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SCIENCE FOR A SUSTAINABLE DEVELOPMENT

CONSTRUCTION OF SCENARIOS AND EXPLORATION OF TRANSITION PATHWAYS FOR SUSTAINABLE CONSUMPTION PATTERNS

« CONSENTSUS»

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CONSTRUCTION OF SCENARIOS AND EXPLORATION OF TRANSITION PATHWAYS FOR SUSTAINABLE CONSUMPTION PATTERNS

« CONSENTSUS»

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INTRODUCTION

Within the policy and science community concerned with sustainable development, it is expected that the first decades of the 21st century are a turning point for the world community. Widespread poverty, growing inequalities between and within countries, pressures on vital ecosystems and ecosystem services combined with an intensive process of economic and cultural globalization present enormous challenges for a world which aims towards sustainable development. The resolution of these societal and environmental problems is not only complex today because they are globally interlinked, but also because uncertainties and the apparent urgency of the stakes generate policy situations where traditional decision-supporting tools reach many of their limits. Policy-makers, civil society organizations and scientists alike are thus looking for new and refined sets of techniques, tools and instruments which help in guiding policy towards meeting sustainable development objectives.

Internationally, scenarios and scenario planning are thought to be such tools, notably because they are said to have the potential to generate thinking and creativity about sustainable development and sustainable development policies. According to some authors, scenario exercises are meant to support more informed decision-making *"by offering insight into uncertainties and the consequences of current actions"* (Carpenter et al, 2005). Their use is typically recommended in situations where complexity, uncertainty, long-time horizons, cross-scale and cross-sector interactions are the rule (Alcamo et al. 2005). Sustainable issues have exactly these characteristics (Kates, et al, 2000; Boulanger, Bréchet, 2004). More specifically, in participative approaches aiming at 'managing' systemic transitions towards more sustainable patterns, scenario building is a central tool used to generate future visions of the system at hand and foster interactive processes.

The Consentsus project ('*CONstruction of ScENarios and exploration of Transition pathways for SUStainable consumption patterns*') is settled within this context. More precisely, during its first phase (2007-2008), the project investigates and experiments how scenarios can be developed, applied and validated within the issue-domain of *sustainable consumption*. While the first phase focused on the construction of consumption scenarios, the second phase (2009-2010) studies the potential of 'new' perspectives and governance approach to draw insights in terms of potential pathways towards sustainable consumption patterns in Belgium through system innovation, transition theory and approaches like the Transition Management. The research questions leading this first phase thus aims at exploring the specificity of addressing the issue-domain of consumption through scenarios, in the wider context of scenarios for transition management and system innovation. In other words, *is the scenario approach a relevant tool to be used in TM-like planning process when focusing on the specific issue of changing consumption patterns?*

To answer this question, two strands of research have been worked out. A first objective was to appraise the characteristics of scenarios. A theoretical analysis of the scenario field in terms of methodology, content and use of scenarios yielded their underlying mechanics, potential outcomes and factors of use. A second objective was to implement during the project a scenario exercise in order to gain insights on the tool's mechanics and to identify a series of pathways towards sustainable consumption patterns. Concretely and on a case-study approach, Consentsus explored a specific theme within the manifold consumption issues, namely food consumption. The research was performed by a team of researchers coming from three different institutions with different backgrounds, even if with similar focus of research: Centrum voor Duurzame Ontwikkeling (CDO, UGent), Centre d'Etudes du Développement Durable (CEDD, IGEAT - ULB), Institut pour un Développement Durable (IDD).

This report is structured in three parts:

The first part introduces the two main strands of the research project: scenarios and consumption. A first section (I.A) provides some structure to the scenario field through a historical overview, the presentation of a theoretical framework providing insights in terms of scenario 'mechanics' and uses and conclusions on the theoretical potential of scenarios as SD-policy tool. In the second section (I.B), the concept of consumption is approached.

Part II presents the methodology and results of the Consentsus scenario process. The first section reports on the scenario methodology as such (II.A). Three discourses, or strategies, of sustainable consumption have been highlighted through decomposition analysis (II.A.1) and used to frame the construction process (II.A.2), subsequently resulting in three scenarios presented through a comparative table (II.A.3) and through an analysis of the different consumer perspectives related to the three scenarios which had been developed (II.A.4).
The second section presents the methodology and results of the integration of these three strategies through a statistical methodology called *Q* Methodology, i.e. in order to get closer to a single sustainable consumption pathway. This approach is prescribing the identification of a specific discourse (II.B.1), decomposed into statements (II.B.2), which are then ranked by a sample of participants (II.B.3 and 4). *Q* methodology allows to gain insight on the diversity of sub-discourses operant in the sample (II.B.5, 6 and 7) and allows to surface elements of consensus and dissensus across the three discourses of sustainable consumption patterns, i.e. the 3 strategies/scenarios developed.

Part III draws reflections and conclusions on the relativity of consumption with regard to the diversity of consumers' perspectives (III.A) and on the specificity of consumption as study topic (III.B) through the analysis of the Consentsus scenario exercise.

The different Working Papers, on which this final report is based, are developing further each of the particular research strands, and can be consulted and downloaded from the website of the Belgian Science Policy (www.belspo.be/FEDRA) and from the website of the research project (http://consentsus-project.pbwiki.com/).

I. TWO STRANDS OF RESEARCH

The Consentsus project's first phase aims at exploring the socio-political potential of scenarios in the realms of SD-policies. In order not to remain at a theoretical level, the scenario tool was applied to the issue of sustainable consumption. Before focusing on the methodology of the developed sustainable consumption scenarios, the next sections present a synthesis of the state of the art of the scenario field and an introduction to the consumption field.

A. ADDRESSING SCENARIOS

The next section is an introduction to the scenario field leading also towards a general overview of the diversity of the field (I.A.1); second, a theoretical framework synthesizes the literature on scenario mechanics and uses (I.A.2); and finally, conclusions are drawn from this theoretical analysis with regard to the potentials which scenario exercises could develop as SD tool (I.A.3).

1. CATEGORIZING SCENARIOS: A HISTORICAL PERSPECTIVE

The term 'scenario' itself is introduced by Kahn in 1960. For him and other early scenario developers such as Wiener, scenarios denote descriptions of future courses of events, sequences of developments, often highlighting key events, decisions, or turning points. Scenarios also include descriptions of final states, future sets of circumstances, i.e. images or 'visions'. In this project, a broad understanding has been endorsed, defining scenarios as logical sequences of events and/or images of the future, highlighting causal processes leading the evolution of socio-ecological systems; they are myths about the future based on different worldviews.

According to Marien (2002), the scenario field can be characterized as *"a very fuzzy multi-field"* of *"disconnected bits-and-pieces"*. Indeed, the term 'scenario' encompasses a variety of definitions, methods and operationalisations. This diversity was particularly observable when analyzing five scenario exercises[1] in terms of their method, content and 'modes of future thinking' along a reading grid containing 20 points of entry (see Annex 3, Goeminne, Mutombo, 2007).

From a **methodological** point of view, it is possible to categorize scenarios through a set of dichotomies: inductive or deductive methods, diachronic or synchronic scenarios, system thinking enhancing or narrative developing, qualitative or quantitative, expert driven or stakeholder oriented... These different options can be complementary but also conflicting: tensions occur between conceiving scenarios as a product, i.e. as a final set of scenarios (with e.g. an emphasis on integrating hard facts), and conceiving scenarios as a process, i.e. as a 'social experience' with a focus on the way of thinking the futures. More 'structured' scenario methods can also be used, which aim at linking both generic approaches; like the axes-technique, the morphological analysis, the backcasting approach, etc. Further, guidelines like the five step process[2] of Schwartz (diffused by the GBN Network) provide a basic guidance whatever the chosen approach.

In terms of **content** analysis, many key parameters structure scenarios, depending on the main interest of the scenario developers: temporal horizon, addressed thematic issues, main drivers, internal

[1] The Global Scenario Group work (The Great Transition – Raskin et al, 2002), the Millenium Ecosystem Assessment scenarios (MEA – Carpenter et al, 2005), the European research projects Visions (Van Asselt et al, 2005) and Toolsust (CARLSSON-KANYAMA et al, 2003) and the Belgian scenario exercise on animal production and consumtpion in flanders in 2020 ("Dierlijke Productie&Consumptie in de 21ste eeuw" - DP21, 2006") were analyzed thoroughly based on reports, publications, website, etc.

[2] 1. Decision focus; 2. Key factors; 3. Pre-determined elements and uncertainties; 4. Selecting the scenario logics - or scenario plots; 5. Fleshing out (Ogilvy and Schwartz, 2004)

dynamics, etc. The variety of these parameters and their translation into the exercises increases the fuzziness of the field rather than structure it.
Generically, scenarios are structured along the categories of *probable*, *possible* and *preferable* futures (Marien, 2002). These three different 'future approaches' provide answers to three questions one may ask about the future: '*What will happen*?', '*What can happen*?' and '*How can a specific target be reached?*' (Börjeson et al., 2006). These three questions match three 'modes of future-thinking': the *predictive*, the *explorative*, and the *normative* modes of thinking (Dreborg, 2004). However, contemporary scenario exercises are necessarily 'hybrids' where choices of modes of thinking, methodology and content are guided by the particular needs of the scenario builders and potential users.

A brief overview of concrete practices and their evolution sheds another light on the field of scenarios since the end of the Second World War, when studying the future with the aim of informing debate and decision-making appeared. Three bifurcation points are apparent in the evolution of the field:

1. During the Cold War, future-oriented approaches evolved from mere forecasting methods deeply relying on techniques of probability estimations, to scenario techniques as such, as developed prominently by Herman Kahn (initially at the Rand Corporation, USA) based on the progress in computer simulation and the rising era of expertise (see among others Bradfield et al, 2005). Despite a first move away from the traditional '*one future, one best solution*', and in a context of economic reconstruction (in Europe) and of industrial development in general, scenarios were focusing on the generation of feasible and surprise-free futures; they were heavily quantified exercises which were mainly forecast-oriented.
2. With the oil shocks of the seventies, the uncertain business context led to the development of *multiple strategic* scenarios focusing on exploration and discontinuities, on dynamic interactions between parameters and leading towards the development of a broad range of futures (Sondeijker, 2006, p.23) rather than on final end states. With the famous example of Shell, scenarios started to imply creativity and imagination for strategic learning, they wanted to foster anticipation and adaptation capacity in a rapidly changing world. In parallel, the failure of the Meadows&Meadows report (Club of Rome, 1972) in terms of accurate predictions led during the 1980s to a gradual loss of faith in quantitative extrapolations methods based on modelling (Sondeijker, 2006, p.23); simultaneously, '*Limits to growth*' also showed the capacity of scenario-based initiatives to generate societal debate on global long term visions.
3. Following the relative 'failure' of the 'World 3' model previsions (used for the Meadows&Meadows report), a double move (Bouvier) within scenario practices emerged, with, on the one hand, the rehabilitation of the global scale, particularly fostered by the raise of the sustainable development discourse, starting with the Brundtland report (1987) and the Rio Summit (1992) and on the other hand, a burst of scenario exercises around sectoral and thematic issues, with among others the success of technological foresight and local territorial development scenarios in the nineties.

The scenario field is still evolving. Indeed, the exploration of the scenario field and the analysis of several case studies highlight that today *three types of scenario exercises* (and as much hybrids) are to be found:

- Scenarios focusing on SD issues and themes such as energy, biodiversity, water provision, and climate change. They are mainly expert-driven scenarios and rely on quantitative data and modelling techniques. The emblematic example of the IPCC scenarios stands for this type.
- Global and transversal scenarios which are explicitly normative and SD-oriented. These visions of the future explicitly address the question of the alternatives to 'Business As Usual' scenarios and

focus on sketching the nature of change (incremental, transformational, etc.); e.g. the Global Scenario Group publications.

- Local and context-bound participative scenarios, organized by local authorities or local stakeholder platforms, focusing on the potentials deriving from the emergence of a (sustainable) development for a specific territory, region, city or community, or on specific sectoral, cultural ... issues, aiming at developing local projects supported by citizens.

2. A THEORETICAL FRAMEWORK

The previous section has pointed out the difficultly to clearly delineate the scenario field. Based on a review of the scenario-oriented literature, the following theoretical framework synthesizes the main characteristics of scenario exercises and highlights their 'mechanics' and uses (see also Annex 4, Mutombo, Bauler, 2008).

Beyond the chosen methods and processes, scenario exercises rely schematically on a few central building blocks, which define the generic characteristics and 'modes of thinking' of a given scenario exercise. While the focus on one or the other of these characteristics is varying across scenario exercises, these building blocks encompass the variety of realities of the scenario domain. Five distinct characteristics are identified: ***Future-oriented thinking***, ***Collecting and integrating information***, ***System thinking***, ***Story-like approach***, ***Dialogue interface.***

One of the principal characteristics of scenario exercises is obviously that they address the future, and specifically in SD oriented scenarios, they are oriented towards the long term future. Hence one of their main specificities is the ***future-oriented and reflexive perspective*** which is initiated to frame the whole process of thinking and debating. Beyond the three modes of thinking (i.e. predictive, explorative, normative), the interest of scenarios is that they elaborate on multiple futures which tends not to address opposing points of view, but to take into consideration parallel, equivalent perspectives (Selin, 2006). Those perspectives in turn tend not to be solely defined by current knowledge and individual interests, because the long term horizon highlights uncertainties and blurs the distribution of the potential impacts of current actions (Voss et al, 2006, p.184). As a consequence, in a scenario brainstorming, there is no right or wrong statement and people are freer to expose their ideas, including perspectives which are labelled as divergent, extravagant, etc. It is this inherent unusual setting implicit in scenario exercises (blurred stakes due to the temporal horizon, and blurred norms due to the multiplicity of possibilities) which is said to foster an open minded and reflexive stance during the scenario construction processes.

A second characteristic of scenarios is related to treatment of information. Not every future-oriented reflection should be labelled 'scenarios'. Beyond mere imagination, scenarios have a pretention towards scientificity. Concretely, to simulate future evolutions implies not only to ***gather*** a considerable amount of ***information*** and parameters, and to devote some energy to their validation, but necessitates ***integrating*** these strains of (largely) non-related information in order to construct a robust picture of the studied system.

Thirdly, contemporary scenario exercises are oriented towards ***systemic thinking***, through computer-based modelling, but also verbal or iconic models. Of course, the scenario images gain in precision when elaborated along systemic approaches which facilitates to identify the relevant variables and their interrelations, to map potential multidirectional causes and effect chains as well as to reflect on the complex interrelations within and between (sub-)systems (Raskin et al, 2005, p.39). Scenarios are meant to allow an integrated overview of the studied system and are an opportunity to strive against

the modernist tendency to fragment reality into presumably non-related study topics, usually studied by presumably non-related disciplines. Scenarios, as other policy tools, contribute to apprehend in a unified framework, bio-physical, economic as well as social, cultural, institutional and value aspects (Swart et al, 2004, p.142) and to articulate knowledge from different scientific disciplines.

Fourthly, although the dissemination of scenarios can be limited to distribute a factual description of the scenario(s), the enhancement of the ***story-like character*** of scenarios - for instance through the construction of narratives - is an important element of the scenario approach. It would be "*a more natural way of making judgments and decisions*" (Korte and Chermack, 2007, p.807), a way people are familiar with and which helps highlighting relations between events, actions and consequences. Framing the future through narratives allows, for instance, to better spot incongruence in a chain of reasoning (Harries, 2003, p.807), and thus facilitate the understanding of the studied system. For quantitatively-oriented scenario exercises, it is also a way to better incorporate qualitative knowledge (Pulver, VanDeveer, 2007, p.2): "*The scenario narrative gives voice to important qualitative factors shaping development such as values, behaviours, and institutions, providing a broader perspective than is possible from mathematical modelling alone*" (Raskin et al, 2005, p.40). Beyond, scenario stories have the "*ability to transmit both rational and creative layers of thoughts and beliefs*" (Rasmussen, 2005, p.230) and can constitute a 'bridge' between the analytical dimension of a scenario exercises and the unconscious emotional and learning mechanisms, which relate scenarios to the narrative categories of myths, tales (Mermet, 2003, p.34) and utopias (van der Helm, 2009).

A final, fifth, characteristic translates scenarios as a synthesis rendering interrelated information in an accessible form. Scenarios can in general terms be seen as communication tools and further are claimed to "*ease communication with non-scientific audiences*" (Swart, 2004, p.141). Beyond the mere informational source-receptor perspective, scenario exercises can thus also be understood as ***dialogue interfaces***, between scientific disciplines, but also between science and policy (van den Hove, 2007), and beyond (see among others, Guimaraes Pereira and Funtowicz, 2003).

Those five building blocks should not be confused with the phases of a construction method, but are rather approaches and perspectives which can be mobilized with different intensities throughout a scenario exercise. They juxtapose and interlink to reinforce each other, and influence the characteristics of the exercise and, hence, of the results.
Indeed, also in terms of effects and uses, the fuzziness of the scenario field infers different expectations and results according to the developers, the users, the issue, the scope, etc. Within this theoretical framework of building blocks, the many different uses identified for scenarios (e.g. better understanding, awareness raising, fostering debate or anticipation capacity and participatory vision building) can be bundled in two more general categories: scenarios as ***strategizing*** tool and, scenarios as ***learning*** tool. Scenarios contribute to strategizing and planning activities, and on the second hand facilitate processes of challenging mental models and learning. According to the typology of information use, strategizing expects an **instrumental** type of information use, i.e. there is a direct link between the results of the scenarios (content and/or process) and the policy outcome of a decision making process. Learning is then closer related to a **conceptual** type of use, or use for *enlightenment*, i.e. scenarios influence a user's understanding of a problem or situation, even if the scenario information is not used to base decisions in a direct way (Hezri, 2006, pp.134-137), along the lines of *"decision-makers […] often found themselves influenced in more subtle ways in the longer term"* (Weiss, 2005).

Scenarios, as future-oriented tools, allow to work in a relatively open and ideally reflexive perspective, hence providing the conditions to foster learning. On the one hand, a scenario exercise can act as a

simulator which enables to virtually experiment with situations, actions and their consequences and to learn from it (Korte, Chermack, 2007, p.652). On the other hand, solid scenario exercises highlight the multiplicity of perspectives and the diversity of their underlying values, and so doing they can contribute to challenge mental models (Connor, Dovers, 2002, p.7), i.e. questioning the underlying set of beliefs, assumptions and norms which guide our judgment and perception of the world. Such learning processes are usually disaggregated in different types (Brown et al 2003). Scenario exercises can foster ***first order learning***, i.e. getting to know new facts and thus improve our mastering of causal logics. On the other hand, scenarios can generate ***higher order learning*** which "*concerns new insights at a higher level with regard to problem definitions, norms, values, goals and convictions of actors, and approaches how to solve the problem*" (Quist, 2007, p.44). In other words, higher-order learning is learning with regard to the way one interprets reality (i.e. a change of our mental model) and how causal and normative logics relate. This type of change in the core thinking framework of individuals and organizations can be generated through highlighting and challenging underlying values, assumptions and representations, and potentially lead people to rethink the way they define (policy) problems, as well as their solutions and concrete approaches (see also Hall, 1993). Higher order learning also includes ***congruent learning***, i.e. the fact that people participating in such a scenario exercise will share something in common beyond the common experience, i.e. a shared understanding of the issue at hand as well as the collectively elaborated results. Scenarios can be seen as 'boundary objects' or spheres of 'co-production', linking different epistemic communities and creating a locus where they can collaborate and co-exist (Pulver and VanDeveer, 2007, p.4).

Beyond learning, the scenario literature stresses more particularly the interest for scenario construction to the elaboration of ***strategies or plans***[3]. According to Van der Heijden, the first objective of scenario-based planning is to generate decisions which are 'robust' under a variety of alternative futures (Van der Heijden, 2005, p.5). Scenarios indeed can generate strategic information across various configurations: (1) explorative 'external' scenario exercises explore potential transformations of the contextual environment and contribute to the elaboration of robust and adaptive strategies across the rapidly changing contexts; (2) 'What if...' scenarios provide the opportunity to simulate and explore the impacts of a specific policy; and (3) so called 'normative' scenarios help to generate vision(s) of the future and explore potential pathways towards pre-determined objectives.
However, if in most of the scenario literature this link between scenarios and policy making seems to be straightforward, the practice does not necessarily confirm such a very pure *strategic* reading. Scenario outcomes seem not to feed decision or planning process in a direct way. Information use literature acknowledges that "*pure instrumental use is not common. Most studies are not used as the direct basis for decisions.* [And] *expectations for immediate and direct influence on policy and program are often frustrated*" (Weiss et al, 2005, p.13).

The absence of direct use within strategy-development is related to various factors[4]. Among those, there is the problematic junction between the two processes into a common, hypothetical decision cycle. There is a gap between the future-oriented process and the decision-making process in terms of (1) modes of thinking the future (virtual/actual), (2) temporal horizon (long /short term) and (3) in terms of actors (experts or stakeholders/policy deciders)[5]. In fact, these three points can be related to the generic differences between the scenario developers and the scenario users which pertain generally

[3] Bood and Postma, 1997; Van der Hijden, 1997; Burt and Van der Hijden, 2003; Mietzner and Reger, 2005; Korte and Chermack, 2007etc.
[4] see also the Part II on Factors of success in the working paper Mutombo and Bauler, Investigating the functions and utilization of scenarios, 2008.
[5] See the results of a previous research on participative foresight methodologies (Mutombo, Bauler, Wallenborn, 2007)

to very different epistemological communities (e.g. science, policy, civil society, administration…) and logically hold different values, objectives and norms.
The effective use of a scenario exercise to feed an actual strategy or plan can be related to the level of credibility, legitimacy and salience of the exercise from the point of view of the potential users (Cash et al, 2002; Mutombo, Bauler 2008, Annex 4). Ultimately, the effective use of scenarios is a question of ownership of the exercise (and its results) by the intended users. This has been widely translated into a call for the direct implication of the potential users in the scenario exercise (Hulme and Dessai, 2007, p.21; Parson et al, 2007, p.88; Pulver and VanDeveer, 2007, p.3). The direct involvement of the user, at least at the beginning and end of the process should foster the salience of the exercise, and generate the necessary ownership. Obviously, involvement of the potential users is also important because the learning outcomes of the scenario exercises are generated during the scenario process as such, rather than merely by the final product.

3. SCENARIOS: BETWEEN SIMPLIFICATION AND COMPLEXIFICATION

Following the study of the scenario field in terms of content, methodology and particularly in terms of uses, this section highlights the conclusions to be reminded with regard to the potential of scenario exercises, particularly in a SD-policy context.

Scenarios, and particularly some explorative highly quantified and model-based exercises, are sometimes presented as if producing new knowledge as such (Wiek, 2006, p.751). A more realistic point of view is that scenario exercises help taking into account and thinking in terms of uncertainties, decision points, potential wild cards, etc. and so doing produce a learning sequence in the way of thinking, i.e. higher order learning. An important element of the potential of scenarios with regard to '**factual' learning** rather relies on their capacity to become **dialogue interfaces**, which leads for instance scientists from different disciplines to meet and exchange. Scenarios become thus potentially important learning tools, also because they function as **knowledge networking tool** (within and beyond the scientific communities).

Furthermore, the **association of the targeted users** should be planned carefully when defining the objective and design of the scenario construction process. If the main objective of an exercise is to feed a decision process, **deciders** will have to be associated to the exercise so to enable them to experience 'learning' and to raise their level of ownership on the results. The call for associating users to the exercises is also linked to the fact that the question remains unanswered of what the influence of a finalized scenario product on recipient-users (users who did not participate to the process) could be; as a consequence one is tempted to question the use of scenarios as wider exercises of awareness raising or vision building when the scenario exercises target an unfocused group of 'stakeholders' or the population at large. In such cases, the eventual impact chain of the scenarios relies heavily on the diffusion interface (e.g. the narrative, the oral presentation, the dissemination, etc).

Finally, if it is admitted that sustainability will require learning processes and changes in the way of thinking, learning is a **condition of change** and **not a guarantee** (Quist, 2007, p.43/45). Beyond 'experience of life', there are different pathways towards change, from soft information-oriented to more coercive ones. If attitude and ideas can guide behaviours, the contrary is also true.

