005, 2006).

A. First stage of delineation of SCIs

* 1995:

A technical dossier with a proposition for the delination of **three pSCIs** (**1.900 ha** or almost 12% of the Brussels surface) was made up by the Brussels Institute for Environmental Management (*Brussels Instituut voor Milieubeheer – BIM* or *Institut Bruxelloix pour la Gestion de l'Environnement – IBGE*). This was based on an inventory of the natural sites by the *IBGE-BIM* (in Brussels, there is a very detailed *BWK*). This delineation was thus made internally, based on existing, scientific knowledge and at this stage, there was no political pressure (pers. comm. M. Gryseels). Furthermore, all proposed sites had a green destination on the spatial zoning plan for the Brussels Capital Region.

* 29/05/1996

The complete files were sent by the Belgian permanent representative to the appropriate services within the European Commission, together with the data concerning 40 Flemish, 58 Walloon and 1 federal site(s).

* May 1998

Formal approval of the EC regarding the reference list of habitats and species for both the Atlantic and Continental Biogeographic regions of Belgium (Anselin & Dufrêne 1998).

* 1999

Scientific evaluation by the ETC-NC in Paris during the seminar for the Atlantic biogeographic region.

* 23/07/1999 and 06/11/2000:

'proofs of default' by the European Commission directed upon the Belgian Government (ref. 20.1299/XI/016513 – DG ENV.D.2) because of insufficient submission. However, **the Brussels Capital Region received no remarks** from the EC.

B. Second stage of delineation of SACs

* 1998-2002:

A LIFE-NATURA project '*Aménagement des Zones Spéciales de Conservation en Région de Bruxelles-Capitale 1998-2001*' (LIFE/NAT/B/5167) was carried out in cooperation with the WWF, resulting in a detailed knowledge of the presence of bats in Brussels.

* 2002:

Based on this new and recent information, a second, updated technical file was prepared in cooperation with the WWF: several additions were made to the **three** earlier proposed **pSCIs**. Although at this stage, the administration got the 'hint' to only include sites with green destination on the spatial zoning plan (pers. comm. M. Gryseels), this was not a real problem as all new proposed sites had meanwhile obtained the essential protection as "green area" on the regional zoning plan. There was only one exception: "plateau de la Foresterie", a site which destination has been kept "open" ('*zone de reserve*'), so a green destination is still possible. Further, a problem exists with one private site, part of the site "Charles Albert" without green destination, but this is due to misinterpretation of the not very detailed maps.

- The total area of the pSCIs increased up to **2.375 ha** or 14% of the Brussels surface.
- For the delineation of the sites, there has not been a real consultation of the Flemish Region, except for the transboundering site "Sonian Forest". This would however, have been interesting for the Linkebeek-valley and the Woluwe-valley (pers. comm. M. Gryseels).

* 21/12/2002:

The second, updated file was sent to the EC (Gryseels 2002).

* 27/03/2003:

Publication of the '*Vaststellingsbesluit*' in the Belgian State journal, without management plans.

* **07/12/2004**

Evaluation of the proposed sites by the EC and **approval of these sites as SCIs** (Eur-Lex Publication L382 of 28/12/2004 and L387 of 29/12/2004).

As it is the case in the other Belgian Regions, the sites, approved by the EC as sites of community importance (SCIs) do not yet have the status of special areas of conservation (SACs) in the Brussels Capital Region. There is still no decision of the Brussels Government to definitively assign these sites as SACs ('*Arrêté de désignation*').). This should be done as soon as the Natura 2000 directives will be correctly transposed in the Brussels law (cfr. currently juridic revision of existing law). Three '*Arrêtés de désignation*' should be prepared (one for each SCI) and these should include management plans, measures, prohibitory clauses, etc. (Gryseels 2006). Because of this legal vacuum, the administration (*IBGE-BIM*) has currently relatively power (pers. comm. B. Van Der Wijden).

Appendix 15: Delineation of the Natura 2000 network at the Federal level

Based on: Cliquet *et al.* (2007) and Decleer (2007).

The North Sea policy of Belgium is scattered over several institutional levels:

The federal government: a.o. environmental policy and protection of the marine environment, wind farms at sea, shipping, military activities, aggregate extraction, cables and pipelines.

The Flemish Region: nature policy on the beach and the hinterland, recreation, ports, fishing, dredging, piloting and coastal defense.

The Belgian federal government is thus responsible for the implementation of the BD and the HD in the North Sea.

However, since the establishment of the BD and the HD, not much progress has been made in protecting marine sites in the EU. For what concerns the HD, the European Member States have focussed on terrestrial areas, while the marine areas were largely neglected. For this, several mutually influencing reasons can be listed (pers. comm. G. Raeymaekers, federal environmental secretary of state: *FOD Veiligheid van de Voedselketen, Volksgezondheid en Leefmilieu*): (i) there was (and is) a lack of scientific knowledge on the marine level, (ii) the experts consulted during the formulation of the HD were more specialized in the terrestrial domain and (iii) it was impossible to draw a European overview of marine habitat types. As a result, very few marine Natura 2000 sites were proposed to the EC and therefore, the EC postponed the evaluation of marine sites.

The EU Biodiversity Action Plan has then set the objectives for marine sites to:

- complete a network of SPAs by 2008,
- adopt lists of SCIs by 2008,
- designate SACs and establish management priorities and necessary conservation measures for SACs by 2012,
- establish similar management and conservation measures for SPAs by 2012.

In accordance with the compliance to several international obligations, the BD and HD were only implementated in the Belgian Federal marine protection law in 1999: '*Law on the protection of the marine environment in marine areas under Belgian jurisdiction on the marine environment*' of 20/01/1999 (Publication in the State journal on 12/03/1999) and changed on 17 September 2005 (State journal 13/10/2005). This law foresees the possibility to demimitate five types of marine protected areas, among which the SPAs and SACs.

* 1996

A proposition for the demarcation of **one pSCI** (Trapegeer-Stroombank, **18.100 ha**) was made by the environmental secretary of law. This delineation was based on existing, scientific knowledge and at this stage, there was no public consultation. No formal delineation of the site by the Belgian Government was made.

* 29/05/1996

The files were sent by the Belgian permanent representative to the appropriate services within the European Commission, together with the data concerning 40 Flemish, 58 Walloon and 3 Brussels sites.

* 1999-2003

Several attempts were made by the federal government to delimitate marine reserves. Cliquet *et al.* (2007), state that in this scientific knowledge was paramount and that they were characterized by a lack of participation opportunities for sectors and local governments while these groups also showed not any goodwill towards the process.

* 2003-2005

In the context of the North Sea Master Plan, the minister with now a specific competence for the North Sea confidentially consulted several departments (mobility and transport, sea fisheries, environment), scientists, actors (e.g. fishermen, coastal mayors, water sport clubs) and NGOs. The discussions concerning the measurements were held parallel to the delimitation procedure. The delimitation of the marine protected areas was still based on scientific knowledge and criteria, but because of the consultation, this demarcation was in the end accepted by stakeholders (Cliquet *et al.* 2007).

* 31/10/2005

Publication of a Royal Decision in the State journal, indicating three SPAs and two pSCIs:

- SBZ-V1 Nieuwpoort, SBZ-V2 Oostende and SBZ-V3 Zeebrugge: announced for several Tern species, Grebe and Little Gull. The scientific background for this was a study by the Institute of Natural Sciences and the *INBO* (based on bird counts along the coastline) and coordinated by the BMM.
- SBZ-H1 Trapegeer Stroombank and SBZ-H2 Vlakte van de Raan: announced for two habitat types, while there occur a number of mobile sea mammels and fish species (Annex II of HD). For this delineation, Annex III of the HD was not strictly followed (pers. comm. G. Raeymaekers).

* 27/03/2006

Publication of a Royal Decision in the State journal, changing the coordinates of one of the SPAs.

- total area of SPAs: **30.576 ha**.
- total area of SACs: **20.017 ha**.
- total area of marine Natura 2000 sites: ca. 12% of the Belgian part of the North Sea (which is 3.600 km² large).
- Belgium has decided to not demarcate sites outside of the territorial waters (12 miles zone).

The Belgian marine sites under the HD are thus still not evaluated by the EC. These marine workshops will take place in 2008 at the earliest, after the announcement of sites by alle EU member states.

Appendix 16: The Natura 2000 network in our neighbouring countries

Neven *et al.* (2005) conducted a comparative study (literature review and document analysis) into the implementation process of Natura 2000, with regard to relevant issues for the Netherlands. Among other aspects, the delineation of the Natura 2000 network was investigated:

- In most of the EU-countries, the ministry responsible for the implementation had the task to nominate sites as national SPA or pSCI, but in some countries (e.g. UK, Sweden) this task was dedicated to a public agency.
- In most countries scientists or expert bodies (museums, scientific institutes) and NGOs were involved in collecting data and the selection of preliminary Natura 2000 sites. Sometimes only scientists were involved (Estonia, Cyprus). In most, if not all member states, insufficient habitat and species data caused problems in the site selection process, particularly when sites were not already protected under other schemes.
- The interference of other ministries during the selection process can also be mentioned as a factor influencing the list of national nominated sites.
- In some member states definite lists of SPA and pSCI were discussed during public consultation with landowners and other stakeholder groups (e.g.The Netherlands). During this stage, strong opposition originated from private landowners in for instance France, The Netherlands and Germany. Moreover, in Lithuania and Slovenia, some groups of stakeholders must even agree with the nominated sites, as a result of which in Lithuania some nominated sites were removed from the national list. Overall, the involvement of stakeholders during the implementation process varies strongly.
- In many countries the number of selected sites was thus higher than the number of national nominated sites sent to Brussels. Many national lists involved in the beginning mainly already protected sites (e.g. The Netherlands). Later on, a considerable number of new sites have been proposed, as well buffer and transition zones to increase coherence and connectivity between sites.

Only two EU Member States (the Czech Republic and Luxembourg) are reported to have integrated the connectivity aspect among the Natura 2000 sites within the site designation process, either at the regional, national or international level. In most Member States, site designation has only been seen as national obligation, so that international cooperation within this context has been secondary (WWF 2006).

Neven *et al.* (2005) also analyzed the establishment of appropriate Management Plans (MP), which can be one of the “necessary conservation measures” (HD Art. 6 (1)), to which the member states are not obliged. Although there exist MPs for protected sites under existing protection regimes, Natura 2000 sites specific MPs are still scarce. Therefore, they concluded that an ecological evaluation of the effectiveness of these MPs and their measures was impossible.

In what follows, we shortly describe the situation in our neighbouring countries. Table 4 gives an overview of the delineation of the Natura 2000 network in our neighbouring countries: The Netherlands, Germany, Luxembourg and France.

Table A - 2. Excerpt of the Natura 2000 Barometer, which monitors the progress of implementing the HD and the BD of the 25 Member States to December 2006. Source: Natura 2000 Newsletter, June 2007 (European Commission 2007). a) Special Protection Areas (SPAs) and b) Sites of Community Interest (SCIs). Legend: + = largely complete; 0 = incomplete; - = notably insufficient; ↑ = recent significant progress.

a)

Member state	SPAs					
	Number of sites	Total area sites (km²)	Terrestrial area (%)	Number of marine sites	Marine area (km²)	Progress
Belgium	229	2964	9.7	0	0	+
Germany	568	48102	8.9	14	16216	0 ↑

France	369	45500	7.7	62	3260	0 ↑
Luxembourg	12	139	5.4	-	-	+
The Netherlands	77	10109	12.5	7	4913	+

b)

Member state	SCIs					
	Number of sites	Total area sites (km²)	Terrestrial area (%)	Number of marine sites	Marine area (km²)	Progress
Belgium	278	3221	10.0	1	181	0
Germany	4617	53294	9.9	48	18086	0 ↑
France	1305	48942	7.9	90	5603	0 ↑
Luxembourg	47	383	14.8	-	-	0
The Netherlands	141	7510	8.4	9	4025	+

The Netherlands

In comparison to other European countries, the Netherlands have delineated a large proportion of its territory as SPA (Table 4).

In the past, The Netherlands have several times been urged by the European Commission or condemned by the European Court of Justice because of the insufficient delineation of pSCIs (see an overview in Geertsema *et al.* 2003). However, The Netherlands was the first member state which designated all SCIs as SACs (WWF 2006).

In the beginning of July 2003, the EC has approved the Dutch list of pSCIs as SCIs (Table 4), comprising eight border-crossing sites with Germany and eight with Belgium (Geertsema *et al.* 2003, Milieu en Natuurplanbureau 2007). Due to it's location in the Delta, The Netherlands have a large importance for species and habitats of coast, dunes, rivers and marshes (also shifting sands and heathland). Forests of community importance are, in contrast, underrepresented (Natuurbalans 2006, Milieu en Natuurplanbureau 2007). Moreover, The Netherlands have great international importance for migratory waterbirds and have therefore assigned a large surface as SPA (Milieu en Natuurplanbureau 2007). Ca. 50% of the total surface of Natura 2000 on land is owned by terrain-managing organizations (Staatsbosbeheer, Monumenten en Landschappen), while ca. 30% is managed by private persons, farmers, foundations and enterprises (Milieu en Natuurplanbureau 2007).

To increase the carrying capacity for the delineation of SACs, a public consultation has been performed in an early stage (Feb-March 2003). Many reactions came from the agricultural sector, but also from the provinces, municipalities and nature protection organizations. These reactions varied from legal uncertainty (e.g. in the context of business expansions), demands for clarity about the adopted procedure, questions for changes in the delineation and proposals for new sites. As a result, the borders of a number of sites were adapted and a number of new sites were added to the list (Geertsema *et al.* 2003). However, the implementation procedure of Natura 2000 is regarded by others (Gerritsen 2006) as a process in which only the European Union, LNV, scientists and environmental and nature organizations were involved until end 2005. The latter organizations have had a large influence on the delineation and goals and this process was therefore dominated by discussions about the nature values defined in species and habitats (Gerritsen 2006). In December 2005, parties with other backgrounds and interests had the chance to react.

The Dutch Ministry of Agriculture, Nature and Food quality (*Landbouw, Natuur en Voedselkwaliteit* or *LNV*) is currently working on the publication of the designation decisions (*Aanwijzingsbesluiten*), which will contain the conservation goals per Natura 2000 site (Natuurbalans 2006). The public consultation of the first part of these designation decisions has taken place in January-February 2007. Furthermore, the Dutch Parliament has decided that management plans are obliged and these should be finished by 2010 (Roels & Thissen 2007). A study of the possible role and content of this instrument was carried out by the University of Wageningen (Beunen & van Ark 2005), which demonstrated that the expectations on the effect of MPs may be often too positive.

In the Dutch Natura 2000 sites, the current state of conservation of a great number of species and habitats is still unfavorable, so more policy effort is necessary (Natuurbalans 2006, LNV 2006, Milieu en Natuurplanbureau 2007).

Germany

In Germany, as in Belgium, the 16 'regions' ('*Bundesländer*') are responsible for nature protection. The federal government is however, from the perspective of the EC responsible for submitting the national list. The selection of pSCIs was thus made by the ministers of environment of the *Länder* and their related technical agencies. The national ministry of environment and the Federal Agency of Nature Conservation (Bfn) then coordinated and integrated the 16 individual lists.

As a result, the procedures of site selection may differ significantly among the *Länder*. While in some cases, there had been extensive consultation with several minisitries and with the public, in other cases the selection was treated merely 'technically' (Leibenath 2004).

The announcement of sites to the EC was quite a few times postponed in Germany: the submission of its list of pSCIs to the EC was performed in several "tranches" (SRU 2004).

As a result of the different selection criteria among the *Länder*, not even the national coherence of sites across the internal boundaries of the Federal State was ensured, e.g. in the case of rivers (Leibenath 2004). Moreover, the German Natura 2000 network consists of relatively small, fragmented sites.

The Bundesländer are also responsible for the management of the Natura 2000 sites, which may thus differ among the regions. The Länder may also already dispose of an other type of ecological network.

Efforts undertaken fora n ecological network

France

The network of French Natura 2000 sites took a long time to be set up, often because of the polemic and the bad acceptance because that was perceived like a confiscation of the grounds.

In France, 1706 Natura 2000 sites have been selected (mai 2007). That is distributed between 1334 pSCIs and 371 SPAs. The total area of sites is 6,82 million hectares, that is to say, ca. 12% of the total area of France (Anonymous, 2007a). France is the only European country to have 4 of the 6 biogeographic regions on its metropolitan territory. It covers, in Europe, 34 % of the Atlantic biogeographic region and 28 % of the Continental biogeographic region. It shelters 70 % of the habitats of Community interest (133, including 43 priority) present in Europe (Anonymous, 2007b). 274 birds species from the BD, 95 animal species and 62 vegetal species from the HD are present in France (MEDA, 2007).

The major soil occupations of the N2000 network are agricultural land (including grasslands) (41%), forests (39%), heathlands and other open environments (13%), wetlands (6%) and artificial territories (1,1%) (Anonymous, 2007a).

The selection of sites has been made on a scientific basis. SPA's are based on the inventory of the *Zones Importantes pour la Conservation des Oiseaux* (ZICO) which were carried out by the *Ligue pour la Protection des Oiseaux* (LPO) and the *Service du Patrimoine Naturel* du *Museum National d'Histoire Naturelle* (MNHN). pSCIs are based on the inventory of the *Zones Naturelles d'Intérêt Ecologique, Faunistique et Floristique* (ZNIEFF) which was launched in 1982 by the *Ministère de l'Environnement* to have reliable and homogeneous information about areas of high biological interest (Anonymous, 2007a)

Within the framework of the HD, an inventory, validated by the MNHN in 1996, determined 1316 sites covering approximately 13% of the territory. This inventory was carried out, with few means and very often voluntarily, by the *Comités Scientifiques Régionaux du Patrimoine Naturel* (CSRPN), starting from the data in their possession (in particular inventory ZNIEFF 1st generation), bibliographical data and/or fields visits. The HD knew oppositions, in particular from the "Group of Nines" (= federation of associations of rural actors: hunters, fishermen, foresters, land-owners,…), which contributed to delay the procedure. A circular of the *Ministère de l'Ecologie et du Développement Durable* (MEDD) of November 21, 2001 identified an additional list of sites intended to fill the insufficiencies identified by the 1st series of biogeographic

seminars. France was sentenced by the European Court of Justice for insufficiency of transmission, on September 11, 2001, within the framework of to the HD, and on November 26, 2002, within the framework of the BD, and passes for the "worse pupil" of Europe for the implementation of Natura 2000. Another circular of November 23, 2004 identified, after political agreement between EC and France, a 2nd additional list of sites intended to fill, for the end April 2006, the insufficiencies identified at the time of the 2nd series of biogeographic seminars. The MEDD should prepare an additional list of sites, intended to fill the insufficiencies not yet filled by the circular of November 23, 2004 (Anonymous, 2006). The European Commission validated the list of the French sites on March 21, 2007 (Anonymous, 2007c)

The equivalent of the designation decree in France is the *Document d'Objectif* (DOCOB).

Its contents are as follows:

- A description and an analysis of the existing state;
- Objectives of durable development of the site, intended to ensure the conservation and/or the restoration of the habitats and species as well as the safeguard of the socio-economic and cultural activities being exerted on the site;
- Proposals for contractual and lawful measurements allowing to achieve these goals;
- Projects of standard schedules of conditions for the contractual measures suggested;
- The indication of the financial devices;
- The description of the procedures of accompaniment, follow-up and evaluation of the measures suggested and the state of conservation of the natural habitats and the species.

The different types of habitats and species of Community interest present in the site are listed in appendix (Anonymous, 2007b).

Each Natura 2000 site is managed by a manager appointed at the time of the creation of the site. This manager must be a local collectivity or a grouping of local collectivities concerned with the site. For each Natura 2000 site, a *Comité de Pilotage* (COPIL) leads the elaboration of the DOCOB and organizes then the management of the site and the follow-up of the implementation of the actions decided in the DOCOB. This DOCOB is a place of exchanges and debates and is composed of the various actors involved by Natura 2000 in the site (Anonymous, 2007a).

France made the choice of a contractual and voluntary management of the sites, by making it possible to the users to invest itself in their management by the signing of *Contrats de gestion* and of the *Charte Natura 2000*. The *Contrat de gestion* comprises a whole of engagements, in conformity with the orientations laid down by the DOCOB, on the conservation and, if necessary, the re-establishment of the natural habitats and the species which justified the creation of the Natura 2000 site. The contract defines the nature and the methods of the State aid and the services required in the other hand by the recipient. The *Charte Natura 2000* of a site contains engagements of general use and durable management of the grounds and spaces and returns to sporting practices or leisures respectful of the natural habitats and species. Adhesion with the *Charte Natura 2000* of the site does not imply the payment of a financial counterpart. However, it opens right for the benefit of the exemption of the land tax on the unbuilt properties and also makes it possible to reach certain government aid. (Anonymous, 2007a).

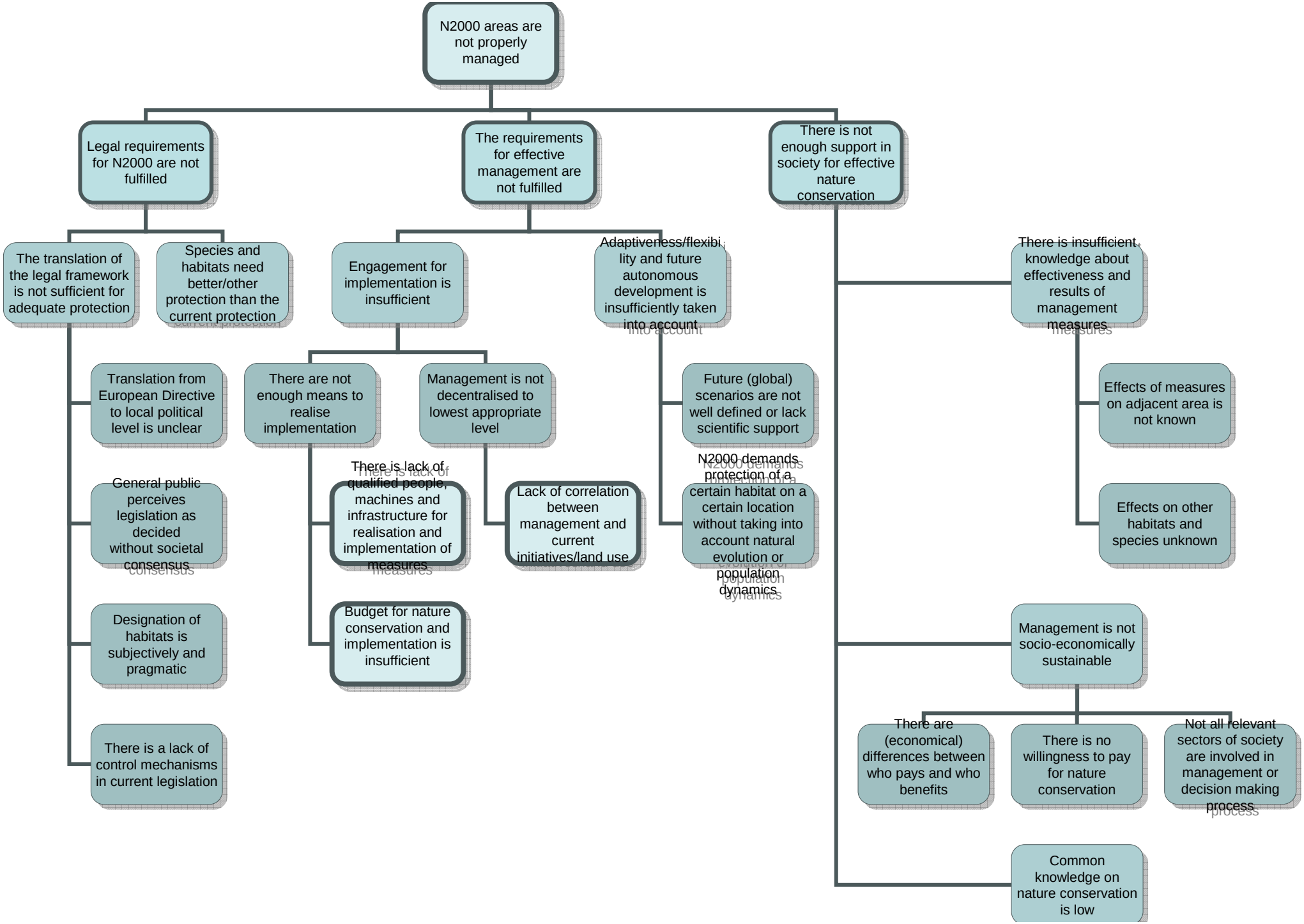
Natura 2000 network in Belgium

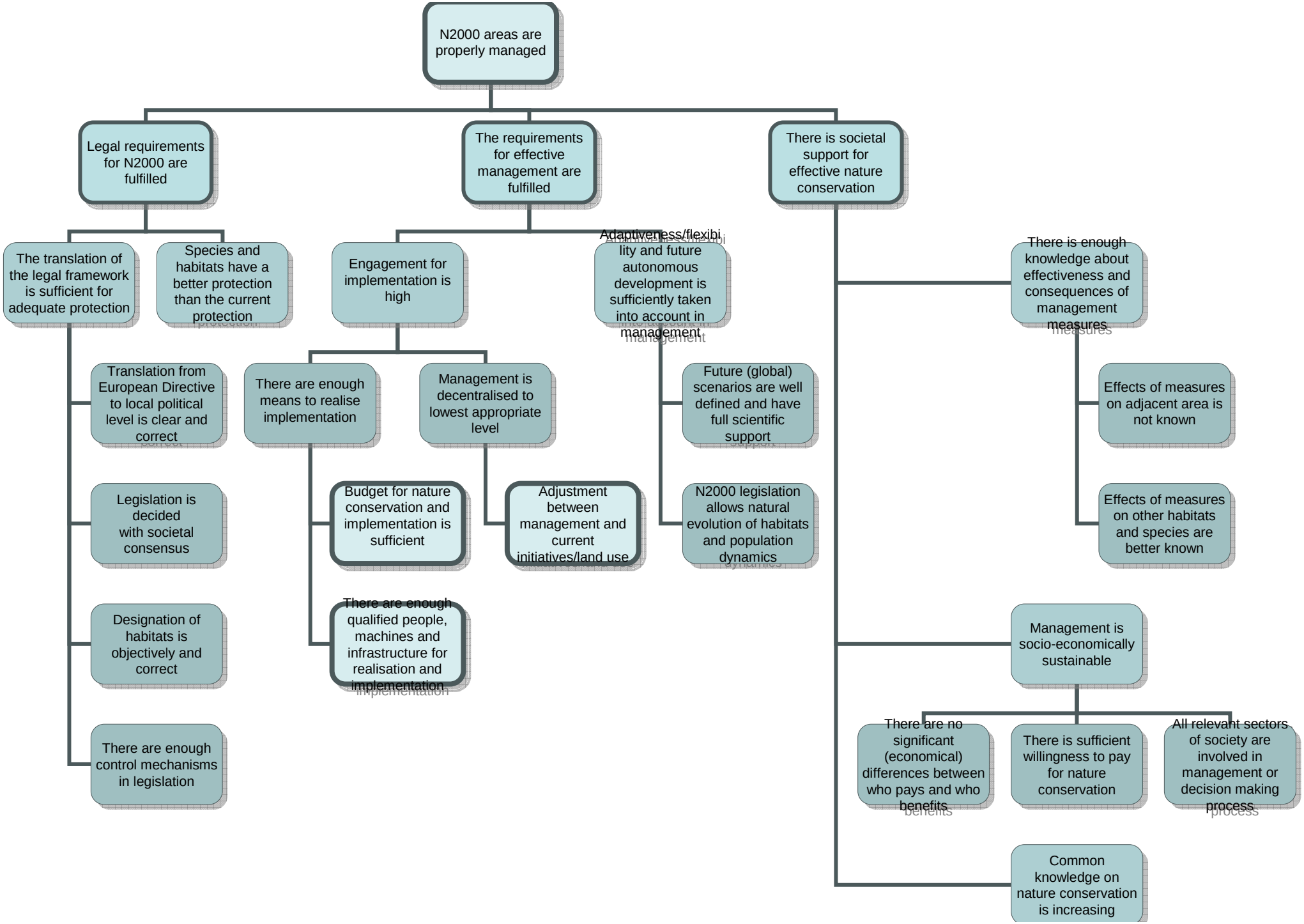
Natura2000 sites in Brussels Region
Regional limits
SPA Flemish
SPA Walloon
SAC Flemish
SAC Walloon

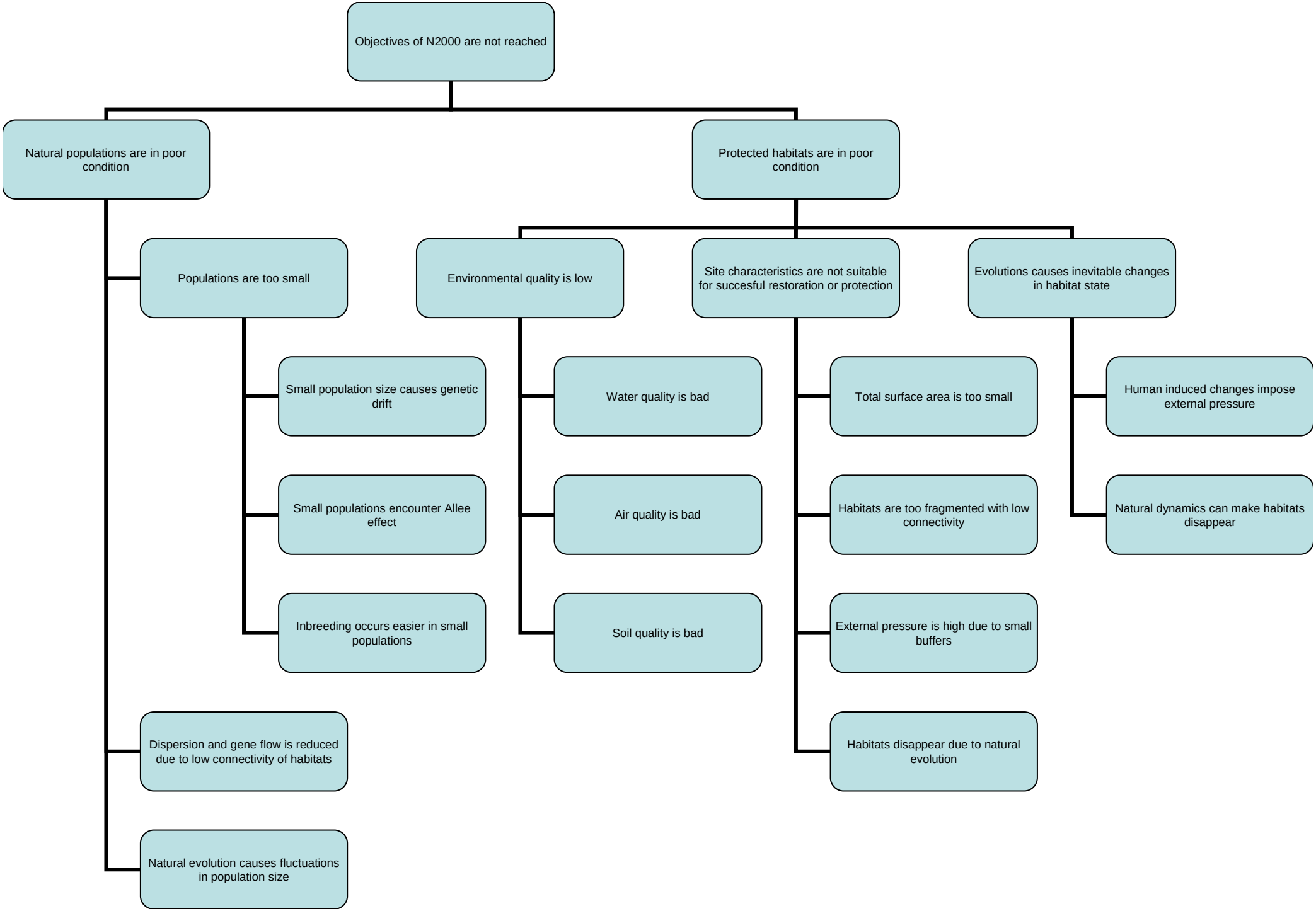
0 60 120 Kilometers

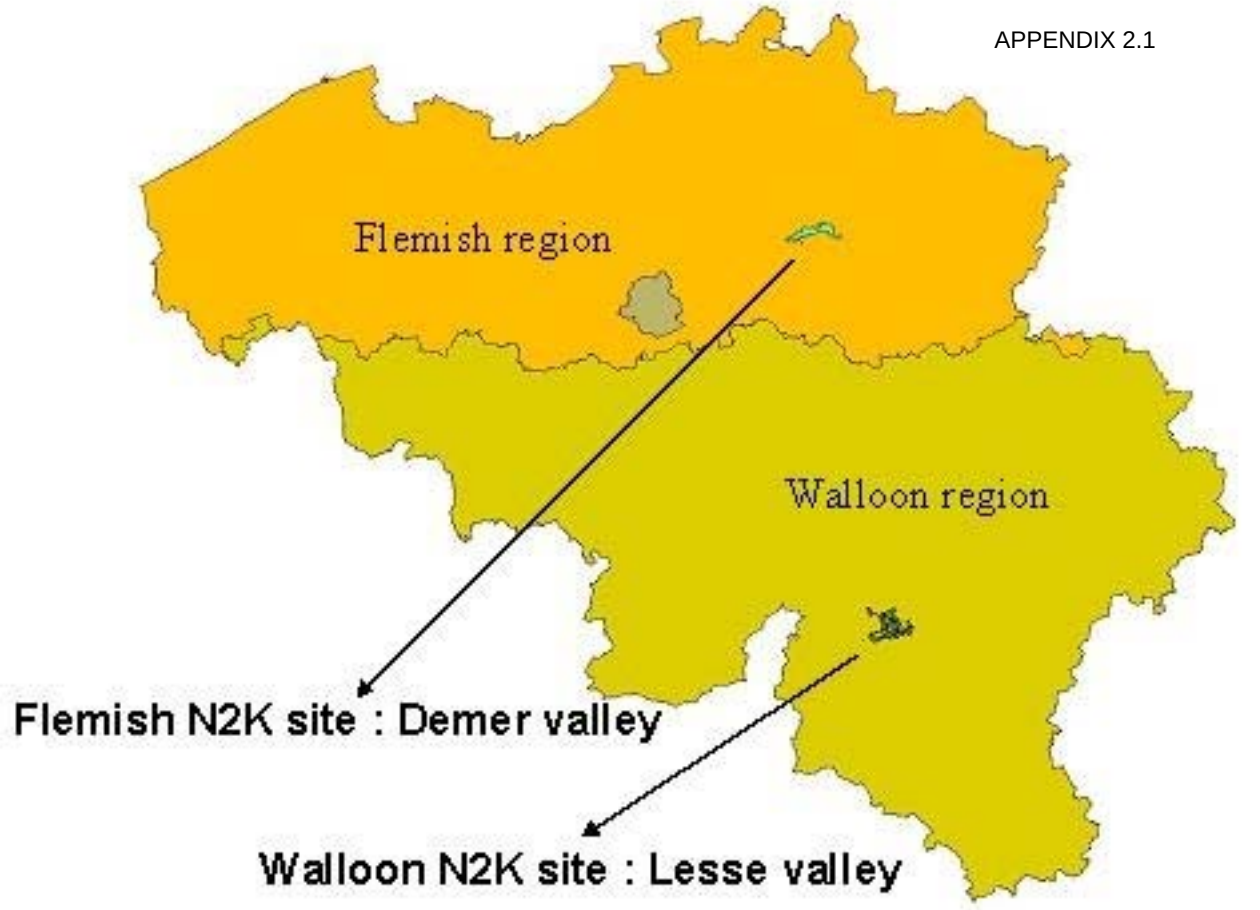
N
W E
S

APPENDIX 1.3 Bottlenecks tree


N2000 areas are not properly managed
Legal requirements for N2000 are not fulfilled
The requirements for effective management are not fulfilled
There is not enough support in society for effective nature conservation
The translation of the legal framework is not sufficient for adequate protection
Species and habitats need better/other protection than the current protection
Engagement for implementation is insufficient
Adaptiveness/flexibility and future autonomous development is insufficiently taken into account
There is insufficient knowledge about effectiveness and results of management measures
Translation from European Directive to local political level is unclear
General public perceives legislation as decided without societal consensus
Designation of habitats is subjectively and pragmatic
There is a lack of control mechanisms in current legislation
There are not enough means to realise implementation
Management is not decentralised to lowest appropriate level
There is lack of qualified people, machines and infrastructure for realisation and implementation of measures
Budget for nature conservation and implementation is insufficient
Lack of correlation between management and current initiatives/land use
Future (global) scenarios are not well defined or lack scientific support
N2000 demands protection of a certain habitat on a certain location without taking into account natural evolution or population dynamics
Effects of measures on adjacent area is not known
Effects on other habitats and species unknown
Management is not socio-economically sustainable
There are (economical) differences between who pays and who benefits
There is no willingness to pay for nature conservation
Not all relevant sectors of society are involved in management or decision making process
Common knowledge on nature conservation is low


N2000 areas are properly managed
Legal requirements for N2000 are fulfilled
The requirements for effective management are fulfilled
There is societal support for effective nature conservation
The translation of the legal framework is sufficient for adequate protection
Species and habitats have a better protection than the current protection
Engagement for implementation is high
Adaptiveness/flexibility and future autonomous development is sufficiently taken into account in management
There is enough knowledge about effectiveness and consequences of management measures
Translation from European Directive to local political level is clear and correct
There are enough means to realise implementation
Management is decentralised to lowest appropriate level
Future (global) scenarios are well defined and have full scientific support
Effects of measures on adjacent area is not known
Legislation is decided with societal consensus
Budget for nature conservation and implementation is sufficient
Adjustment between management and current initiatives/land use
N2000 legislation allows natural evolution of habitats and population dynamics
Effects of measures on other habitats and species are better known
Designation of habitats is objectively and correct
There are enough qualified people, machines and infrastructure for realisation and implementation
Management is socio-economically sustainable
There are no significant (economical) differences between who pays and who benefits
There is sufficient willingness to pay for nature conservation
All relevant sectors of society are involved in management or decision making process
There are enough control mechanisms in legislation
Common knowledge on nature conservation is increasing


Objectives of N2000 are not reached
Natural populations are in poor condition
Protected habitats are in poor condition
Populations are too small
Environmental quality is low
Site characteristics are not suitable for succesful restoration or protection
Evolutions causes inevitable changes in habitat state
Small population size causes genetic drift
Small populations encounter Allee effect
Inbreeding occurs easier in small populations
Water quality is bad
Air quality is bad
Soil quality is bad
Total surface area is too small
Habitats are too fragmented with low connectivity
External pressure is high due to small buffers
Habitats disappear due to natural evolution
Human induced changes impose external pressure
Natural dynamics can make habitats disappear
Dispersion and gene flow is reduced due to low connectivity of habitats
Natural evolution causes fluctuations in population size


Flemish region
Walloon region
Flemish N2K site : Demer valley
Walloon N2K site : Lesse valley

Lesse Valley Site

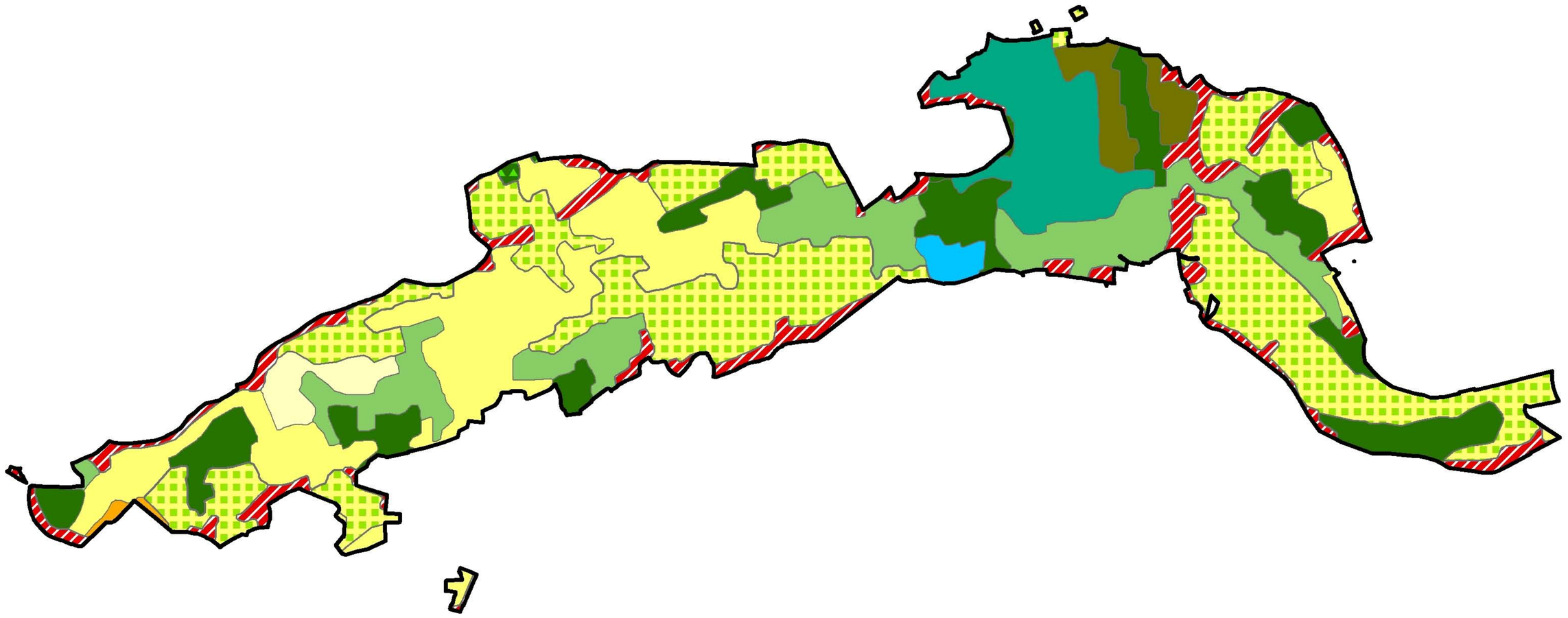
Natura 2000 area

N

W E

S

0 3 6 9 Kilometers



Bodemgebruik (CORINE)

- Discontinue bebouwing
- Sport- en recreatiegebieden
- Niet geirrigeerd akkerland
- Weiland
- Landbouwareaal met complexe percelering
- Landbouwareaal met aanwezigheid van natuurlijke vegetatie
- Loofbossen
- Naaldbossen
- Gemengde bossen
- Overgangbos
- Moeras
- Wateroppervlakken

Description of situations 0 and 1 in the two study sites

1. Walloon region : Lesse valley

1.1. Description of situation 0 (current situation)

1.1.1. Location of Lesse valley in Wallonia

The Lesse basin is located in the Walloon Region, on both Luxembourg and Namur provinces. The Natura 2000 site “Bassin de la Lesse entre Villers-sur-Lesse et Chanly” (BE 35038) covers a section of the Lesse Valley situated on the threshold of the vast Ardennes massif and in the Famenne. The Lesse River rises near Libramont (Ochamps – Luxembourg Province) and flows into the Meuse in Anseremme, near Dinant. This river is 89 km long and crosses the municipalities of Daverdisse, Libin, Libramont-Chevigny, Tellin, Wellin, Dinant, Houyet and Rochefort. The Lesse basin has a superficy of 134338 hectars (1343,4 km²) and hosts not less than 1920 kilometers of rivers. Inhabited by only 62 500 people, this basin is the less densely inhabited of all the Walloon under-basins (Wikipedia, 2008).

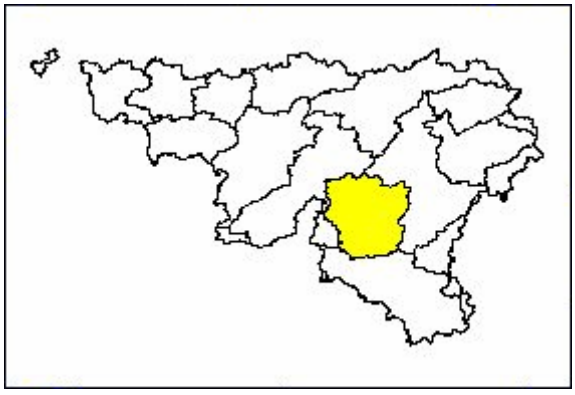


Fig. 1: Location of the under-basin of the Lesse (in yellow)

1.1.2. Socio-economic analysis

Population

The studied Natura 2000 site covers the four following municipalities: Nassogne (in the west), Rochefort (in the north), Tellin and Wellin (in the south). The population of municipalities is distributed as follows:

Municipality	Superficy (km²)	Number of inhabitants	Density of population (#hab/km²)	Evolution (on an annual basis)
Nassogne	112	5 045	44	+ 1,37%
Rochefort	165,3	12 133	72,8	+ 0,79%
Tellin	56,6	2 386	40,7	+ 1,71%
Wellin	67,5	2 958	43,5	+ 0,58%

Table 1 : Population distribution between municipalities

(ref : http://www.statbel.fgov.be **Population de droit par commune au 1er janvier 2007 -** http://www.statbel.fgov.be/figures/dsp_fr.asp **Densité de population au 01/01/2005)**

The Figure 2 illustrates the population density in the Natura 2000 site concerned, and the surroundings.

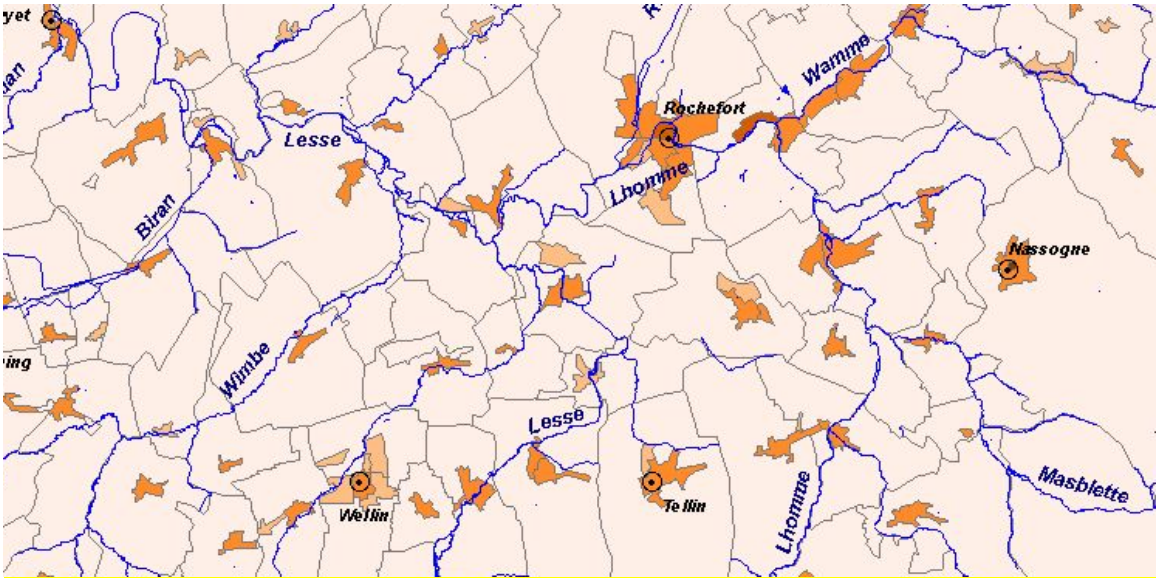


Fig. 2: Density of population (ref : Carte des Etats des lieux du sous-bassin Lesse – MRW Observatoire des Eaux de Surface, janvier 2004 - http://environnement.wallonie.be/directive_eau/cartes/le_ca/le_carte.asp **)**

Land use

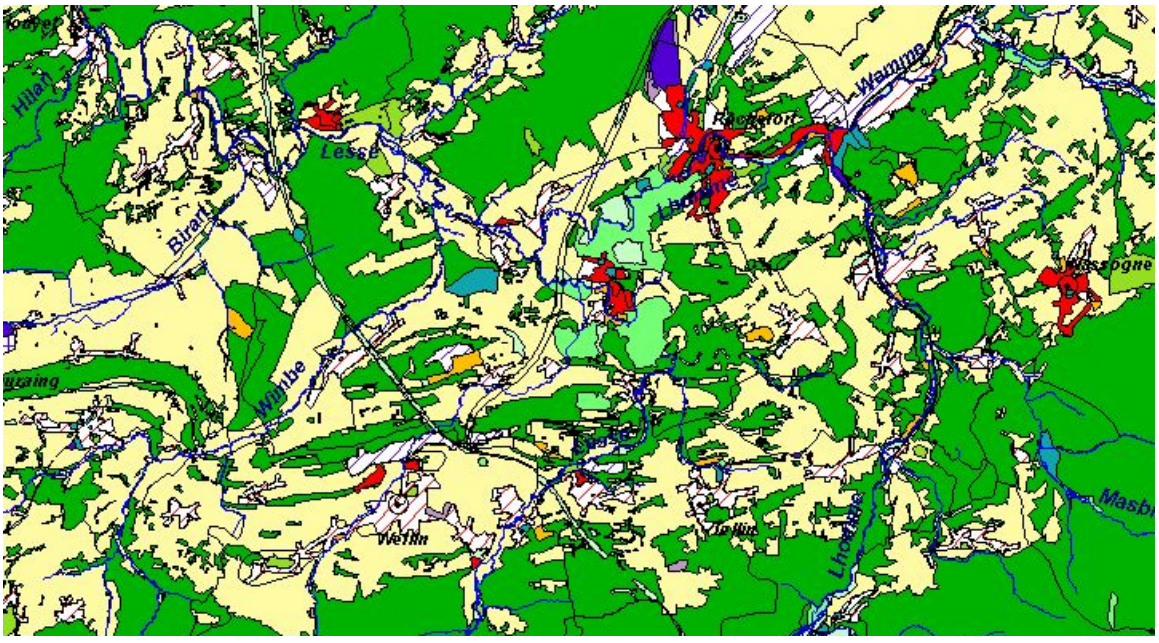


Fig. 3 : Sector plan – Plan de secteur (Cartes des Etats des lieux du sous-bassin Lesse – MRW Observatoire des Eaux de Surface, janvier 2004 - http://environnement.wallonie.be/directive_eau/cartes/le_ca/le_carte.asp)

	Agricultural surfaces	Forests	Building lands and lands related	Residential lands	Industrial lands	Lands used for quarriers, wells, mines, …	Commercial lands
Nassogne	**4 385,96**	**5939,18**	**620,87**	**194,81**	**12,26**	**2,66**	**8,14**
Rochefort	**7628,67**	**7138,73**	**1559,27**	**418,48**	**79,87**	**73,12**	**25,76**
Tellin	**2 223,15**	**2 924,55**	**421,91**	**91,53**	**4,26**	**4,99**	**2,81**
Wellin	**2 472,31**	**3 794,11**	**419,43**	**109,87**	**18,64**	**18,09**	**4,52**

	Lands used for public services	Lands for mixed use	Lands used for transports and communications	Lands occupied by technical	Lands for leisure and other open	Various	Total surface
Nassogne	**7,61**	**2,59**	**329,26**	**0,06**	**63,48**	**250,01**	**11 196,01**
Rochefort	**34,49**	**8,08**	**741,80**	**0,20**	**177,48**	**200,67**	**16 527,34**
Tellin	**5,88**	**1,02**	**262,75**	**0,02**	**48,64**	**94,29**	**5 663,90**
Wellin	**6,66**	**0,46**	**228,75**	**0,08**	**32,35**	**65,80**	**6 751,65**

Table 2: Use of the land by municipality in 2005

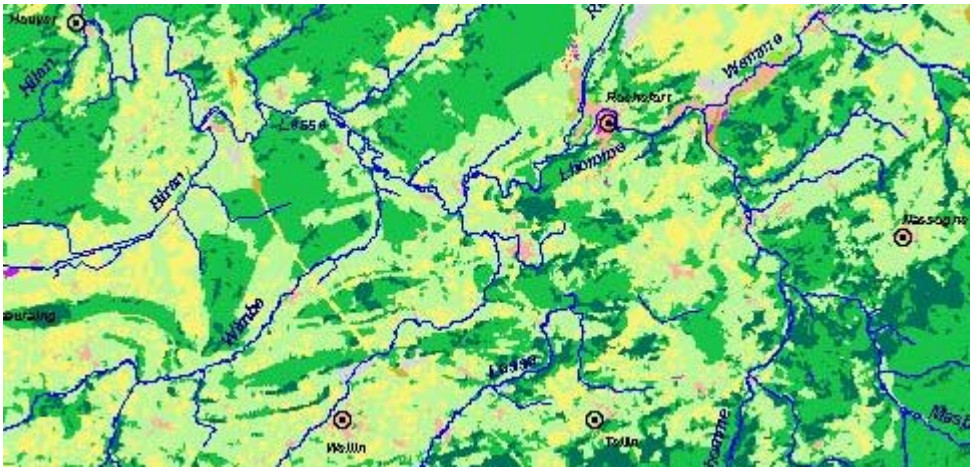


Fig. 4 : Land use (Cartes des Etats des lieux du sous-bassin Lesse – MRW Observatoire des Eaux de Surface, janvier 2004)

Demography of firms

Parameter	Year	Nassogne	Rochefort	Tellin	Wellin
# active firms	2000	366	839	157	202
	2005	403	850	160	208
# disappeared firms	2000	25	58	6	11
	2005	14	60	14	15
# created firms	2000	16	55	10	11
	2005	28	65	10	13

Table 3: Demography of firms – ref :

http://ecodata.mineco.fgov.be/mdf/Demographie_entreprises.jsp?CMDNAME=CHT11188&CMDTARGET=MdScatter343&LEVEL=Selon+17+activit%E9s+%28NACEBEL1%29&INDEX=-1

As far as firms' activity is concerned, we can note a strong activity for the sector of quarries with mention of two ones:

The 'Carrière des Limites' located in Wellin

The 'Carrières du Fond des Vaulx' in Wellin.

Tourism

The Natura 2000 site of the Basin of the Lesse is a zone with a strong touristic appeal with her natural richness but also with her heritage as well as her more specific equipment.

For the whole of the 4 municipalities, it is not less than ten places to visit including:

The 'Domaine des Grottes de Han' (caves and animals park)

The 'Grottes de Lorette-Rochefort'

The Castel of Lavaux Saint-Anne

The Archéoparc of Rochefort,
Numerous farms and churches (Eglise Sainte Marguerite à Lesterny, …)
The natural site of ‘Le Fond des Vaulx’
…

The basin of the Lesse it is also products of the soil/region which attracts number of tourists and makes the success of the Horeca sector (hostels, self-catering cottages, host rooms, restaurants, snacks, chip stands, brasseries, taverns and café). There are among others:
the ‘Autrucherie du Donneu’ (Rochefort)
The farm of the Comogne (Rochefort)
The brewing industry La Rochefortoise
The ‘Chèvrerie du Herdat’ (Lesterny)
…

Campsites take in number of tourists all year long as much as in Nassogne, Han-sur-Lesse and Ave-et-Auffe.

Finally pedestrian walks, cycle touristic rides, health paths or speleology and more specifically on the Lesse, kayaking and fishing reinforce the touristic appeal of the region.

On Figure 5 hereunder, we find the different interesting points on the tourism level (campsites, hostels, holidays villages, …) in the Natura 2000 site.

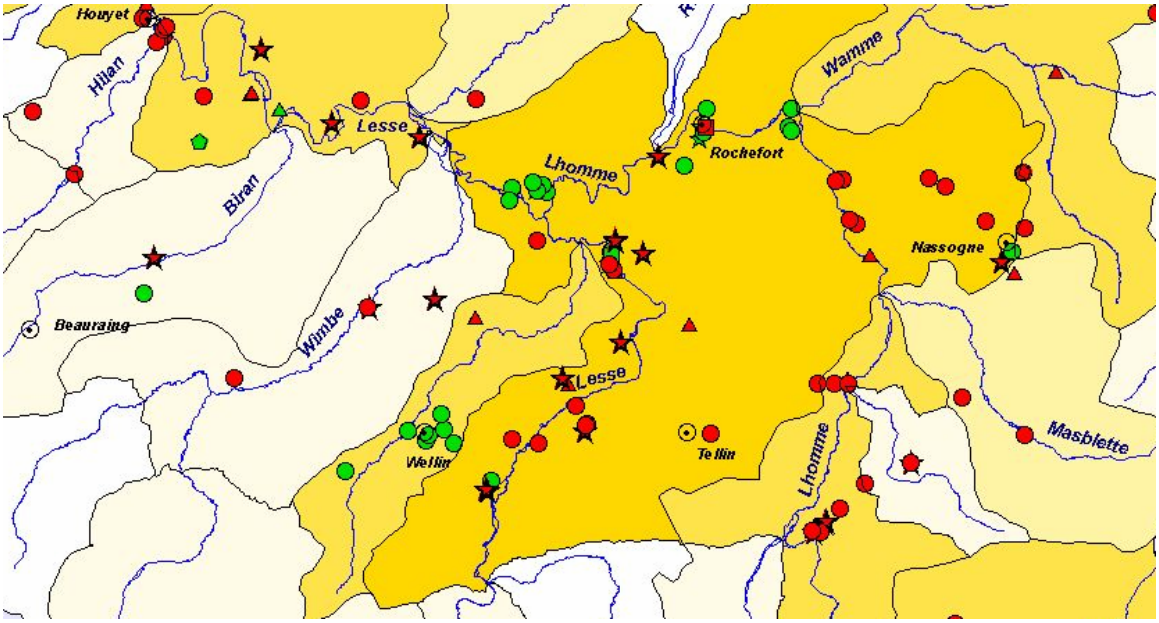


Fig. 5: Tourisme (Cartes des Etats des lieux du sous-bassin Lesse – MRW Observatoire des Eaux de Surface, janvier 2004)

1.1.3. Ecological analysis

General description

The Natura 2000 site « Bassin de la Lesse entre Villers-sur-Lesse et Chanly » (code BE35038) covers a total superficy of 2571 ha , including 2571 ha of SPA's (all the superficy) and 2284,5 ha (+ 307 km of linear habitat) of SCA's. The middle altitude is 250 meters.

This site is located in the Lesse basin, between Resteigne and Rochefort and overlap the Famenne and Ardenne biogeographical regions. Included in the Famenne region, the Calestienne sub-region gives to the site its main original characteristics : the alternation of rocky, calcareous hills (called "tiennes"), and schistous/clay depressions/valleys.

The site is covered by more than 60% of forests, in which approximatively 70% of exotic plantations (mainly Black Pine). Less than 10% of the site is composed of semi-natural open areas. The rest (30%) is mainly intensive agricultural land.

Typical habitats

The calcareous "tiennes" are colonised by a typically sub-mediterranean vegetation, because of their specific hot and dry microclimate. This is an open vegetation of calcareous grasslands and rocks, historically maintained by sheep grazing. The forest vegetations of these hills are calcareous beech forests, forests of slopes and ravines, juniper formations and downy oak forests. Several caves occupies the slopes of "tiennes" and are important for the hibernation of bats (including 6 N2000 bats species).

The depressions between "tiennes" are occupied by famennian oak forests, mesophilous meadows and also more intensively used parcels (intensive grasslands and crops). Alluvial forests occurs along rivers in valleys.

Typical species

The site lodges 23 N2000 species : 1 plant (*Bromus grossus*), 2 molluscs, 1 insect, 2 fishes, 7 mammals (6 bats species and the otter) and 10 birds species. Moreover, this site is of very great importance for a lot of endangered, protected (or not) species in Wallonia, such as reptiles, butterflies, orchids, etc…

Historical and current evolution of the site

Since the beginning of the 20th century, traditional uses of the open areas (extensive grazing and mowing,…) have progressively disappeared, inducing a natural recolonisation of these sites by the forest vegetation. Open semi-natural habitats are strongly isolated one from each other. Moreover, Black Pine has been frequently planted on ancient calcareous grasslands and Spruces and Poplars in valleys instead of indigenous forests or semi-natural grasslands. When not managed, these grasslands are invaded by shrubs and tall herbs, preventing the survival of rare plants and animals species. Mesophilous grasslands have been ploughed or fertilized and the date of the first mowing is more and more early in the season, preventing the flowering of rare plant species and the nesting of birds. The thorn-bush hedges that encircled these grasslands are progressively destroyed, preventing the nesting of some rare birds, such as the shrike.

Some forests are intensively managed for wood production, preventing the maintenance of old trees and dead wood. In certain places, rivers are polluted by agricultural and domestic rejects and their banks are in some places damaged and artificialized, preventing the nesting of sand martins and kingfisher, and the installation of the otter. But globally the physiognomy of the Lesse river has been relatively preserved.

Nowadays, there is again a big potential for calcareous grasslands restoration by cutting trees and shrubs.

Water quality of the Lesse and its tributaries

The water quality in the Lesse and Lomme rivers, the two mains rivers of the site, is rather good mainly because of the low population density in the area and of the building

of cleaning stations (some stations are currently in construction). Nowadays, the waste water of more than 60% of the population is purified. The quality of water of small tributaries is very variable, depending on the land use of the field they cross (forest vs. intensive agricultural land) and on the presence of human habitat.

Available information about the Walloon study site

Appendix 2.4.1. List of habitats and species of the site

Appendix 2.4.2. Répartition des unités de gestion dans le site de la Lesse

Appendix 2.4.3. Cartography of N2000 habitats

Appendix 2.4.4. Plan de secteur

Conservation status of N2000 species and habitats : http://biodiversite.wallonie.be/

Main threats on this site : see Appendix 2.7

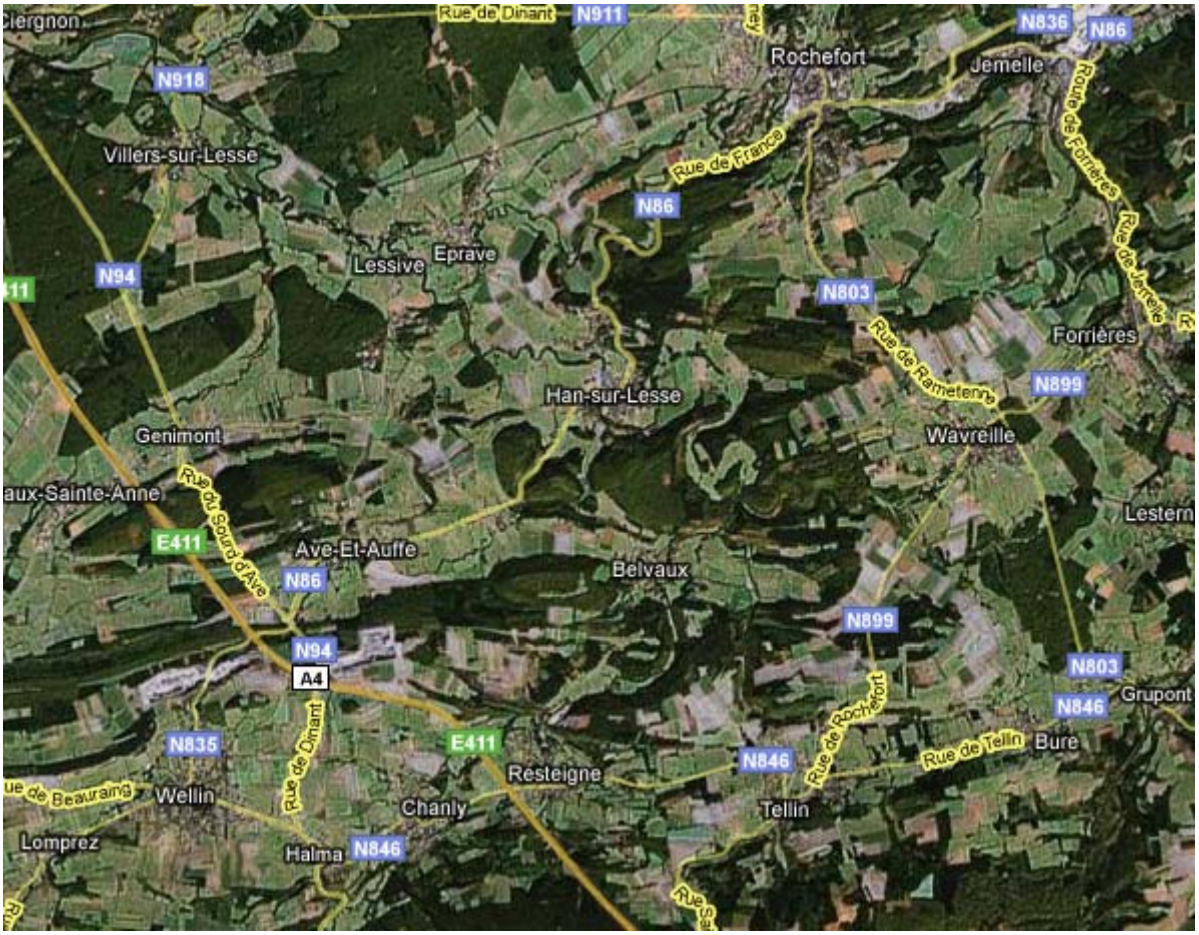


Fig 6. Satellite sight of the Lesse valley (© Google Maps)

1.2. Description of situation 1: favorable conservation status

1.2.1. Ecological analysis

To achieve a favourable conservation status of N2000 habitats and species in the Lesse N2000 site, a coherent ecological network has to be maintained and developed. The different populations of species should be connected to constitute a metapopulation, in order to avoid any extinction, genetic drift or inbreeding at the site scale. This requires sufficient surfaces of well-connected habitats (in which N2000 habitats).

The main N2000 objective in the site is the conservation of a typical habitat: calcareous grasslands. The Lesse valley is one of the most important areas in Belgium for the conservation of this kind of habitat. To maintain this habitat in a good status of conservation, restoration measures are required to increase its area and to improve its biological quality and connectivity. After restoration measures, recurrent management measures have to be implemented (e.g. redevelopment of sheep grazing) to guarantee the perenniality of the habitat.

The ecological situation 1 is more deeply described in the documents “Avant-projet d’arrêté de designation (+ cartes)”, and measures to be taken to maintain habitats and species in a good status of conservation can be found in the “Cahiers scientifiques habitats et espèces”, and “Arrêté “mesures””, in which, for each kind of habitat and species, prohibitions, technical measures,… are described.

1.2.2. Socio-economic analysis

At the end, we whish from the firms, located on and near the Natura 2000 site concerned, a bigger societal responsibility. We need from their to be perfectly aware of the role they have to play to get the conservation objectives scheduled for the site and that they work at the maximum for the effective realization of these objectives.

We wait from stakeholders on the field, farmers and foresters, to participate to the process of active management on the site, to sign agreements and also respect the terms of them.

As for citizens, we wish that they will be fully conscious of the role they can play for nature conservation.

2. Flemish region : Demer valley

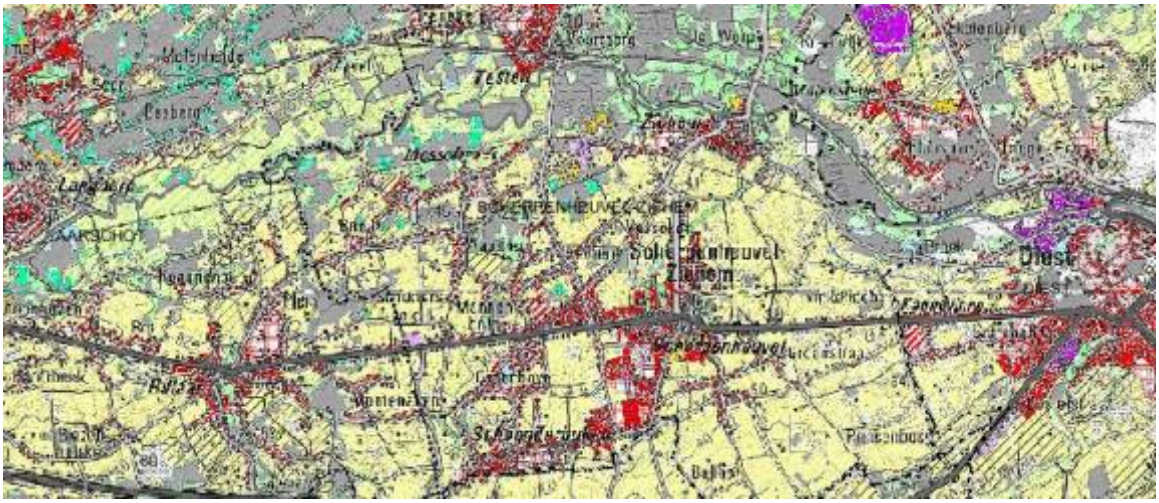
2.1. Description of situation 0 (current situation)

2.1.1. Location of Demer valley in Flanders

The valley of the Demer is situated at the eastern side of the Flemish rural network, also called the Flemish square (Vlaamse Ruit), which comprises the urban centra of Antwerp, Gent, Brussels and Leuven. The valley lies in the centre of the area that connects the Hageland and the province of Haspengouw with the southern Kempen and it forms one of the most important open spaces in Flanders.

2.1.2. Socio-economic analysis

The plan of designation (gewestplan) shows that the valley between Diest and Aarschot has a very rural character, with a great share of agricultural area of ecological importance, nature areas or nature areas with scientific value or nature reserves and forest areas. From Diest in the east till Aarschot in the west, the area is Bird Directive area and some pieces in between are Habitat Directive area.



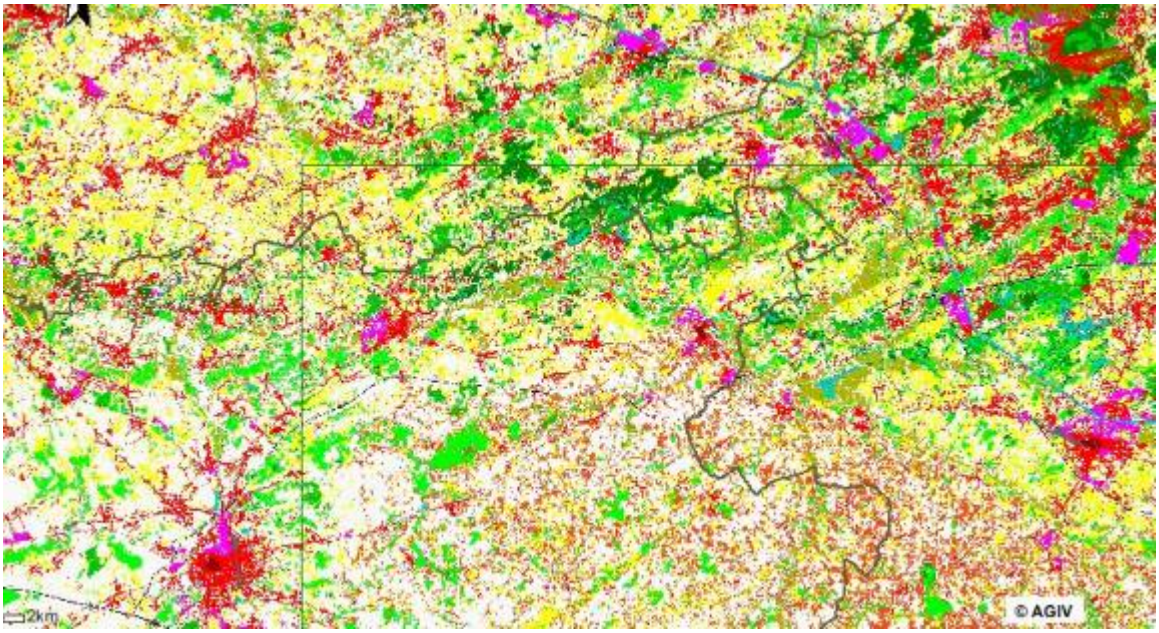
Bodemgebruik en verstedelijking

Within or near the Natura 2000 site, some medium to small villages can be found. In the table below some of the demographic characteristics are given for these locations. These are indicators for the demographic pressure on the surrounding areas.

Municipality	Surface area(km²)	inhabitants	Population density (#/km²)	Evolution (2007)	Unemployement rate (2007)
Diest	58,2	22.845	392,5	+0,46%	6,46%
Scherpenheuvel-Zichem	50,5	22.100	437,6	+0,16%	5,81%
Aarschot	62,52	28.021	448,2	+0,56%	5,33%

Further in the valley if the Demer, some more important and bigger municipalities can be found such as Hasselt, Diepenbeek en Bilzen.

On a soil usage map, one can see that in the valley of the Demer:
The urbanisation is pushing from south to north up towards the Demer valley. Especially the line south of Hasselt, Diest and Aarschot around the E314. Even north of this route, small communictes such as Rillaar and Scherpenheuvel are invading the valley.
The basin of the Demer is a complex mix of land use with some major industrial sites along the Albertkanaal (in Tesenderlo). The north of the study area has relatively more agricultural land.
On a lower scale, one notices the linear pattern of building.
In the north, the study site in the valley is shielded by a green belt of forests and agriculture in the north and by a belt of agriculture in the south.


2km
© AGIV

The valley itself is relatively well conserved from major urbanisation even though some industrial development has taken place.

Fragmentation

There are only two places near Zichem and Teselt where the valley is fragmented up to the flooding area by buildings. In Scherpenheuvel there is an illegal site with holiday houses that cannot be regulated because of the plans to use this place for flood control and water storage.

Sectoral analysis: agriculture

For the OPD (Ontwikkelingsplan Demer), a sectoral analysis was made by the VLM. The study site is larger than the Natura2000 site but the document gives a relatively good insight in the agricultural context in the area.

On the basis of the results of this analysis, some data can be found regarding the importance of agriculture in the region. Of the 916 ha agricultural land registered at the Mestbank, 651 ha lies between Diest and Aarschot in the study area of the OPD. 79 % and 54% of the agricultural land between Diest and Testelt and Testelt and Aarschot

respectively is grassland. On the other hand increases the importance of crops farming from east to west with 6% in the region from Diest to Testelt and 31% in the region from Testelt to Aarschot. This change is caused by the fact that the main activity in the region between Aarschot and Diest is cattle farming.

The main bottlenecks for farming were analysed through interviews with farmers. The main problem in the region seemed to be the lack of land and the high fragmentation of land. This makes it difficult for farmers to expand their farm. Some farmland is also dedicated to other purposes like nature, housing, industry and this puts even more pressure on the land. The high number of regulations according to farming activities are also considered to be a bottleneck. Lats but not least, farmers indicated that uncertainty for the future about rules and legislation makes investments difficult. According to information from Boerenbond, there is hardly any bio-agriculture in the region. While some farmers try to, it does not seem economically feasible at the moment.

2.1.2. Ecological analysis (Problems and threats description)

During the last century, the ecosystem functioning of the Demer-river has been severely disrupted by means of infrastructural works. The straightening and deepening of the river-flow, as well as the walling of the shoreline and constructions in the river, have put severe restrictions on natural dynamic river processes and have also dramatically reduced habitat diversity. Since 1976, the relationship of the Demer and her alluvial planes has been interrupted as the water can only flow from the valley into the river, and no more from the river to the valley. Large areas of the valley, which are perfectly applicable to it, can therefore no longer be inundated. Furthermore, as a consequence from the river works, the Demer became situated deeper and deeper in the landscape, causing the ground water level to drop. These factors have caused a serious drought problem, which on its turn, decreased the natural value of the entire valley. Studies have shown amongst others that when the Demer level is low, the nearby percolation zones drop entirely dry. Furthermore, untill the early 90’s, the Demer was used as an open sewer. Luckily, since then, water quality has improved and is expected to continue doing so, as the water purification infrastructure is being further established. The populations of fish in the

Demer respond in a positive way to the improved water quality. However, lots of fish that are present in the river are known to be exotic species, that invaded the river from neighbouring ponds during severe inundations. Altough the prospections concerning the treatment of household waste water are good, the pollution by agriculture and industry remains a problem. For example the disposals by Tessenderlo Chemie in the past and the present have a negative impact on the quality of the Demerwater. All these factors make that in global, the waterquality of the Demer is moderate to bad, and the norms for the waterquality that were set up are still far from being reached. Efforts for nature conservation are counteracted by several bottlenecks (drought and pollution, fragmentation, disturbance, garden-expansion, etc.) as a consequence of intensive agriculture and forestry, hunting practices and fishery, the lack of nature orientated arrangment and management, illegal constructions and habitation and so on. The management of the water quantities, the pollution poblem and nature conservation therefore remain important issues for the Demer river and its valley.

2.2. Description of situation 1: favorable conservation status

Ecological analysis

The ecological staus that is to be reached is described in the “Natuurrichtplan”, which contains an areal vision of the Demer Valley. This vision is expressed by concepts which consist of several nature goal types. These nature goal types have a sufficient surface to also be meaningfull for populations of faunatic species.

A central element to become in the Demer Valley is a meandering river with sidestreams en with natural stream and erosion processes. The river has natural shore walls, expect there where the residential nuclei are located (Diest, Zichem, Testelt, Langdorp, Aarschot), and has a good water quality. Natural spawn places and little brooks are connected to the river. These streaming waters form the habitat for several rare species, such as the Kingfisher (Alcedo atthis) and the Water Shrew (Neomys fodiens).

Alongside certain areas of the river, humid river- and brook valley forests are developped. These form an important ecological corridor for many forest plant species, forest birds, Slow worm (Anguis fragilis) and perhaps the bever (Castor fiber). Wet

forests, under influence of groundwater or slowly moving water will also be developped, besides swamp areas, wet and dry grasslands, grazed grassland, haylands and heathland. All these nature goal types serve as specific habitats for many endangered species and can therefore be considered as very valuable ecosystems. All types and their location are described more in detail in the “Natuurrichtplan”.

3. References

Martens, L., Hermy, H., 2001, Ontwerp van Ecosysteemvisie voor de Demervallei tussen Werchter en Diest, Deel 1: Omgevingsanalyse, Ministerie van Vlaamse Gemeenschap, AMINAL Afdeling Natuur, 246 p.

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Tijdelijke Handelsvennootschap Haecon – Sumresearch – Taken landschapsplanningstudie, 2007, Ontwikkelingsplan Demer: Omgevingsanalyse, Vlaamse Overheid, 298 p.

Natuurrichtplan voor het Vlaams Ecologisch Netwerk (VEN), de Speciale Beschermingszones (SBZ) en de groene bestemmingsgebieden van de “Demervallei tussen Diest en Aarschot”, 2007, Agentschap voor Natuur en Bos, 67 p.

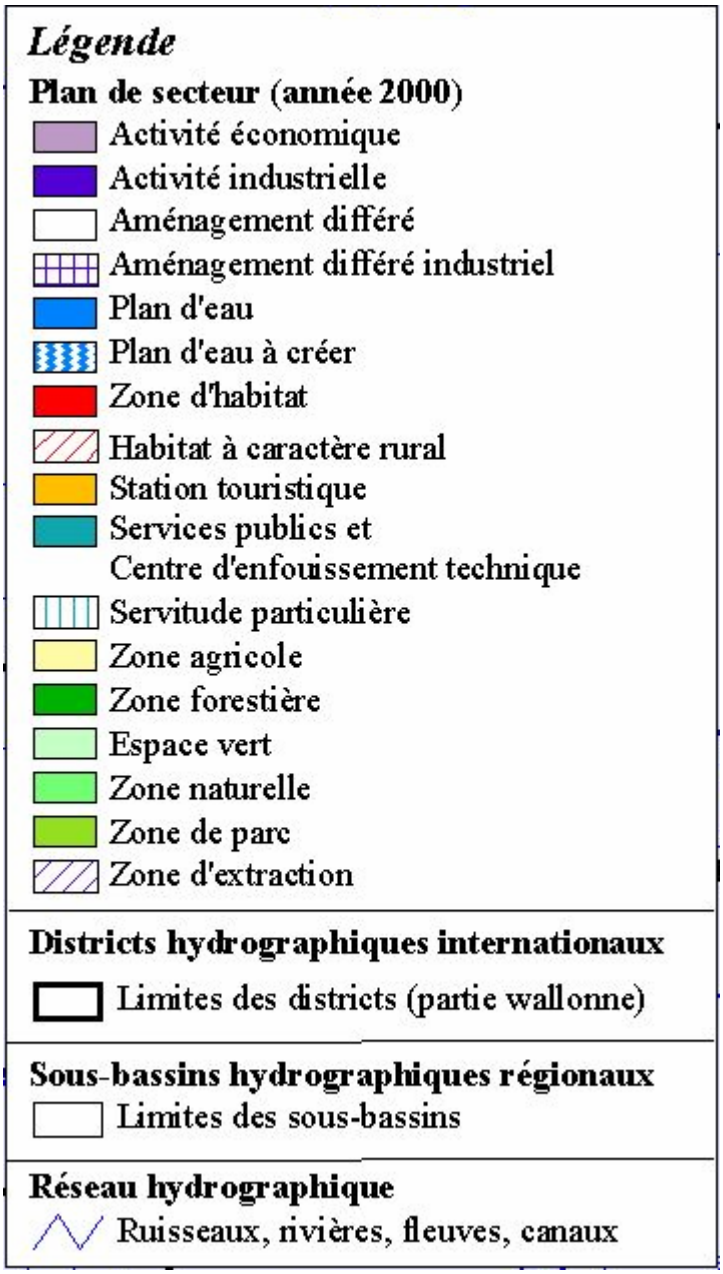
VLM (2005) - Landbouwstudie voor de Demervallei tussen Diest en Werchter. Niet technische samenvatting als onderdeel van de studie Ontwikkelingsplan Demer (OPD-studie). in opdracht van AMINAL afdeling Natuur.

Websites

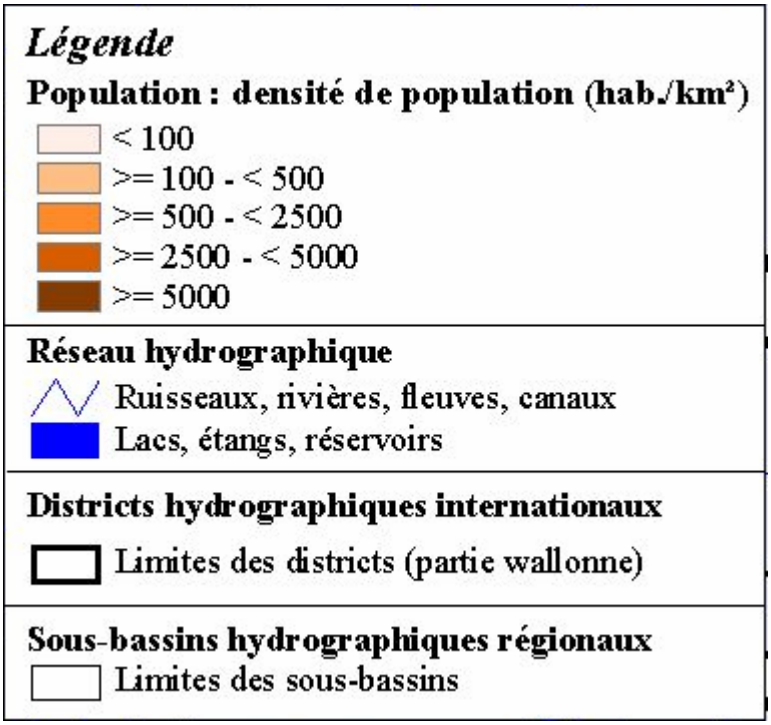
Wikipedia, 2008, http://fr.wikipedia.org/wiki/Lesse_(cours_d'eau) (consultation in May 2008)

4. Appendices

Appendix 1: caption of the « Plan de secteur »

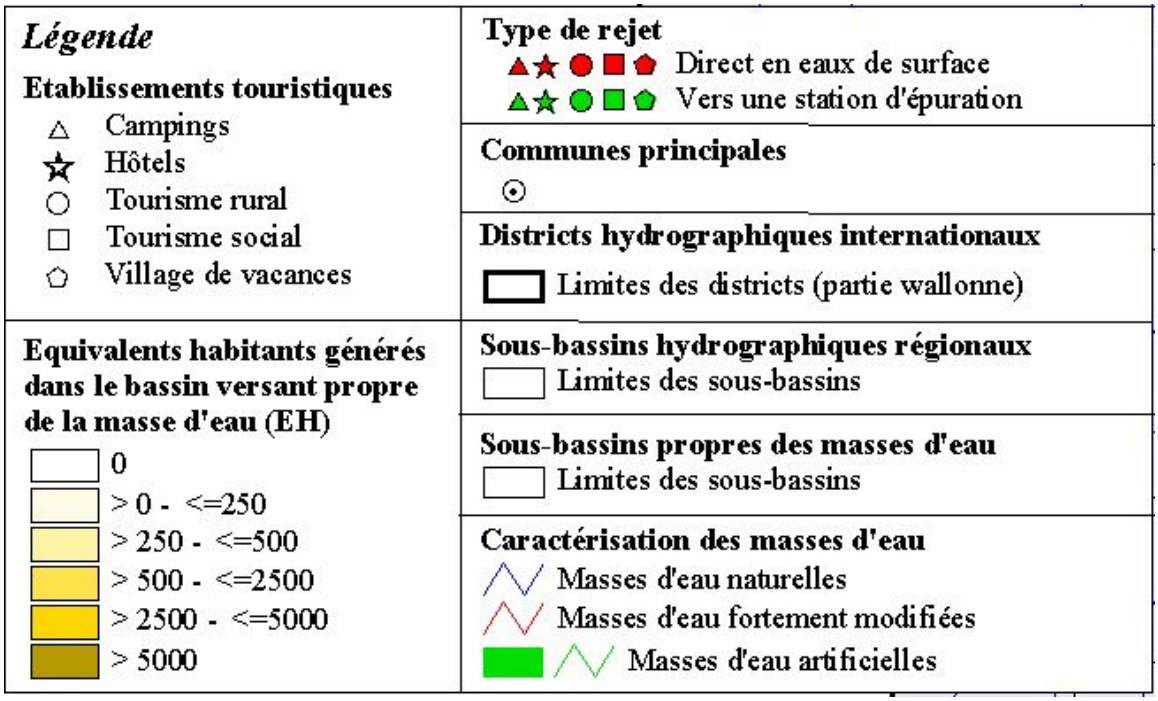


Appendix 2: Caption of the Walloon population density map



Appendix 3: Caption of the Walloon land use map

Appendix 4: Caption of the Walloon tourism map



APPENDIX 2.4.1

Code		BE35038
Fr/Nl name		Vallée de la Lesse entre Villers-sur-Lesse et Chanly
English name		River Lesse Basin between Villers-sur-Lesse and Chanly
Region		Calestienne
Area		2569 ha (2595)
Proportion of great type of habitats	Proportion of deciduous forests	42%
	Proportion of exotic coniferous ans mixed forests	27%

	N2000 code	*	Name of habitat	Group of habitats	Percentage of the total area
Habitats of Community interest	**3260**		Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	R	0,5
	4030		**European dry heaths**	**DG**	0,02
	5130		**Juniperus communis formations on heaths or calcareous grasslands**	**DG**	0,11
	6110	*	**Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi**	**DG**	0,07
	6210		**Semi-natural dry grasslands and scrubland facies on calcareous substrates(Festuco-Brometalia) (* important orchid sites)**	**DG**	1,32
	6410		Molinia meadows	WG	?
	6430		Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	WG	0,36
	6510		**Lowland hay meadows (Alopecurus pratensis,Sanguisorba officinalis)**	**DG**	3,67
	7220	*	Petrifying springs with tufa formation (Cratoneurion)	PS	<0,01
	8160	*	**Medio-European calcareous scree of hill and montane levels**	**DG**	0,01
	8210		**Calcareous rocky slopes with chasmophytic vegetation**	**DG**	0,11
	8220		**Siliceous rocky slopes with chasmophytic vegetation**	**DG**	0,01
	8310		Caves not open to the public	C	0,01
	9110		Luzulo-Fagetum beech forests	F	1,52
	9120		Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercinion robori-petraeae or Ilici-Fagenion)	F	6,09
	9150		Medio-European limestone beech forests of the Cephalanthero-Fagion	F	6,45
	9160		Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	F	6,82
	9180	*	Tilio-Acerion forests of slopes, screes and ravines	F	0,89
	91E0	*	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Pandion, Alnion incanae, Salicion albae)	F	0,23
Species of Community interest	**1882**		Bromus grossus		X
	1016		Vertigo moulinsiana		X
	1032		Unio crassus		X
	1074		Eriogaster catax		X
	1096		Lampetra planeri		X
	1163		Cottus gobio		X
	1303		Rhinolophus hipposideros		X
	1304		Rhinolophus ferrumequinum		X
	1318		Myotis dasycneme		X
	1321		Myotis emarginatus		X
	1323		Myotis bechsteini		X
	1324		Myotis myotis		X
	1355		Lutra lutra		X
Species of the Birds Directive	**A030**		Ciconia nigra		X
	A072		Pernis apivorus		X
	A215		Bubo bubo		X
	A229		Alcedo atthis		X
	A236		Dryocopus martius		X
	A238		Dendrocopus medius		X
	A338		Lanius collurio		X
	A340		Lanius excubitor		X
	A052		Anas crecca		X
	A082		Circus cyaneus		X

Appendix 2.4.2 : Répartition des unités de gestion dans le site de la Lesse

A. Landes, pelouses sèches, éboulis, rochers et espèces associées

Unité de gestion A1 : Fragments de landes sèches, de formations à génévrier, d'éboulis sur calcaires et de pelouses sur rochers

10.2 ha - Soumis = 26%

Unité de gestion A2 : Pelouses sèches semi-naturelles sur calcaire

35.7 ha - Soumis = 41%

Unité de gestion A3 : Faciès plus ou moins avancés d'embuissonnement de pelouses sèches et habitats associés

39.1 ha - Soumis = 65%

Unité de gestion A4 : Forêts feuillues claires et fourrés abritant des espèces typiques des pelouses sèches (notamment la Laineuse du prunellier) et la Bondrée apivore et le Pic noir

49.1 ha - Soumis = 72%

Unité de gestion A5 : Pelouses sèches plantées de résineux à restaurer rapidement pour éviter leur disparition définitive

88.3 ha - Soumis = 94%

Unité de gestion A6 : Plantations résineuses dont la restauration est encouragée pour recréer à long terme des surfaces d'habitats présents dans les UG A1 à A5

65.9 ha - Soumis = 86%

B. Pelouses maigres de fauche et espèces associées

Unité de gestion B1 : Pelouses maigres de fauche et espèces associées

100.2 ha - Soumis = 11%

Unité de gestion B2 : Prairies de liaison et habitats d'espèces

114.1 ha - Soumis = 6%

C : Habitats des fonds de vallées alluviaux

Unité de gestion C1 : Habitats des cours d'eau et espèces associées

47.350 km / 97.9 ha - Soumis < 2%

Unité de gestion C2 : Forêts alluviales à Alnus glutinosa et Fraxinus excelsior (91E0*) et à chênes pédonculés (9160)

47.9 ha - Soumis = 29%

Unité de gestion C3 : Habitats alluviaux ouverts

15.2 ha - Soumis = 9%

Unité de gestion C4 : Plans d'eau

1.1 ha - Soumis = 0%

Unité de gestion C5 : Habitat de la loutre (1355) au bord de la Lesse

34.5 ha - Soumis = 0%

D : Habitats d’espèces des milieux ouverts

Unité de gestion D1 : Habitat du vespertilion à oreilles échancrées (1321)

99.1 ha - Soumis = 1%

Unité de gestion D2 : Habitat de la pie-grièche écorcheur (A338) et de la pie-grièche grise (A340)

282.6 ha - Soumis = 0%

Zone objectif n° E : Habitats forestiers et espèces associées

Unité de gestion E1 : Hêtraie du Luzulo-Fagetum (9110), de l’Asperulo-Fagetum (9130), hêtraies calcicoles médio-européennes du Cephalanthero-Fagion (9150) et habitats favorables au Pic noir (Dryocopus martius - A236) et à la Bondrée apivore (Pernis apivorus - A072)

877.1 ha - Soumis = 73%

Unité de gestion E2 : Chênaies pédonculées ou chênaies-charmaies sub-atlantiques et médio-européennes du Carpinion betuli (9160)

192.7 ha - Soumis = 88%

Unité de gestion E3 : Forêts de pente, éboulis ou ravins du Tilio-Acerion (9180*)

82.4 ha - Soumis = 85%

Unité de gestion E4 : Espèces forestières (pic noir et bondrée apivore)

346.7 ha - Soumis = 70%

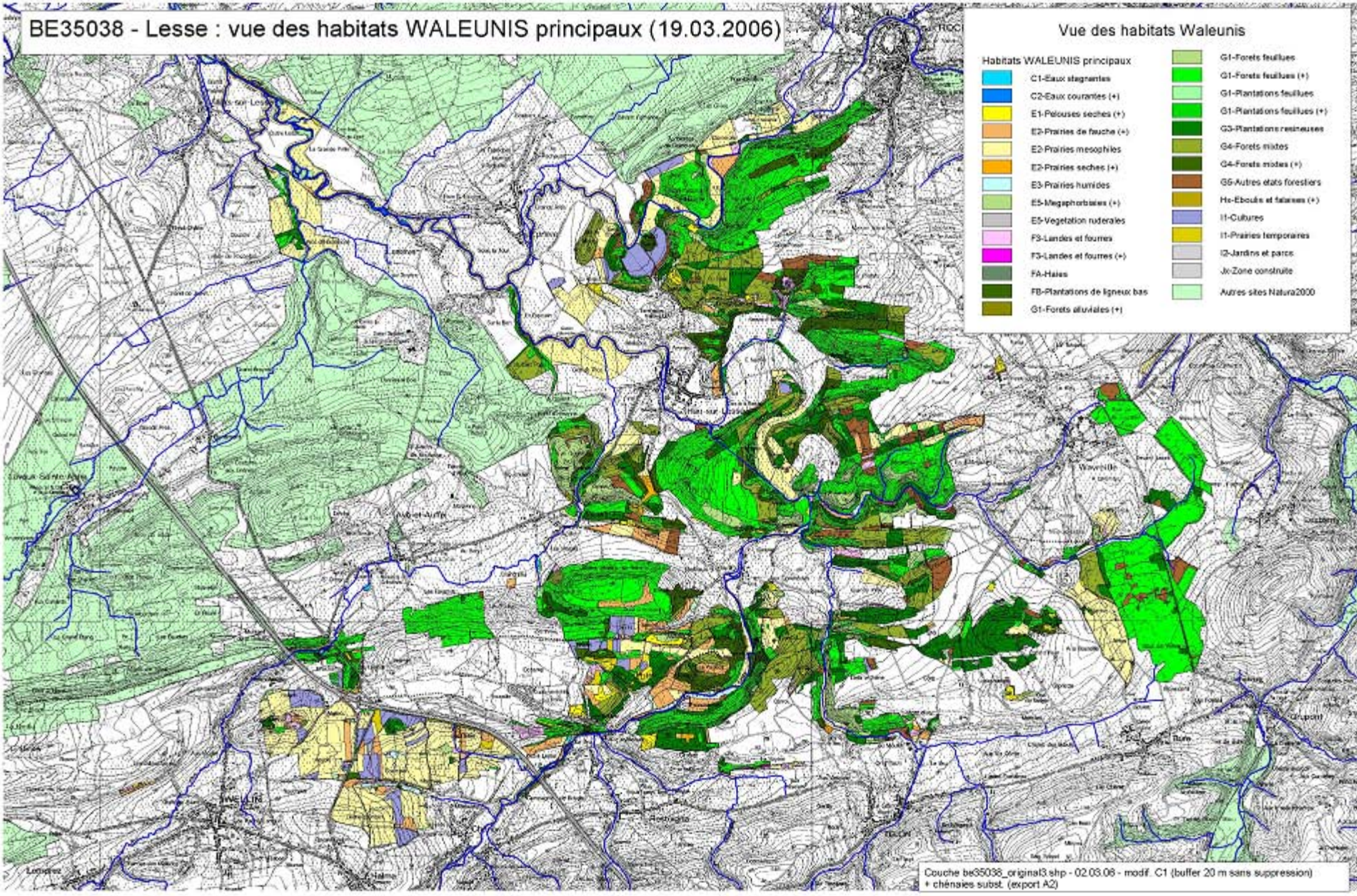
F : Habitat du brome raide (Bromus grossus)

Unité de gestion F1 : habitat du brome raide

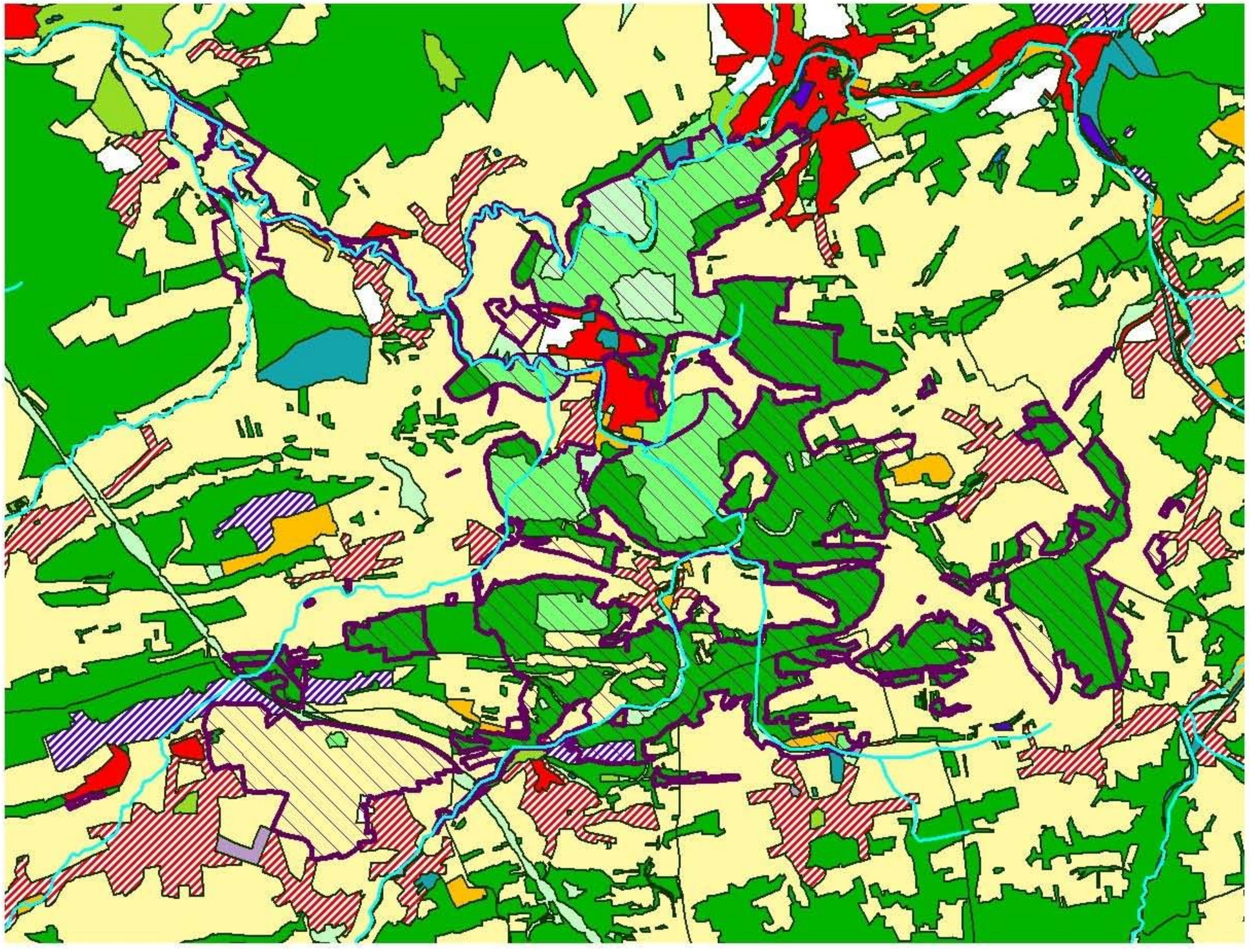
20.6 ha

G : Grottes non-exploitées par le tourisme et espèces associées

Unité de gestion G1 : Habitats des chauves-souris


BE35038 - Lesse : vue des habitats WALEUNIS principaux (19.03.2006)
Vue des habitats Waleunis
Habitats WALEUNIS principaux
C1-Eaux stagnantes
C2-Eaux courantes (+)
E1-Pelouses seches (+)
E2-Prairies de fauche (+)
E2-Prairies mesophiles
E2-Prairies seches (+)
E3-Prairies humides
E5-Megaphorbaies (+)
E5-Vegetation ruderales
F3-Landes et fourres
F3-Landes et fourres (+)
FA-Haies
FB-Plantations de ligneux bas
G1-Forets alluviales (+)
G1-Forets feuillues
G1-Forets feuillues (+)
G1-Plantations feuillues
G1-Plantations feuillues (+)
G3-Plantations resineuses
G4-Forets mixtes
G4-Forets mixtes (+)
G5-Autres etats forestiers
He-Eboulis et falaises (+)
I1-Cultures
I1-Prairies temporaires
I2-Jardins et parcs
Jx-Zone construite
Autres sites Natura2000
Couche be35038_original3.shp - 02.03.06 - modif. C1 (buffer 20 m sans suppression)
+ chénaies subst. (export A2)

Plans de secteur dans la Vallée de la Lesse



Reshydro
Siten2000etude.shp
Affect.shp
Activité écon. mixte
Activité écion. indust.
Activité GD
Activité RM
Aménagement différé
Aménag. diff. indus.
Plan d'eau
Plan d'eau à créer
Zone d'habitat
Habitat à carac. rural
Zonde de loisir
Station touristique
Loisir à prescr. parti.
Récré à prescr. parti.
Service publics
CET
Servitude particulière
Zone agricole
Zone forestière
Epace vert
Zone naturelle
Zone de parc
Zone d'extraction

N
W
E
S

0 4 8 Kilometers

Appendix 2.5

Code		BE35038	BE2400014
Fr/Nl name		Vallée de la Lesse entre Villers-sur-Lesse et Chanly	Demervallei
English name		River Lesse Basin between Villers-sur-Lesse and Chanly	Valley of the Demer
Region		Calestienne	Hagelandse Heuvelstreek
Area		2569 ha (2595)	4910
Proportion of great type of habitats	Proportion of deciduous forests	42%	
	Proportion of exotic coniferous ans mixed forests	27%	
		Percentage of the total area	***presence/absence***
Habitats of Community interest	2310 Dry sand heaths with Calluna and Genista	0	X
	2330 Inland dunes with open Corynephorus and Agrostis grasslands	0	X
	3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	0	X
	3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	0	X
	3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition – type vegetation	0	X
	3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	0,5	0
	4010 Northern Atlantic wet heaths with Erica tetralix	0	X
	4030 European dry heaths	**0,02**	**X**
	5130 Juniperus communis formations on heaths or calcareous grasslands	0,11	0
	6110 * Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi	0,07	0
	6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates(Festuco-Brometalia) (* important orchid sites)	1,32	0
	6230 * Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	0	X
	6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	**0,36**	**X**
	6510 Lowland hay meadows (Alopecurus pratensis,Sanguisorba officinalis)	**3,67**	**X**
	7140 Transition mires and quaking bogs	0	X
	7150 Depressions on peat substrates of the Rhynchosporion	0	X
	7220 * Petrifying springs with tufa formation (Cratoneurion)	<0,01	0
	8160 * Medio-European calcareous scree of hill and montane levels	0,01	0
	8210 Calcareous rocky slopes with chasmophytic vegetation	0,11	0
	8220 Siliceous rocky slopes with chasmophytic vegetation	0,01	0
	8310 Caves not open to the public	0,01	0
	9110 Luzulo-Fagetum beech forests	1,52	0
	9120 Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercinion robori-petraeae or Ilici-Fagenion)	**6,09**	**X**
	9150 Medio-European limestone beech forests of the Cephalanthero-Fagion	6,45	0
	9160 Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	**6,82**	**X**
	9180 * Tilio-Acerion forests of slopes, screes and ravines	0,89	0
	9190 Old acidophilous oak woods with Quercus robur on sandy plains	0	X
	91E0 * Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Pandion, Alnion incanae, Salicion albae)	**0,23**	**X**

			Presence/absence	
Species of Community interest	**Amphibians**	Triturus cristatus (1166)	0	X
	Bivalvia	Unio crassus (1016)	X	0
	Fish	Cottus gobio (1163)	X	0
		Lampetra planeri (1096)	X	0
		Misgurnus fossilis (1145)	0	X
		Rhodeus sericeus amarus (1134)	0	X
	Lepidoptera	Eriogaster catax (1074)	X	0
	Mammals	Lutra lutra (1355)	X	0
	Mammals - Bats	Myotis bechsteini (1323)	X	0
		Myotis dasycneme (1318)	X	0
		Myotis emarginatus (1321)	X	0
		Myotis myotis (1324)	X	0
		Rhinolophus ferrumequinum (1304)	X	0
		Rhinolophus hipposideros (1303)	X	0
	Plants	Apium repens (1614)	0	X
		Bromus grossus (1882)	X	0
		Luronium natans (1831)	0	X
Species of the Birds Directive		**Alcedo atthis (A229)**	**X**	**X**
		Anas crecca (A052)	X	0
		Botaurus stellaris	0	X
		Bubo bubo (A215)	X	0
		Ciconia nigra (A030)	X	0
		Circus cyaneus (A082)	X	0
		Dendrocopus medius (A238)	X	0
		Dryocopus martius (A236)	**X**	**X**
		Ixobrychus minutus	0	X
		Lanius collurio (A338)	**X**	**X**
		Lanius excubitor (A340)	X	0
		Luscinia svecica	0	X
		Pernis apivorus (A072)	**X**	**X**
		Porzana porzana	0	X

APPENDIX 2.6

Code		BE35038
Fr/Nl name		Vallée de la Lesse entre Villers-sur-Lesse et Chanly
English name		River Lesse Basin between Villers-sur-Lesse and Chanly
Region		Calestienne
Area		2569 ha (2595)
Proportion of great type of habitats	Proportion of deciduous forests	42%
	Proportion of exotic coniferous ans mixed forests	27%

	N2000 code	*	Name of habitat	Group of habitats	Percentage of the total area
Habitats of Community interest	**3260**		Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	R	0,5
	4030		**European dry heaths**	**DG**	0,02
	5130		**Juniperus communis formations on heaths or calcareous grasslands**	**DG**	0,11
	6110	*	**Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi**	**DG**	0,07
	6210		**Semi-natural dry grasslands and scrubland facies on calcareous substrates(Festuco-Brometalia) (* important orchid sites)**	**DG**	1,32
	6430		Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	WG	0,36
	6510		**Lowland hay meadows (Alopecurus pratensis,Sanguisorba officinalis)**	**DG**	3,67
	7220	*	Petrifying springs with tufa formation (Cratoneurion)	PS	<0,01
	8160	*	**Medio-European calcareous scree of hill and montane levels**	**DG**	0,01
	8210		**Calcareous rocky slopes with chasmophytic vegetation**	**DG**	0,11
	8220		**Siliceous rocky slopes with chasmophytic vegetation**	**DG**	0,01
	8310		Caves not open to the public	C	0,01
	9110		Luzulo-Fagetum beech forests	F	1,52

	9120		Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercinion robori-petraeae or Ilici-Fagenion)	F	6,09
	9150		Medio-European limestone beech forests of the Cephalanthero-Fagion	F	6,45
	9160		Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	F	6,82
	9180	*	Tilio-Acerion forests of slopes, screes and ravines	F	0,89
	91E0	*	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Pandion, Alnion incanae, Salicion albae)	F	0,23
Species of Community interest	**1882**		Bromus grossus		X
	1016		Unio crassus		X
	1074		Eriogaster catax		X
	1096		Lampetra planeri		X
	1163		Cottus gobio		X
	1303		Rhinolophus hipposideros		X
	1304		Rhinolophus ferrumequinum		X
	1318		Myotis dasycneme		X
	1321		Myotis emarginatus		X
	1323		Myotis bechsteini		X
	1324		Myotis myotis		X
	1355		Lutra lutra		X
Species of the Birds Directive	**A030**		Ciconia nigra		X
	A072		Pernis apivorus		X
	A215		Bubo bubo		X
	A229		Alcedo atthis		X
	A236		Dryocopus martius		X
	A238		Dendrocopus medius		X
	A338		Lanius collurio		X
	A340		Lanius excubitor		X
	A052		Anas crecca		X
	A082		Circus cyaneus		X

Habitats groups **Main threats**	Scale of the threat (Broad or Specific) of the threat	Forests (F)	Dry grasslands (DG)	Wet grasslands (WG)	Rivers (R)	Petrifying springs (PS)	Caves (C)	*Pièces d'eau (ponds)*
Global problems								
Habitat fragmentation	B	2	**2**	2	2	1	1	*2*
Global warming	B	2	**2**	2	2	1	1	*2*
Urbanisation	B	2	**2**	2	2	2	2	*2*
Water								
Water pollution	B	0	**0**	1	2	2	1	*2*
Water eutrophication	B	0	**0**	1	2	2	1	*2*
Pumping	S	1	**0**	1	0	1	1	*1*
Reshaping and correction of waterways	S	1	**0**	1	2	0	0	*0*
Clearing out of waterways	S	1	**0**	2	2	1	0	*1*
Disturbance of water supply	B	0	**0**	1	2	0	0	*1*
Soil								
Deposit ("Atterrissement")	S	0	**0**	0	0	0	0	*2*
Embankment	S	1	**1**	2	1	1	1	*2*
Soil eutrophication	B	1	**2**	2	0	0	0	*0*
Vegetation								
Woody recolonisation	B	0	**2**	2	0	0	0	*1*
Invasive species	B	1	**1**	2	2	0	0	*2*
Animals								
Animal pressure on vegetation	B	2	**1**	1	1	0	0	*1*
Animal damages on soil	B	1	**2**	2	0	0	0	*1*
Vagrancy of domestic animals	B	1	**1**	1	1	0	0	*1*
Piscicultural imbalance	B	0	**0**	0	2	0	0	*2*
Touristic activities								
Surfrequentation	B	1	**2**	2	2	2	2	*2*
Kayak / canoë	B	1	**0**	1	2	0	0	*1*
Climbing	B	0	**2**	0	0	2	1	*0*
Motorized sports	B	2	**2**	2	0	0	0	*0*

Habitats groups	Scale of the threat (Broad or Specific)	Forests (F)	Dry grasslands (DG)	Wet grasslands (WG)	Rivers (R)	Petrifying springs (PS)	Caves (C)	*Pièces d'eau (ponds)*
Sylvo-agricultural activities								
Exotic plantations	S	2	**1**	1	0	0	0	*0*
Cuttin down (“Mise à blanc”)	S	2	**0**	0	0	0	0	*0*
Overexploitation of the old trees and deadwood	S	2	**0**	0	0	0	0	*0*
Abrupt edges	S	2	**0**	0	0	0	0	*0*
Drainage	S	1	**0**	2	1	1	0	*1*
Exploitation damages	S	2	**0**	0	2	2	0	*1*
Excessive mowing	S	0	**2**	2	0	0	0	*0*
Excessive grazing	S	1	**2**	2	0	0	0	*1*
Spreading of manure	S	1	**2**	2	0	0	0	*0*
Herbicids use	S	1	**1**	1	1	0	0	*1*
Pesticids use	S	2	**1**	1	1	0	0	*1*
Helminthicids use	S	0	**2**	2	0	0	0	*0*
Access of the waterways for the cattle	S	0	**0**	2	2	0	0	*0*
Ploughing	S	1	**1**	2	2	0	0	*1*
Oversowing ("Sursemis")	S	0	**1**	1	0	0	0	*0*
Organic matter storage	S	1	**2**	2	2	0	0	*2*
Trees and hedges destruction	S	0	**2**	2	2	0	0	*1*
Foddering ("Affouragement")	S	0	**2**	2	0	0	0	*0*
Other human activities								
Pollution coming from a road	S	1	**1**	1	1	1	1	*1*
Other pollutions	S	1	**1**	1	1	1	1	*1*
Green waste	S	1	**1**	1	1	1	1	*1*
Other waste	S	1	**1**	1	1	1	1	*1*
Extraction	S	1	**2**	1	0	2	2	*0*
Passage of vehicles	S	2	**1**	1	0	1	0	*0*
Creation of roadway systems	S	2	**2**	2	1	1	1	*1*
stabilization of the rock faces	S	0	**2**	0	0	2	0	*0*
Construction of infrastructures	S	1	**2**	2	1	1	1	*1*
Fishing	B	0	**0**	1	2	0	0	*2*
Artificial game feeding	S	2	**2**	1	0	0	0	*0*
Collect plants	B	2	**2**	2	0	0	0	*1*

APPENDIX 3 DISCUSSION ON ECOSYSTEM APPROACH AND GOOD MANAGEMENT PLAN

3.1 A strategy of integration adapted to biodiversity: ecosystem approach

The traditional methods called "sectoral" of the natural resources management - water, forests, wetlands, fauna and flora - are far from a "durable" use of these resources. They show incapacity to apprehend the complexity of the operation of the ecological systems[1]. Their limits caused an important movement of scientific research in order to work out a global, "holistic" solution, natural stock management, based on the concept of "ecosystem" in all its components - physics, biological and human. [2]

The ecosystem approach differs from the "traditional" approaches of the integrated planning of the resources management because of several specificities. It takes scientific postulates: the functional and open character ecosystems, the recognition of the inevitability of the change, the multiplicity of the space and temporal scales, the recognition of the place of the man like integral component of the ecosystem[3]. It specifically aims at guaranteeing the ecosystem integrity, vague concept including at the very least safeguarding of the services rendered by the ecosystems and biological diversity[4], while ensuring a durable and equitable use of its elements.

