



Belgian Federal Services for Scientific, Technological
and Cultural Affairs (DWTC)

*Research Programme “Levers for a Policy aimed at Sustainable
Development”*

Research Project “The Use of Voluntary Instruments for the Realisation of a
Sustainable Development”

Number research contract: HL/02/003

Synthesis

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Faculty of Economics and Business Administration
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Section 1: “Environmental Management Systems”

Synthesis

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Ghent University (RUG), Belgium



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1. SETTING OF THE RESEARCH PROJECT:

The research project of which this synthesis is a research deliverable, is called “*The Use of Voluntary Instruments for the Realisation of a Sustainable Development*”.

The first section of this report is related to the first section of the research project on “*Environmental Management Systems*”.

The project was commissioned by the *Belgian Federal Services for Scientific, Technological and Cultural Affairs*, which are affiliated to the Ministry of the Belgian Prime Minister.

It was executed by the *Center for Environmental Economics and Environmental Management*, which is part of the Faculty of Economics and Business Administration of Ghent University, Belgium, under the supervision of Prof. dr. M. De Clercq and Prof. dr. J.J. Bouma.

2. OBJECTIVES:

The research pertains to the following two kinds of voluntary environmental (policy) instruments: *Environmental Management Systems* (Section 1) and *Voluntary Environmental Agreements* (Section 2).

Its general objective is to study the role these approaches can fulfill in the realisation of a *Sustainable Development*.

The main research objective of the first section is to adapt environmental management systems, in such a way that questions and transforms the whole company on aspects of “*Strong*” *Ecological Sustainability* (see box on the following page), for both SMEs and major companies.

During the course of the project, this objective was further specified into “the identification of generic characteristics of “*corporate processes of environmental management*” (see box on the following page), which are critical to guarantee their effective and substantial contribution to the ecological component of Sustainable Development: “*Strong*” *Ecological Sustainability*.”

Processes for Environmental Management in companies deal with the strategic design and development, as well as the operational implementation and improvement of systematic corporate initiatives and activities, which aim at reducing environmental impacts and at improving corporate environmental performance.

Strong Ecological Sustainability is the interpretation of the concept of Ecological Sustainability, which rejects (high degrees of) substitutability between ecological capital and other forms of human(-made) capital. In this context, it is contended that both the capacities of internal functionality and resilience of eco-systems, as well as those of reproductivity of natural resources and of assimilation of environmental pollution have instrumental value for human kind, and intrinsic value in themselves.

Proponents of Strong Ecological Sustainability adhere to the principle of “constant natural capital”: all these eco-system functions should at least remain intact.

This interpretation of Ecological Sustainability is stricter, and has - in comparison with more widely accepted and most often adopted interpretations of Ecological Sustainability - much more pervasive implications for companies and other societal actors, that place a burden on the natural environment.

In section 4 (“Concepten van Duurzame Ontwikkeling en Duurzaamheid”) in *Deel 1*

(“*Literatuurverslag - Evaluatie van de Strategische Uitgangspunten van Milieubeheer, en Argumentatie van het “Leerinstrument over Sterke Ecologische Duurzaamheid” voor bedrijven*”) of the full research report, a detailed description of the various interpretations of Ecological Sustainability is reported on.

This main objective automatically leads to the following sub-objectives:

- The operationalisation of the concept of Strong Ecological Sustainability for a company or industrial sector.
- Determine how a company can set strategic objectives for Strong Ecological Sustainability, which are meaningful, attainable, sufficiently ambitious and credible.

- Determine the factors within a business organisation and its corporate culture, which limit or enhance its path of development to Strong Ecological Sustainability.
- Design and develop a “measuring tool” to measure and interpret these improvements, so that corporate policies and practices for the purpose of Strong Ecological Sustainability can be made more adequate.