One of the research questions of Consentsus investigates the outcomes and uses of scenario exercises. Scenario developers are often strikingly vague on that topic. Even if it can sound trivial (see among others Burt and Van der Hijden, 2003, pp.1016-1020), the **non-clarity of the objectives** of scenario exercises is frequent and appears to be an important cause of project failure. Many scenario exercises

are not given **precise** objectives; vague mottos are surprisingly present in reports such as 'identifying trends, challenges, needs, wishes'. Simultaneously, these 'objectives' are not **shared**, entailing sometimes that sponsors, developers and participants seem to have different perspectives on the main objectives. Furthermore, scenario exercises are even less often developing **action-oriented objectives**, i.e. identifying windows of opportunities for policy change. Most exercises are aiming at learning without pre-determined opportunity for (policy) action, for instance through exploring potential impacts on ecosystems, or calculating the energetic capacity of alternative scenarios, or even (in the case of Consentsus) through exploring the scenario approach as such.

In fact, so far, scenarios have been assessed in terms of content or methodological credibility. However, the question of **scenario evaluation** in terms of effects (i.e. influence of the produced outputs) and uses is a relatively new topic of research (see Pulver and VanDeveer, 2007), particularly when it comes to their influence on decision making (Sondeijker, 2006, p.23). This is partly due to the fuzziness of the scenario field in terms of 'schools', approaches, context, actors, and moreover, to the just mentioned lack of clarity of the targeted purposes. More generically this situation is due to the general problem, in terms of information use, to trace back causal links between the information source and its influence on decision processes, as this influence is generally very indirect entailing conceptual use instead of instrumental (direct) use. This situation of fuzziness implies that **evaluation** should be an **effective phase** of scenario exercises, and be designed in function of the targeted objective. Definition of clear, shared, and potentially action-oriented objectives is thus a key phase of the exercise. More generally, **scenario exercises** should not be conceived as an end in themselves but as **part of a wider project**. Scenario exercises should be one step within an iterative process from future-oriented thinking to actual decision taking and implementation, to monitoring and evaluation of the measures, and back again to opening up reflexive thinking... This type of iterative process can be related to the theory of reflexive governance which will be investigated in the second phase of the Consentsus project.

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Public decision making implies antagonistic needs for **simplification** and ***complexification*** (Bauler, 2007, p.70). Decision-makers need access to a rather complete set of information, highlighting the complexity of the issue at hand - as much in terms of knowledge as in terms of scientific and normative controversies - and at the same time, they need a clear, understandable, and by definition, simplified, overview of this reality. From this point of view, scenarios are an interesting policy tool as scenario construction aims at elaborating images of reality, necessarily simplified, while highlighting the complexity of the issue in terms of uncertainties and ambivalence through exposing the multiplicity of the possible on a specific issue.

In some discourses on scenarios, the underlying idea was to orient scenarios towards diminishing uncertainties. Scenarios on the contrary, **reveal uncertainties** linked to the irremediably partial knowledge of complex systems with and within which we are living and interacting. Scenarios highlight uncertainties through the multiplicity of possible images and pathways. So doing they contribute to enhance knowledge on ecological and social systems, not so much through diminishing uncertainties, but in preparing minds not to think anymore in terms of certainties.
On the other hand, scenarios, through highlighting the multiplicity of the possible and through questioning perspectives and the underlying values and assumptions, contribute to reintegrate the **normative dimension** within political decision-making, which tends to rely on the generation of scientific 'truth' before taking action (or not).
From these statements, it occurs that scenarios can help to construct a distance with a modernist perspective which denies uncertainties and the ambivalence of objectives. Scenarios contribute to a

transition towards a **non-modernist perspective** of decision-making, claimed to be a necessary step when addressing the challenges of the current unsustainable development (Beck, 2006).

B. ADDRESSING SUSTAINABLE CONSUMPTION

The issue of sustainable consumption patterns remains a very complex problem where the abstract concepts of 'need', 'wellbeing' and 'future generations' are theoretically connected yet insufficiently understood. The bottom-line to sustainable consumption seems however amazingly simple: finding a good balance between human needs and available resources. However, when putting this straightforward idea of balancing needs and resources into the realms of practice, reality clearly shows that it is a largely unmet challenge. While consumption patterns are exponentially increasing in some of the economically 'developing countries', western countries might well generate themselves a slower pace of increased consumption, but in turn are confronted with a confusing stagnation of their levels of happiness or life satisfaction (Inglehart, 2000).

Part of the complexity of sustainable consumption is directly linked to the definition of 'consumption'. Generally speaking two different strands can be discerned. The first strand dominantly[6] links consumption to the purchase of goods and services. Although this delineation limits consumption to a very specific commercial act it does give a clear entrance point to investigate and/or assess the relation between consumer behavior and the use of natural resources. To give an example, Spaargaren, uses the concept of 'consumption junction' to speak about the exchange gate of consumption and production (shops, markets, farm, etc.). This junction can be seen as the ideal place to develop what he calls 'environmental heuristics', i.e. the use of easy rules (of thumb) in daily behavior, 'automatically' leading to more socially and environmentally sound way of living (Spaargaren, 2007).

The second strand broadens the 'what' of consumption to a wider socio-economic context , i.e. it holds that also the use-value and service efficiency of the products, after and disconnected from the purchase phase, needs to be considered. The question is posed whether consumption also encompasses non-commodities such as home-made goods and non-commercial services. This process of opening up the conceptual understanding of consumption to a broader socio-cultural field results in a more comprehensive picture of what consumer behavior is (and consequently, what needs to be changed), but at the same time poses more methodological challenges. Here, there is not such a clear entrance point or 'junction' in order to determine how behavior needs to change in terms of resource-use. There are several reasons why it is not straightforward to address consumption in this broader sense.

One problem here is related to the use of concepts such as 'Wellbeing' and 'Quality of Life' which are, either implicitly or explicitly, pre-supposed in almost any discussion or article on sustainable consumption. This implies considering consumption not as an end in itself but as a way to fulfill needs, and further to foster physical, psychical and relational well being.

However, such concepts as 'Wellbeing' and 'Quality of Life' refer to aspects which are partly subjective and complex to be measured or understood. Kang and James (2007) point out the insufficient conceptualization and slow progress on the evolution of these constructs to properly understand societal orientation. Regardless of intensive research efforts in economics, sociology and anthropology there remain lacunas in the answer to the question of '*what constitutes consumer and societal well-being, or how to enhance (or preserve) that well-being'* (Kang & James, p.5). This suggests that what is generally measured is insufficiently precise to link the theoretical assumptions with empirical observations.

A second serious impediment when addressing the broad view of consumption is linked to language and ontology. As a consequence of words and terminology not being value-neutral, the definition of

[6] Dominantly, because in this strand one often also considers the use of goods and services, but merely in function of a purchase.

'consumption' cannot be either. Frankfurter and McGoun (1999) (in their article on the ideology and theory of financial economics) describe it as follows: *"As they embody our beliefs, words are not neutral. They have both connotative and denotative meanings that are value-laden. To use an existing word to describe a new phenomenon means attaching to the phenomenon all the meanings and images associated with that word – not only those that seem to apply (which where those that caused the word to be chosen in the first place), but also those that may not… We choose one word over another because our values predispose us to prefer its meanings and images"* (Frankfurter and McGoun, p163). Acknowledging this, could involve a differentiated interpretation of some aspects of consumption.

Warde (2005) argues in the sense that it is always the specific instance of the practice (eating, clothing, doing sports, music etc.) that should be under consideration not the act of consuming; except when the practice itself is the very act of consuming, like shopping as entertainment. The nature and dynamics of the relationship between 'needs' and 'resource-intensive behavior' is not at all the same in all societal domains or practices of consumption. The word doesn't stretch out in the same way.

Boulanger (2008) arguments that every practice of consumption should not necessarily be dealt with in the same terms or with the same conceptual apparatus. As a consequence, for instance, it could be maintained that the mobility practice of an individual (consumer) is of a different nature than his food practice. Such different societal functions are characterized by different functionings, types of rules, producer networks, behavior, etc. This induces to conclude that the actual content of what consumption is and who consumers are, through these different practices (i.e. consumer domains), is heterogeneous to such an extent that general solutions might not be transferable from one practice (or domain) to another.

As a consequence, Consentsus focuses on more specific practices. Four proposals for specific consumer domains were initially considered (food, tourism, play and toys, music) and evaluated against a series of criteria (available literature and information, importance in terms of environmental impacts or economic weight, expertise existing on Belgian level, interest of team members …). The practice of food consumption was finally chosen (Boulanger, 2008 Annex 2).

Criteria for the sustainability of food systems are heterogeneous. Most definitions mention three dimensions of sustainability: social sustainability (i.e. people issues, such as health, food safety, quality of life, hunger…), environmental sustainability (i.e. land use, energy use and emissions, soil pollution…) and economic sustainability (i.e. viability of agricultural and distribution sectors, accessibility of food, inequalities in food consumption…). One cannot speak about food sustainability without evoking a sustainable agriculture (a way of producing / raising food that is healthy for consumers and animals, does not harm the environment, is humane for workers, respects animals, provides fair wages to farmers and supports and enhances rural communities), and sustainable nutrition, as defined through the following aspects: enjoyable and easily digestible foods, preferably plant-based foods, preferably minimally processed foods, organically produced foods, regional and seasonal products, ecologically packed and tastefully prepared foods, and fair-trade products.

A working definition of sustainable food consumption could thus mean to guarantee access and use by all present and future generations of the food necessary for an active, healthy life, through means that are economically, socially and environmentally sustainable… This type of definition remains of course vague, particularly when it comes to its implications for policy-making. One central objective of Consentsus is to further investigate, detail and structure this explicitly normative concept through scenario construction.

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The next section of the report presents the methodology and different steps of the scenario construction. Subsequently the phases of analysis are synthesized, aiming to draw conclusions in terms of sustainable food consumption.

II. SCENARIOS FOR SUSTAINABLE CONSUMPTION: CONSENTSUS METHODOLOGY AND RESULTS.

The exploration of the fields of scenarios and consumption was aiming at providing the necessary knowledge for the elaboration of an effective scenario exercise on consumption. The next section presents the scenario methodology followed, divided in two phases: the scenario construction as such (II.A), describing the elaboration of three sustainable consumption scenarios, and the *Q*-methodology (II.B), a statistical analysis based on the scenarios and aiming at drawing further conclusions in terms of integration of these three scenarios.

A. FROM MAIN DISCOURSES ON SUSTAINABLE CONSUMPTION TO FOOD CONSUMPTION SCENARIOS

The scenario construction methodology has been structured along the results of a literature review on sustainable consumption and on scenario practices and theory. The former review highlighted the main public discourses on sustainable consumption, leading, through the 'decomposition analysis' to three sustainable consumption 'strategies' (II.A.1). Those three strategies have then framed the whole scenario construction process which was operationalized within the realms of food consumption (II.A.2), including the participative scenario workshops. Indeed, a participative process was set up in the form of four expert workshops where the three strategies have been explored asking the question of food consumption in 2050 if these strategies were to be followed (II.A.3). Based on the brainstormed ideas, the corpus of ideas has then been worked out into three scenario narratives. An overview of the three scenarios through presenting its diverse components is sketched (II.A.4) as well as their analysis in terms of consumer perspectives (II.A.5).

1. DECOMPOSITION ANALYSIS TO FRAME SUSTAINABLE CONSUMPTION STRATEGIES

One of the main objectives of the consumption-oriented strands of the research was to synthesize the (abundant) literature on consumption from different social sciences (sociology, economics, anthropology, psychology, marketing research) into a workable scheme enabling the design of a relevant and consistent set of alternative scenarios. The challenge was to translate theoretical accounts on sustainable consumption into a practical structure for scenario design. This has been solved through the use of '*Decomposition Analysis'*. The method allows deducing three interrelated parameters (i.e. macro-economic 'identities') that encompass the construct of sustainable consumption. *Decomposition Analysis* was initially introduced by Kaya in 1989 in the context of climate change and has recently been used in scenario for carbon reduction (Agnolucci, et al., 2007).
In a decomposition analysis a problem (here, sustainable consumption) is split up in various significant (sub)ratios. This somewhat formal approach starts from the basic assumption that sustainability can be measured by an indicator of productivity of valuable resources (or of material efficiency) in the well-being production process. This can be expressed in the following formula:

$$\mathbf{S = WB / EF} \quad (1)$$

Where:

- S: Sustainability
- WB : the level of well-being;
- EF_{it} = the environmental load or ecological footprint.

The formula is not to be considered as an equation with calculable and interdependent ratios but rather as a meaningful way to formalize a construct and hence to think about its internal causal relationships, hence allowing to organize any discussions on the issues at stake (Agnolucci, et.al., 2007).

We propose to decompose formula (1) in:

S= (WB/C) * (C/EF) (2)

Where **C** = Commodities. Thus **(WB/C)** refers to the productivity of commodities in terms of well-being and **(C/EF)** to the intensity of commodities in natural resources.
Formula (2) shows that sustainability can be improved by increasing **(WB/C),** by increasing **(C/EF)** or both, or, putting things the other way round, by decreasing the intensity[7] in commodities of well-being, by decreasing the intensity in resources of commodities or both.

Things can be disaggregated further. The term **(WB/C)** can be expressed as:

(**WB/Se) * (Se/C)**

"Se" refers to the notion of service as used by Nørgärd (2006 - like in the context of energy and not as used in the national accounting context). Indeed, what matters for the energy consumer is not energy as such (Kw/h) but the lighting, mechanical power, etc. brought by energy. Likewise, what matters for the user of a TV-set is not the TV-set as a thing but the services it provides in terms of TV-programs, etc. One way to define the notion of service in a need-satisfier framework advocated by Max-Neef (1992) is to define it as the interface between the satisfier and the need or as the "satisfying virtue" of the satisfier. **WB/Se** stands for the productivity of the services in terms of well-being and (Se/C) for "consumption efficiency", the productivity of commodities in producing services**.** The full formula then becomes:

S = (**WB/Se) * (Se/C) * (C/EF)** (3)

This formula highlights three discourses on sustainable consumption: each of the three ratios represents a 'pure' strategy to enhance sustainability (for more information see Boulanger, 2008, Annex 2). The word 'strategy' must be considered as referring to both (1) the framing of the objective to be reached (i.e. the ratio of the decomposition analysis) as well as (2) indications on the way it could be reached (i.e. the corpus of structured ideas). The strategies must rather be seen as structured reflections on general guiding principles rather than as a corpus of ready-made or concrete policy options.

ECO-EFFICIENCY – EE **(C/EF)**

The *eco-efficiency* strategy aims at increasing the **C/EF** ratio by decreasing **EF**, i.e. decreasing directly the intensity in materials (including the non-renewable sources of energy) of the production, use and disposal of commodities. This strategy captures the core of the ecological modernization strand, putting forward mottos like Factor 4 (i.e. a 75% reduction in natural resources uses) and is also linked to the discourses of Industrial Ecology or the Cradle-to-Cradle movement.

[7] The intensity in resource R of a production P is the inverse of the productivity of the resource R in production P. In others words, productivity is measured by the ratio P/R and intensity by the ratio R/P. The more productivity, the less intensity and vice versa.

DE-COMMMODIFICATION – DC **(SE/C)**

The second strategy aims at increasing the ratio **Se/C** by decreasing **C**. This ratio has been labelled the *De-commoditization* strategy. This strategy aims at reversing the "commoditization" process described by Manno (2002, p.70) as the *"tendency to preferentially develop things most suited to functioning as commodities – things with qualities that facilitates buying and selling – as the answer to each and every type of human want and need"*. De-commoditization implies a decoupling of the functions provided by commodities from market-based demand, limiting as a consequence the influence of markets and increasing the influence of other 'function providing' systems or organisations through which needs and aspirations can be satisfied too. That is, other 'modes of provision', heaving over responsibility and management to other societal instances than the markets, i.e. public, communal or domestic agencies.

SUFFICIENCY **– S (WB/SE)**

This strategy aims at increasing the **WB/Se** ratio formally by decreasing Se while maintaining or increasing the generated WB. This amounts to partly disconnecting well-being from the services of commodities, i.e. in simplified terms, delinking the product functions from the wellbeing they generate. This ratio could be called the strategy of cultural de-materialization of needs satisfaction, or in simplified terms, the *Sufficiency* strategy, which is partly captured in the adage "Less is more". This strategy is highly complex because it entails, as a consequence of a complexification of the understanding of wellbeing, a subjective and an objective factor at the same time[8]. Additionally it has a definite normative or moral dimension because the principle of sufficiency involves the sphere of private needs and wants (individual behaviour) and connects them to a larger societal objective. This strategy is closely linked to the growing, diverse and not unified discourses related to the principle of sufficiency, such as Voluntary Simplicity and Religious Frugality. Authors such as Galbraith (1958), Daly (1991), Sachs (1998), Princen (2005) have urged the need to address the problem of consumer satisfaction and affluence beyond the resource-problem, and concluded in the direction of steady-state economies or even degrowth.

These three rather theoretical discourses, or strategies, on sustainable consumption have been at the core of the structure given to the scenario exercise. Each of them has further been explored through the construction of a scenario illustrating what the world could potentially look like in 2050 if we were to follow the principles of each of these discourses, also highlighting their challenges and limits. In terms of scenario typology, the developed approach situates itself thus clearly in the realms of a normative attempt to envision the futures of sustainable (food) consumption.

2. FROM SUSTAINABLE CONSUMPTION STRATEGIES TO SCENARIOS

The three strategies derived from the decomposition analysis were thus used to set up a framework for the scenario construction. Using the decomposition analysis, the Consentsus project took a significantly original approach in the field of scenario construction. Such an approach meant that we did not opt for a process where participants were asked to rank driving forces along grades of

[8] "*Sufficiency can be broadly defined in two ways. One is qualitative, implying wealth and plenty; sufficiency means that a purpose has been achieved, an need is satisified and some sort of optimal state has been reached: 'enough is as good as a feast'. It is subjective in nature and so normally is used in relation to an individual. …The second type of definition is quantitative, implying a clear threshold of acceptability: do we have enough food for the day? Is the rainfall this spring sufficient to allow the crops to harvest?"* (Enough is as good as a feast, sufficiency as policy, p111)

uncertainty and importance in order to distil the most prominent axes of scenario differentiation. Rather, participants were directly confronted with this structured formalisation of discourses on sustainable consumption already implying a series of normative 'driving forces'.
Previous applications of the decomposition analysis aimed more particularly at formulating quantitative assumptions to reflect on carbon emissions (Agnolucci, *et al.,* 2007): *"The scenarios were generated by varying the decomposition ratios to produce different final energy demands but the same carbon emissions."* (Agnolucci et al., 2007, p7). In the Consentsus project, numerical assumptions with regard to the ratios were not projected. Firstly, because the concepts used (EF, Wb, C, Se) do not have identical units of measurement. Secondly, we did not lay connections between the ratios as such. We did not, for example, reflect on how a decreasing Se with relation to (a constant) Wb, effects the eco-efficiency of commodities.
In the Consentsus approach, the connection between the ratios takes place during the phase of analysis and comparison of the three scenarios with regard to various aspects of the food system and primarily in terms of the three different consumption perspectives.

A BRIEF OVERVIEW OF THE SCENARIO CONSTRUCTION PROCESS:

Beyond the literature review on scenarios and consumption, the scenario construction exercise as such took more or less one year to be completed, alternatively in the form of desktop work and of participatory meetings and brainstorms. It started with an analysis of the food system and the elaboration of a concise diagnosis of the current situation based on the multi-level systemic framework stemming from System Innovation theory (Rip and Kemp, 2002). The scenario exercise itself was designed along the three strategies. Four participative meetings were organized which required important time investment (listing and contacting potential participants, practical arrangements of dates, preparation of the material for each workshop…). The workshops generated inputs which were then worked out by the research team. Each strategy has been allocated to one researcher who focused on synthesizing and creating coherence among the workshops' results through drafting images of EE, DC or S worlds in 2050. Finally narratives have been elaborated, which allowed to insert elements of identification, e.g. daily life examples, in the previously rather descriptive and factual images.

The focal points of the scenario construction process - where the strategies have been explored and illustrated - are the participative workshops which are further presented in the next section.

SCENARIO WORKSHOPS

The three sustainable consumption strategies were used as a basis to set up a participative scenario process. Part of the research question was whether the application of these strategies on sustainable food consumption, would result in increased clarity on the (future) issues at stake in the food debate. Expertise was deemed necessary in order to adequately gather a corpus of ideas with significant quality, which led to gather for the participatory moments a sufficiently large, but operational number of food experts originating from different food related organizations/institutions.
Concretely, four participative events have been organized (1+2+1): an introductory meeting, two non-consecutive days of facilitated workshops and a feedback meeting, with a selection of experts from the fields of food, consumption and sustainable development. The workshops were aiming at the construction of drafts of scenario storylines and at collecting elements useful for the further development of the scenarios. Based on a proposal of the research team, the participation process has been designed with a professional facilitator, specialist of scenario workshops.

Concretely, at a very early stage, a 'contact strategy' was elaborated consisting of a set of six concise information briefs dealing with central topics for the Consentsus project and the workshops[9]. The strategy briefs structured the information given to potential participants during first contact (e.g. on telephone), i.e. elevating them to an equal, comparable level of information on the project and the exercise.

The objective in terms of participation was to gather approximatively ten mid-level experts at the workshops. Having been informed of the difficulties of participation in general, and particularly in futures studies and scenarios (see conclusions of, for example, the VISIONS – Van Asselt, 2005, or the Toolsust project – Carlsson-Kanyama, 2003), we decided to gather a higher number of participants. After first contacts, 28 positive answers had been obtained, not all of them followed the entire sequence of workshops: 18 people did attend the first introduction dinner, 11 people attended the 22 May 2008 workshop, 7 were present at the second 19th June 2008 workshop and 5 were available for a later feedback meeting. While such disengagement during the participatory process – regardless of the considerable efforts given to keep active contact with all of the participants - seems quite dramatic, and generated some frustration within the research team, literature shows that 'identical' projects (i.e. rather small-scale, experimental, research-oriented, without any public mandate, voluntary) faced identical dynamics. This disengagement has also partly been foreseen, for instance as the workshops' processes were directed towards gathering a maximum of creativity-based elements on the three strategies right at the start of the process; meetings gradually developed into validating - formerly gathered - structured material.

a. INTRODUCTORY MEETING

At this meeting the project team presented (1) the three strategies derived from the decomposition analysis and (2) an analysis of the food system, i.e. a diagnosis of the current situation comprising the major pressures to the food system. The aim of the meeting was to create a common starting point for the further brainstorming. The meeting took place around a (slow food) dinner and served as an opportunity for the research team to introduce the project as well as for the participants to be introduced to each other. The informal setting created an atmosphere of familiarity as well as an incentive for people to participate (as there was no budget to pay participants).

In the following an overview is given of the proceedings of both subsequent workshops including a short description of the techniques which were used.

b. FIRST SCENARIO WORKSHOP ON THE 22ND OF MAY 2008

This first workshop aimed through different exercises at constructing the foundations of the three images. Concretely, participants have been divided in three groups most of the day, each one being in charge of one strategy. With members of the Consentsus team, each group has brainstormed around the question: *What happens when great efforts and funds are devoted to the EE, DC or S strategy over the next decennia?* In smaller breakout groups, a few causal chains of ideas about this 2050 eco-efficient, decommodified or sufficient world were gathered, then presented and explained to the rest of the 'strategy-group'. In order to add structure to the highly heterogeneous ideas brainstormed, a framework was used which divides the food system in five instances: Produce, Obtain, Prepare, Eat and Discard (POPED). After lunch, the participants commented each other's work. Then, they returned to their respective 'strategy-group' in order to further complement their own image, based on the other groups' comments and through the exercise "A day out of the life of...".

[9] The fiches introduce to the following topics: project and team, futures studies and scenarios, sustainable development and sustainable consumption, the three strategies for sustainable consumption, the three tiers analysis framework (micro, meso, macro), as well as some problems around current food consumption.