1. Ecosystem approach in the Convention on biological diversity

The ecosystem approach is not directly devoted by the CBD itself. No express provision invites the Parts to adopt it systematically in the management of their territory and their living resources.

The dedication and the development of the contents of the ecosystem approach are the result of the work of the Conference of the Parts with the CBD which chose as of its second meeting in 1995 the ecosystem approach as framework for the analysis and implementation of the objectives of the CBD[5]. These principles do not have any constraining value however - as any the "ordinary" decisions of the COP.

The ecosystem approach recommended by the COP with the CBD is based largely on work of the scientists in this field. It defines it as "a strategy of integrated management of the grounds, water and resources alive, which supports the conservation and the durable use in an equitable way"[6]. Such as it is described by the COP[7], it overall consists in, promoting an integrated management ("holistic") of the

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[1] SLOCOMBE, 1998, p. 31.

[2] For a synthesis, see for ex. GRUMBINE, 1994 ; BRUSSARD et al., 1998 ; VAN DYKE, 2003, p. 268 et s.; GROOM et al., 2006, p. 467 et s.

[3] IUCN, « The Ecosystem Approach », recommandation pour la Cinquième Réunion du SBSTTA, janvier 2000, p. 2.

[4] Ainsi, pour M. Mc NEELY, le maintien de l'intégrité de l'écosystème implique *« la protection de toute la biodiversité native à tous ses niveaux, de même que les processus et configurations qui maintiennent cette diversité* » (Mc NEELY, 1999, pp. 23-24, notre traduction). Selon KARR et DUDLEY (1981), cités par DELEO et LEVIN, 1997 (p. 4), l'intégrité de l'écosystème est définie comme « *la capacité de supporter et de maintenir une communauté d'organismes équilibrée, intégrée, adaptative, ayant une composition en espèces, une diversité et une organisation foncttionnelles comparables à celles des habitats naturels de la région* ». Pour l'IUCN, les deux objectifs de l'approche écosystémique sont, d'une part, la conservation de la biodiversité et des services rendus par les écosystèmes et, d'autre part, l'équité et le partage équitable des bénéfices tirés de la conservation (IUCN, *op.cit*., p. 2). See also goals proposed by GRUMBINE, 1994 (ci-dessous, note XXX). For a study about the concept of ecosystems integritu, see DE LEO et LEVIN, 1997.

[5] Décision II/8, § 1, de la COP. Confirmed in decision IV/1, B.

[6] Décision V/6 de la COP, annexe, section A, para. 1.

[7] Décision V/6 de la COP, annexe, section A, para. 1 à 5. See corrections in decision VII/11, annexe I, section A, para. 1 à 10. Nous complétons par certains éléments tirés des principes définis à l'annexe de la décision V/6.

physical and biological resources - grounds, forests, resources water, populations of exploited species, etc. -, founded on scientifically founded, adaptive and participative practices, with for ultimate objective preserving it and guaranteeing its durable and equitable use.

2. Tension fields and principles

One can as follows summarize the tension fields of the ecosystem approach recommended by the CBD. To manage in a ecosystem way a resource initially implies to understand how and on which scales the ecosystem is structured and functions. This implies to delimit the unit of resources management on the basis of limit of the ecosystem to which it belongs. Geographically, this one can be represented on any scale - a stock, a pond, a forest, a biome. The delimitation of the ecosystem to be taken into account actually depends on the problem to solve, in so far as it is ecologically rational[8].
The scales of time to which proceed the ecological processes which animate the ecosystems - tides, cycle of water, cycles nutrients, cycles carbon, cycles erosion, migrations, etc. - must also be taken into account. They vary from the short term (of about a day) to the very long term (of about thousand of years), scale generally ignored in the stock management. The ecosystem approach must also hold account of the perpetually changing and dynamic character of ecosystems.
To this end, she recommends the recourse to methods of management known as "adaptive" - i.e. a flexible management founded on a thorough knowledge of the structure and functioning of the ecosystems and on a harvest uninterrupted collect of data ("knowledge-based management"), which adapts and improves by holding account of the positive and negative results carried out actions (approach « learning-by-doing »). The ecosystem approach in addition recognizes the part of scientific uncertainty in our knowledge on the structure and the functioning of the ecosystems while being based on the principle of precaution. Lastly, it recognizes that the men are an integral part of a great number of ecosystems, which necessarily implies to hold of it account in the decision-making, in particular by the means of an adequate participation in the decision-making process and a definition of the objectives of management on a democratic basis.

While gathering and by summarizing these principles and orientations and with regards to the literature[9], it is possible to structure the principles which form the contents of the ecosystem approach as follows:

1. Objectives and principles having to guide the decision-making:
    - Ecological dimension :
        i. To ensure the conservation in priority of the structure and the functions of the ecosystems (principle 5) ;
        ii. To manage the ecosystems within the limits of their functioning (principle 6) ;
        iii. To define long-term objectives of management of the ecosystems (principle 8)
        iv. To integrate the idea that any change is inevitable (principle 9) ;
    - Socio-economical dimension:
        i. To manage the ecosystems in an economic context (principle 4) ;
        ii. To seek a balance between conservation and use of biodiversity (principle 10) ;

2. Methods and procedural mechanisms of integration:

    - Modes of organization and participation:
        i. To promote the intersector co-operation (point de guidance 5) ;
        ii. To apply the principle of subsidiarity (principle 2) ;
        iii. To identify and ensure the participation of all the actors concerned in the definition of the objectives (principle 1) and the implementation of the measures (principle 12) ;

[8] Thus, to preserve a river, the ecosystem to be taken into account is the river and its major bed as well as the whole of its catchment area.
[9] SHEPHERD, 2004 et MATHES et FRANKENHAUSER, 2004, p. 48.

- Methods of planning and management:
    i. To make the choice of suitable scales of management in time and space (principle 7 et point de guidance 4) ;
    ii. To promote the use of adaptive methods of management (point de guidance 3) ;
    iii. To take into account of all the relevant sources of information (principle 11) ;
    iv. To evaluate the effects of the activities on the adjacent ecosystems (principle 3), including their functioning (point de guidance 1).

3. Difficulties

In spite of its promises, the recourse to the ecosystem approach to manage the natural environment presents some limit - which are certainly often only the reverse of its qualities. It proves particularly complex to implement[10], as show some problems of the environment American administration in the vision certainly extremely disparate that it developed to manage the watery forests and resources[11].
The implementation of the ecosystem approach of the stock management indeed raises an incalculable number of questions, technical, scientific, institutional and human which make random its success and causes the controversy. The principal constraints with its implementation are[12]:

- the sectorization of the institutions, administrations and public authorities which leads to a fragmentation of the decision-making process, to the absence of co-operation and coordination and, therefore, at the risks of inconsistency in the decisions about use of the ground;
- the need for a great quantity of information on the structure and the functioning of the ecosystem, information which does not necessarily exist and requires an important logistic effort;
- competition in and between authorities and administrations;
- lack of communication between concerned actors, which can make impossible any consensual approach;
- the difficulty in solving the conflicts of interests at the local level, in spite of an agreement on the general objectives;
- the institutional and administrative cutting of the territory, without relation with ecological cutting and the relevant space-time scales in ecology;
- vision with short-term of the authorities and administrations (generally limited to a legislature), which contrasts with the need for laying down objectives at long, even very long term to take into account ecological dynamics on all its temporal scales;
- vague character and complexity of the concepts used in the ecosystemic approach;
- the weak use of existing information;
- the important cost of the implementation of the approach, in terms of human, technical and financial means.

There is thus necessary to remain realistic and to regard the ecosystemic approach as a guide to adopt integrated and ecologically rational measures of management of the natural resources, rather than as a constraining framework having definitively to replace the traditional approaches currently followed to manage the territory[13].

[10] See for ex. MORRISSEY, 1998, p. 207 et s.; SLOCOMBE, 1998, p. 33; Mc NEELY, 1999, p. 24 ; IUCN, op. cit., p. 3 et s.
[11] See MORRISSEY, 1998, p. 207 et s.; VAN DYKE, 2003, p. 269 et s.
[12] See SLOCOMBE, 1998, p. 33 ; Mc NEELY, 1999, p. 24 ; CORTNER et al., 1998, p. 161, and references.
[13] Mc NEELY, 1999, p. ; GROOM et al., 2006, p. XXXX.

3.2 Describing the concept of a good management plan

When trying to define what "a good management plan" is, one could find many ways to approach this exercise. One possibility is to regard the concept of a management plan in the scope of the so called Ecosystem Approach[14] (EA). The EA is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (see Appendix). Application of the Ecosystem Approach will help to reach a balance of the three objectives of the Convention on Biological Diversity (i.e. the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources).

The management plan is the starting ground for the actual management on the field. As it is the case for the entire management execution, also the management plan itself is subducted to the continuous process of implementation, evaluation and adaptation. This is shown in figure 1.

Figure 1: The management plan, as part of the entire management process, is subducted to the continuous cycle of implementation, evaluation and adaptation.

A management plan can be divided into three main parts, as depicted in figure 2. First of all, the making of a management plan starts with the process of the development of the plan. The process of development for a management plan consists of several activities, actions and points of interest that have to be taken into account before the actual composition and building of the plan.
The next step is the composition of the content of the management plan. Here, special attention has to go to the description of the relevant aspects of the current and target situation. There should be a major contribution of the composers of the management plan for the description of the strategy towards its objectives. The strategy describes the possible instruments and (technical) measures that will be used in the implementation phase, but also in which sequence and combination they are to be put in.
The implementation is the last phase in the making of the management plan. It consists of a description of the actual execution of the plan. Furthermore, the financing of the measures is depicted in this part of the management plan. As defined in the management cycle, there has to be sufficient attention for the way how the instruments and actions of the plan will be implemented. Last but not least, the implementation and the plan itself have to be evaluated and if necessary, adapted to new insights and knowledge.

[14] COP 7 Decision VII/11, *Ecosystem approach*, Kuala Lumpur, 9 – 20 February 2004

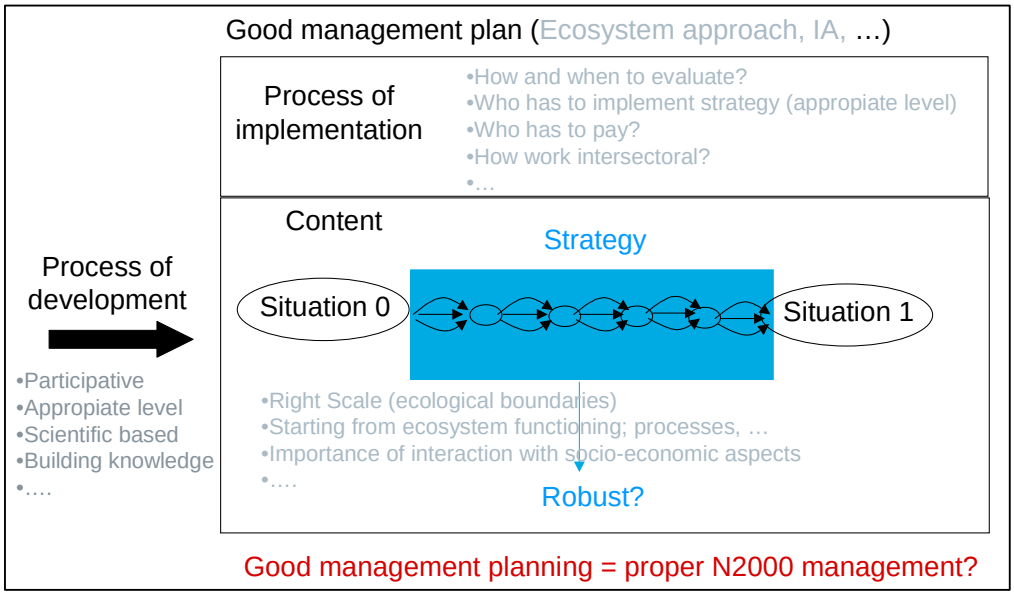

Figure 2: Schematic presentation of a good management plan

In order to assess the robustness of the management plan, the different steps of the process are confronted with the 12 principles of the Ecosystem Approach.

1. Process of development

The process of development contains important fundaments for the creation of a robust management plan.

1.1 Initiation

Starting a management plan and initiating the building of a network of cooperating administrations, officials and stakeholders begins with composing some general objectives for an area of ecological importance. These objectives can be placed in one or several scenarios, presenting the possible development. All relevant partners have to be involved in the development of these objectives in order to know what the aims and the prospects are for the site in which they are involved. They have to understand why these objectives are chosen and what the (scientific) basis is for the scenarios. Moreover, as explained later, all partners have to understand from the beginning their role in this process and why they are involved. Setting clear objectives from the beginning for the cooperation is crucial.

1.2 Inventory

The inventory phase is composed by the preliminary investigation on available indigenous, local and scientific knowledge on all sorts of socio-economic and ecological aspects. Moreover, one should gain insight in the legal framework relevant to the site and its surrounding area. As it is important to decentralize the management of nature sites to the lowest appropriate level, the understanding of the different levels of relevant administrations is another crucial aspect.
The inventory phase also consists of the preliminary research on the content aspect of the management plan. As new inventories and research takes time, one should start up collecting data early in the process when they are not available. For evaluation, managers also need a null-value, a description of the current situation. While this is part of the content aspect of a management plan, it is of major importance to start data collection and monitoring on this aspect. The success of the process of developing and implementing and recurrent evaluation of a management plan partially depends on a sound scientific basis and knowledge. As so, the start of the making of a management plan should prioritize the identification of gaps in our knowledge. Next to scientific knowledge, it is important to

have enough attention for capacity building. As some of the stakeholders will have a more limited knowledge of certain (environmental or socio-economic) aspects of a management plan, their education will increase the likelihood of a successful cooperation. While scientific insight and monitoring results will gradually increase the knowledge of the site and the impact of management measures, one has to consider in advance that nothing is certain on the longer term. Making stakeholders and the general public aware of this uncertainty in management will reduce the chance for lost involvement or cooperation in the future.

1.3 Participation

Appropriate participation refers to the necessity of an equitable involvement for all stakeholders and actors towards the building and the content of the management plan. During the definition of the spatial context of the plan, it will become clear that other actors and stakeholders will have to participate in the process of development. Here, a difficult balance arises between involving many stakeholders and building a plan for a large area or making the perimeter smaller and cooperate with less stakeholders. Therefore, the initiator of the management plan should have a clear view of all relevant sectors and stakeholders. At all times, flexibility is needed. Concerning the relevant actors, one needs to ensure that they all have the capacity to become effectively involved. By consulting them, it might become clear that extension of the perimeter is necessary, meaning that other stakeholders have to be consulted as well. Next to changes in spatial scale, the consultation might bring up the need for a change in temporal scale, i.e. phasing of the plan. The role of a stakeholder can change over time, where some will become more and others less important during the process of actual implementation. Stakeholders have to be aware of this and therefore, as part of adaptive management of the site, participation must be adaptive as well. The use for all sorts of participation, in both inventory and decision making processes, has to be in balance with the socio-economic context, existing societal mechanism or, if new mechanism are build, managers have to make sure they are compatible with existing societal conditions. This approach is most likely to create more citizen involvement and participation in the project.

2. Content

The main goal of the management plan is the conservation of ecosystem structure and functioning as such and with it maintaining the benefits from ecosystem services. The strategy to realize this goal will be set out in the content of the management plan. In that sense, the content is the most practical part of the management plan. In short, the content of a good management plan is the part which includes the actual analysis of the current situation (and its threats), the description of the favourable conservation status and the protocol for the action (on and off the terrain) to reach that status.

2.1 Current situation

A general description of the current situation must be established, providing sufficient information about the main threats and difficulties to manage the site. This description consists of a physical description on the one hand (including a description of the site limits, the local and regional climate, geology, geomorphology, soil and hydrology), and a description of the ecosystems state on the other. The analysis of the current situation of the protected area is extremely important, as the whole strategy to realize the management goals will be based on this part.
The actual state of the ecosystem is to be described by means of the appropriate indicators. In this part, the interrelationship among ecosystem composition, structure and function with respect to human interaction, needs and values (including cultural aspects), conservatory management of biodiversity, and environmental quality, integrity and vitality must become clear. Thus, besides a mere ecological description, also the socio-economic context (hunting, fishery, recreation, historical land use, …) must be taken up in this analysis. The knowledge of the responses of the ecosystem, in terms of changes in composition, structure and function, to both internally and externally induced threats (human use, disturbance, pollution, fire, alien species, disease, abnormal climatic variations such as drought and flood, …) should be assembled here. Traditional knowledge and practice should be used to enable better detection and comprehension of ecosystem change, and to develop appropriate adaptation measures. Usually, there is a need to understand and manage the ecosystem in an economic context. When valuating the ecosystem, appropriate practical economic valuation methodologies for ecosystem goods and services must be applied, and all values should be incorporated (direct, indirect and

intrinsic values). It is important that all stakeholders agree on the used methodology for the economic valuation, to avoid discussions afterwards.

2.2 State to reach

The state to reach is the counterpart of the current state described above. Here, the management objectives are laid out, and a vision of the future of the ecosystem is elaborated. Assumptions behind proposed management decisions should be based on the best available expertise, explicitly compared to scenarios of future change and including the knowledge and views of stakeholders. As the favourable conservation status is the result of the planned restoration and development of the current ecosystem, it will strongly depend on the general description of that current situation. This emphasizes the importance of a correct and profound analysis of the ecosystem in its present state.
When defining the goals for management, the appropriate balance between conservation and use of biological diversity is to be found. Sustainable use objectives are to be determined and defined and are to be used to guide policy, management, and planning, with sufficient stakeholder participation. The management of areas and landscapes has to be carried out in such a way that the delivery of ecosystem goods and services to meet human requirements, as well as conservation management and environmental quality are optimised. The final goals must be in relation with the societal choice.

2.3 Strategy

The bridge between the current and favourable status is formed by the management-strategy. Here, the protocol for the action (on and off the terrain) to reach the favourable status are worked out. Broadly speaking, the right strategy means using the right instruments and measures at the right time in the right sequence and the right combination. The strategy must therefore consist of the elimination of practices that are not sustainable and the development and application of appropriate mechanisms to improve the status of the ecosystem. These mechanisms must have the ability to be implemented over the long term, but at the same time, must provide the possibility to undergo evaluation and – if necessary - adaptation during the management process. The management of ecosystems must always be carried out within the limits of its functioning. As a lot of uncertainties arise concerning those limits, the precautionary approach should be applied. By formulating, reviewing and implementing regulatory framework, codes of good practice and other instruments, the use of ecosystems beyond their limits can be avoided.
At all time, the management has to take into account the possible effects of their actions on adjacent and downstream ecosystems. These effects are to be evaluated by all relevant stakeholders and technical experts to make sure adverse consequences are minimized. The assessment of impacts can be done through a scenario development in collaboration with relevant stakeholders. The knowledge gained by this exercise can give input to the set-up of (precedent) monitoring programs. Also Environmental Impact Assessments (EIA's) can play an important role in this aspect. Yet, natural resource managers must also recognise that natural and human-induced change and pressure are inevitable and take this into account in their management plans. When elaborating the strategy to be followed, it is important to keep in mind that management must take place at the right spatial and temporal scale. Similar to phasing in stakeholder participation, the management has to recognize the relevance of phasing of the implementation of measures and instruments. As some measures are not feasible or effective in the short term, long term approaches have to be implemented as well (see also EA principle 8, 9). As long term objectives are set, short- and mid-term objectives need attention as well. As much as the temporal scale, management should take spatial scale into account. The management of nature reserves should not stop at the boundaries of the sites and external stakeholders need involvement that is recognized by internal stakeholders and site managers. The choice for the spatial scale of the management plan is affected by the choice for management measures and their effects on adjacent sites and ecosystems. Hereby, one must realise that regional collaboration is necessary to deal with large scale changes.
The management of an ecosystem always takes place in an socio-economic context. Therefore, any ecosystem-management programme should reduce the market distortions that adversely affect biological diversity and align incentives to promote biodiversity conservation and sustainable use. Furthermore, costs and benefits in the given ecosystem must be internalised to the extent feasible with the objective of sharing costs and benefits in an equitable way. Sociological aspects, such as the respect for local traditions are not to be overlooked either.

3. Process of implementation

The last phase in the making of the management plan is the implementation phase. It consists of a description and planning of the actual execution of the plan. Here, the process-coordination is worked out. This means that all aspects concerning the distribution of tasks and responsabilities, the functions of managers and stakeholders and the finance questions are handled. Last but not least, a programme for monitoring and evaluation must be set up in order to adapt the management to new insights and knowledge.

Once strategies have been developed, the next step is to make sure they are correctly implemented and that their implementation is effective on the long term. An effective implementation cannot stand without cooperation between multidisciplinary professional and scientific expertise. From the very beginning of the implementation, it has to be clear who will be involved when and for what purposes. Working out scenario exercises with different groups of stakeholders can provide part of this necessary knowledge. It must be stressed that implementing long-term management requires stability of institutions, legal and policy frameworks, monitoring programs, and awareness-raising programs. In order to increase the responsibility, ownership, accountability and participation, management should be decentralized to the lowest appropriate level. To counteract the fragmentation of decision making and its related problems, the sharing of information and expertise and the nesting and linking of decisions are basic principles to respect. Furthermore, the relationships between all stakeholders are to be encouraged and supported. This takes time, so (financial) resources have to be secured to keep the process going. During the implementation process, possible trade-offs between short-term benefits and long-term goals must be recognised. A clear communication between the different management bodies and between the community and the overall management is indispensable. Only this way, overlap and actions taken at the wrong level can be avoided and intersectoral understanding is maximised.

The establishment and maintainance of feed-back mechanisms, in order to monitor the effects of management practices across ecosystems, forms a key-factor in the implementation process. An appropriate management plan should always be linked to the monitoring of population sizes of vulnerable and important species as well as to the detection of long-term, low frequency changes in ecosystem structure and functioning. Initial measures are evaluated and will be re-installed or replaced if it becomes clear they lack the desired results or if external effects occur outside the accepted range of impact. This can only become clear if a monitoring program is available. The detection of incapacities and external effects is crucial, as it creates the need for mitigation, alternative measures, or even compensations. The feedback of information to the appropriate persons and institutions must take place at regular intervals. In addition, it is important to incalculate the time lag between management actions and their outcomes. Landscapes can be restored on a short base but this does not mean that the whole ecosystem is restored. For example, after years of agricultural activities, soils need years to recover. Because the realisation of the final objectives can take many years, long term objectives must be accompagnied by mid-term objectives in order to be able to verify whether the management is going in the right direction.

APPENDIX 4 ASSESSMENT OF INSTRUMENTS

4.1 Definition of instruments

This table contains a list of the instruments that have been assess with a literature analysis and with the three surveys. Here are the definition which were given to the respondents of the surveys. There is also an indication concerning the Flemish or Walloon origin of the instrument.

AEM (Agro-Environmental Measures)	Fl + Wal
Beheersovereenkomsten	Mesures agri-environnementales
The agri-environmental premiums (MAE) are financial compensations that a farmer or forester can receive in exchange of an effort carried out in favor of the environment. The commitment is undertaken on voluntary basis, for a 5 years duration and goes beyond good practices.	
Voluntary	

Buying obligation	Fl + Wal
Koopplicht	Obligation d'achat
Obligation of the government to buy the property of an owner under certain conditions as stated in the Natuurdecreet and the Loi sur la Conservation de la Nature (LCN)	

Code of good practice	Fl + Wal
Code van de goede praktijk	
Code of good practice for nature management sets a framework for effective and efficient nature management with guidelines, goals and commitments for nature managers. Example : see Eco-conditionality in agriculture and forest management	
Regulatory + voluntary	

Cooperation with local government	Fl
Samenwerkingsovereenkomst (milieuconvenant)	Coopération avec le gouvernement (les autorités) local(es)
A voluntary cooperation between the Flemish Government and municipals or provinces concerning the sustainable development of the environment (broad sense). The local governments can receive a financial support for establishing local projects approved according the agreement. Total of 10 themes involved: 8th theme = Nature.	
Voluntary	

Declaration mechanisms	Fl + Wal
Meldingsplicht	Mécanismes de déclaration (de notification)
Administrative mechanism by which a person informs the authority of her will to carry out acts and work or to carry on an activity mentioned on specific lists or showing certain characteristics. Certain conditions can be applicable or imposed by the proper authority.	
Regulatory	

Eco-conditionality in agriculture and forest management	Fl + Wal
	Eco-conditionnalité en agriculture et gestion forestière
It acts of a whole of rules concerning the maintenance of the permanent pastures, the good agricultural and environmental conditions and the lawful requirements as regards management that any farmer, perceiving of the direct payments, is held to respect under penalty of seeing itself applying a reduction or a removal of these payments.	
Regulatory + voluntary	

Environmental Impacts Assessment (EIA)	Fl + Wal
Milieueffectrapportage	Evaluation appropriée des impacts sur l'environnement
Mechanism in virtue of which the projects showing a risk for the environment or one of its sectors must be the subject of an evaluation of the incidences (according to EU-directive 85/337/EEG). The projects for which the evaluation reveals that they deviate or are likely to deviate from a precise protection standard must be refused by the authority. Appropriate assessment has to be made for project within or in proximity of Natura2000-site.	
Regulatory	

Expropriation	Fl + Wal
Onteigening	Expropriation
Expropriation is a procedure initiated by the Administration by which the owner of a real estate, realizing allowance, is obliged to give up his good with the profit of the State. Expropriation is authorized only for the realization of a recognized operation of public utility.	
Regulatory	

Forester management plan	Fl + Wal
Bosbeheersplan	Plan d'aménagement forestier
Wallonia: The forest installation, written by the services of the Division of Nature and Forests, managers of the communal forests subjected to the DNF, is the document which governs, directs and organizes the various functions of the forests. It is composed of 3 principal parts: an inventory of the resource and various ecological conditions. On the basis of this report a discussion of the possible options and main trends which will be given to the forest. Lastly, on the basis of these choice, a planning of work as well as expenditure and receipts on ten years. *Flanders*: The Forest Management Plan is based on a forest inventory and indicates the future management of the forest. It depicts the ecological, economical, social, educative, environmental and scientific objectives to reach. It gives an overview of all the management actions necessary to realize those objectives. The Forest Management Plan is made for a time period of 20 years. All management actions described in an approved management plan need no further approval from the Bosbeheer-administration. Every public forest and every private forest of > 5 ha situated in VEN-area (Vlaams Ecologisch Netwerk) need an extended forest management plan (uitgebreid bosbeheersplan). This plan is subducted to the criteria for sustainable forestry, and thus involves an important ecological aspect.	
Regulatory	

Land arrangement	Fl
Landinrichting	<<Aménagement de la territoire>>
"Landinrichting" is established and carried out by the VLM (Vlaamse Landmaatschappij – Flemish Landcorporation) for the arrangement of the open space. Projects of Landinrichting want to arrange the terrains in a way that all aspects of the area (environment, nature, agriculture, recreation, culture, …) are able to fully develop. The arrangement aims to realise the destinations of the area as depicted by spatial policy (ruimtelijke ordening). Landinrichting tries to improve the quality and balance of the rural area by realising integrated solutions and by calibrating the programs of different sectors to improve the efficiency of the arrangement. The objectives of rural, spatial and environmental policy are taken into account. Landinrichting-projects are subducted to a specific procedure which envolves a public enquiry.	
Regulatory + voluntary	

Land consolidation	Fl (+ Wal)
Ruilverkaveling	Remembrement rural
The regrouping of the arable lands belonging to one or more farmers within a depicted area. The goal is to create adjacent, regular en easily accessible parcels which are situated close to the farm. This way, a profitable and sustainable agricultural exploitation is established. The objectives of rural, spatial, environmental and nature policy are integrated in the process of land regrouping to the maximum extent. In Flanders carried out by the VLM (Vlaamse Landmaatschappij, Flemish Landcorporation). Land regrouping is subducted to a specific procedure which involves a public enquiry. This instrument is not yet used in Wallonia for nature conservation goals.	
Regulatory + voluntary	

Land donation / heritage	Fl + Wal
Landdonatie/erving	Transfert de terrains par donation ou succession
The fact of voluntarily transferring property rights/ receiving the property rights as being the inheritant of the late owner	
Voluntary	

Land purchase	Fl + Wal
Landaankoop	Achat de terrains
Buying land	
Regulatory + voluntary	

Land renting	Fl + Wal
Huren van land	Location de terrains
Voluntary	

Land use zoning plans	Fl + Wal
Ruimtelijke uitvoeringsplannen	Plans d'affectation du territoire (plans de secteur ; plans communaux d'aménagement)
Document carrying out a zoning of the territory and assigning to each zone a certain use	

of the land, a certain destination. They have regulatory value.
Regulatory

Management and "protection" agreement	Fl + Wal
Natuurprojectovereenkomst / Management overeenkomst	Contrats de gestion et contrats de protection
A contract concluded between the owners and occupants from a site and the administrative authority. It includes the description of work, technical management measures and protection measures of which the owners and occupants engage to implement. A financial counterpart can be considered. *Flanders*: Natuurprojectovereenkomst (Nature project agreement) Within the area of VEN (Vlaams Ecologish Netwerk – Flemish Ecological Network), natuurverwevings'-areas, the green and forest areas and the areas with similar destinations in the spatial destination plans and within the special protected zones, a nature project agreement can be set up between the Flemish government and private owners or local governments, whereby compensations are reached out for local projects carrying out a "natuurrichtplan", as far as there are no other subsidiary systems for that type of projects. Up to 90 % of the costs can be compensated in case of private ownership (50 % of costs for local governments).	
Voluntary	

Nature arrangement	Fl
Natuurinrichting	<<Arrangement/ aménagement de la nature>>
"Natuurinrichting" is an instrument which is established and carried out by the VLM (Vlaamse Landmaatschappij – Flemish Landcorporation) for the arrangment of areas in function of nature. By means of active interference, Natuurinrichting wants to create better circumstances for the development of nature in ares which were depicted therefore. Natuurinrichting-projects are subducted to a specific procedure which envolves a public enquiry.	
Regulatory + voluntary	

Permit for intervention in environment	Fl + Wal
Vergunning	Permis environnementaux
Administrative authorizations which any public or private person must obtain if he or she wants to carry out acts and work. Permits relate to a prohibition of certain (aspects of) activities.	
Regulatory	

Pre emption right	Fl + Wal
Recht van voorkoop	Droit de préemption
It is the right legally recognized to a person to be substituted for any other purchaser in the event of sale of the good.	
Regulatory	

Prevention of environmental damages	Fl + Wal
Zorgplicht	Prévention des dommages environnementaux
dir. 2004/35/EC	
Regulatory	

Protection regime	Fl + Wal
Bescherming bij wet	Régime de protection
Specific mechanism for the Natura 2000 sites subjecting to prohibition, authorization or notification activities or work likely to attack the integrity of the sites. Traditional nature conservation approach.	
Regulatory	

Protected zone	Fl + Wal
Beschermde habitat	Zones protégées
Sites that are protected through a protection regime like Natura 2000, natural reserve, Flemish Ecological Network, …	
Regulatory	

Regional Landscapes	Fl + Wal
Regionaal Landschap	Parc Naturel
A regional landscape is a sustainable cooperation entity, established on proposition of a province or at least 3 neighbouring municipals. Its aim is to promote – by means of discussion and cooperation with all involved stakeholders – the regional character, nature recreation and nature education, recreatif co-use of the area, nature conservation and nature management and the restoration, establishment and development of small landscape units. A regional landscape has to be approved by the Flemish Government according to the conditions applied in the Natuurdecreet. Enables delivery of firm-planners for AES, aid with elaboration of cooperation agreement projects, support and realisation of nature projects, the restoration, establishment and development of small landscape units.	
Voluntary	

Rivers agreements	Wal
	Contrats de rivières
"The « Contrats de rivière » are technical and financial agreements covering a whole of catchment area of one or several rivers. Water cleaning, fight against flooding, resource management and rivers revitalization are studied ; Goals are fixed and actions proposed. Each River Agreement is signed between involved local communities (investigator) and partners : the State, the Region, the Department, the Water Agency (depending on the State) and users (industrialists, farmers, fishers, nature conservation associations,…).	
Regulatory	

Species and biotopes direct protection	Fl + Wal
Bescherming van soorten en biotopen (uit Bijlage 4)	Protection directe des espèces et des biotopes
Protection regime in favor of a specified list of species (via Art. 12 of Habitat Directive). Applicable on all the territory, it can aim at the protection of the species in itself, its quietude, its habitat and in addition includes rules relating to the trade and transport.	
Regulatory	

Species protection plan	Fl + Wal
Soortenbeschermingsplan	<<Protection directe des espèces et des

	biotopes>>
Protection regime in favor of a specified species..	
Regulatory	

Voluntary private and public natural reserve / forest reserve	Fl + Wal
Natuurreservaat / Bosreservaat	Réserves naturelles domaniales, réserves naturelles privées volontaires et réserves forestières
Protected zones created with the request or with the agreement of the owner that aim at preserving indigenous species and habitats which are present in the zone. A protection and management regime are associated to these statutes.	
Regulatory + voluntary	

Water shed surface water protection measures	Fl + Wal
Integraal waterbeleid	Measures de protection des eaux de surface
The plan of hydrographic management of district is the tool for management integrated planning of the water masses, it comprises the following elements: • a general description of the characteristics of the district; • a summary of the pressures and incidences important of the human activity on the state of surface and underground water; • the identification and the cartographic representation of the protected zones; • a map of the inspection networks; • a list of the environmental objectives; • a summary of the economic analysis of the use of water; • a summary of the programs of measurement; • a register of the other programs and more detailed management plans relating to the under-basins; • a summary of the measurements taken for the information and the consultation of the public, the results of these measurements and the modifications made to the plans; • the list of the proper authorities; • the contact points and procedures to obtain the reference documents and information	

Deduction of successions taxes on natural assets	Fl + Wal
Aftrekking / vermindering successierechten	Déduction des droits de succession

Fiscal and economic incentives to sustainable forest management	Fl + Wal
Economische en fiscale stimulans voor duurzame bosbouw	Incitations fiscals et économiques pour la gestion forestière durable

Indemnities and compensation for land right restrictions	Fl + Wal
Schedevergoeding en compensatie voor beperkingen en verboden	Indemnités et compensations pour des restrictions de droits

Labels for biodiversity-friendly products/ certification	Fl + Wal

Labelling en certificering van natuurvriendelijke producten	Certification et labels pour les productions respectueuses de la biodiversité
Labeling and certification, aims to create a link between the demand and supply side of the market and establish an advantage for those who preserve biodiversity by labeling their products as such	

Life Nature	Fl + Wal
Life Nature	Life Nature
LIFE is the EU's financial instrument supporting environmental and nature conservation projects throughout the EU, as well as in some candidate, acceding and neighbouring countries. Since 1992, LIFE has co-financed some 2,750 projects, contributing approximately €1.35 billion to the protection of the environment (from http://ec.europa.eu/environment/life/)	
Voluntary	

Organic farming subsidies	Fl + Wal
Subsidies bio-landbouw	Subsides pour l'agriculture biologique

Subsidies for protected areas management	Fl + Wal
Subsidies voor beheer van beschermde gebieden	Subsides pour la gestion de sites protégés

Suppression of perverse incentives	Fl + Wal
for ex. urbanization fiscality	

Information campaign	Fl + Wal
Informatiecampagne	Campagnes d'information

Education program	Fl + Wal
Opleiding/educatie	Programmes d'éducation

Participation	Fl + Wal
Participatie	Participation
public enquiries and consultations; concertation The whole of the mechanisms which make it possible to the private individuals to influence, in a direct way but without decisional capacity, on the adoption, content and implementation of the unilateral administrative decisions.	

4.2 Typology of instruments

This typology was build and used in order to focus on some characteristics of the instruments that justify their use in this or this strategy.

- Regulatory instruments

Regulatory instruments are the instruments which impose restriction to any person who carries out an activity or a project aimed by the instrument.

  - Interdiction

Interdiction is the most constraining instrument. For the private individual, that implies an absolute prohibition to pose an act. It can be coupled with a mechanism of exemption which by principle would be granted only exceptionally.

Exemples:
Species protection regime
N2000 protection regime

  - Authorization

The mechanism of authorization is a control mechanism which makes it possible the authority to appreciate the project appropriateness, to authorize it, refuse it or to match it conditions. The authority has a certain “marge de manoeuvre” to make its decision. For the private individual that implies to carry out administrative procedures, the preparation of a file without having the certainty that the project could be carried out, delay, and costs to carry out the environmental impacts assessment.

The environmental impacts assessment is a mechanism in virtue of which the plans or the projects which show a risk for the environment or one of its particular sectors must be subjected to an evaluation of the incidences (according to the European directive 85/337/EEG). Within this evaluation, a specific part treats impacts on Natura 2000. In case of proven impact on the site or in case of doubt, the authority can authorize the project only within a strict procedure of exemption.

Exemples:
Urbanism or environmental permit
N2000 protection regime
Appropriate impact assessment

  - Notification

The notification is a mechanism of simple declaration to the authority which one will carry out an activity. The objective is to inform the authority so that it can intervene if necessary. For the private individual that does not imply great constraints.

Exemples:
Urbanism or environmental declaration
N2000 protection regime

- Voluntary instruments

One classifies here the instruments including protection or management measures for which the private individuals have the choice to engage or not. Without their willingness, the instruments will be without effects for them
=> with or without financial aids

- Negotiated procedure

Engagement can take the traditional form of the contract. In this case, the contents of engagement are negotiated between the various parts, the responsible authority and the private individuals. The measures to be taken are adapted according to the desideratas of the parts.

Exemples:
Management agreement
Rivers agreement

- Adhesion

Engagement can take the form of an adhesion contract. On this case, the contents are not negotiated. It is about specifications written by the administration to which the private individual chooses to subscribe or not.

Exemples:
Agri-environmental, sylvo-environmental Schemes

- Land property instruments

These are mechanisms that make it possible to transfer the property from a real estate to a public or private person so that this one implement the protection measures and adequate managements. There exist land instruments where the starting owner gives his assent to yield his property, of other where the transfer takes place in spite of its opposition.

- Dispossession

On this case, the owner is purely and simply dispossessed. He receives a financial counterpart, either the selling price, or an allowance calculated on the value of the good plus the expenses generated by this dispossession.

Exemples:
Voluntary : Buying
Non voluntary : expropriation

- Exchange

In this case, one carries out an exchange of grounds, either between two parts or via a procedure of refitting of the more total territory.

Exemples:
Voluntary : Exchange
Non voluntary : Land consolidation

- Economic instruments

One gathers here the mechanisms related to tax premiums or impositions and which allow an environmental appreciation whereas they are at the base completely independent. An environmental objective or a condition is added on an existing tool.

- Eco-conditionnality

Any farmer perceiving direct payments is held to observe agricultural and environmental good conditions (including the maintenance of the grounds devoted to the permanent pastures) as well as lawful requirements as regards management [regulation (EC) n° 1782/2003, title II, chapter 1].

- Tax

They are tax incentives (exemption, reduction) which can be granted linked with lawful protection or management measurements, engagement in this direction or to encourage the private individuals to change their behaviours.

- Participation

One gathers here the tools which make it possible for the public to take share with the evolutions and the decisions relative to their environment.

Exemples:
Education
Information

4.3 Assessment of the instruments

Each team made an assessment based on some criteria's defined in linked with the ecosystem approach.

4.3.1 Legal

Assessment criteria's:

Equality and non-discrimination

The principle of equality and nondiscrimination is registered in articles 10 and 11 of the Belgian Constitution. « Les Belges sont égaux devant la loi (…) ». « La jouissance des droits et libertés reconnus aux Belges doit être assurée sans discrimination »

It is also devoted by article 14 of the European Convention of the humans right: " The enjoyment of the rights and freedoms set forth in this Convention shall be secured without discrimination on any ground such as sex, race, colour, language, religion, political or other opinion, national or social origin, association with a national minority, property, birth or other status."

If one were to express this principle in a sentence, one could affirm "with identical situation, identical rules". The rule of equality will be preserved if the same treatment is ensured in situations which can be regarded as identical, i.e. arranged in the same legal category. The immediate corollary is that if situations are fundamentally different, the law must treat them in a distinct way.

If the principle prohibits thus discriminations, it authorizes the distinctions with respect to certain rules[1] :
- an objective criterion of differentiation;
- the criterion must be regular, not constitute by itself a violation of the rights;
- it must be relevant, i.e. to be in relation to the public interest that the law which establishes the distinction intends to preserve;
- finally the distinction will be licit only if it has a reasonable width, it must be translated in measurements linked to the differences of which it aims to hold account.

Here are thus four key tests to control the respect of the principle of equality: objectivity, regularity, relevance and proportionality of the distinction between two legal categories.

[1] Voyez, F. DELPEREE, Le droit constitutionnel de la Belgique, Bruxelles, Bruylant, 2000, p. 202 et svt.

Within the principles of the ecosystem approach, the first principle states that « The objectives of management of land, water and living resources are a matter of societal choice. » It stresses a management of the ecosystems which must be done « in a fair and equitable way ».

One of the implementation guidelines states that « Ensure that all stakeholders have an equitable capacity to be effectively involved, including through ensuring equitable access to information, ability to participate in the processes, etc" (1.4)

From a legal point of view, the analysis of the instruments in bond with the principle of equality will have to be interested in their spatial, personal and temporal fields of application, and to evaluate if the delimitation of these fields of application complies with the rules of objectivity, regularity, relevance and proportionality.

Proportionality and property right

The deprivation of the property right - recognized in international law and by our Constitution (Article 16) as a basic right - can be imposed to an owner only within the respect of the procedures of expropriation, and the payment of a "equitable and preliminary allowance" (Article 16 of the Constitution). On the other hand, it is not the same for the restrictions brought to this right, which should be the subject of a compensation only when the legislator envisages it.[2] Recently, this "principle of not-compensation for the legal constraints of public utility" seems however called into question by the authors and the jurisprudence, which, less categorical, tend to prefer the principle of the "right balance" (proportionality) between the requirements of the general interest (nature conservancy) and the property right.

Thus in his review article of the conference on "the property right and Natura 2000" organized by the legal observatory Natura 2000[3], Michel Pâques releases two principal ways of articulating property right and nature conservation. The first consists of the establishment of a hierarchy between the rights and interests involved. The second, in the absence of this hierarchy consists for the legislator or the judge to manage the proportionality.

According to him, the implementation of the principle of proportionality is translated in four manners: the choice of the means of action, functional subsidiarity, compensations and procedural guarantees.

The first element is thus to have a sufficiently wide panel of instruments which allow the limitation of the property right to protect the environment. The application of these instruments will lead to more or less large attacks to the property right.

To carry out the choice between these instruments, it seems that one goes towards a kind of subsidiarity which could be connected with the functional subsidiarity which one will speak again later. In this direction one will privilege initially the tools consensual, contractual, those which attack the least the property before considering the instruments more restrictive than one will hold for the more "complex" situations.

Then the manner of compensating. It was said, the rule wants that expropriation is done with an equitable and preliminary allowance. Acting of the compensations for the limitations with the property right which do not constitute an expropriation, the report of the conference teaches us that the tendency is with the compensation. It can be done in equity, for the loss of pleasure, loss in value, loss of profit or compensation for the complete damage. The rule remains always the balance of the interests involved and a room of manoeuvre (???) is generally maintained for the proper authority.

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[2]. Sur ces questions, voyez M. PÂQUES, « Propriété et zonage écologique, compensation et indemnisation », *Le zonage écologique*, Bruxelles, Bruylant, 2002, p. 239 et s.

[3] M. PÂQUES, « Le droit de propriété et Natura 2000. Rapport de synthèse », Le Droit de propriété et Natura 2000, colloque de Volos des 19 et 20 mars 2004, Observatoire juridique Natura 2000, Bruxelles, Bruylant, 2005.

Lastly, about the procedural guarantees, we stress the rules of impacts assessment and the measures of participation which allow the expression of the interests in question.

Within the principles of the ecosystem approach, the principle 10 states that « The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity."

One finds thus there the fundamental concept of "balance" between the general interest to protect biodiversity and the interest more private of using the ecosystems.

The implementation guidelines insist on two important approaches which are linked to the respect of the property right: the participation and the economic instruments.

- Develop policy, legal, institutional and economic measures that enable the appropriate balance and integration of conservation and use of ecosystems components to be determined. (10.2)
- Promote participatory integrated planning, ensuring that the full range of possible values and use options are considered and evaluated. (10.3)

According to us, the evaluation of the respect of the property right must thus be carried out in close relationship to the evaluation of the participative procedure just as in combination with the evaluation of the economic instruments which can accompany the other instruments.

We will focus here our analysis on the application of the proportionality principle. From a legal point of view, one will identify how the instrument allows carrying out a balance between the public interest and the private interest, i.e. if the degree of constraint is adapted to the aim in view.

Subsidiarity

The principle of subsidiarity organizes the relationship between the public sector and the citizens and between the authorities themselves. [4] One can release two types of subsidiarity.

Subsidiarity is known as territorial when it leads a public authority to intervene only in second order compared to another public authority whose competences are more restricted in territory than them his. [5]

The idea is that the higher authority should not assume the tasks of a lower authority which is able to better achieve them as well if not better. [6] The principle is proclaimed in article 4, §3, of the European Charter of local self government: " unless the size or nature of a task is such that it requires to be treated within a larger territorial area or there are overriding considerations of efficiency or economy, it should generally be entrusted to the most local level of government.".

It is known as functional when it leads the public authority not to intervene, in a determined matter, that in second order compared to a private person

In this direction it would constitute a principle of regulation governing the relationship between the public authority and the private people as for the assumption of responsibility of a given activity. [7] It is mainly in the economic sphere of activities and the public services that the principle of functional subsidiarity finds its applications.

[4] R. ZACCARIA, Principe de subsidiarité et environnement, in Rev eur envir 3/2000 p.255-280
[5] P. NIHOUL et B. LOMBAERT, « Belgique », in Droit administratif et subsidiarité, sous la direction de R. ANDERSEN et D. DEOM, XVIIes journées juridiques Jean Dabin, Bruxelles, Bruylant, 2000, pp 43-80.
[6] R. ZACCARIA, op. cit.
[7] P. NIHOUL et B. LOMBAERT, op. cit.

However, according to Chantal Million-Delsol, « la subsidiarité consiste à conférer davantage d'autorité et de capacité de décision à davantage de groupes issus de la société civile, agissant de manière autonome, donc libres par rapport à l'appareil étatique. » The principle of subsidiarity thus brings to turn to new actors not only institutional like the cities or the regions but also of the civil company. It brings back the citizen to the foreground, but also associations, and companies. [8]

Following M. Pâques who uses the concept of functional subsidiarity in environmental matter[9], one could, with regard to the implementation of an ecological network, study the instruments looking to the proper authority and also to his public or private characteristics.

The ecosystem approach state at principle 2 **:** Management should be decentralized to the lowest appropriate level.

Decentralized systems may lead to greater efficiency, effectiveness and equity. Management should involve all stakeholders and balance local interests with the wider public interest. The closer management is to the ecosystem, the greater the responsibility, ownership, accountability, participation, and use of local knowledge.

The implementation guidelines give different orientations :

2.1 The multiple communities of interest should be identified, and decisions about particular aspects of management assigned to the body that represents the most appropriate community of interest. If necessary, management functions/decisions should be subdivided. For example, strategic decisions might be taken by central Government, operational decisions by a local Government or local management agency, and decisions about allocation of benefits between members of a community by the community itself.

2.3 Good governance arrangements are essential, particularly:
- clear accountabilities
- accountabilities of the necessary authorities
- accountabilities of competent bodies or persons

Note that this is not a complete enough list, and there seems no good reason to particularly identify these.

2.4 Achieving an appropriate level of decentralization requires taking decisions at a higher level to create an enabling and supportive environment, as well as a commitment to devolve those decision-making responsibilities that are currently situated at too high a level.

2.5 In choosing the appropriate level of decentralization, the following are relevant factors that should be taken into account in choosing the appropriate body. .
- whether the body represents the appropriate community of interest
- whether the body has a commitment to the intent of the function
- whether the body has the necessary capacity for management
- efficiency (e.g. by moving the function to a higher level you may have sufficient work to allow maintenance of the necessary level of expertise to do the function efficiently and effectively).
- whether the body has other functions which represent a conflict of interest

Integration

Registered in several international, Community or national texts, the principle of integration constitutes the principal legal basis of the obligation of the States to hold account of biodiversity in their space planning.

[8] R. ZACCARIA, op. cit.
[9] M. PÂQUES, « Le droit de propriété et Natura 2000. Rapport de synthèse », op. cit.

The declaration of Stockolm precise in the 13th principle that "*In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population*". [10]

In Community legislation, it is new article 6 of the treaty that gives to him the character of general principle of Community legislation by prescribing that "*Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development.*"[11]

In national law, the legislation relating to the environmental impact assessment is generally presented like the mechanism of integration par excellence. And the Walloon decree of 27 May 2004 relating to the Book 1st of the Code of the Environment lays out in its D.2 article that "*the requirements {of safeguard and environmental protection} are integrated in the definition and the implementation of the other policies of the area*".

Concretely, the obligation of integration aims at the whole of the policies, strategies, actions and plans carried out by an authority. The regional legislations codifying the right of the environment (Flemish and Walloon Regions) stipulate indeed that the principle of integration aims the "*policies of the Region*"[12].

This integration must be carried out *at each stage of the « development process »* (Principle 4 of the declaration of Rio) or the "*national decision-making*" (art.10. a. of the CBD). The Community legislation is more precise: integration must have place on the level of the definition and the implementation of the Community policies and activities (Article 6 EC). Lastly, integration must be respected by all the competent authorities with one of the above mentioned stages of the decision-making process. No level of power - executive, legislative, legal - escapes from the obligation to integrate the environment, as well on the horizontal level as vertical.

With regard to the implementation of the principle, the authors agree to deduce from the principle of integration the obligation for the States to put all the means necessary so that the requirements of environmental protection are taken into account in an effective way through sectoral policies.

In practice, one can affirm that the principle of integration contains two obligations of procedural nature at least:

- *to identify and assess the environmental impacts of the decisions concerned and to evaluate the extent to which they can compromise the achievement of the environmental objectives*. This double evaluation is done mainly by mechanisms of impact assessment of the policies, plans, programs and projects. It results from this a corollary obligation from motivation of the decisions taken with the glance of the incidences, in the body of the decision or the administrative file which accompanies it[13] ;

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[10] Le principe 4 énonce en outre que « *Pour parvenir à un développement durable, la protection de l'environnement doit faire partie intégrante du processus de développement et ne peut être considérée isolément* ». L'article 10, a, de la CDB dispose que « *Chaque Partie (…), dans la mesure du possible et selon qu'il conviendra : a) intègre les considérations relatives à la conservation et à l'utilisation durable des ressources biologiques dans le processus décisionnel national* » (voy. aussi l'art. 6, b).

[11] Sur le plan jurisprudentiel, la Cour de justice s'est fondée, implicitement ou explicitement, sur le principe d'intégration, pour reconnaître la possibilité pour les institutions communautaires d'adopter des mesures ayant partiellement trait à l'environnement sur une disposition autre que l'article 175 CE. Voy. notamment CJCE, 29 mars 1990, aff. C-62/88, *Grèce c. Conseil*; 24 novembre 1993, aff. C-405/92, *Mondiet* (pêche maritime); 19 septembre 2002, aff. C-366/00, *Huber* (mesures agri-environnementales).

[12] Art. D.2, al. 3, du Livre Ier du Code de l'environnement ; art. 1.2.1, § 3, du décret du 5 avril 1995 contenant des dispositions générales concernant la politique de l'environnement.

[13] Dans le sens d'une obligation de motivation, de SADELEER, 1999, p. 283.

- to make so that, formally, *the environmental and socio-economic interests* are duly and equitably represented in the decision-making process specific to the sectoral policy concerned[14]. Even if a broad capacity of appreciation is left in the States to adapt this process, integration seems to necessarily have to take place:
    - on the one hand, by the establishment of *procedures of public participation* and/or *consultation of expert authorities as regards environment*;
    - on the other hand, by the adoption of mechanisms of *articulation* and *coordination of the decisions* at the same time vertical - i.e. between all the levels of capacity concerned - and horizontal - between the qualified administrations for each sector concerned, including the environmental protection. These mechanisms are very diverse. One distinguishes mainly:
        - mechanisms of *sectoral and intersector planning* (being used as reference common to the various administrations);
        - mechanisms of *articulation between decisions* (hierarchy of the standards, formal obligation of taking into account of the other decisions, etc.) ;
        - procedural mechanisms of *setting in conformity of the contradictory decisions*;
        - mechanisms of impact assessment;
        - *institutional mechanisms of coordination, co-operation and consultation;*
        - the *fusion of the instruments* [15].

The integration principle thus presents two aspects:
- a scientific integration, namely an integration of the environmental impacts about the ground - and the other more procedural, an integration of the decisions and a coordination of the proper authorities to counterbalance the principle of subsidiarity and to make sure as well as the decision is taken by the most proper authority and most capable to take it but also that this decision will not be in contradiction with the decisions taken by other authorities.

The principles of the ecosystem approach refer to the two aspects.
On the one hand, principle 3 states that "Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems."

And a guideline mentions that "3.3 Environmental impact assessment (EIAs), including strategic environmental assessments (SEAs) should be carried out for developments that may have substantial environmental impacts taking into account all the components of biological diversity. These assessments should adequately consider the potential offsite impacts. The results of these assessments, which can also include social impact assessment, should subsequently acted upon. When identifying existing and potential risks or threats to ecosystem, different scales need to be considered."

On the other hand, principle 12 affirms that "The ecosystem approach should involve all relevant sectors of society and scientific disciplines."

"12.1 The integrated management of land, water and living resources requires increased communication and cooperation, (i) between sectors, (ii) at various levels of Government (national, provincial, local), and (iii) among Governments, civil society and private sector stakeholders. Increased communication among international and regional organizations also."

Another guidelines states that
"2.2 The potential adverse effects of fragmented decision-making and management responsibilities should be compensated for by:

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[14] En ce sens, voy. l'article 13.2 du Projet de Convention de l'IUCN, qui stipule que "*the Parties shall ensure that environmental conservation is treated as an integral part of the planning and implementing activities at all stages and at all levels, giving full and <u>equal</u> consideration to environmental, economic, social and cultural factors*" (nous soulignons). Voy. aussi, en droit communautaire, WASMEIER, 2001, p. 162 ; ALVES, 2003, p. 139.

[15] Voy., en matière de zone écologique, l'inventaire des mécanismes d'articulation en droit wallon établi in JADOT, 2002.

- ensuring that decisions are appropriately nested and linked
- sharing information and expertise
- ensuring good communication between the different management bodies
- presentation of the overall combination of decisions/management to the community in an understandable and consolidated form so they can effectively interact with the overall system.
- supportive relationships between the levels."

From a legal point of view, we will analyze if the instruments make it possible to hold account of the other compartments of the environment, if they are linked with a mechanism of impact assessment. In addition we will consider if the instruments allow an effective coordination between the various levels of power.

Flexibility

Ecosystem processes and functions are complex and variable. Their level of uncertainty is increased by the interaction with social constructs, which need to be better understood. Therefore, ecosystem management must involve a learning process, which helps to adapt methodologies and practices to the ways in which these systems are being managed and monitored. Implementation programmes should be designed to adjust to the unexpected, rather than to act on the basis of a belief in certainties. Ecosystem management needs to recognise the diversity of social and cultural factors affecting natural-resource use. Similarly, there is a need for flexibility in policy-making and implementation. Long-term, inflexible decisions are likely to be inadequate or even destructive. Ecosystem management should be envisaged as a long-term experiment that builds on its results as it progresses. This "learning-by-doing" will also serve as an important source of information to gain knowledge of how best to monitor the results of management and evaluate whether established goals are being attained. In this respect, it would be desirable to establish or strengthen capacities of Parties for monitoring.

This type of management is called an adaptive management. It is linked to two main principles of the ecosystem approach about the change and the variations:
- Principle 9: Management must recognize that change is inevitable
- Principle 8: Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.

The guidelines linked to these principles are the followed:
9.1 Adaptive management is needed to respond to changing social and ecological conditions, and to allow management plans and actions to evolve in light of experience.
9.2 Natural resource managers must recognise that natural and human-induced change is inevitable and take this into account in their management plans.
9.3 Adaptive management should be encouraged when there is a risk degradation or loss of habitats, as it can facilitate taking early actions in response to change.
9.4 Monitoring systems, both socio-economic and ecological, are an integral part of adaptive management, and should not be developed in isolation from the goals and objectives of management activities.
9.5 Adaptive management must identify and take account of risks and uncertainties.
8.1 Adaptive management processes should include the development of long-term visions, plans and goals that address inter-generational equity, while taking into account immediate and critical needs (e.g., hunger, poverty, shelter).
8.2 Adaptive management should take into account trade-offs between short-term benefits and long-term goals in decision-making processes.
8.3 Adaptive management should take into account the lag between management actions and their outcomes.
8.4 Monitoring systems should be designed to accommodate the time scale for change in the ecosystem variables selected for monitoring.

From a legal point of view, the evaluation of the adaptivity of an instrument is connected with the evaluation of its legal flexibility, i.e. up to what point it is easy to modify the instrument in function of the temporal, space changes, of the evolution of the ecosystem... One will thus analyze for this principle the heaviness or the simplicity of the procedure of revision of the studied instruments.

Assessment:

Mesures agri environnementales et autres mesures incitatives

Les primes agri-environnementales (MAE) ou sylvo-environnementales sont des compensations financières qu'un exploitant agricole ou forestier peut recevoir en échange d'un effort réalisé en faveur de l'environnement. L'engagement est pris sur base volontaire, pour une durée de 5 ou 1 ans et va au-delà des bonnes pratiques.

L'engagement d'un producteur ou d'un forestier dans le régime MAE/MSE lui impose d'appliquer une ou plusieurs méthodes ou sous-méthodes définies dans un cahier des charges qu'il devra respecter.

L'instrument octroie donc un avantage financier aux agriculteurs ou propriétaires forestiers et qui s'engagent volontairement à appliquer des mesures favorables à la biodiversité. L'exclusion des propriétaires non agriculteurs ou forestiers de ce mécanisme pose cependant questions. Les particuliers non professionnels seront sans doute moins atteints dans leur patrimoine que les professionnels de l'agriculture ou de la forêt mais il n'est pas certain qu'il soit conforme au principe d'égalité de ne pas leur octroyer un avantage similaire pour l'application des mêmes mesures.

Les cahiers des charges contiennent des mesures définies pour atteindre les objectifs de conservation généraux en zones agricole ou forestière. On peut juger les restrictions proportionnées dans la mesure où il s'agit d'engagements volontaires indemnisés via un calcul précis des coûts et pertes de revenus engendrés par les mesures.

L'instrument confie la responsabilité de la gestion aux particuliers, sous le contrôle de la Région wallonne.

Le particulier dispose des moyens financiers nécessaires au bon fonctionnement de la gestion. Il peut dans certaines hypothèses recevoir l'assistance d'un conseiller pour optimaliser les mesures.

Les mesures incitatives font partie des instruments qui transposent l'article 6.1 de la directive Habitats. Celle-ci prévoit en effet que les Etats membres peuvent prendre des mesures contractuelles pour répondre aux exigences écologiques des espèces et des habitats. La Cour de justice a jugé que, dans les ZPS, des mesures présentant un caractère volontaire et purement incitatif (en l'espèce justement des MAE) ne suffisaient pas à établir le régime de protection requis pour ce type de zone[16]. Ceci signifie donc que les mesures préventives nécessaires à la protection du site ne pourraient être prises de façon uniquement contractuelle, à tout le moins dans les ZPS. Cette jurisprudence nous paraît valable aussi dans les ZSC.

Conditionnalité

Tout agriculteur percevant des paiements directs est tenu de respecter de bonnes conditions agricoles et environnementales (y compris le maintien des terres consacrées aux pâturages permanents) ainsi que des exigences réglementaires en matière de gestion [règlement (CE) n° 1782/2003, titre II, chapitre 1].

[16] C.J.C.E., 25 novembre 1999, aff. C-96/98, Commission c/ République française (« Marais poitevin », points 26-27) (cité dans Avis du Conseil d'Etat, *Doc. Parl. W.*, session 2000-2001, 250, n°1, page 116).

La conditionnalité définie en Région wallonne se subdivise selon les 4 domaines suivants :
1. Bonnes conditions agricoles et environnementales (y compris le maintien des terres consacrées aux pâturages permanents) (5 thèmes)
2. Environnement, incluant des règles relatives à Natura 2000 (5 actes)
3. Santé publique, santé des animaux et des végétaux (9 actes)
4. Bien-être des animaux (3 actes)

Les règles de la conditionnalité permettent d'assurer une protection minimale de l'environnement. Compte tenu de leur corrélation avec l'ensemble des primes octroyées aux agriculteurs, ces règles apparaissent proportionnées, elles sont une contrepartie de bonne gestion et de services rendus par l'agriculture en échange des paiements.

Mais le mécanisme de la conditionnalité ne trouve à s'appliquer que dans le domaine agricole. Conditionner l'octroi de primes au respect d'un package de règles environnementales ne nous parait pas devoir être réservé exclusivement aux matières agricoles. Si à l'avenir d'autres secteurs devaient bénéficier de mécanismes similaires d'aides financières, un système de conditionnalité identique devrait selon nous s'y joindre afin de respecter l'égalité.

En cas de non-conformité aux obligations, normes et exigences soumises à la conditionnalité, une sanction peut être appliquée par l'organisme payeur. Elle correspond à une diminution de 3 % de l'ensemble des aides, découplées ou non (les aides du 1er pilier de la politique agricole commune (PAC) dont le paiement unique ; les aides du 2ème pilier de la PAC (subventions agri-environnementales, agriculture biologique, indemnités compensatoires en régions défavorisées).

Selon la gravité, l'étendue et la permanence de la non-conformité, cette diminution peut être portée à 5% ou réduite à 1 %, voire à 0 % dans certains cas particuliers.

C'est une administration spécialisée de la DG agriculture qui contrôle le respect de la conditionnalité. Cette administration montre cependant des signes de carences en matière de conservation de la nature. S'en suit une inéligibilité aux primes de certains sites intéressants d'un point de vue biologique et donc un désintérêt des agriculteurs pour la gestion de ces sites. La DNF est également compétente pour contrôler le volet relatif à Natura 2000.

Evaluation appropriée des incidences

Le mécanisme de l'évaluation appropriée des incidences est inscrit à l'article 29 de la LCN : « Tout plan ou projet soumis à permis, qui, au regard des prescriptions à valeur réglementaire de l'arrêté de désignation d'un site Natura 2000, est non directement lié ou nécessaire à la gestion du site mais est susceptible d'affecter ce site de manière significative, individuellement ou en conjugaison avec d'autres plans et projets, est soumis à l'évaluation des incidences prévue par la législation organisant l'évaluation des incidences sur l'environnement dans la Région wallonne, eu égard aux objectifs de conservation du site et selon les modalités fixées par le Gouvernement.
L'autorité compétente ne marque son accord sur le plan ou le projet qu'après s'être assurée qu'il ne porte pas atteinte à l'intégrité du site concerné.
Si, en dépit de conclusions négatives de l'évaluation des incidences et en absence de solutions alternatives, le plan ou le projet doit néanmoins être autorisé pour des raisons impératives d'intérêt public majeur, y compris de nature sociale ou économique, l'autorité compétente prend toute mesure compensatoire nécessaire pour assurer que la cohérence globale du réseau Natura 2000 est protégée et informe la Commission des Communautés européennes des mesures compensatoires adoptées.
Lorsque le site concerné abrite un type d'habitat naturel prioritaire et/ou une espèce prioritaire, seules peuvent être invoquées des considérations liées à la santé de l'homme et à la sécurité publique ou à des conséquences bénéfiques primordiales pour l'environnement ou, après avis de la Commission des Communautés européennes, à d'autres raisons impératives d'intérêt public majeur. »

Outre cette disposition, c'est donc la législation générale organisant l'évaluation des incidences sur l'environnement dans la Région wallonne qui sert de cadre juridique à l'évaluation appropriée des incidences. Elle est constituée par le décret le Code de l'environnement et certaines dispositions du CWATUP. Pour rappel, cette législation générale a été modifiée pour inclure un volet Natura 2000.[17]

Le critère de distinction pour soumettre un projet ou un plan à évaluation appropriée des incidences est le risque d'impact sur un site Natura 2000. Si la pertinence du critère est évidente, son objectivité pose plus de question car le risque d'impact sur un site Natura 2000 est un concept difficile à appréhender même si la jurisprudence tente de lui donner un contenu bien défini.[18] S'il s'agit d'un critère scientifique qui devrait être analysé comme tel, en pratique il est souvent mal aisé à mettre en œuvre.

L'évaluation appropriée des incidences est un mécanisme d'évaluation plus une règle de fond. En ce sens elle amène deux restrictions. La première est que le particulier devra faire une évaluation avant de poser un acte, ce qui est en soit une restriction importante. Le deuxième est que cet acte peut et doit être refusé ou conditionné en cas d'impact avéré ou suspecté sur un site Natura 2000.

L'évaluation appropriée des incidences est l'instrument d'intégration par excellence. Elle oblige toute autorité appelée à se prononcer sur une autorisation à prendre en compte les considérations relatives à Natura 2000 dans sa décision. Elle force même via l'application du principe de précaution[19] l'autorité à faire passer ces considérations avant toute autre.

Quant à la pertinence et la proportionnalité de l'instrument, l'obligation de réaliser une évaluation parait être un instrument efficace et pas trop contraignant pour permettre à l'autorité de prendre sa décision en connaissance de cause. Cependant, l'application stricte du principe de précaution semble très contraignante en pratique et difficile à mettre en œuvre car l'évolution des écosystèmes et leurs facultés d'adaptation restent des matières bien mal connues des scientifiques. Les conditions de dérogation sont strictement balisées et ne laissent que très peu d'espace pour la prise en compte des considérations socio-économiques.

L'instrument transpose l'article 6.2 à 4 e la directive Habitats. La notion de « projet soumis à permis » visée par la loi du 12/7/1973 exclut du mécanisme de l'évaluation appropriée les installations et activités de classe 3 (soumis à déclaration) en vertu du décret du 11 mars 1999 relatif au permis d'environnement. Cette exclusion paraît contraire à la directive Habitats, celle-ci visant « tout projet », sans distinguer s'il est ou non soumis à permis. Comme précisé ci-avant, outre l'article 29, § 2, précité, c'est la législation générale organisant l'évaluation des incidences sur l'environnement dans la Région wallonne qui sert de cadre juridique à l'évaluation appropriée des incidences. Le volet Natura 2000 inclus dans ces dispositions ne parait pas constituer une évaluation appropriée au sens de la directive. Elle devrait analyser spécifiquement les effets du plan ou projet sur chaque habitat et chaque espèce pour lesquels le site a été désigné (et non de façon abstraite). Ce qui ne parait pas être le cas dans le régime actuel.

Expropriation

L'expropriation signifie une privation du droit de propriété. Elle ne peut donc s'effectuer que pour une raison déterminée (l'utilité publique), et suivant une procédure particulière.

L'expropriation permet à l'autorité de priver totalement une personne de son droit de propriété contre son gré. Le propriétaire exproprié a droit à une indemnité juste et préalable. Elle doit donc couvrir tout le dommage subi: tout peut intervenir: la valeur de convenance, les intérêts, les frais de remplacement du bien, le coût du déménagement, les dommages moraux, ...

[17] Voyez Ch.-H. BORN, *Guide juridique des zones protégées en Wallonie*, Publication par le Ministère de la Région wallonne, Division de la Nature et des Forêts, 2005, p. 223 et svts.

[19] Mer des wadden

La notion d'utilité publique n'est pas définie dans un texte légal, et elle évolue au fil des années et en fonction des besoins publics: par exemple, l'extension des aéroports, la suppression de passages à niveau, ou la construction d'écluses évoluent sans cesse. Il ne faut cependant pas confondre "l'intérêt public" avec "l'intérêt de tous les citoyens".

Le concept d'utilité publique peut certainement comprendre la protection de la nature et il ne fait aucun doute que l'acquisition d'un bien peut servir cet objectif. En ce sens la mesure est certainement pertinente. Mais l'expropriation est un moyen indirect car c'est la gestion et la protection mise en place sur le terrain acquis qui permettra d'atteindre ou non les objectifs. Il ne fait aucun doute que d'autres instruments moins radicaux, moins violents, plus consensuels ou simplement règlementaires, mais ne privant pas totalement le propriétaire de son bien contre sa volonté, existent pour atteindre les objectifs. On peut penser dès lors que l'expropriation ne sera proportionnée eu égard aux objectifs qu'à la condition que les autres voies aient été explorées au préalable, sans succès.

La procédure ordinaire est lourde et très longue. La loi a instauré une procédure d'extrême urgence beaucoup plus rapide: pour cette raison, les autorités publiques essaient de l'invoquer. Elles doivent faire une offre et s'adresser au juge de paix qui réunira sur les lieux les représentants de l'administration, les propriétaires intéressés, et un expert qui devra décrire les biens et les estimer. Si les conditions de l'expropriation sont remplies, le juge de paix devra simplement constater que la procédure est régulière et il fixera le montant d'une indemnité provisionnelle.

Aménagement forestier

L'article 31 du Code forestier stipule que: «Tous les bois et forêts soumis au régime forestier sont assujettis à un aménagement réglé par arrêté ministériel. » Cet aménagement est un document qui se compose de 3 parties principales: un état des lieux de la ressource et des différentes conditions écologiques. Sur base de ce constat une discussion des options possibles et des grandes orientations qui seront données à la forêt. Enfin, sur base de ces choix, une planification des travaux ainsi que des dépenses et des recettes sur une dizaine d'années.

Le mécanisme de l'aménagement forestier opère une distinction fondamentale entre les propriétaires publics et les propriétaires privés. Seuls les premiers ont l'obligation d'élaborer et de mettre en œuvre un plan d'aménagement forestier. La Cour d'arbitrage a considéré que *ne sont pas comparables* la situation de personnes morales de droit public propriétaires de bois situés en Région wallonne et donc soumises à un contrôle particulier en cas d'aliénation, et celle des simples particuliers, également propriétaires d'un patrimoine boisé privé, lesquels ne sont pas régis par une mesure de contrôle identique ou similaire. Pour la Cour, « il n'est manifestement pas déraisonnable d'appliquer aux personnes morales de droit public en raison de la nature, des règles différentes de celles qui sont destinées aux personnes de droit privé »[20]. L'obligation pour les propriétaires publics d'élaborer un tel plan apparaît comme une mesure adéquate compte tenu des objectifs de bonne gestion du patrimoine forestier public. Mais l'on ne préjugera pas de savoir si l'obligation d'un tel plan pour les particuliers serait disproportionnée.

L'aménagement forestier limite la liberté du propriétaire public dans la gestion de sa propriété. Même s'il élabore avec l'aide de la Division Nature et Forêts et vote le plan, celui-ci doit être approuvé par le GW et son contenu est strictement défini dans le code forestier. Le plan est soumis à enquête publique et doit faire l'objet d'une évaluation des incidences sur l'environnement. L'élaboration d'un plan de gestion de façon concertée entre le pouvoir public propriétaire et l'administration compétente ne parait pas être un instrument trop contraignant compte tenu de l'objectif, des revenus que procure la forêt aux pouvoirs publics, de leur rôle exemplatif et des principes de bonne gouvernance.

[20] C.A., n° 17/96, 5 mars 1996, motif B.3., cité par F. TULKENS, *op. cit*., p. 137.

Le plan de gestion doit développer plusieurs volets : économique, écologique, cynégétique, social, culturel, récréatif. Il doit intégrer de nouvelles mesures en faveur de la biodiversité qui sont contraignantes, ainsi que « le rappel des mesures de conservation liées au réseau Natura 2000 ». Le Code forestier prévoit que le plan sera révisé dans l'hypothèse où les bois et forêt du périmètre du plan sont érigés en site Natura 2000. Mais il n'existe pas de procédure de révision, seule la procédure complète permet de modifier le plan ce qui le rend peu flexible aux évolutions environnementales ou socio-économiques.

Un mécanisme prévoit que le GW se substitue au propriétaire public si celui-ci reste en défaut d'adopter le plan.

Le plan d'aménagement fait partie des instruments qui transposent l'article 6.1 pour la forêt publique. L'instrument permet une transposition conforme de des directives, le plan peut intégrer les mesures qui répondent aux exigences écologiques des espèces mais il n'existe aucune obligation juridique en ce sens.

Remembrement

Le remembrement ou remembrement rural, est le regroupement des terres agricoles appartenant à un ou plusieurs agriculteurs autour de l'exploitation agricole. En regroupant les parcelles de superficies trop faibles, ou trop dispersées pour qu'elles soient facilement exploitables, le remembrement veut réduire les coûts d'exploitation, faciliter et optimiser le travail de l'agriculteur en limitant ses besoins de déplacements et transports et en adaptant le parcellaire et la topographie aux techniques et engins agricoles modernes. Il est aussi souvent l'occasion de moderniser la voirie locale.

Le remembrement et la redistribution des parcelles reposent sur le classement des terres. Il s'agit du relevé comparatif des différents types de sols du territoire selon la valeur culturale et d'exploitation afin de redistribuer ensuite les terres en fonction de l'apport de chaque intéressé. Après ce classement une vaste consultation a lieu afin de définir et d'affiner au mieux le nouveau parcellaire.

Un plan représentatif de la situation future est dressé. Il servira de base pour les travaux d'aménagement et pour un nouveau cadastre de propriété et d'exploitation.

Le remembrement modifie donc les titres de propriété, en pratiquant l'échange de terres ou en privant certains propriétaires de leur bien.

Le remembrement ne poursuit pas un objectif de conservation. On vise l'intérêt général entendu comme l'exploitation plus économique des biens ruraux. Le mécanisme du classement des terres par points essaie d'objectiver la valeur des terres pour redessiner un parcellaire équitable. D'un point de vue écologique les critères du classement ne sont pas adéquats. En pratique le remembrement pourrait prendre en compte d'autres aspects de l'intérêt général, environnemental par exemple. Le projet de remembrement doit d'ailleurs faire l'objet d'une étude d'incidences sur l'environnement. La Direction générale de l'Agriculture ainsi que la Division Nature et Forêts sont consultées.

Largement participative voire presque totalement consensuelle, la procédure laisse une certaine marge de manœuvre au comité du remembrement pour intégrer les intérêts en présence ce qui pourrait faire l'attrait du mécanisme pour travailler sur le volet foncier de la conservation de la nature. Les terres pourraient être redistribuées en fonction des intérêts publics et privés. Il paraîtrait ainsi pertinent lors d'une réorganisation de la propriété d'octroyer les terres à haute valeur biologique aux personnes intéressées et considérées comme gestionnaires potentiels.

Si le remembrement poursuit divers intérêts, les prend en compte dans le réaménagement de la propriété et que la procédure est largement participative, le remembrement peut apparaître comme un outil proportionné eu égard aux objectifs de conservation de la nature.

Contrat de gestion

Le contrat de gestion active est une sorte de contrat administratif[21] multipartite ou « collectif » par lequel le Gouvernement et une série de propriétaires et occupants s'accordent sur la nature, la programmation et le financement des travaux d'entretien, d'amélioration et de restauration à réaliser pour atteindre les objectifs de gestion active.

Le contrat n'imposera des restriction directe au droit de propriété que dans la mesure de ce que le propriétaire acceptera dans son engagement.

S'agissant d'un mécanisme contractuel, la responsabilité de protection et de gestion est partagée entre les deux partenaires privés pour la mise en œuvre, publics pour le contrôle. Il revient en outre à la Région wallonne de conduire les négociations et de s'assurer que le contenu technique du contrat de gestion active, en particulier la nature des travaux, leur programmation dans le temps et les techniques nécessaires pour les réaliser doit soit conforme au contenu des objectifs de gestion active définis dans l'arrêté de désignation, qui ont valeur réglementaire.

En cas d'inexécution des mesures de gestion active par un ou plusieurs propriétaires ou occupants concernés, ou s'il est mis fin au contrat de gestion active conformément à l'article 27, §3, alinéa 2, ou dans toute autre circonstance susceptible de mettre en péril l'état de conservation favorable du site, le Gouvernement prend, après l'avis de la commission de conservation concernée, les mesures appropriées pour atteindre les objectifs du régime de gestion active tels que définis par l'arrêté de désignation conformément à l'article 26, §1er, alinéa 2, 7°.[22]

Il est difficile d'appréhender dans l'absolu quelles seront les ressources humaines nécessaires pour effectuer ces négociations et le contrôle de la bonne mise en œuvre des contrats.

Le mécanisme prévoit la possibilité de conclure un ou plusieurs contrats par site. Des contrats individuels ou impliquant seulement un nombre limité de parties pourraient permettre d'accélérer la conclusion des contrats, les parties pouvant se mettre plus rapidement d'accord. Mais de tels contrats ponctuels ne garantissent en rien une gestion homogène et cohérente du site. Tandis qu'un seul contrat collectif implique que l'accord des propriétaires et occupants porte sur l'ensemble du contrat, c'est-à-dire aussi sur les travaux auxquels s'engagent les autres propriétaires et occupants.

Le contrat est « fermé » et rigide. En terme de durée du contrat, celui-ci est conclu pour neuf ans. Les conditions de résiliation et de révision sont assez strictes et par là tendent à réduire considérablement la souplesse du mécanisme. En matière de résiliation, la loi prévoit que le contrat est prorogé pour la même durée et aux mêmes conditions, sauf à l'égard des propriétaires et occupants signataires du contrat qui s'opposent à cette prorogation au moins six mois à l'avance. (art. 27, § 3, de la loi). En ce qui concerne la révision, l'initiative appartient à chaque propriétaire ou occupant concerné, au Gouvernement wallon et à la commission de conservation concernée. Mais la loi prévoit que le contrat ne peut être révisé qu'en fonction de l'évolution des connaissances scientifiques, des techniques de gestion et de l'état de conservation du site, ou si les objectifs de gestion active du site ont été révisés (art. 27, § 4). Aucun autre motif (par exemple de nature socio-économique) ne semble pouvoir être invoqué.[23]

Le contrat de gestion fait partie des instruments qui transposent l'article 6.1 de la directive Habitats. Celle-ci prévoit en effet que les Etats membres peuvent prendre des mesures contractuelles pour répondre aux exigences écologiques des espèces et des habitats. La Cour de justice a jugé que, dans les ZPS, des mesures présentant un caractère volontaire et purement incitatif (en l'espèce des MAE) ne suffisaient pas à établir le régime de protection

[21] En ce sens, P.-Y. ERNEUX, « La gestion active des sites », in COLL., *Natura 2000 et le droit*, Bruxelles, Bruylant, 2004, p. 266.
[22] Art 26, §4 de la LCN.
[23] Ch.-H. BORN, Guide juridique des zones protégées en Wallonie, op. cit., p. 209.

requis pour ce type de zone[24]. Ceci signifie donc que les mesures préventives nécessaires à la protection du site ne pourraient être prises de façon uniquement contractuelle, à tout le moins dans les ZPS. Cette jurisprudence nous paraît valable aussi dans les ZSC.

Permis et autorisations

Le mécanisme d'autorisation est un mécanisme de contrôle qui permet à l'autorité d'apprécier l'opportunité d'un projet, de l'autoriser, le refuser ou de l'assortir de conditions. L'autorité dispose d'une certaine marge de manœuvre pour prendre sa décision. Pour le particulier cela implique d'effectuer des démarches administratives, la préparation d'un dossier sans avoir la certitude que les travaux ou l'activité pourront être effectué, des délais, des coûts parfois pour réaliser les évaluations d'impacts environnementaux.

Traditionnellement, les législations urbanistiques ou environnementales établissent des listes d'activités, de projets ou de travaux pour l'exercice desquels il sera nécessaire de solliciter l'autorisation administrative prévue par ces législations.

Les actes et travaux sont en réalité interdits sans cette autorisation, ce qui constitue une restriction importante au droit de propriété. En outre si l'acte ou les travaux sont autorisés, l'autorité compétente peut assortir son autorisation de conditions.

Le mécanisme des listes parait justifié eu égard aux objectifs de bon aménagement du territoire, de protection de l'environnement, de santé ou de sécurité qu'elles poursuivent.

Les restrictions paraissent pertinentes eu égard aux objectifs de bon aménagement du territoire, de protection de l'environnement, de santé ou de sécurité qu'elles poursuivent.
La proportionnalité de l'instrument doit s'évaluer en fonction des actes et travaux qui sont soumis à autorisation. Pour des actes et travaux importants risquant souvent de porter atteinte à l'environnement ou au cadre de vie, un mécanisme d'autorisation avec conditions paraîtra proportionné. Si les actes et travaux sont une faible envergure et ne risquent que rarement de porter atteinte au cadre de vie ou à l'environnement, un mécanisme d'autorisation pourra paraître trop contraignant. Notons que le risque d'impact sera fonction du cadre urbain et du milieu récepteur des actes et travaux.

L'autorité compétente pour délivrer l'autorisation est variable. Cela peut être une commune, un fonctionnaire délégué du Ministre de la Région wallonne compétent ou le Ministre lui-même.

La région wallonne dispose d'administrations spécialisées dans les matières d'aménagement du territoire et d'environnement. Il n'est cependant pas certain que les agents soient en nombre suffisant pour absorber le flot de demandes.

S'agissant des communes, elles ne disposent pas toutes d'agents qualifiés ou spécialisés en aménagement du territoire et environnement. Cela pose d'autant plus problème que ces matières se complexifient constamment. En ce qui concerne leurs effectifs, il n'est pas certain qu'ils soient suffisants pour traiter les demandes.

Des mécanismes existent pour suspendre ou annuler les décisions des autorités inférieures en cas de carence. Les procédures de recours administratifs permettent également de palier aux erreurs des administrations si besoin. En outre, en cas de silence de l'autorité compétente, il existe des procédures permettant à l'administré de s'adresser à l'autorité supérieure afin qu'elle se prononce sur sa demande.

La procédure de délivrance des autorisations prévoit selon les cas une réunion consultation publique préalable, la tenue d'une enquête publique, la réalisation d'une évaluation des incidences ou encore la consultation d'administrations compétente ou de commission consultatives.

[24] C.J.C.E., 25 novembre 1999, aff. C-96/98, Commission c/ République française (« Marais poitevin », points 26-27) (cité dans Avis du Conseil d'Etat, *Doc. Parl. W.*, session 2000-2001, 250, n°1, page 116).

La procédure des permis est relativement rigide (consultations, délais, enquête publique). Les permis sont délivrés à durée déterminée, en général de longue durée. Il n'est pas possible de revenir sur les conditions des autorisations sauf à utiliser la procédure de retrait de permis très peu prisée. (Art. 65 et s. et 97 du décret du 11 mars 1999 relatif au permis d'environnement.)

S'agissant de l'articulation avec le réseau Natura 2000, en RW ce qui est soumis à permis ne sera pas soumis à un autre régime de protection. C'est l'article 29 de la LCN qui transpose la directive quant aux procédures d'autorisation administrative. Cette transposition apparaît conforme. Les autorités ne pourront donner une réponse favorable qu'à la condition que le projet ne porte pas atteinte au réseau Natura 2000. Mais c'est plutôt l'interprétation et l'application qu'en feront les autorités compétentes pour délivrer les autorisations qui détermineront si les directives sont respectées.

Régime de protection

Tous les sites Natura 2000 « sont désignés par un arrêté du Gouvernement », appelé « arrêté de désignation » (art. 25, § 1 et 2 et art. 26, § 1er, de la loi). Chaque arrêté concerne donc un seul site, et lui est spécifiquement adapté. Cet arrêté est un document central, dont dépend en grande partie la réalisation des obligations de résultat qui pèsent sur la Région wallonne. Cet arrêté comprend les interdictions et mesures préventives qui composent le régime de protection des sites.

Les activités et travaux dans ou aux abords des sites peuvent ainsi être soumis à trois types de contrôle : ils peuvent être interdits, soumis à autorisation du directeur de la DNF ou doivent être notifiés également au Directeur.

L'AGW fixant la procédure et les modalités d'octroi des dérogations et des autorisations, ainsi que la procédure et les modalités de la notification ni aucun arrêté de désignation n'étant pas encore adoptés, l'analyse s'effectue dans l'absolu.

Le régime de protection va opérer des distinctions entre catégories de personnes par exemple les propriétaires publics par rapport aux propriétaires privés les propriétaires et occupants de parcelles abritant un même type d'habitat et soumis, d'un site à l'autre, à des prescriptions différentes.

L'objectivité, la pertinence et la proportionnalité des distinctions s'apprécieront mesure par mesure. Quant à la pertinence de la mesure, le législateur (ici le Gouvernement) dispose d'une large marge d'appréciation, qu'il lui suffit de bien justifier, notamment, par des arguments scientifiques pour écarter tout risque de sanction. Seule une erreur manifeste d'appréciation pourrait être critiquée. S'agissant de la proportionnalité de la mesure, la violation du principe d'égalité implique de constater le caractère *manifestement disproportionné* de la mesure considérée comme discriminatoire par rapport à son but. En définitive, c'est par une *motivation* scientifique pertinente et suffisamment étayée, démontrant qu'il a pesé les intérêts en présence, que le Gouvernement pourra respecter le principe d'égalité et éviter l'écueil d'une éventuelle annulation pour discrimination[25].
En pratique, il paraît essentiel d'*harmoniser le plus possible la rédaction des mesures à valeur réglementaire* de façon à éviter que, pour deux parcelles comparables abritant un même type d'habitat, leur traitement soit différent sans qu'il existe une justification objective et raisonnable.

Le régime de protection peut contenir des interdictions, des autorisations ou des notifications. Le choix de soumettre à l'une de ces restrictions une activité doit s'effectuer en considération

[25] Voy. en ce sens, concernant le droit de propriété, M. PAQUES, « Propriété et zonage écologique, compensation et indemnisation », *op. cit.*, p. 294.

du fait que *la mesure adoptée ne doit pas faire peser sur le propriétaire une charge disproportionnée* par rapport à l'objectif d'intérêt général poursuivi et au droit de propriété[26].
La Cour d'arbitrage a jugé que « le seul fait que l'autorité impose des restrictions au droit de propriété dans l'intérêt général n'a pas pour conséquence qu'elle soit tenue à l'indemnisation »[27]. Comment déterminer s'il existe une disproportion manifeste ? Les critères dégagés par la jurisprudence sont multiples. On retiendra les critères suivants :

- l'importance de la limitation ;
- l'existence de compensations ;
- la nature du bien et son état antérieur ;
- l'existence de garantie de procédure, notamment en termes de participation ;

Le Gouvernement dispose d'une large marge d'appréciation dans le choix du contenu ainsi que du champ d'application temporel et spatial des mesures restrictives du droit de propriété lors de l'adoption du régime de protection. La proportionnalité de ces mesures sera respectée *si le Gouvernement peut justifier, par une motivation scientifique, que chaque mesure est nécessaire et pertinente sur le plan écologique* – le cas échéant, en renvoyant à des références dans la littérature scientifique – et qu'il a pesé, le cas échéant, les différentes *solutions alternatives* qui s'offrent à lui pour atteindre ce résultat.

Les demandes de dérogation, d'autorisation et les notifications sont reçues par la DNF, administration compétente en matière de conservation de la nature de la Région wallonne; Inspecteur général pour les dérogations, directeurs des directions extérieurs pour les autorisations et les notifications. Traditionnellement gestionnaires forestiers, les agents de la DNF ne sont pas particulièrement spécialisés en matière de biodiversité. Un ou deux agents sont chargés de suivre Natura 2000 par direction. Le CRNFB les assiste en pratique pour répondre aux demandes.

La teneur des interdictions particulières et mesures préventives n'est pas entièrement laissée à l'appréciation du Gouvernement. En vertu des articles 26, § 1, 6° et 28, al. 2, de la loi, lus à la lumière des objectifs de la directive Habitats et de son article 6, § 2, le Gouvernement est *tenu* d'indiquer dans l'arrêté les interdictions particulières et toutes les autres mesures préventives *nécessaires* pour *éviter la détérioration des habitats naturels et les perturbations significatives des espèces pour lesquelles le site a été désigné*[28]. Le Gouvernement doit donc *identifier les menaces propres à chaque site* (chimiques, physiques ou biologiques) et *adopter les interdictions et autres mesures préventives écologiquement appropriées pour les contrer efficacement*[29], dans le respect de ses compétences. Il s'agit d'une obligation de résultat, qui s'évalue au cas par cas. Il faut également rappeler que le Gouvernement est tenu de respecter le *principe de précaution* dans l'élaboration de ses arrêtés

Contrat de rivière

Le Contrat de Rivière consiste à mettre autour d'une même table tous les acteurs de la vallée, en vue de définir consensuellement un programme d'actions de restauration des cours d'eau, de leurs abords et des ressources en eau du bassin. Sont invités à participer à cette démarche les représentants des mondes politique, administratif, enseignant, socio-économique, associatif, scientifique, …

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[26] M. DELNOY, « Indemnisation des atteintes au droit de propriété : description et appréciation des régimes de compensation du CWATUP et du décret « Natura 2000 » », in COLL., *Actualité du cadre de vie en Région wallonne*, Actes du colloque de Namur des 17 et 18 oct. 2002, Bruxelles, Bruylant, pp. 135-136.
[27] C.A., 6 juin 1995, n° 40/95, *M.B.*, 4 août 1995, motif B.11. ; C.A., 27 mars 1996, n° 24/96, *M.B.*, 26 avril 1996, motif B.1.18.
[28] Dans le même sens, E. ORBAN de XIVRY, « La procédure de sélection des sites en Région wallonne », op. cit., p. 133.
[29] L'efficacité des mesures est une exigence rappelée par la Cour de justice à propos des mesures de protection des espèces prescrites par l'article 12 de la directive Habitats (voy. C.J.C.E., 30 janvier 2002, *Commission c. Grèce*, aff. 103/00, obs. C.-H. BORN, *Amén.*, 2002/3, pp. 216-224). Il ne fait aucun doute que la Cour adopterait la même position à l'égard des mesures préventives que doivent prendre les Etats membres en vertu de l'article 6, § 2, de la directive Habitats.

Depuis 1993, plusieurs circulaires ministérielles successives définissent puis élargissent les conditions d'acceptabilité et les modalités d'élaboration des Contrats de Rivière en Région wallonne. La dernière circulaire a été adoptée le 20 mars 2001 (M.B. 25/04/01)

Les domaines abordés par le contrat de rivière couvrent de nombreux aspects liés de près ou de loin au cours d'eau, à ses abords et aux ressources en eau du bassin :

- la qualité des eaux de surface et des eaux souterraines ;
- les risques liés aux inondations et la gestion quantitative ;
- la restauration des cours d'eau et la gestion concertée ;
- l'aménagement du territoire dans la vallée ;
- la conservation de la nature et la préservation des écosystèmes aquatiques ;
- la gestion des paysages ;
- les activités économiques en rapport avec l'eau ;
- l'agriculture et la forêt ;
- le tourisme et les loisirs ;
- le transport fluvial ;
- la gestion des déchets ;
- l'information et la sensibilisation du public ;
- les activités pédagogiques sur le thème de l'eau ;
- …

L'exécution des engagements (phase de suivi) dure de 3 à 12 ans avec une évaluation tous les 3 ans. Pour suivre ces étapes, une "cellule de coordination" est mise en place, partiellement subsidiée par la Région wallonne. La technique du regroupement de partenaires permet de réunir de nombreuses compétences.

Le contrat de rivière n'est pas soumis à évaluation des incidences. La problématique Natura 2000 n'est pas mentionnée explicitement dans la circulaire mais l'état des lieux réalisé ainsi que les objectifs du contrat de rivière relatifs à la conservation de la nature ne laissent aucun doute quant à l'intégration de la problématique N2000.

De nature volontaire il est peu contraignant juridiquement. Il n'existe pas de mécanisme de sanction juridique en cas de non exécution des engagements, mais un comité de suivi évalue et modifie le contrat en fonction des résultats et de l'évolution du contexte environnemental ou socio-économique. Le mécanisme du contrat de rivière présente à cet égard une souplesse appréciable.