3. ENVIRONMENTAL MANAGEMENT SYSTEMS: SETTING, AND THEIR RELATION TO STRONG ECOLOGICAL SUSTAINABILITY:

In section 3 (“Lokale tot Globale Milieuproblematiek”) and section 4 (“Concepten van Duurzame Ontwikkeling en Duurzaamheid”) from [*Deel I \(“Literatuurverslag - Evaluatie van de Strategische Uitgangspunten van Milieubeheer, en Argumentatie van het “Leerinstrument over Sterke Ecologische Duurzaamheid” voor bedrijven”\)*](#) of the full research report, it is shown that **a Sustainable Development to great extent requires forms of “Strong Ecologically Sustainable Enterprising”.**

[Roome (2001), p. 4]

During the 80s, it appeared that the business community is one of the main societal actors, which contribute to the systematic qualitative and quantitative degradation of the natural environment and of eco-systems. [cf. United Nations Conference on Environment and Development: “Agenda 21”; World Commission on Environment and Development]

During the first half of the 90s, it increasingly appeared that environmental issues do not only influence companies through more stringent environmental legislation and new environmental technologies. Most corporate functions, -decisions and -activities have considerable bearing on the environmental performance of a company.

As a reaction to these insights, a number of initiatives were developed and implemented to enable companies to systematically manage the environmental aspects of their business by means of the operational instrument of environmental management systems. In this context, the ISO 14001 Standard and the Environmental Management and Auditing Scheme (EMAS) of the European

Commission are not the only, but arguably the most important initiatives, as these are currently most widely implemented in business practice.

Concurrently, environmental management systems - as conceived in these initiatives - are implicitly believed or explicitly claimed to support and enhance the contribution of companies to Strong Ecological Sustainability [cf. International Institute for Sustainable Development; International Standards Organisation (ISO); Fifth Action Programme of the European Union].

Environmental management systems - as intended and implemented in the above initiatives - have a certain potential and represent a first step to enable companies - albeit in a limited way - to contribute to Strong Ecological Sustainability. [Spencer-Cooke (1998), p. 100]

Nevertheless, **fundamental differences exist between these forms of environmental management on the one hand, and “Management for Ecological Sustainability”** [Fischer and Schot (1998), p. IX] **or what the author of this report calls “Management for Strong Ecological Sustainability”**. [Sheldon (1997), p. 15-16]