IN BETWEEN TWO WORKSHOPS – DESKTOP WORK

Between the 22 May and the 19 June 2008, the Consentsus team has gathered and summarized the ideas proposed by each group. Based on this material, a first draft of images could be developed for each strategy. A few ideas and details were added in order to generate more coherence and provide participants of the second workshop with a clear overview of these different images (Annex A). The three drafts were then sent to the participants in advance to the second workshop, as central working material, addressing particularly the boundary conditions and the internal tensions of the developed draft images.

c. SECOND SCENARIO WORKSHOP ON THE 19TH OF JUNE

The second workshop has been dedicated to the further development of the three images in two objectives: enrich the draft images and develop their internal coherence and connect these future worlds with their contextual conditions. Based on the three drafts, people were divided again in 'strategy groups', and discussed specific details. Notably, discussion went along a series of coherence-related questions prepared by the research team, which could be highlighted through the first exercise aiming at collecting reactions. Before lunch, the groups commented each other's work through two rounds. After the midday pause, each 'strategy group' focused on the context and the implicit conditions to the developed image with the help of the STEEP(D) categories (Socio-cultural, technological, economic, environmental, political and demographical contexts). Finally, the participants selected six issues they found 'relevant' to be (further) developed (work, quality of life, equality ...). Divided in two groups, the participants have discussed the selected issues, looking in parallel at the situation in the three images.

Technique	***Goal***
Categorizing newspaper-like statements according to the three strategies.	Warming-up exercise in order to get re-acquainted with the three strategies.
In each 'Strategy-groups', small groups of 2 to 3 persons describe possible evolutions regarding their central challenge. Causal diagram are sketched in order to structure the discussion.	Generate ideas and future elements based on each strategy.
POPED: The trial of causal diagrams are presented to the whole 'strategy-group' and structured on a big A0 format poster reproducing the categories: Produce, Obtain, Prepare, Eat and Dispose.	Starting the construction of a coherent future image.
Rotation: People from other groups add remarks and ideas to the POPED structure (presented by one member of the original group).	Further completion of the image.
A day in the life: An exercise where a day in the life of a person living in the created image is described.	Revealing additional, more tangible, elements .

Table 1: 1st Workshop 22nd May

Technique	***Goal***
In an open discussion the question "*What surprised you?*" "*what did you miss?*" are asked.	General discussion to gather the reactions of the participants to the images presented by the research members.
A set of open questions was prepared to guide a discussion on the coherence of the images.	'Flesh out' the images and address un-tackled questions, shed light on intrinsic paradoxes or trade-offs and assess conditions of coherence.
Boundary conditions were formulated according to a STEEP(D) framework:, asking the question '*Which conditions, external to the food systems, are necessary for this image to be 'possible'*?'	Specifying 'landscape' elements, i.e. getting notions on the elements external to the food system influencing the conditions of the images..
Issues at stake: the three images were looked at from the perspective of a number of issues particularly relevant for sustainable development.	Comparing the three ratios through different SD issues.

Table 2: 2nd Workshop 19nd June

d. AFTER THE SCENARIO WORKSHOPS – THE NARRATIVES

Following the workshops, the Consentsus team has further worked out the images, notably by operating certain choices, abstractions and simplifications in order to structure these ideas within three original stories illustrating the three future worlds. This writing process, as foreseen, turned out quite demanding in terms of time, creativity as well as synthesis capacity. These final scenario elements have been reworked at an internal meeting within the Consentsus team, then finalized as narratives (Annex B) and sent for feedback to the workshop participants.

e. FEEDBACK MEETING

A half-day feedback meeting has then been organized with a few selected participants in order to gather their reactions to the narratives, as well as to the procedural setting of the scenario exercise.
Roughly, the meeting consisted in a round-table discussion articulated around several questions: *What were the participants' first impressions after reading the narratives (concerning the form and the content?) What did they 'learn' from the process and from narratives? Did they think they could 'use' those scenarios, and how?* In general, the participants were satisfied with the final narratives, as they were 'giving flesh' to the idea they had made themselves about the three strategies during the workshops. They underlined: the difficulty to 'grasp' the Sufficiency scenario, maybe because it was the most 'science-fictional'; the relative 'plausibility' of the visions depicted in the narratives, their relative 'distance' to the real world; they acknowledged their surprise to find concrete examples related to one or another scenarios (cf. infra, the example of 'Twee waters'). The question of 'desirability' was also discussed: some participants reported that the reading of the final narratives confirmed their impression that it is important to integrate the different strategies instead of pushing one of them to its ends, as the future depicted in each 'pure' vision didn't seem to be desirable as such.

3. THREE SCENARIOS OF SUSTAINABLE FOOD CONSUMPTION

The decomposition analysis of the sustainable consumption equation into three strategies, the participative scenario workshops as well as further desk work have led to three scenarios describing potential 2050 worlds where the principles of eco-efficiency, decommodification and sufficiency have been applied. The three scenarios as 'images' (first step) and narratives (final product) are reproduced, respectively, in English and in original language (French and Dutch) in the annexes (Annex B).

This section presents a synthesis and a more detailed overview of the content of the three scenarios.

THE SCENARIOS	GENERAL DRIVERS OF THE SCENARIOS
ECO EFFICIENCY **Scenario (C/EF)**	- Confidence in technological innovation through market development. - Industrial production with the use of clean technologies at every step of the food chain. - Meeting the demand for highly varied and convenience; mostly processed food. - Business as principal actor of societal change. Minimal state model, market driven world. - Internalization of environmental costs. - Competition in markets based on quality and clean technology implementation.
DECOMMODIFICATION **Scenario (Se/C)**	- Confidence and engagement in local governance and management systems. - De-marketisation of the food sector (production and distribution). - Main mode of provision are local and community-based 'food activities'. - Highly organized citizenship (deliberative democracy). - Co-production (merging of producer and consumer) and barter mechanisms.
SUFFICIENCY **Scenario (Wb/Se)**	- Personal care with regard to resources - Needs-oriented individuals and self-reflexive society. - Flexible organizational structures (e.g. in order to prevent sunk investments or lock-in effects). - Highly qualitative public knowledge.

Table 3: General Drivers of the Scenarios

STRUCTURING THE INSTANCES OF FOOD CONSUMPTION

This section develops an overview of the content elements of the three scenarios through the POPED structure. Linked to POPED a series of specific thematic illustrate the functioning of these 2050 eco-efficient, decommodified and sufficient worlds. The presented structuring exercise constitutes an intermediary, necessary step between the scenarios as such and the actual analysis of the consumption in the three scenarios (which is developed hereafter). Indeed, the scenarios, as simplified images could not address all aspects of interlinkages between the food system and consumption patterns in general, and table 4 contributed to fill in some of these gaps.

Table 4 uses the POPED framework to systematize the different instances of food consumption: production, obtaining, preparing, eating and disposing. At first instance, it might seem counter-intuitive to include 'production', because we are aiming to construct scenarios on food consumption. However, it proved to be essential for the viability of some elements of the three strategies, because leaving the implications of the three discourses on consumption without their linkage to production (and even distribution) the scenario system would implicitly confirm the contemporary strict division between producer and consumer. Such a division, which is characterizing large extents of today's food system remains in the 2050 worlds only connected to the Eco-efficiency scenario, and not necessarily to the other scenarios. It is an example of how contemporary dichotomies - in this case the producer/consumer gap – which are considered as 'normal', can be questioned at the level of scenario exercises.

POPED	THEMES	ECO- EFFICIENCY	DECOMMODIFICATION	SUFFICIENCY
PRODUCE AND PROCESS	Product Design	Eco-efficient technological innovations are flourishing supported by market forces, including applications in the service sector, like the '*mobile barbecue*' appliance one can rent on summer nights, which requires advanced spatial localisation, transportation and miniaturization technologies.	Local communities and governance structures play a powerful role in the product design. *"An important part of the food system is managed through a communal coordination structure which decides, in each local community, through citizen-based peer to peer networks, what has to be grown, how it has to be prepared, etc…"*	Before arriving on the market, products are carefully assessed by a central agency according to high-level criteria regarding the societal needs and the products' long-term impacts on well being.
	GMO	GMO's are produced, as long as they reduce resource input or environmental impact in terms of use of water, pesticides, fertilizers… One consequence : GMOs are allowed for domestic production of non-seasonal and exotic species (reduction of transport-related impacts).	GMO's are in a moratorium and social norm generally considers them as unnecessary, e.g. financial motives for monoculture seed production have disappeared (i.e. production is not market-based and labour intensive, hence less efficient agriculture is not problematic) and local agricultural networks are producing within natural boundaries.	A *"cost-needs"* analysis is applied with regard to needs and impacts, and decisions for or against GMO are taken on a species-by-species basis.
	Agriculture	Hybrid agriculture combines elements of traditional, organic and high-technological agriculture. The use of information and communication technologies (GPS, GIS...) in agriculture enables decreasing environmental impacts at the same time as increasing economic efficiency. By means of better monitoring and surveillance mechanisms, large fields can be efficiently managed, also in environmental terms. Agricultural decisions are based on analysis done by computer systems.	The agriculture methods are not necessarily organic, but they fit with the respect of the local environment and its inhabitants. Because of the prominence given to local networks, agricultural output is partly stemming from urban farming, and a part of the food also comes from orchard production in the neighbourhood. Cultivating methods and processes are based on local knowledge. The rather small size of the fields, and the large number of individuals engaged into agricultural activities, makes their management and surveillance easier. Agricultural decisions are taken by citizen/farmers.	Both urban and local agriculture and globalized production exist. There is a very intensive research and development activity on 'limit'-management and carrying capacities. The context imposes either the use of ICT-based agriculture or organic agriculture.
	'Farmers'	Farmers are mostly contract employees in productivity-enhancing production units. When they are engaged in organic agriculture, apart from an elite serving the high-end market, the farms are partnerships or franchises of large enterprises (occasionally even multinationals).	Everybody has a share, at least part-time, in the food production system and has some knowledge or practice on how to farm the land (or to process food).	Social norm considers farming as a highly ascribed profession, which remains in the hands of few strictly controlled units.

	Food processing	A great percentage of the food is highly processed: most of the food is "convenience food": deep-frozen, ready to (h)eat, and the (rare) fresh products are all ready to eat. The kitchens are thus minimally equipped, being used mostly to "regenerate" (defreeze&heat) rather than to cook.	The processing industry has almost disappeared. Most of the meals are freshly cooked, and the remaining processing activities are "community-based" (bread, jams…). Most of the cooking is done on a community-base in canteens, or local kitchens.	Both highly and low processed food are to be fined along the distinction between 'eat' and 'feed'. Fresh meals are often based on products from local/urban agriculture, while globalized agriculture provides the processing industry. Processing is mainly connected either to health, basic needs or wellbeing aspects: e.g. highly processed health 'packages' and functional food provide for 'feeding' products. No more 'non-functional' additives for texture or colour exist, as they are not considered as serving basic needs' satisfaction.
	Meat/Animals	Cattle for meat (issued from a species selection according to their ecological footprint) is bred in a limited quantity, which makes meat very expensive. It is then largely replaced by protein substitutes produced in the laboratories of the processing industry.	People eat meat from locally bred cattle according to local geographical context and citizens' preferences. Animal welfare is taken into account as people are involved in the production process and develop a sense of responsibility with regard to cattle.	In general, people don't eat a lot of meat. A careful questioning about meat eating has become the norm, trying to balance physical needs, hedonist pleasure and animal welfare. Most people eat meat only at special occasions.
OBTAIN	**Product variety**	People are provided with any kind of food possible. The diversity is very high (with the exception of real meat).	Local and seasonal food does not per se mean less diversity, and communal institutions reflect to guarantee a "reasonable choice", e.g. through investing in 'forgotten' local species. A system of regulation and limited exchange between communities (at regional and global level) contributes to some 'exotic' diversity.	The diversity of food is relative to the needs expressed by the consumers: according to the norm and the 'cost/benefit' analysis in terms of need, impacts and well-being, plethoric diversity is counter-productive on all aspects.
	Locus of exchange	Food is bought on-line, at hypermarkets, or at highly specialized shops (for some market-niches). Food is delivered either directly to the household's "mailbox- fridges" or to neighbourhood's larders. Efficient transport, saving energy, is a very competitive element.	Food comes directly from the local stocks. It is dispatched to all active citizens/households, at specific hubs like schools, municipalities or workplaces … Fresh communally-prepared meals are available in local collective kitchens.	There is a combination of anonymous and accessible supermarkets and small and local hubs and shops.
PREPARE	**Cooking**	Cooking skills of households are limited, as specialized food services are predominant: people often prefer to eat out, or heat already prepared meals.	Most cooking is shifted to the community level: to the local collective kitchens, as to care-oriented institutions which use cooking as an activity for schools, elderly, etc.	Preparing food is very popular in a lot of societal groups. People like to experiment with recipes, tastes… ('eating' moments). 'Ordinary', daily cooking disappeared and is replaced by functional food packages which need no preparation ('feeding' moments).
	Appliances	Hi-tech cooking devices (BBQ, grill, etc.) are mostly rented and the market develops a high innovation rate. Kitchens are minimally equipped (mostly with only 'regenerative' devices).	Most individual kitchens are minimally equipped, and many households have none. The cooking, even at the household level is mostly done in local communal kitchens 'around the corner'.	The devices are functional. Most preparation for 'eating' moments is done with family or friends and requires few electric appliances. To control their nutritional intake, some people use technological devices, either PC-like, either integrated chips.

	Services	Food economy is almost exclusively a food services economy, answering the consumers' demand for high convenience and specialisation. A large number of restaurants serve large varieties of food, based on market-niches (e.g. special for pregnant women or sports(wo)men).	Local communities manage the food system so as to provide to all at least the minimal nutritionally balanced diet, everybody contributes to the food services, mainly through the collective local kitchens. People often eat out of the house, at neighbourhood kitchens/"canteens".	Services are mainly focused on personal empowerment and research of wellbeing. Lot of services revolves around information and knowledge management. Eating out is quite common, mostly in convivial atmosphere
EAT	**Diet**	The diet is defined by a rather flexible consumer culture and the products are provided by commercialized structures.	The diet is seasonal-based and partly dependent on a local food management team. Moreover, it is very region-based and culturally specific.	The diet is highly varying within groups and through time. The diet is primarily focusing on personal and social needs and takes environmental and social impacts into account.
	Health	Laboratory research makes it possible to make 'tasty' food healthy by replacing fat and sugar by worthy substitutes.	Food is minimally processed, local and fresh. Local menu service groups work at providing healthy and nutritionally balanced food.	Extreme eating behaviour is socially controlled. Some people use technological devices to monitor personal food intake.
DISCARD	**Waste**	There are bio-methanization installations at household or collective level.	Composting is common, even absolutely necessary in order to be able to 'close' the rather local resource cycles.	Waste is considered something very negative and everything is done to prevent it.
	Packaging	Biodegradable (or even edible) packaging provides less environmental impact.	The packaging is very low, since most of the food is fresh.	There is a lot of re-use and prevention.

Table 4: The Instances of Food Consumption

The content elements in the table 4 (above), show that the scenarios based on the three strategies' driving forces are not mutually exclusive. Indeed, some elements hold in each of the three strategies. For instance, confidence in technological innovation is a crucial driver in the EE scenario, but is not excluded from the two other scenarios. In the DC scenarios for example, ICT are central in the local food management system and for the deliberative democracy (as a consequence, the DC-narrative is presented as a blog interface). In the S scenario, technology is also used to manage personal food consumption, and functional food per se is technologically driven. Nonetheless, these elements are always 'coloured' or 'filtered' by the general criteria of the strategy. The general drivers have a strong logical connection with the basic assumption of the strategy, which entails that each scenario develops a specific perspective on consumption (see also the following section). The content elements show also a very obvious result, which the scenario framework and the decomposition analysis explicitly aimed at: none of the three scenarios represents a catastrophic, non-sustainable future to be avoided; and opposite, none of the scenarios presents a sustainable world as such. Each of the 3 strategies individually is an answer to provide a 'sustainable consumption'-oriented world, but each of them is only a partial response to the challenges of sustainable consumption. A fully sustainable consumption world would need to combine elements of the different scenarios, or combine the 3 worlds. The integration of the 3 scenarios is thus a major question to be addressed, which we will extensively come back to later (Section II.B).

4. AN ANALYSIS OF THE SCENARIOS: THREE CONSUMER PERSPECTIVES

As we have illustrated in the previous section the three sustainability discourses resulting from the decomposition analysis imply truly different approaches on how to organize practices related to food consumption. In this section we try to develop how this diversity reflects on the perspectives of the consumer. It is of course impossible to give a comprehensive overview of the specific types of consumers and consumer lifestyles that would inhabit these 'worlds' for the scenarios are limited and abstract representations of possible realities. Yet, also in theory and research on consumption a certain degree of abstraction is made in order to frame distinctive types of consumers. This tendency is accurately illustrated by the polarized discussion between the consumer as homo economicus and homo sociologicus (see also Fine, 1995; Wilk, 1999, Anderson, 2000).

In this section we address an archetypical consumer, i.e. a generalized consumer developed on the basis of the structural and content elements of the three scenarios. These consumer perspectives do not aim at indicating real (even potential) groups, but aim at illustrating how the environment of interactions around the consumer fundamentally changes throughout the three discourses. These 'elements of interaction' are interesting for policy makers to use in a consumer policy that aims at integrating alternative discourses. All kinds of different elements are essential in the constitution of one possible social arrangement of consumer culture: modes of behaving, artifacts, organizational arrangements, norms, laws, values, etc.

The framework elaborated upon in this section should be considered as a form of 'heuristics'. The general lines of this exercise should be combined with the insights coming from authors such as U. Beck and A. Giddens, whose ideas imply that the cultural contingencies stemming from the pluralisation and individualization of society should be taken into consideration when studying social change in contemporary post-modern society. It is thus with this multiple and heterogeneous nature of consumer perspectives in mind that consumption patterns should be understood. Empirical research of bottom-up projects will then be necessary in order to come into contact with the complex dynamics of daily life processes. This is one of the very objectives of the second phase of the Consentsus project, which will be using the multi-level framework (Loorbach, 2007) in order to find entry points in '*niche'* food practices, hence enriching the theoretic constructs of consumption research.

The concept of lifestyle is relevant in this context. This term – occurring both in market research and sociology –can be defined as "*an assemblage of social practices, that represent a particular way of life and give substance to an individual's ongoing narrative self identity and self-actualisation*" (Evans and Jackson, 2008). However, until now it does remain somewhat unclear how this concept is to be used in the sustainability discourse (Empacher and Götz, 2007).
The academic or research-oriented focus on the subjective dimension of consumption makes use of a number of different concepts. To name a few: personalities (i.e. consistent responses to environmental stimuli), attitudes (i.e. the kind of stimuli/behaviours that are preferred), lifestyles (i.e. patterns in which people live and spend time and money) and personal values (i.e. what is considered acceptable behaviour, in general terms – Blackwell, 2006, p.270). This variety of concepts reveals multidimensionality and, as mentioned above, it is unclear how to frame these types of concepts within the discourse of sustainable development.

What follows is an endeavour to frame some of the relevant differences with regard to the subjective dimension of consumers along the lines of the three sustainability discourses on which the scenarios are based. A comparative table 5 is reproduced below and subsequently reflected upon. This exercise

of comparison should be considered as a means to generate debate on the different stances of consumers' perspectives when the social and environmental conditions change in favour of sustainability.

Consumer perspectives	**Eco-Efficiency (EE):** **Sovereign decision maker**:	**Decommodification (DC):** **Citizen–Entrepreneur**:	**Sufficiency (S):** **Self-reflexive consumer**:
1. Mainstream driver	Price and quality; self interest	Responsibility and local constraints	Needs and value-management
2. Consumer participation	'Passive' consumer	Co-production	Self-empowerment
3. Handling conflicting values	Value mediation through private institution	Value deliberation through local citizens agency	Value assessment on basis of sufficiency and context
4. Consumer trust	Trust in institutions (market and science)	Trust in their local community	Trust in facilitated self-reflexivity
5. Consumer knowledge	Food quality assessment through brands, labels, …	Food-system direct knowledge	Self-knowledge (personal attitude towards food)

Table 5: Three Consumer Perspectives

THREE CONSUMER PERSPECTIVES

Each scenario reveals a different type (or position) of a consumer. Inspired from a categorization of Elizabeth Shove (2007), summarizing literature on environmental consumption, consumers can be framed either as **decision makers**, **citizen-entrepreneurs** or **self-reflexive consumer**. Each consumer type is presented in this section, and further illustrated through a series of constituent aspects (mainstream drivers, participation, conflicting values, trust and knowledge).

The first group – central in the EE-strategy – defines consumers as autonomous shoppers whose aggregate choices determine the future of food production. The concept of **consumer sovereignty** is central in this perspective. The central argument with regard to sustainability goes that choosing for green products through the market steers society towards sustainable food production, provided that the right incentives are given. Sovereignty implies that a consumer is purposeful and goal oriented. The consumer 'steers' the market deciding what product (s) he chooses (and hence not chooses) to buy, thus deciding which products (and companies) are profitable. The EE consumer, to be able to steer the market towards eco-efficiency, needs to act according to a belief-set where sustainability criteria are integrated, taking into account the "*ethical, resource, waste, and community implications*" (McDonald, et. al., 2008) of its purchase. However, a limit of the EE perspective is that, on the one hand, not all market segments are sovereign (low purchase power), and on the other hand, that not all consumers act in accordance with a stabilised belief-set.

In the DC scenario, the consumer can be seen as a citizen-entrepreneur. This type of consumer has significant influence on the way the food supply is organized. Local governance systems (consisting of local citizens and municipal actors) are configured in order to organize the food system. Consumers in a way are 'entrepreneurs', taking actively part in the management of the food system. In this less commoditized world, a **political consumer** emerges. Not just a 'voting 'at the check-out consumer'

(Jacobsen and Dullard, 2007) but a concerned civic actor.[10] Both individually as well as in groups, this citizen-consumer shapes the socio-technical system as such, i.e. (s) he is taking an active part in the forming of social organisations (the farm, the canteen...) and technologies (processing equipment...).
In the DC scenario as well, limitations can be anticipated. This scenario implies 'command-driven' modes of provision and can be related to a communal ideal, all citizens having **equal participation** in the food system. However, in this sense, it is interesting to highlight that since the Rio Declaration (which has established SD as underlying principle of any political strategy or planning – George, Kirkpatrick, 2007, p.1), planning makes a comeback through SD implementation trials, and new forms of engineering are developing, with the notable example of the Transition Management governance approach.

In the sufficiency world, a **self-reflexive consumer** emerges. This consumer has come to question the underpinnings of consumption practices as such. Aware of the cultural relativity of behavioural patterns, this type of consumer debates on how the good life can be defined. This questioning of what actions are right is a complex activity especially because the rationalistic (and/or functionalistic) view on behaviour is starting from a holistic, 'extra-systemic' approach. The mainstream consumer in the S scenario has acknowledged the existence of inevitable underlying complexity. Firstly, he understands personal complexity, i.e. that on a personal level, not only rational (or conceptual) mechanisms drive his/her behaviour. Amongst others, it is understood that (1) other modes of thinking guide behaviour (unconscious motivations, intuitive and emotional thinking), that (2) social norm and culture foster incentives to act and that (3) structural conditions limit possibilities.
Secondly, the S-consumer also acknowledges process-related complexity, i.e. how everyday life is under constant change and how the conditions of wellbeing are related to the contingent situations and thus never completely identical. On a general level, this calls for a constant inter-personal balance between procedures of standardization and procedures of creative novelty[11]. Uncertainty, unpredictability, uncontrollability and cultural relativity are concepts that one tries to take along in decision processes and evaluation afterwards. The limit of this S perspective is that such a level of self-consciousness and continuous assessment of one's own behaviour simply lies beyond human capacity.

a. MAINSTREAM DRIVER

This section describes the 'mainstream' driver that explains behaviour in the different scenarios, i.e. the driver that is most likely to be connected to the underpinnings of the discourses. In reality, there will always be a mixture of different drivers both within one individual and within one society or culture (Soper 2007, Anderson 2000).