Rappelons cependant que les mesures préventives nécessaires à la protection des sites Natura 2000 ne pourraient être prises de façon uniquement contractuelle[30].

Réserve naturelle

La réserve naturelle agréée est une zone protégée, gérée par une personne physique ou morale autre que la Région wallonne et reconnue par le Gouvernement, à la demande du propriétaire du terrain (qui peut être une personne de droit public ou privé) et avec l'accord de l'occupant.

Le propriétaire d'un terrain présentant un intérêt biologique peut demander que ce terrain soit agréé comme réserve naturelle si sa valeur scientifique et écologique est reconnue par le CSWCN. Aucune procédure d'enquête publique ou d'évaluation des incidences n'est prévue. La demande doit comprendre notamment le futur plan de gestion. S'il est différent du propriétaire, le gestionnaire de la réserve, qualifié d' « occupant » (généralement une asbl de conservation de la nature), doit avoir le droit d'occuper le terrain pendant 20 ans, ce qui rend l'instrument tributaire du marché foncier.

[30] C.J.C.E., 25 novembre 1999, aff. C-96/98, Commission c/ République française (« Marais poitevin », points 26-27) (cité dans Avis du Conseil d'Etat, *Doc. Parl. W.*, session 2000-2001, 250, n°1, page 116).

Le statut de réserve naturelle agréée implique généralement une gestion active du site (par la mise en œuvre du plan de gestion). La gestion est assurée par l'occupant-gestionnaire, sous contrôle de l'administration. Elle peut être subventionnée. Pour bénéficier des subsides à l'achat de terrains, il faut être une association sans but lucratif ou un établissement d'utilité publique ayant pour objet principal la conservation de la nature, notamment la gestion de réserves naturelles, et reconnus à cet effet par le Ministre qui a la Conservation de la Nature dans ses attributions, après avis du Conseil supérieur wallon de la conservation de la nature.
La reconnaissance se fait sur base d'une demande contenant toute indication permettant de juger de la capacité des demandeurs à gérer des réserves naturelles agréées en vertu du présent arrêté.

En cas de manquement grave aux dispositions du plan de gestion, l'agrément peut être suspendu ou retiré.

Le régime de protection applicable dans les réserves naturelles est très strict, et sa violation est passible de peines correctionnelles. Ces restrictions sont l'essence même du régime de protection, elles sont sans aucun doute pertinentes pour atteindre l'objectif de conservation. Compte tenu du fait que le propriétaire fait librement la demande pour agréer son sa propriété comme réserve naturelle, la proportionnalité des mesures est assurée.

D'application volontaire, ce statut de protection est, avec celui de réserve naturelle domaniale, le plus strict existant, mais il présente peu de souplesse compte tenu de l'impossibilité de changer le plan de gestion sauf dans une nouvelle procédure d'agrément.

Avantages fiscaux

En Région wallonne, deux avantages fiscaux sont octroyés aux propriétaires des sites Natura 2000 : les sites Natura 2000 bénéficient de l'exonération du précompte immobilier ainsi que de l'exonération des droits de succession. L'exemption des droits de successions ne joue qu'en ce qui concerne les droits qui sont « réputés localisés en Région wallonne », c'est-à-dire des droits portant sur des biens appartenant à un *de cujus* résident en Région wallonne durant les cinq dernières années avant son décès.

Le critère de distinction parait pertinent compte tenu de l'objectif qui est d'avantager ou indemniser les biens Natura 2000 pour les restrictions ou la perte d'autonomie qui y seront imposées. La proportion de la mesure par rapport à l'objectif s'évaluera en fonction des contraintes liées à cet avantage ou des prévisions de modifications de comportement que l'on espère inciter par cet avantage. De manière générale, une personne possédant un terrain hors Natura 2000 pourrait s'estimer discriminé si l'avantage fiscal est octroyé sans contraintes.

Les conditions attachées au régime d'exemption des droits de succession posent différentes questions au niveau du droit à l'égalité et à la non discrimination.
M. DELNOY soulève le problème de la façon suivante : « (…) si la dernière résidence du de cujus était située en Région flamande, l'exemption ne peut jouer, même si le bien transmis est, lui, situé en Région wallonne. Cela pose donc la question du respect du principe d'égalité et de non discrimination. »[31]
Il semble ainsi affirmer[32], dans son analyse du régime wallon, qu'il y aurait une discrimination entre un résident flamand possédant des biens situés en Région wallonne et un résident wallon possédant des biens en Région wallonne. Selon nous, la question ne se pose pas dans cette hypothèse. En effet, le site, bien que situé territorialement en Région wallonne, sort de sa compétence en matière de droits de succession pour entrer dans celle de la Région flamande. Or, la Cour d'arbitrage a affirmé que « L'autonomie (des collectivités fédérées) serait dépourvue de signification si le seul fait qu'il existe des différences de traitement entre les destinataires des règles s'appliquant à une même matière dans les

[31] M. DELNOY, *op. cit.*, p. 130.
[32] Selon la manière dont nous comprenons son affirmation et sous réserve bien sûr de l'intention réelle de l'auteur.

diverses communautés et régions était jugé contraire aux articles 10 et 11 de la Constitution. »[33]. « Dans les matières de compétence fédérée, l'égalité doit être réalisée au sein de chacune des collectivités. Elle ne saurait correspondre à l'égalité « des Belges devant la loi ». »[34]

La compétence des droits de succession est une compétence des régions, la règle de rattachement est la résidence, l'égalité s'appréciera donc entre deux résidents de la même région.

Une discrimination apparaît selon nous entre deux résidents de la même région lorsque l'un deux possède des biens situés dans une région et l'autre dans l'autre. Ainsi, par exemple, un résident de la Région wallonne possédant des biens situés sur le territoire de celle-ci bénéficiera de l'exemption tandis qu'un autre résident de la Région wallonne possédant des biens situés en Région flamande ne bénéficiera pas de l'exemption. L'idée d'un espace commun et de la libre circulation des biens et des personnes à l'intérieur de celui-ci, présente dans un Etat fédéral et même plus encore que dans les Etats unitaires, aurait dû, selon nous, amener les législateurs régionaux à octroyer l'exemption tant aux sites Natura 2000 désignés par un arrêté du Gouvernement wallon que par un arrêté du Gouvernement flamand, voire même aux sites désignés Natura 2000 dans un autre Etat de l'Union Européenne.

Beheersovereenkomsten

In uitvoering van de Europese Plattelandsverordening werd een Vlaams Plattelandsontwikkelingsplan opgesteld, dat op zijn beurt heeft geleid tot onder meer een aantal uitvoeringsbesluiten over beheerovereenkomsten in de landbouw[35]. Er zijn verschillende beheerdoelstellingen met beheerpakketten: soortenbescherming (weidevogelbeheer en hamsterbeheer), perceelsrandenbeheer, kleine landschapselementen, botanisch beheer, erosiebestrijding, waterkwaliteit en natuurbeheer. Tot de beheergebieden behoren onder meer de gebieden waarvoor natuurrichtplannen (moeten) worden opgemaakt; de speciale beschermingszones zijn daar dus bij.
Het instrument heeft in de praktijk een heel beperkte toepassing voor de instandhouding van speciale beschermingszones, als men enkel de voor de speciale beschermingszones belangrijkste beheerspakketten (weidevogelbeheer en botanisch en natuurbeheer) bekijkt: ten opzichte van de totale oppervlakte aan speciale beschermingszones gaat het om nog niet 1 % die onder een dergelijke beheersovereenkomst is[36], laat staan wat de natuurresultaten ervan zouden zijn.
Er stellen zich geen problemen in verband met de beheersovereenkomsten in relatie tot de vooropgestelde criteria. Voor wat betreft integratie, scoort het instrument zelfs goed, maar men moet dit ook niet overschatten vermits beheersovereenkomsten tijdelijk zijn, en dus niet noodzakelijk een duurzame oplossing wordt bereikt. Als er dan een probleem zou kunnen rijzen met de criteria, dan is het in verband met de gelijkheid en non-discriminatie. De afbakening van de beheersgebieden zou soms voor ongenoegen zorgen bij sommige landbouwers, die doordat ze er met hun gronden buiten vallen niet in aanmerking komen voor beheersovereenkomsten, terwijl vanuit natuuroogpunt gelijkaardige gronden erbinnen vallen. De overheid zou er met name voor opteren, in samenspraak met de natuurverenigingen, in de buurt van natuurreservaten de toepassing van beheersovereenkomsten nogal eens te

33 CA, n° 35/95, IV, B.12.2. et n° 36/95, 25 avril 1995.
34 F. DELPÉRÉE et S. DEPRÉ, *Le système constitutionnel de la Belgique*, Bruxelles, Larcier, 2000, p. 246.
35 B.Vl.R. van 21 oktober 2005 betreffende het sluiten van beheersovereenkomsten; M.B. van 21 oktober 2005 betreffende het sluiten van beheersovereenkomsten.
36 Meer bepaald bracht een eerste evaluatie in 2005 naar voor dat de voor de speciale beschermingszones belangrijkste beheerpakketten (weidevogelbeheer en botanisch en natuurbeheer) maar rond 600 ha respectievelijk 2.200 ha halen, waarvan ongeveer 400 ha respectievelijk 1.000 ha binnen speciale beschermingszones ligt (A. CLIQUET, G. VAN HOORICK, J. LAMBRECHT en D. BOGAERT, "Gebiedsgericht natuurbeleid: operationalisering en uitvoering van de Vogelrichtlijn en de Habitatrichtlijn", in: M. VAN STEERTEGEM (ed.), MIRA-BE 2005, Aalst, Vlaamse Milieumaatschappij, 2005, 94).

beperken, om de landbouw te ontmoedigen (zodat landbouwgronden worden verkocht waardoor de natuurreservaten kunnen uitbreiden). Voor deze veronderstellingen werd evenwel geen empirisch bewijsmateriaal teruggevonden. Een strikte scheiding van beheersgebieden en vooral een afbakening van gebieden voor reservaatsvorming (cf. Nederland) kan voor meer duidelijkheid zorgen.

Cross compliance op milieuvlak in de land- en bosbouw

De overheid ondersteunt op vele wijzen financieel de land- en bosbouw. De uitvoeringsbesluiten inzake beheersovereenkomsten, milieuvriendelijke landbouwproductiemethoden, biologische landbouw en bosbeheersplannen bevatten bepalingen die inhouden dat bij niet-nakoming door de land- of bosbouwer van zijn milieuverplichtingen (een deel van) de financiële steun daarvoor moet worden terugbetaald. In het Vlaamse Gewest vindt men het instrument van de *cross compliance* op milieuvlak in de land- en bosbouw echter niet terug, voor zover ermee wordt bedoeld dat indien de land- of bosbouwer bepaalde milieuvereisten niet nakomt, hij (een deel van de) *andere* financiële tegemoetkomingen verliest. Eén uitzondering vormt de vermindering van de successierechten voor bossen.
Het instrument heeft in de praktijk geen toepassing (de uitzondering buiten beschouwing gelaten).
Er stellen zich mogelijks problemen in verband met het instrument in relatie tot sommige van de vooropgestelde criteria, zij het dat voor wat betreft integratie het instrument zeer goed scoort. Men kan zich met name afvragen in hoeverre een dergelijke regeling niet onproportioneel is: de financiële straf gaat met name zover dat men steun verliest op een domein waarmee men op zichzelf genomen in orde is, de milieuverplichtingen buiten beschouwing gelaten.

Milieueffectrapportage

De milieueffectrapportage voor projecten bestaat uit het opstellen van een milieueffectrapport en uit de procedure die het gebruik ervan als hulpmiddel bij de vergunningverlening omtrent een voorgenomen project waarborgt. Het milieueffectrapport is een openbaar document opgesteld door deskundigen waarin van het voorgenomen project en van de redelijkerwijze in beschouwing te nemen alternatieven, de te verwachten gevolgen voor het milieu in hun onderlinge samenhang op een systematische en wetenschappelijk verantwoorde wijze worden geanalyseerd en geëvalueerd. In het Vlaams Gewest werd bij Decreet van 18 december 2002 het Decreet van 5 april 1995 houdende algemene bepalingen inzake milieubeleid aangevuld met een titel betreffende de milieueffect- en veiligheidsrapportage. Dit verving een vroegere regeling uit 1989. De zogenaamde passende beoordeling wordt in voorkomend geval geïntegreerd in het milieueffectrapport.
Het instrument is sinds lang ingeburgerd in de praktijk.
Er stellen zich geen problemen in verband met de milieueffectrapportage in relatie tot de vooropgestelde criteria. Voor wat betreft integratie, scoort het instrument zelfs goed, onder meer omdat in de loop van het opmaken van het milieueffectrapport, het project soms nog in meer milieuvriendelijke zin gewijzigd wordt. Dit verklaart wellicht ook waarom zo weinig projecten niet worden vergund op basis van het milieueffectrapport. Voor deze veronderstellingen werd evenwel geen empirisch bewijsmateriaal teruggevonden. Als er zich dan al een probleem kan voordoen met de criteria, dan is het met de rechtszekerheid. De milieueffectrapportage voor projecten komt in het stadium dat iemand een bepaald project wil vergund zien, op percelen die reeds een ruimtelijk bestemming hebben die normaal gezien overeenstemt met het project. Indien het project niet zou kunnen doorgaan, ontstaat een tegenstrijd met de ruimtelijke ordening en het rechtsgevoel van de burger ("*ik mag iets niet wat ik volgens het ruimtelijk plan wel mag*"). Vandaar dat de milieueffectrapportage voor *plannen* zo belangrijk is: zij komt in het stadium waarop de overheid haar (ruimtelijke) plannen gaat opstellen. Op dat moment kan er zich geen probleem voordoen in verband met de rechtszekerheid.

Onteigening

Volgens het Natuurdecreet[37] kunnen om redenen van natuurbehoud, het Vlaamse Gewest en de Vlaamse gemeenten onroerende goederen verkrijgen door onteigening ten algemenen nutte. Onder een onteigening wordt volgens oude en constante rechtspraak verstaan een gedwongen, onherroepelijke en volledige overgang van een zakelijk recht (doorgaans een eigendomsrecht), van de onteigende, dit is de vroegere houder van het recht (eigenaar) naar de onteigenaar, die doorgaans een overheidsinstantie is. Indien een onroerend goed getroffen wordt door een onteigeningsbesluit (dat aan de betrokkene per aangetekende brief werd meegedeeld, dit is eigenlijk de start van een onteigeningsprocedure), dan is het best mogelijk dat alsnog een overdracht in der minne aan de overheid plaatsvindt, zodat niet tot onteigening moet worden overgegaan. Ongeveer 95 % van de overdrachten naar de overheid komen door overeenkomst tot stand, slechts 5 % door onteigening[38]. De onteigeningsvergoeding moet volgens artikel 16 Grondwet billijk (in de zin van juist) zijn, dit houdt praktisch in gebaseerd op de venale waarde. Met de ruimtelijke bestemming of beschermingsmaatregel (zoals de ligging in speciale beschermingszone) mag alleen worden rekening gehouden als de onteigening niet met de vaststelling van het betrokken ruimtelijke plan of de beschermingsmaatregel samenhangt.
Het instrument is sinds lang ingeburgerd in de praktijk en wordt de laatste jaren ook wel eens voor natuurbehoudsdoeleinden ingezet.
Er stellen zich mogelijks problemen in verband met de onteigening in relatie tot sommige van de vooropgestelde criteria. Een onteigening omwille van natuurbehoud zal door de burger al snel strijdig met zijn rechtsgevoel worden aangevoeld: waarom wordt juist ik onteigend ? waarom krijg ik een mindere prijs dan de ander ? waarom gebruikt de overheid geen ander instrument, zeker gezien het leed voor mij ? waarom wil de overheid mijn gronden gaan beheren ? wat nog met het eigendom doen nu een onteigeningsdreiging bestaat ? Criteria die problematisch kunnen zijn, zijn de gelijkheid en non-discriminatie, de proportionaliteit, de subsidiariteit, en de rechtszekerheid. *Louter juridisch* is er evenwel doorgaans geen enkel probleem met deze criteria. Zo aanvaardt de rechtspraak dat de betrokkene die vrijwillig verkoopt een lagere prijs krijgt dan degene die weigert en hem laat onteigenen, of dat de betrokkene die wordt onteigend op basis van een onteigeningsplan behorend bij een ruimtelijk plan die het gebied tot natuurgebied bestemd een hogere vergoeding krijgt dan degene bij wie het al vijf jaar natuurgebied is, of dat geen rekening wordt gehouden met het gebruik dat de overheid later maakt van de grond. Ook mag de rechter geen proportionaliteitstoetsing doorvoeren tussen het algemeen belang (van de gemeenschap), met name het natuurbehoud, en het particulier belang (van de onteigende), en de rechter mag ook niet nagaan of de onteigening wel nodig is om het gemeenschapsdoel te bereiken[39]. Immers het bestuur heeft de keuze van de maatregel die hem het best geschikt voorkomt om het gestelde doel te bereiken. Het kan dus zijn dat met andere maatregelen dan een onteigening het doel ook kan worden bereikt, doch dit maakt van de onteigening nog geen disproportionele maatregel[40].

Bosbeheerplannen

Voor elk bos van ten minste vijf hectare dient volgens het Bosdecreet[41] door de bosbeheerder een beheerplan te worden opgesteld. Voor bossen kleiner dan vijf hectare, is dit niet verplicht, maar kan eveneens een beheerplan worden opgesteld. Een uitvoeringsbesluit[42] regelt het beheerplan nader. Het beheerplan gaat in op de technische en administratieve aspecten van het beheer, de inventarisatie, de kapregeling, de uitvoering van onderhouds- en verbeteringswerken, de verkoop van bosproducten, de bebossing, de herbebossing en de bewaking. Het geldt in beginsel voor 20 jaar. Het beheerplan bindt de opeenvolgende bosbeheerders zolang geen gewijzigd beheerplan werd ingediend en goedgekeurd[43]. Binnen

37 Art. 41, § 1 Natuurdecreet.
38 J. COPPÉE, "L'expropriation", *J.T.* 1979, 106.
39 Cass. 30 maart 1933, *Pas.* 1933, I, 185, concl. P. LECLERCQ; Cass. 23 juni 1978, *T.B.P.* 1979, 241; R.v.St. Van Teemsche, nr. 47.944, 14 juni 1994.
40 Rb. Luik 15 juni 2004, *J.L.M.B.* 2004, 1540.
41 Art. 43, § 3 Bosdecreet.
42 B.Vl.R. van 27 juni 2003 betreffende de beheerplannen van bossen.
43 Art. 43, § 5 Bosdecreet.

de perken van het Bosdecreet voert elke bosbeheerder het beheer van zijn bos overeenkomstig het beheerplan[44].
De beheerplannen worden goedgekeurd door het Bosbeheer. Tegen de afkeuring kan beroep ingesteld worden door de indiener van het beheerplan bij een Comité van beroep. Het beoordelingskader van het Bosbeheer en het Comité van beroep wordt gevormd door de bepaling[45] dat "*het beheer van de bossen tot doel heeft het bosareaal te bewaren en (het) te brengen of te behouden in een bestendige staat van veelzijdige functie*" en, voor de privé-bossen in het Vlaams Ecologisch Netwerk, de door de Vlaamse regering vastgestelde criteria voor duurzaam bosbeheer[46].
Voor elk openbaar bos en bosreservaat dat geheel of gedeeltelijk gelegen is binnen een speciale beschermingszone moeten in het beheerplan tevens de volgens het Natuurdecreet vereiste instandhoudingsmaatregelen opgenomen worden[47]. Een bestaand beheerplan van een dergelijk openbaar bos vervalt uiterlijk twee jaar na het van kracht zijn van het natuurrichtplan. Binnen die periode van twee jaar moet een nieuw beheerplan ingediend worden dat rekening houdt met de bepalingen van het natuurrichtplan[48]. De bestaande beheerplannen voor private bossen mogen blijkbaar worden behouden, voorzover deze bossen niet in het Vlaams Ecologisch Netwerk gelegen zijn, zoniet geldt een vergelijkbare regeling. Wel kan een natuurrichtplan bijkomende beschermingsvoorschriften opleggen aan de bosbeheerder[49]. Het is *in het Natuurdecreet* onduidelijk of een beheerplan als een project of plan te beschouwen is dat onderworpen is aan de zogenaamde passende beoordeling.
Het instrument is stilaan wel ingeburgerd in de praktijk, maar toch zijn nog maar ongeveer 30 % van de private bossen onder een beheerplan gebracht.
Er stellen zich mogelijks problemen in verband met het beheerplan in relatie tot sommige van de vooropgestelde criteria. Meer bepaald is er hier een spanningsveld tussen legaliteit en rechtszekerheid. Voor de bosbeheerder is het wenselijk dat hij eens hij een goedgekeurd beheerplan heeft, voor 20 jaar het beheer mag voeren overeenkomstig dat plan (en zo is het ook bepaald in het Bosdecreet). Voor de instandhouding van de speciale beschermingszones (en dus het nakomen van de Europese verplichtingen door het Vlaamse Gewest) daarentegen is het problematisch dat de bestaande beheerplannen voor private bossen zonder meer behouden blijven. Beter zou worden opgelegd dat beheerplannen, ook voor private bossen, moeten voldoen aan de instandhoudingsdoelstellingen voor speciale beschermingszones, en een procedure worden voorzien die het Bosbeheer zou toelaten de bosbeheerder te verplichten tot het herzien van zijn beheerplan, in het licht van de instandhoudingsdoelstellingen.

Ruilverkaveling

De ruilverkaveling, de landinrichting en de natuurinrichting zijn drie inrichtingsinstrumenten die betrekking hebben op het landelijk gebied. Het inrichten van gebieden houdt in dat éénmalige werken gebeuren om een gunstige uitgangssituatie te bekomen voor bepaalde functies in het gebied: herverkaveling, infrastructuurwerken, grondverzet, structuurwerken aan waterlopen, bedrijfsverplaatsing, enz. De doelstellingen die men met de inrichting beoogt verschilt bij de drie instrumenten. Onder ruilverkaveling wordt verstaan de inrichting van het landelijk gebied met het oog op een economisch betere landbouwexploitatie. Landinrichting heeft een multifunctioneel doel. In richtplannen en inrichtingsplannen bij landinrichting, en bij ruilverkaveling, inzonderheid het landschapsplan daarbij, in een speciale beschermingszone, dienen volgens het VLM-decreet respectievelijk de Ruilverkavelingswet[50] de vereiste instandhoudingsmaatregelen te worden opgenomen.

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44 Art. 46, leden 1 en 4 Bosdecreet.
45 Art. 41, lid 1 Bosdecreet.
46 Art. 41 lid 2 Bosdecreet.
47 Art. 19, lid 3 Bosdecreet.
48 Art. 3, § 2 B.Vl.R. van 27 juni 2003 betreffende de beheerplannen van bossen.
49 De bijkomende beschermingsvoorschriften die in een natuurrichtplan kunnen worden opgelegd, en die betrekking hebben op de bosbouw, zijn: de bescherming of het herstel van bepaalde bos- en andere habitats door de bosbeheerder; een verbod op het aanplanten van (bepaalde soorten) bomen of struiken (art. 8 tot en met 18 B.Vl.R. van 21 november 2003 houdende maatregelen ter uitvoering van het gebiedsgericht natuurbeleid, verkort: Maatregelenbesluit).
50 Art. 13, § 2 V.L.M.-decreet; art. 62, lid 5, art. 70, lid 1 en art. 71, lid 1 Ruilverkavelingswet.

Het instrument is ingeburgerd in de praktijk.
Er stellen zich mogelijks problemen in verband met de ruilverkaveling in relatie tot sommige van de vooropgestelde criteria, met name de propotionaliteit en de legaliteit. Meer bepaald rijst qua legaliteit de vraag of het niet haast per definitie strijdig is met de instandhoudingsdoelstellingen in een speciale beschermingszone inrichtingsmaatregelen te nemen met een overheersende landbouwdoelstelling. Hoe dan ook is een ruilverkaveling onderworpen aan de zogenaamde passende beoordeling. Voor wat betreft de proportionaliteit brengt de ruilverkaveling toch soms zware eigendomsbeperkingen met zich mee (tot zelfs verplichte kavelruil) tegenover het eerder beperkte maatschappelijke nut (een economisch betere landbouwexploitatie voor bepaalde landbouwers).

Landaankoop

Het natuurbehoud is een doeleinde van algemeen belang. De overheid kan ten behoeve van het natuurbehoud gebruikmaken van privaatrechtelijke instrumenten, zoals de (ver)koop en de (ver)huur (van gronden), die eenieder ter beschikking staan. Het Natuurdecreet bevat specifieke bepalingen over de onteigening (hoger reeds besproken), de ruil, het recht van voorkoop, en de gedwongen aankoop. Het Vlaamse Gewest kan, om redenen van natuurbehoud en op voorstel van de eigenaar, het eigendomsrecht, de pacht, de huur of het recht van gebruik van een onroerend goed dat het in eigendom heeft of waarover het kan beschikken, ruilen tegen het eigendomsrecht, pacht, huur of recht van gebruik van een ander onroerend goed mits akkoord van de houder van het betrokken recht[51]. Het Vlaamse Gewest heeft in bepaalde gebieden (doch niet op zichzelf in speciale beschermingszones) een recht van voorkoop bij verkoop van onroerende goederen[52]. De eigenaar van een onroerend goed kan van het Vlaamse Gewest de verwerving daarvan eisen indien hij aantoont dat, ten gevolge van de aanduiding van dit onroerend goed als een GEN of GENO of de aanwijzing ervan als een speciale beschermingszone, de waardevermindering van zijn onroerend goed ernstig is, ofwel dat de leefbaarheid van de bestaande bedrijfsvoering ernstig in het gedrang komt. De Vlaamse regering bepaalt de nadere voorwaarden en de procedure van deze koopplicht[53]. Dat is gebeurd in het Maatregelenbesluit. Opmerkelijk is de bepaling in het Maatregelenbesluit dat de overheid de waarde moet vergoeden alsof het onroerend goed niet in een GEN, GENO of speciale beschermingszone lag, wat de gedwongen aankoop voor de overheid budgettair weinig aantrekkelijk maakt.
Het aankopen van land, eventueel in toepassing van het recht van voorkoop, is ingeburgerd in de praktijk, en hangt doorgaans samen met de oprichting van natuurreservaten. Het is ons niet bekend of reeds gebruik is gemaakt van de ruil. De gedwongen aankoop heeft bij ons weten nog geen toepassing gevonden.
Er stellen zich mogelijks problemen in verband met sommige van deze instrumenten in relatie tot sommige van de vooropgestelde criteria. Het recht van voorkoop wordt door de burger soms als onproportionele aantasting van het eigendomsrecht beschouwd. Louter juridisch gezien is dit onjuist, vermits de overheid gewoon in de plaats komt van de koper, niet meer dan dat. Beleidsmatig zou er wel een zekere onproportionaliteit kunnen zijn, vermits het aantal aanbiedingen zeer groot is, en de overheid slechts heel zelden zijn recht van voorkoop uitoefent. En zelfs bij een gewone aankoop van land door de overheid kan de eventuele pacht worden opgezegd, zodat ook dit kan leiden tot ongenoegen bij de landbouwers. Een ander probleem vormt de waardepaling bij een gedwongen aankoop. Vooreerst zou bij de waardebepaling van het onroerend goed bij een onteigening in beginsel wel rekening moeten worden gehouden met de ligging in een GEN, GENO of speciale beschermingszone, wat problematisch lijkt in het licht van het gelijkheidsbeginsel. Tevens toont de praktijk wellicht aan dat de koopplicht onproportioneel is met de (blijkbaar eerder als licht aangevoelde) beperkende maatregelen waaraan de eigenaar of gebruiksgerechtigde wordt onderworpen.

Natuurprojectovereenkomsten

51 Art. 41, § 1 Natuurdecreet.
52 Art. 37, § 1 Natuurdecreet.
53 Art. 42 Natuurdecreet.

Volgens het Natuurdecreet[54] kan de minister binnen de grenzen van de begrotingskredieten natuurprojectovereenkomsten sluiten in bepaalde gebieden, waarbij vergoedingen worden toegekend voor locale projecten in uitvoering van een natuurrichtplan ten behoeve van het natuurbehoud, de natuurontwikkeling, de natuurrecreatie en de natuureducatie.
Het instrument heeft bij ons weten in de praktijk nog geen toepassing gevonden.
Er stellen zich geen problemen in verband met het instrument in relatie tot de vooropgestelde criteria. Het lijkt me wel dat de wetgeving inzake overheidsopdrachten in de gaten zal moeten worden gehouden, mede gezien de vaagheid van de bepaling in het Natuurdecreet.

Natuurinrichting

Het inrichten van gebieden houdt in dat éénmalige werken gebeuren om een gunstige uitgangssituatie te bekomen voor bepaalde functies in het gebied: herverkaveling, infrastructuurwerken, grondverzet, structuurwerken aan waterlopen, bedrijfsverplaatsing, enz. Natuurinrichting is gericht op de inrichting van het landelijk gebied met het oog op natuurontwikkeling (met inbegrip van natuurherstel). De decretale basis van de natuurinrichting vindt men in de artikelen 47 en 47bis van het Natuurdecreet. De natuurinrichting wordt voornamelijk geregeld in de uitvoeringsbesluiten, inzonderheid het Natuurbesluit[55].
Het instrument krijgt stilaan meer toepassing in de praktijk. In 2003 waren er reeds ongeveer 25 natuurinrichtingsprojecten ingesteld of in voorbereiding, die samen goed zijn voor een oppervlakte van bijna 10.000 ha.
Er stellen zich mogelijks problemen in verband met de natuurinrichting in relatie tot sommige van de vooropgestelde criteria, met name de proportionaliteit. De natuurinrichting kan indien zij wordt doorgevoerd op gronden van eigenaars of gebruiksgerechtigden die een loutere economische uitbating voor ogen hebben, zware eigendomsbeperkingen met zich meebrengen (tot zelfs verplichte kavelruil, ofschoon dit in de praktijk bij ons weten nog nooit is toegepast) tegenover het maatschappelijk nut (natuurontwikkeling en -herstel).

Vergunning

Er bestaan diverse vergunningenstelsels in andere wetgevingen dan de natuurbehoudswetgeving die van belang zijn voor het natuurbehoud, zoals de stedenbouwkundige vergunning, de milieuvergunning, de kapmachtiging.
In het Natuurdecreet[56] zelf wordt voorzien in een eigen algemeen vergunningenstelsel, met name dat de Vlaamse regering onder bepaalde voorwaarden algemene maatregelen kan nemen en daarbij onder meer een vergunningsplicht invoeren. Hiermee wordt in essentie bedoeld een regeling ter bescherming van vegetatie en kleine landschapselementen, door de wijziging ervan te verbieden of vergunningsplichtig te maken. De concrete regeling is neergelegd in Hoofdstuk IV van het Natuurbesluit (met een ministeriële omzendbrief)[57], dat handelt over de wijziging van vegetatie en kleine landschapselementen, en eerst in dit uitvoeringsbesluit is er sprake van de "*natuurvergunning*", en dan nog slaat deze term niet op alle vergunningen. Wij gebruiken de term evenwel wel in zijn algemeenheid.
Onder de natuurvergunning vallen volgens het Natuurbesluit de volgende activiteiten:
- het wijzigen van historisch permanenten graslanden[58] en poelen in groene ruimtelijke bestemmingen, holle wegen, graften[59], bronnen, vennen en heiden, moerassen en waterrijke gebieden, en duinvegetaties[60] (relatief verbod);

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54 Art. 45, § 1 Maatregelenbesluit.

55 B.Vl.R. van 23 juli 1998 tot vaststelling van nadere regels ter uitvoering van het decreet van 21 oktober 1997 betreffende het natuurbehoud en het natuurlijk milieu.

56 Art. 13 en 15 Natuurdecreet.

57 B.Vl.R. van 23 juli 1998 tot vaststelling van nadere regels ter uitvoering van het decreet van 21 oktober 1997 betreffende het natuurbehoud en het natuurlijk milieu; Omzendbrief 10 november 1998 LNW/98/01 betreffende algemene maatregelen inzake natuurbehoud (…), *B.S.* 17 februari 1999.

58 Zie ook art. 1, 14° Natuurbesluit.

59 Dit zijn begroeide stroken (bosrestanten) op hellingen in een cultuurlandschap. Zij komen vooral in de Voerstreek voor.

60 Zie ook art. 7, §1 Natuurbesluit.

- het wijzigen van vegetatie als zodanig in groene en geelgroene ruimtelijke bestemmingen en bepaalde beschermde gebieden (natuurvergunning);
- het wijzigen van bepaalde kleine landschapselementen (zoals houtachtige beplantingen) in landschappelijke waardevolle agrarische gebieden en groenere ruimtelijke bestemmingen, en bepaalde beschermde gebieden (natuurvergunning).

Onder de melding valt onder meer het wijzigen van kleine landschapselementen in agrarische gebieden, enz.

Daarnaast bestaan in het Natuurdecreet nog gebiedsgerichte beschermingsvoorschriften in het Vlaams Ecologisch Netwerk, geformuleerd als verbodsbepalingen waarvan ontheffing kan worden verleend.

De natuurvergunningsplicht is na aanvankelijke moeilijkheden ondertussen toch ingeburgerd in de (gemeentelijke bestuurs)praktijk.

Er stellen zich mogelijks problemen in verband met het instrument in relatie tot de vooropgestelde criteria. Vooreerst wordt het voor de burger soms als onproportionele aantasting van het eigendomsrecht aangevoeld dat hij een vergunning moet vragen om enkele bomen te kappen of vegetatie te wijzigen. *Louter juridisch* stelt zich echter geen probleem op dat vlak. Wel roept de regeling soms vragen op in verband met de legaliteit: er valt moeilijk in te zien waarom de beleidsmakers met relatieve verbodsbepalingen of vergunningsplichten werken voor vegetatiewijzigingen in groene gebieden volgens de ruimtelijke ordening, waar deze wegens de verordenende kracht van de ruimtelijke plannen niet mogen. Ook geldt de vergunningsplicht voor vegetatiewijziging slechts binnen de aangewezen habitats en ruimtelijke bestemmingen van de niet-integraal aangewezen speciale vogelbeschermingszones, wat ons strijdig lijkt met de instandhoudingsverplichting opgelegd door de Vogelrichtlijn. Hetzelfde geldt voor de beperking in het Natuurdecreet dat het natuurvergunningenstelsel er niet mag toe leiden dat de verwezenlijking van de ruimtelijke bestemming verhinderd wordt. Tevens is het wel een complexe regeling, zelfs nog bekeken los van andere vergunningenstelsels, zodat er problemen kunnen rijzen met de rechtszekerheid. Zo is het niet steeds duidelijk wanneer men te doen heeft met een beschermde vegetatie. Een herdenking van het ganse natuurvergunningenstelsel lijkt om bovenstaande en nog diverse andere redenen opportuun[61].

Zorgplicht en code van goede natuurpraktijk

In het Vlaamse Gewest werd de zorgplicht in het Natuurdecreet[62] van bij het begin als zeer belangrijk beschouwd in de natuurmiddens: "*Iedereen die handelingen verricht of hiertoe de opdracht verleent, en die weet of redelijkerwijze kan vermoeden dat de natuurelementen in de onmiddellijke omgeving daardoor kunnen worden vernietigd of ernstig geschaad, is verplicht om alle maatregelen te nemen die redelijkerwijze van hem kunnen worden gevergd om de vernietiging of de schade te voorkomen, te beperken of indien dit niet mogelijk is, te herstellen*." Zij geldt rechtstreeks, dus zij behoeft geen nadere uitvoeringsmaatregelen. Wel geeft sinds het wijzigingsdecreet van 2002 de mogelijkheid dat de Vlaamse Regering de zorgplicht concretiseert in een code van goede natuurpraktijk. Dit is vooralsnog niet gebeurd[63], ofschoon deze bepaling heel wat mogelijkheden biedt.

De overtreding van de zorgplicht heeft reeds tot enkele veroordelingen in de rechtspraak geleid. Aangezien er nog geen code van goede natuurpraktijk bestaat, stelt de vraag naar de toepassing in de praktijk voor dat instrument niet.

Er stellen zich mogelijks problemen in verband met de zorgplicht, en dus ook de code van goede natuurpraktijk in relatie tot sommige van de vooropgestelde criteria. Het Grondwettelijk Hof heeft op 27 mei 2008[64] op prejudiciële vraag geoordeeld dat de strafrechtelijke sanctionering van de zorgplicht ongrondwettig is, want strijdig met het wettigheidsbeginsel in

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61 A. CLIQUET, G. VAN HOORICK, J. LAMBRECHT en D. BOGAERT, "Gebiedsgericht natuurbeleid: operationalisering en uitvoering van de Vogelrichtlijn en de Habitatrichtlijn", in: M. VAN STEERTEGEM (ed.), MIRA-BE 2005, Aalst, Vlaamse Milieumaatschappij, 2005, 104-108.

62 Art. 14 Natuurdecreet.

63 Wel bestaat er een omzendbrief die voor vegetatie en kleine landschapselementen aangeeft wat onder normale onderhoudwerken moet worden verstaan, die worden vrijgesteld van de verplichting tot het aanvragen van een natuurvergunning, zie Omzendbrief 10 november 1998 LNW/98/01 betreffende algemene maatregelen inzake natuurbehoud (…), *B.S.* 17 februari 1999.

64 Grondwettelijk Hof nr. 82/2008, 27 mei 2008.

strafzaken, neergelegd in artikel 12 Grondwet. De bezwaren van het Hof slaan op de vage term "*handelingen*" en de alomvattende definitie van het begrip "*natuurelement*" vooraan in het Natuurdecreet, in het licht van het gegeven dat de zorgplicht voor iedereen geldt. Bovendien leidde het Hof uit de parlementaire voorbereiding af dat de decreetgever het blijkbaar noodzakelijk achtte dat de Vlaamse Regering door middel van een code van goede natuurpraktijk een "*handleiding*" zou worden geboden. Overigens kan volgens het Hof de Vlaamse Regering de ongrondwettigheid niet verhelpen door alsnog een code van goede natuurpraktijk op te stellen. Binnen de zes maanden kan nu een beroep tot vernietiging van de bepaling worden ingesteld bij het Grondwettelijk Hof. Alleszins lijkt het belang van de zorgplicht met het wegvallen van de (strafrechtelijke, maar dit kan uitgebreid worden naar bestuurlijke) sanctionering grotendeels uitgespeeld. Ook een code van goede natuurpraktijk kan in de huidige stand van het Natuurdecreet niet gehandhaafd worden vanuit de overheid, tenzij misschien hoogstens in toepassing van het Wet van 12 januari 1993 op het vorderingsrecht voor milieuverenigingen.

Bescherming bij wet

Er gelden geen specifieke verbodsbepalingen in speciale beschermingszones. De beleidsmakers hebben vertrouwd op de zorgplicht en op het natuurrichtplan: voor elke speciale beschermingszone wordt een natuurrichtplan opgesteld en op die manier zou in "*maatwerk*" worden voorzien[65]. Volgens het Natuurbesluit geldt het relatief verbod en de vereiste van een natuurvergunning voor de wijziging van vegetatie binnen de aangeduide habitats en bestemmingsgebieden van de speciale vogelbeschermingszones en de definitief vastgestelde speciale habitatbeschermingszones, en voor de wijziging van kleine landschapselementen binnen de perimeter van de speciale vogelbeschermingszones en de definitief vastgestelde speciale habitatbeschermingszones. In het Maatregelenbesluit vindt men slechts één nieuwe specifieke verbodsbepaling terug voor de aangewezen speciale habitatbeschermingszones: het is verboden om overstorten aan te leggen in de speciale beschermingszones aangeduid voor een vissoort uit bijlage II van het Natuurdecreet[66].
Aangezien er geen specifieke beschermingsvoorschriften in speciale beschermingszones bestaan, zodat de vraag naar de toepassing in de praktijk zich niet stelt.
Er stellen zich door het gebrek aan specifieke beschermingsvoorschriften mogelijke problemen in verband met het instrument in relatie tot sommige van de vooropgestelde criteria, met name de legaliteit. Er zou, om aan de Europese instandhoudingsverplichtingen in speciale beschermingszones te voldoen, minstens een *catch all*-bepaling in de wetgeving moeten worden ingevoerd die alle ingrepen die een speciale beschermingszone nadelig kunnen beïnvloeden, vergunningsplichtig maakt[67].

Bekkenbeheerplannen

Het (integraal) waterbeleid wordt in het Vlaamse Gewest geregeld door het Decreet van 18 juli 2003 betreffende het integraal waterbeleid. Centraal staat een (zwaar opgezette) waterbeleidsplanning, met een waterbeleidsnota (op Vlaams niveau en per stroomgebied), stroomgebiedbeheerplannen, bekkenbeheerplannen, deelbekkenbeheerplannen, bekkenvoortgangsrapporten, en maatregelenprogramma's (per stroomgebiedsdistrict). De stroomgebiedbeheerplannen, bekkenbeheerplannen en deelbekkenbeheerplannen worden vastgesteld door de Vlaamse regering via een vastgelegde procedure. De bepalingen in de bekkenbeheerplannen en deelbekkenbeheerplannen kunnen beperkingen opleggen maar mogen evenwel geen beperkingen vaststellen die absoluut werken of handelingen verbieden of onmogelijk maken die overeenstemmen met de plannen van aanleg of de ruimtelijke

65 Wel is volgens het Maatregelenbesluit elke administratieve overheid gehouden de habitats van bijlage I van het Natuurdecreet en de historisch permanente graslanden, vennen en heiden, moerassen en waterrijke gebieden, duinvegetaties en struwelen en kleine landschapselementen, die voorkomen op gronden waarover zij enig recht van beheer uitoefenen, de instandhouding te realiseren (art. 7 Maatregelenbesluit).

66 Art. 5 § 2 Maatregelenbesluit.

67 A. CLIQUET, G. VAN HOORICK, J. LAMBRECHT en D. BOGAERT, "Gebiedsgericht natuurbeleid: operationalisering en uitvoering van de Vogelrichtlijn en de Habitatrichtlijn", in: M. VAN STEERTEGEM (ed.), MIRA-BE 2005, Aalst, Vlaamse Milieumaatschappij, 2005, 104-108.

uitvoeringsplannen, noch de realisatie van die plannen en hun bestemmingsvoorschriften verhinderen, *met uitzondering van de werken of handelingen binnen overstromingsgebieden en oeverzones*[68]. Opvallend is dus dat het primaat van de ruimtelijke ordening ten opzichte van het waterbeleid niet geldt in de oeverzones en overstromingsgebieden. Daar kan een bouwverbod worden opgelegd, zelfs ingaand tegen de ruimtelijke bestemming. Bovendien zijn de schadevergoedingsmogelijkheden bij b.v. verhoging van het waterpeil op grond van het decreet beperkter dan indien dit in het kader van het natuurbeleid gebeurt. Dit alles maakt dat het waterbeleid een heel belangrijke bondgenoot kan worden van het natuurbeleid.
Aangezien men nu nog in de fase zit van het opstellen van de plannen, rijst de vraag naar de toepassing in de praktijk nog niet.
Er stellen zich mogelijks problemen in verband met sommige van deze instrumenten in relatie tot sommige van de vooropgestelde criteria. Zo lijkt het moeilijk te verantwoorden in het licht van de gelijkheid en non-discriminatie dat schadevergoedingsmogelijkheden voor dezelfde maatregelen (zoals verhoging van het waterpeil) verschillen naargelang de beleidstak waarin deze worden doorgevoerd. Ook de rechtszekerheid van de burger lijdt onder het gegeven dat het waterbeleid "*haasje over*" kan spelen met het ruimtelijk plan, en de uitvoering van dit plan onmogelijk kan maken.

Soortenbeschermingsplan

De huidige rechtsgrond voor maatregelen inzake soortenbescherming wordt gevormd door het Natuurdecreet[69], dat de Vlaamse Regering toelaat alle maatregelen te nemen voor het behoud van "*populaties van soorten of ondersoorten van organismen*". In de planning van het natuurbeleid staan het natuurrapport en het natuurbeleidsplan centraal. Het natuurbeleidsplan is een actieplan en kadert in het milieubeleidsplan bedoeld in het Decreet van 5 april 1995 houdende algemene bepalingen inzake milieubeleid. De Vlaamse Regering bepaalt de delen van het natuurbeleidsplan die bindend zijn voor de administratieve overheden. Het natuurbeleidsplan omvat onder meer "*een deelplan waarin soortenbeschermingsplannen kunnen worden opgenomen*". Een verdere operationalisatie gebeurt onder meer via de milieujaarprogramma's. Tot dusver werden evenwel nog geen soortenbeschermingsplannen in het kader van het natuurbeleidsplan vastgesteld. Binnen het Agentschap voor Natuur en Bos wordt wel gewerkt aan het opstellen van buitenwettelijke soortenbeschermingsplannen (onder meer voor de Europese hamster).
De toepassing in de praktijk van deze buitenwettelijke soortenbeschermingsplannen is ons niet bekend.
Er stellen zich geen problemen in verband met het instrument in relatie tot de vooropgestelde criteria. Uiteraard is een buitenwettelijk plan niet meteen het meest geschikte instrument voor het voeren van een effectief natuurbeleid.

Natuurreservaten

Volgens het Natuurdecreet[70] is een Vlaams natuurreservaat "*een beschermd gebied dat door de Vlaamse regering wordt aangewezen op terreinen die het Vlaamse Gewest in eigendom of in huur heeft of die daartoe ter beschikking worden gesteld*". De Vlaamse natuurreservaten zijn de vroegere staatsnatuurreservaten. Het Natuurdecreet[71] definieert een erkend natuurreservaat als een beschermd gebied, dat geen Vlaams natuurreservaat is, en "*dat door de Vlaamse regering wordt erkend op verzoek van de eigenaar en/of diegene die het gebruiksrecht heeft, mits beider toestemming, of van de beheerder, mits de eigenaar ermee instemt*". De erkenning geldt voor 27 jaar en is voor hernieuwing vatbaar. Het betreft terreinen van natuurverenigingen, die door het Vlaamse Gewest financieel worden ondersteund voor de aankoop en het beheer[72]. Natuurreservaten worden beheerd volgens een door de bevoegde minister goedgekeurd beheersplan waarin een bepaald natuurstreefbeeld wordt

68 Art. 42, § 1, lid 2 en art. 46, § 1, lid 2 Decreet integraal waterbeleid.
69 Art. 51 Natuurdecreet.
70 Art. 33, lid 1 Natuurdecreet.
71 Art. 33, lid 2 Natuurdecreet.
72 B.Vl.R. van 27 juni 2003 tot vaststelling van de voorwaarden voor de erkenning van natuurreservaten en van terreinbeherende natuurverenigingen en houdende toekenning van subsidies.

vooropgesteld. Volgens het Natuurdecreet[73] gelden binnen de natuurreservaten een aantal strenge verbodsbepalingen. Deze maatregelen kunnen evenwel geen erfdienstbaarheden opleggen op de omliggende gebieden. Daarmee wordt bedoeld dat de verbodsbepalingen niet gelden voor op zich rechtmatige activiteiten buiten natuurreservaten, die een nadelige invloed kunnen hebben erbinnen.
Voor wat betreft de toepassing in de praktijk, dient gesteld dat de reservaatsvorming de laatste jaren (gelukkig) in een stroomversnelling komt, maar toch bedraagt de totale oppervlakte nog geen 2 % van Vlaanderen.
Er stellen zich mogelijks problemen in verband met het instrument in relatie tot sommige van de vooropgestelde criteria. Er zijn vooreerst de veel gehoorde opmerkingen vanwege eigenaars dat er geen gelijkheid is door die (hogere) financiële ondersteuning voor het beheer, en de aankoopsubsidies. Deze kwestie is nog niet aan bod gekomen in de rechtspraak. De natuurmiddens gaan er wellicht nogal gemakkelijk vanuit dat *louter juridisch* zich geen problemen stellen. De vraag rijst of dit niet te kort door de bocht is. Voor wat betreft het beheersluik, zou het toch wel discriminerend kunnen zijn dat volgens het uitvoeringsbesluit (niet het decreet) de beheersubsidies worden voorbehouden voor natuurverenigingen. Een eigenaar die hetzelfde wenst te doen, met dezelfde professionele ondersteuning als de natuurverenigingen (b.v. door een studiebureau), zou eigenlijk ook die kans moeten krijgen, niet ? Voor wat betreft de aankoopsubsidies, zou het wel eens kunnen dat deze vanuit Europeesrechtelijk standpunt concurrentieverstorend zijn. Het lijkt toch niet zomaar te ontkennen dat de markt kan worden verstoord doordat de natuurverenigingen (soms tot 90 %) gesubsidieerd worden voor hun aankopen. Wellicht zal vroeg of laat de Europese Commissie of het Hof van Justitie zich daarover moeten uitspreken. Het lijkt ons ondertussen alvast een topic voor verder juridisch onderzoek. Tenslotte moet worden opgemerkt dat aan de aanwijzing of erkenning van een natuurreservaat geen openbaar onderzoek voorafgaat, zodat de bevolking in de besluitvorming geen kans tot inspraak wordt geboden. Dit laatste valt evenwel te begrijpen in het licht van het gegeven dat de aanwijzing of erkenning geen bijkomende beschermingsmaatregelen *buiten* het natuurreservaat met zich meebrengt.

Vrijstelling van successierechten

Er geldt op grond van artikel 55quater van het Wetboek der Successierechten[74] een vrijstelling van successierechten in het Vlaams Ecologisch Netwerk zonder voorwaarden, en voor bossen onder bepaalde voorwaarden (beheersplan dat voldoet aan criteria voor duurzaam bosbeheer; uitdrukkelijk verzoek om de vrijstelling in de aangifte van nalatenschap, gestaafd met een attest opgemaakt en uitgereikt door het Vlaamse Gewest volgens de regels bepaald bij uitvoeringsbesluit, dat voldaan werd aan de eerste voorwaarde). Het recht van successie of van overgang bij overlijden dat verschuldigd zou zijn geweest over het bij toepassing van artikel 55quater van het Wetboek der Successierechten vrijgesteld bedrag, wordt geacht als subsidie te zijn verleend, onder bepaalde voorwaarden (de goederen moeten hun aard van bos blijven behouden; de goederen moeten blijven voldoen aan de vermelde voorwaarden in het Wetboek der successierechten; het effectief gevoerde beheer moet overeenstemmen met het goedgekeurde beheersplan). Indien deze voorwaarden niet worden nageleefd moet de subsidie worden terugbetaald.
De toepassing in de praktijk is ons niet bekend.
Er stellen zich geen problemen in verband met het instrument in relatie tot de vooropgestelde criteria.

Participatie

In het natuurbeleid bestaan voor de meeste besluitvormingsprocessen de mogelijkheid tot inspraak via een openbaar onderzoek. Een openbaar onderzoek houdt in al naargelang het geval dat aanvragen tot vergunning of ontwerpen van plannen gedurende een periode (meestal 30 dagen) ter inzage van de bevolking worden gelegd, en dat de bevolking

[73] Art. 35, § 2 Natuurdecreet.

[74] Decreet van 9 mei 2003 tot invoering van een vrijstelling van successierechten voor bossen en van een vrijstelling van successierechten en onroerende voorheffing voor gronden gelegen in het VEN, *B.S.* 2 juni 2003.

gedurende die periode bezwaarschriften kan indienen. Toch zijn er belangrijke uitzonderingen waar er geen openbaar onderzoek wordt of werd gehouden. De aanwijzing en erkenning van natuurreservaten gebeurt zonder voorafgaand openbaar onderzoek. Ook gebeurde de *vroegere* aanwijzing of vaststelling van speciale beschermingszones zonder openbaar onderzoek, en op dit laatste is er toch heel wat kritiek geuit vanuit de kant van onder meer de eigenaars. De kapmachtiging wordt verleend zonder onderbaar onderzoek
Daarnaast zijn er in sommige besluitvormingsprocessen andere mogelijkheden tot inspraak, zoals door adviesorganen, stuurgroepen, beheerscommissies, enz.
De toepassing in de praktijk is ons niet bekend.
Er stellen zich mogelijks problemen in verband met het instrument in relatie tot sommige van de vooropgestelde criteria. De beleidsmakers dienen meer na te denken vooraleer openbare onderzoeken in te voeren, en met name na te gaan of inspraak wel vereist is en zo ja, of het openbaar onderzoek het ideale instrument is voor die inspraak. Zo lijkt het weinig proportioneel dat zelfs voor het vellen van één boom in het veld, indien er daarvoor een natuurvergunning nodig is, in de vergunningsprocedure ook een openbaar onderzoek moet georganiseerd worden.

4.3.2 Social

Excel file

4.3.3 Economic

The assessment of instruments, for the economic part, will be led in accordance with some guidelines explained hereafter.

The first objective obviously is to know the application cost of each instrument and in a second time compare this cost to the results gained on the field. Nevertheless, it is not possible to give a clear quantitative answer for each instrument. So the collection of information is conducted to answer the following question:

- What does it cover? It could be
    - A loss of earnings
    - The payment of a management action
    - The price of other action (e.g. doing an impact assessment)
- Who pays?
- Who is the beneficiary?
- When is it paid?
- Is it expensive or cheap? This question is quite difficult to answer in a so short and one-discipline oriented analysis. To answer this question we have to compare in regard of results gained on the field, the ecological results, but also evaluate if it is socially acceptable.

Note that for some instruments it is not relevant to answer to each of the above items. Moreover some comments will be done qualitatively to give an opinion on the opportunity to use the instrument for a better application of Natura 2000.

Agri-Environmental Measures (AEM) + Organic farming subsidies

The AEM give a financial support to farmers who voluntary use, for a minimal duration of 5 years, methods of agricultural production planned to protect environment and preserve natural space.

For the organic farming subsidies, there are some differences. This regime was adapted in 2003, the amounts of subsidies were modified (they are decreasing in function of the superficies) and every farmers, not only the ones who are farmer as principal activity, can received this help. Moreover, the duration is not limited to 5 years.

The objective of this support is to compensate the loss of earnings and additional costs supported by farmers who maintain or implement production methods going beyond legal levels, so for what is beyond the level "base line": at the minimum, the requirement of the conditionality. The compensation of the loss of earnings corresponds to the difference between the standard raw margin of a "mean" agricultural parcel and the raw margin that we can expect on a parcel in agrienvironment.

Moreover, the farmers have to respect, over their whole exploitation, the requirements of the conditionality and some complementary constraints are not compensated.

Concerning the date of payment, in the decree, it is specified that the first payment is done 13 to 17 months after the commitment, set up the 1st April each year. That means that in theory the payments have to be done for the 1st September at last. This delay is very long and the Walloon Region does not respect it every time because in 2007, the payments were done on 15th October.

This instrument is financed by the Regions (Walloon and Flemish) and the European Commission (via the FEADER) at a rate of 50/50. For the Walloon Region, the public expenses is about 146 114 000 € with 73 057 000 € from the FEADER. Note that the amount of 146,114 millions € will not be enough to cover the whole period of programming taking into account the fixed objectives. To reach this objective, a budget of 183 millions € is necessary. So when the budget for agrienvironment will be empty, the Walloon Region will take in charge 100 % of expenses unless Europe can give more money.

This instrument is possible with or without Natura 2000 and is okay to ensure economic viability of agricultural exploitations. Economically the good point is that this instrument is cofinanced by EU.

Eco-conditionnality

In accordance with European rules for agrienvironmental payments, the payments of AEM and Organic farming relative to 5 years agreements from 2007 are subordinated to the respect of conditionality. So it is required to fulfill:

- rules of conditionality
- minimal requirements for use of manure and phytosanitary products

The non-respect of these rules can give a suppression/reduction of his "unique rights" (Budget of 1st pillar of the PAC) and AEM and organic farming subsidies (Budget 2nd pillar of the PAC) when this non-respect is noted on a parcel on which is applied AEM regime. In this case, the respect of some rules of eco-conditionnality becomes a condition of eligibility to the payment.

In concrete terms in a case of non-conformity to the rules, a sanction can be applied. It corresponds to a reduction of 3% of the whole helps, 'découplée' or not. In accordance with the gravity, the expanse and the permanence of the non-conformity, the decrease can get 5 % or be reduced to 1 % or even to 0 % in some particular cases. In case of repeat of non-conformity, the sanction can be multiplied by three. In case of intentional non-conformity, the sanction can be fixed between 15 and 100 %.

The payment of the unique rights comes the 1st December that is 8 months after the declaration of the PAC (must be back for 1st April). The AEM payment is done 13 to 17 months after the commitment.

It is the Walloon Region who pays the farmer. So the Walloon Region recovers the money from sanctions but she has to give back 75 % of it to Europe (FEOGA). In 2007, the Walloon region took 300 000 € for the conditionnality in her pockets and must then give back 225 000 € to Europe.

Environmental impacts assessment

The Environmental impacts assessment is an evaluation made by an authority recognized by the government and chosen by the requester. Each research department defines his own rates so the cost will vary from one project to another.

If it is a project, it is the promoter of the project who pays the EIA,
If it is a land use plan, it is the public authority who pays (Walloon Region, municipalities, intercommunales, ….)

The cost of the EIE will be minimal in relation to the implementation of the whole project/plan but quite important in relation to whole study of the project/plan.

Expropriation

Expropriation is not a sale and the payment of this compensation cannot be considered as the payment of a price but the integral reparation of the undergone prejudice, to be recognized as a damage that comes from the removal of a property right.

The compensation of expropriation has to take into account the different prejudices undergone by the expropriated person. The criterions of compensation evaluation are in particular:

- venal value
- future value
- convenience and affection value
- indemnity for depreciation of remaining portion
- reuse indemnities
- delay interests
- movable indemnities
- troubles of professional or commercial activity
- judicial interests
- defence costs

The critera presented above have to be taken in account for expropriation in general. In the case of nature conservation, it is possible to add some remarks.

The first question to ask is about *public utility*: “Could nature conservation be referred to reason of public utility?”.

Secondly, we have to know if we are in a normal procedure or of extreme emergency. As the ordinary procedure is long and heavy, law has established a procedure of extreme emergency, much faster than the normal one. That is why public authorities refer to this procedure.
Costs will be very high because the person has to be repaid to maintain the situation like “nothing has happened!”. The compensation of the full damage gives two possibilities:

- either the field is left behind or does not present a very big interest and in this case the amount will be quite small,
- or we face a building field and then the amount is more expensive.

It is the public authority that will pay the compensation to the expropriated person.

Forest management plan

In this case, we have to consider two options. Making a forest management plan is not compulsory for private forest; if the owner elaborated a plan, some costs will be induced:

- buying of maps
- services of surveyor
- services of an expert

- use of a software
- costs of implementation and active management
- …

Conversely, it is compulsory for public forest, which then induces:
- Inventory of fixtures of the resource and ecological conditions
- discussion of the possible options
- planning of management actions and expenses/receipt
- implementation of active management

Afterwards, a budget has to be set up to implement management actions.

For private forests, the costs are paid by the owner and for public forests, it is paid by public authorities.

Land consolidation

For Land consolidation, it is the public authority who pays the cost. The proportion of the intervention of Walloon Region in the expenses for consolidation strictly speaking is about 100 %.

The proportion of the intervention of the Walloon Region in the expenses for works executed by consolidation Committees is set up as follow:
- 60 % of expenses for works of design, laying out and suppression of paths, way of water flow and closely related works (40 % remain in charge of the concerned municipality),
- 45 % of expenses for works of drainage and irrigation,
- 30 % of expenses for works of implementation of primary networks of electricity distribution and water piping,
- 100 % of expenses for the implementation of the Site assessment plan (Plan d'évaluation des sites),
- 80 % of expenses for the implementation of the Site development plan (Plan d'aménagement des sites) and for the execution of works planned by this Plan.

However, for works of collective interest such as laying out of road networks or site works, local authorities and sometimes provincial authority take in charge the non-subsidized part. Concerning works of transplantation of farm buildings, the Walloon Region pre-finance them and gives loans to interested people.

Land purchase

Purchase of land is paid to the owner(s) of the land by public authorities. In Table A below we can see a list of price per municipalities of study sites. In general lands are more expensive in Flanders.

Note that to the buying price we have to add the cost for the implementation of management action so in the end it could be quite expensive.

From Ecodata (2006),

	Agricultural properties		**Horticultural properties**		**Cultural land**		**Meadows**		**Orchards**		**Mixed agricultural land**	
Place	# selling	Mean price (€/unit)	# selling	Mean price (€/unit)	# selling	Mean price (€/m²)	# selling	Mean price (€/m²)	# selling	Mean price (€/m²)	# selling	Mean price (€/m²)
Flanders	506	106 716	102	120 461	5929	3	3139	3	415	5	9	7
Wallonia	438	64 215	6	191 806	2703	1	2862	1	155	3	18	2
Vlaams Brabant (Prov.)	79	129 974	24	86 575	1145	2	400	1	80	5	1	*
Namur (Prov.)	100	54 239	/	/	423	1	546	1	25	3	1	*
Luxembourg (Prov.)	125	41 126	2	*	847	0	652	1	3	1	14	2
Aarschot	/	/	1	*	43	3	10	4	/	/	/	/
Begijnendijk	/	/	1	*	14	3	4	1	/	/	/	/
Diest	/	/	/	/	16	2	15	3	/	/	1	*
Rotselaar	3	172 670	/	/	22	3	6	1	8	9	/	/
Zichem	2	*	/	/	25	2	12	1	2	*	/	/
Nassogne	3	14 127	/	/	11	1	22	1	/	/	/	/
Rochefort	6	24 114	/	/	17	1	20	1	/	/	/	/
Tellin	2	*	/	/	4	1	9	2	/	/	/	/
Wellin	1	*	/	/	1	*	5	0	/	/	/	/

Table A: Ventes de biens immobiliers (SPF Economie, 2006)

	Building land		**Industrial lands**		**Woods**		**Uncultivated land**		**Small parcels**		**Mixed field and miscellaneous**	
Place	# selling	Mean	# selling	Mean	# selling	Mean	# selling	Mean	# selling	Mean	# selling	Mean

		price (€/m²)		price (€/m²)		price (€/m²)		price (€/m²)		price (€/m²)		price (€/m²)
Flanders	13 961	123	33	58	1055	11	365	8	2	*	677	12
Wallonia	8682	35	28	12	2460	1	357	2	19	49	389	21
Vlaams Brabant (Prov.)	2129	141	6	87	217	11	24	2	/	/	86	87
Namur (Prov.)	1 427	30	6	9	472	1	80	1	2	*	73	26
Luxembourg (Prov.)	1276	23	3	3	1317	1	146	1	3	19	47	12
Aarschot	54	101	1	*	35	6	/	/	/	/	2	*
Begijnendijk	22	126	/	/	2	*	/	/	/	/	/	/
Diest	39	95	/	/	5	1	2	*	/	/	19	155
Rotselaar	57	121	/	/	8	14	1	*	/	/	/	/
Zichem	43	86	/	/	10	21	2	*	/	/	1	*
Nassogne	23	19	/	/	26	0	3	0	/	/	/	/
Rochefort	34	27	1	*	14	2	2	*	/	/	2	*
Tellin	12	19	/	/	15	1	/	/	2	*	/	/
Wellin	20	15	/	/	6	0	2	*	/	/	/	/

Table A: Ventes de biens immobiliers (SPF Economie, 2006)

Management and protection agreement

In this case a contract is concluded between the owners and occupants of a site and the administrative authority. It includes the description of work, technical management measures and protection measures which the owners and occupants agree to implement. A financial counterpart can be considered.

In the Walloon Region, the government can give subsidies coming from the Rural development programs. Considering that Rural Development programs run on 7 years, farmers have the obligation to practice a management to mid term, linked to the length of the contract (10 years), without benefitting of the financial guaranties that will allow to ensure this management over 7 years. So there is an interest to link up compensation subsidies (AEM) to the constraint of an active management agreement.

In the Flemish Region, within the area of VEN (Vlaams Ecologish Netwerk – Flemish Ecological Network), natuurverwevings' – areas, the green and forest areas and the areas with similar destinations in the spatial destination plans and within the special protected zones, a nature project agreement can be set up between the Flemish government and private owners or local governments, whereby compensations are reached out for local projects carrying out a "natuurrichtplan", as far as there are no other subsidiary systems for that type of projects. Up to 90 % of the costs can be compensated in case of private ownership (50 % of costs for local governments)

Nature arrangement – Natuurinrichting

Only in Flanders: Nothing found

Permit for intervention in environment

In the Walloon Region, for some actions in environment a permit is needed. The person who wants to make the action ask the permit to the DPA (Division de la Prévention et des Autorisations) territorially competent. For every demand of permit of environment, file rights are:

- 500 € for realization of class 1
- 125 € for realization of class 2
- free for realization of class 3

The case rights are to be paid to the DPA (Division de la Prévention et des Autorisations) territorialy competent. Note that some municipalities can add supplementary costs for file rights.

Added expenses can be:

- acquisition of the cadastral plan (for every requests)
- Obtaining of the opinion of the 'intercommunale' in the case of the reject of dirty industrial water (paying service in some 'intercommunales')
- Obtaining of the cadastral matrix in the case of establishment of class 1, of 'Centres d'enfouissement techniques' and quarries of class 2
- Realization of an incidence survey for establishment of class 1
- Realization of a safety survey for SEVESO establishment

Protection regime

In the Walloon Region, protection regimes are put in place in Natura 2000 sites. For the action of management and conservation, there are some subsidies from the Walloon Region only available for Natura 2000 sites, other are available outside Natura 2000 but are increased in Natura 2000. The subsidies are paid to the contractor.

Classification among categories is as follow:

1. Subsidies only available in Natura 2000 sites

The implementation of measures in this first case requires beforehand adoption of designation decree by Walloon Government to organize exactly this protection regime.

A. Subsidies for management

A. 1. In open zone

A.1. 1 Natura 2000 payment for farmers (Measure 213 from PwDR[75])

From adoption of the designation decree and the signature of the management contract, the agricultural manager will receive the right to a compensation of 100 €/ha/y for parcels with mean Natura 2000 stakes, generally "species habitats" and to a compensation of 200€/ha/y for parcels with strong Natura 2000 stakes, generally "habitats". These supports can be accumulated with amounts perceived in application of agri-environmental measures.

Budget 2009 for 63 523 ha covered by designation decree =
- 248 164 € WR budget
- 248 164 € PwDR budget

A.1.2 Management of non-agricultural open zones (WR budget)

Here it is the matter of financing real expenses incurred for maintenance (apart from restauration) of communautary interest open non-agricultural habitats (on the base of a previous estimate). These measures, essential to the maintain of the state conservation of habitat, are financed whatever the nature of the property (private, municipal, public establisshemnt, etc…). These measures concern a maximal surface corresponding to 5 % of the Natura 2000 network (grassland, moors, peat-bog). For the 2008 budget, 300 000 € are planned for this measure.

Budget 2009 for 63 523 ha covered by designation decree =
- 317 615 € WR budget

A.2. In forest zone

A.2.1 Natura 2000 payment to foresters (Measure 224 of PwDR)

This measure has the goal to compensate forest private owners possessing more than 5 ha of forest in the Natura 2000 site that is the object of a designation decree adopted by the Walloon Government. The designation decree will impose in particular the respect of 6 general commitments (3 % senescence patches, 2 dead wood per hectare, …). The indemnity is about 40 €/ha/y of leafy forests situated in Natura 2000.

Budget 2009 for 63 523 ha covered by designation decrees =
- 130 730 € WR budget
- 130 730 € PwDR budget

A.2.2 Natura 2000 management agreement in forest (WR budget)

This voluntary measure is for private owner possessing less than 5 ha of forest in the Natura 2000 site that is the object of a designation decree adopted by the Walloon Government. The management agreement commits the owner for the respect of 6 measures mentioned in point A.2.1. The indemnity is about 40 €/ha/y of leafy forests situated in Natura 2000.

Budget 2009 for 63 523 ha covered by designation decrees =
- 80 039 € WR budget

A.2.3 Forest management favorable to biodiversity (WR budget)

[75] PwDR = Plan wallon de Développement Rural

This measure has the goal to allow to forest owners to go beyond the commitments taken in the designation decree. From an amount of 100 €/ha really concerned, the annual compensation has the goal to compensate the loss of earnings for the surfaces established for 'senescence patches' and to 'edges' over the 3 % and the 10 meters in border of the bank ('massif') (commitments going over level base measures). This measure is accessible to forest private owners and public owners. The 2008 budget scheduled for this measure is about 44 000 €.

Budget 2009 for 63 523 ha covered by designation decrees =

- 54 000 € WR budget

B. Subsidies for restoration

B.1. In open zone

- Other Works of restoration (WR budget and eventually LIFE +)

From 2009, it is scheduled to give an annual budget of 1 million € to well conducted restoration programs. This budget could benefit from European supports in the context of invitation to projects Life +, that would double the potential of action.

Budget 2009 for 220 944 ha of Natura 2000 =

- 1 000 000 € WR budget + eventually Life +

B.2. In forest zone

B.2.1 Restoration of 'grasslands', moors and 'valley bottoms' (measure 323 PwDR)

This measure has the goal to finance the restoration of sensitive environment like 'valley bottoms', 'grasslands' and moors. The public intervention is about 100 % of expenses (except for implementation of sheepfold – financing rate of 40 %) in the respect of ceiling and on the base of a previous estimate, of a scientific comment on the pertinence of works and if set up ceilings are not exceeded. The measure is accessible to private individuals, to municipalities and associations. The 2008 budget scheduled for this measure is about 226 000 €.

Budget 2009 for 63 523 ha covered by designation decrees =

- 450 000 € WR budget
- 450 000 € PwDR budget

B.2.2. Other works of restoration (WR budget and eventually Life +)

See measure B. 1 in open zone, also applicable in forest.

2. Subsidies increased in Natura 2000 sites

2.1 Agrienvironmental program (measure 214 of PwDR)

Some measures that are in this program can be voluntary activated by agricultural managers with a positive impact in particular in Natura 2000 sites. Moreover, some of these helps are increased by 20 % in particular in Natura 2000 sites.

2.2 Plantation and maintenance of hedges, orchards and tree lines

The subvention decree newly adopted by the Walloon Government revalues and extends the projects that could be financed in this scope. Moreover, a subprime of 20 % is given in Natura 2000 sites. Furthermore the laying out created can afterwards benefit from support towards maintenance.

River agreement (contrat de rivière)

There are different steps in a rivers agreement. Firstly a preparatory file has to be elaborated. Secondly a study agreement (convention d'étude) has to be elaborated. On the basis of the preparatory file, the Water Division of the DGRNE, in collaboration with the initiator of the project, establishes a project of agreement about the elaboration of a project of rivers agreement.

In a river agreement, there are three management representatives:

- a coordination cell: the authors of the project. One of these people is especially responsible for giving information and doing sensibilization. This cell is also in charge of the daily management of the execution of objectives and manages meetings.
- the river committee composed by parties interested in the realization of the river agreement.
- Administrative assistance: given by the DGRNE.

The need of financing can be divided in four points:

1 The financing of the study agreement: two ways of financing are possible, one inclusive in function of the number of municipalities concerned and the necessary needs and another established in proportion of the number of inhabitants. This financing could be taken in charge by the Walloon Region, the province(s), the municipality(ies) and every other partner willing to support financially the project. The total intervention of the Walloon Region is limited, for the duration of the study agreement (3 years maximum), to the sum of the amount affected by municipalities and provinces, with a maximum amount per year and per 'sub-basin'.

2 The financing of the river committee: to guarantee the follow-up of the execution and the update of the river agreement, the financing of the Committee can be taken in charge by the Walloon Region, the province(s), the municipality(ies) and every other partner willing to support financially the project. The total intervention of the Region is granted for successive periods of 3 years, limited to a maximal period of 12 years. The renewal of subsidies is subordinated to the amounts affected by the municipality(ies) and the province(s). The financing of the updates is preceded by an assessment realized by the administration. This assessment takes into consideration in particular the percentage of actions realized during the previous period. In case of a negative assessment, the Minister can decide to reduce, for a period of time that he determines, the maximum financing.

3 The financing of the program of actions: every signatory take responsibility for the financial expenses for the action in which (s)he is engaged. The regional budget affected to the river agreement is reserved to the implementation of the study agreement and to the management, the assessment and the update, by the river committee, of the execution phase of the commitment in the contract. So, it is up to every signatory to plan the budgets necessary to the implementation of actions. Nevertheless, it is possible to seek a subsidy in the framework of specific regional budgets if a proposal has gained the consensus of the Committee (e.g. works subsidized and extraordinary works in water for municipalities and provinces, subsidies of the DNF, Green week, World day of water, …). It is also usual that the Region intervenes financially for the publication of a leaflet or for the realization of an operation "clean river".

4 Exceptional financing: within the limits of budgetary availabilities, the Minister can decide to enhance by a maximum amount of 25 000 € (Figure of 1999 – to be checked) the ceiling planned for the financing of the study agreement and the river committee to face some exceptional situations.

Species protection plan

Only in Flanders: No information found

Nature reserves

This part is written on the basis of an article written by Colas & Hébert, two scientists working for nature conservation in France. In the scope of a Life environment project, they worked in 2000 on guide of references for the cost of management of open spaces. Results will shortly be presented here.

Two levels of costs could be defined: the apparent cost or *sensu stricto* corresponding to the cost op operation on the field. To this cost has to be added the non-operational expenses of the manager (charges non-opérationnelles du gestionnaire) such as salary of the administrative staff, structure expenses, … We defined then the real cost of the operation. Here we will only see the *sensu stricto* cost with two guidelines: when the work is done by a farmer and not. 230 management operations were analyzed (corresponding to around 25 000 hours of work) and four types of open spaces were taken: the grasslands, the oceanic moors, the water meadows and the bogs and fens, considering four types of work: mowing, grazing, brushwood clearing and tree felling.

Six types of measures will be analyzed:

1. mowing delay
2. mowing of refuse
3. forbidden grazing
4. maintaining of grassy areas
5. forbidden fertilizing
6. Reduction of animal load.

i. Work done by a farmer

In this case, the cost of ecological management corresponds to a marginal cost. It equals the loss of earnings or the surplus due to the production system's adaptation to ecological constraints.

The Table B hereafter presents the assessment of the surplus or the loss of earnings for a farmer in function of the different types of measures.

	Pas de pâturage initial – fauche avec évacuation	Coût de la fauche = temps de travail x coût horaire + coût d'évacuation = temps de travail x coût horaire – Gain de fourrage = rendement x prix du fourrage	82,5 à 210 €/ha
Fauche tardive	Retard de fauche et maintien du nombre de coupes	Coût de la baisse de qualité du foin remplacé par du blé	45 à 150 €/ha
	Réduction du nombre de coupes	Coût de baisse de quantité de foin = rendement x prix du fourrage	79,5 à 94,5 €/ha
Maintien des surfaces en herbes	Maintien de STH à la place de prairies temporaires	Marge brute de la prairie temporaire - Marge brute de la prairie naturelle - coût d'implantation de la temporaire	67,5 à 82,5 €/ha
	Maintien de STH à la place de maïs de fourrage	Marge brute du maïs de fourrage - Marge brute de la prairie naturelle - coût d'implantation du maïs de fourrage	60 à 105 €/ha for the first year of implementation 142,5 à 180 €/ha for the following years

	Maintien de STH à la place de cultures de ventes	Marge brute des cultures de ventes - Marge brute de la prairie naturelle - coût d'implantation des cultures de ventes	0 à 67,5 €/ha
Pas de fertilisation sur prairies	Arrêt de la fertilisation	Coût baisse de quantité de foin = baisse rendement x prix du fourrage - gain sur le poste engrais - gain sur le poste mécanisation	39 €/ha
	Réorganisation du plan de pâturage	Temps de travail supplémentaire	10,5 à 18 €/ha for a additional rotation
	Retrait partiel des animaux excédentaires	Coût alimentaire/UGB/jour x baisse de chargement x nombre de jours de retrait	0,6 à 1,05 €/UGB/day
Diminution du chargement de bétail	Retrait complet des animaux excédentaires	Perte de marge brute par UGB retiré	300 à 450 €/UGB/an

Table B : Assessment of the surplus or the loss of earnings for a farmer in function of the different measures (Colas & Hébert, 2000).

Every measure was assessed in the same way. We can see that the induced cost is relatively low and often less then 152 €/ha with a mean situated between 30 and 122 €/ha. The maintenance by farmers is quite meaningful to promote because it allows the maintenance of a strong rural economic structure.

ii. Work done in non agricultural context

In this case, the cost of management *sensu stricto* equals the global cost of the operation realized on the field, so hourly cost multiplied by time of work. Here the cost depends a lot of works accomplished and the conditions on the field (humidity, …).

For mechanized operations, standardizing the hourly cost of intervention (salary of technician fixed at 10,5 €/hour and the cost of material fixed with a scale), costs can vary from 152 €/ha in the best conditions to more than 2134 €/ha for the longer operations (manual mowing of peat-bog for example). We have a mean of the intervention cost between 460 and 760 €/ha. Considering the mean costs observed during experiences, manual works are generally less expensive due to a low human salary cost (work of volunteers). As works are not performed yearly, the previous costs have to be annualized. We get a yearly cost of management comprised between 152 and 305 € per hectare. This cost is a little bit higher for flooding meadows with a strong vegetal dynamic (need to be more often mowed). When we have a good management on the site, the management can be reduced to mow and clear (débroussailler) – for moor e.g.. The cost of management amounts then to the cost of mowing namely 100 €/ha/year. In table C, we can see the annualized management costs per type of field and level of mechanization.

		Coûts annuels observés en €/ha/an		
		Tout manuel	**Tout agricole**	**Tout spécialisé**
Landes océaniques	Abattage Débroussaillge Fauche	35,4 51,9 84,6	35,4 65,25 58,35	70,35 66,15 75,6
		171,9	**159**	**212,1**
Pelouses	Abattage Débroussaillge Fauche	35,4 44,55 96,75	35,4 61,5 88,5	70,35 66,15 75,6
		176,55	**185,25**	**212,1**
Prairies inondables	Abattage Débroussaillge	35,4 64,8	35,4 26,55	70,35 82,65

	Fauche	338,1	122,1	302,1
		438,3	**184,05**	**455,1**
Tourbières-Bas marais	Abattage Débroussaillge Fauche	35,4 51,9 179,7	35,4 21,3 45,75	70,35 66,15 113,25
		266,85	**102,45**	**249,75**

Table C: Annualized management costs per type of field and level of mechanization (Colas & Hébert, 2000).

For grazing, there is a strong variability of costs due to various contexts and the type of herd watching. For animals conducted in fixed fence, if we take the minimum salary and taking into account the different intermediary expenses (care, fodder, ..) the mean cost is around 152 €/ha. The mean income is around 53 €/ha (selling animals alive or in the meat network) and hence we have a mean cost of management of around 100 €/ha. For itinerant pasture with a shepherd, the cost is more expensive. Nevertheless, this type of management lead on dry land has a return of 3 to 5 years. This implies same annualized management costs than fixed pasturing. The sample analyzed by Colas & Hébert shows that the case of fixed pasture with a light monitoring can be self-sufficient financially (for that the manager has to be in a short economic network of selling of supernumerary animals).

We also need to be careful when buying some material. The time percentage of use during a year and the necessity of reporting have to be considered. Financially, it is interesting to mechanize internally recurrent works and to work with firm for more occasional works.

In the Walloon Region Nature reserves are manage by the regional Government. So the Walloon Region will pay for the management actions and either the Region will do the actions of management itself or it will pay others to do actions.

Deduction of succession rights on natural assets

The deduction of succession rights on natural assets is only due in the Walloon Region. In this case it is a loss of earnings for Public authorities (exonération des droits de succession accordée pour les biens immobiliers situés en Natura 2000).

For the Walloon Region, loss of fiscal receipts (on forests) are as follow :

- in 2007 = 0 €
- in 2008 = 683 000 €
- in 2009 = 719 000 €

For figures of the Walloon Region, rights of succession for cultural land have to be added. Normally, this loss will take effect when the designation decree will be published. As up to now, no designation decree has been published, the loss of earnings equals 0 €.

Labels

The development of the Natura 2000 network asks for new transversal competences to implement this integrated strategy of nature resources management. The promotion of socio-economic benefits linked to the application of the Community legislation must allow giving a new dynamic to the Natura 2000 approach.

Labellisation of activities, services and products from Natura 2000 sites constitutes a considerable stake for the local development of collectivities concerned by Zones of Special Protection and Special Zones of Conservation. It is a guarantee of the territory visibility and activities it supports; labels have the essential mission to translate economically the synergy between the quality of a natural space and the quality of products that come from there, when the territory becomes soil (‘terroir’).

Depending from the brand or the label, it is created to the initiative of public authority, at a national or international level. The goals are to guide consumers towards products more respectable of environment and to encourage producers to enhance the ecological quality of their products.

For each label there are some constraints to respect but having a label allow environment protection and economic profitability of producers, foresters or farmers. Moreover it allows developing the tourism sector. It is difficult to evaluate the cost of implementation of a label (supported by the claimant), it will depend if it is the labellisation of a product, a service or an activity. However that may be, it could be a good opportunity for nature conservation and also for stakeholders on the field.

Life Nature

LIFE is the EU's financial instrument supporting environmental and nature conservation projects throughout the EU (as well as in some candidate, acceding and neighboring countries). Since 1992, LIFE has co-financed some 2,750 projects, contributing approximately €1.35 billion to the protection of the environment.

The data collected by the LIFE projects render it possible to extrapolate the financial requirements of Natura 2000 through two different approaches:

1. either starting from the per hectare management costs for each habitat and species
2. or from the average cost of projects per site.

It is not easy to make assessments based on the first approach due to the fact that many sites habitats are arrayed in a mosaic or overlap each other; there is a wide range of managers and human activities are integrated on the sites. Nevertheless, this method was used to assess the cost of managing natural habitats of a few LIFE projects.

If we assess costs by the second approach, we have to take into account the differences in ecological, cultural and historical, even economic, factors from one Member State to another with regard to nature conservation. We could present three examples to illustrate this phenomenon and its impact (European Commission, 2003):

1. Member State do not all deal with the notion of buffer zones in the same way in their proposition of sites. Moreover, the extent of the sites' surface area is determined by the ecological characteristics of the Natura 2000 sites. Some members State average surface area of sites are from 1000 to 2000 hectars (Italy, Ireland and Sweden) while others are near 10 000 hectars (Spain, Greece and Portugal). The variation of sites' size has direct consequences for the modes of operation in LIFE projects and the management costs per site. Nevertheless, as over half of the sites have a surface area of 500ha or less, this unit of dimension could provide a baseline for assessment.
2. From one Member State to another, nature conservation is more or less decentralized. The management of terrains can be organized in different ways, either by the state or it may depend on private initiatives (NGOs or others). The participation of civil servants in LIFE projects is not always taken into consideration in the same way.
3. The price of land varies considerably in Europe, even within a single Member State, depending on the local real estate market.

Data must be interpreted prudently, nevertheless it is possible to make an assessment of the overall cost of the Natura 2000 network starting from:

- the total cost of projects and their average cost per Member State
- the average breakdown between the various categories of expenditure in LIFE projects.

The average cost of LIFE-Nature projects by country: The average annual management costs are relatively homogeneous and in the neighborhood of 400 000 € for around ten Member States. […] An ideal assessment of Natura 2000's overall financial requirements starting from the average cost of LIFE projects should be based on real costs and on comparable basic data (surface area of projects, type of cost taken into consideration, etc.). As these data have not been compiled, the assessment was made using a restricted sample of projects[76]. The average duration of these projects is 3,83 years and their average annual budget is 358 002 € (European Commission, 2003).

[76] Only the 212 projects which presented the least methodological problems were chosen for analysis. They only related to a single Natura 2000 site, were oriented towards site management (NA1 and NA2 projects categories) and were neither dominated by land acquisition nor were projects focusing on methodology development.

In the Table D below, we can see the variation of costs from one Member State to another:

Country	Number of projects	Average cost projects in euros	Average duration in years	Average cost of projects in euros/year
Ireland	6	3 199 685	3,4	941 084
Austria	20	2 920 227	3,9	748 776
The Netherlands	8	2 845 597	5,2	547 230
Sweden	18	2 679 525	4	669 881
Luxembourg	2	2 166 762	4,2	515 896
United Kingdom	30	2 120 140	3,8	557 932
Denmark	8	2 051 281	4	512 820
Germany	48	1 788 573	3,9	458 608
France	55	1 616 962	3,9	414 606
Finland	30	1 554 733	3,7	420 198
Belgium	20	1 430 715	4	357 679
Spain	89	1 373 569	3,8	361 466
Greece	29	1 346 771	3,2	420 866
Portugal	36	876 715	3,3	265 671
Italy	114	803 168	3,3	243 384

Table D: Average cost in euros of LIFE-Nature projects by country (European Commission, 2003).

The major categories of expenditure under LIFE-Nature: The European Commission has defined in 1994 a standardized classification of the major categories of activities conducted under LIFE-Nature. Seven categories were defined:

1. Elaboration of management plans and preparatory actions
2. Acquisition of land and use rights
3. Non-recurring management
4. Recurring biotope management
5. Public awareness and dissemination of results
6. Project coordination
7. Miscellaneous (in 1995 and 1996 only).

The financial monitoring of LIFE projects allowed the average breakdown of costs per category of measures to be determined in the sample of 212 projects. In Table E, which illustrates the breakdown of costs by category, the considerable weight of land acquisition and of one-off restoration or biotope investment works, each representing around one third of the total cost, is noteworthy. On the other hand, the percentages for recurring habitat management and for information and awareness work are quite low.

The estimate of the overall cost of Natura 2000 has been broken down into various components, using their average breakdown in the sample of LIFE projects. The total cost of the Natura 2000 network by category of activity is estimated by multiplying the average costs per site by the number of sites in the Natura 2000 network (around 18 000).

Category	%	Total for 1 site	Total for the network	Nature of cost
A. Elaboration of management plans and preparatory actions	7,16	25 633	461 392 978	Annual/Investment
B. Acquisition of land and use rights	30,18	108 045	1 944 810 065	Investment
C. Non-recurring management	35,3	126 375	2 274 744 708	Investment
D. Recurring biotope management	7,61	27 244	490 391 140	Annual
E. Public awareness and dissemination of results	6,73	24 094	433 683 623	Annual/Investment
F. Project coordination	12,59	45 072	811 304 132	Annual/Investment
G. Miscellaneous	0,43	1 539	27 709 355	Annual/Investment
Total	**100**	**358 002**	**6 444 036 001**	

Pure investment costs			4 219 554 773	
Annual costs			490 391 140	
Mixed costs			1 734 090 088	

Table E: Total cost, by category of activity, of the Natura 2000 network (European Commission, 2003)

Beside the overall figure, the main conclusion is the dissociation of investments costs, the highest, from the operating costs. The pure investment costs (restoration, land acquisition) represent 4 200 millions € out of the total 6 400. Conversely, annual maintenance costs only account for 500 millions € and part of the 1 700 million € mixed costs.

A considerable financial effort must be made during the network's start-up period. One of the advantages of LIFE, and of LEADER, for that matter, is its capability of mobilizing local stakeholders around a project. This notion of a project defined and shared by local stakeholders is to be found in most LIFE projects, even if the scope of the work did not always cover the whole of the Natura 2000 site in question.

LIFE-Nature projects can play an important catalyzing role on account of their advantages:

- Integration of diverse components into the same projects (studies, management plans, management, information).
- Pump-priming funding to implement appropriate long-term measures.
- Network effect.
- Dissemination of experience and demonstration effect.
- Maintenance and development of a quality network associations.

Information campaign and education programs

The choice of the strategy will determine costs: we have to define the public and the objectives.

There is a lot of information around nature conservation at very different levels: Natura 2000 does not enter in the concerns of people. N2000 schedules actions in the long term and people need things immediately!

We don't have to think for people but with people. To act, people have to know that they are not the only one who made things. We have to create a link to value people in their behavior; we have to put people in project. We have to convince people that everybody acts and that individual actions have an impact!

Question of money and budget is difficult: human energy costs a lot (at least ¾ of the cost of the project). Moreover, in the case of Natura 2000, the general public is not the first target but rather actors on the field like foresters and farmers. These people are yet in a lot of paper so we need to implement a work of relation.

After this analysis we can draw some teachings from the Life Focus *Life for Natura 2000* (European Commission, 2003). It is said that "some economic activities, in particular tourism and public access, educational activities and products with quality labels, could contribute to the financing of the network, but even if all the benefits of conservation are brought to bear, the totality of nature conservation activities cannot always be exploited economically. On the other hand some economic activities, if they are managed well, can be favorable, even vital, for the conservation of habitats and species. These are principally farming, forestry and some hydraulic installations. The integration of policies and the funds which support them (…), requires that these particular aspects be taken into account".

Moreover, the Working group on Article 8 of the "Habitats" directive presents three main options that have to be examined for securing future co-financing for Natura 2000 (European Commission, 2003):

- Option 1: Using existing EU funds, notably Rural Development Regulation of the Common Agricultural Policy (CAP), Structural and Cohesion Funds and the LIFE-Nature instruments, but modifying these in order to ensure better delivery against Natura 2000 needs;
- Option 2: Enlarging and modifying the LIFE-Nature instrument to serve as the primary delivery mechanism; or

- Option 3: Creating a new funding instrument dedicated to Natura 2000.

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4.3.4 Scientific

See Excel file

Agri-environmental Schemes (AES)

Agricultural intensification is widely accepted to be the cause of decline of many wildlife and plant populations. Reforms of the European Common Agricultural Policy to reduce subsidies and concerns over widespread loss of biodiversity lead to the introduction of agri-environmental measurements. Agri-environmental schemes (AES) aim to reduce the environmental impact of agriculture by paying farmers to alter their management practices in an attempt to enhance the biodiversity of the area. In literature, the effectivity of AES is however disputed. Although some positive calls in literature do exist, among others concerning amphibians (Maes *et al.* 2008) and soil macrofauna (Smith *et al.* 2008), many research papers indicate that so far, the positive effects of AES appear to be limited (Kleijn *et al.* 1999, Kleijn *et al.* 2001, Berendse *et al.* 2004, Kleijn *et al.* 2004, Feehana *et al.* 2005). Management prescriptions that have proven to be effective under experimental conditions do not have the desired effects or even have unexpected adverse side-effects when implemented on farms (Kleijn *et al.* 2001, Willems *et al.* 2004, Konvicka *et al.* 2007, Reid *et al.* 2007). Certainly for endagered (target) species, the results of AES seem to be insufficient (Kleijn *et al.* 2006, Reid *et al.* 2007).
Concerning the conservation of bird species, for which most research on AES-effectivity is carried out, the results found in literature are often mixed. Most of the time, positive and negative effects of AES on bird populations are found together. However, in many cases these researches found place on one particular moment in time, comparing area's with and without AES. The influence of other factors on bird population densities can therefore not be excluded. Studies actually comparing the results before and after the implementation of AES on the same terrain do not seem to speak in the advantage of the AES-concept (Sanders *et al.* 2003). In global, the research results show that severe doubts concerning the effectivity of AES for bird species arise (Dochy & Hens 2005, Melman *et al.* 2004, Melman *et al.* 2006, Willems *et al.* 2004, Steurbaut *et al.* 2005, Wilsona *et al.* 2007).
Also for plant species, the results of AES are below expectations, according to a study of the Wageningen university (Melman *et al.* 2007). This study claimed that the higher the nature conservation goals were set at the beginning of the agreement between farmer and government, the more species were found and the higher the value of the species composition. However, new and special species merely showed up, despite measures as weathening and nutrient removal. Thus, although it seems that AES might contribute to the conservation of ecological values, they do not seem to contribute to their development.
In Flanders, as in most countries, there is a severe lack of knowledge concerning the effects of the applied AES (Dochy & Hens 2005, Dumortier *et al.* 2005, Dumortier *et al.* 2007). Examples of succesfull AES exist, where they are accompagnied by a well elaborated species protection plan (Hens, 2005). Nevertheless, one is more and more convinced that the Flemish policy does not yet succeed in reconciling the nature and agricultural goals (Gysels 2003, Dochy & Hens 2005).

Why do AES tend to fail?

Numerous reasons might exist why AES miss their presumed effects. Probably, part of the explanation is to be found in the fact that **certain important supporting measures** – e.g. increasing the ground water level for wader species (Willems *et al.* 2004, Verhulst *et al.* 2007) - are not carried out because they tend to impede the normal agricultural management too much (Willems *et al.* 2004). Furthermore, when **general habitat factors** are subject to unfavourable developments (such as the lowering of water tables or the decline of the open landscape by urbanisation and afforestation), the effectiveness of a substantial part of the management activities is likely to be reduced (Melman *et al.* 2004). Another important issue is the fact that **what might be good for one species, might work in an opposite direction for another species** (Willems *et al.* 2004, Konvicka *et al.* 2007, Reid *et al.* 2007, Olson & Wackers 2007). Also the current link between **conservation research and policy** might form a problem. Conservation policy is often informed by research but, once a policy is formed, the process may take some time to be reviewed and if necessary adapted (Whittingham 2007).

The last few years, more and more warnings arise that the current application of AES **does not sufficiently consider landscape effects** on the effectiveness of the measures. The long-term sustainability of ecosystems and their services depend on the conservation of biodiversity at a landscape scale (Bengtsson *et al.* 2003, Swift *et al.* 2004, Tscharntke *et al.* 2005). When

recolonization sources disappear, the dominant population process in dynamic landscapes is extinction (Picket & Thompson 1978 in Tscharntke *et al.* 2005). Therefore, agricultural landscapes must provide a mosaic of well connected early and late successional habitats, in order to create the ability for species to recover from disturbances (Bengtsson *et al.* 2003). Nevertheless, AES are constrained to be applied mostly at field scales because they are based on voluntary agreements with landowners, a fact that strongly limits its potential for increasing landscape complexity. The conclusions of the review of Whittingam (2007) about AES can be seen in the scope of the missing landscape aspect of most measures. In this review, Whittingham distinguishes three main reasons why AES fail to benefit biodiversity substantially. First, the fact that **the effect of environmental resource provision to small patches of land by means of AES is not easy to predict**. On the one hand, species require multiple environmental resources when breeding. For example, providing a section of hedge 50 m long may be important for many nesting birds but, if suitable resources for foraging nearby are insufficient, then the hedgerow may be of little value for birds. On the other hand, the distance between environmental resource provision and source breeding populations may be of great importance. It is doubtfull that an isolated hedgerow or weed-rich grass margin created under an AES attract many birds, invertebrates and plants if the nearest breeding individual or population is at a considerable distance. Second, AES are likely to be most effective when applied to areas in which target species occur. However, they are **sometimes placed in areas where the target species is absent**, with the intent of improving conditions necessary for the return of the target species. It is not unthinkable that in these situations, AES have little or no effect on species abundance. Last, but not least, **an underlying assumption of AES is that they will have similar effects on target species across the area at which the scheme is applied.** This assumption is however uncertain and good predictors derived from sites in one geographical region sometimes tend to have little or no predictive value when applied in other areas (Whittingham *et al.* 2007).

Of course, besides all the factors mentioned above, the **motivation and expertise of the farmers** play a crucial role in the succes or failure of AES. As the primary concern of farmers is to secure an income, nature conservation will be of secondary importance to them, and therefore will be fitted into a farming system that, owing to economic pressure, is still increasing in intensity (Kleijn *et al.* 2001, Folmer & Heijman 2006). Most farmers lack the knowledge to judge in what way measures taken to improve the economic position of their farm (such as lowering the groundwater table) may interfere with nature conservation measures that are taken concurrently. Above that, the fact that farmers cannot be forced to participate in AES leads to a fragmentated application of the measures (Folmer & Heijman 2006), which might decrease their effectivity, as mentioned above. Furthermore, as AES are set up for a limited period, the necessary continuity in ecological management is always in danger (Folmer & Heijman 2006).

Recommendations

Evaluation research

First of all, concerning the serious lack of knowledge, a lot of research effort should go to the evaluation of AES. Between 1992 and 2003, approximately 24 billion € was spend on AES in the 15 countries in the EU alone (Kleijn *et al.* 2004). Taking these expenses into account, it is quite astonishing that so few evaluation projects are set up. In the future, ecological evaluations must become an integral part of any scheme. An analysis of the areas where AES seem to have a positive effect should help to give a better understanding of the do's and don'ts of these measures. Furthermore, results of these studies should be collected and disseminated more widely (Kleijn *et al.* 2004).

Landscape & connectivity

Spatial connectivity is often a necessary condition for gains in nature conservation. This explains to an important extent why creating the appropriate habitat conditions on the parcel level not always leads to the expected results. The revenue only arises when farmers not only create the good environmental conditions by means of a carefull management, but also cooperate on the landscape level. Areal contracts are thus much more preferable than contracts which are set up with individual farmers, and Environmental Coöperatives offer a great opportunity to realise them.

On the basis of the effects of landscape complexity on landscape-scale species pool sizes, Tscharntke *et al.* (2005) predict that in low-diversity agricultural landscapes, local allocation of habitat is more important than in complex ones. Concepcion *et al.* (2007) claim that AES would be most effective at intermediate levels of landscape complexity, and that effectiveness for improving biodiversity should decrease towards zero in either simpler or more complex landscapes. In either way, it is clear that AES need to take the landscape component of the ecosystem into account. There is little doubt that, in order to maintain ecosystem services and biodiversity outside nature conservation areas, promoting diversity of land-use at the landscape and farm scale (rather than at the field scale) has to be targeted (Swift *et al.* 2004, Bennet *et al.* 2006, Concepcion *et al.* 2007). AES are more likely to increase biodiversity if a lower number of larger resource patches are provided. While current practice promotes many small fragmented areas of environmental resource, a better approach is to run these schemes more like traditional protected area schemes. Hereby, whole farms or groups of farms are to be managed using extensive farming methods, rather then the fragmentated application of measures from nowadays (Melman *et al.* 2004, Wittingham 2007). Concepcion *et al.* (2007) even state that compulsory measures applied across the whole countryside rather than voluntary measures applied at field scales appear to be a necessity to enhance the necessary landscape complexity-and with it biodiversity- in agricultural landscapes. This requires, however, an economical and political climate that favours diversification in land uses and diversity among land users (Swift *et al.* 2004). Furthermore, as species patterns of habitat association vary on a regional basis, AES options targeted at a regional scale are more likely to yield beneficial results than options applied uniformly in national schemes (Melman *et al.* 2004, Wittingham *et al.* 2007). The most costeffective approach may be to use AES themselves as the basis for trialling management options across multiple locations, and adapting recommended management as necessary in the light of population response (Wittingham *et al.* 2007).

One of the main instruments to make sure AES are being adopted at regional scales instead of at field level might be the establishment of Environmental Coöperatives (EC), according to Dutch example (Agrarische Natuurverenigingen)[77]. EC are local organisations of farmers and often non-farmers who work in close collaboration with each other and with local, regional and national agencies to integrate nature management into farming practices. This happens by means of coördinated action between neighbouring landowners and by using an approach that is based on a regional perspective. Each EC emphasizes locality and context in its various activities. The main factor of EC is the fact that it enables government agencies to form contracts and nature conservation agreements with groups of land owners in stead of individuals. Therefore, these agreements go across land ownership boundaries and can be adopted to natural features and geographical boundaries. This way, the improvement of habitat connectivity and the management of habitat edges is much more realistic. An evaluation of the EC made by the Dutch advisory institution CLM points out that the EC's make more effort to increase the effectivity of agraricultural nature conservation (Oerlemans et al. 2006). EC support many activities: giving information and assistance towards farmers concerning the applications to AES, organising training sessions in nature conservation, realising joinst-submission AES, providing advice and expertise towards its members and the uptake of new rural development initiatives which gives rise to opportunities that would have been impossible without collective action. The benefits to farmer and non- farmer members, as well as the government and the regional economy can be important, as described by Franks & Mc Gloin (2007).

High-quality habitats

The effectiveness of conservation management may also be improved by scheme implementation near high-quality habitats that can act as a source of species (Duelli & Obrist 2002, Kohler *et al.* 2008). In intensively farmed areas, remnant high-quality habitats do enhance biodiversity on nearby farmland but increases are spatially restricted and relatively small. Therefore, these habitats may function only as dispersal sources for ecological restoration sites or agricultural fields under extensification schemes that are located in close proximity. Habitat restoration in intensively used farmland should thus be implemented preferentially in the immediate vicinity of high-quality habitats, according to the authors.

[77] In october 2008, a European project (Eco²-project) is about to start in Flanders to establish a Flemish variant of the dutch EC's. Local groups of farmers that want to coöperate for nature and landscape management in a certain area are to form "Agro-management-groups" (Agro-beheersgroepen). At the moment, there are however some legislative issues, as collective contracts cannot yet be used for AES.

One effective way of realizing this is by means of Infield Nature Protection Spots (INPS). This approach uses set aside land (a compulsory measure in the Commun Agricultural Policy of Europe) to create nature conservation spots on agricultural terrains. Areas with extreme conditions (which are often considered to be low yield areas) and parts of fields adjacent to biotopes lent themselves for such purposes (Berger *et al.* 2003). This way, a real improvement for wildlife in arable landscapes should occur (Berger *et al.* 2003, Van Buskirk & Willi 2004, Berger *et al.* 2006), while little or no economic side-effects for the farmers arise (Berger *et al.* 2003, Berger *et al.* 2006). However, despite warnings from ecologists, recent developments in the agricultural policy tend to abolish the set aside measures due to the current food crisis. This of course, puts severe limits on the opportunities for nature conservation in agricultural areas.

Participation

When it comes to participation, without any doubt, the financial benefit is the most important reason for farmers to participate in on-farm nature conservation schemes. However, the preservation of nature also plays an important role in the decision to participate or not (Morris *et al.* 2000, Leneman & Graveland 2004, Toogood *et al.* 2004, Berentsen *et al.* 2007). According to the Nature Report (Natuurrapport) 2007 of the Flemish government (Dumortier *et al.* 2007), none of the AES which specifically aim the conservation, development and restoration of agricultural species and communities were taken up sufficiently to reach the surface goals. The participation rate of the Flemish farmers is thus succeptible for improvement. To realise this improvement, one must tackle the different reasons why farmers might recoil from taking the challenge of an AES.