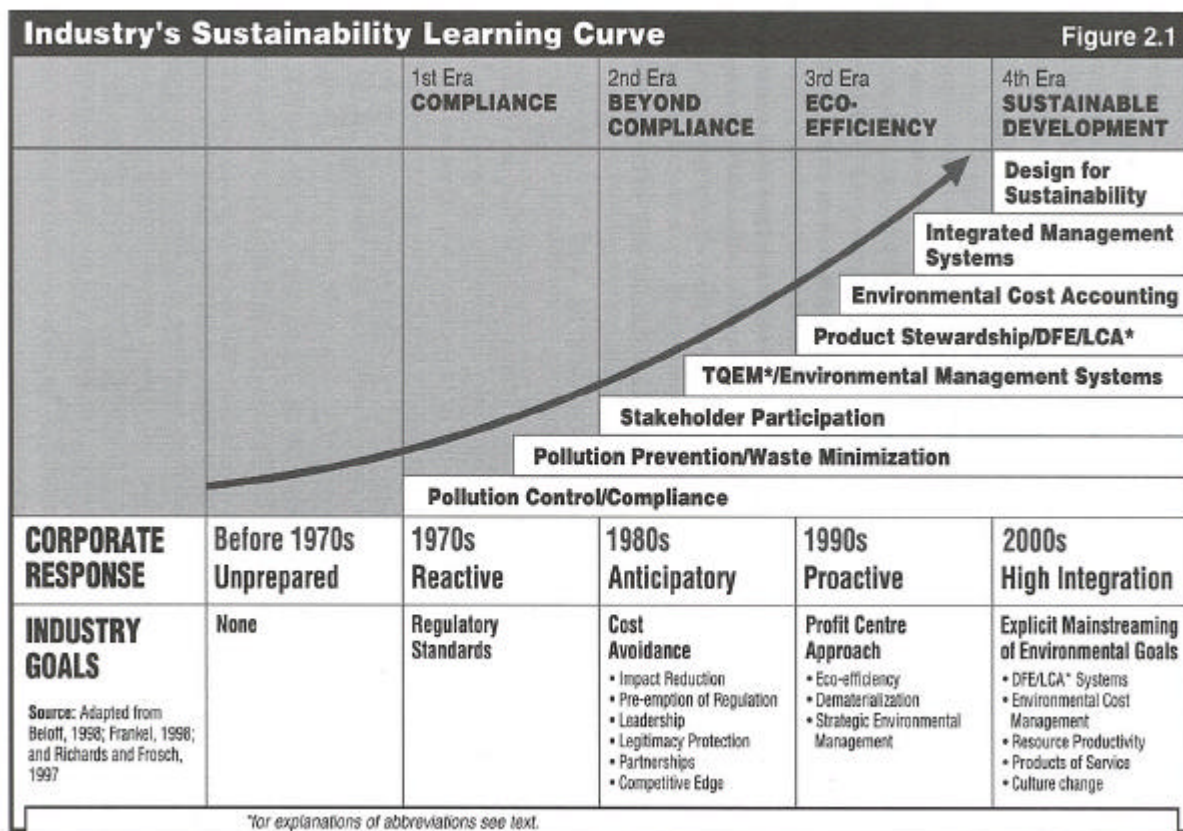
To this end is referred to figure 1. In fact, current environmental management systems originated in the “*Beyond Compliance-era*”, whereas operational management systems for Strong Ecological Sustainability would surface in the “*Sustainable Development-era*” (cf. “*Integrated Management Systems*”).

As a contribution to the societal transformation process to a Sustainable Development, the business community as a whole, as well as individual companies follow a learning curve already for some time, on which successive phases (can be) are gone through.

Figure 1 depicts a limited number of important characteristics, concepts and instruments of these learning phases. [Nattrass and Altomare (1999), p. 16]

Figure 1: The Business World's and Industry's Learning Curve to Strong Ecologically

Sustainable Enterprising:



Source: Natrass and Altomare (1999), p. 16

The characteristics of these successive phases or “eras” pertain to **concepts, approaches and motivations to increasingly and strategically integrate environmental concerns and - issues in the (core) functions and -activities of the company.**

This learning curve does not imply that all corporate initiatives for environmental management already comply with the characteristics of each respective phase.

For example, not all concepts and approaches of environmental management in the “*Eco-Efficiency-era*” are presently applied and implemented by all companies. In that sense (was) is the related time axis only “applicable” to pioneering companies of the respective phases. [Natrass and Altomare (1999), p. 14-17]

Only two general, but fundamental explanations are put forward here for the difference between present forms of environmental management, and “Management for Strong Ecological Sustainability”.

When the **business paradigms** [Hoffman and Ehrenfeld (1998), p. 60-62] **and points of departure, which are presently almost universally adopted in the development and implementation of environmental management processes**, are analysed, a number of fundamental and sometimes interconnected inadequacies in current approaches of environmental management can be identified in light of their contribution and support of Strong Ecological Sustainability.

One of the root causes for this is that **essential strategic and conceptual implications of Strong Ecological Sustainability at the corporate level are not reflected in these paradigms**. [Hoffman and Ehrenfeld (1998), p. 60-62; Roome (1998), p. 260; Natrass and Altomare (1999), p. 170]

Except for the omission of several corporate implications, **another root cause for the mentioned inadequacies exists**: these operational instruments are intended **“to manage something we have not even properly defined”**. [Spencer-Cooke (1998), p. 99]

For a long time to come one of the most important scientific and corporate practice-related challenges will remain to gain better understanding of how direct and indirect environmental impacts, jointly caused by companies and other societal actors, contribute to local to global states of the natural environment and its eco-systems, which are not “strong” ecologically sustainable.