In the EE scenario, consumer sovereignty stands central. The market is considered as a mechanism for translating individual preferences, including the eco-efficiency oriented belief-set. The concept of 'price' is used to compare an almost infinite amount of different values. The consumer is in a customer relationship with the retailer, without effective contact with the producer.

In the DC scenario, responsibility and active engagement are important drivers of action. Small-scaled local interactions prevent forms of 'free-riding'. Local and seasonal production and consumption patterns lead to bottom-up partnership-types of relationships. There are highly diverse local food

[10] Note that the discourse of de-commodification also focuses on other than strictly local management and governance mechanisms. Also mechanisms of care and reciprocity gain.
[11] Creative novelty is a concept developed in the ontology of Whitehead (1985) and denotes the ever increasing crystallizations of the process of reality.

cultures, but pluralist values are limited by the constraints of local management and the necessities to organize self-sufficiency in terms of food production.

Within the S scenario, the main driver is instrumental, i.e. it is the practical managing of values as such (value is here defined as what the consumer believes to be an acceptable behaviour). What is acceptable, good or fair changes from context to context, through space and time. Of course, this constant re-evaluation cannot be so that it is to conflict with the 'processes of daily life', with the thinking necessary for human conduct. Yet, still, the acknowledgement of complexity seeps into the conventions of communication. For instance, time is taken for reflexivity, meta-thinking and open debate.[12]

b. CONSUMER PARTICIPATION

The EE scenario portrays a 'passive' consumer, whose participation and reflexivity in terms of sustainability criteria is integrated at the level of the purchase act, through the types of product and services bought.

The DC scenario is characterized by co-production, blurring the distinction between consumption and production. Therefore, the consumer participates to the very definition of the patterns of production and consumption.

The S scenario features a highly self conscious consumer, continuously analysing his consumption behaviour through 'cost/benefit' analysis in terms of impact on personal and social well-being, direct and global environment.

c. HANDLING CONFLICTING VALUES

Conflicting values on food consumption vary in the three scenarios.

In the EE scenario, the food provision is highly customized. This customer- and convenience-oriented approach allows for conflicting values concerning food consumption to be 'channeled' by the private institutions that provide the food. Indeed, all kinds of consumer preferences (premium brand products, retail brand products, biological products, fresh products, ready meals, etc.) are available for purchase. They are thus mediated at centralized points, i.e. by the retailers who avoid conflict with regard to values (see Dixon, 2002 in: Lockie 2002).

In the DC scenario, this is more likely a process of value convergence. People will need to limit their individual desiderata about food due to the constraints of local food management. Further conflicts will be mediated through the local citizens' agencies through time intensive direct democracy processes of deliberation.

The S scenario presupposes intensive value deliberation with oneself, based on external expertise. The consumption of certain products will be dependent on their 'needs impact assessment'. For example: does the level of coffee consumption (value of personal pleasure) affect the enhancement of the level of economic dislocation in coffee dependent nations (value of economic equity).

[12] There is an interesting link here with contemporary thought on the post-modern conditions of the current society. The principle of undistorted communication of Habermas is not in contradiction with the Risk society of Beck, as is often stated. If there is to be any ground to interpret and deal with the shattered post-traditional conditions it should be by means of open communication, but this communication should depart from, and find concrete means to deal with the inherent complex dynamics.

d. CONSUMER TRUST

Consumer trust is related to the kind of institutions or societal actors that are trusted or granted authority. Consumers often rely on information or advice coming from actors who (might) have access to what economists call credence qualities[13], i.e. non-verifiable product qualities (not even after consumption) such as the environmental history of the product.

In the EE scenario, business and science are considered as principal generators of trust, i.e. social norm puts great trust in technological and economical progress. These actors communicate through media, advertising, labels, warranties and other 'indirect' information devices.

In the DC scenario, the mechanism of trust is particularly different because products generally have far less credence qualities than in the EE scenario. People manage their own food supply and have a rather precise knowledge, individually and at the local community level, on the details of the origin, of its production, processing and distribution.

From a sufficiency perspective finally, the individual as such is the *basic vessel of trust* because self-knowledge is considered essential to assess sufficiency (cf. infra). Yet, anticipating on this possibility, this will only work given adequate educational systems, interpersonal trust, and other similar criteria.

Generally, one could say that, in EE, the consumers trust institutions; in DC, they trust people they know because of the effectiveness of social control; and in the S scenario, they rely mainly on themselves, but with the help of groups and expertise (e.g. psychotherapy, etc.).

e. CONSUMER KNOWLEDGE

Finally, we consider the topic of consumer knowledge.

In the EE world, the distance between producer and consumer widens. The organization of food is left in the hands of a highly efficient and privatized production system. Knowledge on food (production) is very low (due to the highly technological systems only to be understood by specialists). However, precise, comprehensive and understandable information is demanded by the consumers to assess food quality through brands, labels, etc.

A strong link with education is a logical characteristic of the DC scenario. The low level of commodities implies that people have to organize their own knowledge and production networks (there is less standardization). An active safe, healthy and efficient local management of the food system by the citizens pre-supposes adequate education, at the same time generalist (overall sustainability) and specialized (food-related techniques).

In the S scenario the object of knowledge focuses on the nature and dynamics of needs satisfaction, to a large extent, in function of an increased wellbeing and quality of life. This calls for new instruments, heuristics, indicators and lifestyles that integrate the different levels of sufficiency. On a personal level, a higher degree of self-knowledge (or reflexivity) seems to be logically connected with the aptness to reach sufficiency. Indeed knowing one's self implies a more efficient relationship between

[13] " […] food technologies are often associated with so-called credence qualities (Darby & Karni, 1973), the costs and benefits of which cannot be unambiguously verified by the individual consumer from personal experience, such as safety, sustainability, health, and naturalness. These credence qualities are particularly prone to generate perceived risk and uncertainty, particularly when information is inconsistent and trust in authorities is low."(Ronteltap, 2007, p.3)

the desired service and the experienced satisfaction. In respect to the more objective thresholds of sufficiency (for example daily amount of calories, or sufficient top soil quality), the assistance of technology and decision matrices is often used.

*

The elaboration of three scenarios based on the main discourses of sustainable consumption has led, through a participative process and a phase of narrative writing, to the identification and discussion of three specific perspectives on food consumers. It should be noted that a large analytical shift occurred, from consumption as the main focus of interest to the consumer himself being in the spotlight. The next section will further build on the scenarios and the three framing strategies with the aim of drawing insights in terms of the potential of integration of these specific perspectives into a single pathway towards sustainable consumption in Belgium.

B. TOWARDS INTEGRATED 'STRATEGIES': *Q* METHODOLOGY

Beyond the construction of three scenarios illustrating the main discourses on sustainable consumption, it was deemed necessary to reflect in terms of integration of these three perspectives. The formula presented in section II.A.1 accounts for the main discourses in sustainable consumption and shows their logical interconnectedness and complementarities. Indeed, an effective transition to sustainable consumption will most probably need mixed strategy, acting on the three ratios because each of them, taken separately, has intrinsic limits.
The following section describes the methodology and results of a statistical analysis, labelled the *Q* methodology, which allowed highlighting elements of consensus and contention among the three discourses on sustainable consumption (see also Lefin, Boulanger, 2008, Annex 6).

INTRODUCTION : WHAT IS *Q* METHODOLOGY ?

Q methodology was invented in 1935 by the physician and psychologist William Stephenson. Since then, it has been considerably enriched by the political scientist Steven Brown and has been the subject of many applications in political science, marketing, sociology, etc. It has more recently been applied to the environmental field (Addams & Proops, 2000) and sustainable development issues (Swedeen, 2005).
The method consists in having a set of proposals (i.e. sentences, statements, pictures…) called the *Q* sample, sorted by a small sample of subjects, called the *P* sample. The subjects are asked to rank the propositions of the *Q* sample, usually from those with which they most disagree to those with which they most agree, most often taking care to reproduce an almost normal distribution. Once this sorting obtained, an analysis reveals the correlations between the different subjects' sortings, and a factorial analysis reveals factors which are in common to the different sortings. Both analysis are combined and make it possible to reveal standard sortings of the proposals. Since *Q* methodology is nothing much than "*a basis for a science of subjectivity*" (Brown 1980), and since subjective viewpoints can be expressed and communicated around any theme, *Q* can fit any topic that concerns tastes, preferences, sentiments, motives and goals. Yet, some of its characteristics make it particularly well suited for certain situations.
A first characteristic of *Q* is that "*questions pertaining to one and the same domain are not analysed in separate items of information but rather in their mutual coherence for the respondent*." (Van Exel 2005:3). According to Donner (2001), this makes it especially good for cases in which a single 'issue'

is made out of subdimensions, and in which it is not necessarily sure how all these subdimensions fit together.

The idea of using *Q* methodology arose precisely as, knowing that Sustainable Development policy could benefit from elements from the three strategies/scenarios developed, we were trying to find a way of selecting and combining them in order to build one (or more) common vision(s) of a desirable sustainable future of food consumption in Belgium. Aware of the inevitable subjective and normative aspects involved in the selection task, we were looking for a method that would be in the line of the participative scenario exercise, and would prevent the researchers to make only their own selection, according to their own criteria. Here again, *Q* appeared to be a precious tool.

Indeed, a second specificity of *Q* methodology is that it considers the subjects as self-referent, and thus allows them to define the discourses and categories themselves rather than having the researcher define them for analysis. Instead of hypothesizing relationships between items in advance and testing that structure, the researcher gleans the relationship between the items only once the sort has been complemented. (Swedeen 2005; Donner 2001; McKeown and Thomas 1988). The factors 'obtained' are not "*analytically distinct traits synthesized within the researcher's frame of reference*", but, rather, "*operant representations of whole perspectives*" (McKeown and Thomas 1988, p.24). According to Swedeen (2005, inspired by Dryzek 1990), what follows is that the researcher himself or herself can be considered as a subject by participating in a *Q* study, along with the respondents, and that there is thus not the structural power imbalance inherent in the subject/object duality of survey research. "*Q methodology is therefore epistemologically consistent with the intent for researchers to contribute to high quality decision processes with fair outcomes […] and with the role of scientists as participants in public discussion.*" (Swedeen 2005: 192).

For all those reasons *Q* methodology appeared to be a perfect tool to solve the problem of the possible arbitrary character of the selection and combination task involved in the creation of an 'integrated scenario'. During the process, though, our aim slightly changed. Our first objective turned out to be too ambitious. Finally, *Q* methodology wouldn't offer elements of an integrated scenario as such, but, rather, three kinds of outputs that could be, still, of rich interest for us:

1. First, *Q* methodology highlights ***the distinct groups, or distinct shared perspectives that appear in the sample of participants***. Indeed, thanks to a factor analysis, the participants who completed the sort are 'compressed' into a few subgroups (Factors A, B, C), each reflecting a common pattern of responses. Each of these subgroups can be portrayed with a «snapshot», summarizing the average sort of the participants in that subgroup.

This first kind of output could enable us to determine whether and in what measure the three strategies/scenarios were actually operant in the mind of the persons composing our sample. Indeed, we would easily and quickly be able to check if the factors extracted during the analyses would correspond, more or less, to our three strategies.

2. A second kind of output brought by the *Q* methodology analysis is the ***contention elements***, i.e. elements that garner a real split decision in the sample, meaning that they are considered as highly desirable for some participants and disagreeable to others. Those elements, that distinguish a subgroup from another, are particularly prone to feed discussions. They could be seen, in our case, as elements to discuss and themes about which to spark off debates when coming to propositions for policy.

3. Eventually, *Q* can reveal ***consensus elements***, i.e. proposals that were rated at roughly the same level (either high, low, or neutral) by most participants. These statements can serve as a point of departure for consensus building among groups represented by the different factors. Again, those elements are precious in order to discover themes that could serve as a point of departure for policy makers: which are the ideas rejected by, or, on the contrary, shared amongst the different representations of what could be sustainable food consumption?

Practically speaking, *Q* study involves five steps: (1) collection of statements from the full range of people with some interest in the topic; (2) selection of a representative set of statements from the full

concourse; (3) selection of participants and execution of the *Q* sort; (4) statistical analysis; and (5) interpretation of discourses.

1. CONSTRUCTION OF COMMUNICATION CONCOURSE

In *Q*, the flow of communicability surrounding any topic is referred to as a 'concourse', and it is from this concourse that a sample of statements is subsequently drawn for administration in a *Q* sort. Concourses are not restricted to words, but can incorporate virtually all manifestations of human life, all means of expression (paintings, pictures, videos, music, objects …). They can be obtained in a number of ways: a verbal concourse, for example, may be obtained through interviews, participant observation, popular literature (e.g. media reports, newspapers, magazines, novels) and scientific literature (papers, essays, books…).

In Consentsus, the concourse was composed of all the possible discourses existing around the three strategies. A part of this concourse had already been gathered during the scenario workshops, and was thus available through the minutes of those meetings, as well as through the scenarios themselves. However, since we knew this material, because of its form (either too 'sketchy' or too 'narrative') would not necessarily be easily usable for the constitution of the *Q* sample, we also gathered some material from internet, from websites we knew would be close to each strategy (e.g. Slow food movement, voluntary simplicity, local supported agriculture, bio-engeneering, …)

2. SELECTION OF THE *Q* SAMPLE

Once the concourse has been gathered, the task becomes one of selection, organization, and analysis, so as to draw a subset of statements, the *Q* sample (usually 20 to 60 items). The main goal of selecting a *Q* sample, is to provide "a miniature which, in major respects, contains the comprehensiveness of the larger process being modelled" (Brown 1980), i.e. a set that is representative of the wide range of existing opinions about the topic. Usually, a structure (called "design principle") is used in order to avoid the under- or over-sampling of certain components, and, consequently, the incorporation of a bias into the final *Q* sample.

Usually, to make it easier, the researcher builds his design as a two dimensions matrix, distributing the concourse between the different cells, and then selecting a number of statements for each cell.

Here, the *Q* sample was drawn according to the following design principle[14]: The columns obviously represent the three strategies: Eco-efficiency, Decommodification and Sufficiency (with a subdivision for this latter: 'health-oriented' or 'hedonistic'[15]). For the categories in rows, we selected the three actions from the POPED structure the most directly associated to the consumption practices, i.e. obtain, prepare and eat.

[14] Please refer Table 3 to have the full statements corresponding to the numbers displayed in this table or to Lefin, Boulanger, 2008, Annex 6 for the statements in original language (Fr/Nl).

[15] The distinction between the 'health-oriented' and the 'hedonistic' aspects of sufficiency had been developed during the scenarios workshops, even if they do not appear so clearly in the final narrative (see feeding vs.eating moments). This distinction was useful for the constitution of our *Q* sample: since those two logics were so different, even if 'belonging to' the same strategy, we wanted to make sure not to over-represent one of them at the expense of the other one, in order not to have a biased idea of the operant 'sufficiency discourse' (if existing) in our P sample.

	EE	**DC**	**S**		***Total***
Obtain	1; 2; 3; 4; 5	6;7;8;9;10	**(health)** 11;12;13	**(hedonistic)** 14	
	5 statements	*5 statements*	*4 statements*		*14*
Prepare	15;16;17	18;19;20	21;22	23;24	
	3 statements	*3 statements*	*4 statements*		*10*
Eat	25;26;27;28	29;30;31;32	33;34;35;36	37	
	4 statements	*4 statements*	*5 statements*		*13*
Total	*12*	*12*	*13*		***37 statements***

Table 6: *Q* sample design principle

3. PARTICIPANTS SELECTION (P SAMPLE)

A *Q* methodological study needs only a limited number of respondents, since "(...) all that is required are enough subjects to establish the existence of a factor (a specific way of ranking the statements, i.e. a specific discourse, point of view on the topic) for purposes of comparing one factor with another […]." (Brown 1980, p. 192). What really matters is not the number of respondents, nor the statistical representativeness of the sample: the results of a *Q* methodological study are the distinct subjectivities about a topic that are operant, not the percentage of the sample (or the general population) that adheres to any of them. The important thing is thus to select people who are theoretically relevant to the problem under consideration.

In the case of the Consentsus *Q* exercise, aiming at discovering different ways of combining elements of three distinctive strategies for sustainable consumption, we thought that inviting mainly 'sustainability experts' would be the most 'economic' solution. Indeed, it was easier to address our question to people already used to think about long term issues and sustainability, and who were, moreover, inevitably, consumers themselves. We knew from the beginning that, anyway, the most interesting results of the *Q* for us would be groups of statements (i.e. discourses around sustainable food consumption) rather than groups of people.

Invitations were thus sent to three groups of people: people appearing on the participants' list of the 'Forum Energy 2050' organized by CFDD/FRDO (on the13th of November 2008); the members of the CFDD/FRDO themselves; and the experts having participated in our scenario workshops.

Finally, our P-sample was composed of 45 participants distributed as follows :

- Linguistic group :
  - 24 French speaking (53%)
  - 21 Flemish speaking (47%)
- Gender
  - 19 women (42%)
  - 22 men (48%)
  - 4 undeclared (10%)
- Age :
  - 13 aged between 19 and 29 years old (29%)
  - 21 aged between 30 and 49 years old (46%)
  - 7 aged between 50 and 64 years old (15%)
  - 4 undeclared (10%)

- Professional sector:
  - 30 persons working in the sustainable development field (67%)
  - 12 persons working about or within the food sector (27%), amongst whom 5 persons also working in the sustainable development field (11%) (2 for the industry, 2 in the administration and 1 in a NGO). Amongst the 7 remaining persons, 3 are working for the industry, 1 in the distribution sector, 1 in research (human sciences) and1 in another field.

4. EXECUTION OF THE *Q* SORT

The execution of the *Q* sort by the participants was made possible and easy thanks to a free software, FlashQ, a user friendly Flash application for performing *Q* sorts online, developed by Christian Hackert and Gernot Braehler (2007).[16] The participants were asked to read carefully all the statements and to rank the statements in conformity with a 'forced distribution'[17] (see table 7): starting from the extremities (placing under the '-4' the statements with which they disagreed the most and under the '+4' the ones with which they agreed the most), and following a back and forth procedure, finishing by placing the sentences about which they felt the most 'neutral' in the central part of the grid.

Statement rank	**-4**	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**
Number of statements	2	3	4	6	7	6	4	3	2

Table 7: *Q* study sorting scheme

At the end of the exercise, they were asked to explain why they agreed or disagreed most with the statements they had respectively placed in the '+4' and '-4' columns (what we be later referred to as 'the respondent's comments'). Finally, they were enjoined to answer certain questions regarding their personal characteristics: sex; age; whether they were working in the sustainable development field or not; in/about the food sector or not and if yes, in which domain in particular.

5. STATISTICAL ANALYSIS

There is nothing special in the way *Q* methodology uses statistical analysis[18]. The only and very specificity of *Q* methodology lies in the nature of the data matrix on which the analysis is applied. Whereas 'traditional' statistical analysis (called *R* analysis by *Q* methodologists) extracts factors from the correlation between variables, *Q* methodology starts from the correlation between individuals. In other words, whereas in the *R* analysis, "attention focuses on the relationship between traits, with scores being expressions of individual differences for the various traits in a sample of persons" (Brown 1980: 12), in *Q*, the variables under consideration are the persons having performed the *Q*

[16] http://www.hackert.biz/flashq/
We would also like to warmly thank Stephanie Burns, doctoral student at Kent State University, for having created and sent us a precious file in order to make the program compatible with the latest version of Flash Player.

[17] "In mathematical terms, a forced distribution is used to produce sorts that have equal means and variance, thereby conforming the assumptions underpinning the factor analysis […]. Additionnally (at least attempting), a forced distribution improves the quality of the data […] because participants are required to consider the relative merit of statements in order to form their positions» (Niemeyer, Petts and Hobson 2005, 1448)

[18] The statistical analysis was made thanks to "PQmethod», a free statistical program designed by Peter Schmolck to fit specifically the requirements of *Q* studies see http://www.lrz-muenchen.de/~schmolck/qmethod/)

sort, and not the *Q* sample statements. *Q* methodology calls thus for the correlation and factoring of persons (and not of traits, tests, etc.) as statistical means to observe how they are grouped (or, more accurately, how they group themselves) through the process of *Q* sorting.
The analysis of the data from *Q* sorts involves the sequential application of several statistical procedures. First, correlations among *Q* Sorts are computed, which are then factor-analysed, with the objective to identify a number of significant natural groupings of *Q* sorts, each one shared by groups of people with similar points of view. This set of factors is then submitted to one or several rotations (either atheroretical, usually using the Varimax method, or judgmental) thanks to which a set of factors is selected. The final step of the data treatment as such, before describing and interpreting the factors, is the calculation of factor scores, i.e. the normalised weighted average statement score of respondents that define each factor.

6. *Q* METHODOLOGY ANALYSIS OF THE «CONSENTSUS» *Q* SORTS

a. VARIMAX ROTATION

The first solution was obtained with a principal component analysis and a Varimax rotation[19]. This latter aims at finding the simplest structure in the data set that could explain the greatest amount of variability, i.e. to maximize the purity of saturation of as many *Q* sorts as possible on one or the other of the factors extracted. We then decided to retain only three factors, which enabled us to classify 51% of our *P* sample. After rotation, they accounted respectively for 23%, 11% and 9% of the variance, hence for 43% of total variation with 14 sortings allocated to the first one, 11 to the second one and 9 to the third one.
Once we had identified those three significant factors, we then gave the original statements a 'model' factor score in order to examine the sort predicted by the factor model for each factor. Finally, those normalized factor scores were rounded and assigned a score so as to conform the form in which the data were originally collected: here, the two items with the highest scores were selected and given the value +4, the three next-highest items the value +3, etc … (cf. Table 7)
Table 8 shows the rounded factor arrays for the 3 selected factors. For each factor, we underlined, with a bold line, the highest and, with a dotted line, the lowest factor arrays, indicating, on one hand the statements with which the persons respectively loaded on factor A, B and C would agree the most (i.e. the lowest scores), and on the other hand, the statements with which they would disagree the most (i.e. the highest scores).