A first point of conflict is the administrative overload which is often experienced by farmers who take up AES. Recently, the Dutch newspaper NRC Handelsblad wrote that in the Netherlands, the subsidy system for nature conservation is so bureaucratic that many farmers drop out. After the first period of 6 years, one thirth of the farmers has quit the agricultural nature conservation. Farmers and nature conservators were forced to pay back 7,6 billion € of subsidies in the last three years. On top of that came around 2 billion € of fines. In one case out of ten, nature developped insufficiently without the farmer being responsible for it. One penalised farmer out of three made a management mistake, often not on purpose but because of unlogical prescriptions. Melman *et al.* (2007) also found that many Dutch farmers were penalised because nature development goals were not achieved, although the farmer had taken the management measures that were agreed. These Dutch examples clearly illustrate what is concluded in scientific studies concerning farmers uptake of AES. The major disadvantage of participating in on-farm nature conservation seems to be the huge amount of administrative tasks and the lack of transparency and continuity in the regulations. Non-transparent regulations and a lack of continuity in the regulations negatively influence the opinion of farmers about on-farm nature conservation (Morris *et al.* 2000, Leneman & Graveland 2004, Reheul & Vandenabeele 2004, Berentsen *et al.* 2007). Besides that, farmers often feel that they are being curtailed in their entrepreneurship. In many cases, farmers want to participate in on-farm nature conservation but they want minimal governmental interference (Morris *et al.* 2000, Lütz & Bastian 2002, MIRA-be 2005, Berentsen *et al.* 2007). Also, a misperception of AES forms an important barrier towards their implementation. Often, farmers associate agri-environmental measures with a reduction in yields and food production (Lütz & Bastian 2002).
Poor communication and insufficient information towards farmers is without any doubt a major obstacle for a healthy relationschip between farmers and AES (Morris *et al.* 2000, Toogood *et al.* 2004). A better use of mass media and generic literature is relevant to the creation of awareness by farmers, but personal contact and demonstration are critical to actually make farmers decide to join AES (Morris *et al.* 2000). Further, more effort should be put in the training and education of the farmers. More and improved educational programmes would increase farmers conservation-oriented attitudes and their identification with the environmental goals of the scheme (Wilson & Hart 2001). These remarks reiterate the potential of EC, and in effect, according to Franks & Mc Gloin (2007), an important contribution of the EC is their positive influence on participation rates. The interactive approach seems to be vital to increase farmers willingness to accept AES. Involving the farmer more actively in every aspect of AES creates a better attitute and understanding of farmers towards ecological farming. For example, Opperman (2003) studied a self-test method to measure biodiversity and ecological benefit of farms, that was developped under coöperation of farmers and agri-environment experts. This scheme uses 47 different indicators divided into four sectors (biodiversity-structural richness, biodiversity-species richness, farm management, and field management) to record the ecological richness and benefits of farms, especially in the field of biodiversity and cultural

landscape issues. Farmers can perform the assessment themselves and after the assesment, an evaluation can easily be made in form of a nature balance scheme. The presented nature balance scheme is based on a 100-point target system revealing ecological benefits as well as shortcomings of the farms. The results of the study showed that the method works well and farmers become aware of the ecological situation of their farms. ***Still to receive and use: thesis-research about AES participation in Flanders (Katrien Delaet)***

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Environmental impact assessment

Environmental impact assessment (EIA) is the most widespread example of statutory requirement for the consideration of environmental effects of projects. Its main purpose is to forecast the adverse effects on the environment caused by a proposed project so that they may be avoided, mitigated or otherwise taken into account during the project design, construction, and activity.

A survey on the effectiveness of EIA carried out in the early eighties by the Environmental Protection Agency (EPA) of the USA indicated that significant changes to
projects took place during the EIA process, resulting in marked improvements in the environmental protection measures (Wathern 1988 in Geneletti 2002). Similar findings were reached by a survey commissioned by the European Union (Wood et al. 1996 in Geneletti 2002). According to that study, the EIA process has a notable effect on the number of environmentally favourable modifications to projects. Such an effect is confirmed by the conclusion of the review presented by Lee (Lee 2000 in Geneletti 2002): most of the projects subject to EIA are modified to reduce their environmental impacts. EIA proved also to give net financial benefits (Wathern 1988 in Geneletti 2002). On top of this, if the EIA regulations are well formulated and efficient, and if the EIA-report is of good quality, the EIA procedure may reduce the overall time to obtain the project authorisation (Lee 2000 in Geneletti 2002, Ten Heuvelhof and Nauta 1997 in Geneletti 2002). However, such a positive balance for EIA is not always put forward. Other reports note that the influence on planning decisions that is being exerted by EIA seems to be relatively weak. In a review of several studies, Cashmore et al. (2004) concluded that the contribution made by EIA, both to consent decisions and to project design, is generally limited, due primarily to passive integration with the decision processes it is intended to inform. EIA does exert some influences on development decisions and project design, but it is common for the findings of EIA to be marginalised in favour of other considerations, such as non-environmental objectives and political factors (Wood 2003 in Jay et al. 2007, Jay et al. 2007). Therefore, even if EIA is presenting environmental information satisfactorily, it is unlikely to succeed in ensuring that environmental considerations are fully incorporated into decision making (Jay et al. 2007). The achievement of its substantive aim, contributing to more sustainable patterns of activity, although difficult to assess, appears to be even more elusive (Jay et al. 2007). A positive remark however, is the fact that EIA could be seen as a means of bringing about change in the values, rules and priorities that govern the institutions responsible for planning decisions. So rather than being a central factor in individual planning decisions, EIA may be having a more gradual, transformative effect on decision-making authorities (Jay et al. 2007). To improve its effectiveness, EIA should be more closely adapted to the processes that it seeks to influence. The fact that EIA does not impose any particular environmental standards or targets upon decision-makers should change (Jay et al. 2007).

Also in the field of ecological evaluation applied to EIA, there is a large room for improvement (Geneletti 2002, Gontier 2005a, Gontier 2005b, Gontier 2006). A review of publications on the actual treatment of ecological evaluation within EIA-reports highlights that the ecological evaluation, if present at all, tends to be very general and unfocused. For example, an analysis of the ecological content of a sample of UK EIA-reports showed that no ecological evaluation was undertaken “in any formal sense” (Spellemberg 1994 in Geneletti 2002). The main issues to incorporate biodiversity and ecological issues in the EIA process have been studied (Treweek et al. 1993, Thompson et al. 1997, Byron et al. 2000, Atkinson et al. 2000). Some of the overall conclusions concerned the vagueness and descriptive nature of assessments, the focus on protected areas and protected species, the confinement to single development actions and on-site changes, and the lack of assessment at the ecosystem level and at the spatial and temporal scales of ecological processes (Treweek et al. 1993, Byron et al. 2000, Atkinson et al. 2000, Geneletti 2002, Slootweg and Kolhoff 2003). Further, according to several authors (Treweek et al. 1993, Thompson et al. 1997, Byron et al. 2000, Atkinson

et al. 2000, Geneletti 2002), there is a lack of adequate methodologies for accurate, systematic and quantified predictions of impacts on biodiversity.

In general, further research in the field of ecological evaluation applied to EIA should address (Geneletti 2002):

- The explicit inclusion of biodiversity conservation among the objectives of the evaluation, and the consequent identification of adequate criteria to assess its status
- The use of measurable indicators to assess the evaluation. In the context of EIA, this means also that the impact prediction can be kept separated from the impact assessment
- The enhancement of methods to compare different alternatives and to rank them according to their merit

More recently, Gontier made a review of 38 EIA-reports coming from 4 different EU-countries (Sweden, France, the UK and Ireland). The results of this review confirmed a number of shortcomings in the way biodiversity assessments are performed (Gontier 2005, Gontier 2006a). Firstly, the concept of biodiversity was not evident in most reports. Of concern was the fact that the majority of reports contained mainly qualitative biodiversity assessments without sufficiently quantifying and predicting impacts. The biodiversity assessment remained on a descriptive level and therefore often considered only direct impacts, for example local habitat loss for certain species due to land being developed, without considering indirect, long-term, cumulative or widespread impacts. Concerning the type of impacts that were presented in the assessments, even well known impacts linked to linear projects were often not considered in the biodiversity assessment. This gave rise to descriptive assessments with very little analysis present. Furthermore, the information provided on impacts during construction was in most cases standardised and therefore not specific to the project and a distinction between long-term and short-term impacts was seldom made. Besides this, the integration between ecological and landscape assessments was poor. The asssessments often concentrated on impacts at the local scale, failing to consider large-scale and widespread impacts at the ecosystem and landscape levels. The fact that many of the assessments were performed at the habitat level explain why they failed to predict large-scale and widespread impacts. It also accounted for difficulties experienced in assessing the potential cumulative impacts. The omission of areas not benefiting from a protection status is problematic, since those still may contain biodiversity values and/or fulfil important functions in the ecosystem or landscape.

In global, these studies show that despite the EU directive on EIA being enacted over 20 years ago and despite recent efforts regarding biodiversity issues, the assessment of biodiversity related impacts in the EIA process is still far from meeting its goals. Even though the biodiversity concept is now part of the scope of the EIA process according to the requirements of the CBD, there is still a general a lack of concern on biodiversity issues in today's EIA process (Gontier 2006b). Thus, the development and implementation of new methods appear necessary to meet regulations and recommendations on the consideration of biodiversity in EIA. The use of GIS-based ecological models has potential to partially address several shortcomings of today's biodiversity assessment (Gontier 2006a, Gontier 2006b, Gontier 2007). A successful integration of existing ecological tools and models developed in a GIS interface in the regulated EIA proces could be a key factor in working towards sustainable landscape management (Gontier 2006b). Such models can be applied over large areas, making it possible to quantify impacts, to model and visualise uncertainty, to make better use of scarce data, and to take into account wide-spread, off-site and long-term effects (Gontier 2006a).

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Forest management plan

The forest management in Flanders is depicted in forest management plans. According to the Forest Decree (Bosdecreet), all forests except private forests of less then 5 ha must have such a forest management plan. All public forests and private forests (> 5 ha) situated in VEN-area need an extended forest management plan, while private forests (> 5 ha) outside VEN-area need a restricted forest management plan. The extended forest management plan must satisfy the criteria for sustainable forest management. These criteria subduct the forest management to several constraints to guarantee the different forest functions (socio-cultural function, economic function, environmental protection function and nature conservation function). The nature conservation function is to be enhanced by measures for the conservation of habitats and populations of wild plant and animal species, a minimal share of indigeneous species and a diversified forest structure. The restricted forest management plan is only subducted to the 'basic level', which aims at least at a stand still. Here, nature conservation related restrictions concerning to the exploitation are to be respected and measures for the conservation of specific species can be proposed. There is room for the restoration or the development of open spaces, forest edges, pool-swamp and other specific vegetation and the protection of specific faunatic elements (Dumortier *et al.* 2003). Every private owner can voluntarily set up an extended forest mangament plan. To support this, the Flemish Government gives subsidies for the elaboration of such a plan, and once the extended forest management plan is approved, extra subsidies for the management of the forest and the enhancement of the ecological forest function can be requested (Dumortier *et al.* 2003). Of the 146 000 ha of forest in Flanders (Dumortier *et al.* 2003), about 42 190 ha was accompagnied by a forest management plan at the end of 2006. Of these, 28 232 ha had a restricted forest management plan and 13 958 an extended forest management plan (Dumortier *et al.* 2007).

The obligation to set up forest management plans and subduct them to approval is an important controle tool for the qualitative forest conservation. After all, whenever a forest management plan is missing, every logging action needs to be requested and authorized (Dumortier *et al.* 2003). However private forest owners are obliged to subduct their forest mangament to the criteria for sustainable forest management when their forest (> 5 ha) is lying in VEN-area, that obligation does not count for private forests lying in Special Protection Zones that are not designated as VEN-area. Here, an important chance for a better controle of forest management in the scope of Natura 2000 is being missed out (Dumortier *et al.* 2003). Although it was demanded in the Government Agreement of 2004, an analysis of the effectivity of a forest mangament plan is not possible, for available data are insufficient. Nor is the situation monitored, nor are the goals clearly quantified (Dumortier *et al.* 2007). There is an urgent need for more effort concerning the monitoring and effectivity analysis of forest management plans.

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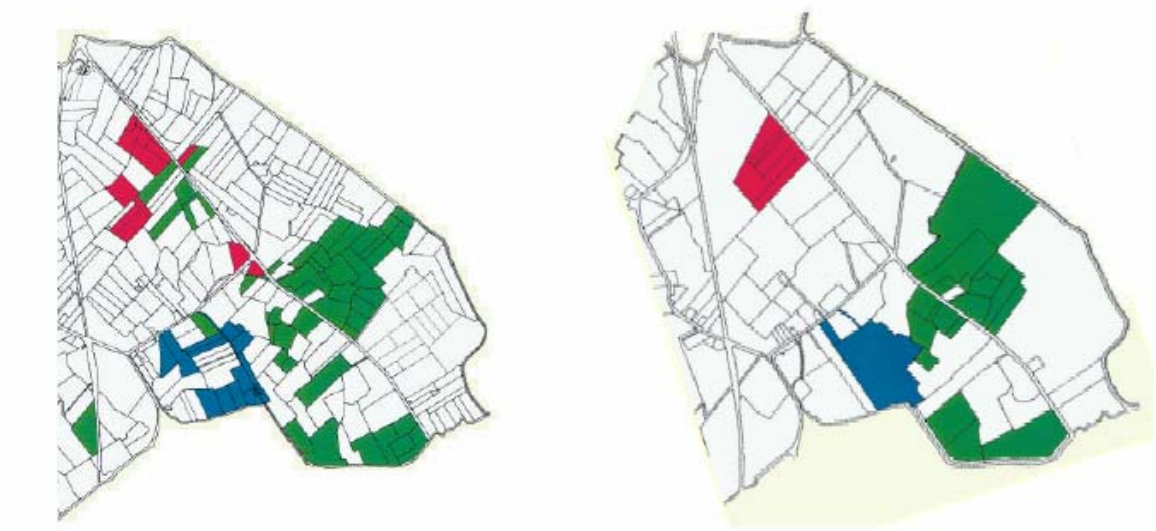
Land consolidation

Rural development by land consolidation is used in several countries in Europe. The demand for land consolidation arises from the need for readjusting unfavourable land division and promoting the appropriate use of the real property without changing the status of ownership (Vitikainen 2004). Traditionally, land consolidation was used for the improvement of the land division of farms by consolidating fragmented parcels through land exchanges in order to form larger and/ore better shaped plots and thus providing a more efficient farm management. In the late 20th century land consolidation has formed into a rural development instrument with multi-purpose objectives, which can additionally be used for improving the infrastructure, enhancing landscape and nature protection, and implementing various recreation area projects. A strictly limited area and the organisation in the form of projects, with stakeholders participation are the main characteristics of land consolidation.

Ecological impact

The available research concerning the ecological impact of modern land consolidation is as good as non-existent. Although in Flanders a few land consolidation projects are allready finished, and even though allready a decade ago, the INBO (Institute for Nature and Forest Research) has set up some guidelines for the integration and monitoring of nature conservation in land consolidation projects (De Blust & Van Olmen 1998), little information about the ecological consequences of land consolidation has risen since then.
It is clear that the change of scope of land consolidation, from a mere agro-economic enhancement tool towards a multi-purpose instrument was an important step for nature conservation. The initial form of land consolidation was mainly an act of increasing field size and areas under cultivation (Bullard 2007). This included removing important ecological structures, such as hedges and water structures, to enhance a more (economically) efficient land management. Furthermore, productivity was to be increased by bringing abandoned land back into production. These actions can have disastreous consequences for the environmental quality of the area. Cover and protection, as well as the possibility for flora and fauna to move are essential factors for a healthy biological environment. Green corridors offer herefore great potential, and these are often provided in a patchwork of fragmented units, but insufficiently available on large, barren fields. Not only biodiversity loss is a probable consequence, barrier removal also increases wind and water erosion. While erosion is more or less controlled in a more diversified, fragmented landscape, this is often not the case in a homogenised landscape, where ground cover and green boundaries are far more likely to be insufficiently provided.

The following ecological structures can be regarded as being of significant importance for the conservation of biotopes along agricultural plots: hedges, water streams, ponds, pools and small water holes, sollitary trees and tree groups, shrubbery and mixed structures. If only the needs of farmers are taken into account, these landscape entities are negatively affected by the process of land consolidation (Lisec & Pintar 2005). For example, hedges form important habitats for predators of pests and for other useful animals that are notable for the methods of new sustainable agriculture production. They provide protection against evaporation and play an essential role in the protection against wind and water erosion. Clearly, they function as an essential component of the ecological network in rural landscapes. In the former process of land consolidation, such frontier structures were often removed or destructed later as a result of the intensive agricultural production. According to the results of a study carried out in Slovenia, almost 50 % of the frontier ecological elements along the plot boundaries of an agricultural area subducted to monofunctional land consolidation disappeared (Lisec & Pintar 2005). Besides that, the majority of plot boundaries after the implementation of land consolidation did not coincide with the old boundaries. Therefore the percentage of loss of the frontier ecosystems was even higher. Also in modern land consolidation projects, one must carefully take into account the consequences of parcel enlargment. For example, the land consolidation project in Hoegaarden, which can be seen as an example for modern land consolidation, did not improve the nature values in the areas assigned for agricultural use. More specially, the small landscape elements have suffered from severe pressure due to the scale enlargement and lots of them have been removed (Geebelen 2000).



An example of parcel enlargement in Eggewaartskapelle. Every colour indicates the parcels of one farmer. It is clear that enlarging parcel sizes has a homogenising effect on the landscape, with possible negative impacts on biodiversity. Ecological consequences must be taken into account. Source: VLM 1999

These findings make clear that, from an ecological point of view, land consolidation should be planned together with the other sectors that are concerned with sustainable rural area development. Sustainable land management includes conservation and establishment of the available ecological patches. Through land consolidation, the basic ecological structures should be preserved and, in the case of removing some of these structures, new ones should be established (Lisec & Pintar 2005). Land consolidation policy seems to have understood the fact that nature development should be part of the goals of any land consolidation project. While in 1990 on average 65 % of the Flemish resources for land consolidation were dedicated to agriculture and 35 % to provisions of public use, a decade later, 35 % went to agriculture, 45 % to public use and 20 % to nature development (VLM 2000). Moreover, since 1998, land consolidation projects in Flanders are nowadays subducted to the nature decree (natuurdecreet) and its 'care duty (zorgplicht)'. This means that land consolidation projects must consider the stand still principle, as well as the principle of ecological compensation. An inventory of the present nature conditions must be made, and be compared with the conditions of nature after the land consolidation project is finished. The balance must be at least in harmony and an evaluation wether the projected objectives concerning nature conditions are reached will be made

(VLM 2000). Signs that modern land consolidation can succesfully take into account nature values, are delivered by case-projects such as the land consolidation project in Sint-Oedenrode (The Netherlands, province of Noord-Brabant). This project covers an area of around 16000 ha and is related to over 6500 areal users. More than 700 ha of land has been exchanged and dedicated to nature, while 300 ha of new forest has been established. Furthermore, 50 pools were digged out and 33 km of plantation has been established alongside the road network. About 5 km of plantation on new parcel boarders has been carried out, accompagnied by 450 farmyard plantations. The watermanagement-measures included the creation of 7 km of shores dedicated for nature development and in an area of 6600 ha, the problem of dreigthening has been taken away (Provincie Noord-Brabant). Also in Flanders, modern land consolidation projects tend to increase the nature vales of the area. Land consolidation plans deliver a positive input for ecotope groups such as forests, heathlands, fan areas, marshlands and waterrich areas. In global, the plan situation takes up more nature with specific nature management then the original situation (Dumortier *et al.* 2003).

Participation

Without a doubt, one of the main advantages of land consolidation is the huge effort spent to make sure every stakeholder can participate in the decision making process. This is very important, as land consolidation can only be realised if the costs and benefits of the different areal users are carefully investigated. The land consolidation procedure provides different moments of voice '? inspraakmomenten' (VLM 2005). At regular times, public investigations take place. As well as during the planning process as during the execution process, advising and directing organs are set up. Besides participation moments that are formally described in the land consolidation legislation, efforts are spent towards profound and solid consultations with the different stakeholders.

Disadvantages concerning the use of land consolidation are the long term on which the projects are realised and, related to that, the many (social) difficulties that arise during their execution. Projects can be left waiting for a long time due to areal bottlenecks or politic priorities (VLM 2005). For example, the land consolidation projects of Sint-Oedenrode (The Netherlands, province Noord-Brabant) and Hoegaarden (Flanders) took respectively 20 and 13 years.

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Natuurinrichting

Natuurinrichting is a Flemish instrument that aims at executing measures and works that are meant to establish an optimal organisation of an area for the maintenance, recovery, management and development of nature and the natural environment. By active interference, natuurinrichting wants to develop nature on places with lots of potential for fauna and flora. It can be applied in those areas designated as being VEN-areas, Special Protection Zones or green-, parc-, buffer- and forest-areas (Kuijken *et al.* 2001). This instrument is inspired on the instrument of land consolidation, but is developped totally in the scope of nature development. Possible measures within the scope of natuurinrichting are amongst others the exchange of parcels, infrastructural works, adaptations of roads and road patterns, stand still measurements, the temporarily abolishment of the authority of administrative governments and public governances, waterworks, groundworks, the building of nature educative provisions and the replacement of firms (Kuijken *et al.* 2001).

Two government instances are closely involved in the execution of *natuurinrichting*: the Agency for Forest and Nature conservation (ANB) and the Flemish Land Corporation (VLM). A *natuurinrichtingsproject* starts with an investigation of the feasibility of the project. The authorized minister must give its aprovement to start the project, whereafter a project comitee and project commission is set up. After this, a project report is established by the ANB and the VLM, which contains an analysis of the project area and clarifies the vision and execution modalities of the project. The report is made public and subducted to a public investigation. After collecting and handling the incoming objections, a list of measures and modalities is set up and approved by the authorized minister. Hereafter, the project comitee creates the project execution plan in coöperation with the VLM. This plan is on its turn subducted to another public investigation and the advice of the project commission. After all this, execution can be started (Kuijken *et al.* 2001).

As the instrument is developped specifically for nature conservation goals, it can be assumed that the ecological balance of this instrument is very positive. However, a profound evaluation concerning the ecological impact of the instrument is not yet possible, due to a lack of monitoring data (Dumortier *et al.* 2005).

Participation

Public participation is a powerfull aspect of *natuurinrichting*. Thanks to a torough communication, the instrument is meant to reach the broader public and its different stakeholders. By setting up natuurinrichtingsproject comitees and – commissions, a broad base for the planning process is realized. Communication happens according to a communication plan, which indicates what stakeholder groups are to be interrogated in what order. By being represented in a commission or committee as well as trough informative sessions, meetings and public investigations, all stakeholders receive the possibility to give their own input to the project and defend their positions (Kuijken *et al.* 2001).

Disadvantages

The Nature Report of 2003 mentions several botllenecks for the instrument of *natuurinrichting*. Financially, insufficient resources impede the realisation of projects. The social base is not always sufficient and on the execution level, the strong legislations concerning polluted grounds makes groundworks difficult. Furthermore, the instruments of parcel exchange and firm replacement are badly elaborated, the compensation system is only applicable for owners and not for users, working via smaller part-projects is not allowed and the execution of the projects can only start after the definitive approval of the project execution plan (Dumortier *et al.* 2003).
The procedures are very heavy, which means the instrument is not apropriate for more or less restricted measures such as the local heightening of the water table, the restoration of a meander or the creation of wood edges and pools (Ministerie van de Vlaamse Gemeenschap 2003, Ministerie van de Vlaamse Gemeenschap 2004, Van Hoorick G. 2005). As a consequence, many chances for nature conservation are missed out (Ministerie van de Vlaamse Gemeenschap 2003) and the succesfull execution of the projects can take many years. Above that, *natuurinrichting* cannot be used in combination with land consolidation (Ministerie van de Vlaamse Gemeenschap 2004). A simplicication of the rules and a better attunement with other legislation remains a necessity, according to the environmental policy plan (Ministerie van de Vlaamse Gemeenschap 2003).

Luckily, in order to counter several procedural and legislative problems, some adaptations have recently been made to the Nature Decree concerning *natuurinrichting*. Amongst others, the possibility for a rapified project execution is given and legislative improvements concerning compensations and the legal certainties for users and owners are worked out (Peeters 2006, Besluit van 2 februari 2007).

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Besluit van 2 februari 2007 houdende wijziging van het Besluit van de Vlaamse Regering van 23 juli 1998 tot vaststelling van nadere regels ter uitvoering van het Decreet van 21 oktober 1997 betreffende het natuurbehoud en het natuurlijk milieu, wat betreft de natuurinrichtingsprojecten (BS 8/3/2007)

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Natuurprojectovereenkomst

Within the areas subducted to an approved ‘natuurrichtplan’, it is possible to establish a management agreement between the Flemish government and a private person, the so called ‘nature project agreement’ (natuurprojectovereenkomst). Here, subsidies are assigend for local projects which enhance the execution of the ‘natuurrichtplan’. The compensation accounts for maximal 50 % of the total costs for works carried out by an administrative government, while this compensation increases to maximum 90 % of the costs if the works are carried out by private persons. The measures that can be taken in the scope of a nature project agreement are amongs others the establishment of sleep- and breeding places for different kind of birds, the creation of animal cross over places, the setting up of information panels and watch cabines, the elaboration of walking routes, the creation of fish spawn places and the buiding of fish stairs, etc …
As the first ‘natuurrichtplannen’ are only very recently approved, no nature project agreements have yet been carried out. The evaluation of this concept is therefore not yet possible. However, the evaluation of the nature project agreement will need more a social investigation then an ecological one, as the succes of this concept will depend on wether the social base for nature conservation is large enough to make this instrument work, rather then wether the different measures are usefull in the scope of nature conservation.

References
Natuurdecreet artikel 45 & 46

Nature licenses

The nature license is one of the instruments with which the Flemish Government aims to protect specific vegetations and small landscape elements. According to the Nature Decree, there is a relative prohibition for the changement of certain vegetations and an obligation of a nature license to change vegetation or small landscape elements witin the natura 2000 areas (Cliquet *et al.* 2005). The application of the nature license belongs to a great deal to the municiplatities and provinces. The license approval and the registration of the reportings, as well as the enforcement of the licenses is mostly the tasks for the municipalities. The Agency for Forest and Nature Conservation (ANB) forfills an advisory role hereby (Dumortier *et al.* 2005).

The current legal protection of vegetations and small landscape elements is far from complete. On several aspects, the legislation is not uniform (Van Hoorick 2005). Furthermore, it is strongly differentiated according to the spatial destination, which increases complexity. There is a lack of mutual attunement to other legislation, giving rise to a doucle license obligation (Van Hoorick, 2005). Furthermore, the relative small fame of the instrument and the minor attention to its enforcement further explain the insufficient working of the nature license (Cliquet *et al.* 2005).

Allready in 2001 the nature report announced an insufficient enforcement and controle and a serious lack of knowledge about the nature license concept (Kuijken *et al.* 2001). The recommendations involved 3 clusters: improve the knowledge level about the nature license legislation, create a greater incentive to applicate the instrument by means of sensibilisation, a better communication and a stronger enforcement and increase the execution capacity, as well as the monitoring and evaluation of the instrument. Related to that last recommendation, the 'Natuurvergunningsloket' was established in 2002. In 2005 however, there is still too few information about nature licenses to make a correct asessment. A lack of quantitative monitoring about the situation and trends of this instrument remains an issue (Dumortier *et al.* 2005). Also data about the enforcement are only kept ad hoc, further impeding a well elaborated evaluation of the effects of nature licenses. An enquiry showed that most license requests delivered at the municipalities concern the cutting of tree rows (Dumortier *et al.* 2005). An earlier small investigation pointed out that most license requests comprise the cutting of poplar trees and the trimming or removal of of wood edges and hedgerows (Verschelde 2000). These findings raise the question wether the current use of nature licenses contributes to the protection of other small landscape elements and specific vegetations (Cliquet *et al.* 2005, Dumortier *et al.* 2005).

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Organic Farming

Over the last few decades, dramatic declines in both range and abundance of many species associated with farmland have been reported in Europe, leading to growing concern over the sustainability of current intensive farming practices. Sustainable farming systems such as organic

farming are now seen by many as a potential solution to this continued loss of biodiversity (Hole *et al.* 2005). Attention in industrialised countries has focused on reducing pollution by fertilisers and synthetic pesticides in intensive agriculture. In particular, the leaching of nitrogen causes the extensive deoxidation of inland water reserves and a reduction in the quality of ground water. The loss of nitrogen in agriculture is also responsible for much of the environmental damage caused to many sensitive and natural terrestrial and marine ecosystems. Furthermore, the use of synthetic pesticides has reduced the quality of ground water, raised suspicions of adverse health effects, and caused changes in the habitats of many species of flora and fauna (Hansen *et al.* 2001). Organic farming has developed rapidly throughout western Europe in response to increasing customer demands and substantial support by EU and national government policy initiatives (Hansen *et al.* 2001, Hole *et al.* 2005).

Effects of organic farming

In general, the risk of harmful environmental effects is lower with organic than with conventional farming practices (Haas *et al.* 2001, Hansen *et al.* 2001, Biao *et al.* 2003, Pacini *et al.*2003). The largest beneficial effect of organic farming is associated with the lack of pesticides leaching and soil biology (bacteria, fungi, springtails, mites, earthworms), the higher level of biological activity being driven by the use of versatile crop rotations and the reduced use of nutrients in the organic system. At the ecosystem level, organic farming also benefits arable land by promoting greater densities and species diversity in the weed flora, lower concentrations of aphids, greater numbers of beneficial insects, and bigger populations of birds (Hansen *et al.* 2001). Regarding the ecosystem, semi-natural areas and small biotopes are assumed to be better protected by organic practices because of the associated ban on pesticides and the reduced use of nutrients. However, changes already incurred may be irreversible (Hansen *et al.* 2001, Hyvönen *et al.* 2003, Hyvönen 2007).

Looking at the real effects of organic farming compared to conventional farming on biodiversity, organic farming has a positive impact on **biodiversity conservation** (Mclaughlin & Mineau 1995, Haas *et al.* 2001, Mäder *et al.* 2002, Biao *et al.* 2003, Hole *et al.* 2005, Holzschuh *et al.* 2007). According to an extended Dutch research, scientific results are mixed, but the majority of the studies comes forward with a positive relation between organic farming and biodiversity. This relation concerns as well the total number of organisms as the species diversity (Smits & van Alebeek 2007). A review made by Hole *et al.* (2005) of more then 76 studies showed that a wide range of taxa, including birds and mammals, invertebrates and arable flora benefits from organic management through increases in abundance and/or species richness. Bird communities, including some species of special interest for nature conservation, seem to profit form organic farming (Genghini 2006). Although benefits of of organic farming for vegetation conservation not always give spectacular results (Bakker & ter Heerdt 2005, Gibson *et al.* 2007), also plant (Hyvönen *et al.* 2003, Pacini *et al.*2003, Manhoudt *et al.* 2007) and fungi (Oehl *et al.* 2004) species richness appears to be significantly higher on organic than conventional farms and in general, biologically farmed agroecosysterns have a higher level of soil biological activity than conventionally grown ones (Paoletti 1995, Hansen *et al.* 2001, Mulder *et al.* 2003, van Diepeningen *et al.* 2006). The available evidence indicates that organic farming could play a significant role in increasing biodiversity across lowland farmland in Europe (Hole *et al.* 2005). Not only is this beneficial for nature conservation, biodiversification can also lead to agroecosystems capable of sponsoring their own soil fertility, crop protection and productivity. Correct biodiversification results in pest regulation through restoration of natural control of insect pests, diseases and nematodes and also produces optimal nutrient recycling and soil conservation by activating soil biota, all factors leading to sustainable yields, energy conservation, and less dependence on external inputs (Altieri 1999).

Although not every study comes forward with significant results (Emmerling *et al.* 2001), organic farming also seems to be suited to markedly improve **soil fertility and nutrient management** (Hansen *et al.* 2001, Mäder *et al.* 2002, Biao *et al.* 2003, Pacini *et al.*2003, van Diepeningen *et al.* 2006). Organically managed soils are on average more stable systems with a larger soil health (van Diepeningen *et al.* 2006). Furthermore, organic farms have clear positive or comparatively fewer negative effects on **surface water and animal husbandry** and show inherent ecological advantages of **the production system** (Haas *et al.* 2001). On top of that, the use of **fossil energy** and the production of greenhouse gases is also markedly lower in organic than in conventional agriculture,

mainly because of the lower use of indirect energy related to the ban on synthetic nitrogen fertilisers (Hansen *et al.* 2001).

Besides these factors, organic farms have a clear positive effect on **landscape image and landscape diversity** (van Mansvelt *et al.*1998, Hendriks *et al.* 2000, Rossi & Nota 2000, Haas *et al.* 2001, Hansen *et al.* 2001). In terms of landscape diversity the organic types of agriculture have a good potential for positive contributions to a sustainable agrolandscape management (van Mansvelt *et al.*1998).

Landscape aspects

Although studies show contradictive information about wether the most important factor for biodiversity conservation is the farming system or the landscape features of the area where the farming system is applied (Purtauf *et al.* 2005, Rundlof & Smith 2006, Holzschuh *et al.* 2007, Smits & van Alebeek 2007), a commun conclusion is that landscape characteristics should be considered in agri-environment schemes (Bengtsson *et al.* 2005, Purtauf *et al.* 2005, Rundlof & Smith 2006, Holzschuh *et al.* 2007). The effectiveness of organic farming appears to be greatest in homogeneous landscapes (Bengtsson *et al.* 2005, Rundlof & Smith 2006, Holzschuh *et al.* 2007, Smits & van Alebeek 2007). In homogeneous landscapes, organic farming greatly compensates for the negative effects of landscape simplification (Holzschuh *et al.* 2007). This interaction between farming system and landscape context clearly shows that incentives for conversion to organic farming or the retention of non-intensive farming practices should be most cost-effective in such intensively managed landscapes and that evaluations of agri-environment schemes have to incorporate a landscape perspective (Bengtsson *et al.* 2005, Rundlof & Smith 2006, Holzschuh *et al.* 2007). This might be done by developing context-based agri-environment schemes to increase the amount of organic farming in intensively farmed landscapes (Rundlof & Smith 2006).

Participation

The surface area of the European organic farming shows an increasing trend. The most recent data point out that about 4,3 % (6,7 million ha) of the total agricultural area is used for organic farming. Belgium scores less than the european mean, with about 2,1 % of it's
agricultural area falling under organic farming (Ministerie van de Vlaamse overheid 2008). In 2007, the total area of organic farming in Flanders reached 3836 ha, an increase with 17,4 %. This matches with about 0,6 % of the total area of cultural grounds in Flanders. The number of biological farms showed a net-decrease of 2 units, which brings the number down to 230 farms. Of these, 175 completely follow the organic production method, while the other 55 partially produce by the convential methods (Ministerie van de Vlaamse overheid 2008).

Different kind of motives to convert to integrated or organic farming can be distinguished (de Lauwere *et al.* 2004): idealistic motives, economic motives, technical motives, related to matters such as the control of weed and the availability of workers, and institutional motives, related to the institutions surrounding farmers (traders of chemical crop protection products, policymakers, farmers living in the area). Idealistic motives seem to form the most important reason to convert, while institutional motives are the most important reason for not converting (de Lauwere *et al.* 2004). Quality and environmental oriented farmers are more likely to convert to organic farming than farmers who do not put this objective as important in their decision process (De Cock 2005). Motives for not converting to more sustainable agriculture are often related to a perceived risk or uncertainty (de Lauwere *et al.* 2004, Pannell 1999 in Wheeler 2008, Rogers 2003 in Wheeler 2008). Especially the economic possibilities of organic farming are estimated very low by conventional farmers (De Cock 2005). Involving relevant actors in the process of conversion, financial incentives, providing knowledge, consistent policy or offering farmers some room for experiments might help to reduce the perceived uncertainty (de Lauwere *et al.* 2004). The information available (and the costs of acquisition) is a critical factor in influencing subjective farmer perceptions (Wheeler 2008). The better farmers are informed about organic farming, the faster they convert to organic farming (De Cock 2005). A study from Cobb *et al.* (1999) suggests that there are economical and ecological advantages arising from organic agriculture that are not fully reflected in the present pattern of agricultural incentives. This is a crucial remark, as policy incentives are given by means of subsidies and financial aspects form one of the the most

important incentives for farmers to coöperate with biodiversity policies (Knierim *et al.* 2003, de Lauwere *et al.* 2004).

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Species Protection Plans

Many species are treathened and often, their situation keeps getting worse. In many cases, it is not clearly known what measures have to be taken to maintain these species. A possible way out of this impasse is the set up of a species protection plan. Such a plan determines the critical problems that impedes the healthy existence of the species and indicates what measures should be taken to tackle them. In Flanders, 12 species protection plans (28 species) have been established at the moment.

Evaluating the concept of a species protection plan is not obvious, as most of the plans have not yet been translated into action on the field. A few problems have allready been determined (Dumortier et al. 2005, Dumortier et al. 2007). The choice of species and the method of setting up the plans is done arbitrarily, and above that, the making of these plans is done by different organisations and scientists. Some plans have a more practical approach, others emphasize the ecology of the species without putting concrete recommendations forward. This randomised set up of the species protection plans leads to an inferior effectivity of the concept of a species protection plan. Criteria need to be developped to indicate which species deserve priority. The Flemish and European red lists can be used in this scope. Also the feasiblity of the possible measurements has to be determined. Next to criteria to determine the urgency for the creation of a species protection plan, also directives concerning the minimum conditions for the set up of such a plan should be put forward.
Furthermore, the setting up of species protection plans is of course insufficient to save a species. These plans also have to be implemented. As only 5 plans have reached the status of implementation, it is clear that more effort is needed to make concrete actions on the field. Otherwise, the whole upset of the species protection plans risks to be lost. Maybe, the obligation of the execution of the species protection plans should be incorporated in the nature legislation.

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Cooperation agreement

The coöperation agreement (*samenwerkingsovereenkomst*) is an agreement between the Flemish Government and individual municipalities and provinces. By entering this agreement, the municipalities and provinces commit themselves to execute some environment related tasks. Therefore, they receive subsidies from the Flemish Government. The coöperation agreement is the most important tool for coöperation between the Flemish Region and the local governments concerning the environmental policy. The most important goal is the stimulance and elaboration of a sustainable local environmental policy. The coöperation agreement is the succeeder of the former environmental convenants (’92 – ’96 and ’97 – ’99) (Dumortier *et al.* 2003). The agreement consists of 3 important aspects: a basic package with instruments to ensure a basic environmental policy, 8 thematic clusters, and 3 levels of ambition. While the first level of ambition is more worked out for inventorisation, the other 2 levels aim at a more concrete execution of projects on the terrain (Dumortier *et al.* 2003). Amongst the thematic clusters is the cluster ‘natural entities’, which consists of environmental tasks concerning nature, forests, green areas and lanscapes. Amongst others, a list of actions is given for the management and fitting up of public or private properties, the appropriate management of small landscape elements, the setting up of species protection plans, enlargement of the social base for nature conservation, green management and the management of connective elements over the entire territory of the municipality.

Effectivity

Despite former critics (Verbanck 2002, Vandeputte *et al.* 2004, Bachus 2005) and an adaptation of the coöperation agreement (Dumortier *et al.* 2005), the administrative overload remains a problem for the municipalities (Minaraad & SERV 2007). The communication and especially the language use in the coöperation agreement, both in the contract text as in other communication channels, is often too academic and not adapted to the target group of environmental municipality workers. The amount of reading is experienced as being too exuberant and time consuming (Vandeputte *et al.* 2004). Also confusal and sloppiness are still an issue on some aspects of the coöperation agreement documents (Minaraad & SERV 2007). Bad timing aspects such as delays in the individual evaluations of the municipalities (Verbanck 2002) and the short time span in which project proposals have to be elaborated, further impede a flexible way of working (Minaraad & SERV 2007). Also a more gradual payment system, aiming at motivating municipalities to reach a higher level of ambition is a missing factor in the current version of the coöperation agreement (Minaraad & SERV 2007). However, despite the practical difficulties linked with this instrument, the coöperation agreement is seen as an important tool for the elaboration of a sustainable local environmental policy (Dumortier *et al.* 2005, Minaraad & SERV 2007). This instrument stimulates the integration of the environment in other local policy fiels and leads to a professionalizing of the local environmental policy. It contributes to actions on the field (Minaraad & SERV 2007), which in the end remains the main target of nature conservation.

Participation

An enquiry made during an evaluation of the coöperation agreement in 2004 (Vandeputte *et al.* 2004) pointed out that, however not being the only reason for municipalities to participate, the receival of subsidies is by far the most important incentive. Also the image of the municipality concerning environmental policy can be a reason for participation. Some municipalities participated thanks to the efforts of a very motivated sherrif of environment, or because they assumed that the coöperation agreement would become obligatory in the future anyway. Reasons to not participate appeared to be mainly the practical problems related to the coöperation agreement, such as the lack of time and human and financial resources. In these cases, the costs of the administrative overload were estimated to overcompensate the benefits of the subsidies. Other reasons were the unwillingsness to accept the tight regulations of the agreement or the lack of a political base. The political will to participate in sustainable development in global and the coöperation agreement appeared to be rather limited over the entire sample of municipalities.
The signing of the coöperation agreement concerning 'natural entities' has improved not only quantitatively but also qualitatively (Dumortier et al. 2007). On the one hand, more municipalities sign in on this facultative cluster (in 2002, 199 municipalities signed in, in 2006 227). Moreover, the number of approved nature projects increased from 20 to 129 during the period from 2002 – 2006. On the other hand, more municipalities choose a higher ambition level (the signing for ambition level 2 increased from 34 municipalities in 2002 to 50 in 2006). This ambition level puts more emphasis on the systematic execution and approach of the policy concerning nature, forests, green areas and landscapes. Therefore, it is to be expected that municipalities that signed in for ambition level 2 will have a bigger impact on nature conservation. When looking at the subject of the nature projects, about 50 % appear to concern nature development projects, 25 % is related to subsidy-regulations (green roofs, protection of the swallow, …). A bit less then 20 % involves the acquisition of land and the remaining 5 % comprises the elaboration of plans (green management, verge management, …) (Dumortier et al. 2007).

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	PROCESS		IMPLEMENTATION	SOCIAL IMPACT			
Column1	Takes into account socio-economic context / Realistic	Citizen involvement	creation of conflict private/public interest	cooperation between stakeholders	knowledge/capacity building	co-responsability for nature conservation	waarom dan dit instrument? voornamelijk bescherming via de juridische weg. Specifieke aandacht
EIA (Environmental Impact Assessment)	yes, EIA takes into accountthe socio-economic context with the discipline MAN. Here the impact on the societal context is described and where necessary, mitigated.	only through objections on preliminary EIA	no, however indirectly the EIA will be used for permit procedures where this conflict will arise once identified in the EIA report	mitigating measures are normally formulated in an EIA but cooperation is never one of them. EIA does however bring several disciplines together in one assessment.	no. The integrated analysis is an open and official document to support the decision making process and permit procedure but does not necessarily enhance knowledge of stakeholders	certain measures can be made obligatory for parties involved through permits procedure, creating some corepsonsabililty for project executing parties	
AEM (Agricultural Environmental Measures)	customised per case. Participation and specific needs can be incorporated if needed.	involvement limited to people involved in the AEM.	no	cooperation between farmers ande government	when farmers are explained why they have to take what measures, this will lead to increased knowledge and improved awareness	yes as the farmer will be asked to perform specific tasks with nature objectives	
FMP (Forester Management Plan)	As in theory all ecological, economic, social, educative, protective and scientific objectives are defined in the FMP, the context of the forest should be taken into account.	involvement limited to people involved in the FMP	cooperation for FMP with other forest owners is voluntarily. Making a FMP is however obligatory for people who own more than 5ha and the plan has to be approved by government	cooperation between forester and government	when foresters are explained why they have to take specific measures for sustainble forestry, this will lead to increased knowledge and improved awareness	yes as the forester will be asked to perform specific tasks with nature objectives	
Management/Nature Project Agreement	mainly for nature with poor and no explicit obligation to take into account the socio-economic context	initiative from public and private owners with good funding possibilities recognises the imortance of smaller landowners for small scale nature projects	through financial encouragment for projects for nature in for example VEN (90% of costs payed by government) the government gives landowners to possibility to cooperate in nature conservation? The project has to be approved by the governmental administration	cooperation through funding between private or public landowner and government	education not necesarily for the party involved but for a target group of people (visitors, ...)	co-responsabiilty through the initiative of the private or public parties	
Land consolidation	desirablility is mainly influenced by the socio-economic context becasue the objectives for land consolidation are mainly for improvement and high economic viability of farms	involvement limited to people involved in the land consolidation. There is also a possibility for participation (inspraak) in the procedure	through the right of prepurchase (voorkooprecht) or through voluntairy sale, the government becomes the owner. Otherwise, ground is traded from one owner to another for public and private interest. Due to voorkooprecht, a conflict partially arises for third parties	cooperation between stakeholders (mainly farmers) and government. Cooperation not objective an sich with more attention for improvement of economic viability of farms	no	cooperation mostly through a better economic activity. Co-responsability therfore reduced	
Expropriation	expropriation can be used for societal interst. Payment is on the basis of similar properties in the area. Large scale expropriation can have a disruptive impact on local communities	no citizen involvement (or only in a negative way as it negatively affects the party involved)	the government gets all the rights over the ground thus creating the largest public-private interest conflict	no	no	no	
Land purchase	estimates for the payment for land purchase is don on similar properties in the area. Most of the time, actual prices are higher and some percentages are payed unofficially. Therefore, the government can most of the time not give the actual value.	private owners presents his proptery for sale and bidding is initiative of adminstation	the government buys the land in a normal procedure, not creating immediate conflict except from the fact that the land is "lost" from the private market	no	no	no, the responsability is transposed to the government	
Nature Arrangement	on the basis of extensive planning, cooperation and participation, an arrangement for the area ismade with the objectives for nature. The extend of participation and cooperation and the output of it determines the level of respect for the socio-economic context. project starts with feasibility study and projectcomité and ^projectcommission for advice and consultation	involvement through participation (inspraak) and debate	nee as most measures are done on a voluntary basis where often the governement takes actions and measures on private property with permession of the owner. The minister has to approve the project and sometimes the government buys part of the land for trading and arrangement according to its own ideas.	coordination of cooperation done by governement but also debate in projectcommission and projectcomité	education might be one of the objectives of the nature arrangement project	co-responsability high due to commission and comité with stakeholders	
Protection regime	no attention for socio-economic context	no citizen involvement	conflict arises via restriction in use or activities potentially affecting protected habitats and species	no	no	general responsability to protect but not personally adressed	

Permits	a permit allows a case-to-case assessment of the activities with the current legislation. Most oif the time this is unidisciplinary about the environment but sometimes societal aspects are taken into account (noise nuisance)	no citizen involvement. However, parties involved will a priori or a posteriiori think about potential impact of their project, sometimes changing the attitude or activity because the permit would have imosed some restrictions anyway	permits will restrict certain activities that are likely to affect the environmental and biotic quality thus creating a conflict between private entrepreneurs and industries and the governmental legislation	no	through permets people are confronted with evironmental awareness but capacity building not a objective	co-responsability through (environemtnal) footprint of (industrial) activities
Natural Reserves		involvement mainly through several (recreational) possibilities for the reserve.	a management plan has to be made for eacht natu reserve. This describes specific topics like accesibility, potentially causing a conflict between private and public interest for use of the terrain. Private organisations can also buy or manage nature reserves. They also need an approved management plan for this and are thus not completely free in their development of the reserve	not necessarily	spreading knowledge can be done through eduaction of visitors of the site	management by govenrment or stakeholder organisation. Therefore, depending on the situation some co-responsability via organisations
Species Protection Plan	no attention for socio-economic context	involvement of local government and stakeholder organisation(s)	organisations or the government can make and approve species protection plans. The execution of the plan uses different instruments for the implementation of specific management measures (such as AEM). Subsidies can be asked for measures for the realisation of the species protection plan and they have to be approved	local cooperation between stakeholders, managers and local officials	not the purpose of the protection plan but because of the local charactere, capacity building can be done through involvement	cooperation between different stakeholder leads to co-responsability for appropriate protection
Ecoconditionnality	exclusively on hte basis fo environmental and ecological criteria	only involvement of the farmer/forester	giving the non governmental party the possibility to get financial support for certain adaptations in conduct of businesses. This encouragement does not create the conflict of private and public interest unless subsidies are withdrawn on discutable basis	cooperation between govenrment and stakeholders	capacity building not the objective but awareness will be created through regulations from ecoconditionnality	support will be lost when eco-conditions are not fullfilled so therefore, the former is responsible for keeping the financial support
Communication campaign	should be customised for the socio-economic context, depending on the needs for communication of that same context	afhankelijk van wie de doelgroep is kan dit inderdaad een belangirjke betrokkenheid van de burger teweegbrengen met als gevolg een mogelijk grotere interesse in mede-beheer etc	no	communication can potentially increase coopeeration	spreading inforamtion is a kind of knowledge building	unless the communication campaign informs about co-responsability for nature objectives, not much co-responsability is gained
Education program	dissimilar to communication, education takes into account a specific audience and not necessarily the socio-economic context. Depending on the socio-economic context, different programs might be necessary.	involvement can increase due to education	no	education and capacity building can potentialy lead to increased cooperation	these are the main objectives obviously	better knowledge will often lead to increased perception that something can be done and thus co-responsability
Contrat de Rivières		many parties involved in instrument as long as they have something to do with water policy	no as the cooperation is on a volunatarily basis	all stakeholders of the water policy sector work together. Cooperation is voluntarily	some knowledge building through cooperartion with stakeholders	united with other parties of the watersector, cooperate goals might be presented and achieved
Life Nature	likelyhood for funding increases when tkaning in to account the socio-economic context and development. Funding application demands description of socio-economic context.dissimination of the project results is considered to be important as well.	participation of NGOs etc no the management of the sites, the importance of communication and the local charactere of the project often stimulates involvement	no as financial support is given for a plan that need to be approved.	cooperation between several partners is encouraged however, most of the time projects will be executed with partners to normally work together as well.	a significatn part of the funding must go to capacity building and dissimenation	through cooperation with several stakeholders, a certain co-responsability can be reached
Deduction of successions taxes on natural assets	no attention for socio-economic context	no citizen involvement	no as private owners are encouraged to keep the current stae of natural areas and forests	no	no	because people can make profit from preserving nature, personal (financial) reasons arise from the conservation
Labels for biodiversity-friendly products/ certification	no attention for socio-economic context	labelling might mean an extra for the party involved and thus, initiative comes from (private) parties. Involvemenbt due to codes of practice for labelling	conflict would arise as labels are given to private partners adapting their conduct of business for proper market profiling. However, changing conduct is on a voluntarily basis, creating added value to product	sometimes cooperation between industries and NGOs of government	labelling will improve knowledge through awareness of regulations but not an objective on itlsef	labelling creates awareness and often co-responsability as consumers will start buying certain products

Organic farming subsidies	no attention for socio-economic context as this is a purely financial instrument specific farming practices	only involvement of farmer	no conflict arises are encouraging specific code of conduct is on voluntarily basis	no	no	as organic farming often starts because of a certain belief in co-responsability, organic farming often leads to changes in consumer behaviour and conscious choices for organic products

	Take into account structures and functions of the ecosystems - Scientific based	Take into account the natural evolution - adaptation possibility - flexibility	Durability - robustness in time	effectiveness to reach the conservation goals	Broad or specific instrument	Recommendations		
AEM (Agricultural Environmental Measures)	Agrienvironmental measures aim at improving the quality of the environment (in a general concept) and at reducing negative impacts of agriculture on biodiversity. Very few scientific research exist about the impacts of AEM, and it explains why some measures are not well scientific-based. Some of them are not adequally adapted to improve biodiversity.	There is a possibility to adapt this insrument during each reviewing of the agricultural policy, but it's not easy to do it. When an agreement is taken with a farmer, in theory the contract can't be changed into the 5 years, so it's not really flexible.	More expensive in the long-term for society than the main other instruments (in regard to the results). This instrument is voluntary base and farmers can decide not to follow when renewing a contract. Agreements are only concluded for a period of 5 years, that is very short-term in regard to the environment requirements/evolution. So, we don't have any guarantee in the long-term.	Limited effectiveness (see text of Steve : adverse side-effects, insufficient for endangered species, do not consider landscape effects). In Wallonia, this instrument is not effective in the current version for a majority of endangered species and habitats.	Currently, this instruments is only usable for farmers (and not for private individuals, or NGO's). This instrument can be applied to a large panel of agricultural-linked habitats.	This instrument should be thought at the landscape or farm scale, and not at the field scale. More studies are needed.	En Région wallonne, impact général positif mais non optimal des MAE (<2004). Succès (nombre de contrats), mise en œuvre effective des mesures et respect des cahiers des charges assez satisfaisants. Par contre, le ciblage des mesures sur les besoins environnementaux prioritaires insuffisants. Manque d'efficience (moyens trop élevés au regard des résultats obtenus). Nouveau programme mieux adapté (actions ciblées et possibilité de majoration des primes en fonction de l'impact environnemental).	Revoir certains cahiers des charges, l'impact positif des mesures fauche tardive et très tardive est évident
Management agreement	This instrument is a good manner to take into account structures, functionning and functions of the ecosystems because management measures (and prohibitions) it contains are theorically based on ecological requirements of species and habitats it aims to protect.	In the current state, this instrument is not really flexible, because the agreement covers a period of 10 years, and it should be difficult to readapt it before the deadline if it is necessary to take into account the environment evolution. One should implement a mechanism allowing its reviewing in regard to some environment evolutions.	This instrument is more or less robust because the agreement is concluded for 10 years. Moreover this instrument is a voluntary one.	We can assume that this instrument should be effective because it has been specifically created to reach the Natura 2000 conservation goals. It supposes concrete technical measures of management and restoration of natural areas. It contains clear objectives. But the effectiveness of this instruments depends on its good application on the field by different landowners or stakeholders. It requires also a control by authorities.	This instrument is at the same time broad and specific because it is broadly applicable for all Natura 2000 sites and for a large panel of conditions, and specific because adaptable to each local situation.		From an ecological point of view, management agreement is a good way to implement management (technical) measures in a Natura 2000 site because it is based on a case by case analysis of the ecological situation and it permits to implement specific measures adapted to this situation. We can assume that after the negotiation between different parties, if they agree with the content of the management agreement, this should be well applied and respected on the field, although it requires a good control.	
Protection regime (prevention regime)	This prevention regime has been specifically created to protect Natura 2000 species and habitats. Prohibitions measures included in it are theorically scientific-based and can be if necessary applied outside the site to tackle broad threats. They are function of ecological requirements of each species and habitats occuring in a Natura 2000 site.	This prevention regime seems not really flexible, because its modification requires a heavy legal procedure.	This instrument can be effective on a long term only if the measures are well-respected. So, it depends on an effective control by authorities.	This instrument can contribute to reach conservation goals, but not if applied only, insofar as it imposes a direct protection of habitats and species. This passive instrument requires other active instruments which include concrete actions to preserve and restore habitats/species.	This is a broad instrument because it is applicable for each Natura 2000 site, but some measures contained in designation decrees are specific for one site, depending on the presence of specific species or habitats.	Content bad-adapted in Walloon region, files should be better followed, presence on the field is required.	prevention regime??	
Permits for intervention in environment	This instrument has been created to reduce negative impacts of some works or activities on different facets of the environment (soil, water and air; fauna and flora), and so, by the same way, on Natura 2000 sites and their species and habitats. By reducing these impacts, we can consider that this instrument, in a certain way, take into account the structures and functions of the ecosystem in its whole.	To take into account the natural evolution, there should be a frequent reviewing of norms and rules to respect for new projects, and this is not currently automatic. But for some activities, permits must be reviewed periodically, and this could be an occasion to adapt permits in relation to the evolution of the environment.	To be robust in time, this instrument requires that constraints are well respected, and it depends on an effective control by authorities	This instrument can contribute to reach conservation goals, but not if applied only, insofar as it imposes some constraints for new projects to reduce their impact on the environment. Most of time, it doesn't include any positive action in favor of Natura 2000 objectives.	This is a broad instrument because it is applicable at each Natura 2000 site and around it.			
Natural Reserves	Yes. Natural reserves contain in general core areas of the ecological network. The management plan of a natural reserve is based on the structure and functionning of the ecosystem. But the scale of application of this instrument (protected site) doesn't allow to take into account some external problems. It requires a more global approach than only focusing on some little protected sites. The ecological network approach is recommended to enhance connectivity between core areas.	No, frequently, this statute takes not into account the evolution of the environment, because management plan are established to maintain certain types of habitats, prohibiting a natural succession. Specific environmental events (like fire, storms) are not taken into account. Management plans are not flexible, because of the heavy procedure required to change it. But at the and of an agreement (for private reserves, each 30 years), it's necessary to make a new management plan.	Yes. The statute of domanial reserve is theorically fixed for an indeterminated period. Private reserves are agreed by the government for 30 years, renewable. Forest reserves are less robust because the convention is only concluded for a period of 9 years. Natural reserves are the best guarantee in the long-term to preserve a site.	This traditional instrument is recognized as the best way to reach conservation goals for a specific site, provided that management plan is well applied on the field and that external negatives influences on the reserve are fought. It allows the protection of sites of high biological value. However, this instrument is not applicable for a large part of the territory, so it doesn't allow by itself to fight the global loss of biodiversity.	This instrument is broadly applicable, for a large panel of habitats and sites, but its application can be very specific, depending on local context, the presence of some species or habitats.	Do not close natural reserves to the public.	Experts consider that 5 to 10% of the territory should have a stong protection statute	When a new natural reserve is created, it's generally necessary to take actions to maintain or restore the ecological quality of the site. If not, it should be better to keep the field as it was before… So it's important to implement a management monitoring
Ecoconditionnality	Eco-conditionality takes into account the structure and functioning of the ecosystems, insofar it contains some measures to protect small-landscape elements, which are very important in the structure of the ecosystem. Farmers are likely to better respect nature conservation legislation.	This instrument should be rather flexible, by changing the conditions it contains in relation to the environment evolution. It can be, e.g., adapted during the revision of the Plan de Développement Rural.	This instrument should be more robust in time than AEM because a majority of farmers respect the conditionality in order to get their payment from European Commission. In a certain way, they are financially obliged to respect this eco-conditionality.	These measures are global measures, which are not always specifically adapted to reach the Natura 2000 goals but they can globally contributes to a better state of the environment. But the effectiveness of this instruments requires a good application on the field, that depends on the sensibilisation of farmers and on the control of agricultural practices.	This instrument is broad because its application involves all farmers which get money from Europe.	Norms should be reinforced	see fiche	
Contrat de Rivières	Yes. This instrument focus on the river ecosystem and try to manage this ecosystem taking into account all different aspects, influences and externalities of the environment on the basin scale. The final goal is to obtain a good quality of the river (physical and chemical quality of water and bed and bank of the river)	This instrument is flexible, seeing that objectives of contrat de rivière (the action program) are frequently (each year) readapt in relation to the evolution of the environment, new problems arising, etc…	This instrument is based on the participation and so its robustness depends on the strenght of links between people involved in it and on the engagement of these people.	This instrument seems to be the most effective to reach concrete objectives in the scope of rivers and water management because this topic requires to put a large number of stakeholders around the table. The effectiveness depends largely on the dynamism of the contrat	It's a broad instrument because largely geographically and sociologically applicable, but specific because it mainly concerns only one habitat : rivers (and ponds)	This instrument can be an support but not the main engine of Natura 2000.	The contrats de rivière permit to develop an integrated view of a catchments basin, via a spinal column, the rivers. They allow people to tackle some global problems that requires the implication of different actors, such as water pollution. This instrument is not specifically dedicated with Natura 2000 topics but it can contributes to reach some conservation objectives, mainly for aquatic habitats and species. Indeed, this instrument can have a positive influence on the water quality, the ecological management of rivers, the land use in the valley, the landscape, etc… Most of time, contrats de rivière develop education and sensibilisation programs.	
Life Nature	Yes. Life Nature are specific projects taking into account a specific problem of nature conservation by analysing all the aspects of the ecosystem to fight this problem. Frequently, a scientific team supervise the project, and a scientific evaluation is made at the end.	As this instrument is a "one shot" instrument, it's not relevant to assess its flexibility. During the period of implementation, it's very difficult to change something envisaged in the project.	No. This instrument is not durable because it is mainly established for a period of 4 or 5 years. EU only finances restoration measures and not recurring management. However, projects must contain an "after Life" chapter, explaining how the results of the project will be maintained in the future.	Yes, these projects are effective because a lot of means are implemented to achieve some very specific objectives, such as the protection of one specific species, or a panel of specific habitats. However, it happens that some objectives are not achieve in the end of a project, mainly when it focus on the protection of one species (e.g. otter)	It's a specific instrument, that is implemented to resolve specific problems in specific contexts, in a specific region.			

redondance des analyses dans chaque discipline??

APPENDIX 5.1 WEBSURVEY 2

5.1.1 Questions survey

See Appendix 5.2_WS2_Questions survey Flanders & Wallonia

5.1.2 Survey analysis

I. Materials & Methods

Data assembly

To get to know better the perception of experts of different sectors towards a number of instruments that could be used in the scope of Natura 2000, an online survey was set up. Stakeholders representatives from different sectors were contacted and asked to cooperate with the survey and send it trough to all persons within their circle of acquaintances from which they thought they were more or less familiar with the concept of Natura 2000 (for a table with all contacted organisations, see Appendix list 1).

The survey started with a short introduction of its goal, followed by a sound of the profile of the respondent, where they were asked to fill in the organisations they are active in, as well as their function within those organisation. After that, the level of knowledge about Natura 2000 of the respondents was determined. People who declared to never have heard of Natura 2000 would be left out from the analysis.

Each respondent was confronted with 20 existing instruments that are put forward in this project, as well as 5 non-existing instruments (see Appendix list 2). Amongst the existing instruments, 2 were strictly regional instruments: *natuurinrichting* for Flanders and *contrat de rivière* for Wallonia. For 1 concept of instrument (nature conservation applied by private persons), both regional counterparts were put forward in its region of application: *natuurprojectovereenkomst* in Flanders and *contrat de gestion et de protection* in Wallonia. Concerning the non-existing instruments, 2 (*natura 2000 balance for municipalities* & *nature coöperation bonds*) could only be presented to the Flemish respondents (75 persons). All the other instruments were presented to the total public of 122 people. First, 5 aspects that could be related to the definition of effectivity and feasibility were put forward and each respondent was asked to rate the importance of every aspect in relation to their perception of the concepts of effectivity and respectively feasibility. Next, every instrument was shortly described and the knowledge level of the respondents was determined for every existing instrument, as well as their appreciation of the effectivity and feasibility of that instrument. For the non-existing instruments, the respondents only had to rate their effectivity and feasibility. All these questions were ended ones. At the end of the survey, every respondent was given the opportunity to give comments on the instruments, Natura 2000 and the survey itself by means of 3 open questions.

Data processing

Ended questions

The answers on the ended questions were converted to ordinal numbers in order to be able to use them later on in a stastistical analysis program. (For the convertion table, see Appendix list 3). For both regions, respondents were classified on the base of their profile: distinct classes were formed for more than 4 persons with a similar profile. The remaining persons were assigned to a class ‘others’. Next, for each respondent, new variables were calculated. The relative scores (to the possible maximum score) per instrument for the knowledge level, effectivity rating and feasibility rating were summed (missing values and ‘no opinion’-answers were left out of the calculation). This way, a measure for the respondents instrument-knowledge level and effectivity

and feasibility rating behaviour over the entire set of instruments was obtained. The new variables are respectively named '*overall instrument-knowledge*', '*overall effectivity rating*' and '*overall feasibility rating*'. Furthermore, every instrument was labeled in terms of 2 characteristics: wether the instruments were voluntary or regulated (or of no concern) and wether the instruments were compensated or not (or of no concern). This way, possible differences between effectivity and feasibility scores for the characteristics voluntary/obligated and compensated/not compensated could be investigated.

Data analysis

The statistical analysis of the data was done by means of the program SPSS 15.0 (for Windows) (SPSS 2006). For every analysis, besides the unanswered questions, also the responses 'no opinion' were treated as being missing values.

First, it was investigated wether the perception of the definition of effectivity and feasibility influenced the rating of the instruments' effectivity and feasibility, i.e. wether their was a relation between the rating of the importance of the 5 aspects of the definition of effectivity and feasibility and the rating of the effectivity and feasibility of the different instruments. This was done by means of the Spearman rank correlation test (Siegel & Castellan 1988). The newly created variables for overall effectivity and feasibility scores were used hereby.

After that, the Spearman rank correlation test was used to determine wether the knowledge level of Natura 2000, the knowledge level of the different instruments and the rating scores of the different instruments for effectivity and feasibility were correlated. This test was also used to investigate if the effectivity (feasibility) scores for the Flemish instruments were correlated with the effectivity (feasibility) scores for the Walloon instruments.

Next, the data was tested to see wether significant differences could be detected between the 2 regions for the overall knowledge level of the instruments, the overall effectivity and feasibility scores and the level of knowledge of Natura 2000. The differences between the 2 regions could be detected by means of the Wilcoxon-Mann-Whitney test (Siegel & Castellan 1988).

For both regions, the distinguished classes (ignoring the classe 'others') were subducted to the same search for differences in the overall knowledge level of the instruments, the overall effectivity and feasibility scores and the level of knowledge of Natura 2000. The analysis was done by means of a Kruskal-Wallis-test (Siegel & Castellan 1988)

As the Flemish government could also be subdivided into 3 distinct groups (the ANB (Agency for Nature and Forest), the research institute INBO (Institute for Nature and Forest Research) and the internally autonomous agencies (intern verzelfstandigde agentschappen) VLM (Flemish Land Corporation) and VMM (Flemish Environmental Corporation), the same questions were also investigated for these 3 groups. Again, the Kruskal-Wallis-test was used.

Finally, the Wilcoxon-Mann-Whitney test was used to detect significant differences in effectivity- and feasibility-scores when looking at the instrument-characteristics 'voluntary/regulated' and 'compensated/not compensated'.

II. Results

1. Descriptive statistics

Respons level

The Flemish survey was answered by 75 persons. From these, 7 belonged to the forestry sector, 6 to the agricultural sector, 42 were classified under the governemental sector and 16 people belonged to the nature conservation group. The remaining 4 people were classified as 'others'.

The Walloon survey was answered by 48 persons. One person indicated he had never heard about Natura 2000. Therefore, this person was excluded from the results. This took the number of respondents down to 47. In total, 4 classes were distinguished: governemental institutions (7 persons), municipality-representatives (10 persons), nature sector (19 persons) and a remaining classe 'others' (11 persons).

Natura 2000 knowledge

Concerning the level of knowledge of Natura 2000 for the Flemish region, 17 % of the respondents indicated they had "already heard or read about Natura 2000". 44 % indicated they knew the basic principles, goals and legislation of Natura 2000, and 39 % of the respondents said to have been involved in the implementation of Natura 2000.

From the Walloon respondents, 60 % indicated they knew the basic principles, goals and legislation of Natura 2000, and 40 % said to have been involved in the implementation of Natura 2000.

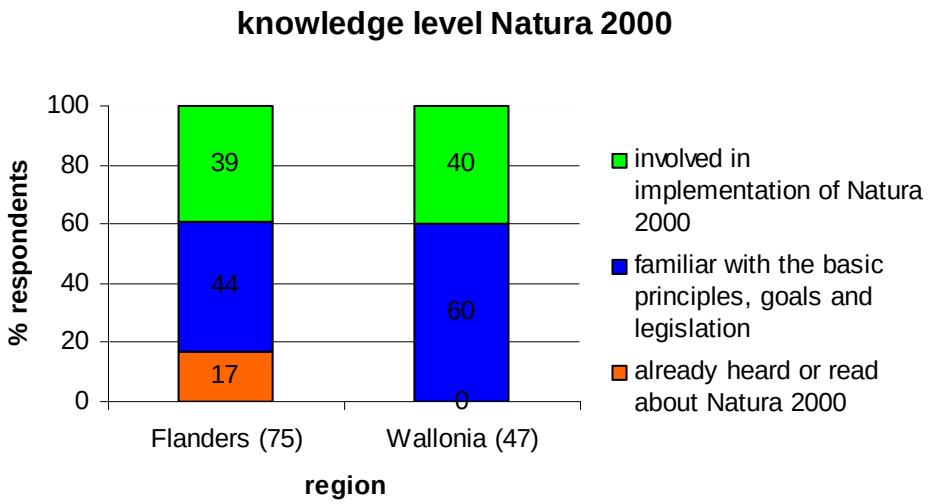

Figure 1: Frequency diagram (%) of the level of knowledge of Natura 2000 for both regions. Percentiles are depicted in every bar.

Aspects of definitions of effectivity and feasibility

To get a better view on the perception of the concepts ‘effectivity’ and ‘feasibility’, both concepts where linked to 5 aspects. Each respondent had to value the importance of these aspects from being unimportant (1) to very important (5) for the definition of ‘effectivity’ and ‘feasibility’.

A frequency diagram shows the distribution of the answers:

Effectivity

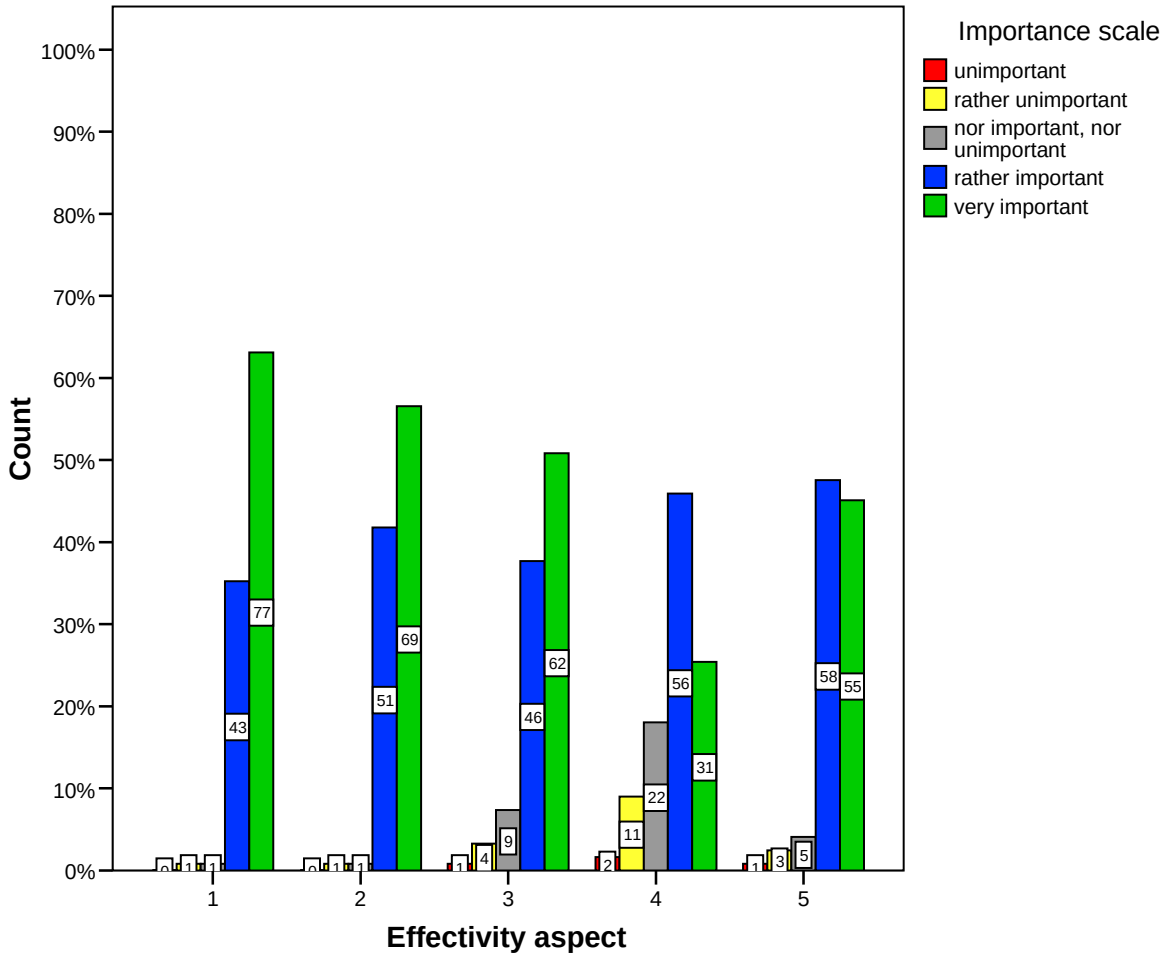

Figure 2: Frequency diagram for the different aspects of the definition of effectivity. Counts are depicted in every bar.

Aspect 1: The instrument contributes to the reaching of the predetermined objectives
Aspect 2: The attained results are sustainable
Aspect 3: The instrument leads to concrete (management) actions and measurements on the terrain
Aspect 4: The efforts are proportional to the attained results
Aspect 5: There are possibilities for evaluation and if necessary adaptations

Total number of respondents: 122

Feasibility

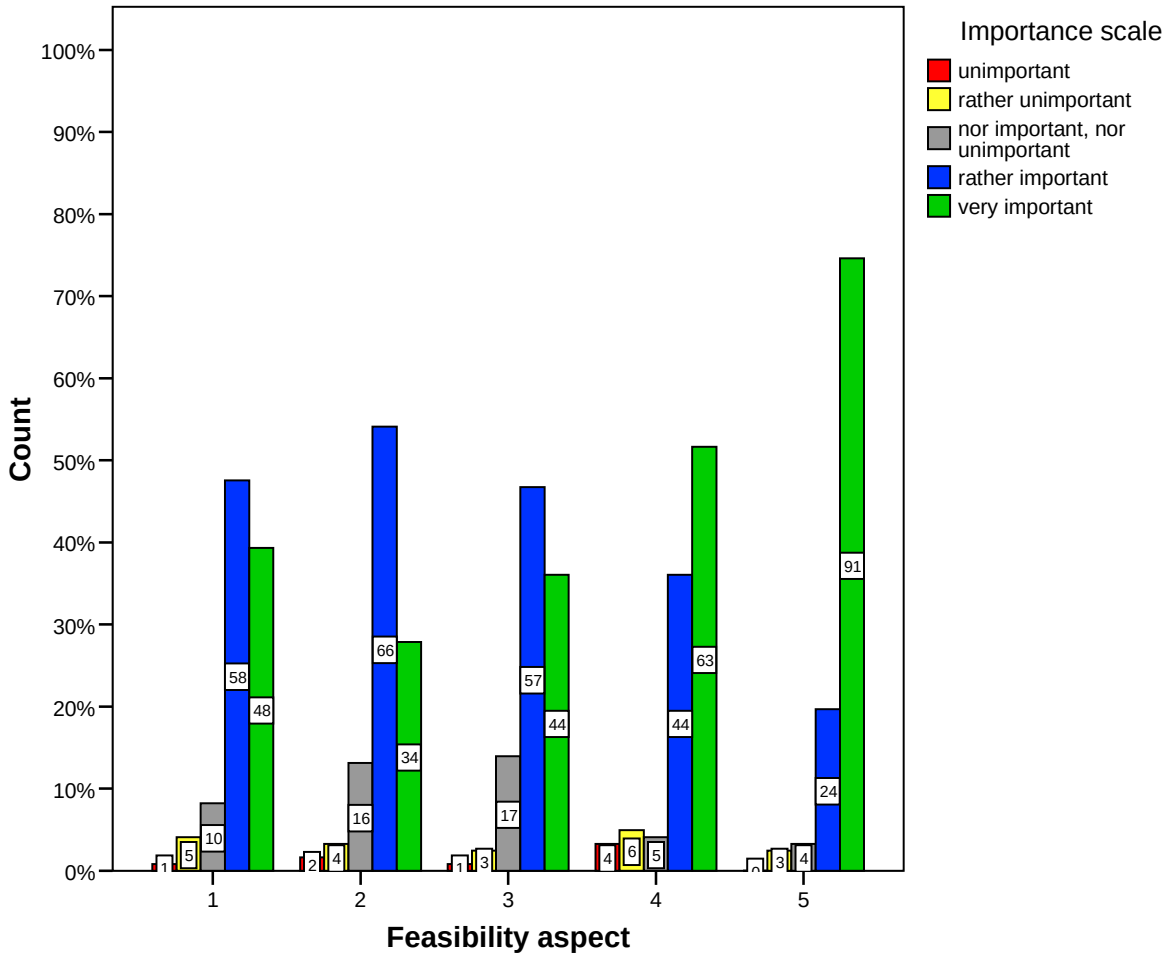

Figure 3: Frequency diagram for the different aspects of the definition of feasibility. Counts are depicted in every bar.

Aspect 1: The instrument is transparant and easily applicable
Aspect 2: There is a social base for the instrument
Aspect 3: The instrument takes its socio-economic consequences into account
Aspect 4: There are enough people and resources to put this instrument into work
Aspect 5: The instrument is technically executable in practice

Total number of respondents: 122

The results show that all aspects are mostly rated as being important or very important parts of the concepts of respectively effectivity and feasibility. Only aspect 4 of effectivity ("*The efforts are proportional to the attained results*") still reached a relatively meaningfull number of respondents who did not rate the aspect as (very) important.

Evaluation of the instruments

Considering the knowledge level for Flanders (see figure 4), most instruments scored very well, in that sense that (nearly) everyone declared to know the instrument at least from a theoretical base. Instruments that had a relative large share of people that did not know them were *contrat de rivière, cross compliance measures, education programme* and the *reduction of succession rights*.

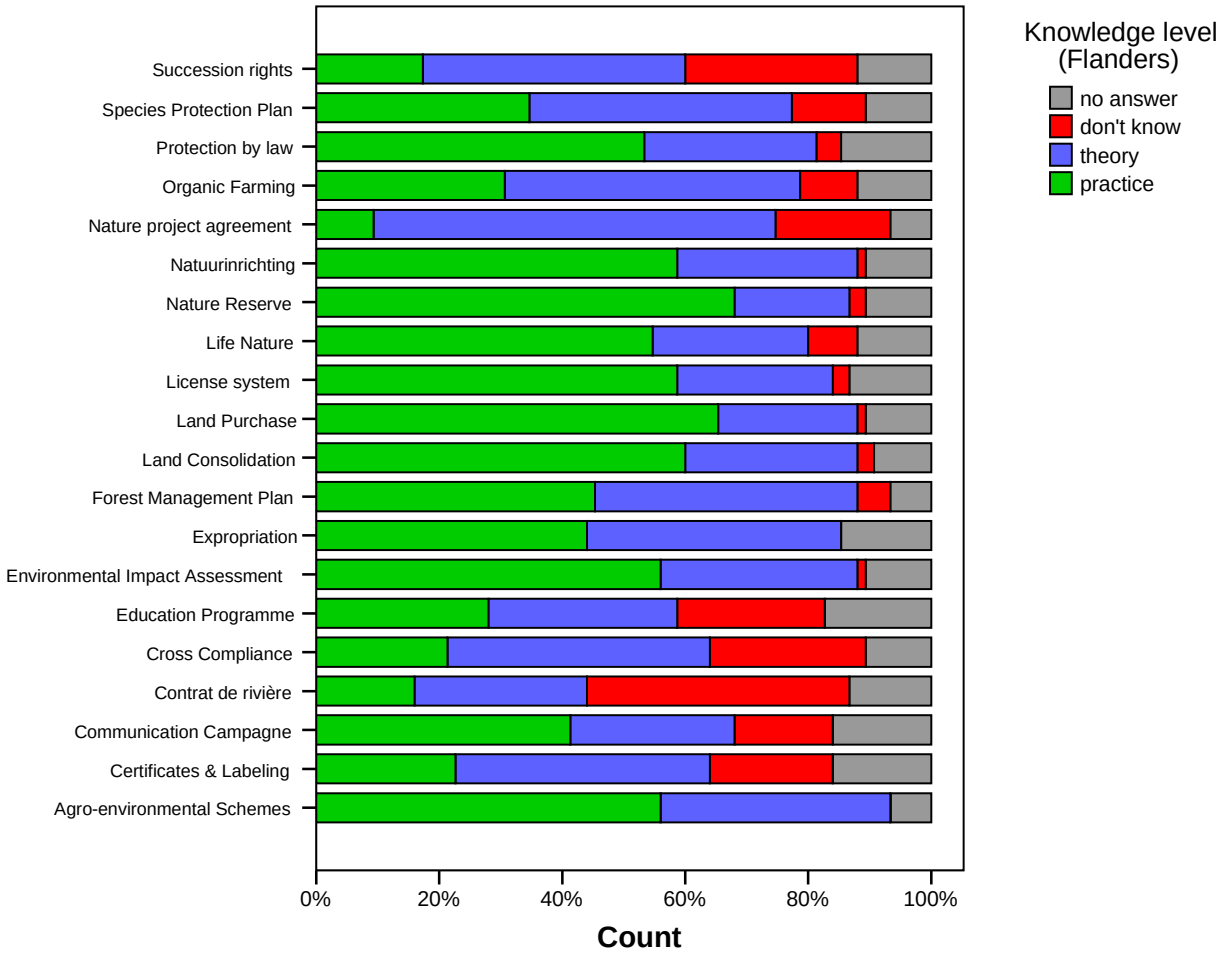

Figure 4: Frequency diagram (%) for the knowledge level in Flanders of the 20 existing instruments.
Total number of respondents: 75

In Wallonia, however less pronounced, the knowledge level for most instruments also scored very well (see figure 5). Only for Natuurinrichting, there was a clear lack of knowledge. Other instruments that had a relative large share of people that did not know them were *education programme* and the *reduction of succession rights*.

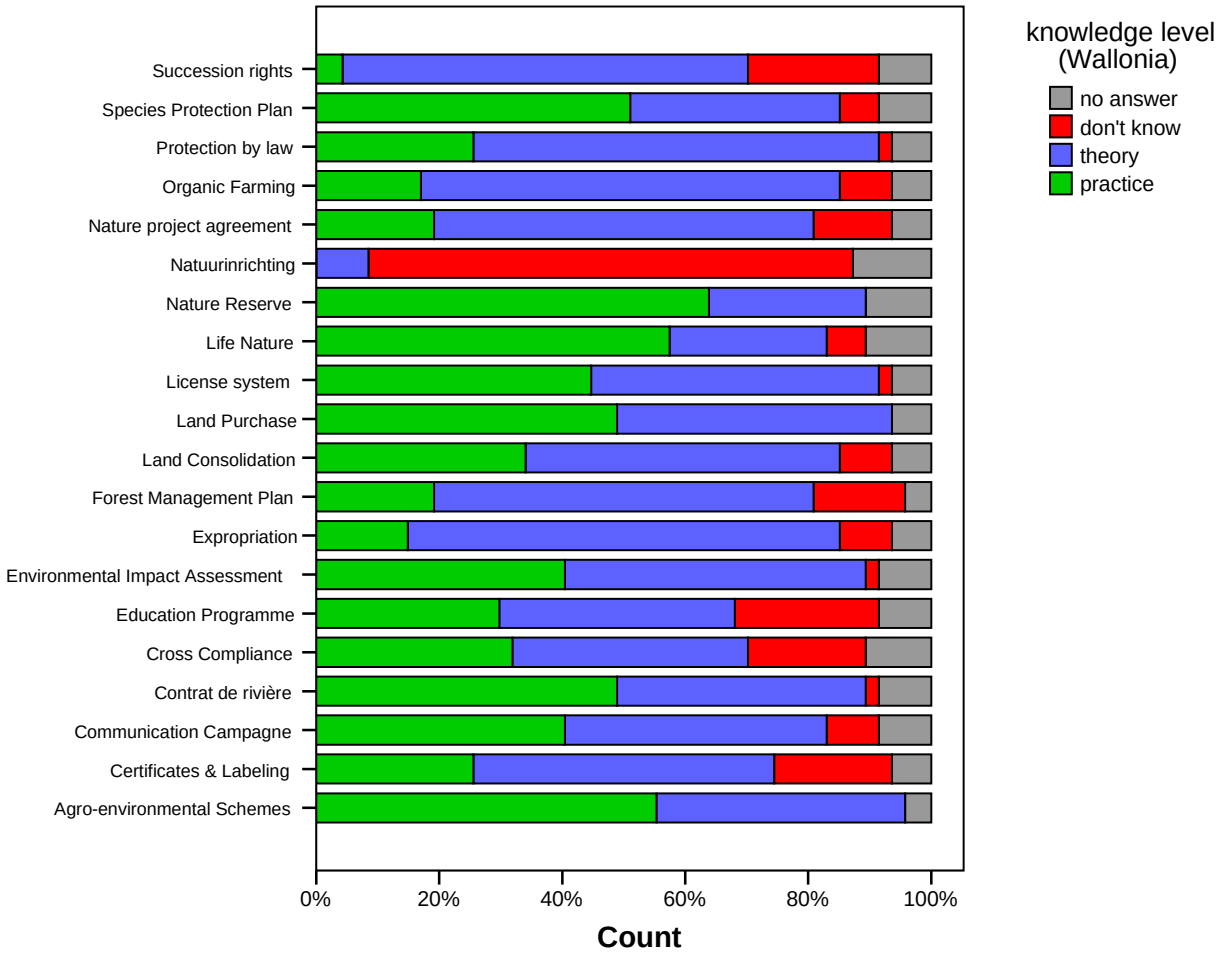

Figure 5: Frequency diagram (%) for the knowledge level in Wallonia of the 20 existing instruments.
Total number of respondents: 47

When looking at the results for effectivity, one can see that for both regions, most instruments are mainly seen as (rather) effective (figure 6 & 7). The instruments that are regarded as being mostly effective in both regions are the *use of nature reserves*, *Life Nature projects, land purchase, expropriation* and *forest management plans*. In Flanders, *natuurinrichting* is also seen as very effective, while in Wallonia the non-existing instrument *'changement of the destination plans'* as well as *nature project agreements* and *agro-environmental schemes* score relatively well. For both regions, the 2 non-existing instruments *'voluntary access pay for Natura 2000 areas'* and *'a tax for horeca facilities in or nearby nature areas'* are seen as the least effective instruments. In Flanders, also *certificates & labeling*, *environmental impact assessments* and *organic farming* are regarded as being non-effective, while in Wallonia that was the case for *Land consolidation*.

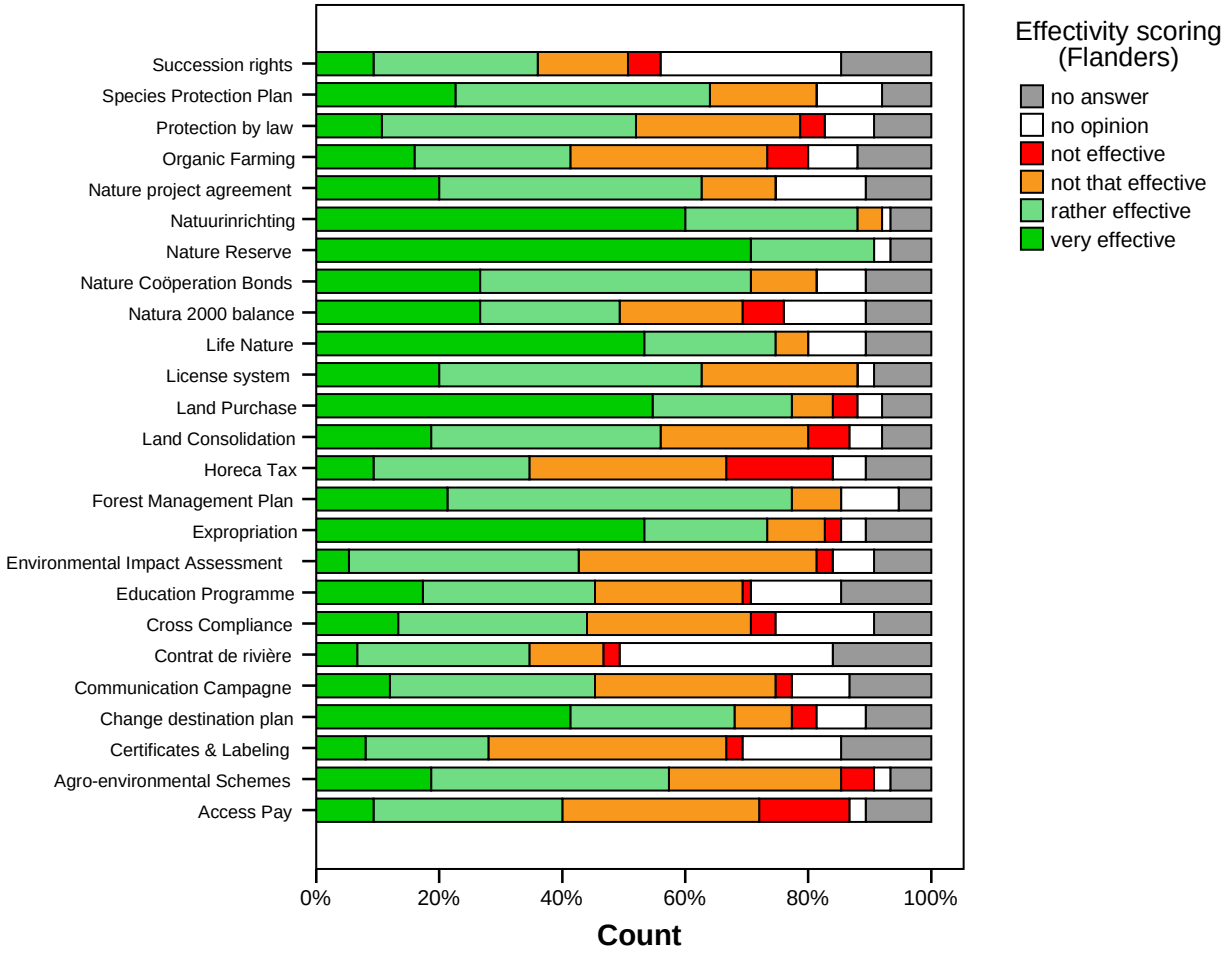

Figure 6: Frequency diagram (%) for the effectivity level of the 20 existing instruments and 4 non-existinging instruments, as rated by the Flemish respondents.
Total number of respondents: 75

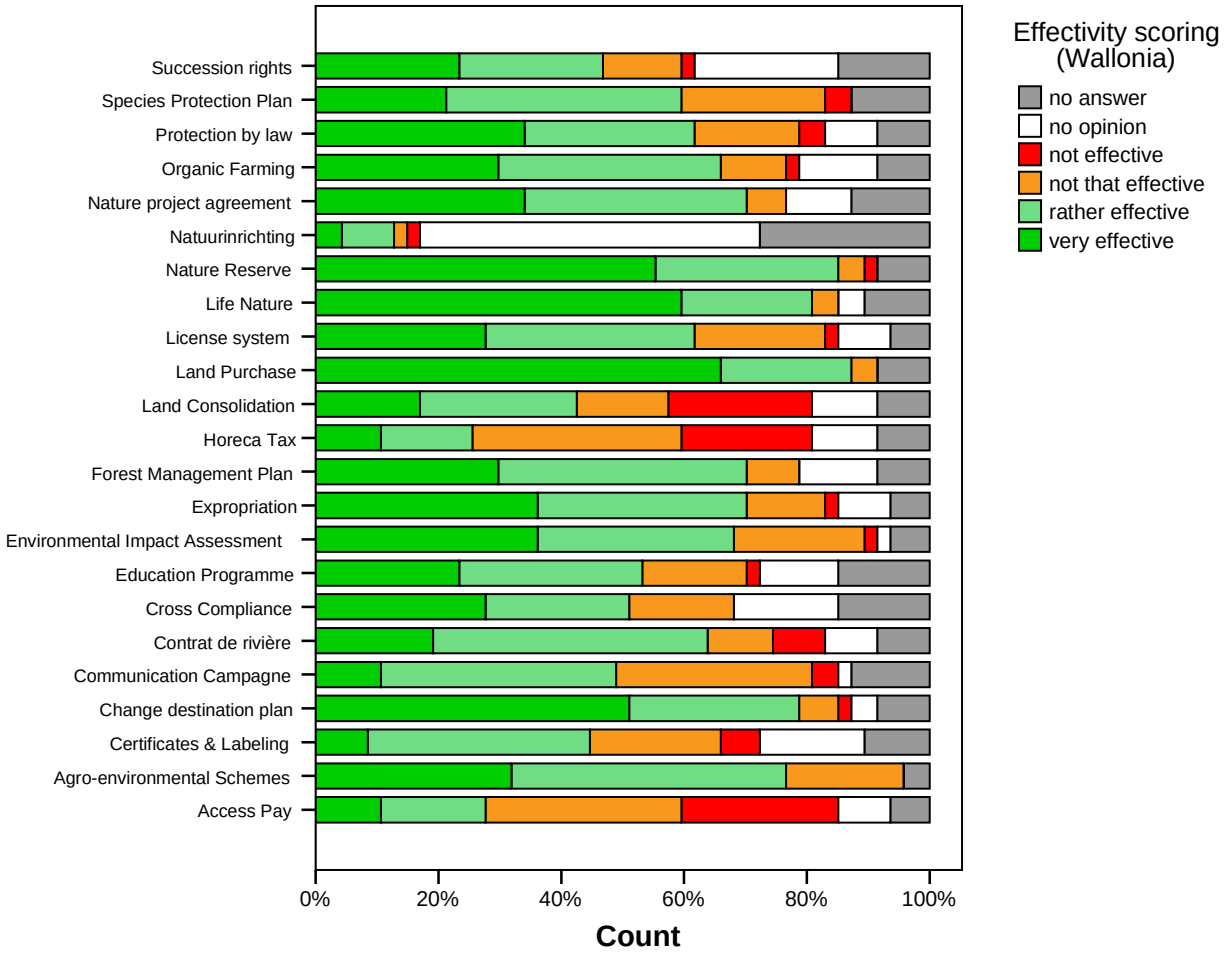

Figure 7: Frequency diagram (%) for the effectivity level of the 20 existing instruments and 4 non-existinging instruments, as rated by the Walloon respondents.
Total number of respondents: 47

Also for the feasibility-aspect, most instruments were mainly given a positive evaluation (figure 8 & 9). *Nature reserves*, *Life Nature-projects*, *forest management plans*, *communication campaigns and agro-environmental schemes* were seen as quite feasible in both regions. In Flanders, this list was completed with *natuurinrichting*, while in Wallonia *license system*, *land purchase* and *envrionmental impact assessment* had to be added. The least feasible instruments according to the total group of respondents were *expropriation*, as well as the 2 non-existing instruments: *'voluntary access pay for Natura 2000 areas'* and *'a tax for horeca facilities in or nearby nature areas'*. In Flanders, *'Natura 2000 balance for municipalities'* was also often regarded as unfeasible, while in Wallonia this was the case for *land consolidation*.

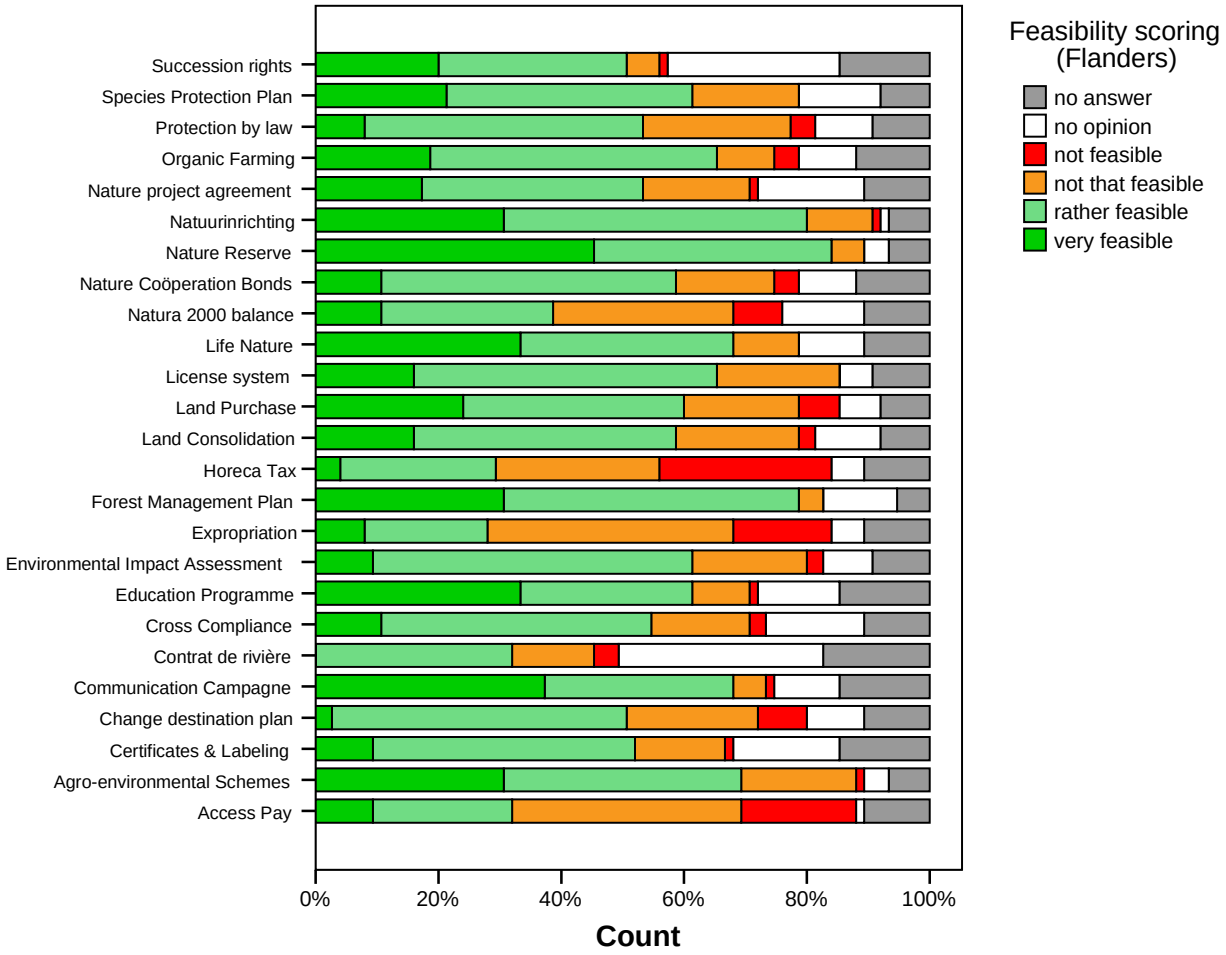

Figure 8: Frequency diagram (%) for the frequency level of the 20 existing instruments and 4 non-existinging instruments, as rated by the Flemish respondents.
Total number of respondents: 75

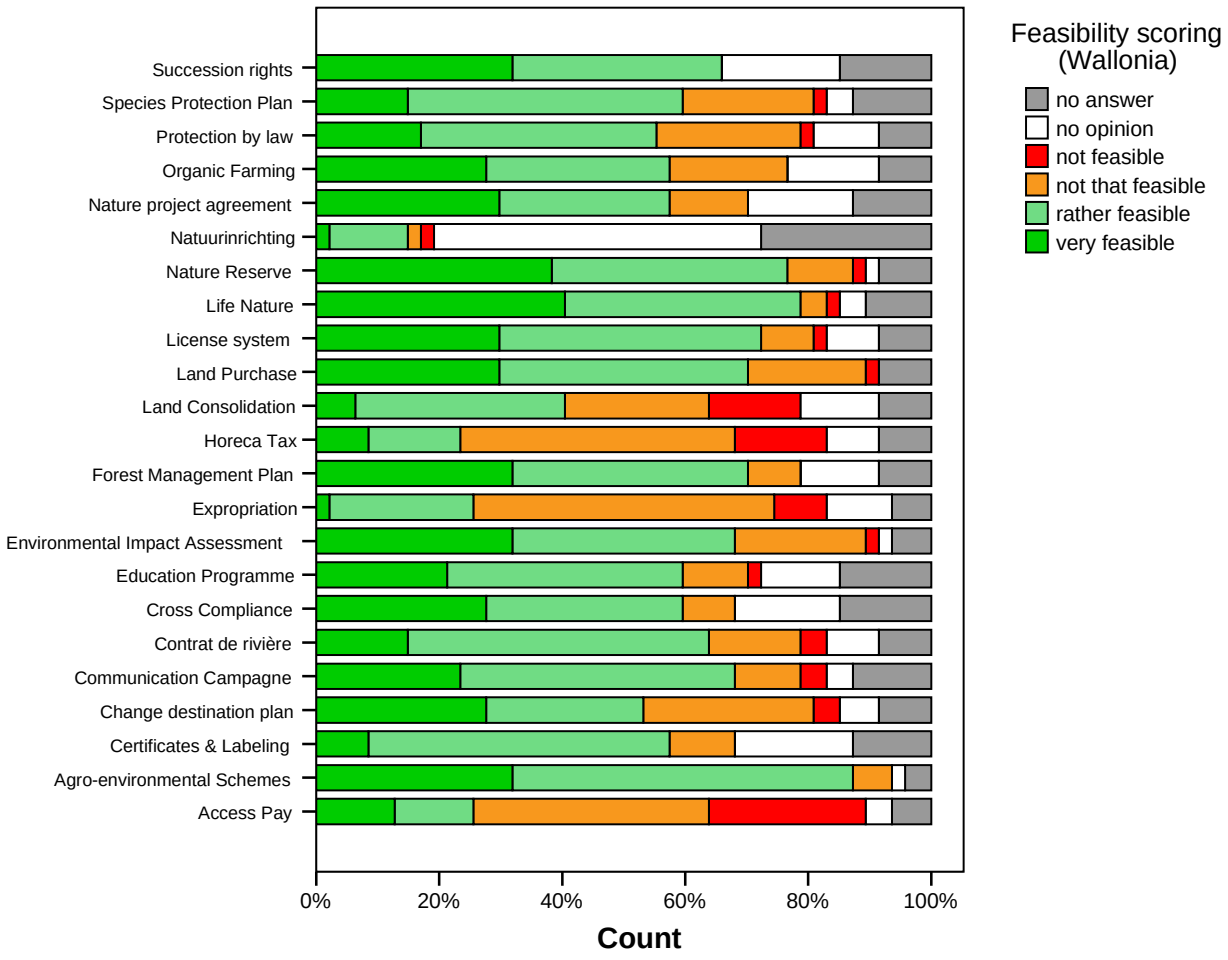

Figure 9: Frequency diagram (%) for the frequency level of the 20 existing instruments and 4 non-existinging instruments, as rated by the Walloon respondents.
Total number of respondents: 47

When plotting the relative total effectivity scores versus the relative total feasibility scores (relative to the possible maximum score over the number of respondents) of the different instruments, the differences in the perception of the different instruments are shown for Flanders (figure 10) and Wallonia (figure 11).