Therefore, it is contended that **current environmental management systems** - as operational instruments, which support corporate processes of environmental management - **do not fulfill their potential to effectively and substantially contribute to Strong Ecological Sustainability**.

This is why it is crucial for companies to go through the strategic self-assessment process, which is depicted in figure 2. This process can be initiated by means of the “Learning Tool”, which is contained in deliverable 3 of the full research report ([*Deel III: “Leerinstrument over Sterke Ecologische Duurzaamheid” voor bedrijven*](#)).

Figure 2: Scheme of the self-assessment process:

(1°) strategic evaluation of existing approaches for environmental management

(2°) redesign of corporate environmental strategy

(3°) redevelopment of environmental processes and of the operational tool of environmental management systems

(4°) periodic feedback loop to (1), and again going through the evaluation process

On the other hand, **the “territory” between environmental management and Strong Ecological Sustainability does represent one of the key areas for scientific research and for corporate practice, where the basics of an ecologically sustainable business world can become developed.**

[Spencer-Cooke (1998), p. 100]



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Section 2: “Environmental Negotiated Agreements”

Synthesis

Center for Environmental Economics and Environmental Management (CEEM)

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Striving for sustainable development implies the active participation from the actors who all together determine the social climate. However the government experiences a lot of problems to stimulate the different actors to take up their responsibilities with respect to sustainable development. This creates the need for new instruments based on shared responsibility and co-operation with industry. Environmental negotiated agreements are such a new instrument. Environmental negotiated agreements are defined as agreements between government and industry by which both parties commit oneself to realise the agreed environmental goals. One hopes, by using this instrument, to enlarge the involvement of industry in environmental policy in a more active way, which should sharpen the environmental consciousness of industry in order build together on sustainable development.

The last decade in Belgium as well as in Europe (especially in the Netherlands and in Germany) environmental negotiated agreements are used more and more as an instrument in environmental policy. The achieved successes with environmental negotiated agreements in those neighbouring countries point to the possibilities of this instrument for the environmental policy in Belgium. Up till now twenty-six environmental negotiated agreements are concluded in Belgium and Flanders. These environmental negotiated agreements had varying successes. Some of them achieved good results and contributed to the fact that the environmental impact of certain industrial processes diminished and/or the use of certain strongly polluting substances was cut down. Others were only partially or hardly not fulfilled or were fulfilled but didn't cause any significant environmental gains.

On the basis of this relatively short experience with environmental negotiated agreements in Belgium it is yet to early to draw a conclusion on the appropriateness of this instrument for environmental policy. Up till now little investigation is carried out about making an inventory and analysing the performance of these environmental negotiated agreements. Neither has one made a lot of effort trying to identify the critical factors leading to success or failure of environmental negotiated agreements. With this report we want to make a contribution on this subject.

The final goal of this study is to get a deeper understanding of the factors that could determine the performance of environmental negotiated agreements on the basis of a comparative case study of all negotiated agreements in Belgium. Hereby we take in to account elements related to the specification of the environmental negotiated agreement as well as elements related to the socio-economic context in which the negotiated agreement was concluded and executed. Before we can investigate the influence of these critical factors leading to success or failure we must have a standard to define success or failure, namely the performance of an environmental negotiated agreement. We then expect a positive relationship between the identified critical factors and the performance of an environmental negotiated agreement. The analysis of these factors leading to success or failure in actual cases can form a first, orienting step for decisions about the appropriateness of an environmental negotiated

agreement on the one hand and can identify elements to keep in mind when negotiating and formulating a negotiated agreement.

This study is based on a theoretical analysis as well as on an empirical investigation of the environmental negotiated agreements in Belgium. The comparative case study covers twenty-one negotiated agreements who are brought together to thirteen agreements by taking comparable agreements together. Five environmental negotiated agreements are not taken into account because they are only recently closed or because at last they were never signed.