		Factor Scores		
No	Statement	A	B	C
1	A well functioning market suffices to guarantee sustainable food consumption, provided that the right incentives are ensured (product norms, labels, tax incentives).	-2	4	2
2	Technological innovation (for example a smart fridge that automatically manages its contents thus preventing any waste) is an important element for sustainable food consumption.	-2	3	1
3	The consumer must be able to obtain his food through the easiest, the most anonymous, and the least time-consuming way possible.	-4	-1	0
4	It is possible to enjoy as much freedom of choice in the context of sustainable food consumption as in the context of non sustainable food consumption.	-1	2	1
5	In the context of a sustainable consumption, the heaviest impact food has on the	3	1	4

[19] Rotations do not affect the relationship among the facts (i.e. the data points are not moved around) but only the vantage point from which the relationships are observed.

	environment, the most expensive it must be.			
6	In 2050, the distinction between consumers and producers will have disappeared: everyone will be participating somewhat in the production of his food.	-1	-3	-1
7	Sustainable food consumption can be achieved through direct relationships between producers and consumers.	2	-3	1
8	Food cannot be compared to any other good. It has a particular character, even a sacred one.	3	0	0
9	Both the production and the consumption of meat should be entrusted to the State.	-1	-3	-4
10	I would find it normal to have rationing tickets for products which are too harmful for the environment.	0	-2	-2
11	The way I get my food is of little importance, as long as I can be sure the food is healthy.	-2	0	-1
12	It is normal, in the context of a sustainable food consumption, to pay more attention to food expenses, to make sure to buy only what is strictly necessary.	1	0	-1
13	The best place to get one's food should be the small local market, where the seller knows his products.	1	-4	1
14	Sustainable food consumption can be achieved through the promotion of gastronomic-quality food and the safeguard of traditional food.	2	-1	1
15	Pre-prepared meals are environmentally more efficient, for instance because they allow economies of scale.	-3	3	-3
16	In 2050, my kitchen will be minimally equipped; I will use it only to defreeze and warm up already prepared meals.	-4	-2	0
17	A sustainable consumption doesn't necessarily imply a deeper knowledge of food and the way it can be prepared.	-1	-1	-1
18	Children should acquire knowledge and skills about food (kitchen garden, preparation, cooking) since primary school.	4	2	4
19	In the context of a sustainable food consumption, it is normal that households should devote more time to preparing and cooking their food.	1	-1	-3
20	To be more environmentally efficient, meals should be prepared collectively, for instance in neighbourhood kitchens.	0	1	-4
21	What really matters in food preparation methods is their impact on health.	0	2	-1
22	In 2050, there will hardly remain any case of mismanagement of food through overconsuming or wasting.	0	0	3
23	It is a pity to spoil good products through inadequate preparation.	1	1	0
24	Carefully preparing a meal is already enjoying it.	1	2	0
25	In 2050, GMO's will be present in my everyday food, as long as their production is motivated by less heavy environmental impacts (less fertilizers, pesticides and water consumption).	-3	1	0
26	I would eat out more often (restaurants, snacks, fast food, …) if I knew the ecological footprint of my meal was lesser there than when I'm eating at home.	0	-1	0
27	According to me, food safety and food traceability are fundamental.	1	4	2
28	It is very likely that the food from tomorrow's sustainable consumption will be completely different from today's products.	0	-2	2
29	In 2050, I'll mainly eat local products.	2	-1	3
30	Diversity is to be seen as rediscovering «forgotten» local products rather than as being offered exotic products.	3	0	1
31	In 2050, the main daily meal will be taken in canteens (at work, at schools, …) in order to reduce wastes as well as energy and water consumption.	-1	1	-2
32	In 2050, the food-processing industry will almost have entirely disappeared: people will mainly eat fresh and artisanal products.	0	-4	3

33	Sustainable food consumption implies that every individual should make a personal effort in order to watch his/her consumption.	4	3	2
34	One should only eat what is strictly necessary to a healthy diet (concerning quantities and nutrients)	-1	-2	-3
35	It would be useful to have a device that would help to manage the food intake by controlling the nutritional supply, regarding to objective individual needs according to age, sex, health status, activities, etc.	-2	0	-2
36	In 2050, the distinction between food and medicines will almost have disappeared: I will eat in order not to be ill, and I'll heal myself through eating.	-3	0	-2
37	In order to fully enjoy our food, it really matters to create a good atmosphere around eating moments (company, location, meals presentation …)	2	1	-1

Table 8: Factors scores of three factors extracted after Varimax rotation

The most interesting fact to notice here is that the two first factors, i.e. the two main types of discourses about possible future sustainable food consumption among the sample, are respectively composed of elements that we had previously classified as being part either of the Decommodification strategy (factor A) or of the Eco-efficiency strategy (factor B). This already means that those two strategies are really operant in people's mind: they are well two different ways of conceiving the future of food consumption. Factor C won't be looked at into more details here, in this first step of the analysis. It doesn't correspond to the sufficiency strategy but is rather a mix between the three strategies.

After this first step, giving us first insights about the results, the analysis focused on what would happen if the three first factors were corresponding, in the 'purest' way possible, to the three strategies. What would be the consensus elements? The contention elements? In order to discover it, a first graphical (or judgemental) rotation has been applied.

b. JUDGMENTAL ROTATION (1) : THE «EXTREME» POSITIONS

The aim here was first to find in the sample the persons who seemed to be the most linked respectively to the Eco-Efficiency, Decommodification and Sufficiency strategies, in order to maximise their respective loadings with one of the 3 selected factors and to end up with one DC factor, one EE factor, and one S factor.

First, the mean of the scores given by each respondent to the statements respectively coming from the EE, DC or S strategy were observed (according to the initial design, cf. Table 6). We then selected the persons with the highest means respectively for each group of statements, and ended up with three (surprisingly well balanced) clusters: 11 persons (24% of the P sample) had given the 'DC' statements particularly high scores, 10 (22% of the sample) had ranked particularly highly the 'EE' statements and 8 (17% of the sample) had shown a similar preference for the 'S' statements. This could already enable us to note that, among the whole sample, 29 persons in total (i.e. 64% of the sample) seemed to show a particular preference for either one or another strategy.

Thanks to a graphical rotation, we tried to associate each of these groups with a specific factor, Factor A' for DC, Factor B' for EE and Factor C' for S.

Here are the results:

		Factor Scores		
No	Statements	A' DC	B' EE	C' S
1	A well functioning market suffices to guarantee sustainable food consumption […]	-3	2	-1
2	Technological innovation […] is an important element for sustainable food consumption.	-1	2	1
3	[...] obtain his food through the easiest, the most anonymous and [...]	-2	2	-4

4	It is possible to enjoy as much freedom of choice in the context of SFC	0	4	-3
5	[…] the heaviest impact food has on the environment, the most expensive it must be.	4	3	4
6	In 2050, the distinction between consumers and producers will have disappeared…	-1	-3	-3
7	S.F.C can be achieved through direct relationships between producers and consumers.	2	-2	0
8	Food cannot be compared to any other good. It has a particular character, even sacred …	2	-1	0
9	Both the production and the consumption of meat should be entrusted to the State.	-1	-4	-4
10	I would find it normal to have rationing tickets for products which are too harmful […]	0	-4	2
11	The way I get my food is of little importance, as long as I can be sure the food is healthy.	-2	-1	-3
12	It is normal […] more attention to food expenses [...] to buy only what is necessary.	1	1	3
13	The best place to get one's food should be the small local market […]	2	-2	2
14	S.F.C.can be achieved through […] gastronomic-quality food and […] traditional food.	3	0	0
15	Pre-prepared meals are environmentally more efficient […]	-2	1	-2
16	In 2050, my kitchen will be minimally equipped; I will use it only to defreeze […]	-4	-1	-1
17	SC doesn't necessarily imply a deeper knowledge of food and the way it can be prepared.	-1	1	-2
18	Children should acquire knowledge and skills about food […] since primary school.	3	3	3
19	In the context of a SFC, […] households should devote more time to preparing […]	1	-2	0
20	To be more environmentally efficient, meals should be prepared collectively […]	0	0	-1
21	What really matters in food preparation methods is their impact on health.	0	0	1
22	In 2050, there will hardly remain any case of […] overconsumption […]	0	1	0
23	It is a pity to spoil good products by through inadequate preparation.	0	0	2
24	Carefully preparing a meal is already enjoying it.	1	2	3
25	In 2050, GMO's will be present in my everyday food, […]	-3	0	-2
26	I would eat out more often[…]if I knew the ecological footprint of my meal was lesser …	-1	-1	0
27	According to me, food safety and food traceability are fundamental.	1	4	1
28	It is very likely that the food from tomorrow's SC will be completely different […]	0	1	0
29	In 2050, I'll mainly eat local products.	3	-1	1
30	Diversity is to be seen as rediscovering «forgotten» local products rather […] than exotic	4	1	1
31	In 2050, the main daily meal will be taken in canteens (at work, at schools, …) […]	-1	0	-1
32	In 2050, the food-processing industry will almost have entirely disappeared […]	1	-3	-2
33	SFC implies that every individual should make a personal effort […]	2	3	4
34	One should only eat what is strictly necessary to a healthy diet […]	-2	-2	-1
35	It would be useful to have a device that would help to manage the food intake […]	-4	-1	1
36	In 2050, the distinction between food and medicines will almost have disappeared […]	-3	-3	-1
37	In order to fully enjoy our food, it really matters to create a good atmosphere […]	1	0	2

Table 9: Factor scores for three factors extracted after a first judgmental rotation

Looking at the statements in the highest and lowest positions for each factor, it is clear that the factors are well representing the strategies.

What characterizes Factor A' is the importance given to the local aspect, and to short food circuit: people loading on factor A' agree with the fact that forgotten species should be rediscovered, as well as local and traditional food. They see the local market as the best place to obtain food, and they give an importance to the direct relationship between the producers and the consumers. For them, food has a sacred character, and it is important to devote time, skills and energy to obtaining and preparing it. It is unconceivable to imagine not having the possibility to cook anymore (by eating more pre-prepared meals or eating out more often). Amongst the statements which were ranked with the highest scores, one can also find some elements of the sufficiency strategy, in his 'hedonistic' side, through the importance given to the atmosphere around the food intake, the gastronomic aspect of the food and the enjoyment of the preparation. On the other hand, the factor A' seems to reject the 'health' side of the sufficiency strategy: the ideas of the food as a medicine or of a controlling device appear as two of the

statements with the highest negative scores. It is also interesting to note that the sentences referring to the intervention of the State (through rationing tickets or control of meat production and distribution), even if belonging to the DC strategy, are ranked quite low in the list.

Not surprisingly, **what characterizes factor B'** is the confidence in the market and the technological innovation. The market itself can ensure a sustainable consumption, through the system of prices, without reducing the freedom of choice. A shorter food chain is not needed for sustainable food consumption. The pre-prepared meals are considered as being more efficient and they are quite welcomed since it's not so important to spend time in the preparation of food. There is no real reluctance towards GMO's (contrarily to factor A'!). Nonetheless, it is interesting to notice that factor B' has some characteristics in common with factor A': it reckons, for example, the importance of an individual effort in order to come to sustainable consumption, as well as the importance of the education about food since the primary school. It also shares with factor A' a repulsion for the intervention of the State and for food seen as medicine.

Finally, **Factor C' is well characterized** by a 'sufficiency' perspective, even if it is not really pure. Indeed, it also encloses, in a moderate way, some elements from the Decommodification strategy (the importance given to the local dimension for example) even if there is not a strong refutation of the market, as well as from the Eco-Efficiency strategy (the importance given to technologies). What specifically characterizes Factor C' is the idea of checking and/or controlling the food intake, either by paying attention to the food expenses, or thanks to rationing tickets, or even through the means of technological devices (be it an intelligent fridge or a 'chip in the belly'). On the other hand, the food has to be enjoyed, carefully prepared, and eaten in a convivial atmosphere.

Even more interesting than describing the three factors separately is to look at **the elements of consensus and the elements of contention** between the 3 factors.

Table 10 shows the statements that garnered real split decision amongst the respondents respectively loaded either on Factor A', B', or C'.

No.	Statement	Factor Scores		
		A' (DC)	B' (EE)	C' (S)
4	It is possible to enjoy as much freedom of choice in the context of a sustainable food consumption as in the context of a non sustainable food consumption.	0	4	-3
10	I would find it normal to have rationing tickets for products which are too harmful for the environment.	0	-4	2
3	The consumer must be able to obtain his food through the easiest, the most anonymous, and the least time-consuming way possible.	-3	2	-4
1	A well functioning market suffices to guarantee sustainable food consumption, provided that the right incentives are ensured (product norms, labels, tax incentives).	-3	2	-1
13	The best place to get one's food should be the small local market, where the seller knows his products.	2	-2	2
35	It would be useful to have a device that would help to manage the food intake by controlling the nutritional supply, regarding to objective individual needs according to age, sex, health status, activities, etc.	-4	-1	1

Table 10: Elements of disagreement (1)

First of all, it is important to notice that the way the factor scores are distributed amongst the three factors is completely logical and consistent, and tells us something about each strategy.

Next, it is interesting to have a closer look to each of the statements that garnered contention among the P sample.

- About the possibility of freedom of choice (4)

Factor B' (EE) strongly agrees with the possibility of maintaining the freedom of choice in the context of sustainable food consumption, contrarily to Factor C' (S) which shows a strong disagreement, and Factor A' (DC) which seems neutral on the question. This can be illustrated by the justifications some respondents gave while writing comments on the statements they disagreed or agreed the most with:

An example of EE (+) justification[20] : " *le choix que fait un individu est étroitement lié aux valeurs qu'il porte, la consommation durable n'enlève rien à la liberté de choix, n'entraîne* ***aucune frustration ou limitation****, mais au contraire, permet à l'individu d'entrer en accord avec lui-même dans ses choix alimentaires aussi*. "

An example of S(-) justification : " *Pouvoir profiter de tout en toute saison est* ***un luxe que la planète ne peut s'offrir*** ".

One hypothesis concerning the 'neutral' position of the 'advocates' of DC concerning the freedom of choice may be that they can have a radically different idea on the question, depending on whether they see the diversity as the one which is proposed today, as stated in this comment: "*Ce choix pléthorique de biens d'alimentation est élargi en dépit de l'impact écologique. Le monde entier cultive et élève en fonction des exigences des distributeurs et consommateurs occidentaux. Un tel mode de raisonnement n'est pas extensible à l'ensemble de la planète*", or as it could be in the future " *Les choix sont tout aussi nombreux même s'ils ne sont pas les même… la diversité des légumes par exemple est en fait plus grande quand on mange 'bio' car on prend aussi en compte toute une série de légumes oubliés.. donc la liberté de choix est là. Par contre, les choix ne sont pas les mêmes, il est clair qu'il ne sera pas possible de choisir certains aliments dans certaines saisons* ".

- About rationing tickets (10)

Again, we can observe the same pattern: Factor EE shows a strong disagreement about the idea of the possible existence of rationing tickets ("*C'est contraire aux libertés individuelles", " Het is aan de consument om uit te maken waar zijn/haar prioriteiten liggen. Duidelijke (maar correcte !) informatie over milieu-impact moet beschikbaar zijn, zodat de consument een geïnformeerde keuze kan maken.*"), although Factor S shows a strong agreement (" *om te vermijden dat consumptie van bepaalde producten enkel voor rijkeren zou zijn weggelegd, zouden coupons een sociale maatregel kunnen zijn*"), and Factor DC remains neutral about it.

- About an anonymous, easy, and 'non time-consuming' way of obtaining food (3)

Here, Factor DC ("*le côté anonyme est une très mauvaise idée, il ne permet pas de responsabiliser le consommateur*") and S *(" als voeding zo belangrijk is, dan moet ik tijd voor maken"*) disagree strongly with the idea, although, not surprisingly, EE strongly agrees with it.

- About the market as being able to ensure sustainable consumption (1)

Again, it is not surprising at all to notice that both Factor A' and C' disagree with the statement; Factor A' to a higher extent than Factor C' ("*Duurzame consumptie heeft mijns inziens niet te maken met de 'markt'.. In de eerste plaats omdat voedsel niet mag gezien worden als een koopbaar, maar als een basisrecht"*). On the other hand, Factor B' obviously shows a great agreement with it. (" *Si on donne de bons signaux aux consommateurs, ceux-ci influenceront les producteurs pour une consommation durable et diversifiée"*)

- About the local market as the best place to get one's food (13)

One can observe the same pattern again: agreement from Factors DC and S, and disagreement from Factor EE ("*geloof in technologie and schaalvoordelen")*

[20] NB : All the comments quoted here are considered as being only illustrative. They just give an example of possible kinds of justifications!

- About the idea of a technological device that would control the food intake (35)
This statement garners a strong disagreement from the factors DC,, a moderate disagreement from the factor EE, and a moderate agreement from the Factor S .

Finally, the most interesting element to note here about those disagreements statements is probably the contested place of, and relationship to the market. This will be discussed further in the following part.

No.	Statement	Factor Scores A' (EE)	B' (DC)	C' (S)
18	Children should acquire knowledge and skills about food (kitchen garden, preparation, cooking) since primary school.	3	3	3
21	What really matters in food preparation methods is their impact on health	0	0	1
22	In 2050, there will hardly remain any case of mismanagement of food through overconsuming or wasting.	0	1	0
24	Carefully preparing a meal is already enjoying it.	1	2	3
26	I would eat out more often (restaurants, snacks, fast food, …) if I knew the ecological footprint of my meal was lesser there than when I'm eating at home.	-1	-1	0
31	In 2050, the main daily meal will be taken in canteens (at work, at schools, …) in order to reduce wastes as well as energy and water consumption.	-1	0	-1

Table 11: Elements of consensus (1)

Table 11 give us insights on **consensus** elements. The consensus statements give us an idea of the themes that should surely be taken into account by policy makers. Unfortunately, this only table gives a very limited idea of elements on which the advocates of the three strategies would, altogether, strongly disagree or strongly agree. Indeed, most of the statements in the table (s21, s22, s26 and s31) appear well as being ranked more or less the same by the three factors, but in a neutral way (with scores as -1, +1 or 0). Surprisingly, none of the statements garner disagreement amongst all three of factors. Statement 24 doesn't bring a lot in terms of policy. Finally, only one statement can give us an insight about a positive attitude from the three groups, since all recognize the fundamental aspect of the education.

Another way to analyse the three positions and how they relate to each other, is to highlight potential integrated mixes of statements stemming from the three discourses. This has been analysed with the second judgmental rotation.

c. JUDGMENTAL ROTATION (2): THE «MIXED» POSITIONS

Having extracted three «pure» factors was interesting, on one hand, in order to confirm the existence of three types of discourses corresponding more or less to the three strategies, EE, DC and S, and on the other hand, in order to highlight, through the consensus and contention elements, interesting themes to work on in a policy perspective.
Nonetheless, we decided to go a little bit further by trying another kind of judgmental rotation: instead of selecting in the sample the persons who were the most 'extreme', being mostly 'associated' with only one strategy, the most 'mixed', 'nuanced' sortings was selected in order to analyse the factor(s) they would compose, after rotation.
Just as during the previous step, we selected some respondents in the sample, according to the mean of their sortings for each group of statements (EE, DC, or S). Nonetheless, this time, rather than selecting people whose rankings' mean was very high for only one kind of statements, we selected people who had an 'average' mean, for the three groups, i.e., who didn't seem to show a true preference for either

one or another strategy. Again, thanks to a graphical rotation, we tried to associate those people and their sorts to one factor (we called it A''), which turned out to be the only significant one.

No	Statement	Factor Scores A'' Unround	Round
5	[…] the heaviest impact food has on the environment, the most expensive it must be.	2.094	+4
33	SFC implies that every individual should make a personal effort […]	1.816	+4
30	Diversity [...] as rediscovering «forgotten» local products rather than […] exotic[…]	1.719	+3
7	SFC can be achieved through direct relationships between producers and consumers.	1.029	+3
8	Food cannot be compared to any other good. It has a particular character [...]	1.022	+3
29	In 2050, I'll mainly eat local products.	0.904	+2
18	Children should acquire knowledge and skills about food […] since primary school.	0.902	+2
27	According to me, food safety and food traceability are fundamental.	0.880	+2
24	Carefully preparing a meal is already enjoying it.	0.728	+2
12	[…] pay more attention to food expenses […] to buy […] strictly necessary.	0.719	+1
23	It is a pity to spoil good products by through inadequate preparation.	0.710	+1
1	A well functioning market suffices to guarantee sustainable food consumption […]	0.602	+1
13	The best place to get one's food should be the small local market […]	0.541	+1
37	In order to fully enjoy our food, it really matters to create a good atmosphere […]	0.529	+1
21	What really matters in food preparation methods is their impact on health.	0.519	+1
28	[...] food from tomorrow's SC will be completely different from today's[…]	0.317	0
19	[…]households should devote more time to preparing and cooking …	0.060	0
4	It is possible to enjoy as much freedom of choice in the context of SFC […]	0.037	0
14	SFC can be achieved through […] gastronomic-quality food and […]traditional food […]	-0.013	0
20	To be more environmentally efficient, meals should be prepared collectively […]	-0.088	0
22	In 2050, there will hardly remain any case of mismanagement of food […]	-0.105	0
26	[...] eat out more often […] if I knew the ecological footprint of my meal was lesser[…]	-0.170	0
32	In 2050, the food-processing industry will almost have entirely disappeared[…]]	-0.268	-1
17	SC doesn't necessarily imply a deeper knowledge of food and the way it can be prepared.	-0.324	-1
10	I would find it normal to have rationing tickets for products which are too harmful […]	-0.422	-1
25	In 2050, GMO's will be will be present in my everyday food[…]	-0.539	-1
2	Technological innovation […] important element for a sustainable food consumption.	-0.683	-1
11	The way I get my food is of little importance, as long as I can be sure the food is healthy.	-0.764	-1
3	[...] obtain his food through the easiest, the most anonymous way possible.	-0.864	-2
9	Both the production and the consumption of meat should be entrusted to the State.	-0.984	-2
31	In 2050, the main daily meal will be taken in canteens (at work, at schools, …) […]	-1.073	-2
34	One should only eat what is strictly necessary to a healthy diet […]	-1.112	-2
6	In 2050, the distinction between consumers and producers will have disappeared […]	-1.138	-3
35	It would be useful to have a device that would help to manage the food intake […]	-1.577	-3
16	In 2050, my kitchen will be minimally equipped; I will use it only to defreeze and […]	-1.597	-3
15	Pre-prepared meals are environmentally more efficient […]	-1.647	-4
36	In 2050, the distinction between food and medicines will almost have disappeared […]	-1.762	-4

Table 12: judgmental rotation (2)

Looking, in the table, at the nine first statements (with a rounded factor score between +4 and +2) and the nine last statements (factor scores between -4 and -2) and enlightening those elements thanks to the comments made by some respondents enables us to have a closer look to this 'mixed factor'.

At first sight, amongst the highly ranked statements, a majority seems to come from the Decommodification strategy. But, looking a little bit closer, one can notice that the place given to the market in Factor A'' is not so clear. Indeed, the most highly ranked statement comes from the EE strategy and proposes a regulation through the price system (statement 5, +4). Moreover, the sentence stating that a well-functioning market is able to ensure a sustainable consumption comes in a rather high place, on the middle-top part of the list (s1, +1). On the other hand, what is clearly rejected from the EE strategy (together with the use of technologies (s2, -1) and the efficiency of pre-prepared meals (s16, -3 and s15, -4), seen as cancelling the pleasure of preparing and cooking (s24, +2), cf. infra.) is the idea that the consumer should be able to obtain his food through the easiest, the most anonymous, and the least time-consuming way possible (s3, -2).

This reflexion about the market leads to have a closer look to the decommodification elements, as Factor A'' strongly agrees with the idea that food is not a mere commodity, but has even a sacred character (s8, +3). Yet, in some respondent's comments about this statement, this means that : *"L'alimentation est un droit, et, à la limite,* ***ne devrait pas relever du secteur marchand*** *"* or "*Voedsel heeft direct te maakt met het instandhouden van het leven en het mag net als water* ***geen puur koopwaar zijn***. *"*

Looking at other decommodification elements, one can notice that what is clearly «kept» from this strategy is the importance given to the local dimension (s30, +3), the rediscovery of forgotten species, the knowledge and the education about food (s30, +3 and s18, +2) but certainly not a possible intervention from the State (s9, -2 and, to a lesser extent -s10,-1) "*Nog meer Staat? Helemaal niet akkoord. Reguleren kan door prikkels of zware incentives te geven"*, a too active participation from the consumer in the production task (s6, -3) or the idea, maybe too 'collective' of eating the main meal at work or school (s31,-2): *"Le noyau familial et par conséquent les repas de famille constitueront toujours un des socles de la vie en communauté*"

Some respondents' comments appeared to be very enlightening in order to discover what can make the link between the eco-efficiency elements and the decommodification elements, and could be synthesized as follows: as far as sustainable consumption is concerned, every individual, thanks to the education he received (s18, +2), and guided by 'real prices' reflecting the external impacts of each product (s5, +4), has to make the choices of a responsible citizen-consumer.

About (s33, +4) : *"Chacun doit agir à tous les niveaux de la chaîne alimentaire, mais les consommateurs doivent aussi changer leur comportement…* ***avec des outils d'aide à la décision comme le prix vérité !*** *"* ; *" Duurzaamheid begint met* ***eigen verantwoordelikheid***. *"* ; «*Il faut avant tout que la consommation passe par des* ***choix conscients d'individus éduqués*** *"*

About (s3, -2) :*" Le côté anonyme est une très mauvaise idée, il ne permet pas une responsabilisation du consommateur. De plus, le fait d'obtenir sa nourriture le plus rapidement possible empêche le consommateur de* ***s'interroger sur ses choix et surtout de prendre du plaisir à faire son choix et finalement en toute connaissance de cause***. *Et pour cela, la facilité est un point important, le consommateur doit facilement* ***repérer les impacts environnementaux de son achat*** *(origine, mode de production, …) "*

Finally, as far as Sufficiency elements are concerned, one can easily notice that what is kept in the first instance is the 'hedonistic' dimension of the strategy. This appears as such in the high position of sentences such as "Carefully preparing a meal is already enjoying it" (s24, +2) or "In order to fully enjoy our food, it really matters to create a good atmosphere around eating moments (company, location, meals presentation …)" (s37, +1), but also indirectly in the reject of elements (technological device (s35, -3), food as medicine (s36, -4), health as an absolute priority (s34, -2), eating mostly pre-prepared meals (s16, -3 and s15, -4)) that could annihilate the pleasure in the acts of cooking and eating. This appears particularly when reading the comments of the respondents.