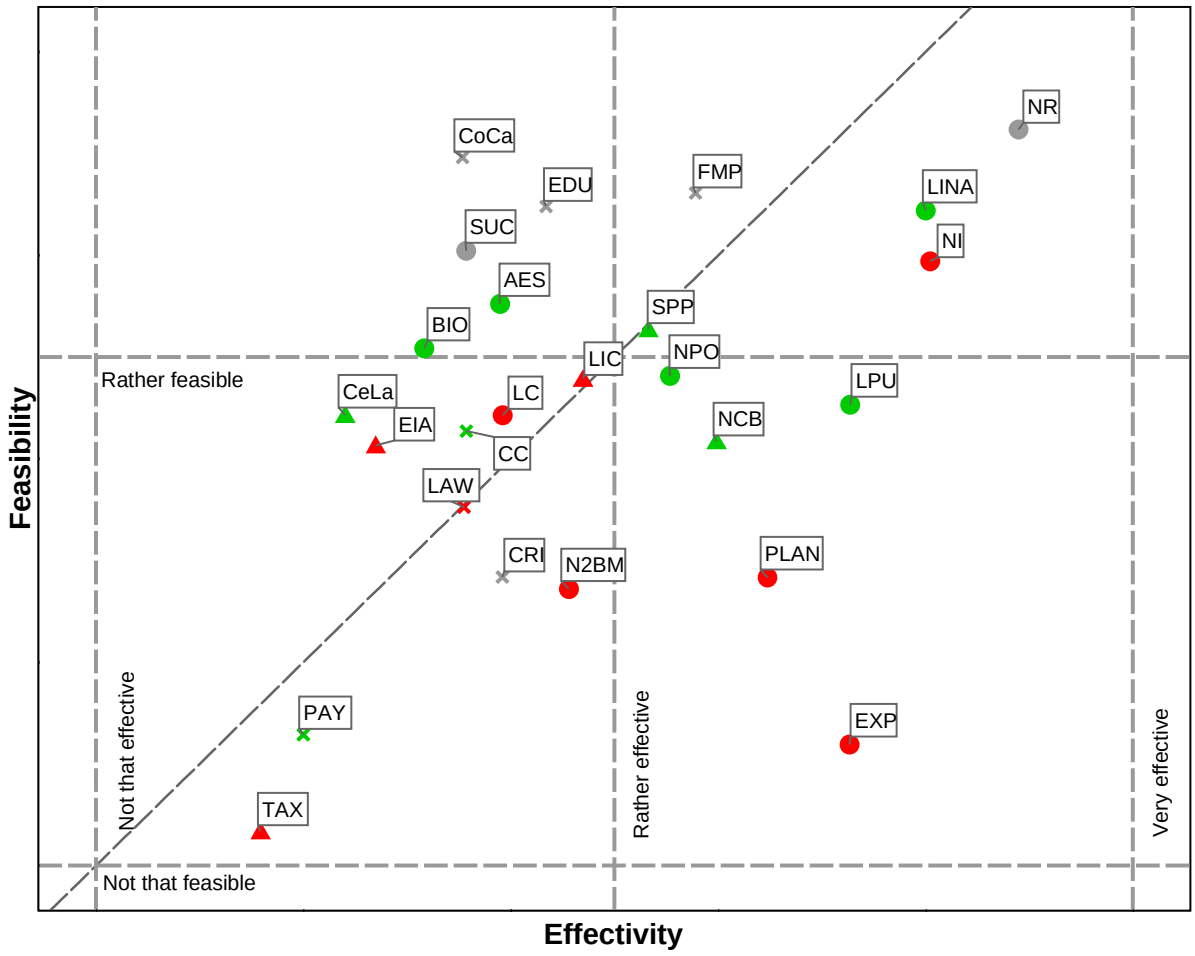

Figure 10: Plot for Flanders of the relative total effectivity scores versus the relative total feasibility scores (relative to the possible maximum score over the number of answers) for the 20 existing instruments and 4 non-existinging instruments.
Abbreviations of the instruments: see Appendix list 2
green = voluntary instrument, red = compulsory instrument, grey = choice of participation not straightforward
circle = compensated instrument, triangle = non-compensated instrument, cross = compensation not straightforward

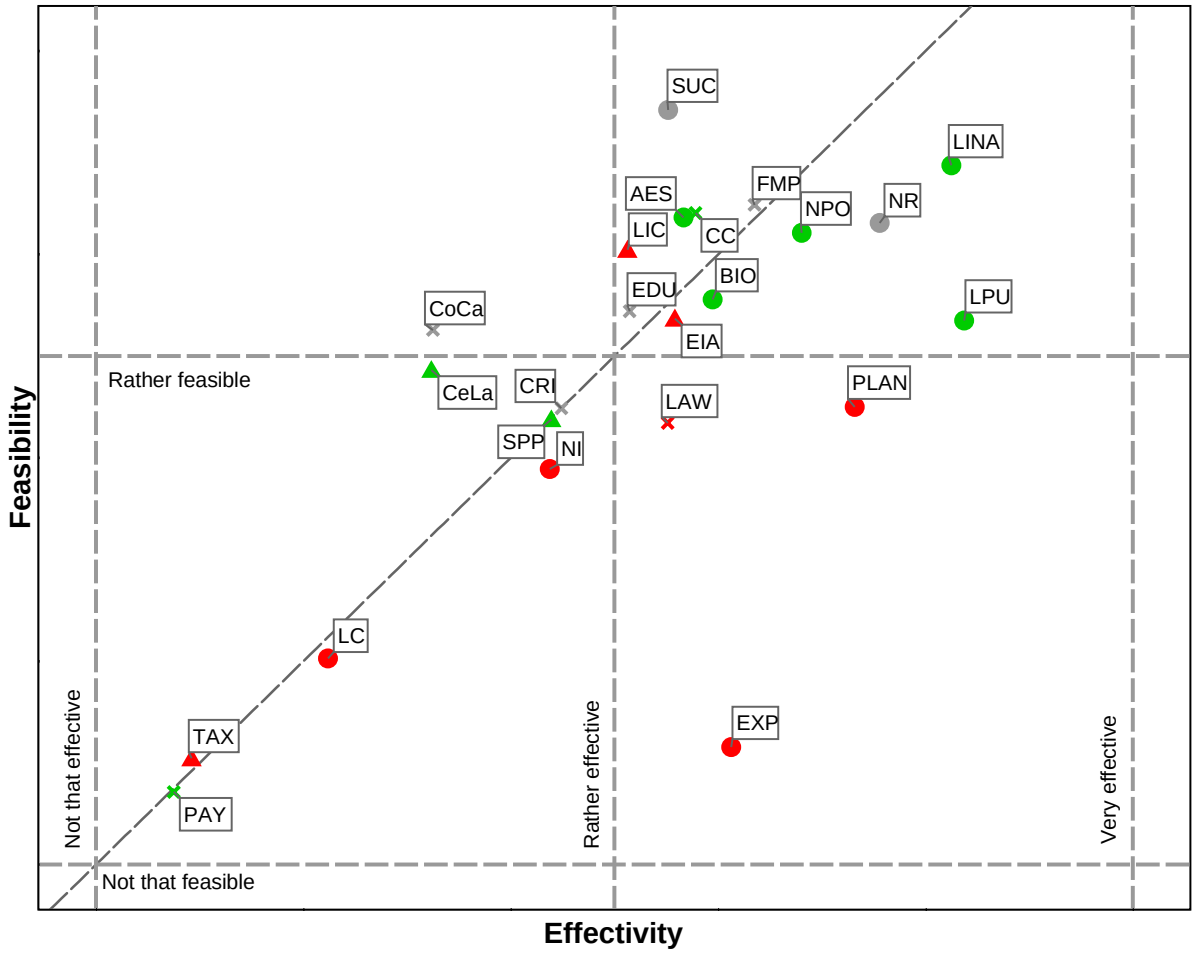

Figure 11: Plot for Wallonia of the relative total effectivity scores versus the relative total feasibility scores (relative to the possible maximum score over the number of answers) for the 20 existing instruments and 2 non-existinging instruments.
Abbreviations of the instruments: see Appendix list 2
green = voluntary instrument, red = compulsory instrument, grey = choice of participation not straightforward
circle = compensated instrument, triangle = non-compensated instrument, cross = compensation not straightforward

2. Non-parametric statistics

1.) Does the perception of the definition of effectivity and feasibility influence the effectivity- and feasibility-rating of the instruments?

First, it was investigated wether the perception of the definition of effectivity and feasibility influenced the rating of the instruments' effectivity and feasibility, i.e. wether there was a relation between the rating of the importance of the 5 aspects of the definition of effectivity and feasibility and the rating of the effectivity and feasibility of the different instruments. The Spearman Rank Correlation test showed their was no significant relation, neither for the rating of the importance of the 5 aspects of the definition of effectivity and the effectivity-rating of the instruments, nor for the rating of the importance of the 5 aspects of the definition of feasibility and the feasibility-rating of the instruments (table 1).

Table 1. Spearman rank correlation coëfficients of the overall effectivity and feasibility rating and the importance scores of the 5 aspects of the definitions of respectively effectivity and feasibility

n=116	Ef-a	Ef-b	Ef-c	Ef-d	Ef-e
Effectivity	0.02	-0.04	-0.10	-0.11	0.11
rating	n.s.	n.s.	n.s.	n.s.	n.s.
n=116	**Fe-a**	**Fe-b**	**Fe-c**	**Fe-d**	**Fe-e**
Feasibility	-0.11	-0.11	-0.08	-0.06	-0.06
rating	n.s.	n.s.	n.s.	n.s.	n.s.

Effectivity rating: sum over all the instruments of the relative effectivity scores (to the possible maximum score) of each respondent
Feasibility rating: sum over all the instruments of the relative feasibility scores (to the possible maximum score) of each respondent

Ef-a to EF-b: Importance scores (1-5) of each respondent towards aspect 1 to 5 of effectivity
Aspect 1: The instrument contributes to the reaching of the predetermined objectives
Aspect 2: The attained results are sustainable
Aspect 3: The instrument leads to concrete (management) actions and measurements on the terrain
Aspect 4: The efforts are proportional to the attained results
Aspect 5: There are possibilities for evaluation and if necessary adaptations

Fe-a to Fe-b: Importance scores (1-5) of each respondent towards aspect 1 to 5 of feasibility
Aspect 1: The instrument is transparant and easily applicable
Aspect 2: There is a social base for the instrument
Aspect 3: The instrument takes its socio-economic consequences into account
Aspect 4: There are enough people and resources to put this instrument into work
Aspect 5: The instrument is technically executable in practice

n.s.: not significant
n = sample size

2.) Is there a relation between the knowledge level of the respondents concerning Natura 2000, their knowledge level concerning the different instruments and their appreciation of the effectivity and feasibility of these instruments?

When looking at the relation between the knowledge level of the respondents concerning Natura 2000 and concerning the different instruments, as well as their appreciation of the effectivity and feasibility of these instruments, a number of significant correlations appear (table 2). First of all, there is a significant positive relation between the level of knowledge of Natura 2000 and the level of knowledge of the different instruments. The level of knowledge of the different instruments is on its turn positively correlated with both the effectivity rating and the feasibility rating. Finally, also effectivity rating and feasibility rating are positively correlated with each other.

Table 2. Spearman rank correlation coëfficients of the knowledge level of Natura 2000, the knowledge level of the instruments and the effectivity and feasibility scores of the instruments

	Knowledge Natura 2000	**Instrument-knowledge**	**Effectivity**	**Feasibility**
Knowledge	1.00	0.16	-0.01	-0.03
Natura 2000	.	***	n.s.	n.s.
n	*3050*	*2191*	*2354*	*2319*
Knowledge	0.16	1.00	0.12	0.13
instruments	***	.	***	***
n	*2191*	*2191*	*1884*	*1849*
Effectivity	-0.01	0.12	1.00	0.45
	n.s.	***	.	***
n	*2354*	*1884*	*2354*	*2302*
Feasibility	-0.03	0.13	0.45	1.00
	n.s.	***	***	.
n	*2319*	*1849*	*2302*	*2319*

Knowledge Natura 2000: level of familiarity with the concept of Natura 2000
Instrument-knowledge: level of familiarity with each instrument
Effectivity: effectivity scores of each respondent towards each instrument
Feasibility: feasibility scores of each respondent towards each instrument

n.s.: not significant, *** = $p < 0.001$
n = sample size

3.) Are there any differences between the regions for the level of knowledge of Natura 2000, the overall instrument-knowledge and the overall effectivity and feasibility rating scores?

The Wilcoxon-Mann-Whitney test that was carried out to investigate differences between the regions for the level of knowledge of Natura 2000, the overall instrument-knowledge and the overall effectivity and feasibility rating scores pointed out that no significant distinctions appear between Flanders and Wallonia for these parameters (table 3).

Table 3. The knowledge level of Natura 2000, the overall instrument knowledge and the overal effectivity and feasibility rating for the 2 regions (Wilcoxon-Mann-Whitney test)

	Knowledge Natura 2000		**Instrument-knowledge**		**Effectivity rating**		**Feasibility rating**	
Group	**Flanders**	**Wallonia**	**Flanders**	**Wallonia**	**Flanders**	**Wallonia**	**Flanders**	**Wallonia**
n	75	47	70	45	71	45	71	45
median	2.00	2.00	79.47	75.00	75.00	76.25	72.96	73.86
range	2.00	1.00	45.61	40.61	37.29	32.09	35.50	32.50
WMW	-1.24		-1.86		-0.79		-0.75	
Sign.	n.s.		n.s.		n.s.		n.s.	

Knowledge Natura 2000: level of familiarity with the concept of Natura 2000
Instrument-knowledge: sum over all the instruments of the relative knowledge level (to the possible maximum level) of each respondent
Effectivity rating: sum over all the instruments of the relative effectivity scores (to the possible maximum score) of each respondent
Feasibility rating: sum over all the instruments of the relative feasibility scores (to the possible maximum score) of each respondent
n = sample size
WMW = test-value Wilcoxon-Mann-Whitney test
Sign. = level of significance; n.s.: not significant
See Appendix list 4a for the cross-table for Knowledge Level Natura 2000

4.) Are there any differences between the Flemish distinguished classes for the level of knowledge of Natura 2000, the overall instrument-knowledge and the overall effectivity and feasibility rating scores?

The Kruskal-Wallis test showed a significant difference for

- the level of knowledge of Natura 2000 between the classes 'forest' and 'government'
- the overall instrument-knowledge between the classes 'forest' and 'agriculture'.

No other differences were found (Table 4).

Table 4. The knowledge level of Natura 2000, the overall instrument knowledge and the overal effectivity and feasibility rating for the distinghuished Flemish classes (Kruskal-Wallis test)

	Knowledge Natura 2000				**Instrument-knowledge**			
Class	Forestry[a]	Agri[ab]	Gov[b]	Nat[ab]	Forestry[a]	Agri[b]	Gov[ab]	Nat[ab]
n	7	6	42	16	7	5	39	15
median	2	2	3	2	71.67	90.00	75.00	81.67
range	1	2	2	2	39.04	11.67	41.67	29.91
KW	9.24				8.59			
Sign	*				*			
	Effectivity-rating				**Feasibility rating**			
Class	Forestry	Agri	Gov	Nat	Forestry	Agri	Gov	Nat
n	7	6	39	15	7	6	39	15
median	72.62	75.00	76.00	76.25	71.00	67.86	73.86	75.00
range	25.16	36.54	26.00	26.71	18.50	30.81	20.09	25.72
KW	0.75				2.09			
Sign	n.s.				n.s.			

Knowledge Natura 2000: level of familiarity with the concept of Natura 2000
Instrument-knowledge: sum over all the instruments of the relative knowledge level (to the possible maximum level) of each respondent
Effectivity rating: sum over all the instruments of the relative effectivity scores (to the possible maximum score) of each respondent
Feasibility rating: sum over all the instruments of the relative feasibility scores (to the possible maximum score) of each respondent
Forestry = Flemish forest sector, Agri = Flemish farmer sector, Gov = Flemish government representatives, Nat = Flemish nature sector
n = sample size
KW = test-value Kruskal-Wallis test
Sign. = level of significance; n.s.: not significant, * = $p < 0.05$
Superscripts a and b show the different classes with a ≠ b and ab not ≠ from a or b
See Appendix list 4b for the cross-table for Knowledge Level Natura 2000

5.) Are there any differences between the Walloon distinguished classes for the level of knowledge of Natura 2000, the overall instrument-knowledge and the overall effectivity and feasibility rating scores?

The Kruskal-Wallis test showed a significant difference for

- the level of knowledge of Natura 2000 between the classes 'government' (>) and 'municipalities' (<)
- the overall instrument-knowledge between the classes 'municipalities'(<)
- and 'nature sector'(>)
- the overall effectivity rating between the classes 'government'(<) and 'municipalities'(>)
- the overall feasibility rating between the classes 'government'(<) and 'municipalities'(>), as well as the classes 'government'(<) and 'nature'(>)

No other differences were found (Table 5).

Table 5. The knowledge level of Natura 2000, the overall instrument knowledge and the overal effectivity and feasibility rating for the distinghuished Walloon classes (Kruskal-Wallis test)

	Knowledge Natura 2000			**Instrument-knowledge**		
Class	Gov[a]	Mun[b]	Nat[ab]	Gov[ab]	Mun[a]	Nat[b]
n	7	10	19	7	10	18
median	3	2	2	74.07	65.83	78.33
range	1	1	1	30.61	23.33	33.33
KW	11.19			11.66		
Sign	**			**		
	Effectivity-rating			**Feasibility rating**		
Class	Gov[a]	Mun[b]	Nat[ab]	Gov[a]	Mun[b]	Nat[b]
n	7	10	18	7	10	18
median	69.44	77.75	73.81	67.86	74.61	76.19
range	21.30	16.93	28.42	12.09	17.93	32.50
KW	9.29			7.56		
Sign	*			*		

Knowledge Natura 2000: level of familiarity with the concept of Natura 2000
Instrument-knowledge: sum over all the instruments of the relative knowledge level (to the possible maximum level) of each respondent
Effectivity rating: sum over all the instruments of the relative effectivity scores (to the possible maximum score) of each respondent
Feasibility rating: sum over all the instruments of the relative feasibility scores (to the possible maximum score) of each respondent
Gov = Walloon government representatives, Mun = Walloon municipality-representatives, Nat = Walloon nature sector
n = sample size
KW = test-value Kruskal-Wallis test
Sign. = level of significance; * = $p < 0.05$; ** = $p < 0.01$
Superscripts a and b show the different classes with a ≠ b and ab not ≠ from a or b
See Appendix list 4c for the cross-table for Knowledge Level Natura 2000

6.) Are there any differences between the distinguished Flemish government classes for the level of knowledge of Natura 2000, the overall instrument-knowledge and the overall effectivity and feasibility rating scores?

As the Flemish government representatives could be subdivided into 3 distinct groups (the ANB (Agency for Nature and Forest), the research institute INBO (Institute for Nature and Forest Research) and the internally autonomous agencies (intern verzelfstandigde agentschappen) VLM (Flemish Land Corporation) and VMM (Flemish Environmental Corporation), a Kruskal-Wallis test was used to detect possible differences between these groups for the same variables (level of knowledge of Natura 2000, the overall instrument-knowledge and the overall effectivity and feasibility rating scores). It appeared that the knowledge-level of Natura 2000 was significantly higher within the ANB compared with the VMM-VLM. No other differences were found (table 6).

Table 6. The knowledge level of Natura 2000, the overall instrument knowledge and the overall effectivity and feasibility rating for the 3 distinct Flemish government classes (Kruskal-Wallis test)

	Knowledge Natura 2000			**Instrument-knowledge**		
Class	ANB[a]	VLM-VMM[b]	INBO[ab]	ANB	VLM-VMM	INBO
n	12	20	7	11	18	7
median	3	2	3	81.67	71.67	77.08
range	1	2	1	25.78	41.67	25.00
KW	10.89			4.59		
Sign	**			n.s.		
	Effectivity-rating			**Feasibility rating**		
Class	ANB	VLM-VMM	INBO	ANB	VLM-VMM	INBO
n	11	18	7	11	18	7
median	78.13	75.00	75.00	75.00	72.16	76.00
range	11.36	23.38	24.00	18.30	14.00	19.33
KW	1.67			0.51		
Sign	n.s.			n.s.		

Knowledge Natura 2000: level of familiarity with the concept of Natura 2000
Instrument-knowledge: sum over all the instruments of the relative knowledge level (to the possible maximum level) of each respondent
Effectivity rating: sum over all the instruments of the relative effectivity scores (to the possible maximum score) of each respondent
Feasibility rating: sum over all the instruments of the relative feasibility scores (to the possible maximum score) of each respondent
ANB=Agentschap voor Natuur en Bos (Agency for Nature and Forests, VMM=Vlaamse Milieumaatschappij (Flemish Environmental Corperation), VLM=Vlaamse Landmaatschappij (Flemish Land Corporation, INBO=Instituut Natuur- en Bosonderzoek (Institute for Nature and Forest Research)
n = sample size
KW = test-value Kruskal-Wallis test
Sign. = level of significance; n.s.: not significant, ** = $p < 0.01$
Superscripts a and b show the different classes with $a \neq b$ and ab not ≠ from a or b
See Appendix list 4d for the cross-table for Knowledge Level Natura 2000

7.) Are the two instrument characteristics 'freedom of choice' (voluntarily/obligated) and the compensation (payed/not payed) related to significant different effectivity and feasibility scores?

Finally, it was investigated wether the two instrument characteristics 'freedom of choice' (voluntarily/obligated) and the compensation (payed/not payed) were related to significant different effectivity and feasibility scores. (For the appointment of characteristics to the instruments, see Appendix list 5). The Wilcoxon-Mann-Whitney test that showed that, for both regions, there is no difference in the perceived effectivity of voluntary or non voluntary instruments, but that voluntary instruments were seen as significantly more feasible. Concerning the difference between payed and not payed instruments, instruments that were compensated were rated significantly higher in terms of both effectivity and feasibility. Also these findings were the case for both Flanders and Wallonia (table 7 & 8).

Table 7. The effectivity and feasibility scores for the instrument characteristics voluntary/obligated and compensated/not compensated in Flanders (Wilcoxon-Mann-Whitney test)

	Effectivity		**Feasibility**	
Group	**Voluntary**	**Obligated**	**Voluntary**	**Obligated**
n	591	558	591	558
median	3	3	3	3
range	3	3	3	3
mean rank	584.89	591.30	620.10	531.36
WMW	-0.34		-4,87	
Sign.	n.s.		***	
	Effectivity		**Feasibility**	
Group	**Compensated**	**Not compensated**	**Compensated**	**Not compensated**
n	736	366	723	358
median	3	3	3	3
range	3	3	3	3
mean rank	605.29	443.34	563.29	495.99
WMW	-8.43		-3.60	
Sign.	***		***	

Effectivity: effectivity scores of each respondent towards each instrument
Feasibility: feasibility scores of each respondent towards each instrument
n = sample size
WMW = test-value Wilcoxon-Mann-Whitney test
Sign. = level of significance; n.s.: not significant, *** = $p < 0.001$

Table 8. The effectivity and feasibility scores for the instrument characteristics voluntary/obligated and compensated/not compensated in Wallonia (Wilcoxon-Mann-Whitney test)

	Effectivity		Feasibility	
Group	**Voluntary**	**Obligated**	**Voluntary**	**Obligated**
n	348	287	341	284
median	3	3	3	3
range	3	3	3	3
mean rank	329.17	304.46	341.59	278.67
WMW	-1.79		-4,60	
Sign.	n.s.		***	
	Effectivity		**Feasibility**	
Group	**Compensated**	**Not compensated**	**Compensated**	**Not compensated**
n	400	196	394	192
median	3	3	3	3
range	3	3	3	3
mean rank	328.47	237.34	303.97	272.01
WMW	-6.472		-2.287	
Sign.	***		*	

Effectivity: effectivity scores of each respondent towards each instrument
Feasibility: feasibility scores of each respondent towards each instrument
n = sample size
WMW = test-value Wilcoxon-Mann-Whitney test
Sign. = level of significance; n.s.: not significant, *** = p < 0.001, * = p < 0.05

8.) Are the effectivity (feasibility) scores for the Flemish instruments correlated with the effectivity (feasibility) scores for the Walloon instruments?

The Spearman Rank Correlation test confirmed a positive relation between the effectivity (feasibility) scores for the Flemish instruments and the effectivity (feasibility) scores for the Walloon instruments (table 9)

Table 8. Spearman rank correlation coëfficients of the Flemish and Walloon effectivity (feasibility) scores for the different instruments

n=23	Effectivity instruments Wallonia
Effectivity instruments Flanders	0,62 **
	Feasibilityy instruments Wallonia
Feasibility instruments Flanders	0,64 ***

** = p < 0,01, *** = p < 0.001
n = sample size

3. Discussion

Before drawing firm conclusions, it is wise to note that the analysis of this survey was subducted to a number of limitations, each reducing the robustness of the results that are put forward. First of all, there was a great imbalance in response between the different classes that were distinct. Different sample sizes always give a certain amount of bias to the outcome. Besides that, the distincted classes between the two regions were quite different, putting another restriction on their comparability. A lot of missing answers scattered over the entire dataset further reduced the ease of handling the data. Besides those factors, as for every survey, conlusions must be drawn with great care and results must be interpreted with a lack of background information. The respondent's incentive to give a certain score to a certain instrument can never be fully determined.

Aspects of definitions of effectivity and feasibility

Concerning the aspects of the definitions of effectivity and feasibility, the results show that all aspects are mostly rated as being important or very important parts of the concepts of respectively effectivity and feasibility. This might well be the result of the fact that once people read the aspects, they all consider them important without thinking into deep wether they applie to the definition of the concepts of effectivity and feasibility. As little difference arises in rating the importance of the definition-aspects over the entire dataset, yet the rating of the instruments in terms of effectivity and feasibility does differ along this entire set of answers, it is straightforward that no significant correlation was found, nor between the rating of the importance of the 5 aspects of the definition of effectivity and the effectivity-rating of the instruments, nor for the rating of the importance of the 5 aspects of the definition of feasibility and the feasibility-rating of the instruments (table 1).

Evaluation of the instruments

When looking at the (lack of) knowledge of the instruments, the best known instruments are indeed those for which experts in the field of nature can be expected to know them well. The least known instruments were *contrat de rivière, cross compliance measures, education programme, natuurinrichting* and the *diminishing of succession rights*. For the instruments *natuurinrichting* and *contrat de rivière*, this is explained by the fact that they represent typical regional instruments (respectively Flemish and Walloon). Within their regions, the instruments are after all very well known. Education programmes are likely to be scored as 'unknown' because of the rarity that people are confronted with them, not because of any difficulties of understanding their concept. For the reduction of succession rights, its unfamiliarity is clarified by the fact that it is a legislative instrument that is more 'hidden' in its use. Cross compliance measures however are more of a surpise, as this is a European concept that matters the entire agricultural sector.

The most effective instruments (*use of nature reserves, natuurinrichting, Life Nature projects, land purchase, expropriation* and the non-existing instrument *'changement of the destination* plans') appear to be those which more or less deal with a 'designation' to nature, wether a legislative one (*change of destination plan*) or via obtaining the terrains (*expropriation, land purchase*) or fitting them up for nature purposes (*nature reserves, natuurinrichting, Life Nature projects*). In all these cases it is meant or it becomes possible to assign to a terrain the primal purpose of 'protection and management of nature values'. The instruments that were perceived as least effective were *Land consolidation* and especially the 2 non-existing instruments *'voluntary access pay for Natura 2000 areas'* and *'a tax for horeca facilities in or nearby nature areas'*. Land consolidation might still be seen as an instrument with mainly agricultural purposes and therefore all its negative effects. The 2 non-existing instruments have a common aspect: they raise money to be used for nature conservation. Probably, the gathering of funds alone is not

promising enough, an issue which can be seen in practice when looking at for example the Flemish "forest compensation fund" (boscompensatiefonds)[1].

Considering feasibility, the experts rated *Nature reserves* and *Life Nature-projects* as most feasible, followed by the use of *forest management plans, education programmes, communication campagnes and agro-environmental schemes*. For the latter three, he voluntary character will at least partly explain this (see also further). It is less clear why the former three are perceived as being so feasible. The least feasible instruments were *expropriation*, as well as the 4 non-existing instruments: *'changement of the destination plans', 'Natura 2000 balance for municipalities'* and especially *'voluntary access pay for Natura 2000 areas'* and *'a tax for horeca facilities in or nearby nature areas'*. For expropriation and 'changement of the destination plans', this was a straightforward result. Both are subducted to a heavy procedure and often involve a lot of public resistance. Public resistance can also be expected for the execution of a 'Natura 2000 balance for municipalities' and 'a tax for horeca facilities in or nearby nature areas', but why a 'voluntary access pay for Natura 2000 areas' is perceived as being rather unfeasible is not immediately clear.

Besides this, the studey revealed that instruments that are executed on a voluntary base are not necessarily seen as more effective, but are however profoundly linked with a greater feasibility score. People don't like to be forced into something, and therefore, having the choice wether or not to begin/carry on with the application of a certain instrument makes such instrument much more accepted. Instruments that are financially compensated are not only perceived as more feasible, but also as more effective. Compensation measures are known to raise people's participatory behaviour, explaining the positive link with the nstrument's feasibility-character. The effectivity of an instrument increases when more severe measures are executed, but such measures of course tend to become more often compensated then less stringent ones, explaing the link between compensated instruments and effectivity.

A closer look at the respondents

This study showed that there was a positive link between the level of knowledge of Natura 2000 and the level of knowledge of the different instruments. That means that, in general, people who are more aware of Natura 2000 and its scope, are also better informed about the different nature conservation instruments that were put forward in the survey. This finding can hardly be seen as unlogic. Interesting was also the positive link between the level of knowledge of an instrument and the way it was rated in terms of both effectivity and feasibility. Clearly, here, the proverb "unknown, therefore unloved" comes into play. People tend to rate higher those things they are more or less familiar with, and the other way around. Furthermore, respondents who give an instrument a high score for effectivity, also tend to score it high on feasibility. Probably, once people perceive an instrument as being 'good', they see it as being as well effective as feasible, without thinking too much into deep about these aspects.

When looking at differences between certain groups of respondents in terms of knowledge of Natura 2000, instrument knowledge and effectivity and feasibility rating, the limitations of the study as mentioned above must be kept in mind. Between the two regions, no clear differences could be found. Within the Flemish region, there is a slight tendency for the forestry sector to be a bit less abreast of Natura 2000 and the different instruments for nature conservation than the other sectors. Within the Walloon region, this is the case for the municiplatities, perhaps indicating an unsufficient passing of information trough the hierarchical levels of policy.

[1] The forest compensation fund is a Flemish instrument that gathers money for reforestation. For every licensed deforestation in Flanders, one has to compensate the cutting of trees by planting a new area forest or by contributing a certain amount of money to the forest compensation fund. The fund is used by the government to establish new forest area. Untill now, the forest compensation fund has mainly missed its prupose, in that sense that people do contribute their pays, but that money is not turned into forest. In other words, 'The forest is on the bank'.

Furthermore, the Walloon government seems to be more sceptic about the effectivity and feasibility of the diffferent instruments than the municipalities and the nature sector. Finally, within the Flemish government, experts from the ANB appear to be more familiar with Natura 2000 than those from the VLM and VMM.

4. Open questions

This synthesis presents the major ideas of the results for both Regions and is divided in different parts. Firstly, we will go through the Walloon results, then through the Flemish results.

The project aims at creating an in-depth insight in the problems and bottlenecks of the (local) implementation of the N2000-legislation. Our goal is to give guidelines to build a good management plan to solve the problems due to the implementation of Natura 2000. The process of building a management plan is summarized in the figure below, which illustrates the different steps of building a management plan: process of development, describing the content of the plan and planning the process of implementation. The analysis of the results was lead in function of this scheme.

There were a lot of free comments coming from every sector, very relevant remarks sometimes but never supported by more than five or six people. It means that there are not big trends but rather a long and varied checklist to be taken into account for a better implementation of Natura 2000.

Results for the Walloon Region

From the interviewed people, there were 44 questionnaires useful for the analysis.

About the process of **development**[2], it is suggested mostly by municipalities to better target the public to give information, i.e., to work at a more appropriate level. Moreover, for some instruments (like taxes on Horeca or entrance rights) the image of Natura 2000 to the general public is not positive enough to allow enhancing constraints; measures can only be put in practice after some more effective realizations.
We also have to take into account that there is a difference between "engagement" (people are convinced by what they do, and do more than what we demand), and "participation" (people do what we tell them to do). Also important is the fact that in the theory of engagement (R.-V. Joule[3]), one shows that engagement is inversely proportional to the perceived remuneration.

About the process of **implementation** the most important aspect emphasized by municipalities and nature sectors is the need of control and follow-up on the field. It is also important that the authorities in place perceive the problem appropriately and adopt the appropriate measures: conservation of nature must become a priority; hence there is a need of financing to have efficient results, and the general public also has to support the management cost of natural zones, because everybody has to be responsible for nature.
There is considerable restraint with respect to the implementation of many instruments; some of them imply heavy administrative procedure and are subject to pressures. In theory, these instruments can act for nature conservation but in practice, either the project does not come to an end (the project is rejected), or it is not useful (compensations are paid but nothing comes).

About the **content** of a good management plan, one of the most frequently repeated remarks by public authorities and municipalities is to make a revision of the 'plan de secteur' and to convert everything to natural zones.
Some instruments are only efficient in the medium or the long term (especially education); there is a necessity of stability in time. In general instruments need to be better known and explained for people who care about nature conservation, it will be efficient only if instruments are well used.
There does not exist only one perfect tool but a whole set of tools to combine in relation to the rarity of a habitat or to the time scale (more concretely for example, for habitats under 1000 hectares in Wallonia, the acquisition is the best way to protect them; for widespread habitats (such as beech forests), voluntary measures are better). Some measures have to be imposed because they are not a "plus" for nature but a necessity, an act of sustainable logic. Finally, there exist other legal/incentives instruments at the municipality level that could be used (e.g. water management).

As a whole, the existence of instruments is one thing, implementation is another: impacts will vary in function of actors on the field and the degree to which each individual person is sensitized. We have also to take into account that some instruments are only known by a few people and that some instruments have never been implemented.

Remarks have been formulated, taking all sectors together, for some special instruments; they are synthesized below:

- Concerning the agrienvironmental schemes, they are potentially and locally interesting but effects are non sustainable (e.g. biological agriculture does not mean "respect of nature": meadows are ploughed to put biological cereals). The commitment is on five years and there are delays (almost systematically) for the payment of primes. Moreover a lack of transparency (no explanation on the amounts paid) can discourage farmers.
  There are internal restraints due to administration and in general it is a heavy administrative procedure: effectiveness and feasibility will depend of political willingness

[2] Process of development, of implementation and content as defined in the scheme of a "Good management plan".
[3] La soumission librement consentie: comment amener les gens à faire librement ce qu'ils doivent faire? PUF, Paris, 1998 et Petit traité de manipulation à l'usage des honnêtes gens, Presses universitaires de Grenoble, 1987.

about their implementation. There is serious discrepancy between the vision of services in charge of control and the vision of the supervising agents; this is detrimental to farmers. For some, the management of the rural space is not always considered as being part of agriculture[4].

- For the labels, the major difficulty noted is the control of the specifications sheet respect.
- As to biological agriculture, it is obvious that it is a plus for nature but one has to be careful that pressure of big distributors does not reduce the requirement of the specifications sheet for biological production.
- Concerning (eco)conditionality, one can note that it is an instrument with a big potential for agricultural zones. Unfortunately, it seems that the Walloon Region does not have the same ambition as some neighboring countries. Currently, it is a matter of respecting minimal standards and more can be made to have more results (a simple link established between the rate of habitat structuring elements in any given agricultural exploitation, and the rights to perceive one unique global subsidy, might prove highly effective, feasible and equitable).
- The rivers agreement ('contrat de rivière') is a participative process that could serve the objectives of Natura 2000.
- With regard to communication and education, it is said that general campaigns are not efficient if they are not associated with a real effort of education. Unfortunately, this effort of education requires huge means to have efficient results (according to answers, the accumulation of leaflet and flyers does not bring much result).

Another tackled subject was the **designation decree**. About 75 % of the people made remarks; the major ones are summarized hereafter. Those instruments are not widely known up to now; so it is difficult to make comments but a priori they might be a good solution. Much time has been devoted to their elaboration, but this was necessary to incorporate proper management in the field; people say that there is not enough communication or bad communication around them. Moreover some people think that they have been realized too fast and without a previous consultation of local owners. People find them not so much restricting and not so much sustainable: the Walloon Region has to listen to scientists and has to impose valuable constraints to maintain habitats. On the contrary, others remarks say that it is important that designation decrees be made not only by nature specialists because it can serve as a door to a dialogue thank to public enquiries (like a working basis for a management plan devised with the different stakeholders). Additionally, some people find them too much subject to lobbying at this stage of the process and that the level of details expected is too ambitious in relation to the delay for the creation of designation decree. The question of the financial and human means confronted to the huge number of owners for some sites has also been mentioned.

Finally, we can briefly comment on **opportunities/chances and problems** due to Natura 2000. Some persons hope that constraints of Natura 2000 will allow understanding the utility of nature protection to people who are less sensitive on this subject; in a way Natura 2000 is seen as a tool of consciousness-raising. People also think that Natura 2000 is a good tool for nature protection and that preservation of nature means a better quality of life (also a possibility to develop green tourism). Moreover people recommend the use of Life projects and agrienvironmental schemes to render the protection of species in difficulty even more efficient in Natura 2000 sites.

Conversely, with respect to some people the major problem will be the fact that constraints for farmers will complicate (more constraints, more work and more control!) the relationship with them. The question is laid: will constraints be accepted by stakeholders?
Another noted point is the question of information and communication. Clearly, there is a lack of communication or bad information given and it implies wrong ideas on the subject. There will be a lot of work with participation and consciousness-raising.

[4] The case of the AEM 8 "Prairie de haute valeur biologique" (tool actually used for the management of Natura 2000 meadows) is enlightening: some traditional humid meadows are often arbitrarily "drawn back" from agricultural land, which has the effect to cancel the AEM contract on these lands.

For political representatives at the local level, the question of compensation is worrying, as in general the question of permits.

Results from the Flemish site

From the interviewed people, there were 51 questionnaires useful for the analysis.

Firstly, some **new instruments** are proposed by the respondents, taking all sectors together. A first possibility is to make a Natura 2000 tax reduction. The idea is to reduce tax for a nature-friendly management, if the owner manages his land according a certain vision for Natura 2000 management; he is eligible for a tax reduction. It can also be seen as encouraging citizens when cooperating actively; they would benefit from a reduction when they can show they have contributed to Natura 2000. Another possibility is to make local land banks to proceed to land exchange. Similarly, for agriculture, the idea to develop a kind of agricultural business that can really specialize in extensive agriculture (using adapted stock races, adapted production methods) is pointed out in the results. Finally, there is the possibility for the farmer to sell his products with label at a surplus price.

About the process of **development**, multiple ideas were presented coming from the different sectors. The major one, coming from the agricultural sector, suggests that best results can be gained if farmers participate on a voluntary basis with corresponding compensations. Respondents from public authorities sector asked for the involvement of third parties for the realization of the objectives and for professional consultancy. The point is to widen the participation around nature conservation, by making people more responsible and working in an integrated manner (involving other sectors).

Another point is the claim for concrete conservation objectives for each Natura 2000 site; on the basis of these objectives, conservation measures that emphasize public-private partnerships should be developed custom-made, through a well focused management plan. There is also a wish for clear participation procedures and consultation before decisions are taken. A final remark for the process of development was made by a hunting stakeholder: the difference between objectives and measure is not always clear to everyone and the fact that hunting has a negative influence on biodiversity (thus on Natura 2000 objectives) seems to be a widespread opinion. It is about time that the positive contribution from the hunting sector be acknowledged and appreciated.

About the process of **implementation**, there are only few remarks. One general point comes out from nature and farming sectors; there are in fact enough instruments, but it is just a matter of using them appropriately (among others they have to be applicable in practice, there must be control on the proper execution). The follow-up is also important! A downside of projects is that once the term of the project has passed, the people involved are left to take care of things themselves. The money of the project has usually been spent and the farmers involved are “up to their ears in water”. New projects should not be started until the current ones are completed and compensated. Clearly, there is also a need of sufficient funds.
As suggested by Bemelmans-Videc (1998)[5], policy instruments should be evaluated on other dimensions; i.e., effectiveness (degree of goal-realization), efficiency (input-output/outcome ratio), legality (equity and motivation of decisions), democracy (degree of participation) and legitimacy (acceptance by target groups and politicians).

About the **content** of a good management plan, we have first to keep in mind that a good instrument is clear, simple, without suffocating administration and has a wide local social support.

[5] Bemelmans-Videc et al., 1998 In: M.L. Bemelmans-Videc, R.C. Rist and E. Vedung, Editors, *Carrots, sticks, and sermons: Policy instruments and their evaluation*, Transaction Publisher, Inc., New Brunswick, NJ (1998).

It is also suggested to work with concrete measures and to apply on a larger scale harder instruments such as land banks, purchases, expropriation or urban regulations.

The efficiency – and partly the feasibility – of an instrument depend of course on the objective for which it is used. The conservation and restoration of very critical species or habitats can only be achieved efficiently through “heavier” instruments such as the creation of reserves etc. For less critical species/habitats the use of management agreements can offer a way out if linked to a result commitment, a good evaluation/monitoring and a sound preservation. On the other hand the feasibility is partly dependent on the objectives. In this regard, the use of the instrument “reserve” is quite feasible for highly valuable habitats (heath land, peat ...), whereas it is less feasible, e.g., for hamster habitats. In a nutshell, the efficiency and feasibility of instruments is no black or white story and can only be assessed “efficiently” if tested vs. the concrete desired objectives. Theoretically instruments are effective and feasible to realize the management of Natura 2000 areas. In practice however this is not the case, because some objectives are perceived as measures and the measures do not always contribute to the objectives. The objectives of the other sectors are not sufficiently taken into account. Thus, measures which are taken are in conflict with the objectives of other sectors and moreover, the measures in that case do not contribute to achieving the Natura 2000 goal.

Another tackled subject was the **Natuurrichtplan**. For this instrument there were not really positive remarks but rather remarks, coming from the different sectors equally, to take into account better implementation of the Natuurrichtplan. A first point to improve is the question of financing and compensation. It is said that in practice it will only work when many more financial means are provided for the elaboration of the plan. If an adequate budget can be provided for the compensation of active management performances then perhaps there is a possibility that the policy is effective. Financial stimuli, apart from a simple package of basic rules, are much more useful and act in a less antagonizing way (i.e., they favor an encouragement policy more than a penalizing policy).
Secondly, feasibility is strongly linked to the extent of the consultations with the current users in the area (mainly farmers and foresters) and with the inhabitants. According to ministerial guideline, the nature sector should reach a consensus with all other sectors. However consensus leads to paralysis, participation to results.
In addition, the process seems too slow for the overall realization of the conservation objectives. It is a slow and time-consuming procedure linked to something complex: local users/owners, target groups often consider it a threat because it creates an extra layer between the destinations and the execution level. Local participants do not always understand the abstraction level of an area vision. Most local target groups lack ecological knowledge to understand the conservation objectives.
Finally, several measures can be added and we have to be careful to the fact that there should be no overlap with existing regulations and other instruments such as nature design and land design.

Some **remarks** have been made as well for some special instruments. We can present them briefly:

- Bio agriculture probably has a positive effect on insect populations, but by mechanical shuffling a lot of field bird nests are destroyed. So there is rarely a straight forward and simple answer to give on effectiveness.
- Land consolidation is considered as okay but still mainly focused on agriculture and found as a very hard and time consuming procedure.
- The purchase of the sites and the management (linked to design) by competent authorities (government and acknowledged site managing associations) are seen as the most important guarantee for the preservation of nature values. Especially expropriation - which can be very effective and easily feasible to achieve the intended objectives in the scope of Natura 2000 - is a one-sided act of management, often considered less popular (it should be the last resort) with parties involved and with policy, and therefore considered to be less feasible. However a lot of other mentioned instruments (prohibitive rules, permits...) from the survey are one-sided acts of management as well, which are

established without consent of the person involved. On top of that, those measures are often embedded in administrative processes a normal citizen has no control over. The benefit of the expropriation procedure is that it is a clear-cut defined procedure, with defined professional procedures for parties involved, at a reasonable compensation, and with very sustainable and effective results.

- Concerning forest management plans, their effectiveness for Natura 2000 will differ in function of the habitats and species for which the area is designated. From the point of view of the conservation objectives, a forest management plan will not be very effective in a coniferous area where the objective is heather or other open vegetation. This is not the case for the same forest management plan in the Meerdaalwoud where for instance the area is designated for its forest habitats. Additionally, it has to be sufficiently tested by practical experience to be practically oriented.
- Nature project agreements will be effective, as long as the procedure is not too time-consuming and does not discourage private owners from submitting a file. On top of that, an adequate budget should be made available
- Requesting entrance fees to Natura2000-area visitors or imposing taxes on catering establishments around Natura2000 areas will rather create resistance, especially because nature conservation in Flanders is mostly financed by government money. With nature conservation initiatives largely financed by private money, as is the case for instance in Great Britain and South Africa, such resistance will be a lot smaller, or even inexistent. Means from the tourist sector as a whole should however be used for co-financing of the recreational aspects of nature conservation (for instance construction and maintenance of pathways).

As a whole, Natura 2000 is seen as a great opportunity for effective nature policy in Flanders. The application of Natura 2000 will contribute to the creation of social support and consultation platform. There is a hope for enlargement of social support for nature design and then a possibility to concretize what nature policy wants to achieve in Flanders: offer to society a long-term framework. Moreover, Natura 2000 is an opportunity to explain to Flemish people that nature is really important. It can also stimulate private owners to take up their responsibility and come to a balance between the different actors in a given territory. Finally, Natura 2000 will have a large role in the scope of the adaptation to climate change and will work intimately with Life support.

Conversely, some people, from all sectors, are less positive and see some **problems** arising with the coming of Natura 2000. A first point is the additional obligations that will create additional work pressure. This makes people go sour and this will lead to a decline of social support and results in a lack of sustainability. Secondly, there are some matters of concern for the agricultural sector: agriculture is seriously burdened and they are not exactly the demanding party. For possible compensations the agricultural sector feels disadvantaged.

Linked to technical criteria, some people are afraid that not enough means will be available (financing and work force). Additionally, there are also uncertainties around Natura 2000 areas; the question is, what is the destination from spatial planning of these areas?

Finally, there seems to be too little political support and insights about the necessity of Natura 2000 – political decision making and putting personal interest first – as well as about the conservation of ecosystem services that benefit the general socio-economic framework. Society is not aware of the social benefits and only considers the costs; it is still too abstract and people do not really understand what is about.

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Appendix

List 1: Contacted organisations for both regions

Flanders	
Agentschap voor Natuur en Bos	Agency for Nature and Forest
Algemeen Boerensyndicaat	Farmers Syndicate
Boerenbond	Farmers Bond
Bosgroepen	Forest groups
Hubertus Vereniging Vlaanderen	Hubertus Corporation Flanders
Instituut voor Natuur- en Bosonderzoek	Institute for Nature and Forest Research
Landelijk Vlaanderen	Rural Flanders
Natuurpunt	
Platform Buitengebied	Platform Rural Area
Regionale Landschappen	Regional Landscapes
Vereniging voor Bos in Vlaanderen	Corporation for Forest in Flanders
Vereniging voor Provincies	Corporation for Provinces
Vereniging voor Steden en Gemeenten	Corporation for Cities and Municipalities
Vlaams Agrarisch Centrum	Flemish Agricultural Centre
Vlaamse Hoge Bosrad	Flemish Forest Council
Vlaamse Landmaatschappij	Flemish Land Corporation
Vlaamse Milieumaatschappij	Flemish Environment Corporation
Wallonia	

List 2: Instruments that were put forward in the enquiry

English	Abreviation	Nederlands	Français
Existing instruments		**Bestaande instrumenten**	**Instruments existants**
Agro-environmental Schemes	AES	Beheersovereenkomsten	Mesures Agro-environnementales
Certificates & Labeling	CeLa	Certificaten en labeling	Certifications et labels
Communication Campagne	CoCa	Communicatiecampagne	Campagnes de communication
River Contracts	CRI		Contrat de rivière
Cross compliance	CC	Randvoorwaarden in de landbouw	Eco-conditionnalité en agriculture
Education Programme	EDU	Educatieprogramma	Programme d'éducation
Environmental Impact Assessment	EIA	Milieu-effectenrapportering	Evaluations des incidences sur l' environnement
Expropriation	EXP	Onteigening	Expropriation
Forest Management Plan	FMP	Bosbeheersplan	L' aménagement forestier
Land Consolidation	LC	Ruilverkaveling	Remembrement rural
Land development for Nature	NI	Natuurinrichting	
Land Purchase	LP	Aankoop van gronden	Achat de terrains
License System	LIC	Vergunningensysteem	Permis d'environnement
Life Nature	LiNa	Life Nature	Life Nature
Nature Reserve	NR	Natuurreservaat	Réserve naturelle
Nature project agreement	NPO	Natuurprojectovereenkomst	Contrats de gestion et de protection
Organic Farming	BIO	Bio-landbouw	L'agriculture biologique
Protection by law	LAW	Bescherming bij wet	Régime de protection
Species Protection Plan	SPP	Soortbeschermingsplan	Protection directe des espèces
(Reduction of) Succession Rights*	SUC	(Verlagen van) Successierechten	(Reduction des) Droits de succession
Non-existing instruments			
Access Pay	PAY	Vrijwillige bijdrage voor toegang tot natuurgebieden	Droit d'entrée dans une réserve naturelle
Changement of destination plans	PLAN	Aanpassing bestemmingsplannen	Adaptation du plan de secteur
Horeca Tax	TAX	Belasting op Horeca-faciliteiten in of nabij natuur- en groengebieden	Taxe sur l'Horeca dans ou près des zones naturelles
Natura 2000 balance for** municipalities	N2BM	Natura 2000 balans voor gemeenten	

Nature Coöperation Bonds***	NCB	Natuursamenwerkingsverbonden

*(Reduction of) Succession Rights: Juridical application whereby succession rights on ecologically interesting areas are reduced to make the preservation of such areas more interesting when heriting them.
**Natura 2000 balance for municipalities: Financial incentive to retain the unhardened surface in municipalities. Each municpilaity must contribute within a “greenfund” a rato of its hardened surface. The money is redistributed between municipalities a rato of their surface of green area. Moreover, a system of tradeable development-rights between municipalities can be set up.
***Nature Coöperation Bonds: bonds of private owners to establish a coherent green management of their grounds with support from the government.

List 3: Table of convertion of the answers into ordinal variables

ordinal number	meaning
Knowledge of Natura 2000	
0	I never heard about Natura 2000
1	I allready heard/read about Natura 2000
2	I know the basic principles, the goals and the legislative scope of Natura 2000
3	I was involved in the implementation of Natura 2000
Knowledge of instrument	
1	I don't know the instrument
2	I know te instrument from theory
3	I know the instrument from practice
Effectivity & Feasibility scores	
1	Not effective/feasible (at all)
2	Not that effective/feasible
3	Rather effective/feasible
4	Very effective/feasible
8	No opinion
0	No answer

List 4: Crosstables for the knowledge level of Natura 2000

a. Between the regions (Table 3)

			Flanders	Wallonia	Total
Knowledge Natura 2000	1	Count	13.00	0.00	**13**
		Expected Count	7.99	5.01	**13**
	2	Count	33.00	28.00	**61**
		Expected Count	37.50	23.50	**61**
	3	Count	29.00	19.00	**48**
		Expected Count	29.51	18.49	**48**
Total		**Count**	**75**	**47**	**122**
		Expected Count	**75**	**47**	**122**

1 = heard or read about Natura 2000, 2 = know the basic principles and goals of Natura 2000, 3 = was involved in the implementation of Natura 2000

b. Between the Flemish classes (Table 4)

			Forestry	Agri	Gov	Nat	Total
Knowledge Natura 2000	1	Count	3	2	6	2	**13**
		Expected Count	1.28	1.10	7.69	2.93	**13**
	2	Count	4	2	13	10	**29**
		Expected Count	2.86	2.45	17.15	6.54	**29**
	3	Count	0	2	23	4	**29**
		Expected Count	2.86	2.45	17.15	6.54	**29**
Total		**Count**	**7**	**6**	**42**	**16**	**71**
		Expected Count	**7**	**6**	**42**	**16**	**71**

1 = heard or read about Natura 2000, 2 = know the basic principles and goals of Natura 2000, 3 = was involved in the implementation of Natura 2000
Forestry = Flemish forest sector, Agri = Flemish farmer sector, Gov = Flemish government representatives, Nat = Flemish nature sector

c. Between the Walloon classes (Table 5)

			Gov	Mun	Nat	Total
Knowledge Natura 2000	2	Count	1	9	14	24
		Expected Count	4.67	6.67	12.67	24
	3	Count	6	1	5	12
		Expected Count	2.33	3.33	6.33	12
Total		Count	7	10	19	36
		Expected Count	7	10	19	36

1 = heard or read about Natura 2000, 2 = know the basic principles and goals of Natura 2000, 3 = was involved in the implementation of Natura 2000
Gov = Walloon government representatives, Mun = Walloon municipality-representatives, Nat = Walloon nature sector

d. Between the Flemish government classes (Table 6)

			ANB	VLM-VMM	INBO	Total
Knowledge Natura 2000	1	Count	0	6	0	**6**
		Expected Count	1.85	3.08	1.08	**6**
	2	Count	2	8	2	**12**
		Expected Count	3.69	6.15	2.15	**12**
	3	Count	10	6	5	**21**
		Expected Count	6.46	10.77	3.77	**21**
Total		**Count**	**12**	**20**	**7**	**39**
		Expected Count	**12**	**20**	**7**	**39**

1 = heard or read about Natura 2000, 2 = know the basic principles and goals of Natura 2000, 3 = was involved in the implementation of Natura 2000
ANB=Agentschap voor Natuur en Bos (Agency for Nature and Forests, VMM=Vlaamse Milieumaatschappij (Flemish Environmental Corperation), VLM=Vlaamse Landmaatschappij (Flemish Land Corporation, INBO=Instituut Natuur- en Bosonderzoek (Institute for Nature and Forest Research)

List 5: Appointment of instrument characteristics

	choice of participation	compensation
Agro-environmental Schemes	1	1
Forest Management Plan	2	2
Nature project agreement	1	1
Natuurinrichting	0	1
Nature Reserve	2	1
Species Protection Plan	1	0
Land Consolidation	0	1
Expropriation	0	1
Land Purchase	1	1
Environmental Impact Assessment	0	0
Protection by law	0	2
License System	0	0
Cross compliance	1	2
Contrat de Rivière	2	2
Communication Campagne	2	2
Education Programme	2	2
Life Nature	1	1
(Reduction of) Succession Rights	2	1
Certificates & Labeling	1	0
Organic Farming	1	1
Access Pay	1	2
Changement of destination plans	0	1
Horeca Tax	0	0
Natura 2000 balance for municipalities	0	1
Nature Coöperation Bonds	1	0

Choice of participation: 0 = unvoluntary instrument, 1 = voluntary instrument, 2 = not of application here
Compensation: 0 = unpayed instrument, 1 = payed instrument, 2 = not of application here

SELNAT Analyse des instruments pour Natura 2000

Chère Madame, Cher Monsieur,

Actuellement, certains instruments sont pressentis pour la mise en oeuvre du réseau Natura 2000. Dans cette enquête, nous voudrions sonder, auprès d'experts de différents secteurs, leurs perceptions d'un certain nombre d'instruments qui pourraient potentiellement être mis en oeuvre afin d'atteindre les objectifs de Natura 2000. Quel sont les instruments efficaces dans le cadre de la réalisation des objectifs de Natura 2000, et dans quelle mesure sont-ils efficaces? Quelle serait leur faisabilité?

Cette enquête est menée dans le cadre d'un projet de recherche de la Politique Scientifique Fédérale visant à étudier la mise en œuvre du réseau européen Natura 2000 en Flandre et en Wallonie. L'objectif de cette enquête est de pouvoir formuler des recommandations pour une mise en œuvre durable et intégrée de Natura 2000. Les résultats de cette enquête ne seront utilisés que dans le cadre de cette étude et l'anonymat des participants est garanti.

Remplir le questionnaire vous prendra entre quinze et vingt minutes. Le questionnaire est structuré de la manière suivante :
1. Un volet composé de questions générales au sujet du répondant;
2. Un volet concernant votre définition de l'efficacité et de la faisabilité;
3. Un volet concernant votre perception de l'efficacité et de la faisabilité des instruments existants ;
4. Un dernier volet où vous pouvez nous faire part de vos questions et éventuelles remarques.

Nous aimerions déjà vous remercier chaleureusement pour votre participation et si vous désirez être tenu au courant des résultats de cette enquête, il vous est possible de nous faire part de votre adresse mail à la fin du questionnaire.

L'équipe Selnat

Si vous avez encore des questions concernant cette enquête, vous pouvez toujours contacter Mr Jan Vincke (jav@resource.be). Pour une assistance technique, vous pouvez toujours prendre contact avec Jeroen Verstraete, (jvr@technum.be, tel. 09/ 242 92 13).

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SELNAT Analyse des instruments pour Natura 2000

Profil du répondant

Afin de savoir qui aura répondu à ce questionnaire, nous avons besoin de certaines informations concernant votre activité, votre niveau de connaissance de la thématique Natura 2000 et dans quelle mesure vous êtes concernés par Natura 2000.

Dans quel secteur ou organisation êtes-vous actif?*

Quelle y est votre fonction?*

Dans quelle mesure connaissez vous Natura 2000?
*

- ☐ Je n'en ai jamais entendu parler.
- ☐ J'ai déjà entendu parler de Natura 2000.
- ☐ Je connais les principes de base, les objectifs et le cadre légal de Natura 2000.
- ☐ Je connais bien Natura 2000 de par mon activité professionnelle

Venez-vous parfois dans le site Natura 2000 du Bassin de la Lesse? Pour quelle(s) raison(s) ?*

* = obligatoire

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Définition efficacité et faisabilité

L'efficacité et la faisabilité d'un instrument dépendent de différents aspects. Dans cette partie du questionnaire, nous vous demandons quels sont pour vous les aspects les plus importants.

Pour les différents critères ci-dessous, dans quelle mesure les estimez-vous importants pour permettre d'évaluer l'efficacité d'un instrument?

*

	Insignifiant	Plutôt insignifiant	Ni important, ni insignifiant	Plutôt important	Très important
L'instrument contribue à atteindre des objectifs fixés	○	○	○	○	○
Les résultats obtenus grâce à l'instrument sont durables (garantis)	○	○	○	○	○
L'instrument permet la mise en œuvre d'actions et de mesures concrètes sur le terrain	○	○	○	○	○
Les résultats (attendus) sont proportionnels aux efforts consentis.	○	○	○	○	○
Il y a des possibilités d'évaluation ultérieure et, si besoin est, d'adaptation de l'instrument.	○	○	○	○	○

Pour les différents critères ci-dessous, dans quelle mesure les estimez-vous importants pour permettre d'évaluer la faisabilité d'un instrument?

*

	Insignifiant	Plutôt insignifiant	Ni important, ni insignifiant	Plutôt important	Très important
C'est un instrument transparent (répartition claire des rôles), simple et facile à mettre en oeuvre	○	○	○	○	○
Il existe un soutien social et une certaine connaissance publique de l'insrument	○	○	○	○	○

L’instrument tient compte de la réalité socio-économique des personnes concernées lors de sa mise en oeuvre.					
Il y a suffisamment de personnes et de moyens disponibles pour la mise en œuvre de l’instrument.					
L’instrument est dans la pratique techniquement réalisable (ce n’est pas un instrument théorique non applicable dans la pratique)					

* = obligatoire

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Analyse de différents instruments(1-6)

Dans cette partie du questionnaire, nous aimerions vous interroger au sujet de notre sélection de 23 instruments permettant la conservation et la protection de la nature. Ceux-ci sont à coter d'après leur efficacité et leur faisabilité dans le cadre de la mise en œuvre du réseau Natura 2000.

Pour chaque instrument, nous vous interrogeons préalablement sur le niveau de connaissance que vous en avez. Dans le cas où vous en avez une connaissance (en théorie ou en pratique), nous vous demandons de bien vouloir estimer leur efficacité et leur faisabilité. Durant cet exercice, veuillez tenir compte autant que possible des appréciations que vous avez données dans la partie précédente concernant les définitions des termes « efficacité » et « faisabilité »

Mesures agro-environnementales

Les mesures agro-environnementales sont des compensations financières qu'un agriculteur peut recevoir en échange d'une action en faveur de l'environnement. L'engagement est pris sur une base volontaire et ce, pour une durée de cinq ans. L'engagement va au-delà de la bonne pratique agricole.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

L'aménagement forestier

L'aménagement forestier, réalisé par les services de la Division de la Nature et des Forêts est le document qui régit, oriente et organise les différentes fonctions des forêts soumises au régime forestier (propriétés des communes, provinces, région,...) . Il est composé de trois parties principales :
1. Un état des lieux de la ressource et des différentes conditions écologiques
2. Sur base de ce constat une discussion des options possibles et des grandes orientations qui seront données à la forêt, peut être faite.
3. Enfin, sur base de ces choix, une planification des travaux ainsi que des dépenses et des recettes sur une dizaine d'années sont établis.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Contrats de gestion et de protection

Contrat conclu entre le(s) propriétaire(s) et l'(es) occupant(s) d'un site et l'autorité administrative. Il inclut la description du travail, les mesures de gestion techniques et les mesures de protection que le(s) propriétaire(s) et l'(es) occupant(s) s'engagent à mettre en œuvre. Une contrepartie financière peut être envisagée.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Natuurinrichting ("Arrangement/aménagement de la nature")

Le « Natuurinrichting » est un instrument établi et exécuté par le VLM (Vlaamse Landmaatschappij – Conseil agricole flamand) pour l'aménagement de certains territoires à des fins de conservation de la nature. Cet instrument veut créer des conditions meilleures pour le développement de la nature dans des périmètres qui sont dédiés à cela. Les projets de Natuurincrichting sont soumis à une procédure spécifique qui inclut une enquête publique.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Les réserves naturelles domaniales, réserves naturelles privées volontaires et réserves forestières

Ce sont des zones protégées créées à la demande ou avec l'accord du propriétaire, dans le but de préserver des espèces indigènes et des habitats qui sont présents dans la zone. Un régime de protection et de gestion sont associés à ce statut.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Protection directe des espèces

Régime de protection en faveur d'une liste précise d'espèces. Applicable sur tout le territoire, il peut viser la protection de l'espèce en elle-même, de sa quiétude, de son habitat et comprend par ailleurs des règles relatives au commerce et au transport.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

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Analyse de différents instruments (7-9)

Remembrement rural

Le remembrement rural est le regroupement des terres arables qui appartiennent à un ou plusieurs agriculteurs dans un périmètre particulier. Le but est de créer des parcelles adjacentes, régulières et facilement accessibles qui sont proches du bâtiment d'exploitation. Les objectifs de politique rurale, spatiale, environnementale et naturelle pourraient être intégrés dans le processus de remembrement rural.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Expropriation

L'expropriation est une procédure, initiée par l'administration, par laquelle le propriétaire d'un bien immobilier est obligé d'abandonner son bien au profit de l'Etat. L'expropriation n'est autorisée que pour la réalisation de projets d'utilité publique et moyennant une juste et préalable indemnité.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Achat de terrains

Achat de terrains à des fin de conservation de la nature.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

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Analyse de différents instruments (10-12)

Evaluation des incidences sur l'environnement

Mécanisme en vertu duquel les projets qui montrent un risque pour l'environnement ou un de ses secteurs particuliers doivent être soumis à une évaluation des incidences (selon la directive européenne 85/337/EEG). Au sein de cette évaluation, un volet spécifique traite des impacts sur Natura 2000. En cas d'impact avéré sur le site ou de doute, l'autorité ne peut autoriser le projet que moyennant une procédure stricte de dérogation.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Régime de protection des sites Natura 2000

Le régime de protection est un mécanisme spécifique aux sites Natura 2000 qui soumet à interdiction, autorisation ou notification des activités ou travaux susceptibles de mettre en péril l'intégrité des sites.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Permis d’environnement

Les permis d’environnement sont des autorisations administratives que toute personne, privée ou publique, doit obtenir si elle souhaite mettre en œuvre des travaux ou des activités visés dans des listes établies par l’autorité compétente.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d’opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

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Analyse de différents instruments (13-17)

Eco-conditionnalité en agriculture

Il s'agit d'un ensemble de règles concernant le maintien des pâturages permanents, les bonnes conditions agricoles et environnementales ainsi que des exigences réglementaires en matière de gestion que tout agriculteur percevant des paiements directs est tenu de respecter sous peine de se voir appliquer une diminution ou une suppression des aides.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Contrat de rivière

Les contrats de rivières sont des engagements techniques et financiers qui couvrent l'ensemble du bassin (versant) d'une ou plusieurs rivières. Epuration de l'eau, lutte contre les inondations, gestion des ressources et revitalisation des rivières sont autant de points abordés. Des objectifs sont établis et pour les atteindre, des actions sont proposées. Chaque contrat est signé par les acteurs locaux concernés et les divers partenaires: l'Etat, la Région, la Commune, la Division de l'eau et les utilisateurs (les industriels, les agriculteurs, les pêcheurs, les associations de conservation de la nature, …).

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Campagnes de communication

Campagnes de communication concernant Natura 2000 et ayant comme objectif de faire connaître le projet, les processus, … aux personnes intéressées et au grand public en général.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Programmes d'éducation

Programmes adressés aux personnes directement concernées et au grand public en général pour donner des informations développées au sujet de Natura 2000 et la nécessité générale de conserver la nature. On explique plus précisément ce qu'est le réseau, comment il est constitué et pourquoi, quels sont ses objectifs et comment les atteindre.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Life Nature

Les fonds Life Nature (L'Instrument Financier pour l'Environnement) sont un instrument financier européen qui soutient des projets de conservation de la nature à travers l'Union européenne, ainsi que dans les pays candidats et certains pays voisins. Ils permettent de développer des

programmes de restauration des milieux naturels, à grande échelle et sur plusieurs années.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

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Analyse de différents instruments (18-20)

Déduction des droits de succession sur les biens immobiliers en Natura 2000

Il s'agit d'un mécanisme juridique qui permet de réduire ou supprimer les droits de succession lors de l'héritage de biens immobiliers situés en Natura 2000.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Certifications et labels pour les productions respectueuses de la biodiversité

Les labels et certifications ont pour but de créer un lien entre l'offre et la demande sur le marché et d'établir un avantage pour ceux qui préservent la biodiversité en labellisant les produits issus de cette production respectueuse.

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Subsides pour l’agriculture biologique

Subsides octroyés aux agriculteurs qui pratiquent une agriculture biologique

Connaissez-vous l'instrument?

-- None --

Quel est le niveau d'efficacité et de faisabilité de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument est efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d’opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

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Analyse de différents instruments (21-23)

Droit d'entrée dans une réserve naturelle

Participation aux frais des visiteurs de réserves naturelles ou de sites gérés en faveur de la biodiversité (par exemple un euro de droit d'entrée) de manière à supporter les frais de conservation de la nature.

Quel est le niveau d'efficacité et de faisabilité *potentiel* de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument peut être efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Adaptation du plan de secteur

La révision des plans de secteur permet de modifier le zonage afin de donner à chaque zone la destination la plus adéquate en fonction de l'évolution des priorités en aménagement du territoire, en intégrant notamment les préoccupations et obligations environnementales.

Quel est le niveau d'efficacité et de faisabilité *potentiel* de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument peut être efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

Taxe sur l'Horeca dans ou près des zones naturelles

Dans l'hypothèse où la proximité d'un site naturel fournirait un avantage aux exploitants de l'HORECA voisin, il pourrait être envisagé de prélever une taxe spécifique sur cet avantage dont les montants seraient alloués à la conservation de la nature.

Quel est le niveau d'efficacité et de faisabilité *potentiel* de cet instrument dans le cadre de Natura 2000?

Indiquez dans quelle mesure, l'instrument peut être efficace et faisable afin d'atteindre les objectifs Natura 2000, en tenant compte de votre définition d'efficacité et de faisabilité (comme demandé ci-avant).

	Pas du tout	Pas très	Plutôt	Très	Pas d'opinion
Efficacité	○	○	○	○	○
Faisabilité	○	○	○	○	○

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Questions générales

Voulez-vous ajouter un commentaire à propos des instruments (ou d'un instrument en particulier) que vous avez évalué dans le questionnaire ci-dessus ?

Quelle est votre opinion sur les arrêtés de désignation?
L'arrêté de désignation est l'outil de planification élaboré par le Gouvernement wallon pour chaque site Natura 2000. Il comprend une description du site, les objectifs de conservation ainsi que les contraintes nécessaires à la réalisation de ces objectifs.

Quelles sont les opportunités ou contraintes qu'engendrent Natura 2000 pour vous ou votre organisation?

Avez-vous des remarques, questions ou suggestions au sujet de cette enquête?

Si vous désirez être tenu au courant des résultats de cette enquête, il vous est possible de laisser vos coordonnées ci-dessous.

Nous vous remercions cordialement d'avoir rempli notre enquête.

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SELNAT beoordeling van instrumenten voor natuur

Beste,

Momenteel wordt het Natura 2000 netwerk geïmplementeerd via verschillende instrumenten. In deze enquête willen we bij deskundigen van verschillende sectoren peilen naar hun perceptie van een aantal instrumenten die mogelijk ingezet zouden kunnen worden voor de Natura 2000 doelstellingen. Welke instrumenten zijn effectief in het kader van het realiseren van de doelstellingen van Natura 2000? Hoe haalbaar zijn de verschillende instrumenten?

Deze bevraging vindt plaats in het kader van een onderzoeksproject voor het Federale Wetenschapsbeleid over de aanpak van de implementatie van het Europese netwerk Natura 2000 in Vlaanderen en Wallonië. Doelstelling van dit onderzoek is om aanbevelingen te doen voor een meer duurzame en geïntegreerde implementatie van Natura 2000. De resultaten van deze bevraging worden enkel gebruikt in het kader van deze studie, dus bij de verwerking wordt alle anonimiteit gegarandeerd.

Het invullen van de bevraging kost 15 tot 20 minuten. Volgende onderdelen worden onderscheiden:
1. Een luik met algemene vragen over u om een beeld te krijgen van de respondent;
2. Een luik over uw definitie van effectiviteit en haalbaarheid;
3. Een luik over uw perceptie van de effectiviteit en haalbaarheid van bestaande instrumenten;
4. Een luik over uw perceptie van de effectiviteit en haalbaarheid van een aantal nieuwe instrumenten;
5. Een luik waarin u uw eigen opmerkingen nog kan meegeven.

Bedankt alvast voor uw bereidwillige medewerking!! Indien u op de hoogte wil gebracht worden van de resultaten van deze bevraging, kan u uw emailadres op het einde van de enquête achterlaten.

Het SELNAT-team.

Voor inhoudelijke vragen over deze bevraging kan u steeds contact opnemen met Jan Vincke (jav@resource.be). Voor technische bijstand voor deze suvey kan u steeds contact opnemen met Jeroen Verstraete, (jvr@technum.be, tel. 09/ 242 92 13).

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SELNAT beoordeling van instrumenten voor natuur

Algemene vragen

Om te weten wie deze bevraging ingevuld heeft, hebben wij onderstaande input met betrekking tot uw achtergrond, kennisniveau en relatie tot Natura 2000 nodig.

In welke organisatie(s) bent u actief?*

Wat is uw functie in deze organisatie(s)?*

Hoe goed bent u vertrouwd met Natura 2000?*

- ☐ Ik heb nog nooit gehoord van Natura 2000.
- ☐ Ik heb al van Natura 2000 gehoord en/of gelezen.
- ☐ Ik ken de basisprincipes, de doelstellingen en het wetgevend kader van Natura 2000.
- ☐ Ik ben betrokken (geweest) bij de implementatie van Natura 2000.

Komt u soms in het Natura 2000 gebied van de Demervallei en waarom?

* = betekent dat deze vraag verplicht ingevuld moet worden

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Omschrijving effectiviteit en haalbaarheid

De effectiviteit en haalbaarheid van een instrument worden door verschillende aspecten bepaald. In dit deel van de bevraging peilen we naar de aspecten die voor u het belangrijkste zijn.

Hoe beoordeelt u de effectiviteit van instrumenten?*

Als een instrument voor natuurbescherming op zijn effectiviteit in Natura 2000-gebied beoordeeld moet worden, dan wordt in de praktijk met verschillende 'criteria' rekening gehouden. Geef voor de onderstaande criteria aan in welke mate ze voor u belangrijk zijn bij het beoordelen van de effectiviteit van een instrument.

	Onbelangrijk	Eerder onbelangrijk	Noch belangrijk, noch onbelangrijk	Eerder Belangrijk	Zeer belangrijk
Het instrument draagt bij tot het behalen van vooropgestelde doelstellingen;	○	○	○	○	○
De bereikte resultaten van het instrument zijn duurzaam (verzekerd).	○	○	○	○	○
Het instrument zorgt voor concrete (beheer) acties en (beheer) maatregelen op terrein.	○	○	○	○	○
De inspanningen zijn proportioneel tot de (nagestreefde) resultaten.	○	○	○	○	○
Er zijn mogelijkheden voor evaluatie en, indien nodig, aanpassingen.	○	○	○	○	○

Hoe beoordeelt u de haalbaarheid van instrumenten?*

Als een instrument voor natuurbescherming op zijn haalbaarheid in Natura 2000-gebied beoordeeld moet worden, dan wordt in de praktijk met verschillende 'criteria' rekening gehouden. Geef voor de onderstaande criteria aan in welke mate ze voor u belangrijk zijn bij het beoordelen van de haalbaarheid van een instrument.

	Onbelangrijk	Eerder onbelangrijk	Noch belangrijk, noch onbelangrijk	Eerder Belangrijk	Zeer belangrijk
Het is een transparant (duidelijke rolverdeling), eenvoudig en gemakkelijk	○	○	○	○	○

inzetbaar instrument.					
Er bestaat maatschappelijk draagvlak en begrip voor het instrument.					
Het instrument houdt rekening met de socio-economische realiteit van de betrokkenen bij de implementatie ervan.					
Er zijn voldoende mensen en middelen te beschikking om dit instrument in te zetten.					
Het is in de praktijk technisch uitvoerbaar (geen theoretisch instrument dat in de praktijk niet inzetbaar is).					

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Analyse instrumenten

In dit deel van de enquête willen wij u vragen om 25 bestaande door ons geselecteerde instrumenten voor natuurbescherming en –beheer eenvoudig te scoren op hun effectiviteit en haalbaarheid voor het realiseren van het Natura 2000 netwerk. Gelieve uw beoordeling te geven op basis van hun bestaande implementatie in de wetgeving en hun bestaande werking op terrein.
Per instrument vragen we eerst naar uw kennis van het instrument. Vervolgens vragen we op basis van uw (theoretisch of praktisch) kennis de effectiviteit en haalbaarheid van de instrumenten in te schatten.
Gelieve in deze oefening zoveel mogelijk rekening te houden met uw beoordeling van effectiviteit en haalbaarheid uit de vorige vraag.

Beheerovereenkomsten

Overeenkomst tussen landbouwer en overheid met financiële compensatie indien de bedrijfsvoering via een aantal milieuvriendelijke principes verloopt en inspanningen geleverd worden voor natuurbehoud. Het engagement is op vrijwillige basis, loopt over een periode van vijf jaar en gaat verder dan de code van de goede praktijk.

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Bosbeheerplan

Beheerplan opgesteld door de boseigenaar en goedgekeurd door de overheid waarin elementen verwerkt zijn omtrent de bronnen en ecologische functies van het bos. Op basis hiervan wordt onderzocht welke toekomstige ontwikkelingen in het bos kunnen gerealiseerd worden. Vervolgens wordt een werkplanning voor 20 jaar uitgewerkt om het bos duurzaam te beheren.

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening

Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Natuurprojectovereenkomst

In de VEN-gebieden waarvoor een goedgekeurd Natuurrichtplan bestaat kunnen privé-eigenaars of lokale overheden financiële steun krijgen voor specifieke maatregelen voor natuurbehoud, -ontwikkeling, -recreatie en -educatie die passen binnen de uitvoering van het Natuurrichtplan. Dit instrument is in de huidige regelgeving expliciet gekoppeld aan de doelen van een Natuurrichtplan maar is enkel van toepassing wanneer geen ander subsidiesysteem van toepassing is op dat type project. Tot 90% van de kosten van de privé-eigenaar en tot 50% voor lokale overheden kunnen zo vergoed worden.

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Natuurinrichtingsprojecten

Natuurinrichtingsprojecten zijn bedoeld om een optimale inrichting van het VEN, de speciale beschermingszones en de groen-, park-, buffer-, bos- en bosuitbreidingsgebieden volgens de bestemmingsplannen te realiseren. Ze worden gecoördineerd door de VLM. Natuurinrichtingsmaatregelen zijn steeds gericht op de bestemming die het gebied heeft.

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Natuurreservaat

Een erkend natuurreservaat is een beschermd gebied dat wordt erkend op verzoek van de eigenaar en/of diegene die het gebruiksrecht heeft of van de beheerder, mits de eigenaar ermee instemt. Wat er kan en niet kan binnen reservaten wordt vastgelegd in goed te keuren beheersplannen. Van de verbodsbepalingen die zijn vastgelegd bij decreet kan in principe worden afgeweken via dit beheersplan.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Soortbeschermingsplan

Plan op niveau van soortbescherming dat evenwel aspecten van het beheer en de inrichting van habitats omvat. De plannen focussen op lokale bescherming van één specifieke soort en zijn opgesteld door verschillende organisaties of wetenschappers.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

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Analyse van instrumenten

Vervolg van de analyse van de instrumenten (7 tot 9)

Ruilverkaveling

Is een proces, waarbij eigenaren van een stuk land onder coördinatie van de VLM kavels met elkaar ruilen. Hiermee wordt gestreefd naar aaneengesloten, regelmatige en gemakkelijk toegankelijke kavels die zo dicht mogelijk bij het landbouwbedrijf liggen. Ruilverkaveling bevordert zo de rendabele en duurzame landbouwuitbating. Naast het bevorderen van de bedrijfsvoering wordt ook getracht de ruimtelijke kwaliteit inzake recreatie, historisch erfgoed en natuur- en landschapszorg te verbeteren.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Onteigening

Onteigening is een rechtsmiddel waarbij de overheid bezit neemt van gronden/goederen die nodig zijn om werken van openbaar nut uit te voeren. Onteigening vindt plaats door tussenkomst van een Comité van aankoop van onroerende goederen. Nadat een onteigeningsplan is opgesteld verloopt de onteigening in der minne of via gerechtelijke procedure.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Aankoop van land

Via een aankoopbeleid van de overheid probeert deze gronden te verwerven die ingezet kunnen worden voor natuurbescherming en –beheer. Door middel van de subsidiëring van de aankoop van gronden door erkende natuurverenigingen wordt hetzelfde doel nagestreefd.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

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Analyse van instrumenten

Vervolg van de analyse van de instrumenten (10 tot 12)

Milieueffectrapportage (MER)

Onafhankelijk onderzoek naar de milieu-impact van een activiteit of ingreep waarbij een aantal abiotische en biotische aspecten van de leefomgeving in verschillende disciplines worden ondergebracht. Een Passende Beoordeling onderzoekt specifiek de impact op Natura 2000 habitats en soorten.

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met u omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Bescherming bij Wet

Specifiek beschermingsmechanisme voor Natura 2000 waarbij alle activiteiten of ingrepen die mogelijk een invloed hebben op de natuur, onderhevig zijn aan vergunningsplicht, aankondigingsplicht en eventuele beperkingen of verbod. Dit is de traditionele manier van natuurbescherming. Voorbeelden hiervan zijn geklasseerde landschappen en het VEN.

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Vergunning

Een vergunning is een officiële toelating van een overheid aan een privaat persoon of een andere

overheid om een bepaalde activiteit en ingreep uit te voeren. Aan vergunningen kunnen bepaalde beperkingen of een verbod gekoppeld zijn. Zo bestaat er vb. een natuurvergunning ten behoeve van de bescherming van ecologisch waardevolle vegetaties.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

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Analyse van instrumenten

Vervolg van de analyse van de instrumenten (13 tot 17)

‹‹Ecologische voorwaarden in landbouw- en bosbouwgebruik››

Het beginsel dat landbouwers binnen de Europese Unie verplicht worden minimum-voorwaarden inzake milieubescherming na te leven om in aanmerking te komen voor Europese marktsteun. Wanneer de landbouwers de milieuvoorschriften niet naleven, worden passende sancties opgelegd, zoals de verlaging of eventueel zelfs de intrekking van de directe steun. Instrument is geldig in de gehele EU. In Wallonië: Eco-conditionnalité et gestion agricole et forestière.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

‹‹Rivierovereenkomst››

Werkgroep die praat omtrent technisch-financiële aspecten van het beheer van rivieren om stroomgebiedsniveau. In deze vrijwillige samenwerking zijn gemeenten, landeigenaars en allerlei overheden betrokken. In Wallonië: Contrat de rivières. In het Vlaams Gewest kunnen maatregelen met positieve uitwerking op de natuur worden opgelegd in (deel)bekkenbeheerplannen die worden opgemaakt in het kader van het Decreet op het Integraal Waterbeleid.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Communicatiecampagne

Campagne die opgezet wordt omtrent Natura 2000 met als doelstelling het meer bekend maken van het doelstellingen van het project, de betrokkenen, het proces, …

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Educatieprogramma

Campagne die erop gericht is om de stakeholders en het brede publiek meer kennis te verschaffen over Natura 2000 en de algemene noodzaak van natuurbescherming (capacity building).

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Life Nature

LIFE-NATURE is het Europees subsidiefonds dat meebetaalt aan de inrichting of instandhouding van gebieden in het Natura 2000 netwerk.

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Analyse van instrumenten

Analyse van de instrumenten (18 tot 20)

Vermindering successierechten

Juridische aanpassing waarbij de successierechten op ecologisch interessante gebieden verlaagd wordt waardoor het voordeliger is deze te bewaren en te behouden bij erving.

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Certificaten en labels voor natuurvriendelijke producten

Het geven van labels en certificaten voor producten die gelinkt zijn aan natuurvriendelijke teelten, diensten (vb tourisme), ... in Natura 2000 gebieden

In welke mate kent u het instrument?
Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000
Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Subsidies voor bio-landbouw

Subsidie voor landbouwers die werken met biologische teelten en natuurvriendelijke productiemethoden.

In welke mate kent u het instrument?

Kies uit onderstaande menu in welke mate u kennis heeft van het instrument en de toepassing er van.

-- None --

Hoe effectief en haalbaar is dit instrument in het kader van Natura 2000

Duid aan in welke mate het instrument effectief en haalbaar is voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

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Analyse van instrumenten

Einde van de analyse van instrumenten (21-25).

*Hieronder bevinden zich enkele **minder voor de hand liggende of nieuwe** instrumenten. Ook over deze willen we graag uw mening kennen.*

Bijdrage voor toegang tot Natura 2000 gebieden

Elke bezoeker van Natura 2000 gebieden wordt gevraagd om een vrijwillige bijdrage te leveren voor het bezoek aan het gebied om zo mee de kosten van natuurbeheer te dragen. De idee is dat een deel van de onkosten voor het beheer van een gebied op deze manier betaald kunnen worden door een grotere groep van mensen.

Hoe effectief en haalbaar zou dit instrument in het kader van Natura 2000 volgens u kunnen zijn?

Duid aan in welke mate het instrument effectief en haalbaar volgens u zou kunnen zijn voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Aanpassingen aan het bestemmingsplan

Door een aantal logische en concrete aanpassingen aan bestemmingsplannen kan een meer overzichtelijk en transparant juridisch kader gecreëerd worden voor natuurbescherming. In de huidige situatie zijn namelijk allerlei onduidelijkheden of onlogische inkleuringen terug te vinden die de werking van dit juridisch instrument enorm bemoeilijken.

Hoe effectief en haalbaar zou dit instrument in het kader van Natura 2000 volgens u kunnen zijn?

Duid aan in welke mate het instrument effectief en haalbaar volgens u zou kunnen zijn voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met u omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Tax op horeca in of nabij natuurgebieden:

Recreatieve uitbatingen (cafe's, restaurants, hotels, ...) gelegen in de nabijheid van een natuurgebied profiteren mee van de toeristische aantrekking van deze gebieden. Door het heffen van een bijkomende tax (of een deel van de inkomsten uit belastingen voor natuur af te romen)

kunnen bijkomende middelen voor natuur gegenereerd worden. Door deze manier van werken kan het principe 'de genieter betaalt meer' in de praktijk omgezet worden.

Hoe effectief en haalbaar zou dit instrument in het kader van Natura 2000 volgens u kunnen zijn?

Duid aan in welke mate het instrument effectief en haalbaar volgens u zou kunnen zijn voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Gemeentelijke Natura 2000 balans

Gemeenten ontvangen nu vooral inkomsten uit 'bebouwde grond' (inkomsten uit lokale gemeentelijke taksen, opcentimen etc). Iedere gemeente wil daarom zijn eigen industriegebied, KMO zone, verkaveling, ... Een rechtstreeks financieel incentief tot het behoud van onverharde oppervlakten (groengebied) is er echter niet. Daar kan verandering in komen door elke gemeente een bijdrage te laten storten in een groenfonds a rato van de verharde oppervlakte op het gemeentelijk grondgebied. Geld uit dat fonds wordt dan herverdeeld tussen de gemeenten a rato van hun oppervlakte groen, bos en natuurgebied.

Bovendien kan een systeem van verhandelbare ontwikkelingsrechten worden opgesteld. Gemeenten die extra willen ontwikkelen dienen dan ontwikkelingsrechten aan te kopen bij andere gemeenten.

Hoe effectief en haalbaar zou dit instrument in het kader van Natura 2000 volgens u kunnen zijn?

Duid aan in welke mate het instrument effectief en haalbaar zou kunnen zijn voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○
Haalbaar	○	○	○	○	○

Natuursamenwerkingsverbanden

Veel grond binnen Natura 2000 gebied is in eigendom van private personen. Zij hebben grote bezwaren tegen de 'publieke' inmenging over de ontwikkeling van hun gronden. Dit instrument zou gericht zijn op het geïntegreerd en gezamenlijk beheer van gronden in een coherent beheerplan over de tijd. Dit beheerplan wordt door particulieren opgemaakt met ondersteuning vanuit de overheid. Eventuele subsidies kunnen afhankelijk gemaakt worden van de bereikte resultaten. Gelijkaardige concepten/instrumenten zijn: Landgoed, agrarische natuurvereniging, ...

Hoe effectief en haalbaar zou dit instrument in het kader van Natura 2000 volgens u kunnen zijn?

Duid aan in welke mate het instrument effectief en haalbaar volgens u zou kunnen zijn voor het bereiken van de doelstellingen van Natura 2000 rekening houdend met uw omschrijving van effectiviteit en haalbaarheid (zoals hoger gevraagd)

	Helemaal niet	Niet zo	Redelijk	Zeer	Geen mening
Effectief	○	○	○	○	○

Haalbaar	○	○	○	○	○

Hebt u zelf nog voorstellen voor nieuwe instrumenten?
Omschrijf hieronder uw voorstellen voor nieuwe instrumenten.

Vindt u dat NATUURRICHTPLANNEN effectief en haalbaar zijn om het beheer van Natura 2000 gebieden op terrein te verwezelijken en waarom?

In de Natura 2000-gebieden moet de Vlaamse Regering of Minister een natuurrichtplan vaststellen dat een gebiedsvisie weergeeft en ook concrete maatregelen bevat die die gebiedsvisie uitvoeren. Daarbij kunnen aan administratieve overheden verbodsbepalingen en actieve beheersprestaties worden opgelegd, en aan particulieren verbodsbepalingen en mits vergoeding actieve beheersprestaties. Ook stimulerende maatregelen zijn mogelijk.

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Algemene vragen

Wilt u nog iets toevoegen over (een van) de instrumenten die u in bovenstaande vragenlijst hebt beoordeeld?

Welke kansen of knelpunten veroorzaakt Natura 2000 voor jou/jouw organisatie?

Hebt u nog specifieke of algemene opmerkingen of vragen over deze enquête?

Indien u op de hoogte wil gebracht worden van de resultaten van deze bevraging, kan u onderstaand uw emailadres achterlaten. Wij sturen u de resultaten van deze bevraging door zodra deze bekend zijn.

Hartelijk bedankt voor het invullen van onze enquête!

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APPENDIX 6.1 FLEMISH WEBSURVEY 3

6.1.1 Questions survey

See Appendix 6.2_WS 3_Questions websurvey Flanders

6.1.2 Survey analysis

I. Materials & Methods

Data assembly

To get to know better the perception of local users towards the implementation of the Natura 2000 network in the Demervalley, an online survey was set up. Stakeholders from different sectors in the Natura 2000 area of the Demervalley were contacted and asked to cooperate with the survey.

The survey started with a short introduction of its goal, followed by a sound of the level of knowledge of the respondents about some nature policy concepts and especially Natura 2000. After that, each respondent was confronted with 6 statements about the possible implementation of Natura 2000 and each had to point out wether he/she agreed or disagreed with it (or had no opinion). From these, 3 statements concerned a rather rigid way of implementation, while the other 3 determined a more flexible one. Furthermore, 12 concepts of implementation strategies were put forward, from which 7 belonged to a more or less rigid way of implementation and 5 supported a rather flexible implementation manner. Each respondent had to indicate wether he/she totally agreed, agreed, disagreed or totally disagreed with these strategies (or wether he/she had no opinion).

Next, the profile of the respondent was determined (profession, degree of education, age, living area, wether they are owner of real estate in the Natura 2000 area of the Demervalley or elsewhere, wether and what kind of user they are in the Natura 2000 area of the Demervalley).

Finally, respondents were given the chance to give some comments about the chances Natura 2000 offers for their use and about the most important problems its implementation involves. Also general comments or questions could be posted.

Data processing

Ended questions

The answers on the ended questions were converted to numbers in order to be able to use them later on in a stastistical analysis program. Respondents were classified on the base of their user-profile and their real estate ownerschip profile.

For each respondent, new variables were calculated.

A '**nature policy'-knowledge score** was calculated on the base of the responses for the 8 Flemish nature policy concepts. Respondents indicating that they did not know the concept received a 0-score for that concept, while the indication that the concept was known resulted in a 1-score. The sum of all 8 answers per respondent resulted in the 'nature policy'-knowledge score. Once a missing value for one or more nature policy concepts was found, the respondent's nature policy'-knowledge score was also seen as a missing value.

Besides the 'level of familiarity with Natura 2000', the level of real knowledge of Natura 2000 was determined by means of 6 statements wich could be rated as 'true', 'false' or 'I don't know'. For each correct answer, the respondent received 1 point, for each incorrect answer they lost one and when indicating they did not know, no points were served. The sum of the scores over all 6 statements resulted in the **level of knowledge of the Natura 2000 concept**. For these calculations, respondents that indicated they had never heard about Natura 2000 were ignored and in further analysis seen as missing values. Once a missing value for one or more statements was found, the respondent's level of knowledge of the Natura 2000 concept was also seen as a missing value.

Finally, each respondent was given an appreciation-score for the strict and the flexible Natura 2000 implementation strategies. The rating-scores were converted as follows: "totally agreed" = 2, "agreed" = 1, "disagreed" = -1, "totally disagreed" = -2, "no opinion"= missing value. The sum over all strict (flexible) strategies was divided by the number of strict (flexible) strategies for which an answer (besides "no opinion") was given and this outcome resulted in the **appreciation score for the strict (flexible) strategies**. The new variables are respectively named '*overall strict strategy rating rating*' and '*overall flexible strategy rating*'.

Data analysis

The statistical analysis of the data was done by means of the program SPSS 15.0 (for Windows) (SPSS, 2006). For every analysis, besides the unanswered questions, also the responses 'no opinion' were treated as being missing values.

First, it was investigated wether significant differences could be detected between the distinguished user classes in terms of the nature policy knowledge, the familiarity with Natura 2000 and the knowledge level of the Natura 2000 concept. The analysis was done by means of a Kruskal-Wallis-test (Siegel & Castellan 1988). Significant differences for the same aspects between owners and non-owners of real estate within Natura 2000 areas were traced by means of the Wilcoxon-Mann-Whitney test (Siegel & Castellan 1988).

Next, differences in the appreciation scores for the strict and flexible strategies between the distinguished user classes were determined by means of a Kruskal-Wallis-test. Significant differences for the same aspect between owners and non-owners of real estate within Natura 2000 areas was traced by means of the Wilcoxon-Mann-Whitney test.

Finally, the Spearman rank correlation test (Siegel & Castellan 1988) was used to determine to what extent the appreciation scores of the different strategies were mutually correlated, as well as to what extent these scores were correlated with the age of the respondents, with the overall strict and flexible strategy rating scores, and with the appreciation scores for the strict and flexible statements. Furthermore, a Non-metric Multidimensional Scaling was carried out on all strategies. This was done by means of the statistical program PcOrd (McCune & Mefford 1999).

II. Results

1. Descriptive statistics

Response level

After withdrawing the respondents with too many missing values, 119 persons were retained. From these, 13 belonged to the agricultural sector, 11 to the forestry sector, 18 to the nature sector, 8 were classified under the hunting sector and 33 people belonged to the recreation sector. The remaining 36 people were classified as 'non-users', as they had no direct interests in the Natura 2000 area of the Demervalley (figure 1).

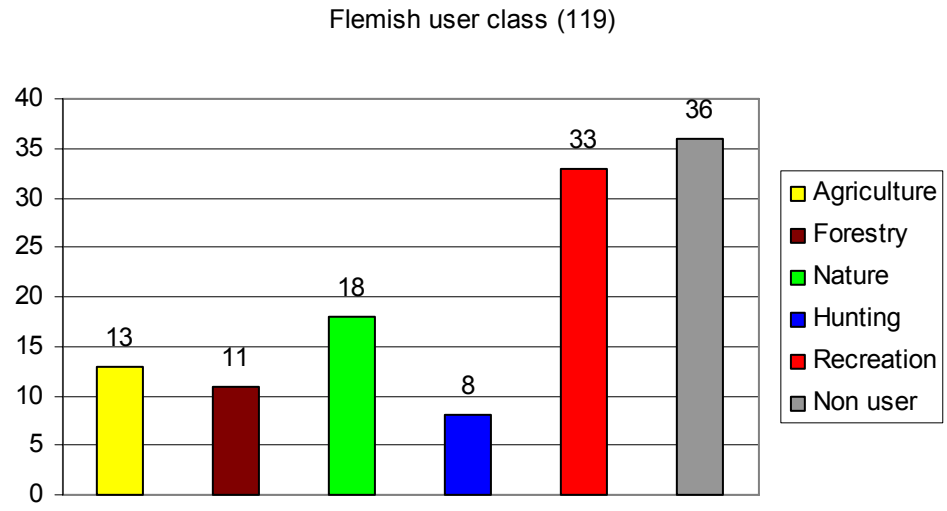

Figure 1: Frequency diagram of the respons level for all user classes. Counts are depicted above every bar.

Level of familiarity with Natura 2000

Concerning the level of familiarity with Natura 2000, figure 2 demonstrates the results:

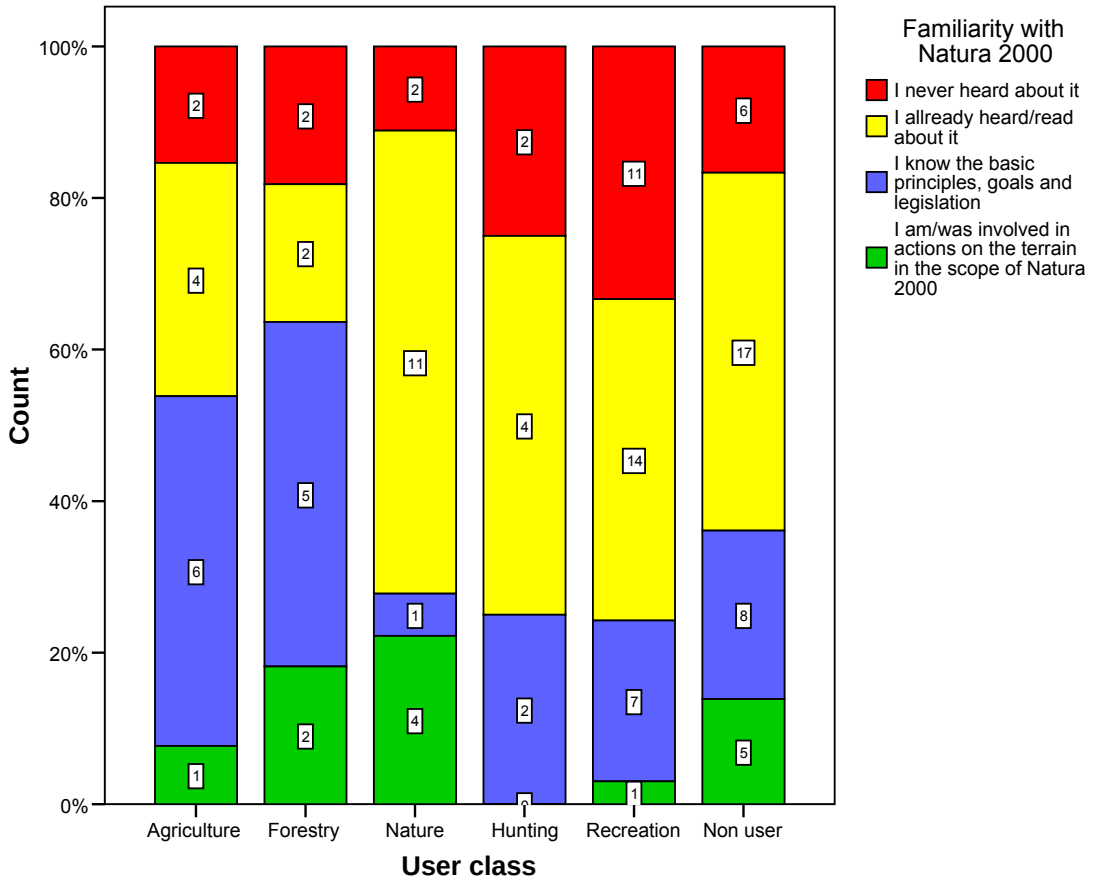

Figure 2: Frequency diagram (%) of the level of familiarity with Natura 2000 for all user classes. Counts are depicted in every bar.

Next, 6 statements about Natura 2000 were put forward and respondents had to indicate wether they were correct or false. The results are shown in figures 3 – 8. Respondents that declared to have never heard about Natura 2000 (25 in total) were left out of the results.

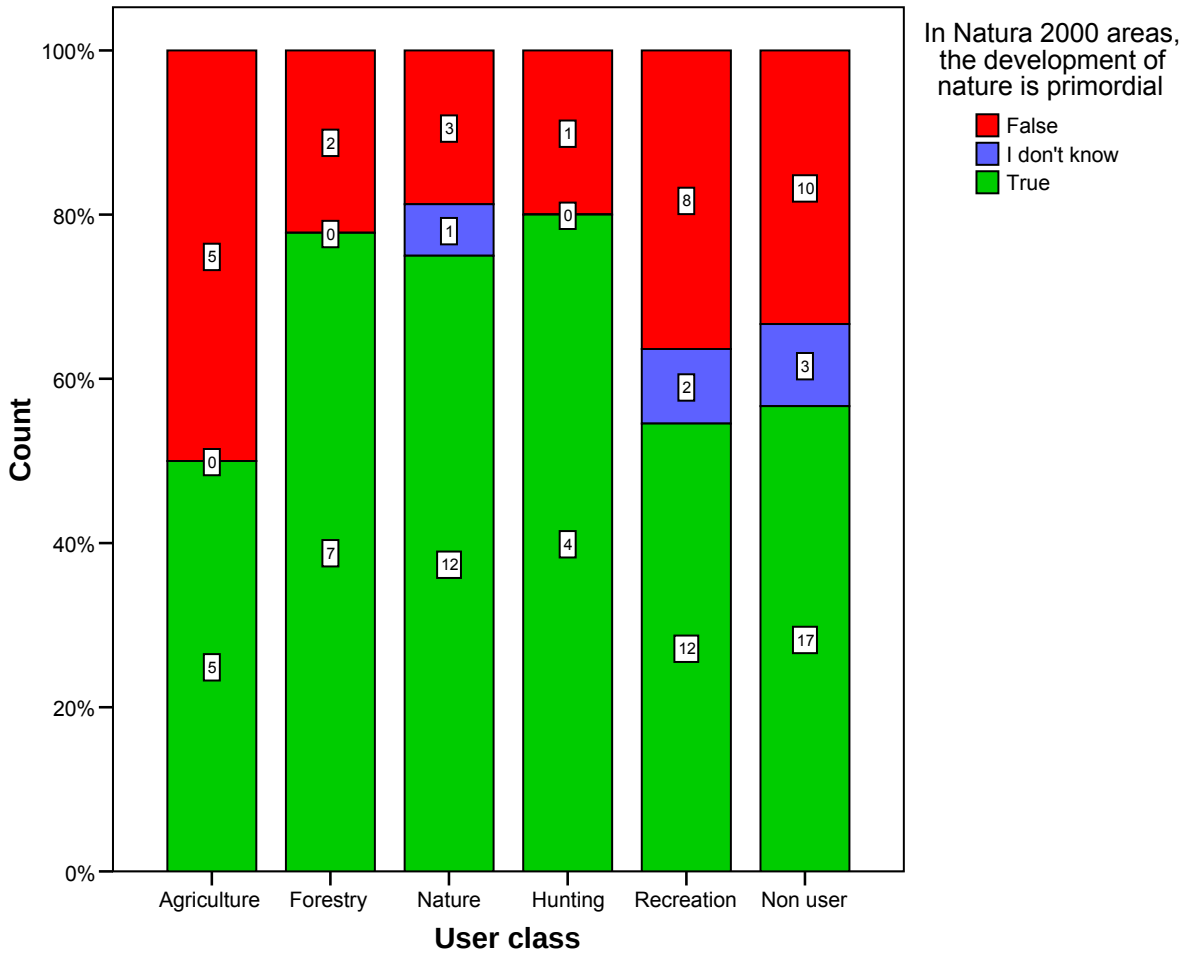

Figure 3: Frequency diagram (%) of results for the 1th statement about Natura 2000. Number of respondents = 94 (25 respondents that declared to have never heard about Natura 2000 were ignored in these results). The green colour indicates which answer was correct, the red stands for an incorrect answer. Counts are depicted in every bar.