The group of environmental negotiated agreements that were taken into consideration for the comparative case study contains five agreements related to products, three agreements related to production processes and five agreements related to waste management.

5 environmental negotiated agreements related to products:

- Agreement on the reduction of the amount of mercury in primary batteries (2)
- Agreement on the reduction of the amount of phosphates in washing-preparations
- Agreement on the reduction of the amount of CKF in spray-cans (2)
- Agreement on the reduction of the amount of CFK in cooling installations
- Agreement on the reduction of the amount of CFK in the synthetic material sector (2)

3 environmental negotiated agreements related to production processes:

- Agreement with BASF about the draining of phosphate-gypsum
- Agreement on the storage of fuel by particular families (2)
- Agreement on the emissions of SO₂ and NO_x by the electricity supply sector

5 environmental negotiated agreements related to waste management:

- Agreement on the selective collection and recycling of aluminium waste
- Agreement on the selective collection and assimilation of batteries
- Agreement on prevention and recycling of packaging waste (2)
- Agreement on the selective collection of old pharmaceuticals (3)
- Agreement on the selective collection and assimilation of old paper (2)

Although the sample was limited the study nevertheless points to a number of important policy considerations. Looked upon from a positive research methodological point of view their validity of course relates strictly to the cases studied. However we believe that because of their nature they can be considered as important factors to take into consideration for decisions about the appropriateness of this instrument and about the actual design of an environmental negotiated agreement.

In our view, the performance of a negotiated environmental agreement is a mixture of the degree of good application of the agreement, the degree of impact the agreement has on the environment and on the economic efficiency, and the degree of resource development that occurs while negotiating and implementing the agreement. Taking into account only the application of the agreement results in a very narrow definition of performance. Taking into account only the impact of the agreement is a better solution, though the individual impact of an agreement on the environment and on the economic efficiency is difficult to measure. We therefore take into account both the application and the impact, while not minimising the resource development.

The theoretical analysis as well as the empirical research point to a number of internal as well as external (socio-economic) factors of good performance or success. Four external preconditions for success were identified :

1. the general policy style: a tradition of consensus seeking and joint problem solving is generally considered to be an enabling factor for the realisation of a successful negotiated agreement;
2. the readiness to use severe alternative instruments in case of non-compliance with the agreement concluded: the stick behind the door;
3. the potential of the sector to negotiate and act as one collective actor due to for example the dominance of one major player, the small number of actors concerned, the power of the industry association, the low potential for free riding, the homogeneity of the actors concerned...
4. the potential for market success triggered off by the implementation of the negotiated agreement (the market 'carrot'). In other words the potential that firms participating in the agreement have to distinguish themselves towards other firms in the sector(s) covered by the agreement by environmentally beneficial behaviour. Putting it differently participating in the (future) agreement can be rewarding in market terms because:
 - potential customers are able to distinguish clearly which companies are performing environmentally better by participating in the agreement;
 - buyers are sensitive to the positive environmental behaviour of firms: their willingness to pay for their products is higher or to the minimum buyers are willing to favour them over substituting products at the same price due to their higher environmental performance.

It should be noted that taken individually each of the factors is not as such a *conditio sine qua non* for the success of a negotiated agreement. Rather it is the combination of the success factors that is ultimately decisive for the success or non-success of the agreement. This is important because some of the success factor – the sector structure and to a large extent the competitive structure - are independent factors that cannot be manipulated by the government. The other two - the general policy climate and certainly the alternative instrument - however are under the control of the policy maker

and can thus be used to create a combination of external factors that constitute a favourable environment for a negotiated agreement.

The questions used in the study to enable the research teams to assess the environment wherein the different negotiated agreements were functioning could be used as a quick checklist to assess whether or not the environment is potentially favourable for the conclusion of a successful negotiated agreement.