About (s34, -2): *" Eten moet ook lekker and plezierig zijn*" or "*Limiter le discours alimentaire à sa seule function nutritive et scientifique est un écueil à éviter. L'assiette est éminemment culturelle et*

sociale et est le reflet du fonctionnement de notre société. En outre, le goût et le plaisir sont nécessaires à l'appétit et à la fonction humaine et relationelle ! La santé est un facteur essentiel, mais à considérer de manière holistique et non nutritionnelle pure ".
About (s35, -3) : " *Et que fait-on de la qualité de vie, du plaisir gustatif, de la joie de goûter des saveurs variées ?* " or " *Les problèmes de santé devraient pouvoir se résoudre par une politique d'éducation mieux pensée, qui permet notamment aux êtres humains de mieux évaluer leurs besoins et de savoir comment y répondre en alliant par exemple plaisir et diététique.* "
About (s36, -4) : " *L'alimentation n'est pas un médicament mais doit rester un plaisir* ", " *Manger est et doit rester un plaisir* ", " *Voeding moet een plezier blijven* ".

7. CONCLUSIONS

Three main conclusions can be drawn from the whole *Q* exercise and analysis.

1. From the results, it is clear that the three strategies identified and developed through the scenarios (namely Eco-efficiency, Decommodification and Sufficiency) are obviously existing and operant in the representations of sustainable food consumption. Amongst our P-sample, groups of people that really 'think' one should follow either an EE, DC or S strategy in order to lead the future of food consumption towards more sustainability could be identified. This analysis therefore confirms that the performed scenario exercise is not pure fantasizing, but definitely has an anchorage into reality.
2. The first judgmental rotation enabled to highlight themes which garner either consensus or disagreement among the 3 strategies. Those can be potentially relevant to inform policy makers. Moreover, they will be precious tools to spark off debates and discussions on the occasion of the dissemination process. Finally, those themes and the discussions they raised will for sure be taken along in the development of the second phase.
3. Finally, the second judgmental rotation highlighted how the three strategies could possibly combine, i.e. on which elements people «belonging» to the three pure factors would probably agree if they had to find a common way of seeing the future of food consumption.

This statistical analysis highlights thus how the three strategies are actually a relevant way to classify the options towards sustainable food consumption. However, it also highlights the specificity of the sufficiency strategy, which is maybe less operant in people's mind. Further, sufficiency has been structured in the *Q* analysis (based on the results of the scenario workshops) as a combination of hedonistic and rational (health-oriented) perspective on food: it turned out that the first aspect is also quite significantly associated to the DC discourse (and the second, in a limited extent to the EE discourse). The specificity of the sufficiency, as it surfaces in this analysis, is a bigger acceptation of the finitude of the resources and of the necessity of limits, whatever through self-imposed or through external mechanisms of limitations. This position is clearly rejected in the EE discourse, and more or less not addressed (neutral) in the DC discourse. In this latter, the issue is not defined in terms of limitation, but rather in terms of responsibility, whether individual or collective; this can provide an explanation of the neutral position of the DC discourse with regard to state intervention considered as one answer among other levels of action (individual and community).

This supports the idea that, if, at first sight, one could think the three strategies could be associated to specific ideological trends, it appears from the ranking of the statements that the three strategies' discourses as outlined here cross transversally across ideological demarcation lines with e.g. the role of the individual quite spread across the three discourses, nevertheless coloured in different ways and

associated to different elements; or radical state intervention being clearly rejected in the EE discourse as expected, but neutral in the DC discourse, where one could have expected a high score.

The clearest point of agreement is the recognition by all of education as a fundamental aspect for sustainable consumption (giving statement 18 a high score: +3). Apart from this latter, it is interesting to note that the three groups only agree on issues with neutral scores, i.e. low stakes. Unlike the elements of disagreement which gather more 'extreme' scores. Thus one conclusion can be that, striving towards one integrated strategy will result in a supported but rather limited consensus. The integrated strategy resulting from the last statistical rotation can illustrate such a minimum consensus stating that individual, based on a robust and relevant education and guided by 'real prices' reflecting the external impacts of each product will have to make choices and behave as responsible citizen-consumers. Beyond this rather mainstream statement, deciders, on the one hand, will inevitably have to make political choices among contrasting options, but on the other hand, as promoted by system innovation theory, this results argue for the parallel development of various options stemming from diverging, but not antithetic, discourses, at least from the sustainable (food) consumption perspective.

Finally, beyond those thrilling findings, we would like to recall, with Donner, that *Q* methodology is, after all, "more explorative than confirmatory, more of an opener than a conclusion" (Donner 2001, 26). Therefore, the conclusions we drawn here can certainly not be considered as definitive conclusions, but only as supporting some hypotheses and opening the way towards further investigations and discussions.

III. REFLECTIONS AND CONCLUSIONS

Through the study of the scenario field and the implementation of a scenario exercise on food consumption, the Consentsus project aimed at exploring the consumption issue with regard to SD-governance tools, in our case scenario exercises in the wider context of transition management and system innovation.

The subsequent section presents the project's (first phase 2007-2008) conclusions. These are structured in two sections reflecting first on the feasibility and relevance of addressing consumption through scenario construction and specifically on the (re)interpretations which emerge for 'consumption' (III.A), and second, on the governance implications of addressing the consumption issue through scenario exercises (III.B).

A. THE RELATIVITY OF CONSUMPTION

Addressing consumption through scenarios proved 'technically' feasible, as illustrated through the Consentsus scenario exercise. While the consumption perspective generated some specific consequences for the construction process (see next section), a certain form of validation of the method is endorsed by the confirmation of the 'discursive' stability of the 3 strategies (and their narratives) obtained during the *Q*-methodology application. Looking at the issue of consumption, entails to notice that the very concept changes over the three different perspectives derived from the decomposition analysis. Consumption appears to be an equivocal concept when it is considered through alternative discourses of sustainable development.

In the eco-efficiency scenario, consumption remains to pertain to the purchase of commodities. Buying food products with money is necessary to stimulate the advance of 'efficient' markets. It is through 'consumer choice' that the market is re-oriented towards a greener production. Summarizing the consumer perspectives of this scenario, we suggest the term 'sovereign green consumer'. In the decommodification scenario, the centre of authority shifts towards 'local governance structures'. Consumption is not so clearly differentiated from production anymore and delineates a field that is much larger than the purchase of commodities. Through the local partnerships, both ownership on and care over the means of production are high and the consumer perspectives can be summarized with the term of 'citizen-entrepreneur'. In the sufficiency scenario the provision of food is organized on a needs-oriented level. Food is consumed and acquired by autonomous individuals. The consumption of food is considered as a practice that is to be framed in a larger project of wellbeing. Processed food and non-local food are still available but only when it offers a substantial benefit for the end-user. Summarizing the consumer perspectives the term 'reflexive practionist' is proposed.

This analysis of the scenarios is confirmed by the results of the *Q* methodology. Based on both strands of analysis, the specificity of the three strategies can also be termed as follow. In the eco-efficiency scenario, the belief lies in the human capacity to strive towards well-being and preserve the environment through institutions and a form of societal organization which is able to direct and regulate markets, and also through science and technological progress. The decommodification strategy seems to favour the notion of responsibility, of societal inclusiveness and active engagement,

while investing in community-based interventions. The specificity of sufficiency seems to be an acceptation of limitations with regard to the finitude of the world and of one's own needs, which highlights the belief in a (rational) human being who constantly is able to activate a highly reflexive behaviour. The referent of the understanding and underpinnings of 'consumption' is particularly different in each scenario. Holding in mind the discussion on language and ideology (see the section on 'addressing consumption'), the word 'consumption' implies and reinforces a different meaning in a different discourse. Foucault (1969) defines 'discourse' as the words or propositions (also called 'enouncements') that are currently used and which repeatedly constitute reproductive relationships between objects (the supermarket ...), subjects (consumer X with lifestyle Y ...) and other propositions. In this sense, the term 'consumption' will have highly alternative 'discoursal functions' within this web of (reproducing) interrelationships, hence potentially leading to very different possible realities. This leads us to consider the importance of the argument of how different starting points lead to alternative social arrangements. Systematically attaching specific meanings to words will create divergence in social reality. For example, in the S scenario, very likely, the word consumption would be used much more often in daily life conversations for it is assessed in terms of interpersonal wellbeing, where in the EE world, the word would only be used in specific contexts (be it marketers, researchers, policy makers, NGOs or other 'experts').

This important link to reality and the political sphere is all but easy to grasp, for the alternative meanings of 'consumption' – as they are framed in this project – are presented as a static snapshot when in fact they entail a multitude of highly complex societal evolutions and (in some instances) behavioural changes. Working for our own food, incorporating inter-personal wellbeing in our daily decisions or systematically internalizing externalities in business, each of these operationalisations of the three different 'objectives/strategies for sustainable consumption' implies a fundamental change in human organization and/or even behaviour. This reflection on language and discourse is not of mere academic interest but has very real implications for policy. Policy-making, here with regards to sustainable consumption, should take into account the implicit meanings of concepts and how they play a role in the construction of tools for consumption policy. Furthermore, the kind of discourse exercises that have been exerted in the Consentsus project can serve to guide such a reflexive process.

Paradoxically, the question rises whether the term consumption as such is the best concept to use when we aim to link the practices of obtaining, preparing and eating food with the objectives of sustainability. What we want to look at when addressing sustainability and consumption is not merely how to make current consumption practices more environmentally and socially acceptable, but how we can move towards less resource-intensive lifestyles which allow to 'maximize' wellbeing.

B. THE SPECIFICITY OF CONSUMPTION

Studying consumption through scenarios has also generated learning with regard to the implementation of transition management-like approaches to this specific issue. Shared vision building through scenarios is one of the first phases ascribed in this governance approach. Hereafter, we base on the mechanics of the constructed scenarios to draw insights with regard to the specificity of the consumption perspective (III.B.1) and finally draw conclusions in terms of outcomes of the whole scenario exercise (III.B.2).

1. ANALYSING CONSUMPTION ALONG THE SCENARIO BUILDING BLOCKS

In this section, following the strands elaborated in section I.A, the Consentsus scenario exercise is analyzed across five dimensions which have been identified as main characteristics of scenarios, i.e. the *building blocks*. In the following, the specificity of the consumption issue is presented through each of them.

FUTURE-ORIENTED THINKING

Addressing sustainable consumption has led to an original scenario construction approach in terms of modes of thinking and methods. Indeed, the Consentsus scenario exercise is a hybrid of normative and explorative modes of future-thinking. The approach addresses "*specific targets*" (the EE, DC and S worlds - however, leaving those targets rather undefined) and simultaneously initiates an *exploration* of the possible EE, DC and S worlds by asking the question *"what can happen if we follow the principles of each strategy?"*. An explorative mode of thinking was thus endorsed, but within a predetermined (normative) framework of driving forces, i.e. the three strategies. It is this pre-determined framework that affirms the normative character of the exercise. However, this 'normativity' of the exercise should be nuanced (1) by the fact that Consentsus is aiming at critically exploring each of the three strategies, without any overarching objective to attain particularly *sustainable* worlds as final images, and (2) by the fact that scenario exercises imply necessarily a certain degree of 'normativity', even in the very traditional explorative scenarios (for instance when selecting the driving forces of the system under study).
One of the differences between our hybrid approach and classic explorative scenarios is that, in this latter, there are no pre-determined driving forces and that the subjective and normative dimensions in the selection of the '*most important and uncertain*' variables (e.g. performed through brainstorming or Delphi exercises) is legitimated by the participation of experts and/or stakeholders. In the Consentsus exercise, this form of participatory legitimisation has not been addressed within the process nor with the participants. The choice has been made to rather support the credibility and salience of the exercise on the basis of sustainable consumption literature (i.e. consolidated peer-reviewed knowledge), which highlighted - through decomposition analysis - a scenario approach based along three strategies.

The Consentsus approach shows a second specificity with respect to traditional explorative scenario exercises. Consentsus used the scenario process as a simulator with regard to pre-determined uncertainties and driving forces, rather than as a revelator of those 'most important and uncertain' variables. What is 'revealed' however, are the underlying assumptions associated to each of the three strategies and moreover the possible and plausible multiplicity of perspectives which coexist on the issue of sustainable food consumption. In the end, the Consentsus approach fruitfully highlights the ambivalence of SD.

On another level of observation, it is interesting to analyze the nature of the 'futuristic' and intuitive ideas, which were identified during the scenario workshops (like edible packaging, local community barter systems, a technological device measuring food intake…). It is not that these ideas as such were really innovative but their relevance is related to the different strategies and how the same ideas are coloured differently in each scenario. Simultaneously, while these examples of practices are put forward to illustrate the life in the EE, DC and S worlds within a time horizon of 50 years, these very same practices prove in fact to be deeply linked to present and historical references. For example, the main reference (used in the scenario exercise) when exploring non-market policy options remains the very negatively connoted communist practice in the soviet countries' block. All the same, the most futuristic elements which could be depicted are actually 'seeds of change' which really are already

today on the drawing tables of industry or policy makers. For instance, in linkage to the EE scenario, a current architecture realization in Leuven[21] (Belgium) proposing apartments with minimized kitchens and with external delivery boxes for food has been reported by a participant at the feedback meeting. Such anecdotic but recurrent information confirms, as initially acknowledged, that scenario construction is more about how ideas are re-structured, than about 'creating future knowledge'.

COLLECTING AND INTEGRATING INFORMATION

The decomposition analysis and the three strategies are the results of a synthesis of sustainable consumption literature and succeeded in the integration/disintegration of the various information related to sustainable consumption discourses. However, the Consentsus scenario process also highlighted consumption as being a very wide field of investigation without clear and precise boundaries. Indeed, collecting information on *food* consumption turned out to be highly demanding. It requires researching a vast array of topics and sources of information: from meat consumption, to vegetarianism practices, through artificial meat and protein drinks; from agriculture to marketing, through sociology and psychology; from international organizations to national and local data providers. Connecting and integrating these different types of information is obviously necessary, for example, when studying alternative consumption practices (like vegetarianism), and implies to take into account various levels of analysis. Applying the three strategy-discourses resulted in providing some order to integrating these different strands of information.

Furthermore, *Q*-methodology was an attempt to reach another level of integration of the collected information, namely the configuration of an integrated strategy for sustainable consumption based on the entire set of ideas and perspectives generated during the scenario exercise. The analysis has delivered hints towards the integration of the different perspectives through highlighting connections and disjunctions among them.

SYSTEM THINKING

From a *production* point of view, the delineation between production and consumption seems robust and leads to study a rather closed system, from raw material to final product. Often studied from an economic and environmental resources-oriented stance, addressing production also implies the use of rather formalized analytical frameworks, such as Life Cycle Analysis, which endorse a traditional form of system thinking.
However, endorsing the *consumption* perspective, the distinction between production moments and consumption prerogatives suddenly appears blurred. Thinking in terms of consumption asks to open up the investigation field to a vast array of societal and individual practices based on habits, values, standard of living …, which as such are mirrored in the production and distribution processes and, hence, ask to widen the perspective taken to the entire chain of production-distribution-consumption.

As a consequence, consumption is composed of these various aspects along the production-distribution-consumption line which are grounded in different sectors and disciplines. Consumption is moreover difficult to apprehend because of the lack of a stabilized analytical multi-disciplinary, multi-sector, multi-actor framework. As a reaction to this situation, the Consentsus research processes mobilized multiple frameworks, e.g.:

- the '*micro-meso-macro'* framework composed individual needs and resources, modes of provision and social values, norms and meanings associated to the current food system (Boulanger, 2007, Annex 1);

[21] www.tweewaters.be

- the multi-level perspective composed *landscape* (i.e. contextual environment), *regime* (i.e. dominant structures) and *niches* (i.e. alternative innovative elements); stemming from system innovation and transition theory it has structured the diagnosis of the current state of food consumption; and
- the STEEP(D) framework (Socio-cultural, technological, economic, environmental, political and demographical aspects) has framed the brainstorming on the contextual environment of the three scenarios.

These three frameworks were in fact aiming to take into account the food system as a whole in order to avoid undermining one aspect of the system, but did not really lead to systemic analysis across sub-dimensions in the sense of pinpointing specific interrelations between precise variables. The same restriction applies to the POPED framework which was mobilized at a more practical level of analysis. The POPED framework structured the scenario construction process as such, starting with the first participative workshop through to the steps of writing the narratives. POPED highlighted the different steps of the food chain from *production* to *discard* (through *processing*, *distribution*, *preparing* and *eating*). The POPED framework proved effective in the construction of a lively image of food consumption along the strategies. However, in an exercise focusing on consumption, it might have been more adequate to decompose further the consumption moment as such, instead of presenting a categorization where *production* and *distribution* aspects were on the same level as *preparation* and *eating*.

Studying consumption from a systemic point of view implied difficulties with regard to drawing clear boundaries around a 'food consumption system'. Combined to the multiplicity of perspectives on consumption, understanding and exploring the final act of consuming opens a whole world of knowledge and potential interrelations.

STORY-LIKE APPROACH

The story like approach, i.e. the elaboration of the scenarios, has been divided in the Consentsus exercise between (1) the elaboration of the three images as a synthesis of the workshops' brainstorming sessions (see Annex A), and (2) the writing of narratives to illustrate the EE, DC and S worlds through daily life stories (see Annex B).

The elaboration of the images and the writing of the narratives proved useful to highlight and correct some problems in the developed EE, DC or S worlds such as a certain amount of lack of coherence or blind spots in the 'mechanics of the worlds'. However, some of the incoherencies or imprecision could not be solved in the context of this exercise; for instance, in the DC scenario there remains a blind spot as to the configuration and operationalisation of the coordination mechanism which will help that demand and offer for food are met. On the other hand, the 'writing' moments can be considered as 'learning' moments, complementing the theoretical research and brainstorming phases with new ideas and linkages to feed the scenarios.

DIALOGUE INTERFACE

As a consequence of the difficulty to draw clear boundaries around a 'food consumption system', selecting participants implied to target actors from a variety of sectors, i.e. to favour diversity. From a basic point of view, and like any participative meeting, the scenario workshops allowed of course for interpersonal dialogue. Independently of the consumption perspective, the research nature of the project had implications on this aspect.

Scenario exercises have the potential to be 'boundary organizations' (in their procedural reading) or to generate 'boundary objects' (in their substantive reading). This means that - as other policy-making tools such as indicators for SD or participative evaluation processes - scenarios can act "*as interfaces between a series of interconnected arenas*" (Bauler, 2007, p.161) such as policy, science, society. For example, '*Limits to growth'*, the Meadows&Meadows report of the *Club of Rome* in 1972, has reached the level of boundary object as it became not only a scientific or policy reference, but succeeded in highlighting and linking together different types of discourses generating a number of debates at the societal level. Parallel to the first image of the Earth from space and the oil shocks, this report did help to change the way people in general were looking at resources (as infinite) and pollution (as always digestible by the ecosystem) in the 1970s.

The generation of such 'boundary objects' is highly contingent in general and can probably not be expected from a research project. Consentsus was a rather experimental project with scientific objectives. Despite a participative phase, the project was not driven by societal goals and did not invest in linking with the political sphere. This rather implicit stance has been clearly reaffirmed for the second phase, shifting the attention from an experimentation with a transition management process to researching the specificity of consumption when applied to system innovation and transition theory.

*

The issue of sustainable consumption is a specific topic of research when it comes to study it through systemic-oriented tools and approaches as is illustrated through this scenario exercise and as can be extrapolated to the implementation of a transition management process on consumption patterns. The specificities of consumption highlighted here revolve, among others, around the difficult closure of a 'consumption system'. This observation contributes to support the change of accent for the second phase of the project, from the 'small-scaled' experimentation of a transition management process to a study of the wider field of system innovation and transition theory including the role that consumers and their daily practices play in system innovation.

2. THE OUTCOMES OF THE CONSENTSUS SCENARIO EXERCISE

The theoretical framework presented at the beginning of this report (Section I.A) develops on the five building blocks (used in III.B.1 to present the specificities related to the consumption issue), but also on two generic scenario outcomes: learning and strategizing. Learning has been interpreted here as a conceptual type of 'use'. Strategising pertains to an instrumental, direct type of 'use' (see Section I.A). In this final section, conclusions are drawn with regard to these potential outcomes and uses of the Consentsus scenario exercise on sustainable food consumption.

LEARNING

Learning, as conceptual use, implies that scenarios can influence a user's understanding of a problem or situation, even if the information is not used to base decisions in a direct way (Hezri, 2006, pp.134-137). Learning processes are disaggregated in different types: ***first order learning*** (facts and causal logics) and ***higher order learning*** (with regard to problem definitions, norms, values, goals and convictions of actors, as well as approaches how to solve the problem). Higher order learning also includes ***congruent learning***, i.e. the fact that the scenario exercise generates a shared understanding of the issue at hand.

It appeared difficult, in practice, to draw the line between ***first*** and ***higher order learning***. One cannot say that 'new' factual information has been generated through this exercise. The main information for the participants was linked to the three strategies, their logic and driving forces. For the participants and potential users, this presentation of sustainable consumption is a novelty potentially contributing to structure their understanding of sustainable consumption-oriented information and actions.

This and further insights on consumer perspectives (presented in section II.A.4 and synthesized in the first concluding section III.A) can be related to ***higher order learning***, i.e. the influence of the scenario exercise on underlying assumptions, norms and beliefs around sustainable food consumption. Indeed, among the three strategies, eco-efficiency is rather well known. 'Discovering' the two other sustainable consumption strategies is already changing the definition of the problem related to consumption and opening up the panorama towards other perspectives on consumption. It is not that the participants did not have heard about, or even, for some of them, worked with approaches, measures or actions related to decommodification or sufficiency, but those were not part of a clear structures decomposition of sustainable consumption as such. Where the scenario process has an added value, is that working on the construction of images based on the three strategies contributed for the participants to get familiarized with these, at the start, rather theoretical approaches to sustainable consumption and to make them concrete with regard e.g. to daily life practices.

In terms of ***congruent learning***, i.e. of convergence between the participants, few elements could be observed. The participants did get along during the workshops, but did not report on creation of 'networking outputs'. Moreover, the Consentsus scenario exercise, as acknowledged in the above discussion of scenarios as '*dialogue interfaces'*, did not aim at a societal objective, e.g. of creating common and shared vision of the future for further policy actions.
In fact, the chosen approach probably generated a low level of ownership with regard to the constructed scenarios. On the one hand, this is due to the pre-determined starting point of the exercise based on the three strategies, which tended to restrict or canalize the participants' creativity in a direction they did not chose. On the other hand, the exploration of the strategies from a maximization perspective (without specific requirements in terms of sustainability criteria) did not produce *desirable* scenarios, which is of course not favourable to the creation of shared guiding visions for action building.

Still, the exercise contributed to create a common ground of understanding with regard to sustainable consumption. This type of shared understanding could constitute a starting point for discussion and debates around options towards sustainable consumption. Such a shared starting point could potentially avoid clashes between divergent options stemming from these strategies and thus facilitate potential forthcoming processes of action planning. But this remains to be experimented outside of a research context.

STRATEGIZING

Our approach to scenario building does not yield what could be called direct instrumental results within strategy-development, in the sense of e.g. the elaboration of precise 'external' scenarios against which strategies could be assessed in terms of robustness or adaptability, or as a normative desirable vision along which to plan policy actions and measures. Nevertheless, these three scenarios have led to learning points that could be valuable in a policy context through the consumer perspectives and the *Q*-methodology, leading to relevant information on the way to integrate the three strategies.