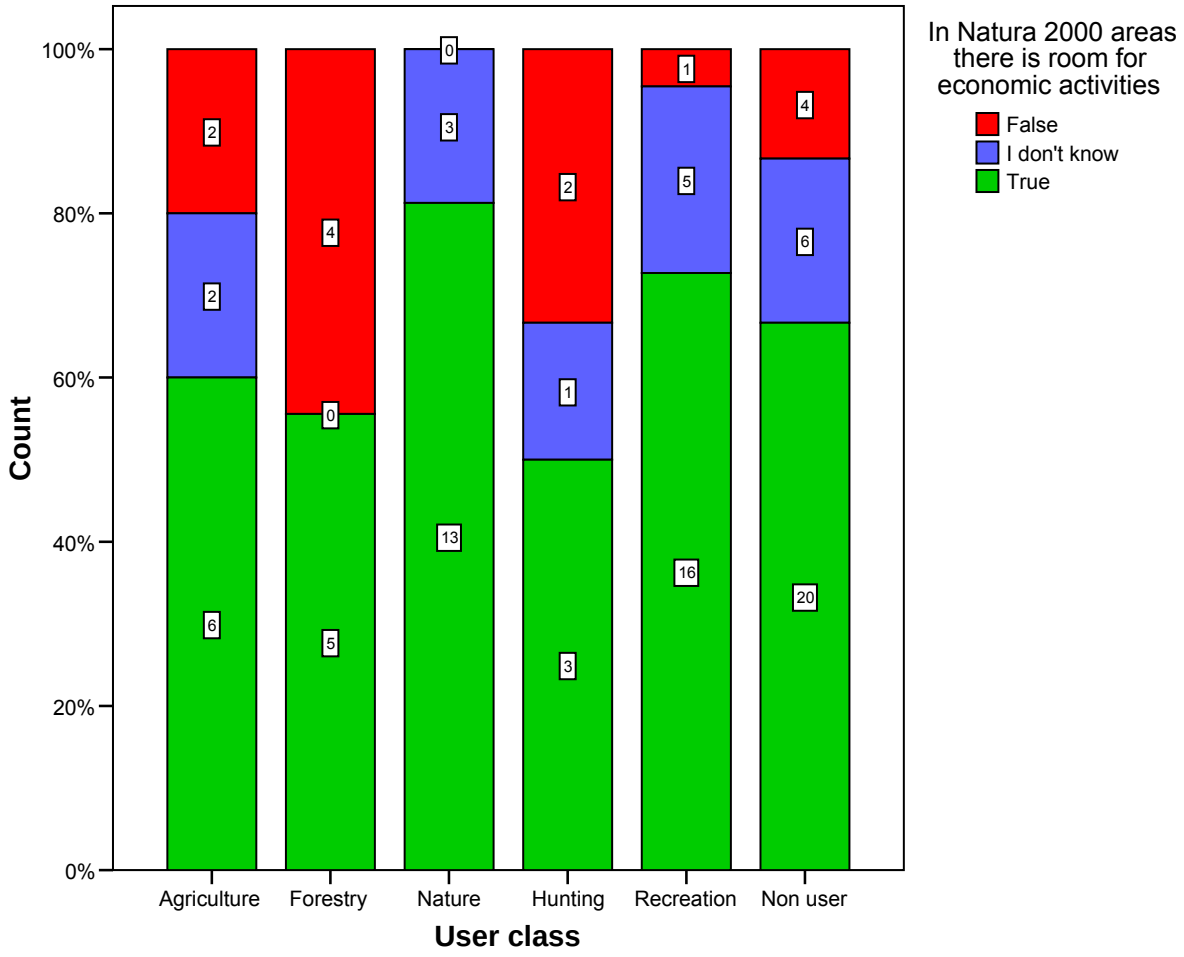

Figure 4: Frequency diagram (%) of results for the 2th statement about Natura 2000. Number of respondents = 94 (25 respondents that declared to have never heard about Natura 2000 were ignored in these results). The green colour indicates which answer was correct, the red stands for an incorrect answer. Counts are depicted in every bar.

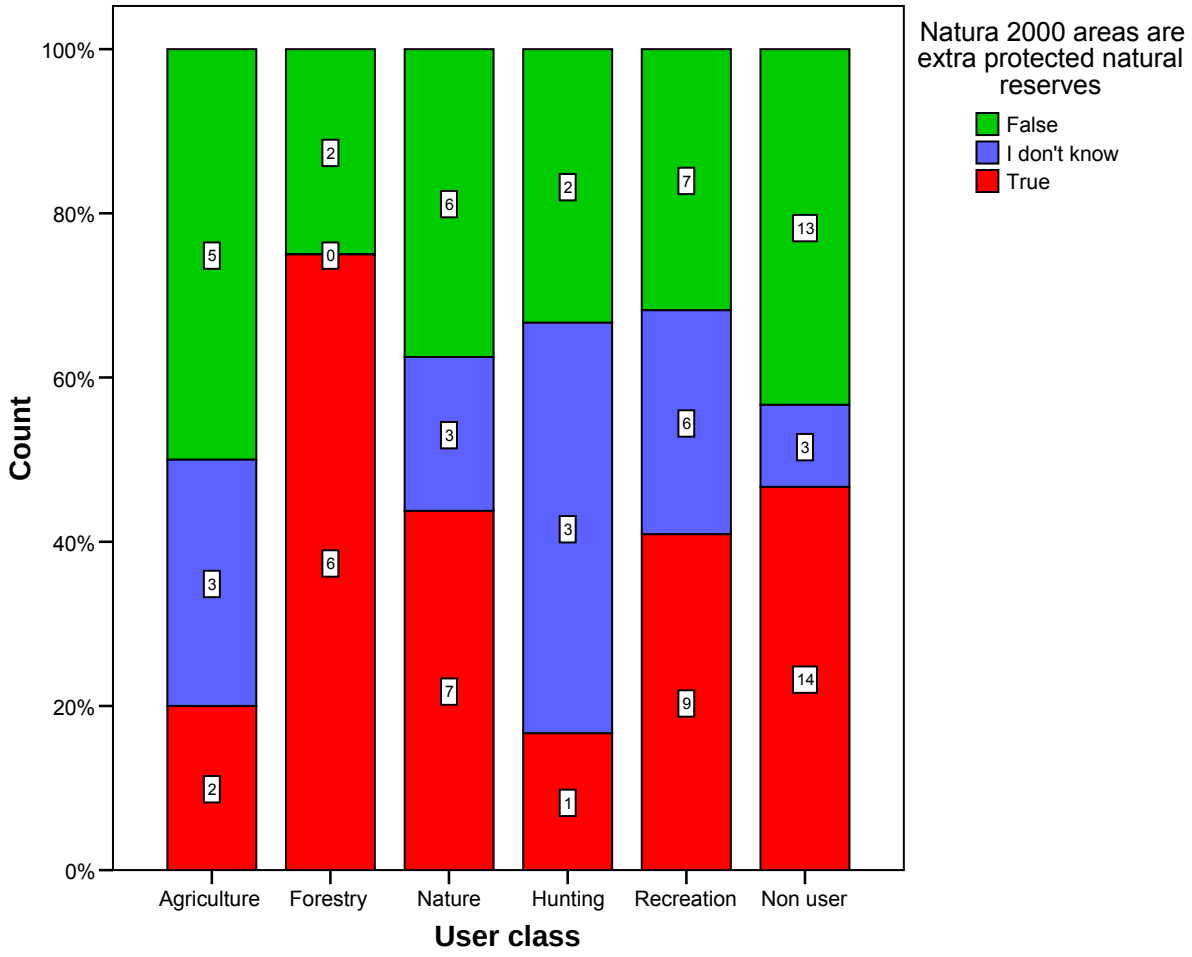

Figure 5: Frequency diagram (%) of results for the 3th statement about Natura 2000. Number of respondents = 94 (25 respondents that declared to have never heard about Natura 2000 were ignored in these results). The green colour indicates which answer was correct, the red stands for an incorrect answer. Counts are depicted in every bar.

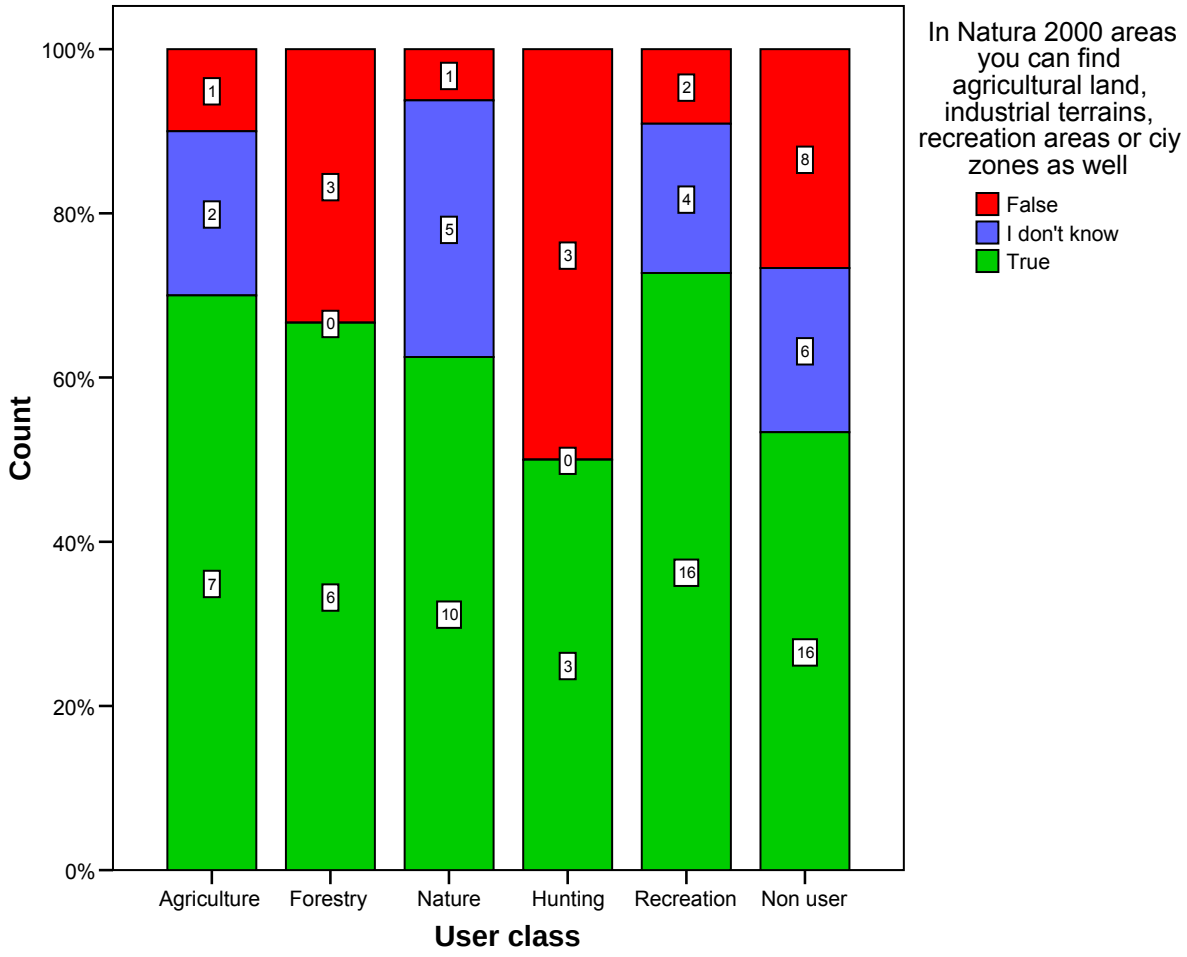

Figure 6: Frequency diagram (%) of results for the 4th statement about Natura 2000. Number of respondents = 94 (25 respondents that declared to have never heard about Natura 2000 were ignored in these results). The green colour indicates which answer was correct, the red stands for an incorrect answer. Counts are depicted in every bar.

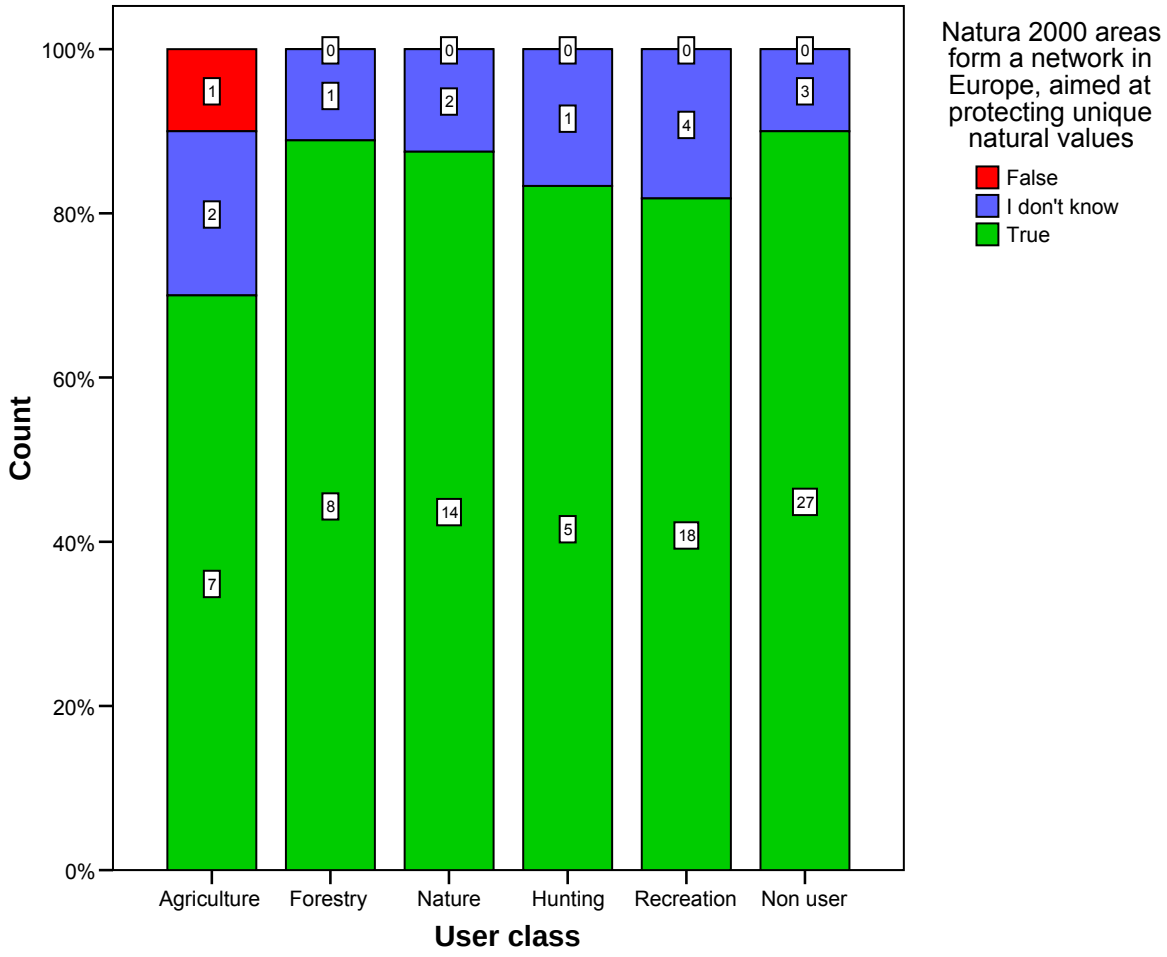

Figure 7: Frequency diagram (%) of results for the 5th statement about Natura 2000. Number of respondents = 94 (25 respondents that declared to have never heard about Natura 2000 were ignored in these results). The green colour indicates which answer was correct, the red stands for an incorrect answer. Counts are depicted in every bar.

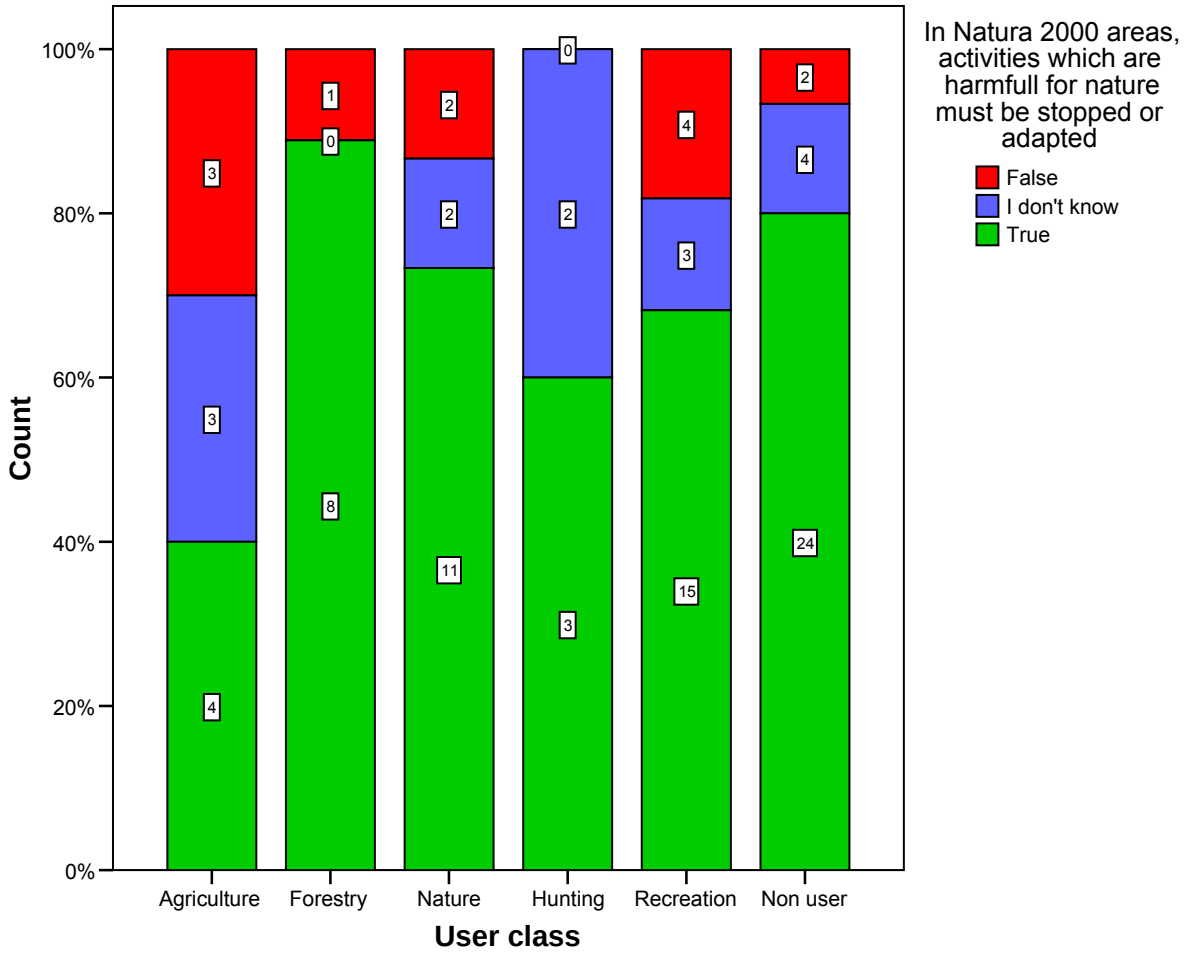

Figure 8: Frequency diagram (%) of results for the 6th statement about Natura 2000. Number of respondents = 94 (25 respondents that declared to have never heard about Natura 2000 were ignored in these results). The green colour indicates which answer was correct, the red stands for an incorrect answer. Counts are depicted in every bar.

Finally, the respondents could indicate wether they would like to have more information on 7 aspects concerning the Natura 2000 matter. Figure 9 shows the results for each aspect (over all respondents together), while figure 10 shows the result for every user class (over all aspects together).

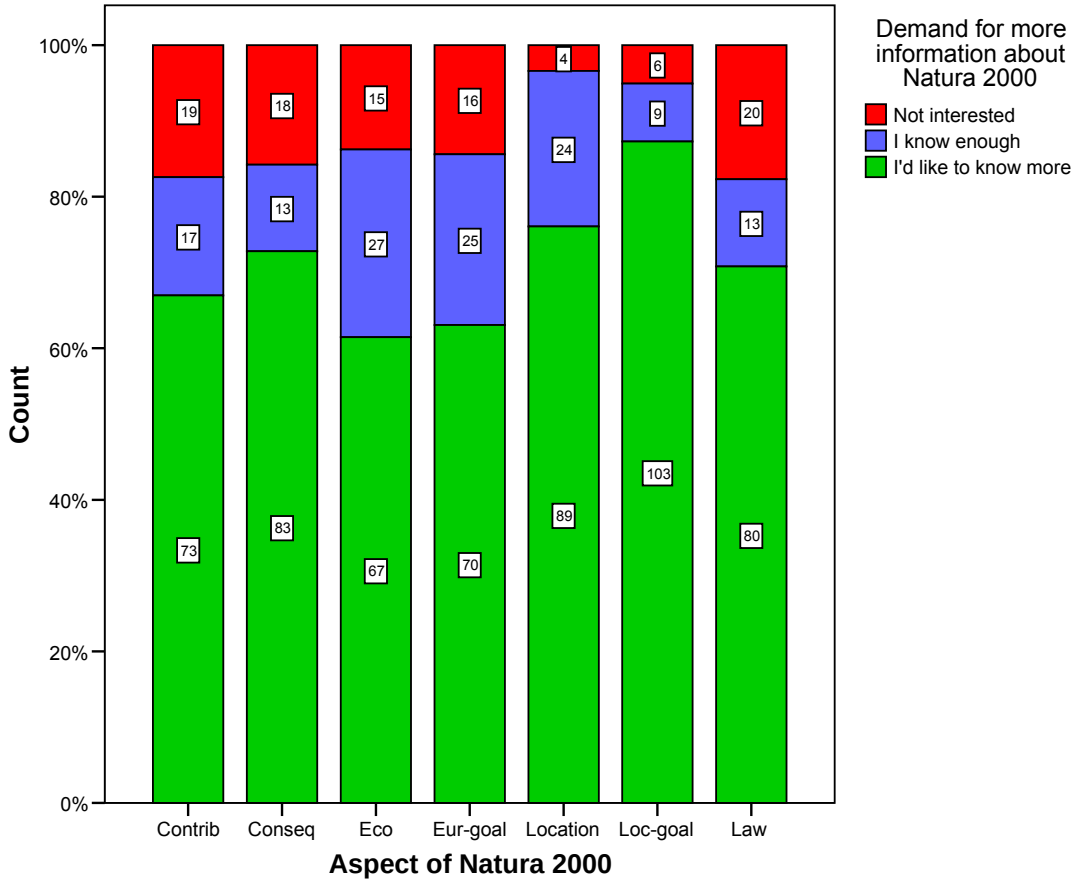

Figure 9: Frequency diagram (%) of results for the demand for more information about Natura 2000. Contrib = the way in wich I can contribute to Natura 2000
Conseq = the concrete consequences of the Natura 2000 implementation for my activities
Eco = the underlying ecological principles of Natura 2000
Eur-goal = the global goals on European level for Natura 2000
Location = the location of the Natura 2000 areas in my neighbourhood
Loc-goal = the Natura 2000-goals for the areas in my neighbourhood
Law = legislation of Natura 2000
Counts are depicted in every bar.

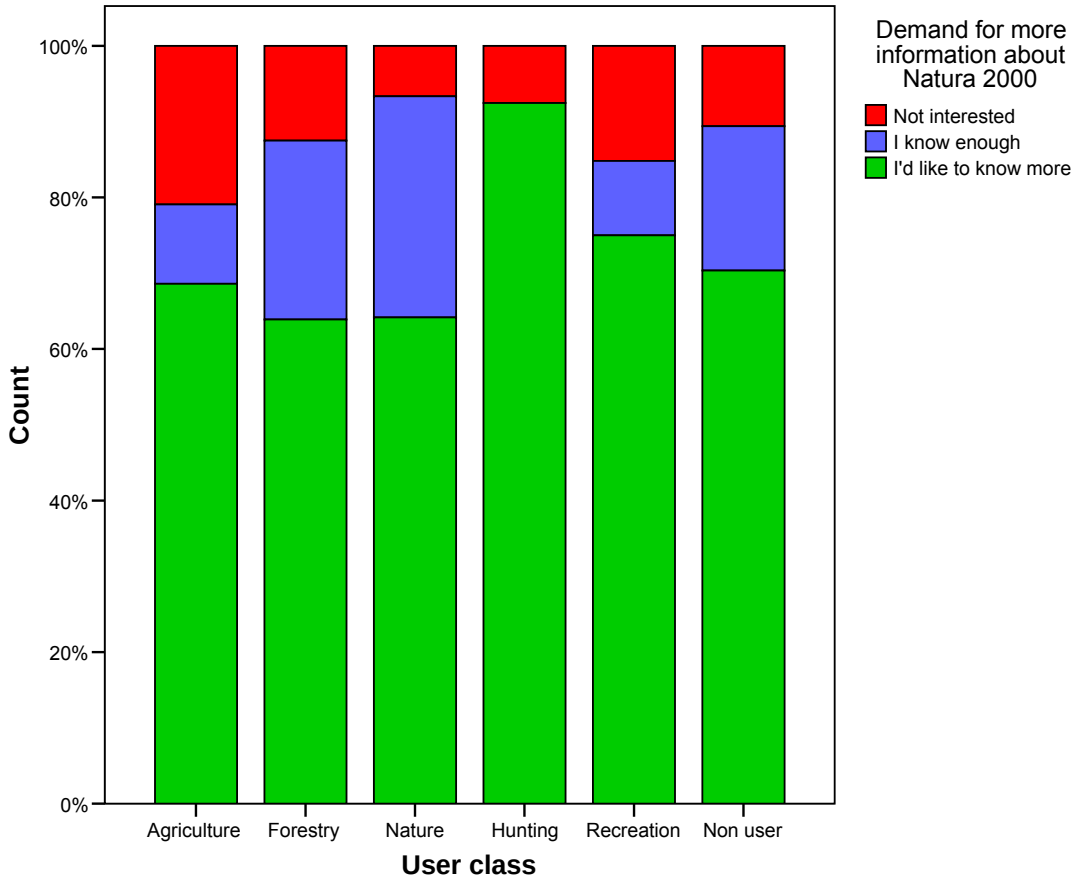

Figure 10: Frequency diagram (%) of results for the demand for more information about Natura 2000 for every user class.

Statements about the implementation of Natura 2000

To get to know better the perception of local users towards the implementation of the Natura 2000 network each respondent was confronted with 6 statements about the possible implementation of Natura 2000 and each had to point out wether they agreed or disagreed with it (or had no opinion). Figures 11-16 show the results.

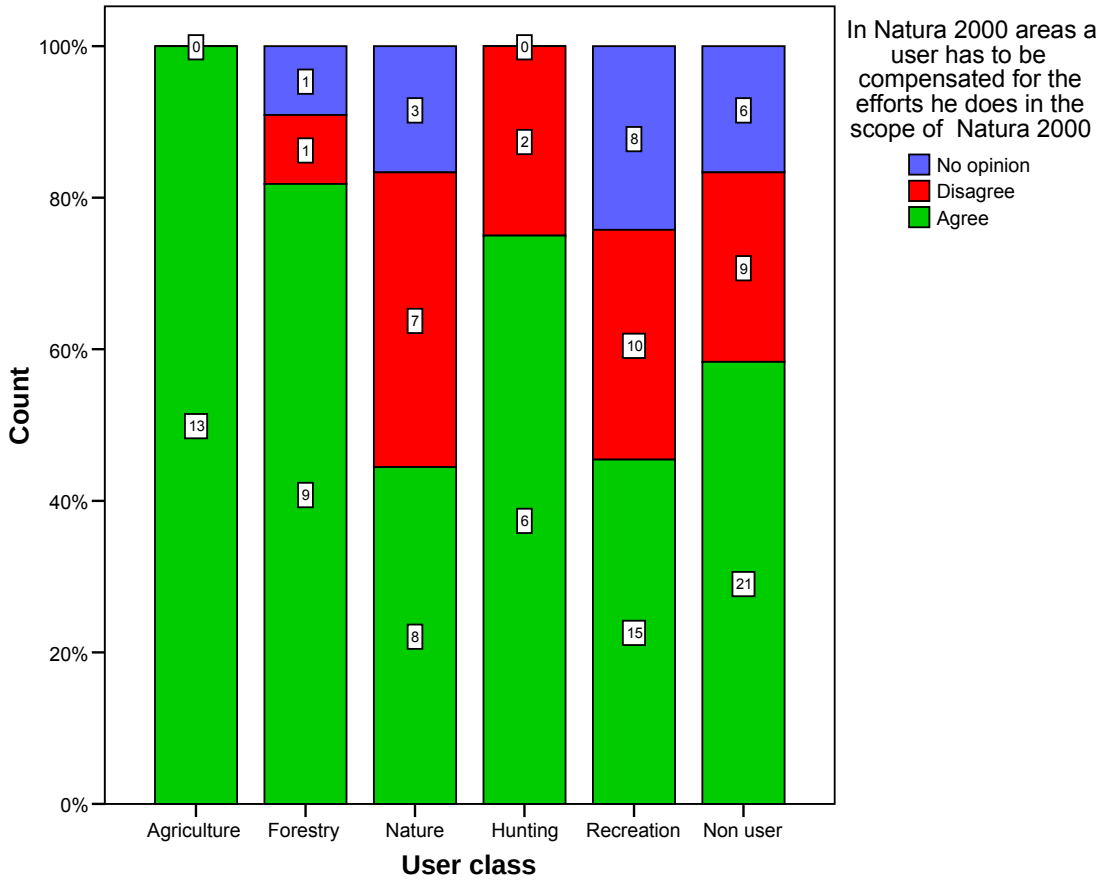

Figure 11: Frequency diagram (%) of results for the 1th statement about the implementation of Natura 2000. Counts are depicted in every bar.

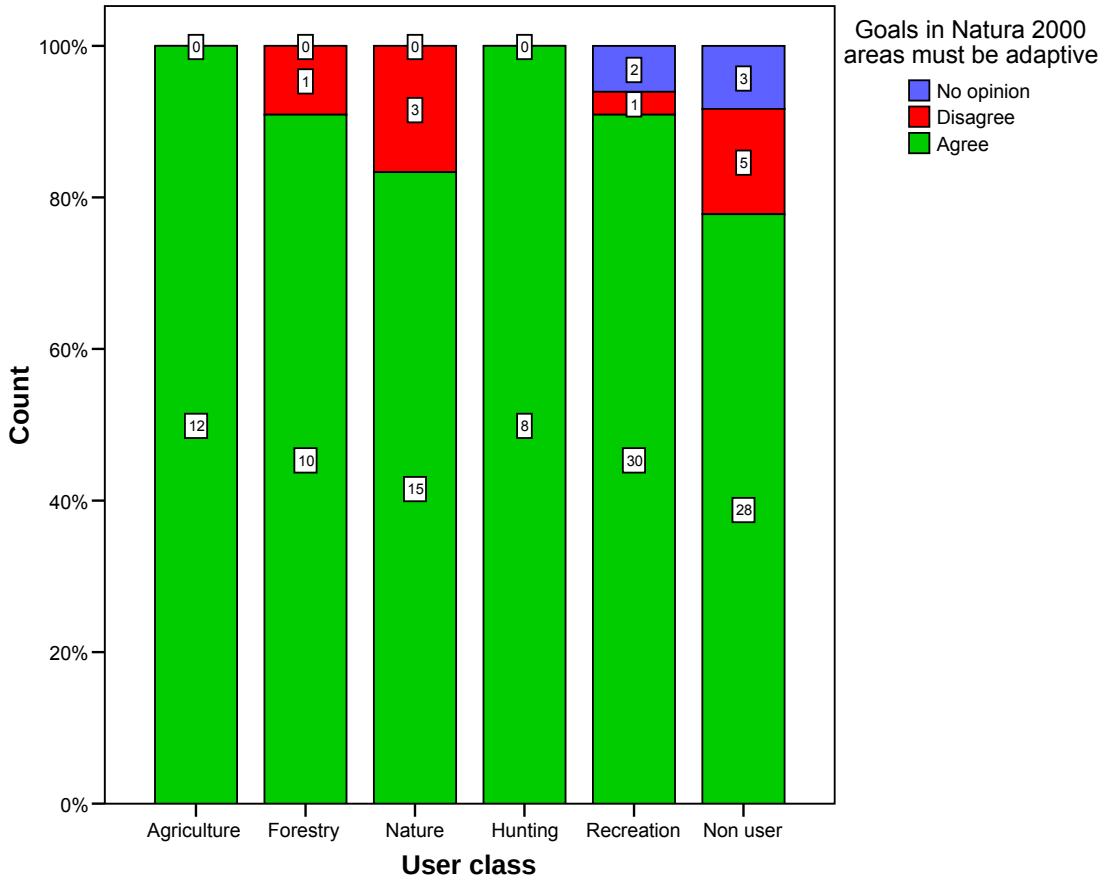

Figure 12: Frequency diagram (%) of results for the 2th statement about the implementation of Natura 2000. Counts are depicted in every bar.

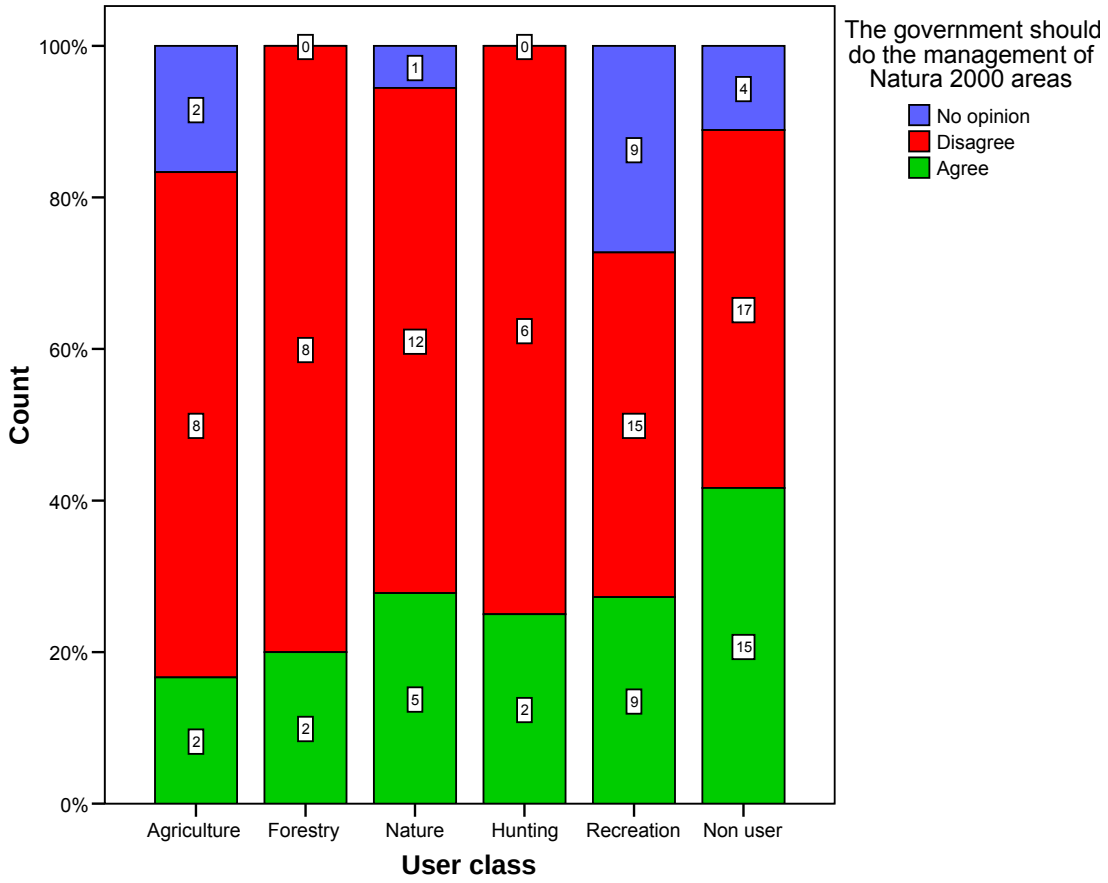

Figure 13: Frequency diagram (%) of results for the 3th statement about the implementation of Natura 2000. Counts are depicted in every bar.

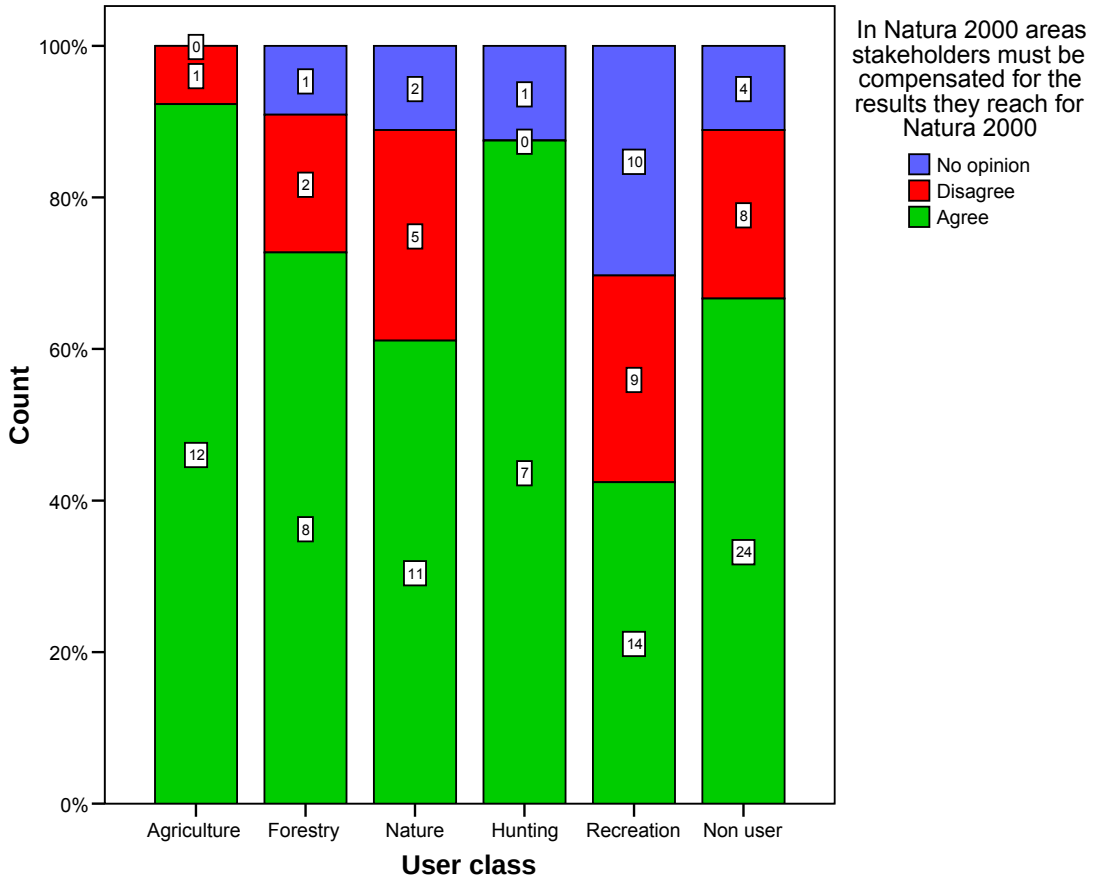

Figure 14: Frequency diagram (%) of results for the 4th statement about the implementation of Natura 2000. Counts are depicted in every bar.

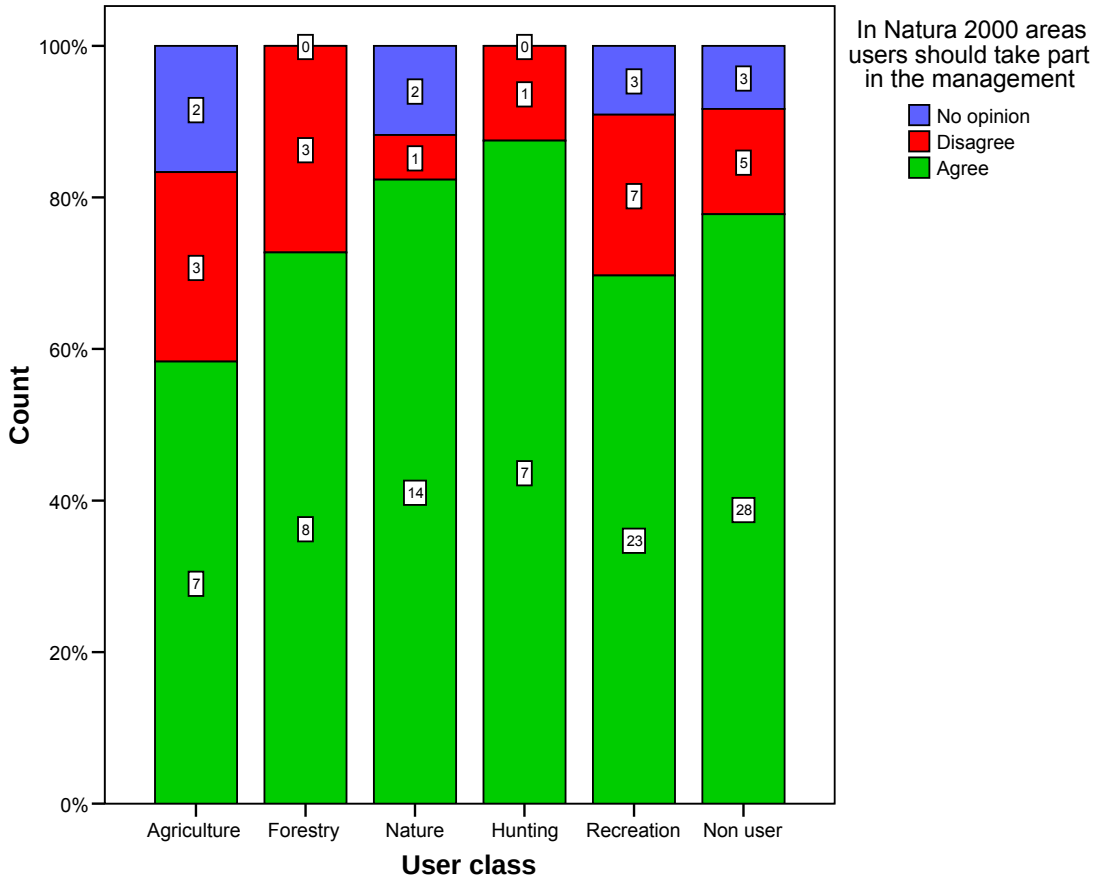

Figure 15: Frequency diagram (%) of results for the 5th statement about the implementation of Natura 2000. Counts are depicted in every bar.

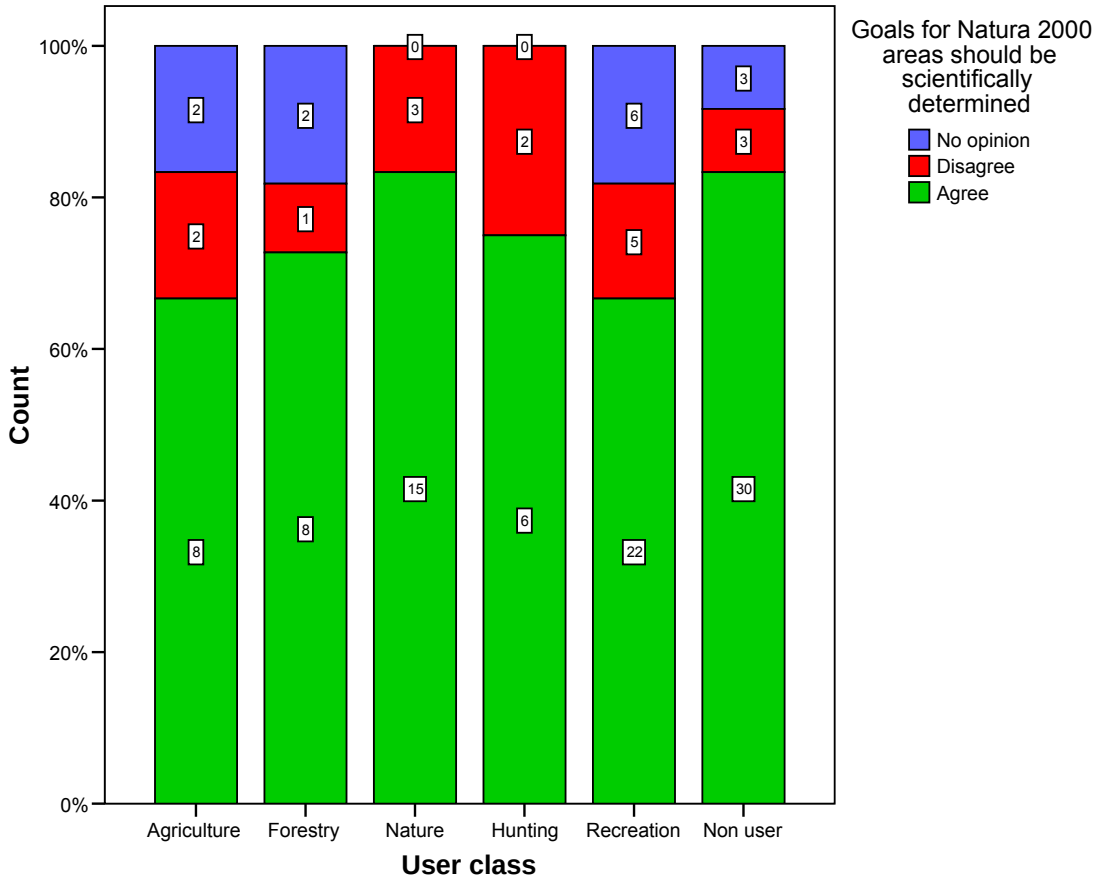

Figure 16: Frequency diagram (%) of results for the 6th statement about the implementation of Natura 2000. Counts are depicted in every bar.

2. Non-parametric statistics

1.) Are there any differences between the user classes in terms of the nature policy knowledge, the familiarity with Natura 2000 and the knowledge level of the Natura 2000 concept?

The Kruskal-Wallis test showed a significant difference for the level of knowledge of nature policy between the classes 'hunting' (<) on the one side and the classes 'forestry' and 'nature' (>) on the other. No other differences were found (Table 1).

Table 1. The nature policy knowledge, the familiarity with Natura 2000 and the knowledge level of the Natura 2000 concept for the 6 user classes (Kruskal-Wallis test)

	Knowledge nature policy					
Class	Agriculture[ab]	Forestry[a]	Nature[a]	Hunting[b]	Recreation[ab]	Non user[ab]
n	11	11	17	6	28	30
median	8	8	8	2.5	8	7
range	3	2	4	6	6	8
KW	12.08					
Sign	*					
	Familiarity with Natura 2000					
Class	Agriculture	Forestry	Nature	Hunting	Recreation	Non user
n	13	11	18	8	33	36
median	3	3	2	2.5	2	2
range	2	2	2	1	2	2
KW	7.62					
Sign	n.s.					
	Knowledge Natura 2000					
Class	Agriculture	Forestry	Nature	Hunting	Recreation	Non user
n	10	9	15	5	22	30
median	3	3	4	2.5	3	3
range	5	5	5	4	5	6
KW	6.02					
Sign	n.s.					

n = sample size
KW = test-value Kruskal-Wallis test
Sign. = level of significance; n.s.: not significant, * = $p < 0.05$
Superscripts a and b show the different classes with a ≠ b and ab not ≠ from a or b

2.) Are there any differences between the owners and non-owners of real estate in Natura 2000 areas in terms of the nature policy knowledge, the familiarity with Natura 2000 and the knowledge level of the Natura 2000 concept?

The Wilcoxon-Mann-Whitney test that was carried out to investigate differences between the owners and non-owners of real estate in Natura 2000 areas in terms of the nature policy knowledge, the familiarity with Natura 2000 and the knowledge level of the Natura 2000 concept pointed out that no significant distinctions appear (table 2).

Table 2. The nature policy knowledge, the familiarity with Natura 2000 and the knowledge level of the Natura 2000 concept for the owners and non-owners of real estate in Natura 2000 areas (Wilcoxon-Mann-Whitney test)

	Knowledge nature policy		**Familiarity with Natura 2000**		**Knowledge Natura 2000**	
Group	**Owners**	**Non-owners**	**Owners**	**Non-owners**	**Owners**	**Non-owners**
n	49	46	56	52	46	41
median	7.5	8	2	3	3	3
range	8	8	2	2	6	7
WMW	-0,61		-1,10		-0,50	
Sign.	n.s.		n.s.		n.s.	

n = sample size
WMW = test-value Wilcoxon-Mann-Whitney test
Sign. = level of significance; n.s.: not significant

3.) Are there any differences between the user classes in terms of the overall strict and flexible strategy rating scores?

The Kruskal-Wallis test showed some significant difference for the overall strict and flexible strategy rating scores. The results are summarized in table 3.

Table 3. The overall strict and flexible strategy rating scores for the 6 user classes (Kruskal-Wallis test)

	Strict implementation strategies					
Class	Agriculture[a]	Forestry[abc]	Nature[c]	Hunting[ab]	Recreation[abc]	Non user[bc]
n	13	11	18	8	32	36
median	-0,83	-0,14	0,86	-0,71	0,43	0,36
range	3,86	3,14	3,00	2,14	3,40	3,86
KW	20,90					
Sign	***					
	Flexible implementation strategies					
Class	Agriculture[b]	Forestry[ab]	Nature[a]	Hunting[ab]	Recreation[ab]	Non user[a]
n	13	11	18	8	32	36
median	1,60	1,20	0,40	0,60	0,60	0,60
range	1,80	2,80	3,20	2,00	2,60	3,20
KW	17,02					
Sign	**					

n = sample size
KW = test-value Kruskal-Wallis test
Sign. = level of significance; ** = $p < 0.01$, *** = $p < 0.001$
Superscripts a, b and c show the different classes with a ≠ b ≠ c and ab not ≠ from a or b, bc not ≠ from b or c, abc not ≠ from a, b or c. The supercript a stands for a lower appreciation of the strategie then the superscript b, which on its turn stands for a lower appreciation of the strategie then the superscript c

When setting out the respondents of each user classes on a biplot with their overall strict and flexible strategy rating scores on the axes, a visualisation of the results from table 3 is obtained (figure 17 and 18).

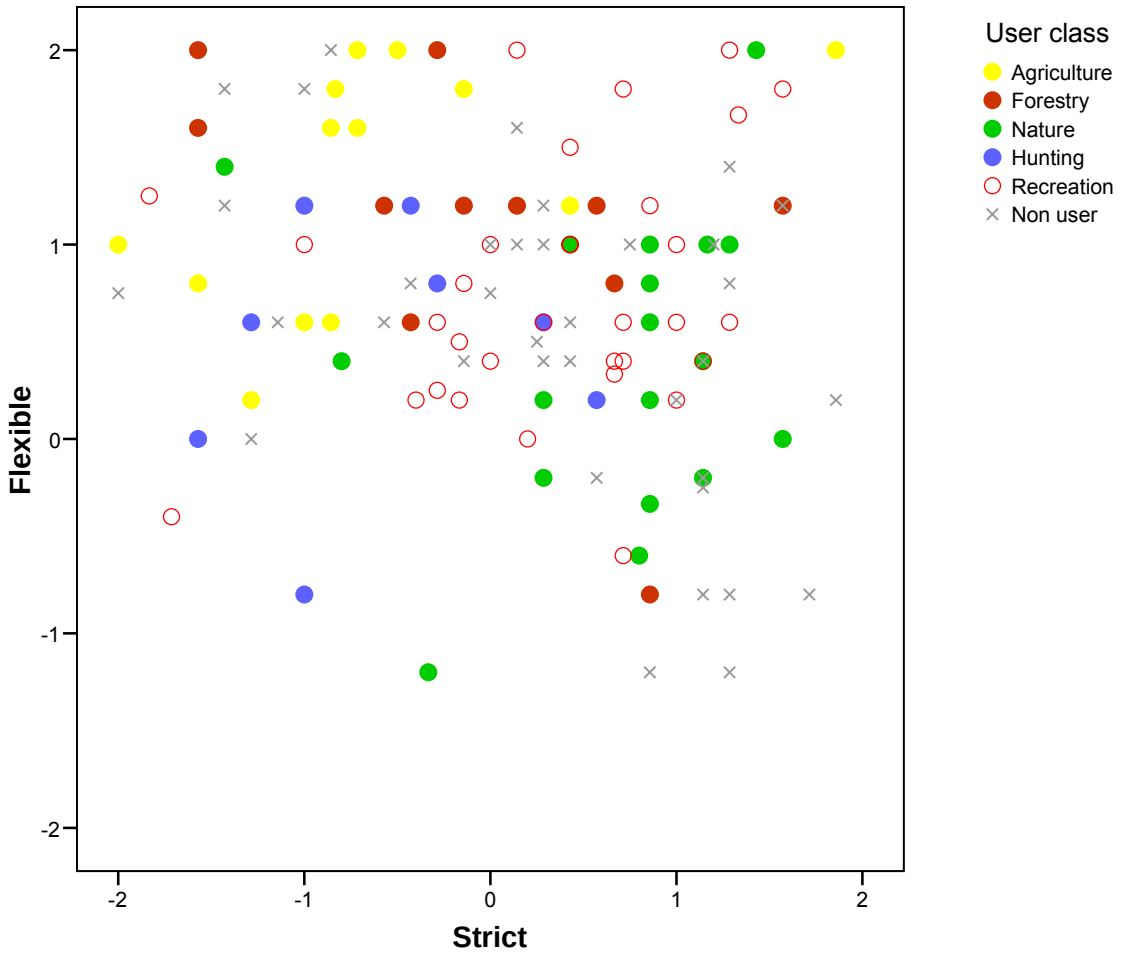

Figure 17: Biplot of the overall strict and flexible strategy rating scores for the respondents of each user class.

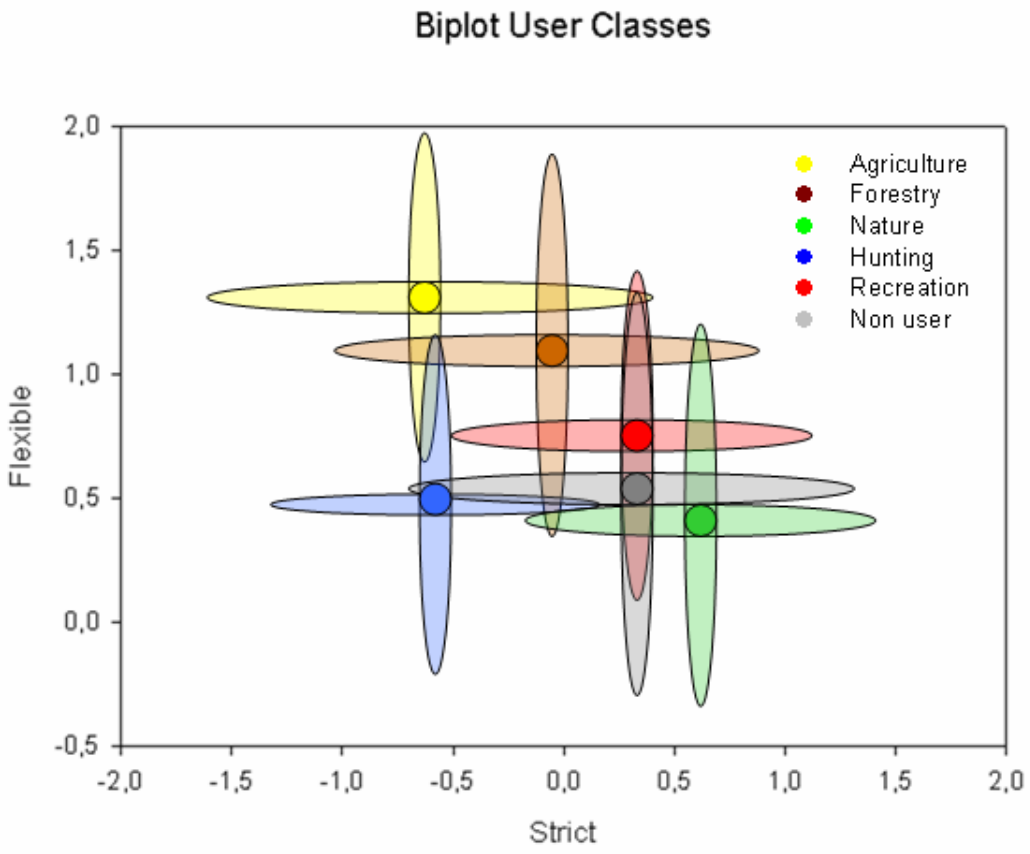

Figure 18: Biplot of the mean overall strict and flexible strategy rating scores (full coloured) and their standard deviations (transparent colours) of each user class.

4.) Are there any differences between the owners and non-owners of real estate in Natura 2000 areas in terms of the overall strict and flexible strategy rating scores?

The Wilcoxon-Mann-Whitney test that was carried out to investigate differences between the owners and non-owners of real estate in Natura 2000 areas in terms of the overall strict and flexible strategy rating scores pointed out that owners of real estate in Natura 2000 areas have significantly lower appreciation scores for the strict implementation strategies than non-owners. No differences were found for the flexible implementation strategies (table 4).

Table 4. The overall strict and flexible strategy rating scores for the owners and non-owners of real estate in Natura 2000 areas (Wilcoxon-Mann-Whitney test)

	Strict implementation strategies		**Flexible implementation strategies**	
Group	**Owners**	**Non-owners**	**Owners**	**Non-owners**
n	52	56	52	56
median	-0,23	0,43	0,70	0,68
range	3,86	3,71	3,20	3,20
WMW	-2,70		-1,04	
Sign.	**		n.s.	

n = sample size
WMW = test-value Wilcoxon-Mann-Whitney test
Sign. = level of significance; n.s.: not significant, ** = $p < 0.01$

When setting out the owners and non-owners of real estate in Natura 2000 areas on a biplot with their overall strict and flexible strategy rating scores on the axes, a visualisation of the results from table 4 is obtained (figure 19).

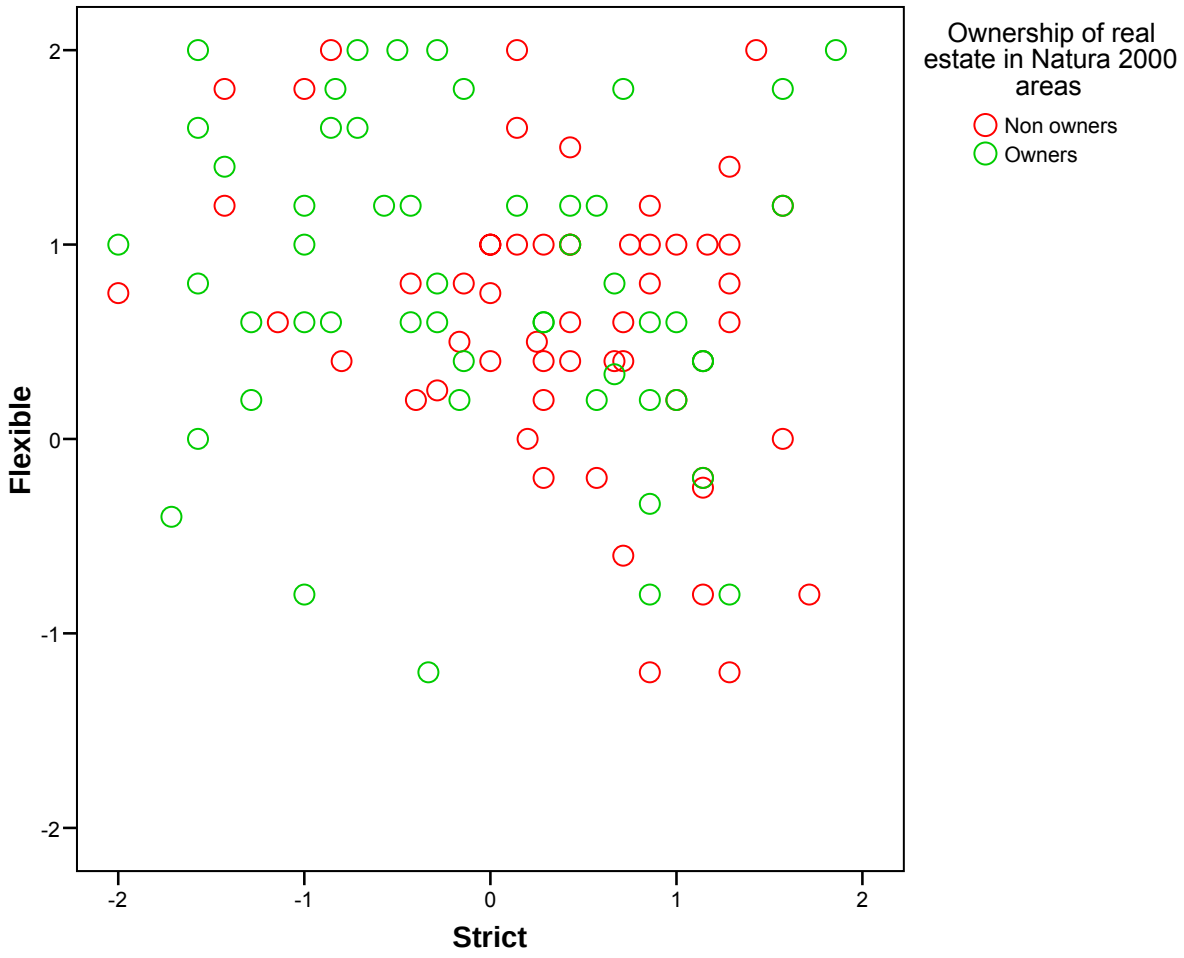

Figure 19: Biplot of the overall strict and flexible strategy rating scores for each owner and non-owner of real estate in Natura 2000 areas.

5.) To what extent are the appreciation scores of the different strategies mutually correlated?

The Spearman rank correlation test reveiled that near all of the strict strategies were mutually well correlated, as it was also the case for most flexible stratgies. Figure 20 shows a graphic presentation of the position of all the strategies in a 2-dimensional space, after all answers were subducted to a Non-metric Multidimensional Scaling. The correlations are visualised by means of connection lines.

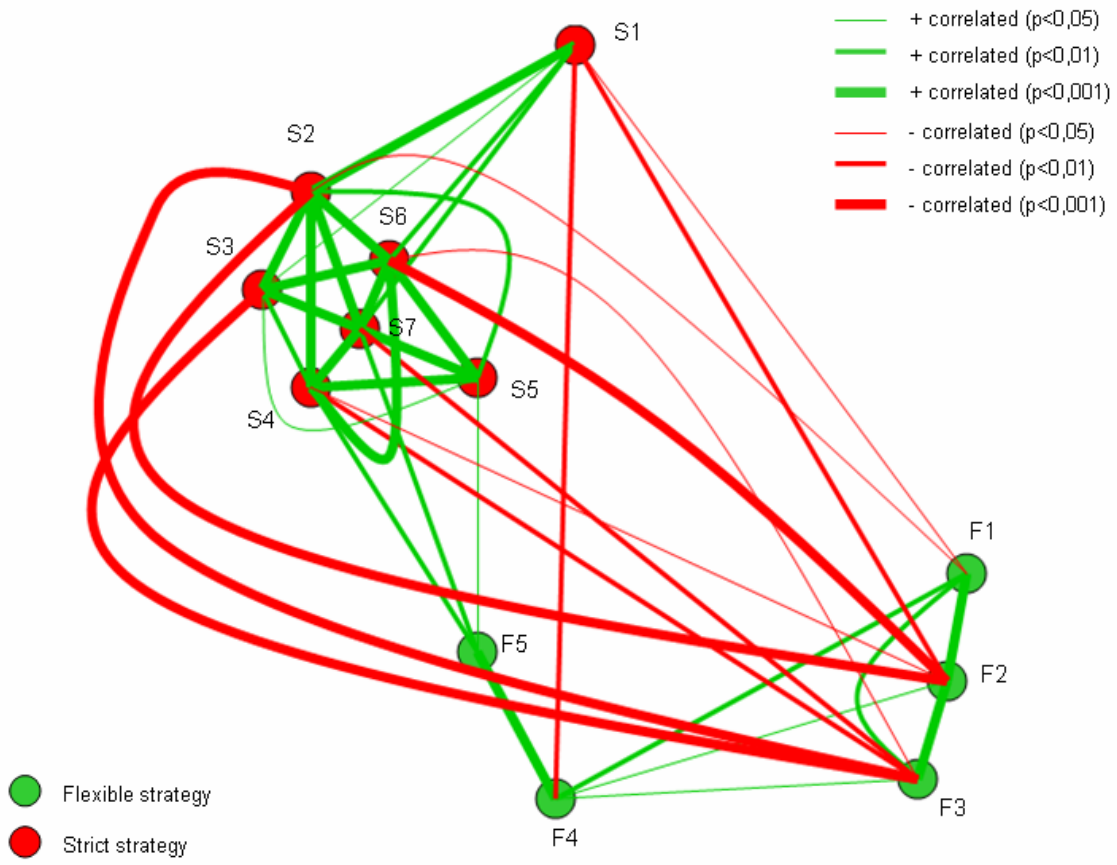

Figure 20: Visualisation of the different strategies in a 2 dimensional space.
Abbreviations of strategies: see table 6.

Furthermore, it became clear that the overall strict (flexible) strategy rating score was highly positively correlated with the strict (flexible) strategies individually (table 5).

Table 5. Spearman rank correlation coefficients for the strict (flexible) strategies with the overall appreciation score for the strict (flexible) strategy implementation

	S1	**S2**	**S3**	**S4**	**S5**	**S6**	**S7**
Overall strict strategy rating	0,51 ***	0,82 ***	0,70 ***	0,62 ***	0,48 ***	0,73 ***	0,75 ***
n	107	117	111	117	108	112	113
	F1	**F2**	**F3**	**F4**	**F5**		
Overall flexible strategy rating	0,57 ***	0,68 ***	0,67 ***	0,61 ***	0,53 ***		
n	115	117	109	107	113		

*** = $p < 0.001$
n = sample size

Table 6. The different strategies for Natura 2000 implementation as put forward in the enquiry

S1: It is not the task of the users to aid at helping reaching the Natura 2000 goals, even this might mean that users within Natura 2000 zones must hand over there grounds to the government.
S2: Nature goals in Natura 2000 zones can only be reached if these areas are managed by nature organisations and/or the government. The best protection for nature values is the purchase of land by these organisations and/or the government.
S3: Users making efforts within Natura 2000 zones must receive a compensation according to the reached goals. When the goals are not reached, the government is allowed to impose extra measures within these zones without providing financial compensations.
S4: The government should impose strict rules to the users within the Natura 2000 zones in order to protect certain nature values. The loss of income shall be compensated. If the rules are not respected, the government must intervene.
S5: The goals and rules within Natura 2000 areas should be set for the long term. Only then, users will adapt there activities because they have the certainty that these goals will not change on the short term.
S6: To be sure something happens on the terrain, the government itself must impose measures to the users. The efforts and income losses will be compensated and grounds will be purchased by the government.
S7: Users receive a compensation if the agreed results are reached. If these are not reached, the government can impose additional rules without having to compensate the users.
F1: The government should determine goals in consultation with the users. If users make sufficient efforts but the goals are not reached, than these goals must be able to be adapted after an evaluation.
F2: The government should particularly dedicate itself at informing and coaching the users. Users than can manage and develop nature values theirselves together with the least economic loss for their activities.
F3: Users are able to choose themselves wether they make efforts for nature in or outside the Natura 2000 zone. They must be compensated for the made efforts.
F4: Users that make efforts in or outside Natura 2000 zones in order to reach the goals for a Natura 2000 area are to be guaranteed they can compensate their income loss elsewhere so their possible loss is reduced to a minimum.
F5: A number of minimal restrictions should be in force for all users within the Natura 2000 zones. Users from in or outside Natura 2000 zones are compensated for the efforts they made that contribute to reaching the Natura 2000 goals.

S = strict strategie
F = flexible strategie

3. Analysis of open questions

Out of 145 registered respondents for the survey, a relatively high number of people made the effort to answer the open questions at the end of the survey. From these, 37 respondents gave their opinion on the question if Natura 2000 offers any opportunities for them. On the question what bottlenecks the users experience, 53 remarks were counted while for the general remarks about the questionnaire 32 responses were collected..

It can be concluded that there is a clear gap between the vision of people who are against and people who are pro Natura 2000. In total we received more than 20 negative responses about Natura 2000 and just under 20 positive responses. Many people were very clear and practical when describing the bottlenecks for Natura 2000 ("the green danger", "with our money", "we are punished", "my current activities will become impossible", "overload of regulations", "what about financial losses"). It is clear that many users (mainly farmers, foresters and landowners) are afraid of loosing their current activities and income. Another issue that is considered to be a problem is the lack of control mechanisms and enforcement. The people who responded in a positive way were somehow less practical in their responses ("possibilities for large scale management", "finally real protection of nature", "preservation of nice nature in my neighbourhood"). From a large group of people (+10) we received extra questions and remarks regarding the need for more information and consultation of stakeholders. It is very clear that a lot of people are not really familiar with the principles of Natura 2000 or want to be involved in the process. One landowner who owns more than 400ha said he was never even consulted in the process of designation of his own property. Furthermore, about 5 people mentioned their concern for financial aspects such as loss of income or financing the Natura 2000 process from designation over implementation and management. A last group of people made remarks that relate more to the recreational aspect of Natura 2000. Some people are concerned that nature protection will close more and more sites for recreation while others tended to see many opportunities for recreation in these 'new nature reserves'.

It can be concluded from the open answers that:

- people who are "against Natura 2000" focus very much on the practical implications and consequences for their activities and property (future activities, value, …)
- people who are "in favour of Natura 2000" are looking much more at the objectives for nature protection and they care less about the practical consequences on the terrain (or at least they did not express their concern in this survey).
- Recreation is often seen as an opportunity for Natura 2000 acceptance and Natura 2000 is seen as an opportunity for recreation, although also some concerns in this matter were put forward.
- People clearly took the effort to ask for more information and participation in the Natura 2000 process.

References

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Siegel, S., Castellan, N. J. J., 1988. Nonparametric statistics for the behavioral sciences, second edition. McGraw-Hill book company, Singapore, 399 p.

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Selnat-project: bevraging lokale gebruikers

Beste,

Momenteel wordt in Vlaanderen het Europese Natura 2000 netwerk in de praktijk gerealiseerd. De realisatie gebeurt door verschillende initiatieven en maatregelen. Wij zijn benieuwd naar uw mening. **Waarmee moet volgens u rekening gehouden worden, welke maatregelen zijn voor u haalbaar, …?**

Deze bevraging kadert in een onderzoeksproject voor het Federale Wetenschapsbeleid over de aanpak van de implementatie van het Europese netwerk Natura 2000 in Vlaanderen en Wallonië. Doelstelling van dit onderzoek is om aanbevelingen te doen voor een betere implementatie van Natura 2000.
Bij de verwerking van de resultaten van deze bevraging wordt alle anonimiteit gegarandeerd.

Het invullen van de bevraging kost ongeveer 20 minuten. Volgende onderdelen komen aan bod:
1. Een eerste deel bevat algemene vragen over uw **kennis**;
2. In een tweede luik vragen wij **uw mening** over een aantal stellingen met betrekking tot maatregelen voor Natura 2000;
3. In het derde luik stellen wij u een aantal vragen over uw leeftijd, woonplaats, beroepsachtergrond.

Wij danken u alvast voor uw bereidwillige medewerking!!

Indien u op de hoogte wilt gebracht worden van de resultaten van deze bevraging, kan u uw emailadres op het einde van de enquête achterlaten.

Het SELNAT-team.

Voor inhoudelijke vragen over deze bevraging kan u steeds contact opnemen met Jan Vincke (jav@resource.be). Voor technische bijstand voor deze survey kan u steeds contact opnemen met Jeroen Verstraete, (jvr@technum.be, tel. 09/ 242 92 13).

Algemene vragen over natuurbeleid en Natura2000.

Onderstaand vindt u enkele algemene vragen om te peilen naar uw kennis van enkele begrippen uit het natuurbeleid en Natura 2000 specifiek.

1.

Van welke van de onderstaande begrippen in verband met natuurbeleid hebt u reeds gehoord?

	Nooit van gehoord	Is mij bekend
VEN	O	O
Natuurverwevingsgebied	O	O
Natuurreservaat	O	O
Groengebied	O	O
Habitatrichtlijngebied	O	O
Natuurinrichtingsproject	O	O
Natuurrichtplan	O	O

2.

Hoe goed bent u vertrouwd met Natura 2000? *

Duid onderstaand een van de opties aan over uw ervaring en kennis over Natura 2000. Deze vraag is verplicht.

O Ik heb nog nooit gehoord van Natura 2000.
O Ik heb al van Natura 2000 gehoord en/of gelezen.
O Ik ken de basisprincipes, de doelstellingen en het wetgevend kader van Natura 2000.
O Ik ben betrokken (geweest) bij acties op het terreinen gelegen binnen Natura 2000.

3.

Gelieve aan te geven of onderstaande stellingen volgens u correct zijn.

	Niet waar	Waar	Weet ik niet
In Natura 2000 gebieden komt de ontwikkeling van de natuur op de eerste plaats.	O	O	O
In Natura 2000 gebieden is ook plaats voor economische activiteiten.	O	O	O
Natura 2000 gebieden zijn extra beschermde Europese natuurreservaten.	O	O	O
In Natura 2000 gebieden vind je ook landbouwgrond, industrieterreinen, recreatiegebieden of stedelijk gebied.	O	O	O
Natura 2000 gebieden vormen een netwerk van beschermde gebieden gericht op het beschermen van unieke natuurwaarden in Europa.	O	O	O
In Natura 2000 gebieden moeten activiteiten die schadelijk zijn voor de natuur stopgezet of aangepast worden.	O	O	O

4.

Over welke van onderstaande aspecten van Natura 2000 zou u graag meer willen weten?

	Ik wil hier meer over weten	Ik weet hier voldoende over	Geen interesse
De wetgeving	O	O	O
De algemene doelstellingen op Europees niveau	O	O	O
De achterliggende ecologische principes	O	O	O
De concrete consequenties voor mijn activiteiten	O	O	O
De ligging van de gebieden in mijn buurt	O	O	O
De manier waarop ik een bijdrage kan leveren	O	O	O
De doelstellingen voor de gebieden in mijn buurt	O	O	O

Uw visie op Natura 2000

In onderstaande vragen willen wij van u weten wat uw visie is op een successvolle implementatie van de Natura2000 gebieden.

Bij de vorige vragen wilden we te weten komen wat uw kennis is over Natura2000.
Hieronder geven wij onze omschrijving van Natura2000.
Gelieve bij het beantwoorden van de resterende vragen deze omschrijving in overweging te nemen.

*Natura 2000 is een **netwerk van beschermde gebieden** binnen de Europese Unie met als doel **belangrijke natuurwaarden** (soorten en leefomgevingen) **te beschermen** voor de volgende generaties. De aanduiding van een gebied als Natura 2000 gebied moet de biodiversiteit **herstellen en/of beschermen**.*

*De Europese regelgeving **sluit economisch of ander gebruik** van deze Natura 2000 gebieden echter **niet uit**, vooral omdat het in de praktijk vaak uit een combinatie van natuurgebied, landbouwgebied, bosgebied, … bestaat. Ook industrie- en woongebieden kunnen hierin voorkomen. Omdat het hier gaat over plaatsen waar er meestal natuur is, wordt er vaak ook gevist, gejaagd, gewandeld, gefietst, paardgereden,…*

*Op een aantal plaatsen is het echter zeer slecht gesteld met de dieren en planten en hun leefomgeving en moet de natuur '**opnieuw gemaakt of hersteld**' worden, soms ten koste van landbouw, bosbouw of andere activiteiten.*

In dit onderdeel vragen wij dus uw **mening als gebruiker en/of eigenaar** over het mogelijk beheer van deze natuurgebieden. Met 'gebruikers' bedoelen we onder andere land- en bosbouwers, natuurliefhebbers, recreanten, jagers, ...

5.

Onderstaand worden een aantal stellingen gepresenteerd. Geef voor iedere stelling weer of u het ermee eens bent of niet, rekening houdend met de bovenstaande omschrijving van Natura2000.

	Niet eens	Eens	Geen mening
In Natura 2000 gebieden moet een gebruiker vergoed worden voor de inspanningen die hij levert voor Natura 2000	O	O	O
Doelstellingen in Natura 2000 gebieden moeten bijgesteld kunnen worden	O	O	O
De overheid moet de natuur in Natura 2000 gebieden beheren	O	O	O
In Natura 2000 gebieden moet een belanghebbende vergoed worden voor de resultaten die hij levert voor Natura 2000	O	O	O
In Natura 2000 gebieden moeten gebruikers van het gebied mee instaan voor het beheer	O	O	O
Doelstellingen voor Natura 2000 gebieden moeten			

Uw visie op de implementatie

vraag 6 tot 10 over uw visie

Voor het bereiken van de natuurdoelstellingen zijn meerdere pistes mogelijk. We zijn benieuwd naar de pistes die u vanuit uw huidig gebruik zou kiezen. Geef voor de onderstaande pistes aan in welke mate u er al dan niet akkoord mee zou gaan.

6.

Gebruikers die binnen Natura 2000 gebieden **inspanningen** leveren voor de Natura 2000 doelstellingen moeten een vergoeding krijgen volgens de bereikte **doelstellingen**. Indien de doelstellingen niet gehaald worden, mag de overheid bijkomende maatregelen binnen Natura 2000 gebieden opleggen **zonder** financiële compensaties te voorzien.

Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

7.

De overheid moet zich vooral richten op het informeren en begeleiden van de gebruikers. Gebruikers kunnen de natuurwaarden dan samen zelf beheren en

Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

8.

De overheid moet binnen de Natura 2000 gebieden **strikte regels aan de gebruikers opleggen** om bepaalde natuurwaarden te beschermen. Minder opbrengsten zullen worden **vergoed**. Indien de regels niet nageleefd worden, dan moet de overheid ingrijpen.

Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

9.

Een aantal minimale beperkingen moeten gelden voor alle gebruikers **binnen** Natura 2000 gebieden. Gebruikers van **binnen of buiten** Natura 2000 gebieden worden vergoed voor de geleverde **inspanningen** die een bijdrage leveren aan het bereiken van de natuurdoelstellingen van Natura 2000.

Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

10.

Gebruikers die **binnen of buiten** Natura 2000 gebieden **inspanningen** leveren om de doelstellingen in een Natura 2000 gebied te behalen, krijgen de garantie dat ze hun verlies ergens anders mogen compenseren zodat eventueel verlies minimaal is.

Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

Uw visie op de implementatie

vraag 11 tot 17 over uw visie

Voor het bereiken van de natuurdoelstellingen zijn meerdere pistes mogelijk. We zijn benieuwd naar de pistes die u vanuit uw huidig gebruik zou kiezen. Geef voor de onderstaande hypothetische werkwijzen aan in welke mate u er al dan niet akkoord mee zou gaan.

11.

De natuurdoelstellingen in Natura 2000 gebieden kunnen enkel behaald worden indien deze gebieden **beheerd worden door natuurorganisaties en / of de overheid**. De beste bescherming voor de natuurwaarden is de **aankoop van gronden** door deze organisaties en/of de overheid

	Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

12.

Gebruikers krijgen een **vergoeding** als de afgesproken **resultaten** bereikt worden. Als ze de resultaten niet bereiken, mag de overheid **bijkomende regels** opleggen **zonder** dat gebruikers daarvoor vergoed worden.

	Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

13.

De overheid moet **doelstellingen vastleggen in overleg met de gebruikers**. Als gebruikers zich voldoende inspannen maar de doelstellingen worden niet gehaald dan moeten deze doelstellingen **na een evaluatie aangepast kunnen worden.**

	Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

14.

Gebruikers kiezen zelf of ze **binnen of buiten** het Natura2000 gebied inspanningen voor natuur doen. Ze moeten worden vergoed voor de geleverde **inspanningen**.

	Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

15.

Het is **niet de taak van gebruikers** om de Natura 2000 doelstellingen mee te helpen halen ook al wil dit misschien zeggen dat gebruikers **hun gronden** binnen Natura 2000 gebieden **moeten afstaan aan de overheid**

	Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen menir
Uw mening	O	O	O	O	O

16.

De doelstellingen en regels zouden op **langere termijn binnen** Natura 2000 gebieden moeten worden vastgelegd. Gebruikers zullen dan hun **activiteiten aanpassen** omdat ze dan de **zekerheid** hebben dat de doelstellingen op lange termijn **niet zullen wijzigen**.

	Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

17.

Om zeker te zijn dat er op terrein iets gebeurt, moet de **overheid zelf maatregelen opleggen** aan gebruikers. De **inspanningen of het verlies** van inkomsten zullen worden **vergoed** en gronden worden door de overheid aangekocht

	Helemaal eens	Eerder eens	Eerder oneens	Helemaal oneens	Geen mening

Uw mening	O	O	O	O	O

Profiel van de respondent

Om af te sluiten zouden wij u nog enkele vragen willen stellen zodat wij een profiel van u kunnen opmaken. Tevens willen wij u de mogelijkheid geven nog opmerkingen op Natura 2000 of deze bevraging aan de onderzoekers door te geven

18.

Wat is uw beroepsactiviteit?

	Beroepsgroep
Ongeschoold personeel en beschutte werkplaatsen	O
Machine- en installatiebestuurders, montagearbeiders	O
Ambachtsberoepen en ambachtelijke beroepen	O
Landbouwers en geschoolde arbeiders in de landbouw en de visserij	O
Dienstverlenend en verkooppersoneel	O
Bedienden in administratieve functies	O
Intermediaire functies	O
Intellectuelen en wetenschappelijke beroepen	O

19.

Opleidingsniveau

Geen diploma	O
Technisch onderwijs	O
Secundair onderwijs	O
Hoger onderwijs korte type	O
Hoger onderwijs lange type	O
Universiteit	O

20.

Leeftijd

21.

Woonplaats

22.

Bent u eigenaar en/of gebruiker van onroerend goed (woning, grond….) in een Natura 2000 gebied?

Profiel van de respondent (vervolg)

23.

Wat voor gebruiker bent u in het Natura 2000 gebied (van de Demer)?

	Meerdere opties mogelijk
landbouwer	O
bosbouwer	O
landeigenaar	O
jager	O
visser	O
natuurbeheerder	O
natuurliefhebber	O
wandelaar	O
fietser	O
ruiter	O
overage	O

24.

Indien u bij de vorige vraag 'overige' hebt geantwoord, kan u dit onderstaand verduidelijken.

25.

Welke kansen geeft Natura 2000 voor u/uw gebruik in het gebied?

26.

Welke zijn de belangrijkste problemen die Natura 2000 voor u met zich meebrengen?

27.

Hebt u nog algemene opmerkingen of vragen? Hier kan u zowel over Natura 2000 als over deze bevraging uw opmerkingen kwijt

28.

Indien u op de hoogte wil gebracht worden van de resultaten van deze bevraging, kan u onderstaand uw emailadres achterlaten.

APPENDIX 7 WALLOON SURVEY 3

7.1 Questions survey

7.1.1 Questionnaire : Agriculteurs du site de la Lesse

0) Au préalable : connaissance de Natura 2000 (après s'être introduit brièvement ?

Qu'est-ce qui vous vient à l'esprit en premier lieu lorsque l'on vous parle de Natura 2000 ?

Qu'est-ce pour vous Natura 2000 ? Quel est son but ?

Etes-vous impliqués dans le réseau Natura 2000 ? Si oui, à quelle(s) occasion(s) ?

Considérez-vous le réseau Natura 2000 comme étant positif/négatif, quels avantages/désavantages en retirez-vous ?

Pensez-vous que l'on arrivera à mettre en place le réseau Natura 2000 ? Est-ce possible de stopper le déclin de la biodiversité ? Si non, pourquoi ?

Avez-vous changé d'avis sur Natura 2000 avec le temps ? Si oui, pourquoi et de quelle manière ?

1) Contexte : [brève intro sur Natura 2000 et sur les objectifs de l'étude et les équipes]

Le Réseau Natura 2000 est un réseau écologique qui est issu de l'application des directives européennes « Oiseaux » (79/409/CEE) et « Faune-Flore-Habitats » (92/43/CEE). Il se construit dans chaque Etat ou Région membre de la Communauté européenne et a pour but de concilier les différentes utilisations du territoire avec la lutte contre l'érosion de la diversité biologique.

Les populations d'espèces et les habitats menacés au niveau européen doivent être maintenus dans un état favorable de conservation mais il est important de signaler que cela n'empêche pas toutes les activités de l'homme. La plupart de ces activités pourront être maintenues à la condition qu'elles ne soient une menace ni pour les espèces ni pour les habitats ciblés par le réseau Natura 2000. Tandis qu'en ce qui concerne les espaces plus strictement protégés, elles seront limitées voire interdites.

La mise en application de Natura 2000, par les Régions flamande et wallonne, ne se fait pas sans difficulté. C'est un processus long dans lequel il faut prendre en compte diverses parties prenantes.

Il est important de mener à bien ce processus. C'est pourquoi, le projet Selnat, intitulé « How to make Natura 2000 work properly ? » a été mis en place. Il s'agit d'un projet de recherche de la Politique Scientifique Fédérale visant à étudier la mise en œuvre du réseau européen Natura 2000 en Région wallonne et en Région flamande. L'objectif de cette étude est de pouvoir formuler des recommandations pour une mise en œuvre durable et intégrée de Natura 2000. Le projet est constitué d'une équipe multidisciplinaire de différentes universités et bureau de recherche belge ; les disciplines suivantes sont représentées : l'écologie, le droit, la sociologie ainsi que l'économie.

Par le biais de cette enquête, nous aimerions avoir l'opinion des acteurs de terrain impliqués dans le processus Natura 2000 sur le site de la Lesse entre Villers-sur-Lesse et Chanly. Plus particulièrement, nous avons ciblé les agriculteurs, les forestiers, les communes, le secteur du tourisme ainsi que les entreprises sur le site. Les résultats de cette enquête ne seront utilisés que dans le cadre de cette étude et l'anonymat des participants est garanti.

L'application de Natura 2000 ne pourra aboutir sans une parfaite concertation de toutes les acteurs ainsi qu'une prise en compte de leurs idées et critiques. C'est pourquoi, nous vous remercions déjà du temps consacré à cette enquête.

2) Mise en situation

Deux grands types d'habitats naturels ou d'espèces d'intérêt communautaire sont directement gérés par les agriculteurs car faisant partie du « domaine agricole » :

- les prairies et le bocage
- les cultures (ex : Grand Hamster ; Busard cendré)

En outre, votre activité peut avoir des incidences sur des habitats ou espèces en dehors du domaine agricole (par ex. dans les cours d'eau)

Le régime Natura 2000 implique de réaliser des « objectifs de conservation du site », c'est-à-dire de maintenir ou rétablir, dans le périmètre du site, certains habitats ou des populations de certaines espèces menacés en « bon état de conservation ». Il s'agit d'obligations de résultat pour les pouvoirs publics, qui doivent donc mettre tout en œuvre pour réaliser ces objectifs de conservation. Ces obligations nécessitent donc l'adoption :

- de **mesures de protection**, pour éviter la détérioration des habitats et la perturbation significative des espèces pour lesquels le site est désigné ET/OU
- des **mesures de gestion active** (entretien et amélioration) en vue de recréer les conditions écologiques nécessaires pour assurer la pérennité des habitats et populations d'espèces pour lesquels le site est désigné ET/OU
- des **mesures de restauration**, en vue de recréer des habitats d'intérêt communautaire à partir d'habitats artificiels ou dégradés (cultures, prairies amendées, etc.)

Ces mesures peuvent être réalisées de différentes façons et différents instruments juridiques. L'objet du présent questionnaire est de vous permettre de donner votre opinion sur ce qui vous paraît constituer une manière « durable » de réaliser ces objectifs au travers des différentes mesures de protection, de gestion et/ou de restauration qui s'avèrent nécessaires à cet effet.

3) Education et information

3.1 Que pensez-vous de l'information[1] dans le processus Natura 2000 ? Est-ce un instrument utile ?

- Pour le grand public ?
- Pour les gestionnaires sur le site ?
- Pour les fins de la conservation de la nature ?

3.2 Quel est le rôle de l'instrument « éducation[2] » pour Natura 2000 ?

3.3. Comment peut-on impliquer le grand public dans Natura 2000 ? Et pour la conservation de la nature en général ?

[1] Campagnes de communication : Campagnes de communication concernant Natura 2000 et ayant comme objectif de faire connaître le projet, les processus, … aux personnes intéressées et au grand public en général.

[2] Programmes d'éducation : Programmes adressés aux personnes directement concernées et au grand public en général pour donner des informations développées au sujet de Natura 2000 et la nécessité générale de conserver la nature. On explique plus précisément ce qu'est le réseau, comment il est constitué et pourquoi, quels sont ses objectifs et comment les atteindre.

Que pensez-vous d'instaurer un droit d'entrée dans une réserve naturelle (participation aux frais des visiteurs) ?

3.4. Etes-vous prêt, en tant que particulier, à payer pour la protection de la nature. Si oui, combien (0, 50, 100 €/an ou plus ?) et de quelle manière (taxes générale, droit d'entrée de domaine, de parcs ou de site particulier, taxe sur l'Horeca dans la région) ?

4) Les objectifs de conservation du site

4.0. Acceptez-vous que les « objectifs de conservation » du site soient fixés par l'Union européenne et la Région wallonne sur les terres que vous exploitez ?

OUI – NON- PAS D'OPINION
Commentaire :

4.1. Pensez-vous que la fixation des OC doit faire l'objet d'une concertation au niveau local ?

4.2. Pensez-vous qu'il importe de garder une flexibilité dans la définition des OC ?

4.3. Estimez-vous que le caractère contraignant des OC pour l'autorité (notamment dans la délivrance des permis) est un bon moyen de préserver les habitats et les espèces ?

5) La protection du site

5.1. Etes-vous prêt à réduire l'intensité de vos pratiques agricoles (par ex. la quantité d'engrais épandu) pour réaliser les OC sur le site ?

Si oui, selon quel moyen juridique de la part des autorités :
- les interdictions d'exercer certaines pratiques dommageables, sauf dérogation
- la soumission à permis de ces pratiques, accompagné d'une évaluation des incidences et de l'obligation, pour l'autorité qui délivre le permis de respecter les OC, sauf dérogation (mécanisme dit « d'évaluation appropriée »)
- la soumission à notification de ces pratiques, avec interdiction au cas par cas par l'autorité, en fonction de l'impact
- l'adoption d'incitants économiques positifs (subventions, MAE,…)
- l'adoption d'incitants économiques négatifs (écoconditionnalité)
- l'adoption de mesures foncières (rachat des terres ; expropriation ; droit de préemption ; remembrement)
- une combinaison de ces mesures

5.2. Comment pensez-vous que les autorités devraient gérer la question des incidences des pratiques agricoles exercées à l'extérieur des sites pour garantir la réalisation des OC ? Par :
- des interdictions sauf dérogation applicables à ces pratiques
- la soumission de certaines de ces pratiques à permis et donc évaluation des incidences
- l'encouragement, par ex. par un surcroît de prime, à l'adoption de MAE dans une zone tampon autour des sites
- une combinaison de ces mesures ?

5.3. Estimez-vous que la conditionnalité en agriculture est un moyen :
- techniquement approprié pour faire respecter les obligations de protection des sites Natura 2000 contenues dans la conditionnalité par les agriculteurs
- légitime de contraindre l'agriculteur à respecter les obligations de protection des sites Natura 2000 contenues dans la conditionnalité
- proportionné eu égard à l'impact d'une suppression des aides pour l'agriculteur
- discriminatoire par rapport aux autres catégories d'utilisateur non soumis à la conditionnalité (par ex. les forestiers) ?

5.4 Quels sont les pertes de revenus que vous estimez devoir être prises en charge par la collectivité via une indemnisation appropriée ?
- la perte de revenu lié à une réduction de l'intensité de l'activité existante
- la perte de la valeur immobilière du bien concerné par les mesures de protection
- le coût d'opportunité lié à l'impossibilité d'envisager d'autres activités plus intensives qu'actuellement

6) La gestion active du site

6.1. Quels moyens vous paraissent les plus appropriés pour assurer l'entretien des habitats naturels ou d'espèces liés au milieu agricole ?

- le contrat de gestion avec l'agriculteur
- les MAE
- la substitution des pouvoirs publics ou d'ONG de protection de la nature aux agriculteurs pour assurer la gestion
- les mesures foncières (expropriation, remembrement, etc.)

6.2. Quelle sanction estimez-vous appropriée lorsque l'agriculteur ne respecte pas ses engagements ?
- une sanction administrative (amende redevable à l'administration)
- une suppression de la subvention
- une suppression des autres aides (écoconditionnalité)
- aucune sanction

7) La restauration de certains habitats

7.1. Estimez-vous qu'il peut être nécessaire et légitime de restaurer des habitats naturels à partir d'habitats agricoles intensifiés, dégradés ou artificialisés (comme un champ de maïs ou une plantation de résineux par ex.) ?

7.2. Si oui, quels moyens vous paraissent les plus appropriés pour assurer cette restauration ?

- le contrat de gestion avec l'agriculteur
- les MAE
- la substitution des pouvoirs publics ou d'ONG de protection de la nature aux agriculteurs pour assurer la gestion
- les mesures foncières (expropriation, remembrement, etc.)

8) Stratégie globale de gestion des sites Natura 2000 au niveau local

Quelle stratégie vous paraît à même d'atteindre de façon « durable » les OC sur le site

- Uniquement des mesures de protection contraignantes (interdictions, permis),
- Mesures de protection contraignantes (interdictions, permis) ; mesures de gestion et de restauration strictement consensuelles
- Mesures de protection et de gestion et/ou restauration strictement consensuelles
- Mesures foncières de manière à assurer aux pouvoirs publics une maîtrise foncière des terres sises en site Natura 2000
- Une combinaison de ces mesures
- Aucune de ces mesures

7.1.2 Questionnaire : communes du site de la Lesse

1) Au préalable : connaissance de Natura 2000

Qu'est-ce qui vous vient à l'esprit en premier lieu lorsque l'on vous parle de Natura 2000 ?

Qu'est-ce pour vous Natura 2000 ? Quel est son but ?

Etes-vous impliqués dans le réseau Natura 2000 ? Si oui, à quelle(s) occasion(s) ?

Considérez-vous le réseau Natura 2000 comme étant positif/négatif, quels avantages/désavantages en retirez-vous ?

Pensez-vous que l'on arrivera à mettre en place le réseau Natura 2000 ? Est-ce possible de stopper le déclin de la biodiversité ? Si non, pourquoi ?

Avez-vous changé d'avis sur Natura 2000 avec le temps ? Si oui, pourquoi et de quelle manière ?

Contexte :

Le Réseau Natura 2000 est un réseau écologique qui est issu de l'application des directives européennes « Oiseaux » (79/409/CEE) et « Faune-Flore-Habitats » (92/43/CEE). Il se construit dans chaque Etat ou Région membre de la Communauté européenne et a pour but de concilier les différentes utilisations du territoire avec la lutte contre l'érosion de la diversité biologique.

Les populations d'espèces et les habitats menacés au niveau européen doivent être maintenus dans un état favorable de conservation mais il est important de signaler que cela n'empêche pas toutes les activités de l'homme. La plupart de ces activités pourront être maintenues à la condition qu'elles ne soient une menace ni pour les espèces ni pour les habitats ciblés par le réseau Natura 2000. Tandis qu'en ce qui concerne les espaces plus strictement protégés, elles seront limitées voire interdites.

La mise en application de Natura 2000, par les Régions flamande et wallonne, ne se fait pas sans difficulté. C'est un processus long dans lequel il faut prendre en compte diverses parties prenantes.

Il est important de mener à bien ce processus. C'est pourquoi, le projet Selnat, intitulé « How to make Natura 2000 work properly ? » a été mis en place. Il s'agit d'un projet de recherche de la Politique Scientifique Fédérale visant à étudier la mise en œuvre du réseau européen Natura 2000 en Région wallonne et en Région flamande. L'objectif de cette étude est de pouvoir formuler des recommandations pour une mise en œuvre durable et intégrée de Natura 2000. Le projet est constitué d'une équipe multidisciplinaire de différentes universités et bureau de recherche belge ; les disciplines suivantes sont représentées : l'écologie, le droit, la sociologie ainsi que l'économie.

Par le biais de cette enquête, nous aimerions avoir l'opinion des acteurs de terrain impliqués dans le processus Natura 2000 sur le site de la Lesse entre Villers-sur-Lesse et Chanly. Plus particulièrement, nous avons ciblé les agriculteurs, les forestiers, les communes, le secteur du tourisme ainsi que les entreprises sur le site. Les résultats de cette enquête ne seront utilisés que dans le cadre de cette étude et l'anonymat des participants est garanti.

L'application de Natura 2000 ne pourra aboutir sans une parfaite concertation de toutes les acteurs ainsi qu'une prise en compte de leurs idées et critiques. C'est pourquoi, nous vous remercions déjà du temps consacré à cette enquête.

2) Mise en situation :

Plusieurs grands types d'habitats naturels ou d'espèces d'intérêt communautaire sont directement gérés par les communes propriétaires de terres agricoles ou de forêts.

En outre, le rôle de la commune en tant qu'autorité compétente pour délivrer des permis ou des autorisations et adopter des plans, notamment d'aménagement du territoire, est capital puisqu'elle est à ce titre l'autorité chargée de contrôler un nombre important d'activités pouvant impacter le réseau écologique.

Le régime Natura 2000 implique de réaliser des « objectifs de conservation du site », c'est-à-dire de maintenir ou rétablir, dans le périmètre du site, certains habitats ou des populations de certaines espèces menacés en « bon état de conservation ». Il s'agit d'obligations de résultat pour les pouvoirs publics, qui doivent donc mettre tout en œuvre pour réaliser ces objectifs de conservation. Ces obligations nécessitent donc l'adoption :

- de **mesures de protection**, pour éviter la détérioration des habitats et la perturbation significative des espèces pour lesquels le site est désigné ET/OU
- des **mesures de gestion active** (entretien et amélioration) en vue de recréer les conditions écologiques nécessaires pour assurer la pérennité des habitats et populations d'espèces pour lesquels le site est désigné ET/OU
- des **mesures de restauration**, en vue de recréer des habitats d'intérêt communautaire à partir d'habitats artificiels ou dégradés (cultures, prairies amendées, etc.)

Ces mesures peuvent être réalisées de différentes façons et différents instruments juridiques. L'objet du présent questionnaire est de vous permettre de donner votre opinion sur ce qui vous paraît constituer une manière « durable » de réaliser ces objectifs au travers des différentes mesures de protection, de gestion et/ou de restauration qui s'avèrent nécessaires à cet effet.

3) Les objectifs de conservation du site

3.0. Acceptez-vous que les « objectifs de conservation » du site soient fixés par l'Union européenne et la Région wallonne sur vos propriétés et votre territoire communal ?

OUI – NON- PAS D'OPINION
Commentaire :

3.1. Pensez-vous que la fixation des OC doit faire l'objet d'une concertation au niveau local ?

3.2. Pensez-vous qu'il importe de garder une flexibilité dans la définition des OC ?

3.3. Estimez-vous que le caractère contraignant des OC pour l'autorité (notamment dans la délivrance des permis) est un bon moyen de préserver les habitats et les espèces ?

4) La protection du site

4.1. Etes-vous prêt à adapter la gestion de votre territoire communal pour réaliser les OC sur le site ?

Si oui, selon quel moyen juridique de la part des autorités :
- les interdictions d'exercer certaines pratiques dommageables, sauf dérogation
- la soumission à permis de ces pratiques, accompagné d'une évaluation des incidences et de l'obligation, pour l'autorité qui délivre le permis de respecter les OC, sauf dérogation (mécanisme dit « d'évaluation appropriée »)

- la soumission à notification de ces pratiques, avec interdiction au cas par cas par l'autorité, en fonction de l'impact
- l'adoption d'incitants économiques positifs (subventions, MAE,…)
- l'adoption de mesures foncières (rachat des terres ; expropriation ; droit de préemption ; remembrement)
- une combinaison de ces mesures

4.2. Comment pensez-vous que les autorités devraient gérer la question des incidences des pratiques agricoles exercées à l'extérieur des sites pour garantir la réalisation des OC ? Par :
- des interdictions sauf dérogation applicables à ces pratiques
- la soumission de certaines de ces pratiques à permis et donc évaluation des incidences
- l'encouragement, par ex. par un surcroît de prime, à l'adoption de MAE dans une zone tampon autour des sites
- une combinaison de ces mesures ?

4.3. Estimez-vous que l'évaluation appropriée des incidences (évaluation scientifique eu égard aux objectifs de conservation) et le critère d'autorisation lié à la certitude d'absence d'impact est un mécanisme :
- techniquement approprié pour faire respecter les obligations de protection des sites Natura 2000
- légitime de contraindre le demandeur d'effectuer une évaluation
- proportionné eu égard à la charge que représente cette évaluation
- possible à mettre en œuvre en pratique (application stricte du principe de précaution)?

5) La gestion active du site

Quels moyens vous paraissent les plus appropriés pour assurer l'entretien des habitats naturels ou d'espèces?

- le contrat de gestion, outil négocié, adapté à chaque situation
- les subventions contrat d'adhésion : primes liées à un cahier des charges précis
- la substitution par les pouvoirs publics ou des ONG de protection de la nature pour assurer la gestion
- les mesures foncières (expropriation, remembrement, etc.)

6) La restauration de certains habitats

6.1. Estimez-vous qu'il peut être nécessaire et légitime de restaurer des habitats naturels à partir d'habitats intensifiés, dégradés ou artificialisés (comme un champ de maïs ou une plantation de résineux par ex.) ?

6.2. Si oui, quels moyens vous paraissent les plus appropriés pour assurer cette restauration ?

- le contrat de gestion, outil négocié, adapté à chaque situation
- les subventions contrat d'adhésion : primes liées à un cahier des charges précis
- la substitution par les pouvoirs publics ou des ONG de protection de la nature pour assurer la restauration et la gestion
- les mesures foncières (expropriation, remembrement, etc.)

7) Sanction et financement

7.1 Quels sont les pertes de revenus que vous estimez devoir être prises en charge par la collectivité via une indemnisation appropriée ?
- aucune, les communes gèrent leur patrimoine en fonction de l'intérêt général
- la perte de revenu liée à une réduction de l'intensité de l'activité existante
- la perte de la valeur immobilière du bien concerné par les mesures de protection
- le coût d'opportunité lié à l'impossibilité d'envisager d'autres activités plus intensives qu'actuellement

7.2. De quelle manière devrait-on prélever les moyens nécessaires à la conservation de la nature ? (taxes générales, droit d'entrée de domaines, de parcs ou de sites particuliers, taxe sur l'Horeca dans la région) ?

7.3. Quelle sanction estimez-vous appropriée lorsqu'un propriétaire ou occupant ne respecte pas ses engagements ?
- une sanction administrative (amende redevable à l'administration)
- une suppression de la subvention
- une suppression des autres aides (écoconditionnalité)
- aucune sanction

8) Education et information

8.1 Que pensez-vous de l'information[3] dans le processus Natura 2000 ? Est-ce un instrument utile ?

- Pour le grand public ?
- Pour les gestionnaires sur le site ?
- Pour les fins de la conservation de la nature ?