Even when the external factors are favourable to the conclusion and the execution of a negotiated agreement success is by no way automatically guaranteed. Success indeed depends also upon the creation of a number of internal preconditions. They are to a certain extent influenced by the external factors identified above, but the degree of policy freedom in this respect is much larger. In the study those internal factors of success were captured under the heading of specification. They relate to environmental performance, economic efficiency and learning. Well-specified negotiated agreements are important because they lead to a higher rate of application, more demanding objectives and as such a better impact on the target variables. Our analysis essentially points to the following important elements:

1. WELL-DEFINED ENVIRONMENTAL PERFORMANCE INDICATORS

Successful negotiated agreements are characterised by clearly specified targets that represent a meaningful improvement over the business-as-usual evolution. The targets are quantified and intermediate milestones are identified. The identification of the business-as-usual scenario is often not an easy task but is clearly necessary if one aims at significant progress in environmental performance. Nevertheless it should be pointed out that even if in the end nothing more than business-as-usual is realised the agreement can still be successful in terms of efficiency, because it enables industry to realise the targets in a flexible way, thus decreasing the associated costs.

2. A CREDIBLE AND WELL-SPECIFIED MONITORING MECHANISM

Success clearly depends on monitoring. Thus the creation of a mutually accepted and performing monitoring system is crucial. A number of elements seem important here. First of all, monitoring mechanisms are working better if they are clearly specified and agreed upon by the parties concerned at the start of the agreement. If the monitoring rules still have to be discussed at the moment of evaluation itself the monitoring agreement clearly lacks credibility. Secondly, monitoring is not only important because it can - potentially at least- be linked to a sanctioning mechanism (cf. de 'stick behind the door' hypothesis), but perhaps even more importantly because it creates for the parties concerned the social momentum according to which they are positively motivated to prove that their performance is at least sufficient if not exemplary with respect to other parties concerned. Thirdly, a

good monitoring mechanism provides credibility also to the outside world. Often it is noted that third parties are critical with respect to the effectiveness of voluntary agreements and do question their usefulness. A reliable monitoring scheme could help convincing them of the opposite. Involving them in the monitoring process could help overcoming those concerns. Fourthly, in order to guarantee its objectiveness as well as its social acceptability the autonomy and the independence of the monitoring body should be guaranteed. Fifthly, it should be realised that credible monitoring mechanisms demand a significant investment in terms of time, personnel and financial resources. Negotiated agreements are therefore not costless; their administrative feasibility should be judged against the implementation costs of other instruments.

3. A CREDIBLE MECHANISM FOR ACHIEVING THE ENVIRONMENTAL PERFORMANCE OBJECTIVE

Agreements clearly perform better if they do not only state goals but indicate clearly how the participating parties will effectively realise them. The kind of mechanism is of course dependent upon the nature of the goals to be realised. For example with respect to agreements relating to product responsibility often collective action is required. The credibility of such a scheme is undermined if no realistic funding scheme is created. Other potential approaches include the setting of individual performance targets, the provision of encouragement, technical support and advice by either sector associations, public authorities or independent bodies. The capability of the implementation mechanism must be judged in relation to the stringency and the nature of the environmental performance objective.

4. A CREDIBLE MECHANISM FOR PREVENTING FREE RIDING

A number of agreements studied clearly were performing sub-optimally because their implementation demanded some form of collective action and free riding occurred. As a result the effectiveness of the agreement is diminished and the erosion of the agreement is stimulated because participants in most cases do not longer see the advantage of participating in it. The potential for free riding of course is dependent partially upon the characteristics of the sector concerned, but it can be positively or negatively influenced by the design of the agreement itself. Prevention of free riding can be done by the private sector itself (for example through its buying policies) or can rely upon government action (for example fines or taxes in case of non-participation or non-compliance). The strictness of the sanctioning mechanism must be judged against the severity of the consequences of participating in the agreement. It should be realised that 'overkill' measures are seldom politically realistic.