In a sense, the *Q*-methodology has been used to realize an open-ended sustainability assessment of the scenarios. Based on the illustrations of the three strategies developed within the scenarios, participants

ranked statements with regard to their own definition of sustainable food consumption, so inducing a mapping of the societal values present in the sample. The *Q* analysis did not point out integrated scenario(s) which could have led to concrete policy options. Rather it has confirmed the existence of three perspectives on sustainable consumption within the federal sustainability actors of variable stakeholder backgrounds, as well as elements of junction and disjunction among them.

The outcomes of this scenario exercise could in fact rather be labelled '*policy-relevant learning'* and '*action-oriented use'*. Indeed, the original scenario approach developed in Consentsus, based on the three strategies, appears as a communication and 'challenging' tool when it comes to the various perspectives on sustainable consumption. It could be further used as starting point to organize discussions and debate with stakeholders around sustainable consumption in other fields than food consumption, notably because the strategies' ratios work with general macro-economic identities.

The discussions and reflections around the three strategies and their concrete illustrations through potential images of daily life practices could contribute to redefine the sustainable answers to food-related issues taking into account, not only the drivers of an eco-efficiency scenario, i.e. technological and market-oriented answers (intelligent fridge, GMOs etc.), but also the potential of SD lying in the DC and S drivers, i.e. within the civil society and the community (be it local or global) and within the reflexive stance with regards to the effective needs and limitations of individuals and societies. This could sound trivial with regard to the current state of knowledge within the scientific and stakeholders' communities working with such sustainability issues, but discussions with participants and beyond clearly indicate that this perspective is not widely spread.
Concretely, if some elements stemming from the decommodification and sufficiency strategies are starting to reach political arenas (e.g. the degrowth discourse, short food circuits…), it is mainly the 'eco-efficiency' strategy that is explicitly present and given the necessary credibility in political arenas so far. Such an exercise, could be one way not only to inform relevant stakeholders about this tri-folded approach to sustainable consumption, but to really make it part of their personal understanding of the consumption issue as a starting point for further debate and policy action.

*

Through the three scenarios and the construction process, we can see how scenario exercises provide a framework towards simplification and complexification. They provide a general overview of the consumption dimension, and moreover, they highlight the complexity of the issue in terms of multiplicity of perspectives and rationalities. Particularly in SD policy-making, it is important to be aware of the ambivalence of objectives and values implied in the now widely used expression of 'sustainable consumption'. The Consentsus scenario exercise illustrates, not so much, the use of scenarios to reveal uncertainties, but rather to re-emphasize the normative dimension of sustainability issues. Such 'problems' require scientific as well as factual answers, but moreover necessitate to highlight the diverse rationalities at stake in sustainable consumption through presenting and questioning those perspectives and the underlying values and assumptions. This type of approach contributes to question the quest of scientific a-contextual truth when the question is, in the strict sense, political and in the wider sense, societal.

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SCENARIOS

INTRODUCTION

With this scenario approach of the three strategies, we are not aiming at forecasting 'The' most probable world, nor even the most probable way DC, EE or S strategies could materialize. We want to script one possible DC, EE or S 'world' among others, in order to highlight different issues and debate questions that arose from these strategies. The narratives are vehicles to explore the three strategies, to make them more concrete and highlight the various strengths and weaknesses that are implied in these three different approaches to sustainable consumption.

Infra, we present two types of scenario products; both are final state (synchronic) scenarios.

The 'images' of three 2050 world are the first product of the scenario construction. They are the result of a work of synthesis and of generating coherence, starting from the ideas generated during the workshops up to descriptive account of the contours and main characteristics of three potential worlds, *when great efforts and funds are devoted to the EE, DC or S strategy over the next decennia.*

The final scenarios are further 'fletching out' the images to give them a livelier dimension. The images were descriptions; the narratives are 'illustrations'. Those latter are specific stories featuring typical characters in daily life facing practical typical aspects of each EE, DC and S 'worlds'.

A. IMAGES OF THREE WORLDS OF FOOD CONSUMPTION

1. AN EXAMPLE OF ECO-EFFICIENT WORLD IN 2050

In the Eco-efficiency world, food is produced through three co-existing types of agriculture (conventional, organic and new industrial), all being highly efficient thanks to hi-tech "precision agriculture" techniques. Indeed, GPS, sensors, satellites or aerial images, information management tools, …, are used to evaluate sowing density, to estimate inputs needs, and to predict crop yields, which allows both to enhance the efficiency of organic agriculture and to reduce the environmental impacts of conventional agriculture. Whilst organic agriculture is mainly devoted to the culture of seasonal and local species (especially those whose impacts on the environment are the heaviest), local GMO's culture makes it possible to meet the consumers' demand for products from all origins and seasons, all year round, without requiring an excessive amount of energy (e.g. due to transport). Since everything can thus be locally grown, there are no more major imports of food as such, although still a kind of international trade exists through a system of patents and royalties on certain "traditional" local products and recipes (e.g. Belgium has to pay royalties to Greece for producing feta cheese, …).

People thus have an enormous freedom in choosing food. In fact, almost any kind of food is available (fruits, vegetables, cereals, …) with a nuance, though, concerning meat products. Cattle (issued from a selection of the species that produce least methane) are bred in a limited quantity, which makes meat very expensive and therefore considered as a luxury product. It is largely replaced by protein substitutes (produced in laboratories), that are given flavours, shapes, colours and textures that make them look like, and "taste like" real meat. Other kinds of protein "pasta" or bars, replacing any kind of food, are available, but their use is still limited to special situations and diets.

In the Eco-efficient world, the food economy is for the most part a food services economy, answering the consumers demand for high convenience. Primary foodstuffs are processed by big industries (auto-sufficient in terms of energy, e.g. thanks to a process of biomethanization), that produce a whole range of already prepared meals. These meals are designed by nutritionists and marketing professionals in order to meet the specific needs and desires of different kinds of people, in terms of age, gender, budget, but also professional activities and hobbies, i.e. according to their lifestyles. The meals can be ordered by internet. Local delivery systems are organized, following a market division principle (the delivery companies make agreements to stay out of each other's way and reduce competition in the agreed-upon areas) or they compete on basis of prices where all external costs are internalized: the most eco-efficient delivery systems can offer the lowest prices to the consumer.

Some houses are equipped with a "mailbox fridge", integrated into the house (a door outside, and another one in the kitchen), where the food can directly be delivered. The households that do not own such a fridge can take their food from the neighbourhood larder, which also has a function of "displaying" the food: there, new products can be touched, smelled, tasted, …

When people are not at work or at school – where they eat in canteens the meals they can order by internet beforehand – people often eat out in restaurants , some of which are specialised in one or another kind of specific diet (e.g. restaurants for sportsmen, …). However, in general people still eat at home, but usually, they do not prepare anything. Most of the time, the food is deep-frozen, ready to (h)eat, and the fresh products are all ready to eat. The kitchens are thus minimally equipped: most often, the devices consist only in an intelligent fridge/deep-freezer ("mailbox" or not) and an elaborated kind of "micro-wave".

While most of the people do not cook, there are some exceptions. Firstly, on certain occasions, people have the possibility to rent "cooking modules" which include, on consumer's request, ingredients, recipes, cooking lessons with a teacher, and sometimes even specific devices (barbecues modules, for example, are very appreciated during the summer time.) Secondly, people who really want to cook can still choose a kitchen equipped with more facilities, which allow them to prepare food on their own. However, to acquire such equipment their house must be certified as completely auto-sufficient in terms of energy.

In the EE world, food waste is reduced to a minimum, since each meal consists of one prepared portion, calculated by nutritionists to fit at best the needs of each consumer. In case there are still rests, those are "biomethanized", either by the household itself when it is equipped for this kind of operation, or by the processing factories that collect them back. As for the packing supplies, they are minimal as well. They are eatable, "biomethanizable", or reusable, and in the latter cases, are also collected back by the industries, the value of those being deduced from the cost of the next delivery.

The eco-efficient world is a highly technological world. Technology is present at every step of the food chain, from production (in precision agriculture, bio-engineering, laboratory food, …) to ordering (the use of internet is totally generalized, food can be ordered directly from the fridge, from personal computers, but also from mobile devices, at any time, from anywhere), to delivery (since external costs are internalized, the competition between the delivery firms contributes to make transport more and more efficient, and to find innovative ways to deliver food eco-efficiently), to "preparation" (even if the devices in the kitchen are minimal, they are hi-tech), to discard (techniques of biomethanization, recycling, …). In general, sciences and technologies are highly legitimate in this world, and huge investments are put into the research and development field. Not only the food chain is made eco-efficient, but any component of the daily life, such as housing, mobility,… which requires constant technological innovations.

Most people live in high-density urban areas. There are still different kinds of housing, but the preference is given to the most efficient type: dense living arrangements, such as buildings, or residential blocks, each being a single point for food delivery. The countryside is mainly left to agriculture and leisure activities.

The EE world also supposes a particular relation to nature: on the one hand, there is a huge distance between people and nature, be it only because people eat mainly already prepared meals (sometimes containing GMO's or proteins substitutes produced in laboratories), and thus no longer have any direct contact with the natural ingredients. On the other hand, the high convenience offered by a services economy allows people to have more free time, that they mainly devote to leisure activities, often in the countryside.

The EE world is essentially a market-driven world. Yet, the government still has a role to play in the definition of certain norms and rules about the products and the production, as well as in providing the right incentives through taxes, subsidies, etc.

2. AN EXAMPLE OF DECOMMODIFIED WORLD IN 2050

In this 2050 DC world, most people eat local and seasonal food produced by a local community-based and communally managed agriculture and food system. The preparation of the food and meals is for an important part the responsibility of a communal and collective organization, and amongst others, schools and universities have also a crucial role to play. Indeed, an important part of the food system is managed through a communal coordination structure (including the Local Menu Working Groups, food teams, local collective kitchens, etc.) which decides, in each local community, through citizens-based peer to peer networks, what has to be grown, and thus also what is available. Local communities are required to grow enough food to ensure a minimum nutritional intake for their population. The agriculture methods are not necessarily organic, but they have to fit within the respect for life and carrying capacity at the local level. Agriculture is partly based on urban farming, which includes new city infrastructures (like e.g. multiple floor passive building functioning as greenhouses with a pig or hen shed on the upper floor). Part of the food also comes from the orchard production in the neighbourhood: people who have a private garden use part of it to grow food by themselves or through a "neighbourhood farmers' service" (e.g. for elderly people). Another part of the production is centralized at a higher level: e.g. the fields of wheat and other cereals are owned by the state, which than redistribute it towards local communities and small processing structures.

Beyond this focus on local production and consumption, communities have built a monitoring system aiming at exchanging or sharing the surplus when necessary and thus avoid localised food shortages around the region and further (country, ...). The result of this system is that exports and imports tend to be limited to an efficient management of foodstuffs (e.g. no more export of local beef parallel to import of Irish beef for example). Each local community is more or less self sufficient in terms of food supply, without being too specialised. However certain regions, due to land quality for example, cannot grow the same diversity of fruits and vegetables as others. Those regions benefit from the regulation system at the upper scale (regional, national, etc.), exchanging e.g. meat products from the Ardennes against cereals and vegetables coming from fertile grounds of Hesbaye.

This system of regulation and exchange also contributes to the diversity of the available products, giving access e.g. to some exotic products not producible at the local level. Indeed, some people complain that this organization reduces the choice in terms of food products and menus. However, local and seasonal food does not per se mean less diversity, and some communal institutions are dedicated to reflect on the way to guarantee a "reasonable choice", e.g. through investing in 'forgotten' local species, also contributing to revitalize the local biodiversity. Through this, the local production gets in fact more diversified. However, indeed, the menus are less 'exotic' than today, and may seem monotonous to some people as the diversity materializes in various species of e.g. apples, cabbages, potatoes, etc. rather than in diverse species from around the globe.

It is the Local Menu Working Group which estimates the food needs of the local community and plans the production in function of it. Food is then centralised at the local level and, for an important part, prepared in centralised kitchens which provide complete meals to any citizen and household who asks for it. The other part of the locally produced food is distributed to households that ask for it at specific hubs, like schools or workplaces (one can get his share of the harvest when e.g. taking his/her kids to or from school).

So it happens that people prepare their own food in the collective kitchen, but most people regularly eat complete meals provided by the communal organisation through local collective kitchens. The meals can be eaten in the collective kitchen dinner room or taken home to be eaten or first heated in the soft kitchen equipped minimally (just a 'smart microwave'). Some people even

don't have any kitchen's equipment at all, as meals are usually still hot when coming back from the local kitchen.

Delivery (and collecting) systems are also organised for the neighbourhood home grown/prepared food. Furthermore, organizations as schools, universities and residential centers – places where any kind of people live, single and families, but with a higher proportion of students, elderly people, disabled people, etc. – play a specific role in the preparation of part of the food (like cakes, jam and marmalade, juices, alcohol, etc.).

As food production is carefully planned, people try to avoid wasting food as much as possible. Food waste joins the other organic waste to be transformed into compost and used as fertilizer.

This world is decommodified, which means that the market structures and the profit driven logic have regressed and given place to a more needs-driven society, based on rights and duties. Indeed, every inhabitant of the area participates in one way or another to the system of food production or to the redistribution and preparation and general management of food. This participation entails them to receive part of the harvest and preparations. The DC world thus relies on an agriculture of non professional 'workers'. Most people have a regular job, but their work schedules are rather different than what we knew in 2008 and quite flexible with regard to the communal tasks each one has to take care of. This type of organization is also made possible because food holds an important place in the schools and universities programs. Every child and then student is provided with the basic knowledge in agriculture, and later in food management and technological aspects of the production.

This DC world is characterized by a double focus. People, through education and a high level of involvement in their local community, give importance to their close networks of relationships and have a strong local identity. However, they also develop a sense of global citizenship, amongst other things through the knowledge they get of other cultures during the traditional one year 'international food service' that each citizen does before his/her 25th birthday. This combination of local belonging with global awareness foster the values of cooperation, solidarity and trust which are central in the education of children. This also appear in the political structures. On the one side, political structures heavily rely on bottom-up coordination mechanisms in citizens councils, set up from local to global level. But on the other side, some strongly centralized administrations are responsible, amongst other things, for taking urgent decisions when necessary. They remain however directly accountable to the citizens' councils. For these coordination mechanisms to be possible and efficient, ICT infrastructures are crucial: e.g. needs assessment of each local community, management of the production and coordination of the distribution cannot be managed without them. They are also useful for the control of demography (birth rates, migrations, etc.). Indeed, the size of the communities has to fit with the local carrying capacities. People in this DC world are quite caring about their environment as the local food supply relies on its protection against pollution, overexploitation, water shortages and or drought.

3. AN EXAMPLE OF SUFFICIENT WORLD IN 2050

In the Sufficiency world, a culture has emerged characterized by an increased awareness and knowledge of needs satisfaction and moderation. Sufficiency has evolved from an idea towards a societal principle. To apprehend what it is to be, have, do, make,... enough has become a dominant driver in the daily routines of behavior. Norms and values – present in both people and in institutions – are reframed on the basis of a new set of principles linked to the sufficiency strategy. Influenced by this cultural as well as socio-economic re-orientation, important governmental bodies reacted and contributed to a radical shift: maximum per capita resource consumption has become a leading principle in devising policies. In parallel, research focuses on

how to tackle the problem of finding a reasonable, qualitative and quantifiable definition of 'sufficiency' and 'overconsumption'. At which point can we reasonably say that needs become wants? Education curricula are enriched with the dynamics of limit research.

Market oriented measures made business become more accountable, external costs are internalized. Initially, this led to numerous problems, one of them being the collapse of energy-intensive domains such as the meat sector. Nonetheless this was a necessary part of the process of value re-orientation on use quality linked to environmental impact. This process also led to restructured price mechanisms. People are used to a relative high share of the household budget for food expenditure.

Because food intensification in the food sector has gone through a process of de-growth (based on operational principles such as the precautionary principle and eco-sufficiency) there is a new need for self-sufficiency in the form of home grown and urban agriculture. The average consumer will only buy food from the shops when it is of superior quality or when it is impossible to grow it at home (for example exotic food, or some type of neutraceuticals).

The federal policy of national sufficiency affairs has implemented an agro-service of 10 months. In times of food crises the population needs to be prepared. Earth capacity management and efficient agriculture techniques are two of the main fundaments. An underlying principle is the importance of identification of the consumer with the work, time and energy that is involved in food production. This principle and all its implications has been the focus of societal debate, yet it has without doubt resulted in an increased awareness of the food chain.

It is striking to observe that three different perspectives on sufficiency are dominant in society. A first distinctive group adheres to a rational approach, making use of scientific knowledge to assess sufficiency. Secondly, there is a more cultural and traditional-oriented approach where hedonistic values are promoted to stimulate sufficiency lifestyles. Finally, a particular group of people define sufficiency on spiritual grounds. We take a closer look at what these outlooks imply for the food practices.

For the rational group, science is a guide and mentor. Research and Development has re-oriented its focus: instead of finding new ways to fulfill the needs of consumers, they want to find new ways to enhance need-management. This area which used to be restricted to philosophy and psychology (what are my real needs, how can I know myself, ...) is now also approached from a technological perspective. A whole array of applications are designed in order support the self-management of the individual. Sufficiency-innovations are achieved in all kinds of areas and sectors,. In the nutritional sector, measuring devices for analyzing food intake are very popular. Here, food intake is rationalized by taking into account limits linked to health (i.e. everyday Kcal use, combinations of food, chewing rate related to digestion, etc.) and (when possible) environmental safety (used energy, water, soil fertility, pollution, etc.). There are two fundamentally different ways of using the device. First, as a mere informational device informing the consumer when (and why) nutritional limits are exceeded, the consumer is free to judge whether he crosses that limit or not. A second type of use makes a voluntary paternalism possible: the consumer willingly agrees (for a period of time) to make it physically impossible for him to engage in eating behavior considered to be unhealthy. This has helped a lot of people to deal with forms of compulsive consumption. Nonetheless a lot of people are disgusted by the idea of what some call 'a chip in the belly' because it conflicts with aspects of freedom and privacy. Questions are raised whether 'non-rational', cultural aspects of eating will not be replaced by standardized patterns. This critique is often countered by referring to the possibility of freely self-defining the boundaries in which one engages. The possibility to respect cultural criteria remains. Integrating cultural criteria into the measuring device is even considered possible.

Another specific societal group has a completely different approach to steering adequate self-regulation. Their slogans are 'bite less chew more' and 'quality over quantity': this group states that

by promoting and stimulating the feelings of pleasure while eating, it becomes easier to reduce overall quantity as well as the intake of food categories with a high environmental impact. Exemplary is the custom of drinking a very high quality wine, yet only a small glass, once in a while, when it can be 'afforded'. Some hedonistic groups organize something similar to the South-American 'Churrasco' (to have all different kinds of meat at the same time) to savor and taste the diversity of any animal and experience the affluence of eating. When these people go shopping for food it is to be a hedonistic experience: goods are selected with utter care and precision, tasting and smell sessions are considered an absolute necessity.

A minority in Belgium approaches the sufficiency principle on basis of ethico-spiritual grounds. Temperance and moderation are considered essential in the leading of a good life. Some typical western values such as the division between man/nature, the obsession with prolonging life and health and the isolation of all signs of death are profoundly criticized. Working the land is considered as sacral, so any form of over-use or intensification is considered malicious. Agriculture, eating and disposal is accompanied by rituals. Spilling food is considered a taboo: frequently potlatches are organized to eat up food remains. Occurrences where food is seen to be thrown away have led to (sometimes even violent) conflicts.

Every nation deals in its own way with the governing rule of sufficiency. Needs are adapted to available limits, spiritual enrichment serves as a surrogate for forms of deprivation. Yet, certain countries don't engage in the sufficiency strategy and act as free-riders in relation to the use of the earth (what is saved by one nation is used by another). This forms a fundamental problem; does sufficiency only work when everybody works along?

B. SCENARIOS (NARRATIVES)

1. "ECO-EFFICIENCY" SCENARIO (FRENCH)

Elle m'a quitté… Je n'ai plus faim. Cela fait trois jours maintenant que je ne peux presque plus rien avaler. Trois jours que mon frigo, alarmé, m'informe que lui aussi a le ventre vide et qu'il déploie toute son inventivité pour me proposer de commander les mets les plus variés, raffinés, originaux, … Trois jours qu'il farfouille dans sa base de données pour tenter de comprendre où ça a court-circuité. M'aurait-il proposé trop de plats à base de tomates ces derniers temps ? En aurais-je eu marre de ces substituts protéinés qui remplacent la viande, hors de prix, et voudrais-je m'offrir, pour une fois, le luxe d'un steak pur bœuf ? (Une rapide vérification de mon compte en banque a suffi pour lui en faire abandonner l'idée) Serais-je en recherche de davantage d'exotisme alors? La Belgique vient justement d'acheter à l'Inde les droits d'utilisation de la recette brevetée du poulet tandoori, ainsi que les droits de fabrication des ingrédients qui la composent, élargissant la gamme « world » du catalogue des plats préparés sur nourritureonlinevoedsel.be… Mais peut-être bouderais-je les plats pré-cuisinés de toutes sortes, sans distinction, parce que je manquerais de fruits frais ? C'est vrai qu'en cette saison ils ne sont pas légion dans la région, et le fidèle appareil a bien enregistré que je les préférais non génétiquement modifiés…
D'ailleurs, quand j'y pense, depuis ma première commande à partir de ce réfrigérateur, c'est-à-dire depuis que j'ai emménagé ici, avec elle, j'ai…
…oh……emménagé…le frigo… avec elle…
Ce souvenir…
Elle était fantaisiste. C'est pour ça qu'entre toutes, je l'avais choisie. C'est pour ça que je l'aimais. Quand nous avons emménagé ensemble, elle a exigé que je lui fasse passer le seuil

de la maison, non pas par la porte d'entrée, mais par la porte extérieure du frigo, celle qui, intégrée à notre façade, facilite la livraison.
Mais je perds le fil de mes idées… que disais-je… Oui, c'est cela… Depuis ce jour béni où le frigo nous a « accouchés » dans la cuisine, elle et moi, il ne m'est arrivé qu'une ou deux fois seulement de consommer des fruits qui ne soient pas d'origine locale. La première fois, je ne les avais même pas achetés, mais j'avais accepté le panier offert, pour fêter sa toute récente implantation dans le quartier, par la firme « BaNaNaNas », dont la spécialité est la culture de ce fruit hybride issu du croisement entre banane et ananas, très apprécié ici.
La deuxième fois, emporté par un élan de romantisme, j'avais commandé… des fruits de la passion. Bon, je les avais choisis à cause de leur nom, d'accord, mais je n'avais quand même pas osé pousser le kitsch au point de les commander en forme de cœur...
Depuis, je n'avais pas réitéré l'expérience. Ces fruits lui avaient paru sucrés à souhait, à elle, mais moi, je leur avais trouvé un petit goût amer. Je ne sais pas vraiment ce qui me vaut cette aversion pour les produits génétiquement modifiés. Je sais pourtant pertinemment que la majorité des plats préparés que je consomme tous les jours en contiennent une quantité non négligeable. Ô bien sûr, il est sans doute possible de les éviter complètement. Je crois que certaines personnes y arrivent. Il existe même encore quelques restaurants qui servent une nourriture garantie sans OGM's. Mais ils sont assez chers, se situent à proximité des cultures, (c'est-à-dire à la périphérie de la ville) et je n'ai ni assez de temps ni assez d'argent pour me rendre dans de tels endroits. Et puis, je ne suis pas un extrémiste. Le fait que les tomates qui composent la sauce de ma lasagne soient des OGM's, par exemple, ne m'empêche pas de hisser celle-ci au rang de mes plats préférés. Seulement, quand il s'agit de produits frais… Mon grand-père était agriculteur bio. Il vivait à une époque où il était difficile d'imaginer que bio et OGM's puissent un jour se marier sans entraves. Et pourtant, aujourd'hui, ces deux types de production coexistent sans problème, parce qu'ils permettent tous deux d'exclure l'utilisation d'engrais et de pesticides de synthèse. Ces derniers n'ont pas été éradiqués complètement, ils sont encore utilisés par une agriculture conventionnelle de précision, mais de manière la plus limitée possible.