8.2 Quel est le rôle de l'instrument « éducation[4] » pour Natura 2000 ?

8.3. Comment peut-on impliquer le grand public dans Natura 2000 ? Et pour la conservation de la nature en général ?

9) Stratégie globale de gestion des sites Natura 2000 au niveau local

Quelle stratégie vous paraît à même d'atteindre de façon « durable » les OC sur le site

- Uniquement des mesures de protection contraignantes (interdictions, permis),
- Mesures de protection contraignantes (interdictions, permis) ; mesures de gestion et de restauration strictement consensuelles
- Mesures de protection et de gestion et/ou restauration strictement consensuelles
- Mesures foncières de manière à assurer aux pouvoirs publics une maîtrise foncière des terres sises en site Natura 2000
- Une combinaison de ces mesures
- Aucune de ces mesures

[3] Campagnes de communication : Campagnes de communication concernant Natura 2000 et ayant comme objectif de faire connaître le projet, les processus, … aux personnes intéressées et au grand public en général.

[4] Programmes d'éducation : Programmes adressés aux personnes directement concernées et au grand public en général pour donner des informations développées au sujet de Natura 2000 et la nécessité générale de conserver la nature. On explique plus précisément ce qu'est le réseau, comment il est constitué et pourquoi, quels sont ses objectifs et comment les atteindre.

10) <u>Gestion environnementale du site</u>

(Hiérarchiser si plusieurs réponses)

10.1. D'après vous, qu'est-ce qu'il serait important de protéger et/ou de valoriser ?

- o La qualité des eaux
- o La diversité et la conservation de la faune et de la flore
- o Les paysages
- o Autre :

10.2. Quelles en sont les menaces ?

- o Pollution
- o Surfréquentation touristique
- o Cabanisation
- o Problème de gestion de l'eau
- o Intensification agricole ou forestière
- o Urbanisation
- o Aucune menace particulière
- o Autre : ……..

10.3. Qu'est-ce qui pourrait permettre de réduire ou d'éviter ces menaces ?

……
……
……

7.1.3 Questionnaire : Entreprises du site de la Lesse

A) L'économie locale et votre activité

A.1. Quelle place occupez-vous localement ? Et votre secteur d'activités ?

	Vous	Votre secteur
Activité influente		
Activité moyennement influente		
Activité marginale		
Activité en plein essor		
Autre : ……		

A.2. Pensez-vous que votre activité ait un impact sur l'environnement ?

	Positif	Pas d'impact	Négatif
Eau			
Air			
Faune			
Flore			
Sonore			
Paysage			
Déchets			

B) Vos projets en lien avec le site

B.1. De manière générale, comment envisagez-vous un développement de votre activité ou champ d'intervention ?

……
……
……
…….

B.2. Lors de l'étude de vos projets, quels types de critères sont pris en compte ?

	Très important	Important	Peu important	Non intégré
Economique				
Social				
Environnemental				
Culturel				
Politique				

C) Gestion environnementale du site

(Hiérarchiser si plusieurs réponses)

C.1. D'après vous, qu'est-ce qu'il serait important de protéger et/ou de valoriser ?

- o La qualité des eaux
- o La diversité et la conservation de la faune et de la flore
- o Les paysages
- o Autre : ……..

C.2. Quelles en sont les menaces ?

- o Pollution
- o Surfréquentation touristique
- o Cabanisation
- o Problème de gestion de l'eau
- o Aucune menace particulière
- o Autre : ……..

C.3. Qu'est-ce qui pourrait permettre de réduire ou d'éviter ces menaces ?

……
……
……

C.4. Quels types de mesures vous semblent les plus efficaces en matière de protection de l'environnement ?

- o La réglementation
- o La surveillance et le contrôle
- o L'information/sensibilisation
- o La concertation
- o Autres : …….

C.5. Sont-elles compatibles avec le développement de votre activité ?

- o Oui, comment ?

……
……
……

- o Non, pourquoi ?

……
……
……

C.6. Seriez-vous prêt à participer à la préservation du site de la Lesse dans le cadre de votre activité ?

- o Non, pourquoi ?

……
……
……

- o Oui, quels types d'actions ?

Opérations ponctuelles et courtes	
Opérations régulières et/ou répétées	
Opérations d'informations et de sensibilisation	
Changement et adaptation de mes pratiques et usages	
Adaptation dans l'utilisation de l'espace	
Autre :	

<u>Au préalable : connaissance de Natura 2000 (après s'être introduit brièvement ?</u>

Qu'est-ce qui vous vient à l'esprit en premier lieu lorsque l'on vous parle de Natura 2000 ?

Qu'est-ce pour vous Natura 2000 ? Quel est son but ?

Etes-vous impliqués dans le réseau Natura 2000 ? Si oui, à quelle(s) occasion(s) ?

Considérez-vous le réseau Natura 2000 comme étant positif/négatif, quels avantages/désavantages en retirez-vous ?

Pensez-vous que l'on arrivera à mettre en place le réseau Natura 2000 ? Est-ce possible de stopper le déclin de la biodiversité ? Si non, pourquoi ?

Avez-vous changé d'avis sur Natura 2000 avec le temps ? Si oui, pourquoi et de quelle manière ?

1) Contexte : [brève intro sur Natura 2000 et sur les objectifs de l'étude et les équipes]

Le Réseau Natura 2000 est un réseau écologique qui est issu de l'application des directives européennes « Oiseaux » (79/409/CEE) et « Faune-Flore-Habitats » (92/43/CEE). Il se construit dans chaque Etat ou Région membre de la Communauté européenne et a pour but de concilier les différentes utilisations du territoire avec la lutte contre l'érosion de la diversité biologique.

Les populations d'espèces et les habitats menacés au niveau européen doivent être maintenus dans un état favorable de conservation mais il est important de signaler que cela n'empêche pas toutes les activités de l'homme. La plupart de ces activités pourront être maintenues à la condition qu'elles ne soient une menace ni pour les espèces ni pour les habitats ciblés par le réseau Natura 2000. Tandis qu'en ce qui concerne les espaces plus strictement protégés, elles seront limitées voire interdites.

La mise en application de Natura 2000, par les Régions flamande et wallonne, ne se fait pas sans difficulté. C'est un processus long dans lequel il faut prendre en compte diverses parties prenantes.

Il est important de mener à bien ce processus. C'est pourquoi, le projet Selnat, intitulé « How to make Natura 2000 work properly ? » a été mis en place. Il s'agit d'un projet de recherche de la Politique Scientifique Fédérale visant à étudier la mise en œuvre du réseau européen Natura 2000 en Région wallonne et en Région flamande. L'objectif de cette étude est de pouvoir formuler des recommandations pour une mise en œuvre durable et intégrée de Natura 2000. Le projet est constitué d'une équipe multidisciplinaire de différentes universités et bureau de recherche belge ; les disciplines suivantes sont représentées : l'écologie, le droit, la sociologie ainsi que l'économie.

Par le biais de cette enquête, nous aimerions avoir l'opinion des acteurs de terrains impliqués dans le processus Natura 2000 sur le site de la Lesse entre Villers-sur-Lesse et Chanly. Plus particulièrement, nous avons ciblé les agriculteurs, les forestiers, les communes, le secteur du tourisme ainsi que les entreprises sur le site. Les résultats de cette enquête ne seront utilisés que dans le cadre de cette étude et l'anonymat des participants est garanti.

L'application de Natura 2000 ne pourra aboutir sans une parfaite concertation de toutes les acteurs ainsi qu'une prise en compte de leurs idées et critiques. C'est pourquoi, nous vous remercions déjà du temps consacré à cette enquête.

2) Mise en situation :

Deux grands types d'habitats naturels ou d'espèces d'intérêt communautaire sont directement gérés par les agriculteurs car faisant partie du « domaine agricole » :

- les prairies et le bocage
- les cultures (ex : Grand Hamster ; Busard cendré)

Les forestiers gèrent également une partie du site, en l'occurrence le domaine sylvicole. Enfin, votre activité peut avoir des incidences sur des habitats ou espèces en dehors des domaines forestier et agricole (par ex. dans les cours d'eau ou les carrières).

Il est établi que les territoires classés Natura 2000 ne sont aucunement des sanctuaires d'où l'homme serait exclu. Néanmoins, si de manière générale, les territoires entretenus pour et par l'activité agricole et sylvicole doivent être respectés par les autres utilisateurs, des précautions supplémentaires sont nécessaires lorsqu'il s'agit d'un site Natura 2000. En effet, la protection du site Natura 2000 porte non seulement sur la faune mais également sur la flore présente. Ainsi, dans le cadre du plan de gestion du site, les activités économiques productives seront encadrées. De même, il pourra être imposé un certain nombre de limitations d'usages particuliers à des périodes dites sensibles pour la reproduction d'une espèce animale ou végétale.

Le régime Natura 2000 implique de réaliser des « objectifs de conservation du site », c'est-à-dire de maintenir ou rétablir, dans le périmètre du site, certains habitats ou des populations de certaines espèces menacés en « bon état de conservation ». Il s'agit d'obligations de résultat pour les pouvoirs publics, qui doivent donc mettre tout en œuvre pour réaliser ces objectifs de conservation. Ces obligations nécessitent donc l'adoption :

- de **mesures de protection**, pour éviter la détérioration des habitats et la perturbation significative des espèces pour lesquels le site est désigné ET/OU
- des **mesures de gestion active** (entretien et amélioration) en vue de recréer les conditions écologiques nécessaires pour assurer la pérennité des habitats et populations d'espèces pour lesquels le site est désigné ET/OU
- des **mesures de restauration**, en vue de recréer des habitats d'intérêt communautaire à partir d'habitats artificiels ou dégradés (cultures, prairies amendées, etc.)

Ces mesures peuvent être réalisées de différentes façons et différents instruments juridiques. L'objet du présent questionnaire est de vous permettre de donner votre opinion sur ce qui vous paraît constituer une manière « durable » de réaliser ces objectifs au travers des différentes mesures de protection, de gestion et/ou de restauration qui s'avèrent nécessaires à cet effet.

3) Les objectifs de conservation du site

3.0. Acceptez-vous que les « objectifs de conservation » du site soient fixés par l'Union européenne et la Région wallonne dans les périmètres que vous exploitez ?

OUI – NON- PAS D'OPINION
Commentaire : _____

3.1. Pensez-vous que la fixation des OC doit faire l'objet d'une concertation au niveau local ?

3.2. Pensez-vous qu'il importe de garder une flexibilité dans la définition des OC ?

3.3. Estimez-vous que le caractère contraignant des OC pour l'autorité (notamment dans la délivrance des permis) est un bon moyen de préserver les habitats et les espèces ?

4) La protection du site

4.1. Etes-vous prêt à réduire l'intensité de vos pratiques pour réaliser les OC sur le site ?

Les sites industriels sont en dehors des sites Natura 2000. Par contre, il peut y avoir des influences de sites industriels vers l'extérieur (et donc vers des sites Natura 2000), par exemple l'abaissement de la nappe phréatique des carrières (influence sur les sources et cours d'eau), rejet de poussières par ces mêmes carrières (influence sur la flore et la faune), pollution de l'eau par la brasserie (influence sur les cours d'eau en aval).

Si oui, selon quel moyen juridique de la part des autorités :
- les interdictions d'exercer certaines pratiques dommageables, sauf dérogation
- la soumission à permis de ces pratiques, accompagné d'une évaluation des incidences et de l'obligation, pour l'autorité qui délivre le permis de respecter les OC, sauf dérogation (mécanisme dit « d'évaluation appropriée »)
- la soumission à notification de ces pratiques, avec interdiction au cas par cas par l'autorité, en fonction de l'impact
- l'adoption d'incitants économiques positifs (subventions, MAE,…)
- l'adoption d'incitants économiques négatifs (écoconditionnalité)
- l'adoption de mesures foncières (rachat des terres ; expropriation ; droit de préemption ; remembrement)
- une combinaison de ces mesures
- autre : ……

4.2. Comment pensez-vous que les autorités devraient gérer la question des incidences des pratiques productives exercées à l'extérieur des sites pour garantir la réalisation des OC ? Par :
- des interdictions sauf dérogation applicables à ces pratiques
- la soumission de certaines de ces pratiques à permis et donc évaluation des incidences
- l'encouragement, par ex. par un surcroît de prime, à l'adoption de MAE dans une zone tampon autour des sites
- une combinaison de ces mesures ?
- autre : ……

4.3 Quelles sont les pertes de revenus que vous estimez devoir être prises en charge par la collectivité via une indemnisation appropriée ?
- la perte de revenu lié à une réduction de l'intensité de l'activité existante
- la perte de la valeur immobilière du bien concerné par les mesures de protection
- le coût d'opportunité lié à l'impossibilité d'envisager d'autres activités plus intensives qu'actuellement
- autre : ……

5) La gestion active du site

5.1. Quels moyens vous paraissent les plus appropriés pour assurer l'entretien des habitats naturels ou d'espèces liés à ce site Natura 2000?

- le contrat de gestion avec le propriétaire/le gestionnaire
- les MAE
- la substitution des pouvoirs publics ou d'ONG de protection de la nature aux gestionnaires de terrain pour assurer la gestion
- les mesures foncières (expropriation, remembrement, etc.)

5.2. Quelle sanction estimez-vous appropriée lorsque le gestionnaire de terrain ne respecte pas ses engagements ?
- une sanction administrative (amende redevable à l'administration)
- une suppression de la subvention

- une suppression des autres aides (écoconditionnalité)
- aucune sanction
- autre : ……

6) La restauration de certains habitats

6.1. Estimez-vous qu'il peut être nécessaire et légitime de restaurer des habitats naturels à partir d'habitats naturels intensifiés, dégradés ou artificialisés (comme une plantation de résineux par ex.) ?

6.2. Si oui, quels moyens vous paraissent les plus appropriés pour assurer cette restauration ?

- le contrat de gestion avec le gestionnaire
- les MAE
- la substitution des pouvoirs publics ou d'ONG de protection de la nature aux agriculteurs pour assurer la gestion
- les mesures foncières (expropriation, remembrement, etc.)
- autre : ……

7) Stratégie globale de gestion des sites Natura 2000 au niveau local

7.1. Quelle stratégie vous paraît à même d'atteindre de façon « durable » les OC sur le site

- Uniquement des mesures de protection contraignantes (interdictions, permis),
- Mesures de protection contraignantes (interdictions, permis) ; mesures de gestion et de restauration strictement consensuelles
- Mesures de protection et de gestion et/ou restauration strictement consensuelles
- Mesures foncières de manière à assurer aux pouvoirs publics une maîtrise foncière des terres sises en site Natura 2000
- Une combinaison de ces mesures
- Aucune de ces mesures

7.2. Quel autre acteur pourrait être impliqué dans la stratégie ?

7.3. Que pensez-vous de l'information[5] dans le processus Natura 2000 ? Est-ce un instrument utile ?

- Pour le grand public ?
- Pour les gestionnaires sur le site ?
- Pour les fins de la conservation de la nature ?

7.4. Quel est le rôle de l'instrument « éducation[6] » pour Natura 2000 ?

7.5. Comment peut-on impliquer le grand public dans Natura 2000 ? Et pour la conservation de la nature en général ?

[5] Campagnes de communication : Campagnes de communication concernant Natura 2000 et ayant comme objectif de faire connaître le projet, les processus, … aux personnes intéressées et au grand public en général.

[6] Programmes d'éducation : Programmes adressés aux personnes directement concernées et au grand public en général pour donner des informations développées au sujet de Natura 2000 et la nécessité générale de conserver la nature. On explique plus précisément ce qu'est le réseau, comment il est constitué et pourquoi, quels sont ses objectifs et comment les atteindre.

Que pensez-vous d'instaurer un droit d'entrée dans une réserve naturelle (participation aux frais des visiteurs) ?

7.6. Etes-vous prêt, en tant que particulier, à payer pour la protection de la nature. Si oui, combien (0, 50, 100 €/an ou plus ?) et de quelle manière (taxes générale, droit d'entrée de domaine, de parcs ou de site particulier, taxe sur l'Horeca dans la région) ?

7.1.4 Questionnaire : Forestiers du site de la Lesse

0) Au préalable : connaissance de Natura 2000 (après s'être introduit brièvement ?

Qu'est-ce qui vous vient à l'esprit en premier lieu lorsque l'on vous parle de Natura 2000 ?

Qu'est-ce pour vous Natura 2000 ? Quel est son but ?

Etes-vous impliqués dans le réseau Natura 2000 ? Si oui, à quelle(s) occasion(s) ?

Considérez-vous le réseau Natura 2000 comme étant positif/négatif, quels avantages/désavantages en retirez-vous ?

Pensez-vous que l'on arrivera à mettre en place le réseau Natura 2000 ? Est-ce possible de stopper le déclin de la biodiversité ? Si non, pourquoi ?

Avez-vous changé d'avis sur Natura 2000 avec le temps ? Si oui, pourquoi et de quelle manière ?

1) Contexte : [brève intro sur Natura 2000 et sur les objectifs de l'étude et les équipes]

Le Réseau Natura 2000 est un réseau écologique qui est issu de l'application des directives européennes « Oiseaux » (79/409/CEE) et « Faune-Flore-Habitats » (92/43/CEE). Il se construit dans chaque Etat ou Région membre de la Communauté européenne et a pour but de concilier les différentes utilisations du territoire avec la lutte contre l'érosion de la diversité biologique.

Les populations d'espèces et les habitats menacés au niveau européen doivent être maintenus dans un état favorable de conservation mais il est important de signaler que cela n'empêche pas toutes les activités de l'homme. La plupart de ces activités pourront être maintenues à la condition qu'elles ne soient une menace ni pour les espèces ni pour les habitats ciblés par le réseau Natura 2000. Tandis qu'en ce qui concerne les espaces plus strictement protégés, elles seront limitées voire interdites.

La mise en application de Natura 2000, par les Régions flamande et wallonne, ne se fait pas sans difficulté. C'est un processus long dans lequel il faut prendre en compte diverses parties prenantes.

Il est important de mener à bien ce processus. C'est pourquoi, le projet Selnat, intitulé « How to make Natura 2000 work properly ? » a été mis en place. Il s'agit d'un projet de recherche de la Politique Scientifique Fédérale visant à étudier la mise en œuvre du réseau européen Natura 2000 en Région wallonne et en Région flamande. L'objectif de cette étude est de pouvoir formuler des recommandations pour une mise en œuvre durable et intégrée de Natura 2000. Le projet est constitué d'une équipe multidisciplinaire de différentes universités et bureau de recherche belge ; les disciplines suivantes sont représentées : l'écologie, le droit, la sociologie ainsi que l'économie.

Par le biais de cette enquête, nous aimerions avoir l'opinion des acteurs de terrain impliqués dans le processus Natura 2000 sur le site de la Lesse entre Villers-sur-Lesse et Chanly. Plus particulièrement, nous avons ciblé les agriculteurs, les forestiers, les communes, le secteur du tourisme ainsi que les entreprises sur le site. Les résultats de cette enquête ne seront utilisés que dans le cadre de cette étude et l'anonymat des participants est garanti.

L'application de Natura 2000 ne pourra aboutir sans une parfaite concertation de toutes les acteurs ainsi qu'une prise en compte de leurs idées et critiques. C'est pourquoi, nous vous remercions déjà du temps consacré à cette enquête.

2) Mise en situation

Deux grands types d'habitats naturels ou d'espèces d'intérêt communautaire sont directement gérés par les agriculteurs car faisant partie du « domaine agricole » :

- les prairies et le bocage
- les cultures (ex : Grand Hamster ; Busard cendré)

En outre, votre activité peut avoir des incidences sur des habitats ou espèces en dehors du domaine agricole (par ex. dans les cours d'eau)

Le régime Natura 2000 implique de réaliser des « objectifs de conservation du site », c'est-à-dire de maintenir ou rétablir, dans le périmètre du site, certains habitats ou des populations de certaines espèces menacés en « bon état de conservation ». Il s'agit d'obligations de résultat pour les pouvoirs publics, qui doivent donc mettre tout en œuvre pour réaliser ces objectifs de conservation. Ces obligations nécessitent donc l'adoption :

- de **mesures de protection**, pour éviter la détérioration des habitats et la perturbation significative des espèces pour lesquels le site est désigné ET/OU
- des **mesures de gestion active** (entretien et amélioration) en vue de recréer les conditions écologiques nécessaires pour assurer la pérennité des habitats et populations d'espèces pour lesquels le site est désigné ET/OU
- des **mesures de restauration**, en vue de recréer des habitats d'intérêt communautaire à partir d'habitats artificiels ou dégradés (cultures, prairies amendées, etc.)

Ces mesures peuvent être réalisées de différentes façons et différents instruments juridiques. L'objet du présent questionnaire est de vous permettre de donner votre opinion sur ce qui vous paraît constituer une manière « durable » de réaliser ces objectifs au travers des différentes mesures de protection, de gestion et/ou de restauration qui s'avèrent nécessaires à cet effet.

3) Les objectifs de conservation du site

3.0. Acceptez-vous que les « objectifs de conservation » du site soient fixés par l'Union européenne et la Région wallonne dans les forêts que vous exploitez ?

OUI – NON- PAS D'OPINION
Commentaire : _____

3.1. Pensez-vous que la fixation des OC doit faire l'objet d'une concertation au niveau local ?

3.2. Pensez-vous qu'il importe de garder une flexibilité dans la définition des OC ?

3.3. Estimez-vous que le caractère contraignant des OC pour l'autorité (notamment dans la délivrance des permis) est un bon moyen de préserver les habitats et les espèces ?

4) La protection du site

4.1. Etes-vous prêt à réduire l'intensité de vos pratiques forestières (par ex.laisser des îlots de sénescence) pour réaliser les OC sur le site ?

Si oui, selon quel moyen juridique de la part des autorités :
- les interdictions d'exercer certaines pratiques dommageables, sauf dérogation
- la soumission à permis de ces pratiques, accompagné d'une évaluation des incidences et de l'obligation, pour l'autorité qui délivre le permis de respecter les OC, sauf dérogation (mécanisme dit « d'évaluation appropriée »)
- la soumission à notification de ces pratiques, avec interdiction au cas par cas par l'autorité, en fonction de l'impact

- l'adoption d'incitants économiques positifs (subventions, MAE,…)
- l'adoption d'incitants économiques négatifs (écoconditionnalité)
- l'adoption de mesures foncières (rachat des terres ; expropriation ; droit de préemption ; remembrement)
- une combinaison de ces mesures
- autre : ……

4.2. Comment pensez-vous que les autorités devraient gérer la question des incidences des pratiques forestières exercées à l'extérieur des sites pour garantir la réalisation des OC ? Par :
- des interdictions sauf dérogation applicables à ces pratiques
- la soumission de certaines de ces pratiques à permis et donc évaluation des incidences
- l'encouragement, par ex. par un surcroît de prime, à l'adoption de MAE dans une zone tampon autour des sites
- une combinaison de ces mesures ?
- autre : ……

4.3 Quels sont les pertes de revenus que vous estimez devoir être prises en charge par la collectivité via une indemnisation appropriée ?
- la perte de revenu lié à une réduction de l'intensité de l'activité existante
- la perte de la valeur immobilière du bien concerné par les mesures de protection
- le coût d'opportunité lié à l'impossibilité d'envisager d'autres activités plus intensives qu'actuellement
- autre : ……

5) La gestion active du site

5.1. Quels moyens vous paraissent les plus appropriés pour assurer l'entretien des habitats naturels ou d'espèces liés au milieu forestier ?
- le contrat de gestion avec le forestier
- les MAE
- Paiements Natura 2000 pour les forestiers (Mesure PwDR 224) : L'objectif de cette mesure est de préserver l'intérêt biologique des peuplements feuillus repris en sites Natura 2000 et plus particulièrement d'assurer la pérennité des habitats et habitats d'espèces d'intérêt communautaire. Pour parvenir à cet objectif, les arrêtés de désignation de chaque site Natura 2000 reprendront un ensemble de mesures qui devront être respectées par chaque propriétaire forestier concerné. En échange du respect de ces différents points, les propriétaires forestiers privés auront droit à une indemnité annuelle pour chaque hectare de forêt feuillue reprise en Natura 2000 à partir de l'adoption de l'arrêté de désignation du site concerné. Par ailleurs, les actions réalisées auront des impacts positifs au niveau paysager : lisière structurée, fonds de vallée feuillus, diversification de la structure, …. Cette amélioration paysagère constituera un atout particulier en relation avec un tourisme rural totalement intégré dans l'environnement.
Les deux objectifs précités relèvent clairement de l'intérêt public vu l'impact sur la cadre de vie et sur la protection de la biodiversité.
- la substitution des pouvoirs publics ou d'ONG de protection de la nature aux forestiers pour assurer la gestion aux forestiers
- les mesures foncières (expropriation, remembrement, etc.)

5.2. Quelle sanction estimez-vous appropriée lorsque le forestier ne respecte pas ses engagements ?
- une sanction administrative (amende redevable à l'administration)
- une suppression de la subvention
- une suppression des autres aides (écoconditionnalité)
- aucune sanction
- autre : ……

6) La restauration de certains habitats

6.1. Estimez-vous qu'il peut être nécessaire et légitime de restaurer des habitats naturels à partir d'habitats forestiers intensifiés, dégradés ou artificialisés (comme une plantation de résineux par ex.) ?

6.2. Si oui, quels moyens vous paraissent les plus appropriés pour assurer cette restauration ?
- le contrat de gestion avec le forestier
- les MAE
- la substitution des pouvoirs publics ou d'ONG de protection de la nature aux forestiers pour assurer la gestion
- les mesures foncières (expropriation, remembrement, etc.)
- autre : ……

7) Stratégie globale de gestion des sites Natura 2000 au niveau local

7.1. Quelle stratégie vous paraît à même d'atteindre de façon « durable » les OC sur le site
- Uniquement des mesures de protection contraignantes (interdictions, permis),
- Mesures de protection contraignantes (interdictions, permis) ; mesures de gestion et de restauration strictement consensuelles
- Mesures de protection et de gestion et/ou restauration strictement consensuelles
- Mesures foncières de manière à assurer aux pouvoirs publics une maîtrise foncière des terres sises en site Natura 2000
- Une combinaison de ces mesures
- Aucune de ces mesures

7.2. Quel autre acteur pourrait-être impliqué dans la stratégie ?

7.3. Que pensez-vous de l'information1 dans le processus Natura 2000 ? Est-ce un instrument utile ?
- Pour le grand public ?
- Pour les gestionnaires sur le site ?
- Pour les fins de la conservation de la nature ?

7.4. Quel est le rôle de l'instrument « éducation2 » pour Natura 2000 ?

7.5. Comment peut-on impliquer le grand public dans Natura 2000 ? Et pour la conservation de la nature en général ?

Que pensez-vous d'instaurer un droit d'entrée dans une réserve naturelle (participation aux frais des visiteurs) ?

7.6. Etes-vous prêt, en tant que particulier, à payer pour la protection de la nature. Si oui, combien (0, 50, 100 €/an ou plus ?) et de quelle manière (taxes générale, droit d'entrée de domaine, de parcs ou de site particulier, taxe sur l'Horeca dans la région) ?

7.1.5 Questionnaire : Secteur du tourisme dans le site de la Lesse

0) Au préalable : connaissance de Natura 2000 (après s'être introduit brièvement)

Qu'est-ce qui vous vient à l'esprit en premier lieu lorsque l'on vous parle de Natura 2000 ?

Qu'est-ce pour vous Natura 2000 ? Quel est son but ?

Etes-vous impliqués dans le réseau Natura 2000 ? Si oui, à quelle(s) occasion(s) ?

Considérez-vous le réseau Natura 2000 comme étant positif/négatif, quels avantages/désavantages en retirez-vous ?

Pensez-vous que l'on arrivera à mettre en place le réseau Natura 2000 ? Est-ce possible de stopper le déclin de la biodiversité ? Si non, pourquoi ?

Avez-vous changé d'avis sur Natura 2000 avec le temps ? Si oui, pourquoi et de quelle manière ?

1) Contexte : [brève intro sur Natura 2000 et sur les objectifs de l'étude et les équipes]

Le Réseau Natura 2000 est un réseau écologique qui est issu de l'application des directives européennes « Oiseaux » (79/409/CEE) et « Faune-Flore-Habitats » (92/43/CEE). Il se construit dans chaque Etat ou Région membre de la Communauté européenne et a pour but de concilier les différentes utilisations du territoire avec la lutte contre l'érosion de la diversité biologique.

Les populations d'espèces et les habitats menacés au niveau européen doivent être maintenus dans un état favorable de conservation mais il est important de signaler que cela n'empêche pas toutes les activités de l'homme. La plupart de ces activités pourront être maintenues à la condition qu'elles ne soient une menace ni pour les espèces ni pour les habitats ciblés par le réseau Natura 2000. Tandis qu'en ce qui concerne les espaces plus strictement protégés, elles seront limitées voire interdites.

La mise en application de Natura 2000, par les Régions flamande et wallonne, ne se fait pas sans difficulté. C'est un processus long dans lequel il faut prendre en compte diverses parties prenantes.

Il est important de mener à bien ce processus. C'est pourquoi, le projet Selnat, intitulé « How to make Natura 2000 work properly ? » a été mis en place. Il s'agit d'un projet de recherche de la Politique Scientifique Fédérale visant à étudier la mise en œuvre du réseau européen Natura 2000 en Région wallonne et en Région flamande. L'objectif de cette étude est de pouvoir formuler des recommandations pour une mise en œuvre durable et intégrée de Natura 2000. Le projet est constitué d'une équipe multidisciplinaire de différentes universités et bureau de recherche belge ; les disciplines suivantes sont représentées : l'écologie, le droit, la sociologie ainsi que l'économie.

Par le biais de cette enquête, nous aimerions avoir l'opinion des acteurs de terrain impliqués dans le processus Natura 2000 sur le site de la Lesse entre Villers-sur-Lesse et Chanly. Plus particulièrement, nous avons ciblé les agriculteurs, les forestiers, les communes, le secteur du tourisme ainsi que les entreprises sur le site. Les résultats de cette enquête ne seront utilisés que dans le cadre de cette étude et l'anonymat des participants est garanti.

L'application de Natura 2000 ne pourra aboutir sans une parfaite concertation de toutes les acteurs ainsi qu'une prise en compte de leurs idées et critiques. C'est pourquoi, nous vous remercions déjà du temps consacré à cette enquête.

2) Mise en situation :

Plusieurs grands types d'habitats naturels ou d'espèces d'intérêt communautaire sont directement gérés par les communes propriétaires de terres agricoles ou de forêts.

En outre, le rôle de la commune en tant qu'autorité compétente pour délivrer des permis ou des autorisations et adopter des plans, notamment d'aménagement du territoire, est capital puisqu'elle est à ce titre l'autorité chargée de contrôler un nombre important d'activités pouvant impacter le réseau écologique.

Le régime Natura 2000 implique de réaliser des « objectifs de conservation du site », c'est-à-dire de maintenir ou rétablir, dans le périmètre du site, certains habitats ou des populations de certaines espèces menacés en « bon état de conservation ». Il s'agit d'obligations de résultat pour les pouvoirs publics, qui doivent donc mettre tout en œuvre pour réaliser ces objectifs de conservation. Ces obligations nécessitent donc l'adoption :

- de **mesures de protection**, pour éviter la détérioration des habitats et la perturbation significative des espèces pour lesquels le site est désigné ET/OU
- des **mesures de gestion active** (entretien et amélioration) en vue de recréer les conditions écologiques nécessaires pour assurer la pérennité des habitats et populations d'espèces pour lesquels le site est désigné ET/OU
- des **mesures de restauration**, en vue de recréer des habitats d'intérêt communautaire à partir d'habitats artificiels ou dégradés (cultures, prairies amendées, etc.)

Ces mesures peuvent être réalisées de différentes façons et différents instruments juridiques. L'objet du présent questionnaire est de vous permettre de donner votre opinion sur ce qui vous paraît constituer une manière « durable » de réaliser ces objectifs au travers des différentes mesures de protection, de gestion et/ou de restauration qui s'avèrent nécessaires à cet effet.

3) Les objectifs de conservation du site

3.0. Acceptez-vous que les « objectifs de conservation » du site soient fixés par l'Union européenne et la Région wallonne dans les périmètres que vous exploitez ?

OUI – NON – PAS D'OPINION

Commentaire :

3.1. Pensez-vous que la fixation des OC doit faire l'objet d'une concertation au niveau local ?

3.2. Pensez-vous qu'il importe de garder une flexibilité dans la définition des OC ?

3.3. Estimez-vous que le caractère contraignant des OC pour l'autorité (notamment dans la délivrance des permis) est un bon moyen de préserver les habitats et les espèces ?

4) La protection du site

4.1. Etes-vous prêt à réduire l'intensité de vos pratiques (comme expliqué auparavant) pour réaliser les OC sur le site ?

Si oui, selon quel moyen juridique de la part des autorités :
- les interdictions d'exercer certaines pratiques dommageables, sauf dérogation
- la soumission à permis de ces pratiques, accompagné d'une évaluation des incidences et de l'obligation, pour l'autorité qui délivre le permis de respecter les OC, sauf dérogation (mécanisme dit « d'évaluation appropriée »)

- la soumission à notification de ces pratiques, avec interdiction au cas par cas par l'autorité, en fonction de l'impact
- l'adoption d'incitants économiques positifs (subventions, MAE,…)
- l'adoption d'incitants économiques négatifs (écoconditionnalité)
- l'adoption de mesures foncières (rachat des terres ; expropriation ; droit de préemption ; remembrement)
- une combinaison de ces mesures
- autre : ……

4.2. Comment pensez-vous que les autorités devraient gérer la question des incidences des pratiques récréatives exercées à l'extérieur des sites pour garantir la réalisation des OC ?
Par :
- des interdictions sauf dérogation applicables à ces pratiques
- la soumission de certaines de ces pratiques à permis et donc évaluation des incidences
- l'encouragement, par ex. par un surcroît de prime, à l'adoption de MAE dans une zone tampon autour des sites
- une combinaison de ces mesures ?

4.3 Quelles sont les pertes de revenus que vous estimez devoir être prises en charge par la collectivité via une indemnisation appropriée ?
- la perte de revenu lié à une réduction de l'intensité de l'activité existante
- la perte de la valeur immobilière du bien concerné par les mesures de protection
- le coût d'opportunité lié à l'impossibilité d'envisager d'autres activités plus intensives qu'actuellement
- autre : ……

5) La gestion active du site

5.1. Quels moyens vous paraissent les plus appropriés pour assurer l'entretien des habitats naturels ou d'espèces liés à ce site Natura 2000?

- le contrat de gestion, outil négocié, adapté à chaque situation
- les subventions contrat d'adhésion : primes liées à un cahier des charges précis
- la substitution par les pouvoirs publics ou des ONG de protection de la nature pour assurer la gestion
- les mesures foncières (expropriation, remembrement, etc.)

5.2. Quelle sanction estimez-vous appropriée lorsque le gestionnaire de terrain ne respecte pas ses engagements ?
- une sanction administrative (amende redevable à l'administration)
- une suppression de la subvention
- une suppression des autres aides (écoconditionnalité)
- aucune sanction
- autre : ……

6) La restauration de certains habitats

6.1. Estimez-vous qu'il peut être nécessaire et légitime de restaurer des habitats naturels à partir d'habitats naturels intensifiés, dégradés ou artificialisés (comme une plantation de résineux par ex.) ?

6.2. Si oui, quels moyens vous paraissent les plus appropriés pour assurer cette restauration ?

- le contrat de gestion, outil négocié, adapté à chaque situation

- les subventions contrat d'adhésion : primes liées à un cahier des charges précis
- la substitution par les pouvoirs publics ou des ONG de protection de la nature pour assurer la restauration et la gestion
- les mesures foncières (expropriation, remembrement, etc.)
- autre : ……

7) Stratégie globale de gestion des sites Natura 2000 au niveau local

7.1. Quelle stratégie vous paraît à même d'atteindre de façon « durable » les OC sur le site

- Uniquement des mesures de protection contraignantes (interdictions, permis),
- Mesures de protection contraignantes (interdictions, permis) ; mesures de gestion et de restauration strictement consensuelles
- Mesures de protection et de gestion et/ou restauration strictement consensuelles
- Mesures foncières de manière à assurer aux pouvoirs publics une maîtrise foncière des terres sises en site Natura 2000
- Une combinaison de ces mesures
- Aucune de ces mesures

7.2. Que pensez-vous de l'information[7] dans le processus Natura 2000 ?

Est-ce un instrument utile ?

- Pour le grand public ?
- Pour les gestionnaires sur le site ?
- Pour les fins de la conservation de la nature ?

7.3. Quel est le rôle de l'instrument « éducation[8] » pour Natura 2000 ?

7.4. Comment peut-on impliquer le grand public dans Natura 2000 ? Et pour la conservation de la nature en général ?

Que pensez-vous d'instaurer un droit d'entrée dans une réserve naturelle (participation aux frais des visiteurs) ?

7.5. Etes-vous prêt, en tant que particulier, à payer pour la protection de la nature. Si oui, combien (0, 50, 100 €/an ou plus ?) et de quelle manière (taxes générale, droit d'entrée de domaine, de parcs ou de site particulier, taxe sur l'Horeca dans la région) ?

8) L'économie locale et votre activité

8.1. Quelle place occupez-vous localement ? Et votre secteur d'activités ?

	Vous	Votre secteur
Activité influente		

[7] Campagnes de communication : Campagnes de communication concernant Natura 2000 et ayant comme objectif de faire connaître le projet, les processus, … aux personnes intéressées et au grand public en général.

[8] Programmes d'éducation : Programmes adressés aux personnes directement concernées et au grand public en général pour donner des informations développées au sujet de Natura 2000 et la nécessité générale de conserver la nature. On explique plus précisément ce qu'est le réseau, comment il est constitué et pourquoi, quels sont ses objectifs et comment les atteindre.

Activité moyennement influente		
Activité marginale		
Activité en plein essor		
Autre : ……		

8.2. Pensez-vous que votre activité ait un impact sur l'environnement ?

	Positif	Pas d'impact	Négatif
Eau			
Air			
Faune			
Flore			
Sonore			
Paysage			
Déchets			

9) Vos projets en lien avec le site

9.1. De manière générale, comment envisagez-vous un développement de votre activité ou champ d'intervention ?

……
……
……
…….

9.2. Lors de l'étude de vos projets, quels types de critères sont pris en compte ?

	Très important	Important	Peu important	Non intégré
Economique				
Social				
Environnemental				
Culturel				
Politique				

10) Gestion environnementale du site

(Hiérarchiser si plusieurs réponses)

10.1. D'après vous, qu'est-ce qu'il serait important de protéger et/ou de valoriser ?

- o La qualité des eaux
- o La diversité et la conservation de la faune et de la flore
- o Les paysages
- o Autre : ……..

10.2. Quelles en sont les menaces ?

- o Pollution
- o Surfréquentation touristique
- o Cabanisation

- o Problème de gestion de l'eau
- o Aucune menace particulière
- o Autre : ……..

10.3. Qu'est-ce qui pourrait permettre de réduire ou d'éviter ces menaces ?
……
……
……

10.4. Quels types de mesures vous semblent les plus efficaces en matière de protection de l'environnement ?

- o La réglementation
- o La surveillance et le contrôle
- o L'information/sensibilisation
- o La concertation
- o Autres : …….

10.5. Sont-elles compatibles avec le développement de votre activité ?

- o Oui, comment ?

……
……
……

- o Non, pourquoi ?

……
……
……

10.6. Seriez-vous prêt à participer à la préservation du site de la Lesse dans le cadre de votre activité ?

- o Non, pourquoi ?

……
……
……

- o Oui, quels types d'actions ?

Opérations ponctuelles et courtes	
Opérations régulières et/ou répétées	
Opérations d'informations et de sensibilisation	
Changement et adaptation de mes pratiques et usages	
Adaptation dans l'utilisation de l'espace	
Autre :	

Quelles autres personnes devraient être impliquées dans la gestion des sites Natura 2000 ?

Quelles seraient les actions que vous auriez entreprises pour la protection de la nature (de votre initiative) ?

7.2 Survey analysis: Natura 2000 et les acteurs sur le site: leurs perceptions et recommandations

7.2.1 Natura 2000 et les agriculteurs

Au préalable, connaissance de Natura 2000

Lorsque l'on parle de Natura 2000 aux agriculteurs deux types de réponses leur viennent à l'esprit. Ils parlent de protection et de préservation de la nature, de la faune et de la flore avec une notion de menace sur la biodiversité. Cependant, ils parlent également de contraintes pour leur profession et d'un manque d'information qui ne permet pas de répondre à leurs questions. Les sept répondants sont impliqués dans Natura 2000 via la propriété de leur(s) parcelle(s).

Quant au caractère positif ou négatif de Natura 2000, les avis divergent franchement, passant de 'résolument positif' à 'négatif' en passant pas par 'ne sait pas'. Du côté des positifs, c'est essentiellement un souci pour les générations futures qui poussent à vouloir agir, réparer les dégâts commis tout en ayant une équité car la biodiversité profite à tout le monde. Pour un des répondants, agriculteur en mode biologique, c'est une opportunité pour maintenir une exploitation de taille réduite pour évoluer à son rythme et sans faire de gros investissements. Pour les plus négatifs, ce sont à nouveau les contraintes et une idée de limitation de la liberté d'exploiter qui sont mentionnées.

En ce qui concerne la possibilité de stopper le déclin de la biodiversité en mettant en place le réseau Natura 2000, les avis sont franchement positifs. Il faudra cependant que tout le monde y trouve son compte et ce sera, pour certains, une question essentiellement de moyens financiers à mettre en place.

Enfin, on peut dire que depuis que l'on parle de Natura 2000, les avis ont fortement changé. De 'négatif' à 'plus positif', inversement de 'positif' à 'négatif' ou encore de 'inconnu' à 'moins inconnu', les avis divergent à cause de manque d'information mais également un manque de consultation avant la désignation des sites qui pourrait créer un blocage. Certains des répondants sont toutefois conscients qu'il faudra s'y faire.

Education et information

Aucune des personnes interviewées n'a dit que l'information sur Natura 2000 était inutile. Au contraire, l'ensemble des répondants souhaite de l'information car cela permet une meilleure compréhension et de ca fait, permet une meilleure acceptation des choses. C'est le contenu de l'information qui est plutôt divergent, certains souhaitant uniquement des informations techniques sur ce qu'ils peuvent ou non faire dans leur exploitation, d'autres souhaitent de l'information plus générale avec le pourquoi des choses. Notons que certains agriculteurs ont reçu de l'information via la Fédération Wallonne de l'Agriculture et une personne relève le manque d'échanges entre les naturalistes et le monde agricole.

L'information est utile pour le grand public ainsi que pour les gestionnaires des sites mais personne ne pense qu'elle soit utile pour les fins mêmes de la conservation de la nature. Un des répondants suggère d'inclure un chapitre sur la biodiversité et la protection de la nature dans tous les programmes de cours.

En ce qui concerne l'éducation, il s'agit d'un instrument que les agriculteurs trouvent également important mais plutôt pour l'intérêt général. Il s'agit d'abord d'éduquer à l'environnement et au savoir-vivre. Les agriculteurs voient également l'éducation comme un instrument utile pour valoriser l'agriculture et la nature auprès du grand public : il y a un décalage entre la nature et l'agriculture et il faudrait valoriser les produits plus localement. Dans le sens inverse, l'éducation est un outil intéressant également pour faire prendre conscience aux agriculteurs qu'ils sont nécessaires au bon fonctionnement de Natura 2000.

Informer et éduquer via des réunions et conférences ne semblent pas adéquat car ce sont toujours les personnes concernées, intéressées et souvent déjà convaincues qui sont là. Il faudrait donc toucher le grand public via les médias, pour les sensibiliser à Natura 2000 et changer leur vision du monde agricole. Plus spécifiquement, on pourrait toucher les enfants dans les écoles, via les programmes et activités scolaires.

Enfin, lorsque l'on pose la question de payer pour la protection de la nature, une majorité des répondants est d'accord sans toutefois, proposer de montant précis. Il faudra donner des explications claires et assurer la transparence du processus. Aucun des agriculteurs ne s'est prononcé sur la possibilité d'instaurer un droit d'entrée dans une réserve naturelle.

Les objectifs de conservation du site

La majorité des agriculteurs répondants accepte que les objectifs de conservation des sites Natura 2000 soient fixés par l'Union européenne et la Région wallonne tout simplement parce qu'ils ne pensent pas avoir le choix.

Pour l'agriculteur qui n'est pas d'accord, il estime que l'exploitation agricole est une société qui prend des risques (emprunts, …), qu'il sera difficile de changer ce système et qu'il n'est pas correct d'imposer le 'risque' de Natura 2000 encore en plus. Les agriculteurs sont trop dépendants des filières et ne savent plus correctement gérer eux-mêmes. Cet agriculteur pointe le besoin d'un système agricole différent, durable et dit avoir besoin d'accompagnement et de formation dans cette démarche.

Les objectifs de conservation ne doivent pas nécessairement faire l'objet d'une concertation au niveau local dans la mesure où il s'agit d'objectifs écologiques qui doivent être définis par des experts. Les raisons scientifiques étant présentes, il n'y a pas lieu de les contester, cependant, certains répondants demandent quand même une certaine information autour de ces objectifs et une amélioration de la communication.

La question de la flexibilité dans la définition des OC et le caractère contraignant comme bon moyen de préserver les espèces n'a pas été posé. Nous ne pouvons donc pas trancher sur ce point.

Il importe seulement à un seul répondant de garder une certaine flexibilité dans la définition des objectifs de conservation ; également, un seul répondant estime que le caractère contraignant des objectifs de conservation est un bon moyen de préserver les habitats et les espèces (les autres agriculteurs n'ayant pas répondu à ces deux questions).

Une remarque intéressante d'un agriculteur est d'être attentif au risque de déséquilibre qui pourrait se produire en intensifiant moins dans les parcelles Natura 2000 tout en intensifiant plus sur le reste de l'exploitation pour compenser.

La protection du site

Tous les agriculteurs interrogés sont prêts à réduire l'intensité de leurs pratiques agricoles afin de réaliser les objectifs de conservation sur le site mais ce, à certaines conditions. Le moyen le plus plébiscité est l'adoption d'incitants économiques positifs comme les subventions ou les mesures agrienvironnementales mais les répondants demandent d'être attentif à la durabilité du système : quand il n'y aura plus d'argent, ils ne seront plus d'accord de participer.

Les interdictions d'exercer certaines pratiques dommageables à l'environnement (sauf dérogation) rencontrent également l'approbation de certains répondants et ce, à la condition d'obtenir une compensation financière.

Aucun des répondants ne souhaitent l'adoption de mesures foncières telles que le rachat des terres ou l'expropriation, trouvant cette mesure trop radicale car la terre, c'est leur patrimoine.

Certains agriculteurs suggèrent enfin une combinaison des mesures proposées (interdictions sauf dérogation, soumission à permis ou notification des pratiques, adoptions d'incitants positifs ou négatifs et adoption de mesures foncières). De plus, les agriculteurs désirent que le 'résultat final tienne la route' : il faudra bien calculer l'ensemble pour que tout le monde s'y retrouve. Pour ces agriculteurs, peu importe l'outil finalement, pour autant que ce soit équitable, adapté et flexible.

En ce qui concerne la gestion des incidences des pratiques agricoles exercées à l'extérieur des sites pour garantir la réalisation des objectifs de conservation, les agriculteurs sont majoritairement pour l'encouragement, par exemple par un surcroît de prime, à l'adoption de MAE dans une zone tampon autour du site.

Lorsque l'on parle de la conditionnalité, les agriculteurs la qualifient très diversement. Ils trouvent tout d'abord que la conditionnalité en agriculture est un moyen techniquement approprié pour faire respecter les obligations de protection des sites Natura 2000 contenues dans le programme de la conditionnalité par les agriculteurs, en ce sens que l'outil est efficace, les agriculteurs respectent les mesures. Mais ils demandent quand même un accompagnement technique, afin de savoir ce que l'on peut faire ou pas, quand et dans quelles conditions. De plus, ils trouvent majoritairement que c'est un moyen légitime de contraindre l'agriculteur à respecter les obligations de protection des sites Natura 2000 contenues dans le programme de la conditionnalité. Ils considèrent que c'est un donné pour un rendu, presque comme du civisme de respecter l'environnement. Toutefois, un agriculteur ne partage pas cette vision et rappelle qu'historiquement le paiement unique vise à garantir une autonomie alimentaire et à maintenir l'agriculture, à la différence des mesures agrienvironnementales qui constituent des engagements pour l'environnement.

Les avis sur la proportionnalité de la conditionnalité eu égard à l'impact d'une suppression des aides pour l'agriculteur divergent. Le caractère proportionné ou non qu'ils accordent à la conditionnalité découle de leur appréciation du mécanisme des sanctions. Certains estiment la gradation actuelle acceptable, d'autres non. Egalement, ils considèrent presque à l'unanimité que la conditionnalité est un moyen discriminatoire par rapport aux autres catégories d'utilisateur non soumis à la conditionnalité, comme par exemple les forestiers. Il s'agit pour certains d'une double sanction (pénale et financière) alors que d'autres utilisateurs font des actes du même type et ne sont pas sanctionnés. Ils souhaitent avoir une mise à niveau des contraintes pour tous les utilisateurs.

Enfin, les agriculteurs sondés ciblent différents types de perte de revenus qu'ils estiment devoir être pris en charge par la collectivité via une indemnisation appropriée. Pour tous, la perte de revenu liée à une réduction de l'intensité de l'activité existante doit être prise en charge. En ce qui concerne la perte de la valeur immobilière du bien concerné par les mesures de protection, près de la moitié estiment qu'elle doit être prise en charge. Certains se posent toutefois la question de savoir s'il y aura réellement une perte de valeur immobilière. Quant au coût d'opportunité lié à l'impossibilité d'envisager d'autres activités plus intensives qu'actuellement, peu se prononcent. Cela semble difficile à dire et certains se posent la question des éventuelles autres opportunités sur ces zones Natura 2000. Un agriculteur estime que le travail supplémentaire imputable aux règles de Natura 2000 devrait être pris en charge.

La gestion active du site

Dans le cadre de la gestion active des sites, c'est le contrat de gestion avec l'agriculteur qui est choisi à l'unanimité comme moyen le plus approprié pour assurer l'entretien des habitats naturels ou d'espèces liées au milieu agricole. Ce contrat devrait prendre en compte la rentabilité de l'exploitation et l'environnement et être proportionnel à la taille de l'exploitation, au nombre d'hectares exploités. Cette solution est choisie car il existe une possibilité de discuter, de flexibilité et d'adaptabilité. Les mesures agrienvironnementales sont également choisies par un peu moins de la moitié des répondants.

Dans le cas où l'agriculteur ne respecterait pas ses engagements, les sondés préfèrent à l'unanimité une suppression de la subvention comme sanction. Cette suppression pourrait éventuellement ne concerner que la parcelle « en faute » et être imposée avec gradation, c'est-à-dire d'abord commencer par un avertissement. Un agriculteur suggère de supprimer les autres aides. De manière générale, les répondants demandent d'être attentifs aux erreurs qui pourraient ne pas être volontaires.

La restauration de certains habitats

En ce qui concerne la nécessité et la légitimité de restaurer des habitats naturels à partir d'habitats agricoles intensifiés, dégradés ou artificialisés, les agriculteurs ont un avis assez mitigés. Trois d'entre eux sont franchement pour si c'est nécessaire et qu'il existe des compensations, trois autres considèrent que cela doit dépendre de la situation en sachant que ce ne serait encore qu'une contrainte de plus, enfin un est contre.

Néanmoins, si cela devait se faire c'est le contrat de gestion avec l'agriculteur qui a la quasi-unanimité car c'est une option qui pourra être discutée, la mise en place d'un partenariat. Egalement, la substitution d'ONG de protection de la nature aux agriculteurs pour assurer la gestion est un moyen plébiscité par un peu plus de la moitié des agriculteurs interrogés. Enfin, aucun agriculteur n'est pour l'adoption de mesures foncières, comme expliqué précédemment ; un agriculteur suggère d'utiliser ce moyen contre l'urbanisation.

Stratégie globale

Pour terminer, lorsque l'on parle de stratégie globale pour atteindre de façon durable les objectifs de conservation sur le site, les mesures de protection et de gestion et/ou restauration strictement consensuelles obtiennent les faveurs d'un peu moins de la moitié des répondants. Cela s'explique car les contraintes données « en bloc » sont mal vécues mais également par le fait que ce ne sont pas les contraintes qui favoriseront la succession des agriculteurs de demain. A nouveau, les mesures foncières sont refusées et l'ensemble des agriculteurs serait favorable à une combinaison des mesures proposées. Notons, la remarque d'un agriculteur disant qu'il faut être attentif à ne pas considérer les agriculteurs comme des jardiniers mais plutôt comme des producteurs de nourriture.

7.2.2 Natura 2000 et les communes

Dans le cas présent, ce n'est pas à chaque fois le même type de personne qui a répondu au questionnaire. Les fonctions interrogées sont les suivantes : échevin de l'agriculture, de la forêt et du tourisme, échevin de l'environnement, éco-conseiller et bourgmestre. Il y a différentes tendances selon les « niveaux de pouvoir » et les résultats seront donc traités séparément. Sur quatre communes, cinq personnes ont été rencontrées, cela constitue donc notre échantillon. Cependant, même si les avis divergent franchement, c'est un avis concerté qui amène à la décision finale dans les communes.

Au préalable, connaissance de Natura 2000

En premier lieu, lorsque l'on parle de Natura 2000 aux représentants des communes, deux types de réponses leur viennent à l'esprit. Tout d'abord des réponses de type positif, Natura 2000 serait une très bonne chose, positif pour le tourisme mais également, avoir ce statut serait une reconnaissance de bonne gestion. Ce serait également financièrement supportable dans la mesure où les communes s'attendent à recevoir certaines subventions. Cependant, Natura 2000 est aussi vu comme une contrainte par la majorité des répondants. Il y a un manque d'information et de concertation autour de la mise en application, avec une certaine incompréhension qui règne.

Dans le cas des représentants des communes, ce qu'est Natura 2000 et son but paraissent assez clairs. La moitié des répondants savent qu'il s'agit d'une décision européenne qui porte sur la création d'un réseau d'aires protégées avec comme but le maintien de la biodiversité et la protection des espèces et des habitats. Pour un répondant, cela reste néanmoins assez flou.

Quand on pose la question de savoir si les communes sont impliquées dans Natura 2000, la réponse est majoritairement oui. Les communes se sentent impliquées par le fait qu'une partie de leur territoire communal a été désigné en Natura 2000.

La perception de Natura 2000 est assez mitigée. D'un côté, Natura 2000 est vu comme positif d'abord pour la nature mais également pour la commune, ce serait un atout d'un point de vue touristique, un effet « carte de visite », en plus du budget que cela pourrait amener. Le point négatif ciblé est le fait que Natura 2000 est considéré avoir été pensé dans des bureaux, sans souci de la réalité du terrain. Le principal avantage cité est le financement possible alors que les désavantages sont plus nombreux : la perte des dividendes des droits de succession et du précompte immobilier ainsi qu'une perte d'autonomie et de compétences dans l'octroi de permis (urbanisme, …).

En ce qui concerne la mise en place du réseau, une petite majorité pense que ce ne sera pas possible notamment si on n'oblige pas les gens et si on n'exerce aucun contrôle. De plus, les agriculteurs et leurs syndicats sont cités comme pouvant être un frein à la mise en place du réseau. Les autres répondants considèrent qu'il sera possible de mettre en place le réseau par la persévérance. En outre, la moitié des répondants considère comme possible de stopper le déclin de la biodiversité car, c'est le but du réseau et également si toutes les communes sont fortement impliquées. Cependant, un des répondant (conseiller en environnement) pense que le processus de déclin est allé trop loin que pour pouvoir être stoppé.

Les avis ont changé pour une majorité, en devenant plus favorables. Progressivement, les communes se sensibilisent à la chose et voient que c'est de l'intérêt de tous. Un répondant, néanmoins, est lui devenu plus critique depuis l'arrivée à l'échevinat.

<u>Les objectifs de conservation du site</u>
Seule la moitié des répondants acceptent que les objectifs de conservation (OC) du site soient fixés par l'Union européenne et la Région wallonne. Les autres ont l'impression que l'information est donnée brute, « d'en haut » avec un manque de concertation.
Une majorité pense que la fixation de ces objectifs doit faire l'objet d'une concertation au niveau local afin d'éviter certains problèmes (opportunité ou non de faire certaines activités sur le site, …) mais un des répondant a tout de même conscience que les avis divergent énormément et que donc ça aurait été un trop long processus. Le problème de l'intégration des aspects socio-économiques est également pointé. Un des répondants pense qu'il ne faut pas de concertation dans la mesure où la fixation des objectifs est basée sur des arguments scientifiques donc objectifs.
Tous les répondants désirent de la flexibilité dans la définition des OC, de manière à pouvoir s'adapter à des cas particuliers et aux problèmes socio-économiques. Un des répondants a comme impression que l'on veut arrêter l'évolution et que l'on met trop l'accent sur l'environnement et pas assez sur l'humain. Enfin, la majorité des répondants pense que le caractère contraignant des OC pour l'autorité est un bon moyen de préserver les habitats et les espèces. Cependant, des problèmes pratiques, comme la lourdeur administrative sont mis en avant.

Quelques remarques sont ajoutées de manière indépendante du questionnaire :

- un répondant rapporte une expérience négative d'un projet Life, avec le sentiment d'une communication insuffisante sur les objectifs et un manque de transparence,
- également, un répondant suggère qu'il faut préserver la nature là où l'agriculture est encore extensive, donc dans d'autres pays de l'UE, considérant qu'il y a assez de place en-dehors de la Wallonie,

- et enfin, un répondant ajoute que si Natura 2000 représente une contrainte pour l'humain, il n'y aura jamais l'adhésion des gens.

La protection du site

Lorsque l'on demande aux représentants communaux s'ils sont prêts à adapter la gestion de leur territoire communal pour réaliser les OC sur le site, ils répondent à l'unanimité positivement. Un commentaire précise quand même qu'« on n'aura pas le choix » et les répondants demandent le temps de pouvoir s'adapter. Ce sont les soumissions à permis des pratiques (accompagnée d'une évaluation des incidences et de l'obligation pour l'autorité qui délivre le permis de respecter les OC, sauf dérogation – mécanisme dit « d'évaluation appropriée ») et l'adoption d'incitants économiques positifs (les subventions rencontrant la moitié des avis) qui sont choisis comme moyen juridique pour arriver à cette fin. Un répondant propose également une combinaison des mesures, à condition que cette combinaison soit bien réfléchie ; les interdictions et les mesures foncières sont catégoriquement refusées par deux répondants.

Les répondants ont donné peu d'avis sur la gestion de la question des incidences des pratiques agricoles exercées à l'extérieur des sites pour garantir la réalisation des OC par les autorités. Un répondant suggère l'encouragement, par exemple par un surcroît de prime, à l'adoption de MAE dans une zone tampon autour des sites, un autre suggère des interdictions sauf dérogation applicables à ces pratiques.

Enfin, les répondants ont été plus critiques en qualifiant les mécanismes de l'évaluation appropriée des incidences (évaluation scientifique eu égard aux objectifs de conservation) et le critère d'autorisation lié à la certitude d'absence d'impact. Ces mécanismes sont techniquement appropriés et proportionnés pour la majorité des répondants. Ils sont légitimes pour seulement la moitié des répondants, un répondant déclarant que c'est à la société de prendre cela en charge. Un seul répondant juge qu'ils sont possibles à mettre en œuvre. Ceux qui répondent par la négative (la moitié de l'échantillon) jugent la règle du principe de précaution trop stricte et ajoutent que les communes n'ont pas les outils pour savoir s'il y a impacts ou pas, et doivent donc faire confiance au DNF

Un répondant remarque qu'il n'existe pas vraiment de canevas bien structuré pour cette évaluation appropriée des incidences et que donc, les gens y remplissent tout et n'importe quoi.

La gestion active du site

En ce qui concerne la gestion active du site, le moyen qui parait le plus approprié pour assurer l'entretien des habitats naturels ou d'espèces est le contrat de gestion comme outil négocié et adapté à chaque situation. Les subventions contrat d'adhésion (primes liées à un cahier des charges précis) sont choisies par une personne ; mais si ce n'est pas adapté alors en deuxième choix vient le contrat de gestion. Un répondant remarque que l'ensemble des moyens peut être approprié, à condition qu'ils soient hiérarchisés en fonction du milieu et des circonstances.

La restauration de certains habitats

Une petite majorité des répondants estime qu'il peut être nécessaire et légitime de restaurer des habitats naturels à partir d'habitats intensifiés, dégradés ou artificialisés (comme un champ de maïs ou une plantation de résineux par exemple). Quelques remarques sont ajoutées :

- restaurer est important pour obtenir un réseau écologique cohérent mais parfois cela ne se justifie pas si l'on veut restaurer une petite parcelle d'habitats isolée,
- et, il faut voir au cas par cas, selon l'intérêt et les coûts.

Une commune précise qu'elle ne désire pas de restauration en milieux agricoles mais plutôt en forêt.

Pour cette question, les quatre moyens proposés sont choisis par une personne à la fois, il n'y a donc pas de suggestion claire pour effectuer la restauration des habitats menacés.

Sanction et financement

Les pertes de revenus que les représentants communaux estiment devoir être pris en charge par la collectivité via une indemnisation appropriée sont de trois types :

- tout d'abord, la perte de revenu liée à la réduction de l'activité existante, citée par trois répondants,
- ensuite, la perte de valeur immobilière du bien concerné par les mesures de protection (toutefois, un des répondants précise que pour cette perte de valeur immobilière, les communes sont moins concernées que les particuliers),
- et enfin, le coût d'opportunité lié à l'impossibilité d'envisager d'autres activités plus intensives qu'actuellement, citées par trois personnes. Les deux autres répondants jugent eux, que la prise en charge du coût d'opportunité ne se justifie pas.

La taxe générale est la plus souvent citée comme manière de prélever les moyens nécessaires à la conservation de la nature. Les répondants ajoutent qu'il ne faut pas léser le secteur Horeca et que cette taxe ne doit pas uniquement concerner les locaux mais bien tout le monde en général. Enfin, un répondant remarque que selon lui, il n'y a aucune retombée pour le secteur Horeca, car les touristes sont des consommateurs de nature, ils viennent se balader en forêt mais ne rentrent pas dans les villages.

En cas de non-respect des engagements, les répondants plébiscitent une suppression de la subvention (un répondant suggère même un remboursement depuis le début des montants déjà perçus). La sanction administrative et la suppression des autres aides sont également choisis mais de façon marginale.

Education et information

Les représentants communaux pensent que l'information est un instrument important ! Il y en a un tout petit peu qui circule déjà mais ce n'est pas pour autant que tout le monde est au courant. Selon plus de la moitié des répondants, les gestionnaires du site doivent être informés en priorité, et ensuite le grand public, notamment les enfants via les écoles.

Les répondants considèrent l'éducation également comme importante. Il est important d'expliquer d'où on vient et vers quoi on va. Pour ce faire, il est suggéré de viser les plus jeunes, plutôt dans le secondaire avec l'idée de disposer d'un créneau horaire au sein d'un programme d'éveil ou de sciences, spécifique à Natura 2000.

Pour impliquer le grand public, il est suggéré d'utiliser des campagnes de communication via la presse, la télévision et l'Internet. Il est également important de montrer des réalisations concrètes afin que les citoyens puissent visualiser sur le terrain ce qui est ou a déjà été (à) accompli(r). Pour les fins de la conservation de la nature, les répondants remettent en avant le fait qu'il faut d'abord l'adhésion des gestionnaires car ils sont tout le temps sur le terrain et que ce sont eux qui vont construire l'image positive ou négative de Natura 2000.

Stratégie globale de gestion des sites Natura 2000 au niveau local

Pour finir, les répondants n'ont pas d'avis très tranché pour la mise au point d'une stratégie qui paraîtrait à même d'atteindre de façon « durable » les objectifs de conservation sur le site. Aucun répondant ne choisit l'option des faire uniquement des mesures de protection contraignantes ainsi que d'appliquer des mesures foncières. Le choix de mesures de protections contraignantes ainsi que de mesures de gestion et de restauration strictement consensuelles est l'option d'un répondant. Il en va de même pour l'option « strictement consensuel ». Deux répondants favorisent la combinaison des mesures présentées.

7.2.3 Les entreprises et Natura 2000

Aperçu de l'économie locale et de l'activité

La majorité des entreprises interrogées pour cette enquête de terrain sont des exploitants de carrière situé sur ou à proximité du Bassin de la Lesse. L'Abbaye Saint-Rémy, qui brasse la bière de Rochefort, a également été interrogée pour son implication dans la gestion de la ressource en eau de la région. Elle est utilisatrice d'une eau de qualité et celle-ci est mise en péril par une des carrières précitées. Nous avons aussi rencontré des représentants de l'intercommunale namuroise, gestionnaire de la zone d'activités économiques de la commune de Rochefort. Enfin, nous avons rencontré un négociant en bois, entrepreneur indépendant, au même titre que les agriculteurs et qui, par son activité, connait de près la problématique de la forêt en Natura 2000. Le total des répondants est au nombre de six.

Au niveau de l'activité même des entreprises, elle est catégorisable en trois types :

1. activité extractrice pour les carrières
2. activité brassicole pour l'Abbaye Saint-Rémy
3. gestion d'une zone économique – négoce sur une zone économique

Localement, les carrières et la zone d'activité économique ont une activité qui varie d'influente à en plein essor (une carrière a une activité que l'on peut qualifier de plutôt moyennement influente). Ces activités ont toutes un impact sur l'environnement mais qui est généralement correctement pris en compte par les gestionnaires afin de limiter les dégâts (plan de réaménagement, kit anti-pollution, … pour les carrières, travail avec des études d'incidences pour la zone économique, gestion des déchets de production pour l'abbaye).

Remarquons que les personnes interrogées sont les porte-paroles de leur entreprise mais souvent elles s'expriment également à titre personnel. Egalement, beaucoup nous ont parlé du DNF.

L'idée générale qui transparaît est que les représentants d'entreprise interrogés sont d'accord de soutenir une politique de gestion pensée environnement mais il leur faut avant tout rester rentable, c'est là que se trouvera la limite. De plus, nous pouvons dire que les carriers semblent très volontaires pour le réaménagement des carrières après exploitation. Ils ont également l'envie de montrer ce qu'ils font grâce à des journées portes ouvertes. La commission d'accompagnement, avec les riverains, est un bon endroit pour introduire la problématique de Natura 2000.

<u>Au préalable, connaissance de Natura 2000</u>
Lorsque l'on parle de Natura 2000 aux entrepreneurs qui ont été interviewés, plusieurs idées leur viennent à l'esprit. D'un côté, ils parlent de superficies dédiées à la protection de la biodiversité et du respect de « quelque chose » qui profite à tout le monde mais d'un autre, ils parlent également de contraintes, de limitation de propriétés et de beaucoup d'interdits mais pas du mauvais non plus.

Pour définir Natura 2000, les représentants des entreprises utilisent plusieurs fois les termes de périmètre, zone ou superficie dans lesquels la nature est protégée ou préservée. Un des répondants parle de 'directive' et un autre de 'niveau européen'. Un des répondants dit encore qu'il s'agit de zones où l'on ne peut rien faire et un dernier, plus radical dit que « c'est un grand bazar ».

Seul un des répondants se sent impliqué dans Natura 2000 car il fait partie du Comité de rivière Lesse. Les autres déplorent ne jamais avoir reçu d'informations ou encore disent se sentir impliqués mais pas directement.

Le réseau Natura 2000 est vu en majorité comme positif pour la nature et en tant que citoyen, d'un point de vue personnel. Lorsque le répondant revient à sa place d'entrepreneur/industriel, une majorité pense que Natura 2000 peut amener des désavantages, soit si leur activité propre devrait s'étendre ou alors en pensant aux autres acteurs comme les forestiers ou les agriculteurs. Pour la moitié des répondants, cela reste quand même neutre dans la mesure où Natura 2000 se

trouve en zone non-urbanisable, ne va pas à l'encontre de l'activité de production ou encore que l'activité industrielle est déjà pensée dans un maximum de respect de l'environnement.

La majorité des répondants pense que l'on pourra mettre en place le réseau et stopper le déclin de la biodiversité, ou en tout cas y contribuer. Un répondant cependant, n'est pas du tout convaincu.

Enfin, concernant les avis sur Natura 2000, soit qu'ils n'ont pas changé car les exploitants étaient déjà en faveur de Natura 2000 ou alors ils sont devenus encore plus positifs. Les répondants déplorent cependant le manque d'information. De manière plus radicale, un répondant pense qu'il s'agit « d'une vaste couillonnade » dans l'ensemble, beaucoup de discours mais peu de résultats. Pour les forestiers, le bois est leur ressource mais ça ne veut pas dire que ce sont des massacreurs de forêts comme on le pense. En citant un exemple, selon lui, c'est en Amazonie qu'il y a un vrai problème.

Les objectifs de conservation du site

Sur les quatre répondants qui se sont prononcés, deux acceptent que les objectifs de conservation (OC) soient fixés par l'Union européenne et la Région wallonne dans les périmètres qu'ils exploitent, arguant que ce n'est pas un souci car on sait que la Région wallonne s'appuie sur des études et que de toute façon, il faut bien qu'une institution prenne cela en charge. Pour ceux qui ont répondu négativement, ils souhaitent que le processus se fasse à un niveau plus local.

Une grande majorité des répondants pense que la fixation des OC doit faire l'objet d'une concertation au niveau local et qu'il importe de garder une flexibilité dans la définition de ces objectifs. Selon les répondants, il faut garder de la flexibilité car on est dans un monde où tout change vite. Il faut également mettre des objectifs réalistes pour faire adhérer les industriels et se donner les moyens pour y arriver.

Seulement deux répondants se prononcent sur le fait que le caractère contraignant des OC pour l'autorité (notamment dans la délivrance des permis) soit un bon moyen de préserver les habitats et les espèces, arguant que ce sont des spécialistes qui ont défini les OC et que donc, il faut leur faire confiance. Pour les autres répondants, c'est un peu plus difficile de juger, tout dépend des cas et il faudra sans doute réévaluer au fur et à mesure. Se fixer un objectif énorme à atteindre, c'est risquer de ne pas l'atteindre ! Un des répondants dit également que l'on peut contraindre beaucoup de choses, mais ce n'est pas pour autant que ce sera efficace.

La protection du site

Un peu plus de la moitié des répondants accepte de réduire l'intensité des pratiques pour réaliser les OC sur le site. Plusieurs moyens sont mis en avant pour se faire :

- la moitié des répondants suggère l'adoption d'incitants économiques positifs et négatifs, processus qui est qualifié de plus facile et plus souple ;
- ensuite, les interdictions d'exercer des pratiques dommageables, qui sont de l'avis de deux personnes ;
- enfin, l'adoption de mesures foncières, qui est suggéré par une personne. Il faut cependant voir les moyens dont on dispose, on a besoin d'argent pour acheter mais il faut encore gérer après. Il est plus durable et plus profitable d'aider le propriétaire. L'idée serait d'apprendre aux gens sur place à faire les choses, ce serait en quelque sorte de la « substitution assistée ».

Deux répondants refusent de réduire l'intensité des pratiques car ils estiment alors que ce ne serait plus la peine de garder des propriétés. De plus, la question des incidences des pratiques productives exercées à l'extérieur des sites pour garantir la réalisation des OC n'a pas été abordée lors des interviews.

Enfin, en ce qui concerne les éventuelles pertes de revenu et leur prise en charge, il n'y a pas suffisamment de réponses que pour trancher. Deux répondants ouvrent le débat et penchent pour une prise en charge par la collectivité, sans toutefois donner de précisions sur le type de pertes.

La gestion active du site

Afin d'assurer l'entretien des habitats naturels ou d'espèces liés au site Natura 2000, le contrat de gestion avec le propriétaire ou le gestionnaire est mis en avant par une grande majorité des répondants. La moitié des répondants choisissent également la substitution des pouvoirs publics ou d'ONG de protection de la nature aux gestionnaires de terrain pour assurer la gestion. Ce moyen est jugé comme un des meilleurs pour que le travail soit fait et la gratuité est un atout également car il n'y a pas toujours les compétences et le matériel disponibles pour effectuer le travail de gestion. Un des représentants des entreprises suggère quand même de laisser les deux options selon que le propriétaire soit apte ou non à le faire.

En cas de non respect des engagements, la moitié des répondants est d'accord d'imposer une sanction (si on part sur base d'un contrat signé où on a expliqué les choses). C'est une suppression des subsides qui est choisi, tout en restant attentif car parfois cela peut être involontaire.

La restauration de certains habitats

Une petite majorité estime qu'il est nécessaire et légitime de restaurer des habitats naturels à partir d'habitats naturels intensifiés, dégradés ou artificialisés. Il faut cependant voir si c'est un péril important pour les objectifs de conservation car il y a des choses à préserver en toute grosse urgence. C'est également une question de moyen, si on en a peu, on fera de petites choses. Sur ce point, un des répondants pense qu'il vaut mieux ne pas trop se disperser ou travailler par morceaux afin de garantir l'état global. Sur la question des moyens, l'ensemble des commentaires ne permet pas de trancher.

Stratégie globale de gestion des sites Natura 2000 au niveau local

Dans une idée de stratégie globale, il est important de signaler que deux des entreprises les plus industrielles effectuent des communications orientées environnement à leur personnel.

Pour atteindre de façon durable les objectifs de conservation sur le site, le mix de contraignant et de consensuel est choisi par la moitié des répondants : il faut un minimum de contraintes pour que les gens réagissent et pour ne pas risquer d'obtenir trop peu, mais il faut également de la concertation.

Plusieurs acteurs sont cités pour être impliqués dans cette stratégie :

- les communes, citées par la moitié des répondants,
- les Régions, notamment le service d'urbanisme et l'aménagement du territoire,
- les écoles,
- les syndicats d'initiative pour le pôle touristique
- les contrats de rivière,
- ainsi que des sociétés/ONGs de terrain comme le Centre d'Economie Rurale, acteur de terrain qui a une bonne connaissance générale.

Deux répondants souhaitent également une concertation générale : Mr Tout le Monde a le droit d'émettre son avis et a également le devoir de s'impliquer.

Dans le processus de Natura 2000, l'information est un instrument important et utile dans la mesure où l'application est obligatoire. C'est efficace dans l'absolu mais il faut décider les gens, les impliquer pour les pousser à aller aux réunions, … . L'éducation permettrait d'aller plus en profondeur. Les répondants soulignent également le travail prodigieux fait dans les écoles et qui semble efficace : il s'agit de l'éducation des parents par les enfants.

Pour impliquer le grand public dans le processus Natura 2000, les répondants suggèrent d'organiser des journées de la nature, des journées du patrimoine ou encore des w-e découvertes de sites Natura 2000 pour sensibiliser les gens sur le terrain. Cela donnerait la possibilité de voir les espèces et ce que l'on peut faire sur les sites. Pour les campagnes d'information, les médias, les toutes-boîtes et les supports papier sont conseillés mais plutôt avec des images que du texte, que l'on n'aura pas envie de lire (ex. photos avant/après de bord de route nettoyée). Les carriers soulignent que les journées découvertes entreprises ont du succès !

Trois répondants sont d'accord d'instaurer un droit d'entrée dans les réserves naturelles mais seulement s'il y a un réel intérêt (donc pas pour des forêts banales) et si l'argent est nécessaire pour assurer la gestion. Deux autres répondants sont contre, car ils considèrent qu'il ne faut pas se tromper d'objectifs, que c'est un droit de se balader où l'on veut ; mettre un droit d'entrée serait une atteinte à la liberté des gens. De plus, cela pourrait faire fuir le public et pousser à ne pas profiter de ce que l'on a chez soi.

Enfin, à titre personnel, trois répondants sont d'accord de payer pour la conservation de la nature, avec un minimum de transparence. Un montant précis de 100 €/an est proposé, pour les deux autres personnes, cela reste à voir. A l'inverse, deux répondants refusent car ils estiment que les gens n'en n'ont plus les moyens, même sil y a la volonté de faire quelque chose pour la protection de l'environnement. En ce qui concerne la proposition de taxe pour le secteur Horeca, trois répondants sont d'accord sur le principe, si c'est constructif et si on fait payer ceux qui bénéficient des retombées directes. Deux autres répondants ne sont eux, pas d'accord car ils considèrent que certains établissements sont déjà limites rentables et que ce secteur paye déjà une TVA élevée. Donc, il ne faut pas mettre de charge supplémentaire. Un répondant ajoute encore que la conservation de la nature n'est pas uniquement touristique, mais que c'est une considération pour tous.

Un des répondants est négociant en bois. Il a été très critique envers le système de compensations financières. Il travaille en tant qu'indépendant, au même titre que les agriculteurs mais il ne reçoit pas d'aides. Il considère que les agriculteurs sont aidés du début à la fin et il se pose des questions sur la répartition des futures primes : les petits propriétaires seront-ils lésés et les grands propriétaires (barons, ….) recevront-ils tout ? Il estime également qu'à un moment donné, on atteindra un point de non-retour : on s'apercevra que l'on a du retard dans les plantations et qu'il n'y aura plus suffisamment de ressources pour fournir le marché belge (il faudra donc avoir recours à l'importation).

7.2.4 Natura 2000 et les propriétaires forestiers

Pour les interviews concernant les propriétaires forestiers, sept personnes ont été rencontrées. Il s'est avéré parfois difficile de poser certaines questions, ou d'avoir une réponse claire car l'échantillon était composé de quelques personnes relativement, qui avaient des problèmes de compréhension concernant les tenants et aboutissants de la problématique Natura 2000.

Au préalable, connaissance de Natura 2000

Lorsque l'on parle de Natura 2000 aux propriétaires forestiers, on retrouve uniquement des termes concernant la préservation de la nature : protection/conservation/préservation des sites naturels/des espèces/de la nature. Le mot 'contrainte' n'apparaît pas à ce stade dans un sens négatif, il s'agit de maintenir le site le plus naturel possible via certaines *contraintes*. Un commentaire cependant montre le flou autour de Natura 2000 et demande « ce que c'est exactement ».

Quand on demande ce qu'est Natura 2000, des précisions sont amenées. Deux répondants pensent que Natura 2000 est un organisme qui supervise le suivi des plantations, du gibier, des autres espèces et qui établit des règles pour gérer la nature le mieux possible. Un répondant

parle d'une obligation de l'Europe de désigner des zones pour conserver la nature. Ici, le terme 'contrainte' apparaît dans son sens plus négatif, un des répondants souligne que l'on ne pourra plus faire ce que l'on veut.

Une petite majorité des répondants a déjà reçu de l'information concernant Natura 2000 : réception de papiers, informations reçues des notaires, recherche sur Internet, … . Par contre, aucun des propriétaires forestiers ne se considère comme impliqué dans le réseau.

Natura 2000 paraît plutôt positif pour une petite majorité mais certains ajoutent que cela ne se fera pas sans grogne. Les répondants ne s'expriment pas précisément sur la teneur des avantages possibles, ils disent qu'il y en aura mais plutôt à long terme et dans une optique patrimoniale. Deux répondants qualifient Natura 2000 de négatif, car cela aura un coût et ils ont l'impression d'être dépossédés de leurs biens, de ne « plus en être maître ». Un des avis positif pourrait devenir négatif s'il s'avérait que Natura 2000 devient « coupeur de cheveux en quatre ».

Les répondants ne se prononcent pas franchement sur la possibilité de mettre en place Natura 2000. Ils donnent cependant leur avis sur la possibilité de stopper le déclin de la biodiversité. Cet avis est graduel, de « est-ce la priorité ? » à « oui franchement », en passant par « c'est à espérer », les avis divergent mais près de la moitié pensent que ce ne sera pas suffisant et suggèrent à demi-mot de faire quelque chose de plus.

Les avis concernant Natura 2000 n'ont pas vraiment changé. Soit que les gens, près de la moitié, se jugent peu informés et donc ne peuvent pas aller dans un sens positif ou négatif, soit qu'ils sont positifs car déjà sensibles à la protection de l'environnement.

Les objectifs de conservation du site

La majorité des propriétaires forestiers interviewés accepte que les objectifs de conservation (OC) du site soient fixés par l'Union européenne et la Région wallonne, pour autant que ce soit géré par des gens compétents, avec une expérience du terrain. La majorité souhaite également que la fixation des OC fasse l'objet d'une concertation au niveau local. Les propriétaires interviewés ont l'impression que cette fixation a été faite « loin » du terrain, dans les bureaux ; c'est pourquoi ils souhaitent une partie « plus locale ». De plus, lorsque quelque chose fait l'objet d'une concertation, c'est plus facilement accepté.

La majorité des répondants pense également qu'il importe de garder une flexibilité dans la définition des OC. Ils considèrent que la nature change d'elle-même et que cela correspond mieux à la réalité. Egalement, les répondants pensent que cela permettrait éventuellement de renégocier les contraintes.

Enfin, un peu moins de la moitié estime que le caractère contraignant des OC pour l'autorité (notamment dans la délivrance des permis) est un bon moyen de préserver les habitats et les espèces. Il est nécessaire de mettre des contraintes pour avoir des résultats, mais dans le cas de la forêt, il faut parfois plusieurs générations pour renouveler les plantations et avoir des effets donc il faut adopter une vision à long terme. Pour l'autre partie des répondants, c'est difficile à dire ! Les contraintes sont a priori mal acceptées sauf s'il y a de la concertation et que l'on voit un intérêt à faire les choses.

La protection du site

Une majorité des propriétaires forestiers interrogés est prête à réduire l'intensité des ses pratiques forestières pour réaliser les objectifs de conservation sur le site. Une petite majorité (quatre répondants sur les sept) choisit en premier lieu l'adoption d'incitants économiques positifs car ils jugent cela plus efficace. Viennent ensuite l'adoption d'incitants économiques négatifs et l'adoption de mesures foncières pour un peu moins de la moitié des répondants. Ceux qui sont pour l'adoption de mesures foncières, le sont soit pour eux-mêmes, car ils ne se sentent pas capables de gérer les parcelles en question et donc acceptent de les vendre à un prix raisonnable, soit dans le cas de personnes qui ne seraient pas à même de faire la gestion des

parcelles elles-mêmes. Les autres répondants sont contre l'adoption de mesures foncières car selon eux, ce serait un gaspillage de temps et d'argent et que ce serait plus compliqué (certains ne donnent pas non plus de raison). Egalement, les interdictions d'exercer certaines pratiques dommageables, sauf dérogation, sont choisies par deux personnes. Selon un répondant, la soumission à permis, serait une catastrophe. Ce procédé serait soumis aux dictats de certains fonctionnaires et subirait les pressions de certains lobbies politiques.

La gestion de la question des incidences des pratiques forestières exercées à l'extérieur des sites pour garantir la réalisation des OC n'a pas reçu suffisamment de commentaires que pour faire un choix précis. Trois personnes sont d'accord que les autorités s'occupent de cette question, une choisi le moyen des interdictions, sauf dérogation applicable à ces pratiques, les deux autres étant sans avis. Un répondant est contre car il considère que travailler à l'intérieur du site est déjà suffisant, cependant il accepte un minimum concernant la question des pesticides et engrais.

Concernant les pertes de revenus que les propriétaires pourraient encourir avec l'application de Natura 2000, les réponses sont assez variées. Trois personnes estiment que la perte de revenu liée à une réduction de l'intensité de l'activité existante, doit être prise en charge par la collectivité via une indemnisation appropriée. Il paraît logique si l'on a des pertes d'être remboursé, une personne déclare cependant que s'il s'agit d'une perte peu importante, alors elle peut être prise en charge au compte du propriétaire. Deux répondants estiment que la perte de valeur immobilière du bien concerné par les mesures de protection doit être prise en charge par la collectivité car l'environnement, c'est l'affaire de tous et que tout le monde en profite. Enfin, deux personnes se prononcent contre la prise en charge du coût d'opportunité lié à l'impossibilité d'envisager d'autres activités plus intensives qu'actuellement. De plus, trois personnes ne revendiquent rien car elles agissent avec plaisir pour la nature mais se prononcent quand même sur le fait que ça doit être pris en charge par la collectivité pour que « ça passe mieux ». Enfin, un répondant est sans avis : si les pertes sont réelles, alors il faut que cela soit pris en charge. Mais il estime que certains pourraient s'inventer des dommages qu'ils n'ont pas et que si ce sont des pertes raisonnables, il n'y a alors pas de raison de demander une compensation.

La gestion active du site

Au préalable, nous pouvons faire une remarque sur le fait que deux des propriétaires étaient d'emblée au courant de l'exemption du précompte immobilier et des droits de succession en cas de propriété en zone Natura 2000.

Le moyen le plus approprié, selon les propriétaires interrogés, pour assurer l'entretien des habitats naturels ou d'espèces liés au milieu forestier est le contrat de gestion passé avec le forestier. Ce procédé est appuyé car selon les répondants, le forestier vit sur ses terre donc les connait, et il pourra donner son avis. Des compensations sont demandées. Les mesures agrienvironnementales sont également choisies par trois répondants. Ensuite, viennent les paiements Natura 2000 et la substitution choisis respectivement par deux et une personne(s). Toutefois, trois personnes sont contre la substitution, car cela ne plait guère de laisser faire par d'autres. Enfin, deux personnes sont catégoriquement contre l'adoption de mesures foncières.

Les propriétaires forestiers acceptent qu'une sanction soit donnée en cas de non-respect des engagements car si l'on ne respecte pas ce que l'on a signé, on doit être pénalisé. Les répondants suggèrent une gradation de la sanction avec d'abord un avertissement, ensuite une suppression de la subvention (choix de quatre personnes), et enfin, une sanction administrative (choix de trois personnes). Pour ce faire, il faudra qu'au préalable un cahier des charges précis ait été présenté et il faudra également être attentif aux situations extrêmes ou de non-respect involontaire. Certains conseillent la suppression de la subvention et l'amende pour que cela soit plus efficace.

La restauration de certains habitats

La majorité des répondants estime qu'il peut être nécessaire et légitime de restaurer des habitats naturels à partir d'habitats forestiers intensifiés, dégradés ou artificialisés. D'emblée, certains (trois répondants) disent que les propriétaires font attention à replanter autre chose que du résineux.

Lorsque l'on pose la question des moyens à employer pour assurer la restauration, les mesures agrienvironnementales sont pointées par trois personnes, le contrat de gestion par deux répondants et enfin, la substitution par une ONG est citée par une personne ; tout en laissant la propriété, car on ne trouve pas toujours facilement des gens pour faire ou alors on n'est pas capable soi-même.

Stratégie globale de gestion des sites Natura 2000

Pour atteindre, de façon « durable » les OC sur le site, l'emploi de mesures de protections contraignantes (interdictions, permis) et de mesures de gestion et de restauration strictement consensuelles est cité par quatre répondants. Un minimum de contraintes avec du consensuel et de la coopération de la part des gens pourrait être efficace. Deux personnes pensent elles que des mesures strictement consensuelles seraient efficaces. C'est mieux de demander l'avis des gens, cela doit se faire d'un commun accord. Enfin, une personne cite les mesures foncières mais uniquement pour des cas précis.

Divers autres acteurs sont cités pour être impliqués dans la stratégie, notamment :

- les promeneurs (à la majorité) : pour un comportement plus responsable, notamment rester sur les sentiers
- les chasseurs (également à la majorité),
- les associations sportives, sont visés plus particulièrement les vététistes, motos et quads
- les communes
- les pisciculteurs
- les bûcherons : adoption de technique d'abattage plus respectueuses de l'environnement (utilisation d'huiles biodégradables, …)

Une partie (trois répondants) des propriétaires forestiers considère que l'information n'est pas au point, car on parle de Natura 2000 depuis longtemps mais on ne sait toujours pas grand-chose. Que ce soit pour le grand public ou pour les gestionnaires des sites, l'information doit servir à sensibiliser et expliquer ce qu'il faut faire sur le terrain. Un des répondants considère que le grand public n'a rien à voir avec Natura 2000, ce serait un acteur de plus qui va faire plus de mal que de bien. Plus précisément dans les moyens, les médias sont mis en avant par des émissions télévisées pour éveiller sur des choses précises. Les supports papiers ne sont pas conseillés car rapidement jetés à la poubelle sans être lus. L'éducation est vue comme nécessaire, un commentaire dit qu'il vaut mieux en savoir trop que pas assez. C'est important pour tous !

Pour impliquer le grand public, deux types d'idées sont donnés : tout d'abord sensibiliser via les médias et ensuite, expliquer sur le terrain ce que l'on veut faire, montrer de manière concrète. Egalement, l'école est un support pour toucher les enfants (dans l'idée de « l'éducation des parents par les enfants »).

Trois propriétaires sont d'accord d'instaurer un droit d'entrée dans les réserves naturelles, uniquement pour les promeneurs et pas une grosse somme, ce serait un « petit quelque chose » qui fait comprendre que l'on n'a rien pour rien, un petit minimum. A l'inverse, quatre propriétaires sont contre car ils considèrent que l'on paye déjà beaucoup de choses, que certaines personnes peuvent ne pas avoir les moyens et que surtout la nature est à tout le monde.

Trois propriétaires sont d'accord de payer pour la protection de la nature, sous la forme d'une taxe générale. Deux montants sont proposés : 5€/ménage/an et de 30 à 100 €/ménage/an. Egalement des commentaires vont dans le sens que ce ne doit pas être des sommes « qui fâchent », qu'il faut réserver l'argent pour la région où elle a été perçue et que le processus doit être transparent. Une personne suggère que ce soit les personnes qui ne sont pas déjà

directement impliquées qui payent, comme les citadins. Deux personnes sont contre la taxe générale, considérant qu'il y a déjà les écotaxes et que l'éducation est un meilleur moyen pour arriver au but.

En ce qui concerne la taxe pour le secteur Horeca, aucun répondant n'est en sa faveur. Ils considèrent qu'il faut agir sur le dommage en lui-même, que celui-ci doit être géré et transformé pour ne plus exister. Mettre une taxe pour le secteur Horeca, ce serait aller trop loin car beaucoup sont déjà en difficulté.

Notons encore le fait qu'un parc éolien doit être installé sous peu dans les environs du site Natura 2000 concerné. Lors de l'enquête, certains répondants forestiers (qui ont rapporté le fait) se disaient interloqués : d'un côté l'on agit pour la protection de la nature et de l'autre, on installe des éoliennes qui ont un impact sur la faune et qui posent un problème au niveau paysager.

Pour finir, ajoutons encore les commentaires d'un répondant qui avait préparé au préalable un document intitulé « Défense des propriétaires ». Il présente un préalable ainsi qu'une qualification des contraintes que Natura 2000 voudrait imposer.

Préalable
Il est impératif que le oules motifs qui ont eu pour conséquence la mise d'une parcelle sous le régime Natura 2000 soient communiqués au propriétaire. Ceci doit permettre :

1- *de vérifier le bien fondé de la décision.*
2- *si après vérification le motif est confirmé, de prévoir les contraintes et/ou de vérifier leur bien fondé c'est-à-dire leur adéquation avec le ou les motifs.*
3- *Si le ou les motifs sont jugés non fondés, d'exclure la parcelle de Natura 2000.*

Qualification des contraintes que Natura 2000 voudrait imposer

1- *en aucun cas, les contraintes ne peuvent aliéner les droits à la propriété comme*
    a. *la continuation du droit de chasse,*
    b. *l'interdiction de circulation aux tiers ; en particulier s'il y a contrôle, ceux-ci ne peuvent se faire sans préavis au propriétaire ni hors de sa présence s'il en exprime la volonté,*
    c. *la vente ou la location du bien. Si les contraintes altèrent la valeur du bien, le propriétaire doit être indemnisé lors de la dite transaction,*
    d. *une expropriation arbitraire.*
2- *en aucun cas les contraintes ne peuvent modifier les revenus actuels ou potentiels de la propriété comme*
    a. *l'exploitation agricole si le bien est cultivé ou cultivable,*
    b. *l'exploitation forestière en bon père de famille, droit aux coupes et aux plantations et aux choix des espèces.*

    Dans le cas où les revenus seraient modifiés par les contraintes, une compensation financière (adéquate et faisant l'objet d'un accord entre les parties) doit être garantie aux propriétaires. Ceux-ci retrouveraient automatiquement leur liberté si les engagements financiers n'étaient pas respectés dans des délais normaux (termes précisés dans l'accord de compensation).
3- *si des travaux spécifiques, des adaptations de matériel d'exploitation ou des modifications de technique d'exploitation sont imposés via les contraintes de Natura 2000 leur coût, tant direct qu'indirect sera supporté par Natura 2000.*

7.2.5 Natura 2000 et le secteur du tourisme dans le basin de la Lesse

Pour cet acteur important qu'est le tourisme dans le processus Natura 2000, nous n'avons malheureusement pu interroger qu'un seul représentant, le Domaine des Grottes de Han. Nous ne pouvons donc pas faire d'analyse précise au travers d'un échantillon mais nous donnerons simplement les commentaires émis par l'un des acteurs touristiques qui draine le plus de touristes dans la région.

Les exploitants du Domaine n'ont pas attendu Natura 2000 pour agir en faveur de la nature. Ils ont déjà mis en place certaines mesures comme rendre inaccessibles certaines cavités rocheuses et grottes pour protéger les chauves-souris ou encore la mise en pratique de laisser du bois mort et des arbres morts dans leur forêt qui n'est pas exploitée économiquement parlant. Les prairies sont également gérées de manière extensive. Cela fait trois ans qu'elles n'ont plus été amendées et elles sont fauchées tardivement (mais pâturée toute l'année). On y préserve des zones refuges lors de la fauche et le pâturage ne dépasse pas la capacité du milieu. Enfin, ils donnent très peu de compléments aux animaux. Le cas de la clôture des berges en bords de cours d'eau leur semble impossible dans le Domaine car la Lesse subit de régulières inondations et recouvre alors son ancien lit.

Le Domaine des Grottes de Han occupe une place assez influente dans le domaine du tourisme de cette région. De manière générale, le Domaine envisage d'encore développer ses activités à l'avenir : le projet en cours de développement s'intitule « La nature grandeur nature ».

Lors du développement de nouveaux projets, les critères économique, social et environnemental sont intégrés de manière très importante et une grande place est accordée au culturel. Concernant le social, le Domaine accorde de l'importance à l'emploi et à la concertation avec les habitants du village.

Au préalable, les connaissances de Natura 2000

Lorsque l'on parle de Natura 2000, il vient immédiatement à l'esprit de l'interviewé les mots « protection du milieu naturel ». Plus précisément, il semble difficile de se faire une opinion, le but de Natura 2000 n'est pas défini. Le Domaine des Grottes de Han ne se sent pas impliqué car pas informé, mais cela ne devrait a priori pas être un inconvénient pour ce groupe. Le Domaine voit Natura 2000 comme une opportunité au niveau pédagogique, ce serait un plus pour mettre en valeur certains aspects du parc. Le réseau Natura 2000 semble positif, il n'y a pas d'exploitation forestière à but de rentabilité pour le Domaine. L'avantage pourrait donc être de bénéficier de conseils avisés pour une gestion plus écologique du parc. Néanmoins, le Domaine ne pense pas que la mise en place du réseau Natura 2000 permettra de stopper le déclin de la biodiversité car les services forestiers sont débordés et ne semblent que peu intéressés par Natura 2000. A titre personnel, la personne interrogée n'a jamais été contre Natura 2000 mais il pense toutefois qu'il y a une très mauvaise communication à ce sujet.

Les objectifs de conservation

Le Domaine des Grottes de Han accepte que les objectifs de conservation du site soient fixés par l'Union européenne et la Région wallonne dans les périmètres qu'il exploite. Il ne pense pas que cette fixation doit faire l'objet d'une concertation au niveau local, cependant il faut justifier et fournir des explications au niveau local. Il importe également de garder une flexibilité dans cette définition. Il estime enfin que le caractère contraignant des objectifs de conservation pour l'autorité est un bon moyen de préserver les habitats et les espèces car cela semble le seul moyen efficace. Il remarque que les propriétaires sont d'ailleurs plus attentifs de nos jours qu'avant.

La protection du site

Le Domaine des Grottes de Han est prêt à réduire l'intensité de ses pratiques car il a déjà une utilisation peu intensive du domaine. Les moyens juridiques qu'il privilégie pour se faire sont au nombre de deux :

- la soumission à permis des pratiques, accompagné d'une évaluation des incidences et de l'obligation, pour l'autorité qui délivre le permis de respecter les objectifs de conservation, sauf dérogation (il s'agit du mécanisme dit « d'évaluation appropriée »), et
- l'adoption d'incitants économiques négatifs comme l'écoconditionnalité.

Il n'est par contre pas d'accord d'adopter des mesures foncières.

Selon le représentant du Domaine, les autorités devraient gérer la question des incidences des pratiques récréatives exercées à l'extérieur des sites (pour garantir la réalisation des objectifs de conservation), par des interdictions sauf dérogation applicables aux pratiques en question. Il faut être strict sur ce principe.

Enfin, la perte de revenu liée à une réduction de l'intensité de l'activité existante et la perte de la valeur immobilière du bien concerné par les mesures de protection, sont les deux types de perte de revenu qui doivent être prises en charge par la collectivité via une indemnisation appropriée.

La gestion active du site
Dans le cadre de la gestion active du site, c'est le contrat de gestion avec le propriétaire ou le gestionnaire qui paraît le plus appropriés pour assurer l'entretien des habitats naturels ou d'espèces liés au site Natura 2000. Et dans le cas d'un non-respect des engagements du gestionnaire, il est suggéré de supprimer la subvention.

La restauration de certains habitats
Le représentant du Domaine estime qu'il est nécessaire et légitime de restaurer des habitats naturels à partir d'habitats naturels intensifiés, dégradés ou artificialisés. Le moyen le plus approprié pour assurer cette restauration serait le contrat de gestion avec le gestionnaire.

Education et information
Dans le processus Natura 2000, le représentant du Domaine pense que jusqu'ici l'information est nulle, il n'en a jamais reçu. Pourtant, cela paraît essentiel pour le grand public et les gestionnaires, et également important pour les fins de la conservation de la nature. L'éducation quant à elle, a un rôle très utile, ce serait une reconnaissance du travail qui est fourni par le Domaine.

Avant d'impliquer le grand public dans Natura 2000, le représentant du Domaine estime qu'il y a d'autres priorités, qu'il ne faut pas concentrer tous les moyens sur le grand public. Quant au fait d'instaurer un droit d'entrée dans une réserve naturelle (comme participation aux frais des visiteurs), il pense que ce serait mal perçu, sauf pour les grands sites touristiques.

Enfin, la personne interviewée n'est pas prête, en tant que particulier, à payer pour la protection de la nature car il y a déjà beaucoup de taxes. Mais elle serait d'accord si d'autre part, il y a des compensations financières pour les bonnes pratiques. Il ajoute qu'une taxe sur l'Horeca dans la région serait très mal perçue.

Stratégie globale de gestion des sites Natura 2000 au niveau local
La stratégie qui paraît la plus à même d'atteindre de façon durable les objectifs de conservation sur le site est celle des mesures de protection contraignantes (interdictions, permis) avec des mesures de gestion et de restauration strictement consensuelles car il faut laisser une certaine marge de manœuvre aux propriétaires.

7.2.6 Natura 2000 in the Lesse site and the local actors

This survey was led in the Lesse Valley at the end of September 2008. The goal was to have a view of the implementation of Natura 2000 at a local level. We met 27 people in the following sectors: agriculture (7), forestry (7), municipalities (4 municipalities and 5 persons), firms (7) and tourism (1).

The interview began with a general overview of respondents' knowledge on Natura 2000. When we speak about Natura 2000 to the stakeholders, two types of answers came to their mind. First, answers "pro nature"; i.e., protection of nature, fauna & flora and biodiversity, also an idea of conservation and the fact that it is a good thing. Conversely, there were also more negative words like constraints, questions, lack of information and also restrictions. When we asked the question what is exactly Natura 2000, we see that the goal seems clear, the protection of nature in protected zones (especially for the municipalities which have precise knowledge on Natura 2000). Some people talked about the European Union and about directives. Also, some people thought that Natura 2000 is an organization of nature protection.

As to the question "are you implicated in Natura 2000?", farmers and municipalities answered yes. Farmers are implicated because they own land in Natura 2000 and municipalities, because a part of the municipality territory is also designated. Conversely, the foresters, the firms and the tourism sector are not implicated because they didn't receive any information. Moreover, Natura 2000 is perceived as generally positive for nature and negative for the activities of the stakeholders.

Most of the interviewed persons think that it will be possible to implement Natura 2000. Also, in general people think it is possible to stop the decline of biodiversity, provided specific constraints are implemented in the field and also because it is the goal of Natura 2000. Finally, at the question "does your opinion change about Natura 2000?, answers are very divergent, there is no general trend. The views vary from positive to negative or negative to positive with some graduation.

After these few questions we made a general presentation on Natura 2000, the objectives and the measures in function of the represented sector.

The next section concerned the conservation objectives. A majority of people accept these to be defined by the European Union and the Walloon Region. If people don't accept this situation, it is because they would like to see it at a more local level. To the question "do you think that conservation objectives have to be defined at a local level?", farmers, firms and foresters answered 'yes' because they have an impression of "office work" and that the work was performed too far from the field with no knowledge of the local situation. Conversely, farmers do not want conservation objectives to be defined at a local level. They know that the objectives are defined by experts, so it is well accepted. A majority of persons prefer to keep flexibility in the definition of the objectives, to have the possibility to adapt in particular case and because the world and nature change quickly. Additionally, this would allow negotiating constraints. Finally, the constraining character of the objectives is seen as a good tool to have results on the field for most people. For the others, they cannot give an opinion because these people think they do not have the knowledge to answer to this question.

Following the conservation objectives, some questions on the site protection were presented. Most people agree to reduce the intensity of their activities to achieve the conservation objectives on the site. Some legal means were presented and people ranked these as follows:

1. adoption of positive economic incentives (subsidies and agrienvironmental schemes),
2. adoption of negative economic incentives (like ecoconditionnality),
3. submission of the activities to a permit,
4. interdictions,
5. or a combination of these measures.

Real estate measures are preferred by a few persons (generally old people at the end of their activities. They accept to sell their lands but with a good purchase price), but most people are against.

Concerning the question of the impacts management outside the site, we received few answers so it is difficult to draw general trends. We can nevertheless say that people are okay to use firstly interdictions and then agrienvironmental schemes.

Finally we also asked if the revenue losses due the implementation of Natura 2000 have to be taken in charge by the collectivity. Most people agree that the revenue loss due to the reduction of activities intensity and the loss of real estate value have to be taken in charge. For the cost of opportunity (this cost is the cost of passing up the next best choice when making a decision. For example, if an asset such as a land or a meadow is used for one purpose, the opportunity cost is the value of the next best purpose the asset could have been used for, e.g. Christmas trees plantation[9]), opinions vary: municipalities are for the management of this 'loss' and some others are against because they think it is not justified.