5. THE STIMULATION OF LEARNING PROCESSES

The theoretical analysis as well as the case study analysis pointed to the importance of the so-called resource development: the improvement in the policy resource base resulting from negotiating and

implementing the agreement. The theoretical analysis pointed to the fact that voluntary initiatives are especially interesting in situations of shared uncertainty because due to their interesting properties (co-operation, flexibility, revisability) they stimulate learning processes. Learning could relate to the reduction of information asymmetries (for example the dissemination of current best practices, the identification of new technical and managerial solutions, or the generation of new environmental insights). Even if no explicit learning targets are included, the practical implementation of the agreement should favour the development of such collective learning processes. An explicit implementation mechanism stipulating how the learning is expected to occur (for example through co-operative research programmes, or through site visits) is to be provided for. Here also, the effectiveness of the learning process could benefit from a well devised monitoring system that tracks down the learning initiatives taken and the dissemination of the results of these activities. The detailed requirements of a monitoring system will depend upon the nature of the learning objective and the implementation mechanism that is adopted. As learning is a long term phenomenon and often requires insight into a variety of complex processes a sufficiently long time horizon for the agreement is to be welcomed as well as stability with respect to the other elements of the regulatory environment.

6. A BURDEN SHARING MECHANISM CONSISTENT WITH A COST-EFFICIENT OUTCOME

The burden sharing mechanism defines who is responsible for achieving the environmental performance objective. In order to limit the total cost of achieving the environmental goals an explicit ex ante burden sharing mechanism that differentiates between actors in order to reduce the aggregate costs of achievement of the objective is necessary. For an 'individual action' agreement the responsibilities for action and payment coincide: the actors that take the actions effectively have to bear the costs. In this case, burden sharing refers to the apportionment of the general policy goal to the different actors concerned. Those actors that have the lowest marginal costs should do the most efforts to reach the collective target. In other words targets should be differentiated in such a way that marginal costs of action are equalised. In case this allocation conflicts with other political goals additional instruments should be used to compensate for the undesired effects rather than changing the allocation pattern of the efforts themselves. In case collective action is required to reach the goals of the agreement, the cost allocation should reflect the difference in contribution of the actors concerned to the environmental problem that lays at the origin of the negotiated agreement. Particular care should be taken to avoid that in the negotiating or even in the executing phase powerful actors can shift the burden of adaptation to less powerful ones when such a shift is not in line with efficiency considerations.

7. THE IMPORTANCE OF BACK-UP POLICIES

An important factor explaining the success or failure of negotiated agreements is the fact whether or not the different actors considered it in their own interest to join the agreement and faithfully execute it. The objectives pursued through the agreement should be complementary to the business strategies of the participants. Within this perspective private industry will only voluntarily execute certain requirements if the investments that are required are characterised by a positive return on investment. This private business logic limits the applicability of this instruments and leads some scholars and policy makers to conclude that negotiated agreements as all voluntary initiatives are only effective to pick up low hanging fruits and thus are not suitable instruments in the substantial industrial restructuring processes that are required to achieve sustainable development. One should not forget however that whether or not a particular environmental investment is characterised by a positive return depends on the economic parameters (the relative prices) that directly or indirectly influence the calculation of the relevant benefits and costs. This points to the importance of incorporating negotiating agreements in a total policy package that aims amongst others to correct relative prices in an environmentally friendly way. Some successful cases clearly pointed to the fact that in the negotiating game preceding the conclusion of the agreement the fact that the government made a unilateral and drastic first move explained to a large extent why demanding targets could be set and where realised. This argument pleads in favour of a greater government involvement in the setting of the targets to be reached, while leaving it to the private parties concerned to select the appropriate ways to realise those targets. The greater degree of flexibility obtained in the negotiated agreements in comparison to the regulatory approach enables significant costs savings and as such provides still enough incentives for private industry to participate. More research is needed to investigate the role that negotiated agreements could play as a part of total policy packages and to identify the economic and institutional conditions under which such policy packages (for example the combination of voluntary agreements and environmental taxes, the combination of voluntary agreements and negotiable pollution rights) could be effective.