Next, a part on active management was submitted. Legal means proposed to manage actively the site are as follow:

1. management contract
2. agrienvironmental schemes
3. substitution by public authorities or NGOs

Again, people are against the use of real estate measures but marginally some are for.

In case of the non-respect of the commitment people agree to put a penalty. Firstly they advise to suppress the subsidies (the money received in counterpart of performing the management), secondly put an administrative sanction (a fine) and then suppress all the other subsidies. Nevertheless people ask to put first a warning and to be careful in case of non-voluntary fault.

For the part restoration of habitats, most people think it is necessary and legitimate to do restoration on deteriorated parcels. Some people (in farmers, municipalities and firms sectors) have mixed feelings; i.e., either they think it is enough to do active management or it is important to assess the need case by case (with the object of not spending money and add constraints for small/useless parcels).

For people who agree, the best means to perform restoration are, successively:

1. management contract
2. substitution
3. agrienvironmental schemes

In this case nobody is for the use of real estate measures.

A part was also dedicated to the information and education instruments. People think that information is an important instrument, useful for managers on the site and also for the general public. Nevertheless most people find that there is not enough information given and, in particular, farmers and foresters ask to know what they can exactly do on their lands. One other important remark is, for the management, first to have the support of the site managers, because they are always on the field and they are the ones who will build the positive image of Natura 2000. Education is also seen as important. People mentioned the good work made at schools (in a way the parents are educated by the children). One suggestion is to begin at school by including some courses on environment in the programs.

[9] http://www.investorwords.com/3470/opportunity_cost.html (23.12.08)

To involve the general public in the process of Natura 2000, it is advised to give more information, at schools for children but also with the media, e.g. TV spots, and no paper, which are immediately thrown away. A few people agree to pay entrance fees in natural reserves. Just a little amount to know that we “have nothing for nothing”. Moreover some people are okay to pay for nature but most are against because they already pay for a lot of things. Similarly, people disagree to put a tax on the Horeca sector: it is not a good idea, they have already the value added tax and other expenses to pay.

Finally, to present a global strategy to achieve the conservation objectives on the site in a sustainable way, people advise to use orderly:

1. a mix of consensual and constraining measures
2. strictly consensual measures
3. and not real estates measures.

ANNEXE 8,1 Habitats comprehension Framework

Kind of habitat	Eunis correspondance	Patrimonial-conservation value	Conservation status		Sensitivity to human perturbations - protection level required	Effort for conservation (Need for human intervention)	Need for restoration measures	Effort for restoration	Economical value for landowner/user	Kind of habitat	Recurring active management measures	Restoration measures
			Area	Quality								
		(1:low - 2:medium - 3:high)	(A: good - B : medium - C : bad)	(A : good - B : medium - C : bad)	(1:low - 2:medium - 3:high)	(1:low - 2:medium - 3:high)	(1:low - 2:medium - 3:high)	(1:low - 2:medium - 3:high)	(1:low - 2:medium - 3:high)			
extensive meadow	**6410, 6430, 6510, 6520**	2-3	C	C	2	2	3	2		**extensive meadow**	Extensive mowing (+ sometimes extensive grazing)	Sod-cutting, intensive mowing, suppression of the drainage, cutting shrubs and trees
dry grassland	**5110, 5130, 6110, 6120, 6130, 6210, 6230**	3	C	C-B	3	2	3	2		**dry grassland**	extensive grazing (+ sometimes extensive mowing)	Sod-cutting, intensive mowing or grazing, cutting shrubs and trees
peatland	**7110, 7120, 7140, 7150, 7210, 7230**	3	C	C-B	3	1	3	3		**peatland**	Almost nothing (only ligneous vegetation control)	Suppression of drainage, raising of the water level, sod-cutting, cutting of shrubs and trees, reshaping of the coal faces
heathland	**2310, 2330, 4010, 4030**	3	C	C-B	3	2	3	2		**heathland**	extensive grazing (+ sometimes extensive mowing), management by fire, control of ligneous regeneration	Sod-cutting, intensive grazing, cutting shrubs and trees
caves	**8310**	3	A	A	2	1	1	1		**caves**	Nothing	Closing to the public
rocks	**8150, 8160, 8210, 8220, 8230**	3	B	C	2	1	2	2		**rocks**	Almost nothing (only ligneous vegetation control)	Sometimes cutting trees
N2000 forest	**9110, 9120, 9130, 9150, 9160, 9180, 91D0, 91D0, 91E0, 91F0**	2-3	A-C	C	2	1	2	1		**N2000 forest**	The less one makes, the better it is (only invasive species control + management of open habitats)	cutting coniferous and exotic trees, giving time! Creation of open habitats into the forest (clearing area, edges,…)
other broadleaved forest	**species habitat**	2			1	1	2	1		**other broadleaved forest**	The less one makes, the better it is (only invasive species control + management of open habitats)	cutting coniferous and exotic trees, giving time! Creation of open habitats into the forest (clearing area, edges,…)
exotic forest	**species habitat**	1			1	1	1	2		**exotic forest**	Invasive species control + management of open habitats	Creation of open habitats into the forest (clearing area, edges,…), diversification
oligotrophic rivers	**3260, 3270**	2	C	C	3	1	2	2		**oligotrophic rivers**	Invasive species control	elimination of coniferous and exotic trees, elimination of invasive species populations, recreation of "natural" banks
eutrophic rivers	**3260**		A	B-A	2	1	1	2		**eutrophic rivers**	Invasive species control	Recreation of alternation of open and forested areas, elimination of coniferous and exotic trees, elimination of invasive species populations, recreation of "natural" banks
oligotrophic body of water	**3110, 3130, 3140, 3160**	2-3	C	C	3	2	3	3		**oligotrophic body of water**	Water level management	restoration of good quality water, restoration of banks, restoration of a good fish equilibrium, cleaning silt
eutrophic body of water	**3150**		A	C	2	2	2	2		**eutrophic body of water**	Water level management, fish population regulation	restoration of good quality water, restoration of banks, restoration of a good fish equilibrium, cleaning silt
crop land	**species habitat**	1			1	3	1			**crop land**		
intensive meadow	**species habitat**	1			1	3	1			**intensive meadow**		
References		*1	*2	*2	*3	*4					*6	*5
***1**		Habitat Directive + expert judgement										
***2**		Evaluations of conservation status from both walloon and flemish regions										
***3/*4/*5/*6**		Cahiers habitats										
	Not considered habitats	coastal & estuarian 1130, 1140, 1310, 1320, 1330, 2110, 2120, 2130, 2150, 2160, 2170, 2180, 2190										
		marine habitats 1110										
		petrifying springs 7220										

APPENDIX 8

8.1 Habitat's comprehension framework

See excel file

8.2 An habitat's comprehension framework as a decision making tool

This comprehension framework is a proposal aiming at guiding politicians making decisions about the different strategies to adopt in order to achieve conservation goals for each big kind of habitat. Very briefly, it gives some information about the habitats, like ecological functioning, requirements, status of conservation, patrimonial value and level of protection required, and it tends to estimate the economical potential value of each habitat, which is the reflect of the social sensitivity in regard to the habitat.

The framework proposed is only a draft that should be completed in the future with further research, but not in the scope of the SELNAT-project.

Explaining of different columns

Kind of habitat : This column gathers all the main terrestrial habitats concerned by Natura 2000 into 15 global kinds of habitats (which are described below) in order to simplify the analysis.

Eunis correspondence : This column mentions the correspondences between the global kind of habitat and the Eunis codes (European based).

Patrimonial-conservation value : The patrimonial value (or conservation value) of an habitat depends on its biological value, but this concept takes also into account its importance into the global ecological network in term of content of biodiversity, its originality, the history of land use and vegetation evolution,… It reflects a priority for conservation and protection. Especially in Belgium, an habitat of high patrimonial value is an habitat which has a high level of rarity in the regional context, which is endangered, which is the biotope of endangered, rare species and/or which is sometimes culturally significant.

Conservation status : These 2 columns mention the conservation status (in regard to the habitat area and quality) as defined by the Habitat Directive (Art. 17) and calculated for the first report about conservation status to the European commission (2007).

Sensitivity to human perturbations - protection level required : This column aims at estimating the protection level required, in relation to the sensitivity of each habitat to human perturbations and activities. This information is inspired from the habitats books.

Effort for conservation (Need for human intervention) : This column gives an estimation of the human efforts required for the conservation of the habitat, to keep it in its current state, taking into account all different technical measures which are necessary to maintain it (see specific column). This effort could be valued in money.

Need for restoration measures : In regard to the current conservation status, the protection level required and the patrimonial value, this column informs if the restoration of the habitat is a priority or not at the country scale.

Effort for restoration : This column gives an estimation of the human efforts required for the restoration of the habitat taking into account all different technical measures which are necessary to maintain it (see specific column) and the different states of initial habitat. This effort could be valued in money.

Economical value for landowner/user : This column aims at evaluating the economical value which the habitat represents for the landowner or the land user.

Recurring active management measures : This column gives a non-exhaustive list of active management measures that can be set up to manage the habitat.

Restoration measures : This column gives a non-exhaustive list of restoration measures that can be applied to restore the habitat.

Big kinds of habitats selected

extensive meadow
This term includes the following Natura 2000 habitats : 6410, 6430, 6510, 6520. This habitat includes grasslands/meadows which are mowed, grazed, fertilized extensively. These are generally rich-flowered grasslands.

intensive meadow
This habitat is not of community interest but it includes species habitats, for example, birds like *Lanius excubitor, Saxicola rubetra*, bats like *Myotis dasycneme*,… These meadows are intensively used (mowed more than 2 time a year, or intensively grazed, fertilized).

dry grassland
This term includes the following Natura 2000 habitats : 5110, 5130, 6110, 6120, 6130, 6210, 6230. Dry grasslands are open, herbaceous vegetations occurring on poor soils (acid or calcareous). They are the biotope of a lot of endangered plants and animals species.

peatland
This term includes the following Natura 2000 habitats : 7110, 7120, 7140, 7150, 7210, 7230
Peatlands are open habitats occurring on poor, wet and organic soils. The level of organic matter increases with time and so this habitat has a high capacity for water retention. Acid peatlands are characterized by large populations of *Sphagnum* species. They are the biotope of a lot of endangered plants and animals species.

heathland
This term includes the following Natura 2000 habitats : 2310, 2330, 4010, 4030
Heathlands are open vegetations occurring on poor, wet or dry soils. Their existence is mainly due to ancestral activities like sod-cutting, sheep grazing, fire management, etc… So they have most of time an anthropogenic origin. They are the biotope of a lot of endangered plants and animals species.

caves
This term includes the following Natura 2000 habitats : 8310. These caves are not open to the public and are of great interest for the conservation of bats.

rocks
This term includes the following Natura 2000 habitats : 8150, 8160, 8210, 8220, 8230. This habitat includes rocks outcrops, cliffs, rock falls, rock cracks,… It can be the habitat of some birds species like raptors (peregrine falcon,…)

Natura 2000 forest
This term includes the following Natura 2000 habitats : 9110, 9120, 9130, 9150, 9160, 9180, 91D0, 91E0, 91F0. the three last habitats are of community interest. This term includes a large diversity of forests of community interest, like dry and wet forests (of beeches, oaks,…), slope forests, alluvial forests, boggy birch forests, etc… These forests are of great interest for a large diversity of animals like insects (lucanus,…) , bats, birds (woodpecker, raptors,…).

other broadleaved forest
This habitat is not of community interest but it includes species habitats, rather similar to the previous.

exotic forest
This habitat is not of community interest but it includes species habitats. Potentially, this habitat is able to be restored into broadleaved, indigenous forests, or into open semi-natural habitats (depending on the historic).

oligotrophic rivers

This term includes the following Natura 2000 habitats : 3260, 3270. These rivers are characterized by a low concentration of nutrients and a weak colonization by aquatic vegetation. These rivers are the habitat of a lot of species like kingfisher, fish, bats, otter, pearl mussels, etc…

eutrophic rivers
This term includes the following Natura 2000 habitat : 3260. These rivers are characterized by a high richness in nutrients and a colonization by aquatic vegetation. These rivers are the habitat of a lot of species like kingfisher, bats, fish, etc…

oligotrophic body of water
This term includes the following Natura 2000 habitats : 3110, 3130, 3140, 3160. This habitat includes bodies of water, ponds, that can be very small, with a low level of nutrients. It also includes banks vegetation like *Carex* sp. and low-marshes vegetations. This habitat is also a species habitat for a some birds and other animals (bats, fish,…).

eutrophic body of water
This term includes the following Natura 2000 habitat : 3150. This habitat includes bodies of water, ponds, with a high richness in nutrients. It also includes banks vegetation like reeds and *Carex* sp. vegetations. This habitat is an important species habitat for a lot of aquatic birds and some other animals like fish and bats.

crop land
This habitat is not of community interest but it includes species habitats

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Habitats not taken into account
coastal & estuarian habitats (1130, 1140, 1310, 1320, 1330, 2110, 2120, 2130, 2150, 2160, 2170, 2180, 2190), marine habitats (1110) & petrifying springs (7220)

How to make Natura 2000 work properly? Socio-economic, legal and ecological management.

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LABORATORY FOR FOREST, NATURE AND LANDSCAPE RESEARCH

Introduction & Goal

To halt the increasing biodiversity loss, the EU enhances an ecological network of Special Protected Zones, known as the Natura 2000 network. In Belgium, the delineation of the SPZ's has come to an end, but many questions arise concerning the management of these areas. The multiple use of the space gives rise to many conflicts of intrest. In this project, we tend to couple socio-economical principles to ecological objectives to organise a sustainable use of the environment in the SPZ's. This research tries to investigate the social base for the conservation goals, weather the available instruments to reach them will be sufficient and what economical effort will be required.

Work package 1

- Implementation of European Guidelines for Natura 2000 in Belgium: process, responsibilities, resulting network
- Legal, social, economical & ecological bottlenecks of the Belgian Natura 2000 policy

General asessment of actual Natura 2000 network in its historical context

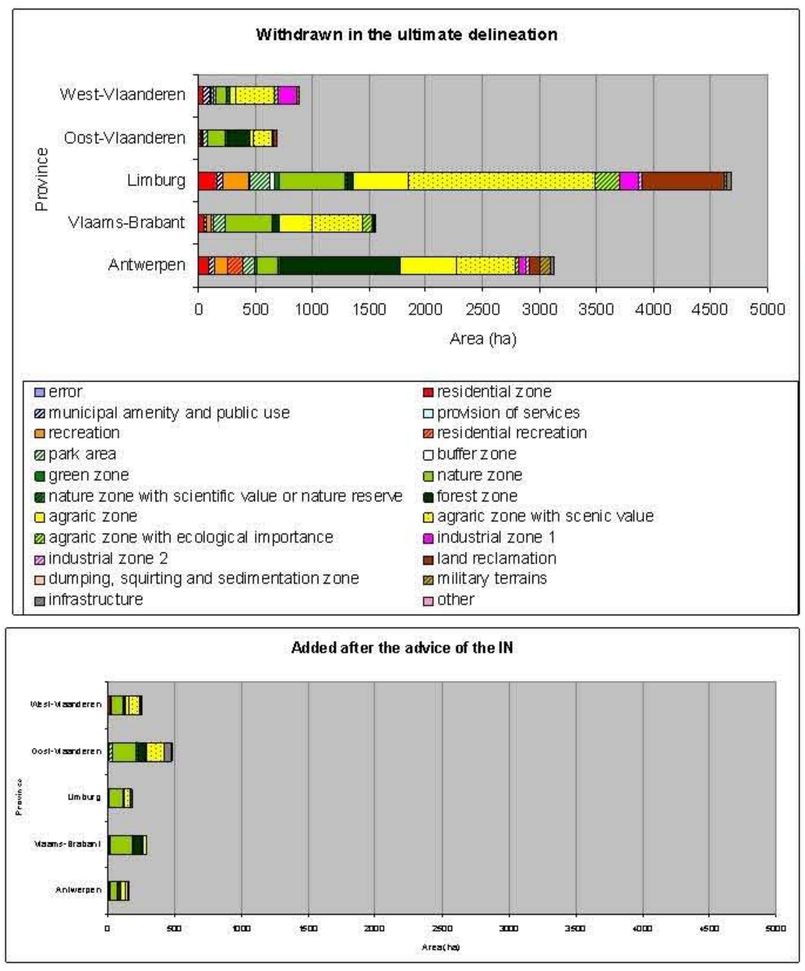

Figure 1. Structures taken out from (top) or added to (bottom) the proposal of pSCIs (proposed Sites of Community Importance) by the IN (Institute for Nature conservation), obtained by a comparison of the advice by the IN in 2000 with the final delineation of pSCIs in 2001 and laid over the Flemish spatial zoning plan.

Ecological bottlenecks

Incomplete scientific knowledge
Difficulties for the interpretation of the habitat types
- Defined on a European level
- Not easy to classify
- Complexes of habitats (transitions, superpositions, mosaics,…)

Pragmatism of the scientific approach
- Difficulties for the argumentation

Long-term evolution of the ecosystem
- Human induced evolution
- Natural evolution

Habitat fragmentation

Work package 2

- How to adopt adaptive management in the planning process & implementation?
- What is the efficiency & social acceptance of different instruments for the implementation of Natura 2000?
- Is there a need for new instruments?

Socio-economic, legal and ecological evaluation.

Study areas:

Demer valley & Lesse valley

Figure 2. Scheme of a good management plan.
Research goals:
What is an appropriate management plan?
Recommendations for the implementation strategy to enhance Natura 2000 results.

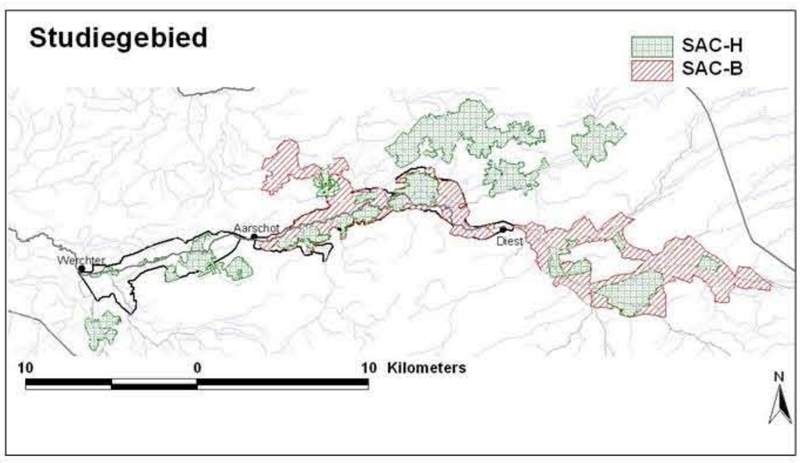

Figure 3. Study area in Flanders: the Demervalley.
SAC-H: Special Areas of Conservation → Habitat Directive
SAC-B: Special Areas of Conservation → Bird directive

In coöperation with:

Resource Analysis NV (Jan Vincke, Stan Weyns, Greet Nulens), Université Catholique de Louvain (Charles-Hubert Born, Daniel Tyteca, Marie Mahy, Valérie Grogna), Faculté Universitaire des Sciences Agronomiques de Gembloux (Grégory Mahy, Julien Taymans)

Financed by:

Belspo (Belgian Federal Science Policy Office

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How to make Natura 2000 work properly?

Socio-economic, legal & ecological management

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Introduction & Goal

To halt the increasing biodiversity loss, the EU set up a legal framework for an ecological network of Special Protected Zones, known as the Natura 2000 network. In Belgium, the delineation of the Natura 2000 sites has come to an end, but many questions arise concerning the management of these areas. The **multiple use of the space** gives rise to many conflicts of interest. In the SELNAT-project, we try to couple socio-economical principles with ecological objectives to organize a **sustainable use of the environment in the Natura 2000 sites**. In particular, feasibility and effectiveness of considered implementation instruments, social support, inequality between beneficiaries and payers, compatibility of ecological and socio-economic development are studied in this **multidisciplinary research**.

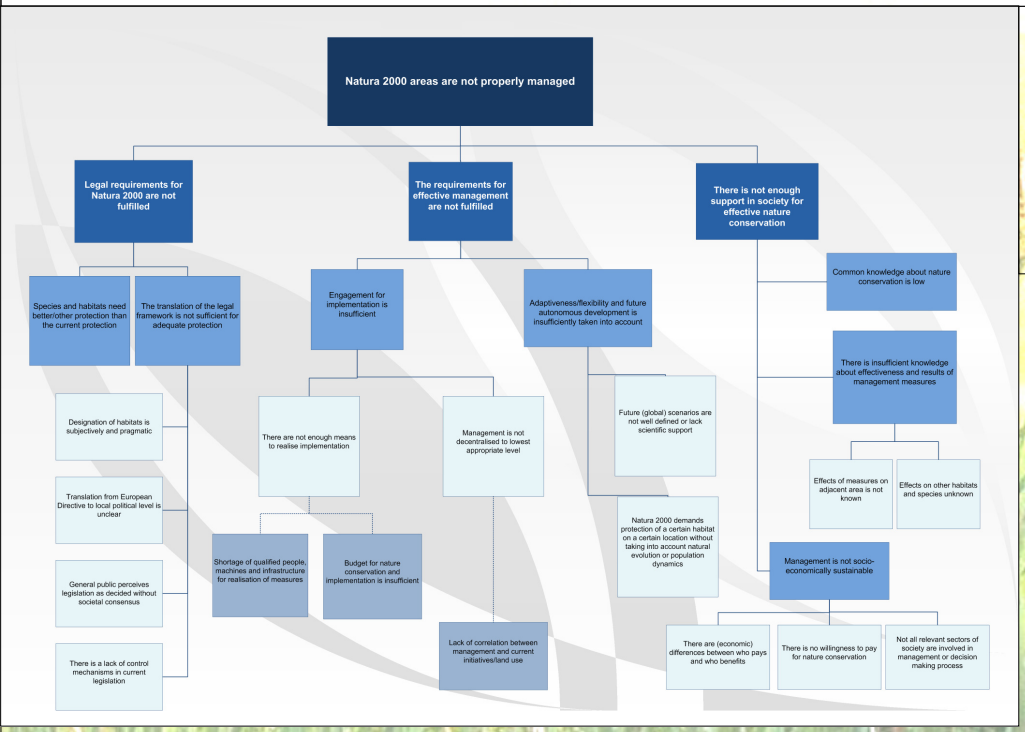

Fig. 1 : Problem tree of Natura 2000 – Synthesis of the main bottlenecks for the implementation of the Natura 2000 network in Belgium

Work package 1

Goal :

• Multidisciplinary analysis of the implementation of European directives and highlighting of legal, social, economical & ecological bottlenecks of the Belgian Natura 2000 policy.

Result : **General assessment of actual Natura 2000 network (fig. 1)**

Work package 2

Goal :

• Socio-economic, legal and ecological evaluation of instruments

Research questions :

• How to adopt adaptive management in the planning and implementation process of Natura 2000?

• What is the effectiveness and feasibility of different instruments for the implementation of Natura 2000?

WP2 currently in progress

→ **Assessment of effectiveness and feasibility of some instruments** for N2000 implementation by means of a literature review and 2 surveys of experts and local stakeholders

Survey 1 Questions :
-How do stakeholders perceive "feasibility" and "effectiveness" terms?
-How do they score different instruments on their feasibility and effectiveness?
Target public : **stakeholders** at the **regional/national level**

Survey 2 Question : *-What does make instruments for Natura 2000 feasible for users?*
Target public : **local users** from different sectors (forestery, agriculture, nature protection, municipalities, tourism, industry) in **2 study sites** : the Demer valley, in Flanders, and the Lesse valley, in Wallonia

→ Goal of the instruments assessment = Providing guidelines and recommendations for the elaboration of a **good management plan**. This one should :
- comprise **different strategies**, including a set of instruments adapted to different specific situations,
- be **adaptive** (allowing changes in priority and timing of implementation of instruments in relation to the future evolution of environment and society)

→ **Ecosystem Approach** = a framework for an integrated and sustainable management of Natura 2000 sites (fig. 2)

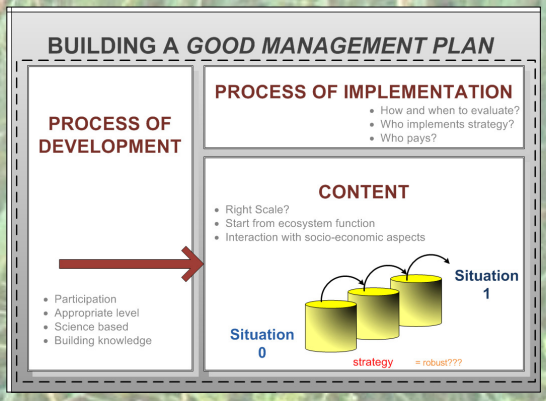

Fig. 2 : Building of a good adaptive management plan for Natura 2000 sites, in regard to the ecosystem approach principles

Work package 3

Making of policy recommendations concerning the better functioning of the Natura 2000 network, taking the socio-economical context into account.

Selnat project – financed by Belgian Science Policy

Short-paper : Summary of the poster

Reference of the submission: SER_0442

Title of the poster: SELNAT project : How to make Natura 2000 work properly? - Socio-economic, legal & ecological management

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Introduction

As shown in a large number of scientific studies and recent research, there is a major problem of loss of biodiversity in Europe and, on a larger scale, in the whole world. Plant and animal species vanish at a dazzling speed. Today, scientists believe the observed extinction rate is up to 1000 times faster than the natural rate. The main reason for this unnatural fast extinction rate is the impact of man on his environment. All around the world, ecosystems and natural resources are used and exploited in a non-sustainable manner, leading to an ever-increasing pressure on species and their habitats.

At the end of the 20th Century, the European Community understood that radical measures were necessary to counter this negative spiral of biodiversity loss. Therefore, an ecological network of protected areas with a high ecological value due to their specific habitat and/or the presence of specific species was established, the so-called NATURA 2000 network. The areas designated in the Birds and Habitats Directives were the foundation for the delineation of this network. For both, levels of protection and special areas are defined: Special Protection Areas for the Birds Directive and Special Areas of Conservation for the Habitat Directive. In Belgium, the delineation of these Special Protection Zones has come to an end, but many questions arise concerning the management of these areas. The multiple use of the space gives rise to many conflicts of interest.

SELNAT is a two-year research-project financed by Belgian Scientific Policy that aims to answer the question "How to make Natura 2000 work properly?", taking into account socio-economic, legal and ecological aspects. A multidisciplinary team of researchers works on this project. This team is composed of ecologists from Katholieke Universiteit Leuven and Gembloux Agricultural University, lawyers and economists from Université

Catholique de Louvain and sociologists from Resource Analysis n.v.. In the SELNAT-project, we tend to couple socio-economical principles to ecological objectives to organize a sustainable use of the environment in the Natura 2000 sites. In particular, social support, inequality between beneficiaries and payers, compatibility of ecological and socio-economic development and feasibility and effectiveness of considered implementation instruments are all subjects to be studied.

First results of the research: highlighting of bottlenecks in the implementation of the Natura 2000 network

The main problem with the completion of the NATURA 2000 network is twofold. First of all, the state of most ecosystems and their functioning is in such a poor condition that far-reaching measures are necessary. Declining biodiversity and disappearing ecosystems are mainly the result of anthropogenic pressures: global loss of habitats or decreasing quality of endangered species habitats, overuse of stocks and resources, pollution, invasive species, global change, etc. In Europe, the environmental quality of most of our natural and semi-natural habitats is very low due to eutrophication and pollution with heavy metals, pesticides and other toxic substances. Above that, the total surface area of habitats is in general far too small due to the high urbanization of the territory. The remaining small protected areas suffer from higher external pressures as a sufficient buffer is lacking. Habitat fragmentation in its turn leads to inbreeding, genetic drift and the Allee effect.

Secondly, the complexity of the implementation process, as well as the specific interaction between all different users on all different policy- and management-levels demands an approach that is difficult to overview. Both aspects affecting the success of the network realization are discussed.

The NATURA 2000 legislation determines the translation of the European legislation into national legislation. It also imposes in a number of rules that the deterioration of the biological diversity of ecosystems should be stopped with all means possible. Although the implementation of the NATURA 2000 legislation has progressed considerably, many issues remain, impeding the progress on the field. Some of the main problems this European legislation is confronted with are put forward in the SELNAT research-project.

First of all, the demarcation of some of the protected areas has been done on the basis of what seem to be subjective criteria. This is however partially due to the difficulty of the interpretation of some of the habitat types and the complexity of natural habitats. The network remains too fragmentary and species are not able to migrate sufficiently enough in order to maintain sustainable populations and attain a favourable conservation status, as stipulated in the NATURA 2000 legislation. Also, the European legislation does not consider natural evolution and succession and therefore habitats should be kept in the state as reported to the European Commission. Natural succession towards a climax vegetation is not allowed for the sites. Besides that, there is a considerable lack of (scientific and indigenous) knowledge on the real effects of management and nature conservation measures on the targeted species and habitats and on adjacent areas.

From a socio-economic point of view, an important problem is the fact that perception of nature and ecology differs in our society. In general, public awareness and knowledge on ecosystem services and biodiversity remains poor. Ecologically valuable nature reserves are definitely appreciated by most people, but so are other 'green areas' like agricultural landscapes, city parks, etc. that have a much lower ecological interest. Therefore, restoration measures that delete one type of nature to replace it with another (more valuable) type, are often considered to be a waste of money and incompetent policy. A number of social and economic stakeholders have opposed to or tried to alter the demarcation of the areas for NATURA 2000, mainly because the legislation was considered to be a threat for their activities. Even though there is more attention to participation and sensibilisation in recent nature policy processes, there is still a problem of trust between many different stakeholders. Above that, NATURA 2000 creates confusion about the private property right, as the government should be able to acquire areas for the purpose of nature management. Another problem comprises the lack of scientific consensus about the economic valuation of nature. This results in a reduced leverage of ecological versus economic arguments and impedes the calculation of the actual economic cost of the implementation of the network. Furthermore, costs and benefits from conservation and ecosystem services very often belong to different (groups of) individuals, increasing the likelihood of conflicts. In addition, costs are mostly direct whereas benefits only arise on the long term.

Another problem for the final implementation of the NATURA 2000 network is the fact that the requirements for effective and good management of nature areas are not fulfilled. Due to a poor translation of (European) legislation to a local legislative level, policy makers and officials are not adequately aware of the necessary protection measures they are obliged to take. Also, effective control mechanisms and a clear delineation of responsibilities are absent. Because of a vertical difference in responsibilities and a horizontal diversity of policy approaches, the integrated character of sustainable management practices is never attained. Therefore, it becomes difficult to convince opponents of certain conservation and protection measures. Good management requires also sufficient resources. Since the (financial) means dedicated to nature management are below level, many problems arise during the realization. Cheap measures, rather than the more effective ones are applied and the supply of appropriate machinery and manpower remains too low. In addition, the lack of funding obstructs management to be decentralized to the lowest appropriate level. Besides an appropriate level of available resources for nature management, good management also implies an adaptive approach that takes future development of the area and society in general into account. Legislation and management plans, however, don't recognize this process sufficiently.

The development of an adaptive good management plan of Natura 2000 sites

Studying the implementation of the NATURA 2000 network remains a big challenge. Because of the complexity of the process and the interaction between all different users on all the different levels of policy and actual management, this research demands a

broad approach. Within the SELNAT-project, the integration of the Ecosystem Approach as a framework for an integral and sustainable management approach will be emphasized. The Ecosystem Approach can be seen as a working frame or strategy for the integrated management of land, water and living resources that promotes their conservation and sustainable use in an equitable way. This approach recognizes that humans, with their cultural diversity, are an integral component of ecosystems. This strategy aims at maximizing the gains from ecosystems services and at minimizing the negative impact of human development on ecosystem functioning.

In the scope of the SELNAT-project, the elaboration of a good management plan for the (local) development of the Natura 2000 network is to be investigated for two case-studies: the Valley of the Demer between Aarschot and Diest and the Valley of the Lesse at Rochefort. The first step in this research was to collect the different legal, economical, social and ecological bottlenecks concerning the current Belgian Natura 2000 policy, as mentioned above. After establishing a general view of the current situation of Natura 2000, the next phase consists of analyzing the effectiveness and feasibility of different kind of instruments for nature conservation management and policy development for nature.

In order to provide guidelines for the elaboration of a good management plan, we are identifying and analyzing the problems that people at the policy and local level are confronted with. Therefore, besides a more general literature study of several instruments for nature conservation, a websurvey was set up to investigate the perception of different stakeholder groups on the policy. In this survey, a collection of approximately 20 important nature conservation instruments was subducted to an evaluation by people from different Walloon and Flemish institutions and organizations that are familiar with nature conservation policy. The respondents were asked to indicate their level of feasibility and effectiveness for each instrument according to their experience. The goal of the survey is to come to a better understanding of the different views about the acceptance of current nature conservation policy. After this analysis, the perception of the local users and stakeholders at the scale of the two case-study areas towards the NATURA 2000 implementation will be studied. By tracking the perception of NATURA 2000 at this level, a better understanding of the social base for the network is to come forward. This better understanding should allow us to provide guidelines and recommendations for the elaboration of a good management plan. This plan should include different strategies (a whole of instruments) adapted to different specific situations. This management plan should be adaptive, that is allowing changes in priority and timing of implementation of instruments in relation to the future evolution of environment and society. The final goal of the project is to come to recommendations concerning the better functioning of the Natura 2000 network, taking the socio-economical context into account.

MEETING REPORT FOLLOW-UP COMMITTEE SELNAT

Project:	**SELNAT: HOW TO MAKE NATURA 2000 WORK PROPERLY?**
Subject:	meeting Follow-up Committee SELNAT project
Meeting date:	20/04/2007
Place:	Division Forest, Nature & Landscape, KUL

Participants:		
	Aline Van der Werf	Belspo
	Didier Vieuxtemps	Fédération Wallonne de l'Agriculture - syndicat
	Christel Thermol	Union wallonne des villes et des communes
	Katty Wouters	Regionaal Landschap Noord-Hageland
	Johan Toebat	Agentschap voor Natuur en Bos, Buitendienst Vlaams-Brabant
	Fons Beyers	De Boerenbond studiedienst
	Kurt Sannen	Agentschap natuur en bos
	Sophie Salle	Service éco-conseil
	De Visscher Frédéric	l'Union wallonne des Entreprises
	Marie Etienne	Natagora
	Research team	
	Marie Mahy	Université Catholique de Louvain
	Charles-Hubert Born	Université Catholique de Louvain
	Valérie Grogna	Université Catholique de Louvain
	Els Ameloot	Katholieke Universiteit Leuven
	Patrick Endels	Katholieke Universiteit Leuven
	Gregory Mahy	Faculté universitaire des Sciences agronomiques de Gembloux
	Julien Taymans	Faculté universitaire des Sciences agronomiques de Gembloux
	Jan Vincke	Resource Analysis
	Stan Weyns	Resource Analysis
Distribution:	Participants and projectteam	

Reporters:	Stan Weyns	**Document reference:**	6041-42-015-03
Date report:	15/06/2007	**Version number:**	1

1 Goal and agenda of the meeting

The goal of the meeting is to inform the follow-up committee of the context, the goals and the methodology of the SELNAT project and to get feedback from them on the proposition.

The following points were presented and discussed

- *Welcome and introduction*
- *Presentation of the The SELNAT-project team*
- *Background of the project proposal SELNAT*
- *Presentation and discussion of research framework of SELNAT*

- *Presentation of the of the possible study sites*
- *Presentation of the expectations concerning the Users Committee*

2 Introduction (Aline Van der Werf, BELSPO)

At the start of the meeting the program manager of BELSPO, Aline Van Der Werf introduces the background of the project proposal. The project is situated within the framework of Second Call for proposals (Energy, Transport and mobility, Agro-food, Health and environment, Biodiversity, Terrestrial (incl. freshwater) and marine ecosystems of the North Sea, and Transversal research) of the programme 'Science for a Sustainable Development (SSD)' from the Belgian Federal Public Planning Service, Science Policy. After an introduction on the position of BELSPO in Belgian science she gives an overview of the other project proposals that were selected in the first and second call. Finally, she clarifies the role of the follow-up committee and illustrates the mutual benefits that can be gained from cooperation between researchers and policy makers.

The powerpoint-file of this presentation is attachted to this meeting report.

3 Presentation of the SELNAT-project team

WHO	RESEARCH INSTITUTE	TASKS
Jan Vincke Greet Nulens Stan Weyns	Resource Analysis	Coordination Social aspects
Prof. Dr. Gregory Mahy Julien Taymans	FUSAGx	Ecological aspects
Prof. Dr. Martin Hermy Dr. Ir. Patrick Endels Dr. Els Ameloot	Division Forest, Nature and Landscape - KULeuven	Ecological aspects
Charles-Hubert Born Marie Mahy	UCL	Legal Aspects
Prof. Dr. Daniel Tyteca Valérie Grogna	UCL	Economic aspects

4 Presentation of the The SELNAT-Follow-Up Committee

The table below presents a list of persons invited for the Follow-Up Committee and willing to join this committee. The list is not definive or fixed. The project team has tried to make a first selection taking into account the interdisciplinarity of the project and the purpose of the Follow-Up-Committee. The primal purpose of this forum is to give remarks on the assumptions and methods that are used within the framework of the project and to discuss the general findings. For the more local discussions concerning the local study areas subgroups will be formed.

Action: The follow-up-committee goes through this list and gives feedback to the research team if they feel that some stakeholders are missing.

person	**background**
Michel Terlinden	Société Royale Forestière
Etienne Snyers	Nature Terres Forêts - représentant des propriétaires ruraux
Didier Vieuxtemps	Fédération Wallonne de l'Agriculture - syndicat
Marc Thirion	Direction générale de l'agriculture
Christel Thermol	Union wallonne des villes des communes
Kris Decleer	INBO

Wouter Van Landuyt	INBO
Bart Vercoutere	Vrienden van Heverleebos en Meerdaalwoud
Katty Wouters	Regionaal Landschap Noord-Hageland
Johan Toebat	Agentschap voor Natuur en Bos, Buitendienst Vlaams-Brabant
Joos Dessein	ILVO
Maarten Puls	Provincie Antwerpen
Fons Beyers	De Boerenbond studiedienst
Kurt Sannen	Agentschap natuur en bos
Dirk Bogaert	Maritiem Instituut/ Artevelde
Marie Etienne	Natagora
Jacqueline Saintenoy-Simon	Ardenne & Gaume
Lionel Delvaux	Inter-Environnement Wallonie (IEW)
Jean-Yves Paquet	Société d'études ornithologiques AVES
Catherine Hallet	DGRNE
Jean Renault	Division de la Nature et des Forêts (DNF) - Directeur de la Division de la Nature
Sophie Salle	Service éco-conseil
De Visscher Frédéric	l'Union wallonne des Entreprises

In the meanwhile, BESLPO has proposed to add Els Martens (Agentschap Natuur en Bos) and E. Baus or A. Heughebaert (biodiversity platform).

5 SELNAT: background and framework

The SELNAT-project is more or less a sequel of the ECONET-project, which was done by the same partners. In the ECONET project, the ecological, economical, legal and social aspects that are important for the implementation of ecological networks were investigated. One of the conclusions of the project was that an eco-centric approach seems to be insufficient for a succesfull implementation. Moreover an integrative approach seems neccesary. To halt biodiversity loss and increase the resilience of ecosystems, the EU has been building an ecological network of special protected areas, known as 'Natura 2000' The question now arises as to how these Natura 2000-sites should be managed in order to operate well, be sustainable and maintain or restore species and habitats in a favourable conservation status. How to realize ecocentric targets in a multifunctionally used landscape, in which different users have equally different nature-images? Or, how to reconcile social-economic and ecological objectives for the chosen areas in order to be (ecologically) sustainable in the long term, as required by the Habitats Directive itself?

Whitin the framework of the project we want to approach Natura 2000 from a fully integrated perspective taking into account the lessons learnd in the ECONET project The starting hypothesis of the research project is: ***An external approach based on the integration of ecological, economical, legal and social aspects is necessary to design management strategies for large nature areas that will create a favourable conservation status and reach Natura 2000 objectives in a robust way.***

Question of the Follow-up committee: Are there for the moment many projects managed with a solely internal approach? Many nature reserves are, at the moment, managed from an ecocentric approach where the management of nature values is the only point of attention. Moreover they are not always taking into account the major pressures on biodiversity, often coming from outside the reserves. This is more or less logical because the 'power' of the nature organisitions, policy people, … is limited to the reserve of the nature area.

The SELNAT-project aims at

a) performing a system analysis of the complexity of the implementation of (the goals of) Natura 2000 in the Walloon and Flanders context and reach of discipline-transcendent bottlenecks and
b) the development of integrated management strategies and test their robustness for a Walloon and a Flemish Natura 2000-site in interaction with a group of local and non-local stakeholders.

In the first work package we start with a broad system analysis of basic concepts, the set-up of an assessment frame and we analyse why the implementation of Natura 2000 goals could be very difficult. The aim of the second work package is to test the assessment frame. For two sites a historical description of the sites, a problem analysis and a development of basic management strategies will be performed. The historical analysis is probably crucial to understand the temporal and spatial framework of (economic and social) development of the site in the past and the current threats to biodiversity. These measures will be evaluated and criticised by local and non-local stakeholders and the Follow-up committee. In the third work package policy recommendations will be formulated.
The different disciplines involved in the project will work closely togheter during the whole project. In the following paragraphs the highlights for the different disciplines are presented.

Social aspects of biodiversity

The social team aims at the clear definition of social aspects influencing biodiversity at different levels (international, national, local) and at understanding the support and perception of Natura 2000 by the general public and stakeholders. We need to understand how this perception and experience is influenced. By means of literature research, a thesis research and a citizens parliament the social team will get a good impression of the perception of people of biodiversity, Natura 2000 and nature in general. In workpackage 2 an in-depth social analysis of the study areas will be performed. Togheter with the other teams a management strategy will be developed. This is the basis for the analysis of the social impact of different management strategies for stakeholders (farmers, hunters, recreational users, inhabitants, …)

Legal aspects of Natura 2000

Starting with the context description of the legal perspective, the legal team will describe the general legal framework, the requirements of de EC legislation, its relationship with Flemish and Walloon legislation and the position of ecosystem approaches for sustainable conservation policy. The COP of the Convention on biological diversity (CBD 1992) will be tested with the ecosystem approach in both selected sites. Last but not least recommendations for sustainable implementation and legal modifications will be formulated.

Question of the Follow up committee: *Will there be any research on the Brussels-Capital Region (French: Région de Bruxelles-Capitale, Nederlands: Brusssels Hoofdstedelijk Gewest)? No, the focus is on the local situation and, if relevant, on the comparison of the legal possibilities and constraints for nature conservation between Flanders and Wallonia. However, basic aspects of the implementation of Natura 2000 regulation in Brussels will be incorporated in WP1.*

Economic aspects of biodiversity conservation

Costs and benefits and positive and negative aspects of the implementation of ecological networks such as Natura 2000 will be assessed. Finally, the economic fine-tuning of management measures and implementation of several stakeholders in the management of nature reserves will be assessed.
Questions of the Follow up committee:

- *How will (economic) impact on industrial activities into acoount be taken into account by the project team? In our Flemish case we have mainly farming activities while the Walloon site*

has a forestry oriented development. In the wider region therel are industry-related activities in both case studies.

- *A very interesting case might be the implementation of Natura 2000 in highly industrialised regions like the harbour of Antwerp. Here, there is an extremely high pressure from economical activities and the weight of nature conservation is often too low to combat economical development.*
- *Conclusion is that it would be interessting to estimate the economic impact of the implementation of Natura 2000 in Flanders and Wallonia on the different sectors that are involved. This would be a good output. The economic partner will do an estimation in Workpackage 1.*
- *Moreover It might be very interesting to discover how all different sectors have been involved in the implementation and designation process of Natura 2000. This is a point that will certainly be adressed in Workpackage 1.*

Ecological description of study sites

In Flanders, a part of the valley of the Demer was selected. A relatively similar site was found in Wallonia at the "Bassin de la Lesse entre Villers-sur-Lesse et Chanly".
For this project, a glossary of ecological terms will be composed to allow good communication between all different disciplines. Moreover, bottlenecks will be identified for the implementation and the current delineation of the Natura 2000 network.
Optimal ecological scenarios will be defined for the sites for fine-tuning with strategies of other disciplines. These integrated strategies will be presented to local and non-local stakeholders in an iterative process.
Questions of the Follow up committee: What are the economic activities/threats for biodiversity near or in the Walloon site?
The Walloon site is indeed not highly under pressure of economical development. However, the larger region has some economic importance. Both study sites have a river that brings along a similar dependence on clear water, basin-oriented management,… Of course, a study site has to be chosen on the basis of availability of data, similarity with other study site, similarity of ecological, social, legal and economical criteria. It is not possible to find two exactly similar sites but we think the differences can be overcome by identification and clear description of these differences.

6 Project outcome

The aim of the project is at developing tools that enable us

- to identify land use types that cause biodiversity degradation
- to evaluate the robustness of biodiversity conservation measures
- to clarify the (dis)advantages of economic evaluation
- to assess the degree of the public support of stakeholders for different management strategies
- to describe the legal complexity (timescale, spatial scale) on Natura 2000

7 Practical arrangements

- All participants of the Follow-up committee will be informed about the progress of the project. They will receive the report of the first meeting and have the opportunity to ask members of the project team for extra information, literature, frameworks for analysis, etc.
- The members of the Follow-up Committee will be asked to come together at least 4 times (2 times in 2007, 2 times in 2008). For these occasions, the SELNAT-project team will prepare input, an agenda and the opportunity to give feedback on the set-up and realisation of the project goals. The tasks of the Follow-up committee during this project can be recapitulated as follows:
    - Input for methodology

- Input for data/ (site specific) knowledge
- Feedback on reports
- Interaction with people in the field confronted with management conflicts
- Send papers and information for review
- Contact for specific details or reflections on general principles
- Confront with specific paradigms in nature conservation
- Reflecting on scenario development

- In the future, a projectweb will be set-up to allow members of the Committee to easily gain access to papers, literature, presentations and project information. Everybody will be informed when this projectweb is ready to use.
- Possibly, members of our research team might contact you for direct communication and feedback on certain matter.
- When the research team has finished a more detailed planning of the project, it will be sent to the follow-up committee (asap).

8 Contact details

If you have any questions, please do not hesitate to contact the members of the SELNAT-project:

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Resource Analysis – social aspects + coordination	Jan Vincke *jav@resource.be*

MEETING REPORT FOLLOW-UP COMMITTEE SELNAT

Project:	**SELNAT: HOW TO MAKE NATURA 2000 WORK PROPERLY?**
Subject:	meeting Follow-up Committee SELNAT project
Meeting date:	11/01/2008
Place:	Doyen, Louvain-la-Neuve

Participants:		
	Aline Van der Werf	Belspo
	Olivier Noiret	Sociéte Royale Forestière
	Katty Wouters	Regionaal Landschap Noord-Hageland
	Els Ameloot	Agentschap voor Natuur en Bos, Buitendienst Vlaams-Brabant
	Bart Vercoutere	Vrienden van Heverleebos en Meerdaalwoud
	Joëlle Huysecom	Natagora
	Sophie Salle	Service éco-conseil
	De Visscher Frédéric	l'Union wallonne des Entreprises
	Erika Baus	Biodiversity platform
	Frank Vassen	Europese Commissie
	Geert Raeymaekers	FOD Veiligheid van de voedselketen
	Research team	
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	Charles-Hubert Born	Université Catholique de Louvain
	Valérie Grogna	Université Catholique de Louvain
	Daniel Tyteca	Université Catholique de Louvain
	Patrick Endels	Katholieke Universiteit Leuven
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	Gregory Mahy	Faculté universitaire des Sciences agronomiques de Gembloux
	Julien Taymans	Faculté universitaire des Sciences agronomiques de Gembloux
	Jan Vincke	Resource Analysis
	Stan Weyns	Resource Analysis
Distribution:	Participants and projectteam	

Reporters:	Stan Weyns	**Document reference:**	6041-42-015-03
Date report:	01/02/2008	**Version number:**	1

1 Goal and agenda of the meeting

- *Presentation of Work Package 1*
- *Presentation research approach for Work Package 2*
- *Evaluation instruments and discussion*

2 Presentation WP1 (Julien Taymans, Jan Vincke)

In the first part of the meeting, the results of WP1 are presented to the UC (Users Committee). This is a list of bottlenecks for the different disciplines of the research.

The remarks of the UC on the presentation of the results of WP1 were that the research was very broad, a lot of questions are asked and the link between the disciplines is not clear. The response of the team is that the ECONET-project showed that all different disciplines speak a different language. Until today, it is clear that sociologists have difficulties talking about the same nature as biologists do. So WP1 gave an overview for the other disciplines of the specific problems for the designation and implementation of N2000. Moreover, the knowledge is fragmented in different disciplines and problems need to be shared with each other.

One member of the UC wonders why SELNAT focused in WP1 on problems and bottlenecks and not already on solutions. It was answered that a thorough analysis of the main issues that hamper N2000 implementation must be performed in order to propose adequate solutions to tackle these bottlenecks. This is one of the goals of SELNAT.

Other members of the UC notice that the socio-economic context will always change (climate change etc). So in this project, we should be focusing on this when laying out the objectives for the case study analysis. The Directive gives clear conservation objectives but the main problem is not only the ecological but also the socio-economic time-frame. The implementation remains difficult because the local stakeholders do not understand the logics of N2000.

One aspect that is not enough highlighted according to a member of the UC (Frédéric De Visscher), is the impact of N2000 on the economical context. The economic partners answer that this is something that will have to be developed for the case studies. This remark can be taken as an anticipation of what will be done next. To our knowledge there is no study published yet, or research performed, on the general impact N2000 can have on the economic activities. Some specific impacts in the case of the Walloon Region have been reviewed in the research report.

3 Presentation Work Package 2 (Jan Vincke)

In WP2, we will focus on the bottlenecks that were identified for N2000 and on the solutions proposed in conservation biology literature and by international organizations, within two case studies. The integrated assessment and the Ecosystem Approach (considered as the main framework of implementation of the Convention on Biological Diversity) should enable us to assess the “sustainability” and efficiency of actual management instruments and (technical) measures provided by current Natura 2000 legislations and administrative practice. SELNAT will not deliver a new/alternative management plan for these sites, but the planning process will be reviewed in the light of these approaches. Recommendations to integrate ecosystem approach principles into Natura 2000 planning and into the implementation process will be given in WP 3.

Depending on the species or habitat, actions need to be taken immediately or can be postponed to a later stage in the implementation phase. Habitats are changing and sometimes species are closer to extinction than they were the day the site was designated.

3.1. Evaluation of the planning process & adaptive management

As one of the UC members mentions, a lot of time is often wasted during the making of the management plan. Too many people are participating; too many deals are made, and in the end a lot of time is invested in a management plan that cannot be implemented. He argues that there is a correlation between the time and resources spent on making the plan and the chance of failure.

Often, management plans are too detailed and do not leave the choice of the implementation instruments. They should rather focus on clear objectives and only give an overview of the different possible instruments.
Another problem for adaptive management is the way temporary goals and objectives can be assessed. How do we measure them and do we have the scientific knowledge to interpret our results?

Because a management plan should not have a linear approach, an alternative approach should be designed. Some projects start with a lot of talking and exploration, then they start taking actions and along the way, the management plan is made. In this perspective, the management plan is a tool or instrument but not a goal on itself. A management plan is a process and partially an agreement to talk with each other. Some projects demand a result-obligation approach while others do not hold such an obligation. Discussions with stakeholders often have the problem of uncertainty, which is inherent to scientific research. However, people are often afraid of change and uncertainty. Implementation is therefore often very difficult. Moreover, communication and cooperation between administration and local actors is often severely hampered by the 'distance' (be it physically or mentally) between them.

3.2. Evaluation of implementation instruments: effectiveness and acceptance

There was no time left to formally assess the effectiveness and acceptance of the list of implementation instruments distributed by the project team. However, the principle of doing so is clearly supported by most members of the UC. The UC's advice is to assess the effectiveness of these instruments, to support decision making for certain instruments and their bottlenecks, to describe local socio-economic indicators and to talk with people on the site. Today, many people talk with representatives of different organisations but not always with the people on the terrain. The KULeuven explains that there is a thesis going on to assess the valuation and perception of nature and the societal support for nature conservation actions at the lower level of the administration and among stakeholder representatives.

4 Lessons learned by the project team

As to research focus within WP2, the UC insisted on being rather pragmatic and on tackling the following specific aspects (rather than taking a broad approach as we did in WP1):

4.1. *Evaluation of management planning & adaptive management*

There seems to be a clear need for guidelines on how to adapt management plans within a changing ecological and socio-economic context. This calls for revision of procedures on how to make the actual plan and how to be adaptive in implementing this plan.

4.2. Evaluation of implementation instruments

The UC-members generally approved of our proposal to assess acceptance and effectiveness of several types of instruments but by discussing this we learned that the approach should be somewhat refined and that 'acceptance' should not only be tested among representatives but also with local stakeholders. A few additional environment-related economic instruments will be added to the list of instruments enumerated so far.

5 *Contact details*

If you have any questions, please do not hesitate to contact the members of the SELNAT-project:

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Resource Analysis – social aspects + coordination	Jan Vincke *jav@resource.be*

MEETING REPORT FOLLOW-UP COMMITTEE SELNAT

Project:	**SELNAT: HOW TO MAKE NATURA 2000 WORK PROPERLY?**
Subject:	Discussion meeting Follow-up Committee SELNAT project
Meeting date:	20/04/2007
Place:	Division Forest, Nature & Landscape, KUL

Participants:	Didier Vieuxtemps	Fédération Wallonne de l'Agriculture - syndicat
	Katty Wouters	Regionaal Landschap Noord-Hageland
	Els Ameloot	Agentschap voor Natuur en Bos, Buitendienst Vlaams-Brabant
	Bart Vercoutere	Vrienden van Heverleebos en Meerdaalwoud
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	Valérie Grogna	Université Catholique de Louvain
	Steve Meuris	Katholieke Universiteit Leuven
	Martin Hermy	Katholieke Universiteit Leuven
	Gregory Mahy	Faculté universitaire des Sciences agronomiques de Gembloux
	Julien Taymans	Faculté universitaire des Sciences agronomiques de Gembloux
	Jan Vincke	Resource Analysis
Distribution:	Participants and projectteam	

Reporters:	projectteam	**Document reference:**	6041-42-079
Date report:	15/06/2008	**Version number:**	1

1 Goal and agenda of the meeting

At the last user meeting in Louvain-La-Neuve was decided to assess the feasibility and effectiveness in relation to Natura 2000 of different existing instruments. A websurvey was conducted among the users. Goal of this meeting was to discuss within the follow-up committee the results of the survey.

First the research team presented a small introduction and the results of the survey. The second part of the meeting was used to discuss the results of the survey.

2 Introduction (J. Taeymans)

J. Taeymans presented the contect and goal of the meeting and the way the different instruments were selected by the research team. The powerpoint-file of this presentation is attachted to this meeting report.

Questions from the users in relation to the presentation:

- What is exactly Species protection plan?
  Species Protection Plan is as an instrument developed in the Netherlands. It's translated to the Flemish situation. In practices is seems difficult to apply it. These species protection plan are very optimistically formulated on the slide but it might develope in that way.
- Contrat de rivière exist also in Flanders.
  There is an instrument that is'nt the same thing but overlapping. In Flanders we call it a 'Bekkenbeheerplan' as a coordination instrument for water management. The bekkenbeheerplan itself has no money to implement measures.
- Organic farming subsidies: What does it cover? Only the subsidies for organic farming? This seems not specific for Natura 2000?
  True, the goals of natura 2000 arent the primal purpose. The purpose of this survey is to analysis all kind of instruments that could contribute to a certain environmental purpose.

3 Discussion on instruments

J. Vincke gives a small presentation of the most important results of the inquiry. The powerpoint-file of this presentation is attachted to this meeting report. First of all the users were asked for a global response. Afterwards the results for the different instruments were discussed.

General points of attention from the users were:

- Most of the people who answered were mainly naturalist. To have a better view of the perception of other groups, a broader survey is needed.
- Generally there is not a large difference in feasibility/effectiveness between the instruments. Most of the instruments are at the upper side of feasibility and effectiveness.
  Correct but an important aspect is that the sample is too small.
  If nature is THE objective then Natural reserves, Land Purchase and Life Natura seems to be the most interesting.
- The definitions of feasibility/effectiveness different for everybody? In analysis the results this has to be taken into account.
- 'Natuurprojectovereenkomst' does it exists in the Walloon area? Its surprisingly that everybody find this instrument feasible and effective while there isn't any experience.

Points of attention **Land purchase vs. expropriation**

In the results the feasibility of the instruments land purchase vs. expropriation is strongly different. Technical and budgetary this seems just the same measures for a user. Differences in feasibility must be explained by the sociologic acceptance. The legal framework is the only difference (with emphasis on power by the government). Not everybody agreed whit this statement. The budget does differ! When we do expropriation it's more expensive for the authorities: the prices are higher and moreover, most of the time you have to pass by court. Agreed is that in the case of expropriation we have to add the management cost at the start. Afterwards the budget will be the same for the nature management. For the reason a user stated that the financial impacts of the two instruments are globally (at regional level) the same.

In practice land purchase for nature is most of the time a case of opportunities. It's on a free basis. Expropriation is not (often) used for nature conservation goals. The government tries to minimalize

(not only for nature) the use of this instrument. On the other hand users know cases were people are happy to receive money. It's cost a lot for the government, especially on the short term! It's more difficult if it's an expropriation of a house or a good agricultural land. Then you have more severe protest. Expropriations in these cases are mainly done for infrastructural works and inundations areas.

The low feasibility for expropriation in this survey is maybe more based on the knowledge of people regarding expropriation for infrastructure then on the knowledge of people regarding expropriation for nature. It's not well known for a purpose of nature.

Points of attention **in relation to the instruments 'Nature reserves' – Life Nature – Land purchase**

A researcher is surprised by the 'ranking' as feasible of the nature reserves. In the survey it seems to be rated quite feasible, while in practice for instance farmers have a strong opposition. People want that N2000 zones are different than natural reserve. A possible answer is certainly that most of the respondents were nature people. Almost every body agreed that foresters and farmers aren't interested in nature reserves on there ground. Another researcher stated that the incorporation of more people in nature reserves might counter the opposition.

Instruments that have the same feasibility have quit the same characteristics (Nature reserves, Life Nature, purchaise). To implement a nature reserve you purchase the ground. You then have the time to manage the area. Live Nature is an instrument to accelerate the process of purchasing and development measures. Important is that the main objective of those instruments is nature. Besides that nature minded persons (organizations, government) own the land. They have then the power/right to develop it.

A nature conservation users states that nature reserves are: *more protected by law and therefore the chance on succes is larger*. Sometimes, people are afraid of reserves (invasions by thistle, etc…). An important aspect for the users is that you can exclude people, other activities. A user agreed: the greatest chance to reach nature conservation goals are indeed nature reserves because the management here is a long term case, in contrast with for example AEM. In this case farmers can stop whenever they want with the nature management.

In the Flemish region there are forest owners that want reach the same targets as in nature reserves. Do foresters in the Walloon part find nature reserves a punishment?? (question of user) Yes they find it a punishment to create natural reserves, to make nature conservation. In the Flemish region it's maybe different because of the different possibilities for financial compensation. Would a forester do efforts for nature if he is paid?
A Walloon forest users explains that it depends on the proportion: 3% of "îlots de sénescence" could be okay but 10% is too much for economical aspects. It's also a question of liberty of choice, a psychological aspect. About hunting: you need 50 ha to rent the land for hunting and not everybody is in this case. Reserves seem effective to reach the objectives of Natura 2000 but they aren't feasible because it is mono-functional whereas we are waiting for a forest that is multifunctional. A nature reserve, like management today, doesn't create money. It consumes money. In a nature reserve there is, for the moment, a constant input of money needed. it's not durable in an economic way. A forest has to produce/generate my salary. When the forest doesn't create money I'm not paid. In natural reserves forests doesn't produce. A forest has to create money, not consume money.

First function of the private forest in Wallonia: it's an inheritance/patrimony that you receive and transmit after. There is also a sentimental value. So the private forest in Wallonia has two important aspects, first: the technical management aspect, and second: the family relationship aspect (sentiment). There can be some technical problems and familial relation problems. Putting in a natural reserve in a forest is not only an economic loss, but also a loss of liberty and feeling of property, as the familial choice is restricted. It must be the choice of the owner. ("option value" of a

field). A Flemish user states that this feeling is the same in the Flemish Region. But it stands not only for forest(ers). Patrimonial sentiments aren't restricted to certain land use. Also in nature reserves you can sentimental feelings. Indeed, but … important stays for everybody the freedom of choice. It's possible to reconcile sentimental value and nature protection. Important to know how we will realize N2000 objectives in a forest management plan. A solution could be to leave the choice about the designation of ecological zones in the FMP to the owner. Nature reserves are one way for N2000, forest plans form another way.

At the moment, the strategy of the government is not of any good systematic procedure: they have zones where they follow a land purchase policy, and zones where they follow a stimulation policy of land owners. More or less the development of nature reserves is a case of opportunity. A good strategy is to begin with a small part. ('You grown at the tempo of the land owners around you'). You gain respect. In the beginning you are 'stupid'. After a while say that they can use the nature reserve (for instance for cattle breeding), that they can collaborate,... When you are accepted by the local community you can start to try to grow. Once you have token an opportunity and establish a nature reserve more opportunities to purchase land arise. Owners of land have to see the opportunities, they have to learn, …In this way nature reserves are very feasible. The only treat is that nature reserves can have an impact on the surrounding lands.

We cannot say that forest is only production. The forest is multifunctional by law. There this is no freedom of choice (according to a user). In practice there is a gradient in forest owners (nature minded – economic minded owners). For the people who really want to live from the forest, multifunctionality is not wanted. In Flanders, FMP and deduction of succession rights are coupled. This is very effective. Large land owners are now actively buying forests in Natura 2000 to benefit of this fiscal advantage. Nature management in forests seems to be less negative in Flanders then in Wallonia. There are within the (forest)property always some areas that can be used to reach nature targets (e.g. ponds, lanes, …).

If you don't have to manage forests it's okay, but if you have to manage to support one special species, it costs. Compensations of this cost could be done by subsidies. Even if the bill at the end is kif kif this doesn't feel sentimental the same for a forest user. Moreover he find that subsidies aren't durable, there is a constant uncertainty involved, linked with the length of the legislature. The actual government doesn't engage him for the next government.

A researcher state that integrated reserves could cost nothing. Studies in the Netherlands demonstrate that estates, land have more value if they are next to natural reserve. There are also other important revenues possible (e.g. Park Hoge Kempen). So the costs can turn out very different when calculating this in the cost-benefit analysis. A possibility is maybe also the establishment a regime of visitors payback.

Nature reserves most of the time cost money. That is for a nature user clear. The government is committed to the legislation. Question is how to reach the target in the best way (private subsides or nature reserves). The subsidies are a European case, it's not a case of national policy. It is stated that the tools provided by the Programme de Développement Rural wallon should be better used in the scope of Natura 2000 for forests.

The success of Life Nature projects is very dependable on the integration of local stakeholders. If they are involved the project doesn't end at the end of the Life Nature project. On the other hand it also varies with the kind of project. Not all Life Nature projects purchase land. Then it's probably even more difficult to reach really durable results. A users state that when people know that when a Life Nature project is going on they can higher there prices.

Points of attention **in relation to the instruments EIA, Protection Regime and Permits.**

The instrument EIA is highly effective to prevent damage if the government uses it's strategic. Like in the port of Antwerp it plays a crucial role. Good instrument to help to manage land use in and

around N2000 site and to avoid human impact. An extra is the compensation duty. We have to distinguish between appropriate assessment and EIA. In Wallonia: for every permit you need an EIA (in some case, it's only a "notice" (NEP)), not in Flanders. Here the EIA, can be understood differently. EIA could be interpreted in different ways. For every permit you need for instance a minimal environmental impact analysis. In Flanders, assessment if it's in N2000 but if it's at 2 or 3 km, an assessment is not always needed. An EIA is not the same as an appropriate assessment *(passende beoordeling)*! An EIA also goes beyond nature areas.

The private forests in Wallonia do not have an EIA. Not so much in forest: in forest, not a lot of acts submitted to permit. Not a lot of permits in agricultural zones too ←→ a lot in conditionality. For permits and FMP, often the distance between administration/plan and the field/practices makes that the results are not the one that are expected. Control and things like that are very important.

A weak point for the EIA in Belgium is that EIA is not tuned on protected species in contrast with for example France. Most of times, impacts on protected species are not taken into account when delivering a permit.

Points of attention in relation of **Communication and education:**

What about effectiveness? It works on the long term. It depends for the users a lot on:

- …how the campaign is organized
- …weather people want to listen
- …the long term implementation of education and communication (week van het bos)
- …more effective if linked to a concrete project, actions, …it might increase the awareness
- …

Communication is most often in a direct effective.

Points of attention in relation **of voluntary instruments like AEM, labels, organic farming,…**

Voluntary instruments can be effective if it goes hand in hand with information programs according to a forest user. It depends on the kind of information and on the kind of program. Forest owners for example did not join in Wallonia voluntary programs that were developed, but they did in certain regions of France.

Another user believes that the effectiveness is generally low, but important because they give to people the feeling → good for long term. They can be used for the stepping stones between low value and high value nature conservation areas. Another users agrees that it's a good tool on the long term. It's based on the belief of the users that they can contribute to the nature goals. In the long time this is more durable then regulations (according to this user).

For a researcher voluntary instrument are maybe also good instruments to try something (as a user? Or as a government) → if it does not work, stop the initiative, if it does, people can go on. On user is clear: Voluntary tools are good to make people aware of nature (to get knowledge about nature management), but not sufficient to reach the objectives and not really cost-effective.

Farmers can stop AEM when they want. For grassland, the species diversity is smaller than in nature reserves but larger than in intensive agricultural landscapes. In the Flemish region AEM is very popular. The different AEM measures vary quit a bit in effectiveness. For instance, efforts for landscape elements could be very effective. Efforts in the arable land could be less effective.

Results could be better when there is a contract. What is better, pay for the results or pay for the efforts? In the Netherlands, farmers take compensation type instead of the result-oriented reward. In Flanders the botanic AEM has a partly result-oriented payment

AEM = context different in Flanders than in Wallonia. There is more success in Wallonia (50% of farmers involved But be careful to statistics. When the farmer applies a measure, he goes in the ranking of statistics.). About the surface of AEM, little is known. Gap: we pay without necessary expecting results. A proposition for Wallonia, to better valorize the work of farmers, should be to pay a contractual amount and a bonus depending on results for nature. Sometimes, in Flanders, farmers are paid only if there are some concrete results on the field.

AEM is a tool that could be efficient but it lost importance today because of:

- Administrative reason: very strict, there are a lot of papers, not encouraging the system.
- Economical context evolves: some measures are financially a failure (increase of cereals value)
- Some measures are not well prepared. Ex: MAE 9 (arranged band), not tested before the program was launched, that do a bad publicity. This is a general point of concern.
- Resistance in the administration to change mentalities (nature instead of production)
- Discordance between administrations (agricultural administration vs AEM administration)

A researcher proposes that a final recommendation of the SELNAT project should be to better adapt AEM in a nature conservation scope: change the design and take the spatial context into account, at the moment there is no overview. A user thinks that it should be better if AEM were thought on a multi exploitation scale. At the moment measures were only taken on the marginal farming lands. A network of patches is not developed. In Flanders firm-planners aid (group of) farmers in the entire region to come to landscape broad measures. One of the main problems is to integrate the rotation system of farming, to change agricultural habits of working, the 'pacht', … . A general approach for whole the region is not effective. You have to implement measures case/region by case/region.

The potential impact of an instrument like labels on the other is not very high. Not conceivable in Natura 2000. In the first place, it is not the first problem now. It's try out with the"Boeuf des prairies gaumaises" but it doesn't work. An important aspect for this instrument is that you need people wo want to pay more for 'natural' products. A user argued that the knowledge of this instrument is rather low. In general people don't want to give money so therefore little potential. This could be the explanation to the low effectiveness of this instrument. At the moment, there are some experiments with labels in the Netherlands.

Other instruments

Other instruments that were mentioned during the discussion: :

- include destination plan (plan de secteur). Because this is the most traditional and well known instrument.
- natural reserves with visitor payback
- National parks (like Hoge Venen) can include some N2000 sites. Strong points: large area, integrated management/goals is possible, you have a product that can sell (possibility to develop the HORECA)
- Conservation groups. A group of non-nature users that have grouped and work together on nature management. At the moment they work only advising in Wallonia. In Flanders you have the instrument of bosgroepen. Like Nature reserves it is slowly, organic growning. You build up trust.
- Sylvo-environmental measures are not sufficiently applied in Wallonia

<u>Conclusion</u>

Lot of instruments so why this perception that Natura 2000 doen't work properly? Is this correct? The implementation of Natura 2000 needs to start. We are only at the beginning. Possible reasons why Natura 2000 might not work:

- Because of the lack of clear targets
- because of the lack of constraints
- because of the lack of financial means.
- often, there are too many overlapping authorizations for one region, and the overview on responsibilities and hierarchy is lost.

We need a broader survey to enlarge the insight in the effectiveness and feasibility of the different instruments. At the moment the representativeness is to low.

The perception of respondents can change with different definitions of feasibility and effectiveness. For instance, the perception can change if we have an unlimited budget; when we take in to account socio economic circumstances, … The discussion on the definition is for this reason very important.

The research team will extend the survey to a broader public (representatives of nature organizations, landowners, foresters, ….). Afterwards we want to test ours knowledge at a local level in the two pilot areas.

RESOURCE ANALYSIS

MEETING REPORT

Project:	**SELNAT: HOW TO MAKE NATURA 2000 WORK PROPERLY?**
Subject:	Meeting with users
Meeting date:	05-02-09
Place:	Leuven
Participants:	Simon de Voghel (Naturawal) Olivier Noiret (NTF) Simon-Pierre Dumont (NTF) Johan Toebat (ANB) Didier Vieuxtemps (FWA) Frédéric De Visscher (UWE) Gregory Mahy (FUSUGx, ecological team) Julien Taymans (FUSUGx, ecological team) Martin Hermy (KULeuven, ecological team) Steve Meuris (KULeuven, ecological team) Daniel Tyteca (UCL, economic team) Valérie Grogna (UCL, economic team) Mary Mahy (UCL, legal team) Stan Weyns (Resource Analysis, coordinator) Jan Vincke (Resource Analysis, coordinator) Not present: Katty Wouters (RL) Charles-Hubert Born (UCL, legal team)
Distribution:	Project team and users

Reporters:	Stan Weyns	**Document reference:**	
Date report:	06-02-09	**Version number:**	1

Minutes of meeting:

Presentation
Introduction on the project by Jan Vincke
Description of assessment of instruments by Marie Mahy
Description of results of websurvey in Flanders and Wallonia at administrations and expert level on instruments for Natura 2000
Description of results of interviews with Users of Natura 2000 in Wallonia by Valérie Grogna
Description of results of websurvey on alternative strategies for Natura 2000 in Flanders by Stan Weyns
Overview of main recommendations from the research project by Julien Taymans.

Discussion

- what about the recommendations and conclusions for the surveys? They wer enot presented in the presentation.
    - The research team admits that a profound link between the recommendations and the actual research results is missing. The main recommendations are identified on the basis of literature review and bottlenecks for Natura 2000 (WP1)
    - This will be adjusted in the final report and more concrete recommendations will be formulated from the survey results
- What is the conclusion from the different definitions of effectiveness and feasibility of instruments? How to interpret this?
    - The results did not exactly correspond with our expectations. We thought our respondents would give a better ranking themselves but this didn't happen. Afterwards, we have to recognise it would have been better to let them rank the main important aspects from their point of view. Our respondents were experts and people from administration in this survey. It is clear they consider very different aspects as important and they should recognise in public consultation and debates that actual users of nature sites can have different perspectives on their appreciation of instruments.
    - A recomme,dation on this will be added to the report.
- What is the cost of the different strategies?
    - There was no cost assessment in this research on the different strategies because we didn't describe the actual content of alternative strategies. The information is very difficult to find and difficult to assess. Moreover, the focus of the project was mainly on social acceptance of instruments and strategies. An economic assessment would have asked a different focus. The team however recognises that the economic cost is an important aspect.
    - Some recommendations will be formulated in the report on this aspect.
- What do you conclude fro the research that Flanders can learn from Wallonia and the other way around?
    - We have seen differences in the instrument assessment of Flanders and wallonia. However, the respondent group was rather unsimilar and conclusions are difficult to make. On the second survey, a different methodology was used (interviews versus websurvey) so comparison is even more difficult
    - Some recommendations for Flanders and Wallonia on instruments will be made in the final report.
- Do you think it is realistic to have the government choose what consultant executes the EIA as proposed in the recommendations?
    - There are important considerations to take on EIA reporting. Cost, availability of certified experts, ... it is nearly impossible to chenge the liberal system of choosing the company that makes the EIA. However, it is considered that some companies have an interest in a positive analysis in the EIA. So, on the basis of what criteria can you chose the consultant that gets the contract? How to make this system work is not clear but the system is not perfect as it is.
    -
- voluntary instruments and processess seem very interesting for future instruments and nature conservation as being feasible and mostly relatively effective. For example the instrument Natuurinrichting seems to have some good results in Flanders. So, as we have seen very emotional (negative and positive) reactions on the issue of nature conservation, the voluntary aspect of instrument might increase the social acceptance and thus increase the likelihood of success. Clearly the age of users plays a role in this acceptance process. Moreover, the knowledge about an instrument increases the appreciation of an instrument. Therefore, communication about the insturments seems very important in the process of implementation.

RESULTATEN BEVRAGING OVER INSTRUMENTEN VOOR NATURA 2000

Beste,

Een tijdje geleden beantwoordde u onze enquête over de implementatie van Natura 2000 in België. U gaf in deze bevraging aan dat u op de hoogte wilde gebracht worden van de resultaten hiervan. Onderstaand vindt u een korte beschrijving van onze belangrijkste bevindingen.

Op dit ogenblik loopt een andere bevraging bij de gebruikers van natuurgebieden: landbouwers, bosbouwers, natuurliefhebbers, landeigenaars, recreanten, etc. Deze mensen worden bij hun bedrijfsvoering en hun dagdagelijkse activiteiten geconfronteerd met Natura 2000 en het natuurbeleid.

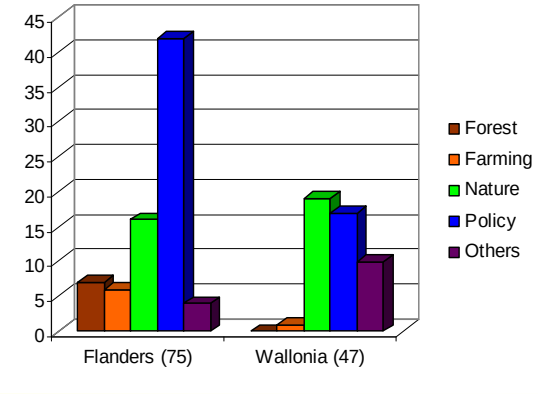
Wij wilden ook hun visie hierover leren kennen.

Het SELNAT-project loopt nog tot einde januari 2009. Onze conclusies en de specifieke resultaten van deze twee bevragingen zullen begin februari 2009 beschikbaar worden gemaakt via het internet. Indien u hiervoor interesse hebt, kan u deze dan raadplegen via www.technum.be/natura2000.

Indien u nog vragen heeft over het project, kan u steeds contact opnemen met Stan Weyns via swe@resource.be of 03/270.00.44.

Wij danken u nogmaals voor uw medewerking!

De respondenten



Vooral vertegenwoordigers van bevoegde administraties beantwoordden de enquête.

De bevraging gebeurde op verschillende beleidsniveaus in Vlaanderen en Wallonië en vond plaats in juni 2008.

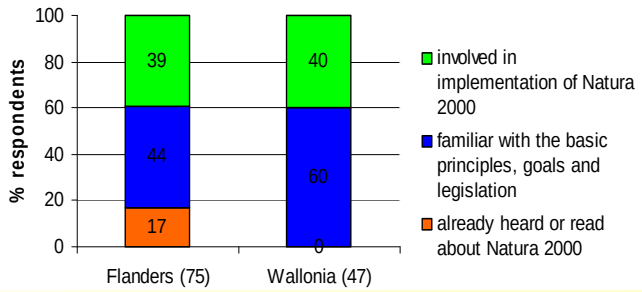
In het totaal beantwoordden 122 mensen de online enquête (zie grafiek links). In Vlaanderen kregen we antwoorden binnen uit de landbouw- en bosbouwsector maar vooral uit de administratie (ANB, VLM, INBO,...).

Meer dan 80% van de Vlaamse respondenten blijkt goed tot zeer goed op de hoogte van de implementatie en principes van Natura 2000 (zie grafiek rechts).

Dit was ook wat beoogd werd: de enquête werd doelgericht rondgestuurd naar mensen die (op professioneel vlak) bezig zijn met natuurbescherming en –beleid.

Doordat deze specifieke doelgroep aangesproken werd en omdat de enquête een hoog kennisniveau vereiste, bleef het aantal respondenten per regio wel aan de lage kant.

Hun kennisniveau van Natura 2000



RESULTATEN BEVRAGING OVER INSTRUMENTEN VOOR NATURA 2000

Effectiviteit en haalbaarheid: veelomvattende begrippen

In onze enquête werd gevraagd naar de effectiviteit en haalbaarheid van een aantal instrumenten voor de realisatie van het Natura 2000-netwerk. Ten eerste stellen we vast dat niet iedereen altijd eenzelfde idee heeft over wat nu juist effectiviteit en haalbaarheid van een instrument is. Uit onze resultaten blijkt dat de meeste mensen vinden dat een effectief instrument moet bijdragen aan vooropgestelde natuurdoelstellingen, duurzaam is en leidt tot concrete maatregelen op terrein. Een haalbaar instrument moet volgens de meesten in de praktijk uitvoerbaar zijn en er moeten voldoende middelen voor beschikbaar zijn. Transparantie van en draagvlak voor een bepaald instrument lijken iets minder belangrijk in de beoordeling.

Dit betekent dat 2 respondenten eenzelfde instrument als effectief kunnen scoren om een verschillende reden.

Vooral vrijwillige instrumenten worden het meest haalbaar ingeschat

De instrumenten werden in verschillende groepen opgedeeld: al dan niet op vrijwillige basis en al dan niet met financiële compensaties. Uit de bevraging blijkt dat er voor Vlaanderen en Wallonië samen een significant verschil is tussen de inschatting van de haalbaarheid van de meer vrijwillige instrumenten (vb. Life Nature) tegenover de niet vrijwillige instrumenten (vb. onteigening). De instrumenten die op vrijwillige basis werken, worden als meer haalbaar gescoord. De instrumenten waarbij financiële compensaties voorzien zijn, werden door Vlamingen en Walen zowel effectiever als meer haalbaar beoordeeld.

Instrumenten met concrete maatregelen op terrein worden als het meest effectief aanzien

Voor Vlaanderen zien we nog enkele opmerkelijke resultaten (zie grafiek rechts). De X-as stelt de effectiviteit en de Y-as de haalbaarheid van de instrumenten voor volgens de beoordeling van de respondenten.

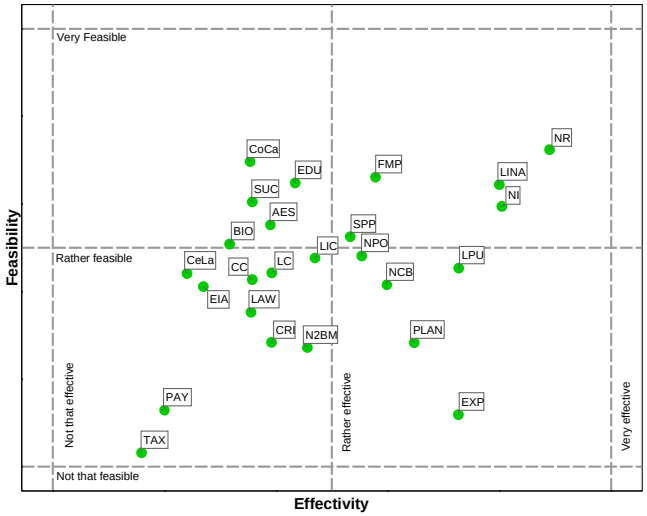
De meest effectieve instrumenten voor natuurbeheer zijn deze instrumenten die impliceren dat de overheid de gronden verwerft (vb. aankoop en onteigening) en (vervolgens) concrete acties op terrein kan nemen (natuurinrichting, natuurreservaat). Het is duidelijk dat een sectorale aanpak van bescherming van groene gebieden op basis van deze groep van instrumenten effectief en haalbaar wordt ervaren. Onteigening is even effectief maar minder haalbaar dan aankoop van gronden, omdat dit een geladen begrip is en zowel procedureel als administratief een log instrument is.

Instrumenten uit de landbouwsector zoals bio-landbouw en beheersovereenkomsten worden voor de implementatie van Natura 2000 als minder effectief dan andere instrumenten. Ze blijken evenwel redelijk haalbaar.

Instrumenten met een wetgevend karakter voor de bescherming van natuur (vb. vergunningen, milieu-effectenrapportage) worden in vergelijking met de andere instrumenten als minder effectief en haalbaar beschouwd.

Fictieve instrumenten die ook in de enquête bevraagd werden zoals het betalen voor de toegang tot of het gebruik van Natura 2000-gebieden, worden door iedereen als weinig effectief en weinig haalbaar gescoord.

Effectiviteit en haalbaarheid van instrumenten in Vlaanderen



AES	Beheersovereenkomsten	LPU	Aankoop van land
BIO	Bio-landbouw	LAW	Bescherming bij Wet
CC	Randvoorwaarden of ecologische voorwaarden voor land- en bosbouw	NCB	Natuursamenwerkingsverband
CeLa	Certifikaten & Labels	NI	Natuurinrichting
CoCa	Communicatie Campagne	NPO	Natuur Project Overeenkomst
CRI	Contrat de rivière	NR	Natuurreservaat
EDU	Educatieprogramme	N2BM	Natura 2000 Balans voor gemeenten
EIA	Milieueffectenrapportage	PAY	Vrijwillig toegang betalen
EXP	Onteigening	PLAN	Verandering van bestemmingsplan
FMP	Bosbeheerplan	SPP	Soortenbeschermingsplan
LC	Ruilverkaveling	SUC	Vermindering successierechten
LIC	Systeem van vergunningen	TAX	Belasting voor horeca
LiNa	Life Nature		

Natuurrichtplan: de theorie versus de praktijk

In de enquête werd ook gepeild naar de mening van de respondenten over Natuurrichtplannen. Via de verankering in het Natuurdecreet worden deze in Vlaanderen beschouwd als belangrijke processen om doelstellingen in VEN en Natura 2000 te realiseren.

De meeste mensen antwoorden genuanceerd.

Velen vinden het een interessant theoretisch werkkader dat veel potentie biedt. De uitwerking in de praktijk vindt men (nog) niet werkbaar: het wordt ervaren als een log instrument. Er wordt vermeld dat er een gebrek aan concrete maatregelen voor natuur is en dat er te weinig beperkingen voor gebruikers kunnen opgenomen worden. Een bijkomend belangrijk knelpunt is dat er tevens te weinig middelen voor de opbouw en implementatie voorzien worden.

Les Résultats du questionnaire des instruments pour Natura 2000

Chers participants à l'enquête SELNAT,

Il y a quelques temps, vous avez répondu à notre enquête concernant la mise en œuvre de Natura 2000 en Belgique. Vous aviez indiqué à la fin du questionnaire que vous souhaitiez être tenu au courant des résultats. Ci-dessous, vous trouverez une brève description des éléments les plus importants qui ont pu être mis en avant lors de l'analyse des résultats.

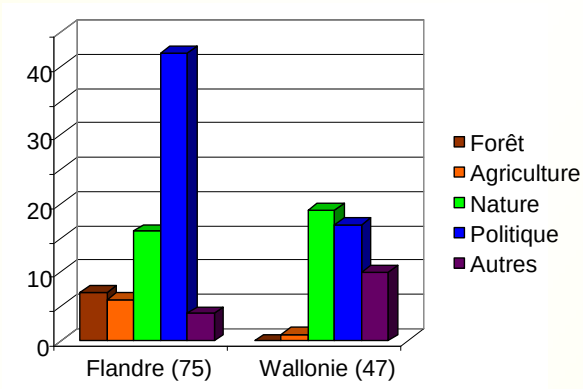
En ce moment, une deuxième enquête est en cours de réalisation auprès des principaux usagers du site Natura 2000 étudié, celui du bassin de la Lesse. Ces usagers sont les agriculteurs, les forestiers, les naturalistes, les propriétaires terriens, les entreprises (dans ou à proximité du site), les touristes, etc… Ces personnes sont confrontées à Natura 2000 et aux politiques de conservation de la nature dans leurs activités journalières et/ou via la gestion de leur entreprise. Nous avons de ce fait voulu connaître leur avis.

Le projet de recherche SELNAT sera finalisé pour la fin du mois de janvier 2009. Nos conclusions et les résultats spécifiques des deux enquêtes seront disponibles au début du mois de février sur Internet. Vous pourrez les consulter via le site www.technum.be/natura2000 . Si vous avez des questions concernant le projet de recherche SELNAT, n'hésitez pas à contacter Valérie Grogna (Email : valerie.grogna@uclouvain.be ou Tel : 010/47.84.66).

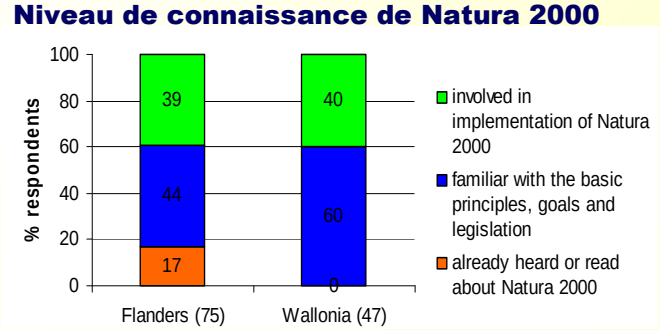
Nous vous remercions encore pour votre coopération.

L'enquête a permis de sonder différents secteurs d'activité en Région wallonne et flamande durant le mois de juin 2008. Au total, 122 personnes ont répondu à l'enquête en ligne. En Région wallonne, nous avons principalement reçu des réponses de la part d'organisations de protection de la nature, ainsi que des différents niveaux de l'administration, essentiellement des communes. Au vu des résultats, nous pouvons constater que tous les répondants wallons étaient, dans une certaine mesure, familiarisés à Natura 2000. Le nombre de répondants était cependant relativement bas aussi bien en Région wallonne qu'en Région flamande.

Les Répondants



Niveau de connaissance de Natura 2000



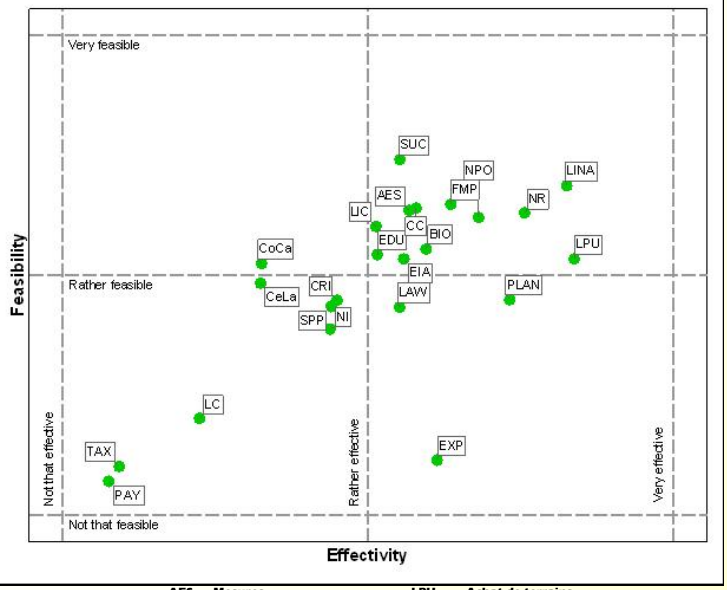
Les Résultats du questionnaire des instruments pour Natura 2000

Dans l'enquête, nous demandions d'évaluer l'efficacité et la faisabilité d'un ensemble d'instruments. Avant cela, il était demandé à chacun de définir les termes efficacité et faisabilité. D'après les réponses obtenues, nous constatons que la définition de ces termes varie d'une personne à l'autre. Mais pour la plupart des répondants, un instrument efficace est un instrument qui contribue à atteindre les objectifs de conservation de la nature, qui est durable et qui permet la mise en œuvre d'actions concrètes sur le terrain. Un instrument faisable quant à lui, est, selon l'avis de la plupart des répondants, un instrument qui est exécutable en pratique, et pour lequel de la main d'œuvre et des moyens sont disponibles. La transparence et le support du public sont considérés comme secondaires.

En Région wallonne ainsi qu'en Région flamande, les instruments volontaires sont perçus comme significativement plus faisables. Les instruments qui envisagent une compensation financière sont mieux classés en termes d'efficacité et de faisabilité.

D'après les répondants wallons, l'efficacité et la faisabilité sont les plus élevées pour les instruments qui permettent au gouvernement d'obtenir la propriété des parcelles (expropriation et achat de terrains), ainsi que pour ceux qui permettent la mise en place de mesures concrètes sur le terrain (Life Nature, réserves naturelles). Les taxes et le paiement de droits d'entrée sont considérés comme non efficaces et non faisables pour protéger la nature et mettre en place Natura 2000. Cette constatation ne doit sans doute pas seulement être due au fait que les gens doivent payer pour la nature, mais aussi au fait que les détails pratiques concernant ces instruments n'étaient pas explicités dans la question posée. Contrairement à la Flandre, les répondants en Wallonie considèrent les mesures de protection strictes et obligatoires, comme les lois, les licences ou les Etudes d'Incidences Environnementales (EIE) comme étant des instruments plutôt efficaces et faisables. Les règles sectorielles pour l'agriculture et la sylviculture sont considérées comme étant quasiment aussi faisables que les instruments spécifiques au secteur de la conservation de la nature mais elles sont considérées comme étant moins efficaces. Le remembrement rural n'est clairement pas considéré comme un instrument efficace pour la conservation de la nature selon les répondants.

L'efficacité et la faisabilité des instrument en Wallonie



AES	Mesures agrienvironnementales	LPU	Achat de terrains
BIO	Agriculture biologique	LAW	Protections légales
CC	Ecoconditionnalité	NCB	Natuursamenwerkingsverband
CeLa	Certificats et labels	NI	Natuurinrichting
CoCa	Campagnes de communication	NPO	Projet d'aménagement de la nature
CRI	Contrats de rivière	NR	Réserves naturelles
EDU	Programmes d'éducation	N2BM	Natura 2000 Balans voor gemeenten
EIA	Etudes d'Incidences Environnementales	PAY	Droits d'entrée dans un site naturel
EXP	Expropriation	PLAN	Modification du plan de secteur
FMP	Plan d'aménagement forestier	SPP	Plan de protection des espèces
LC	Remembrement rural	SUC	Réduction des droits de succession
LIC	Système de licences	TAX	Taxes pour l'Horeca
LiNa	Life Nature		

Les campagnes de communication et les programmes d'éducation sont perçus comme des instruments relativement faisables, les seconds étant considérés comme plus efficaces que les premières. Les contrats de rivière, instruments qui ne concernent qu'indirectement la conservation de la nature, sont considérés comme peu efficaces et faisables en regard de la problématique de Natura 2000. L'agriculture biologique, quant à elle, tout comme les mesures agrienvironnementales, est considérée comme relativement efficace et a un bon score pour la faisabilité. Enfin, les éventuelles modifications du plan de secteur et les protections légales sont considérées comme peu faisables mais bénéficient d'un bon score concernant l'efficacité.

MEETING REPORT SELNAT

Project:	**SELNAT: HOW TO MAKE NATURA 2000 WORK PROPERLY?**
Subject:	meeting research team – special meeting with Rink Kruk (INBO)
Meeting date:	14-11-2008
Place:	Leuven
Participants:	Valérie Grogna, Steve Meuris, Julien Taymans, Rink Kruk
Distribution:	All

Reporters:	Julien Taymans	**Document reference:**	
Date report:	25-11-2008	**Version number:**	1

1 Goal and agenda of the meeting

The main goal was to exchange information with Rink Kruk, studying Natura 2000 at the INBO.

- Presentation of SELNAT
- Presentation of survey 2 results
- Presentation of the project of Rink Kruk
- Answers to Rink Kruk questions
- Discussion

This agenda wasn't really respected during the meeting. It was more a global discussing between each other.

2 Rink Kruk study presentation

Rink Kruk explains the goals of his project, with a PPT presentation (see in annex.).
His study is financed by the European Commission. It's a 1-year international project conducted by INBO (Belgium), Alterra (Netherlands) and CEH (UK).

The main goals are:

- Reporting on the different approaches of EU member states concerning the process of designation of N2000 areas;
- Providing 10 examples of good practice in integrated management of N2000 sites;
- Establishing a platform for knowledge exchange about N2000;
- Elaborating a "Natura2000 Partner of the year Award"

The study began in July 2008 (end in June 2009), so it's too early to have concrete results allready. There will be no "field research" but information is to be collected by means of a literature review and by contacting people and institutions from each Member state.

This study should answer some research questions (for each member state):

- What kind of ownership characterize the sites in this country?
- What can be the advantages of N2000 for stakeholders, and what can they give for the management of N2000 sites?
- What was the planning/timing of the designation phase?
- Designation of sites and establishment of management plan are sometimes separated. What does it influence?
- How are objectives/goals for sites formulated?
- How are decisions and procedures made in relation to the characteristics of each member state?
- How are different legislations integrated or arranged hierarchically?
- How is it possible to convince people to implement management measures if it is not legally obligatory?

Rink shows some examples of integrated management plans (see PPT).

3 Presentation of the SELNAT-project

Short presentation of the goals of the study, what has been done, and some results : bottlenecks from WP1, WS2,…

4 Discussion with Rink Kruk

4.1 General remarks ("in bulk")

According to Rink, the Walloon region is a special case in Europe because there is a possibility (theoretically) for the government to take measures on a private site even when there is not an agreement with the landowner.

France is a typical example of participative management of sites. There is a specific organizer for each site. It is relatively expensive but it seems to be very effective.

In the Netherlands, it exists a compensation system between sites. When a site achieve an improved state of conservation (more than required by the HD), it permits to compensate for a site where things are worse.

In the Brussels region, it is now necessary to change the law because there wasn't any public participation in the current procedure.

According Habitat directive, a specific Natura 2000 site management plan is not obligatory, but it is recommended. Some countries use existing (former) plans but the majority created new ones.

The prosecution of illegal practices in the scope of Natura 2000 lacks power, most of the cases never lead to legal action.

Depending on the member state, it's sometimes either an NGO, a consultance office or the authorities that establish a management plan. In some countries, NGO's have a big importance for the establishment of management plans – they have a critical view of sites and are very effective for public sensibilisation.

In Luxemburg, government is waiting after the elections before launching first designation decree/management plan, in order not to lose their electorate.

In Wallonia (but also everywhere), they should absolutely show examples of good projects to convince people.

4.2 Answers to questions of Rink Kruk submitted by email

1. *Could you give some examples (names) of areas that have been cancelled (large areas) in the process of identification of Natura 2000 areas, which causes now incoherencies in the Natura 2000 network?*

→ Some examples are given by Julien, with illustrating maps allowing a comparison between the scientific selection of sites and the final politic decision.

2. *Which good examples of integrated management you know of nature reserves, or of Natura 2000 areas. Best would be examples were people, organisations make profit out of their nature management activities (so that the state does not have to pay anything, or just relatively little for the management). Also if you know of other good examples of good cooperation between the stakeholders, tell me about it then! Just a short description is fine.*

→ Some examples are given:

a. Nature reserves where environment opening is done by people who need firewood.
b. Removal of fish (carps) by fishermen societies in natural reserves ponds.
c. A lot of private natural reserves are managed by farmers which concludes AES contracts.
d. "Plateau de Saint-Hubert" : integration of nature conservation with hunters interests
e. Contrats de rivière in Walloon region : a kind of integrated plans for rivers management

4.3 Questions to Rink Kruk

4.3.1 Process of designation

How could you define the kind of designation process applied in Belgium? Is it different from other countries?
→ There is apparently a lack with regard to stakeholders participation, but I didn't contact any person yet.

In which countries Natura 2000 is already well implemented, which are the best examples? Which are the worst examples? Why?
→ In general, Natura 2000 is already well implemented in countries where N2000 areas are mainly public properties. In these cases, public administration do a good job but with less participation (example : Greece). The approach depends on each country (traditions).

4.3.2 Instruments

Did you find studies about evaluation of implementation instruments in the scope of nature conservation?
→ It's really difficult to find something more global. In general, studies concern specific cases or third world countries.

Considering your experiences, what is the best kind of instruments to set up N2000?
→ In my opinion, participation is very important, mainly in the beginning of a project, in order to highlight the potential conflicts. People have to feel responsible and become involved in the project. Compensation alone is boring and insufficient. Give people ideas and let them change their behaviour. Yet, some guidance must be incorporated. If no results are reached within a certain time limit (eg 1 year), the government must take over.

4.3.3 Integrated management plan

What are, in your opinion, the most important principles to keep in mind when implementing management plans?
→ You must use good criteria (of good practices) and adapt the approach for each specific case.

Do you know effective examples of integrated management plan?
→ There exist for example cases of ecological vineyard, of restoration rivers drained in the past,… (+ examples PPT)

4.4 After meeting…

Back to home, the SELNAT-workers promised to send the useful information to Rink and vice-versa.

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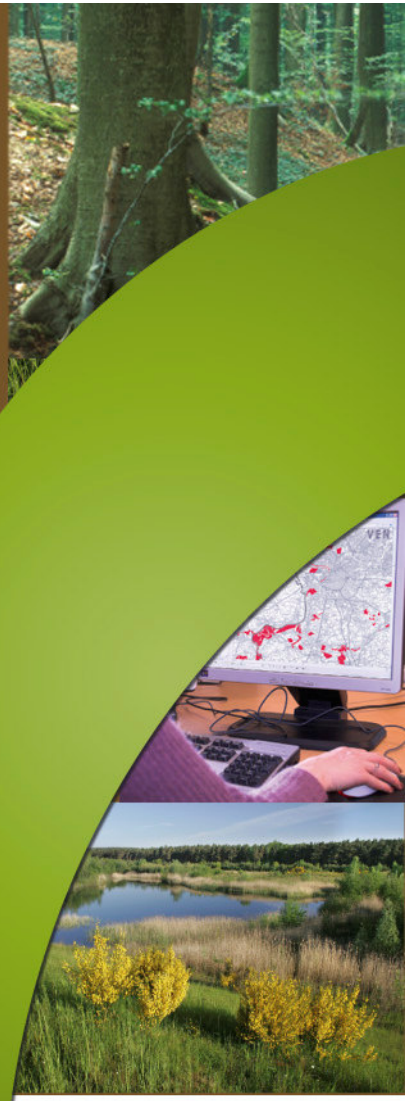
Designation and Integrated Management

of Natura 2000 sites in the EU member states



inbo
Instituut voor Natuur- en Bosonderzoek
Research Institute for Nature and Forest

www.inbo.be

Who?

Consortium INBO, Alterra, CEH

Geert De Blust, **Rink W. Kruk** (INBO)

Rob van Apeldoorn (Alterra)

Andrew Siers (CEH)

Under authority of EC-DG ENV

Aim of project

- Report on the different approaches of EU member states
- Provide 10 examples of good practice in **integrated** management
- Platform for knowledge exchange
- Natura2000 Partner of the year Award

Report

As inspiration and guidance to member states

- Resume on the different approaches
- Pro´s and Con´s, Pitfalls
- Bottlenecks and solutions
- Examples of good Practices of **integrated** management

Data collection

- Questionnaire
- Contacted Institutions and organisations at National and EU level
  - Universities, Scientific Institutes and Governmental Agencies
  - National, regional and local governments
  - Interest groups (Landowners, Hunting, etc.)
  - Industry (including harbours, tourism, etc.)
  - Nature organizations
- Literature study
  - Scientific publications
  - Review of laws
  - Websites, reports, publications, etc
- Conferences and meetings

Questions

- Ownership of sites does it cause problems with designation and management?
- How are ecological goals formulated?
  Systematic (NL) or at site level (many)
- Planning/timing the designation phase
  Capacity problems?
- Integration of legislation

Questions

- Who is responsible, who draws MPs?
- How are stakeholders involved in designation process? Kind; Problem or facilitating; When
- Participation slows or speeds up MP?
- Problems solved by NGOs, Consultancy?

Questions

- Detail of regulations on Management Plans (MP)?
- Ecological effectiveness of management
  Output/effort
- Support by socio-economic stakeholders
  (how?)
- Striking differences in MP (why? meaning?)

Questions (Management)

- Who is responsible for the management approaches/measures to be taken?
- Who writes and how socially accepted? (how is the process organized, who participating)
- MP legally binding? If not how the management can be enforced?
- Monitoring (Coordination, Money, Existing schemes)

Criteria for good practice?

- Successful in reaching N2K targets
- Feasibility (with regard to [financial] resources)
- Goodwill and support from socio-economic stakeholder
- Socio-economic stakeholder does not loose on management activity
- Not directly paid for management activity
- …

Examples of integrated management

- PAN Parks (tourism, local development)
- Weerribben (tourism, education)
- Po plain (agriculture)
- South Coast Finland (industry, agriculture and water management)

South Coast Finland

Reed for biodiversity: Industry, Agri, WaterM

- Reed cutters
- Farmers
- Bio-energy sector
- Nature NGOs

Government provides Licence and Management framework

Fair price for reed (roofing, fuel, etc)

Patches of meadow for bio-cattle

Favourable Conservation Status

Cleaning Baltic Sea water quality

Protected Area Networks (PAN) Parks - WWF

Tourism, local development for biodiversity

Tourism enterprises
Local, regional authorities
Forestry, Hunting
NGOs
Small/Medium Enterprises

Formal agreement

support and commitment to conservation goals and monitoring

Nature conservation

Attractive status (for visitor)

Sustainable regional development

Examples: Retezat National Park (NP) (RO), Bieszczady NP (PL), 6 more.

Po plain

Agriculture for biodiversity – La Cassinazza (Italy)

Farmers
Local authorities
Nature NGOs

Set-aside policy

Common Agricultural Policy

Agri-environmental scheme

Biodiversity explosion

Soil fertility increase

Weerribben

Tourism for biodiversity

- Adaptation of camp sites, sanitary and nature trails for minimal impact
- Natura 2000 ambassador for competitors
- Promotion change of public behaviour

Work to do…

- Answer our questions
- Collect good practices of socio-economic stakeholder participation
- …