Mais j'en reviens à mon frigo. On le dit intelligent, et pourtant il ne peut même pas comprendre que sans elle, je n'ai plus goût à rien. Parce qu'il faut bien tenir, parce qu'il faut quand même aller travailler, le matin, j'engouffre une barre protéinée… Je ne prends même pas le temps de lui choisir un goût, ni une texture. Ca lui faisait presque plaisir, à elle, de ne pas avoir le temps de prendre son petit-déjeuner. Elle traînait dans la salle de bains pendant que je mangeais mes céréales et, bien souvent, je m'attaquais déjà au bol que je l'entendais encore chanter, à tue-tête, pour couvrir le bruit du sèche-cheveux. J'en étais à mâchonner la dernière bouchée du récipient qu'elle faisait irruption, radieuse, souriante : « Ne m'attends pas pour manger ce soir, mon chéri. Je prends quelques barres pour la journée (elle les choisissait souvent plus en fonction des couleurs que des goûts, mais toujours bien croquantes)… Voyons voir… Olive noire-banane-betterave… Je me sens d'humeur patriotique ce matin. » Alors que j'esquissais une grimace de dégoût, elle pouffait, s'élançait vers la sortie, attrapait son sac au passage, me décochait un petit baiser sur le front, activait l'ouverture de la porte, suspendait un instant son élan, se retournait pour me lancer : « Je risque de rentrer tard… J'y pense, tu devrais essayer ce nouveau restaurant dans la rue Philippe Ier, ça t'éviterait de manger seul, et puis Michaël m'en a parlé, il dit qu'il est conçu pour les gens comme toi ». Je m'apprêtais à lui demander ce qu'elle entendait par « les gens comme toi », mais elle avait déjà disparu, me laissant seul avec les effluves déjà lointains de son parfum, « Fraise d'Hiver ».

Perdu dans mes souvenirs, alors que le nom de Michaël continue à résonner désagréablement dans mon esprit, je remarque soudain que cela fait un petit moment que je cligne compulsivement des yeux. Je secoue la tête, craignant les signes avant-coureurs d'un malaise imminent. C'est que je n'ai encore toujours rien avalé ce matin… Je n'ose pas me lever tout de suite. Je maintiens mes paupières ouvertes avec mes doigts, jusqu'à ce que les yeux m'en piquent… pour finalement remarquer que cela n'y change rien, la pièce s'obstine à plonger dans l'obscurité, par intermittence. Enfin, je comprends. Ce n'est pas (encore) mon corps qui flanche, mais le système énergétique de la maison.

Lorsqu' il y a quelque temps, elle m'avait demandé d'équiper la cuisine pour lui permettre de cuisiner de temps en temps elle-même – auparavant nous ne disposions, comme la plupart des ménages, que d'un frigo et d'un four régénérateur, permettant de réchauffer les plats préparés –, j'avais fait installer un système de biométhanisation dans la maison en prévision d'une augmentation de notre dépense d'énergie. Elle n'avait finalement utilisé la cuisinière qu'une ou deux fois, et l'avait vite abandonnée, découragée, obligée de se rendre à l'évidence : elle ne savait pas cuisiner… et puis, le temps qu'elle passait dans la cuisine était celui qu'elle ne pouvait pas consacrer au sport, « tu comprends chéri, Michaël dit que je dois passer plus de deux heures par jour dans la salle de sport si je veux progresser un peu». Un peu déçu au début (j'étais très intrigué à l'idée d'essayer des aliments « composés » par la femme que j'aimais plutôt que « designés » par des professionnels de la diététique et du marketing), je lui avais vite passé ce caprice qui, après-tout, m'avait permis de faire l'un des investissements les plus intéressants de ma vie : ce fameux système de biométhanisation.

Aujourd'hui, elle m'a quitté, et voilà qu'il défaille. Mais bien sûr ! J'aurais dû y penser… Trois jours que je ne mange quasi plus, c'est aussi trois jours pendant lesquels je ne produis plus de déchets… en tous cas plus assez pour me fournir de l'énergie en suffisance ! J'éclate de rire… Ben voyons… Comme si je n'étais pas encore tombé assez bas ! Il va maintenant falloir que j'aille quémander quelques kilos de déchets organiques chez mes voisins. Cela ne devrait pas leur poser de problèmes : ils ont trois enfants, dont un bébé, et je sais qu'ils offrent une partie de leur surplus de déchets à la société qui produit leurs plats préparés (elle aussi s' « auto-fournit » en énergie par biométhanisation), en échange de coupons de réduction pour leurs prochains achats. Je leur achèterai un sac ou deux de langes… utilisés… Heureusement, je n'ai pas le temps de m'occuper de ça maintenant. Il faut que j'aille travailler… toutes ces rêveries m'ont sûrement mis en retard…

En sortant, je manque de me faire renverser par un véhicule de livraison. Il s'arrête quelques maisons plus loin, et, alors que le chauffeur-livreur introduit la combinaison afin d'ouvrir les portes extérieures du frigo de mes voisins, j'ai le temps de remarquer que le logo imprimé sur son t-shirt, le même qui estampie les flancs de son engin, a changé depuis la semaine dernière… C'est monnaie courante. Les entreprises en charge du service de livraison dans le quartier se succèdent à un rythme assez soutenu, suivant qu'elles se révèlent plus ou moins concurrentielles dans la compétition qui les pousse à développer des technologies de plus en plus performantes afin de réduire le « coût environnemental » des livraisons. Voilà pourquoi j'ai failli me faire écraser : le nouveau modèle est sans aucun doute plus silencieux que l'ancien.

Après ma journée de travail, alors que j'entreprends de rentrer chez moi, mes pas me mènent inconsciemment dans la rue Philippe Ier. Mon regard est d'emblée attiré par une enseigne lumineuse, de l'autre côté de la rue : « Aux petites envies ». Serait-ce le restaurant dont elle m'a parlé ? Intrigué, je m'approche, et le reste de l'enseigne se dévoile à ma vue : « Aux

petites envies… Nourriture saine et équilibrée pour femmes enceintes. Venez discuter et partager votre expérience de la grossesse autour d'un bon repas. Le jeudi, soirées spéciales « respiration et relaxation ». Conjoints bienvenus : repas spéciaux prévus pour les futurs papas». Mon cœur s'emballe… « les gens comme toi »… « futurs papas »… Aurait-elle voulu me dire quelque chose ce matin-là ? Aurais-je été trop aveugle, trop sourd pour ne rien soupçonner ? Michaël aurait-il appris (compris ?) la nouvelle avant moi ? Une pointe de jalousie enflamme mes tripes. Mes jambes se mettent à trembler, les larmes me montent aux yeux. Déstabilisé, estomaqué, je traverse à nouveau la rue, en titubant cette fois, et m'effondre sur un banc. Je m'apprête à enfouir mon visage entre mes mains, pour pleurer sans doute (je ne sais si c'est sur mon sort… ou sur celui de ma future progéniture qui risque de prendre cet idiot de Michaël comme père de substitution), lorsqu'une autre enseigne attire mon attention : « Le sportif du dimanche. Cuisine légère destinée aux hommes normaux à gras, tendance à regraisser. » Pour la deuxième fois aujourd'hui, je me surprends à éclater de rire. Quel idiot j'ai pu être ! Voilà, sans aucun doute le restaurant auquel elle faisait allusion ! Mais à ce rire franc de soulagement succède bientôt un rire jaune et grinçant, à mesure que je me rends compte combien ils se sont moqués de moi, tous les deux. Bien sûr, ce qu'ils ont en commun, c'est une forme parfaite, un corps de rêve. N'est-ce d'ailleurs pas dans une salle de sport Hi-Tech qu'ils se sont rencontrés ?

Je me souviens maintenant avoir surpris le regard dédaigneux de Michaël sur mon abdomen lorsque nous étions allés nous baigner ensemble, avec quelques amis, cet été aux lacs de l'Eau d'Heure. Ce soir-là, il avait aussi loué un barbecue mobile. Celui-ci était venu se poser auprès de nous à l'heure exacte où le ciel commençait à rosir, et avec un petit cliquetis métallique, s'était déployé pour nous révéler ses trésors : Michaël avait commandé le module « soirée d'été » : quelques bières de la région, des portions individuelles de salades mixtes aux poids et compositions différentes en fonction de nos besoins (j'avais pu remarquer que la mienne était visiblement plus légère que la sienne), des pommes de terre bio, des brochettes de substituts de volailles, de porc et de bœuf, et, sans doute pour nous impressionner, un unique spare-rib en « viande véritable » que nous nous étions partagés avec délectation. Je finissais de me lécher les doigts lorsque j'avais surpris le regard furtif de Michaël en direction de mon estomac. Je ne suis pas gros (dans cette société, presque plus personne ne l'est, puisque la majorité des repas, qu'ils soient pris à la cantine, dans un restaurant, ou commandés par internet, sont calibrés par des nutritionnistes en fonction des besoins de chacun), mais je ne suis pas vraiment musclé, et c'est vrai que j'ai tendance à développer quelques petits bourrelets. Je pensais qu'elle les aimait… Comment a-t-elle pu me faire ça ? « Le sportif du dimanche »… Je n'avais jamais pensé à moi-même en ces termes, mais ce n'est pas complètement faux… Je préfère faire du sport le week-end, quand je peux prendre une ou deux journées entières pour m'évader hors de la ville et aller courir sur les sentiers balisés à travers les vergers. Je ne trouve pas vraiment de plaisir à m'agiter sur place dans une salle, au 45ème étage d'un immeuble. C'est pourquoi mes après-midi et soirées de loisir, en semaine, je les passe plutôt à la médiathèque, au cinéma, ou à m'attarder dans l'un ou l'autre de mes restaurants préférés, à discuter avec les habitués.

Soudain, un grognement sourd met un terme au défilement de mes pensées : c'est mon estomac qui se fait entendre. Je suis bien obligé de me rendre à l'évidence, toutes ces émotions m'ont donné… faim. Je ne suis qu'à deux pas de l'entrée du « Sportif du dimanche »… Je ravale le peu de fierté qui me reste et me décide à entrer. Il n'y a personne dans la salle. Je suis d'abord surpris mais je comprends vite : je suis tombé sur la soirée « cuisines ouvertes ». De temps en temps, les restaurants ferment l'accès à leur salle et ouvrent les portes de leur cuisine, où un Chef renommé propose des cours aux clients intéressés. Il doit y en avoir une fois par mois, et il a fallu que ce soit aujourd'hui. Qu'à cela ne tienne, j'ai l'impression d'être affamé à présent. Je pourrais assister à l'un de ces cours,

pour une fois, qui sait, j'y prendrais peut-être goût, et cela me permettrait de rentabiliser un peu ma cuisine suréquipée…
Je pousse les deux battants menant à la salle de cours… Une étrange impression de familiarité me saute presque à la gorge : je ne comprends pas tout de suite. Quelque chose de particulier se dégage de toutes les personnes qui se trouvent là et qui, concentrées, observent le professeur dans un silence presque religieux. Alors qu'un peu éberlué, je détaille leur visage, un à un... je comprends. Tous ces gens… Je les connais ! Ce sont, des amis, des membres de ma famille, des collègues,… Même le professeur, j'ai l'impression que… Il finit par tourner son visage vers moi, et cela me fait l'effet d'une décharge électrique… C'est… Michaël ! Et derrière lui, cette jeune femme aux cheveux défaits, au visage un peu barbouillé… C'est… ! Malgré moi, je laisse échapper un petit cri, qui finit par trahir ma présence. Ils se tournent tous vers moi, les yeux arrondis par la surprise. «Chéri ? Mais… qu'est-ce que tu fais ici ? ». Je suis tellement ébahi que j'ai du mal à articuler :
- « Et toi… Et vous alors… Et ce…de… enfin… et Michaël ? »
- « Ne te mets pas dans des états pareils mon amour ! Quelle tête tu fais ! On dirait que ça fait trois jours que tu n'as plus mangé ! ».
- « Mais ça fait... ! Mais enfin je ne comprends pas ! Tu te fiances avec Michaël dans une cuisine ? Et ce sont MES amis et MA famille que tu as invités pour fêter l'événement ? »
- « Quoi ? Mais qu'est-ce que tu vas inventer là ? Chéri, réfléchis ! Quel jour sommes-nous demain ? »
Je n'en sais fichtrement rien… J'ai l'impression d'avoir perdu toute notion du temps… Je bredouille « Je ne sais pas…»
- « C'est ton anniversaire, enfin ! Et mon cadeau pour toi, c'était d'avoir appris à cuisiner ! Je voulais enfin pouvoir utiliser toutes les potentialités de notre cuisine… enfin, au moins une fois de temps en temps, le week-end par exemple. Quand j'ai rencontré Michaël à la salle de sport, il m'a dit qu'il était cuisinier. Il m'a proposé de prendre quelques cours après l'entraînement. Il a ouvert ce restaurant ici et, après t'avoir rencontré cet été, il s'est dit que ce qu'il y proposait te conviendrait et te plairait sûrement. C'est donc lui qui a eu l'idée de te préparer une de ces « formules anniversaire », et d'inviter tous tes proches à confectionner un repas pour toi. Je les ai contactés, et tous ont répondu présent et ont bien voulu se prêter au jeu. C'est pour ça qu'ils sont là !»
Je me prends la tête entre les mains…
-« Mais…et toi… où étais-tu ces trois derniers jours ? »
-« J'ai envoyé un message au frigo pour te prévenir, tu ne l'as pas vu ? »
Non, je ne l'avais pas vu… Le premier jour de sa disparition, j'étais tellement désemparé que je n'avais pas pensé à vérifier la messagerie du frigo… ensuite, celui-ci s'était mis à me proposer tellement de commandes différentes que j'avais fini par désactiver l'écran.
« Margaret a gagné deux jours de détente pour deux personnes dans un centre de loisirs à la campagne pour avoir été la cent-millième cliente à commander le plat « *Poulet tandoo-riz* » de la marque Tonton Jan. Elle m'a appelé aussitôt, il fallait se décider vite, elle est passée me chercher directement après le boulot lundi soir, je me suis dit que tu ne m'en voudrais pas ! Je suis rentrée ce matin, et j'ai filé ici aussitôt ma journée terminée. »
Je ne sais quelle expression exacte se lit sur mon visage, mais elle doit être drôle, car elle éclate de rire et court me serrer dans ses bras… Elle me souffle à l'oreille : « Mon pauvre chéri ! Ca devait rester un secret, mais comme la surprise est fichue maintenant… Tu sais, c'est moi qui ai choisi les ingrédients et la forme du repas… Comme dessert, j'ai commandé… des fruits de la passion, en forme de cœur. »

2. DECOMMODIFICATION SCENARIO (FRENCH)

LES DESSOUS DE WOLIXUCBEEK

Steph : Délégué Communication (Elections 2050)

Extraits du blog de Steph, Délégué au LMWG de Wolixucbeek de Février 2050 à Janvier 2052

A propos de l'auteur
A propos de ce blog
Mode d'emploi
Pourquoi ce blog ?
Ecrivez-moi

4 MARS 2050 – EN GUISE D'INTRODUCTION

Chers concitoyens,

Voilà déjà plusieurs semaines que j'ai été tiré au sort pour faire partie du *Local Menu Working Group* (LMWG) de Wolixucbeek. Comme la plupart d'entre vous le savent, cette instance citoyenne a pour mission principale de gérer les ressources alimentaires dans notre 'Communauté Alimentaire Locale', en collaboration avec les instances politiques et administratives locales, régionales, etc. Etant entre autres délégué à la communication, j'ai décidé, au-delà de notre moniteur local où sont énumérées et expliquées toutes les décisions prises au niveau de la localité, de vous tenir informés au jour le jour du fonctionnement de notre cité et de faire le lien entre votre quotidien (qui est aussi le mien) et les missions du LMWG.

Comme la plupart d'entre vous, en temps normal, mon emploi non-food m'occupe à mi-temps, je suis menuisier. La seconde partie de mon temps de travail, dédiée aux tâches citoyennes en matière d'alimentation, j'avais choisi de la consacrer depuis 5 ans à la pisciculture. Avant mon agro-service, il y a quelques années, je m'étais essayé à l'horticulture, ainsi qu'à la boulangerie, mais les quelques mois que j'ai passés avec les pisciculteurs de Guatille m'ont donné envie de partager ce savoir-faire avec mes collègues d'ici. Qui sait si ce poste de délégué m'amènera dans les prochains mois à me passionner pour d'autres métiers de l'alimentation.

5 MARS 2050 - ENTRÉE DANS MA NOUVELLE FONCTION

Comme pour chacune des activités citoyennes liées à l'alimentation que j'ai exercées jusqu'à présent, je bénéficie comme les autres délégués, d'une formation spécifique, ici, aux techniques de communication et aux tâches de gestion administratives et de décision (un rappel du fonctionnement du LMWG, une formation pointue sur le fonctionnement des différents logiciels de gestion que nous utilisons pour calculer les besoins de la localité, ajuster la production, assurer la distribution vers les cuisines collectives de quartier, gérer les horaires d'accès aux cuisines collectives, etc.).En effet, en tant que délégué, je participe à la prise de décision avec l'ensemble du LMWG. De plus, je seconde le délégué HauReCo (Haute Restauration Collective), en charge de la gestion des cuisines collectives.

Comme nous avons tous pu l'expérimenter avec la crise d'octobre 2047, cette dernière est une fonction assez complexe car il s'agit d'assurer le bon fonctionnement des cuisines locales en termes de

personnels, d'approvisionnement, de qualité, d'accès et de disponibilité pour chaque citoyen de un à trois repas par jour, selon la demande, ainsi que d'accès aux infrastructures des cuisines elles-mêmes pour les activités collectives de cuisine (confitures, pâtisseries, etc.) ou pour les particuliers qui de temps à autres désirent cuisiner leur part personnelle de nourriture en famille ou entre amis.

Jusqu'à présent, je ne me rendais pas compte de ce que cela représente comme travail d'organisation et de logistique. En tant que citoyen lambda, tout ce que j'ai à faire d'habitude, c'est m'inscrire tous les six mois dans la (ou les) cuisine(s) de quartier de mon choix, pour un nombre précis de repas par semaine. En ce qui me concerne, en général, je les prends le soir près de mon domicile. Le reste du temps, j'utilise les produits frais et préparés que je commande chaque semaine pour le pique-nique du midi et les diners entre amis. Cependant, agréger ces centaines de choix individuels et les opérationnaliser au quotidien demandent une gestion administrative importante. Et ce, sans compter que le LMWG gère également la production alimentaire en tant que telle qui exige, au-delà du calcul compliqué des besoins de la localité, une grande capacité de coordination (avec les différents niveaux de gestion) et malgré tout une certaine flexibilité.

COMMENTAIRES (Extraits Choisis)

Oui, c'est parfois un peu compliqué. En tant que déléguée sortante, je sais ce que c'est. D'ailleurs, je tenais à être la première à te féliciter. Tu vas voir : là, ça te tombe dessus par hasard (c'est le cas de le dire), mais c'est passionnant. Le blog, c'est vraiment une super idée. Moi j'organisais des permanences régulièrement ; mais là, finalement, les gens vont pouvoir te faire part de leurs impressions encore plus facilement.

Rédigé par : Lina | 08/08/2050 à 08h53

[…]

23 AVRIL 2050 - RÉSEAU INTERNATIONAL ET CO-JUMELAGE

Je suis personnellement assez sceptique face à certaines 'Communautés Alimentaires', en particulier les plus chanceuses en termes d'implantation (terres fertiles, climat favorable, etc.) qui ont parfois tendance à se refermer sur elles-mêmes. Je suis donc heureux d'être délégué dans une localité qui, comme beaucoup d'autres, a fait le choix de l'ouverture et de la prévoyance. En effet, malgré les progrès technologiques, nous constatons encore régulièrement combien nous sommes dépendants du climat et jamais à l'abri de pénuries potentielles.

Wolixucbeek accorde donc beaucoup d'importance aux relations d'amitié et de solidarité intra- et inter-communautés et est particulièrement active dans le '*Monitoring System'*, le réseau international qui s'est progressivement élargi à des communautés alimentaires de partout et qui a pour mission de pallier à ce type de problème. En particulier, cette année, nous développerons une relation spécifique avec, au niveau régional, la communauté de Navers, et au niveau international, la communauté de Guatille, que je connais bien pour y avoir résidé pendant 18 mois lors de mon agro-service : nous nous soutiendrons mutuellement en cas de coups durs et tireront les enseignements des meilleures pratiques des uns et des autres.

[…]

7 AOÛT 2050 - DEUX NOUVELLES VARIÉTÉS DE FRUITS ET LÉGUMES DANS NOS MENUS EN 2050

Comme me le répète régulièrement ma grand-mère, militante du mouvement VivaBio depuis 60 ans, la monoculture et la production exclusive d'un nombre réduit de variétés (plus efficientes à produire et à distribuer dans les quelques grandes chaines agro-alimentaires intégrées verticalement qui dominaient complètement le secteur alimentaire il y a 30 ans) ont fait disparaitre un grand nombre de variétés indigènes. L'héritage d'une biodiversité appauvrie combinée aux caractéristiques de notre système ancré dans le local (production, transformation et consommation locale de denrées alimentaires) a un impact important sur la diversité des produits et menus proposés aujourd'hui dans

les communautés locales. Ce qui avait fait dire aux détracteurs des « Communautés Alimentaires Locales » qu'il n'était pas possible de proposer un choix suffisamment vaste aux citoyens, qui finiraient par se lasser.

C'était peut-être vrai au départ, mais aujourd'hui, alors que notre communauté est quasi autonome en matière d'alimentation et assure plus qu'une offre de base pour tous ses citoyens, le LMWG s'attache à proposer un plus grand choix de produits à la population. Petit à petit nous redécouvrons des espèces locales oubliées et découvrons, grâce à nos citoyens en agro-service à l'étranger et aux chercheurs en agronomie, de nouvelles espèces cultivables dans nos régions.

Cette année, suite à un projet de collaboration des universités européennes d'agronomie et de bio-agriculture avec plusieurs instituts d'Asie, nous accueillons dans notre panier de fruits et légumes, le Bi-Bâu ou citrouille vietnamienne et le longane, de la famille du Litchi, mais plus résistant au froid, que nos agronomes cultivent encore pour le moment dans des éco-serres. Personnellement j'ai déjà ma petite idée sur la manière de les inclure dans les recettes de nos cuisines locales.

COMMENTAIRES (Extraits Choisis)

Deux fruits ! Sur les quatre dernières années ! Il me semble que les efforts de recherche ne sont pas très efficaces. Etes-vous sûrs que la collaboration inter-communautés fonctionne de ce point de vue ?

Rédigé par : Béa | 7/08/2050 à 21h17

Et puis surtout, il me semble qu'il y a des sujets plus importants que la diversité des produits: vous n'avez pas encore parlé du débat actuel sur les fraudeurs : pensez-vous qu'ils menacent le fonctionnement de nos communautés alimentaires ?

Rédigé par : Paul | 08/08/2050 à 08h53

[…]

27 SEPTEMBRE 2050 - RAPPORT EUROPÉEN SUR LES 'FREE RIDERS'

La question avait été soulevée sur le blog il y a quelques temps : les '*free riders*' mettent-ils les communautés en péril ? Certains citoyens des communautés alimentaires s'offusquent du peu de contrôle quant au fait que seules les personnes ayant effectivement presté leurs tâches d'intérêt alimentaire collectif ont accès aux repas, et posent la question d'un durcissement des pénalités à l'encontre des fraudeurs. Selon moi, tout système connait son lot de fraudeurs qui profitent des règles mises en place pour les contourner au moindre coût. Dans notre communauté, la règle veut que chaque membre dispose d'un droit à l'alimentation, c'est-à-dire de l'accès à une nourriture saine, équilibrée d'un point de vue nutritionnel, aux qualités organoleptiques satisfaisantes et en quantité adéquate. Parallèlement, tout membre de la communauté a le devoir, selon ses capacités, de dédier un nombre d'heures standard à des activités liées à la production, la transformation, la distribution ou la préparation de denrées

Savez-vous que …

A l'heure actuelle, la population d'Europe de l'ouest vivant en-dehors des communautés locales alimentaires est marquée par une forte dualisation entre les ménages à revenus élevés dont la part du revenu dédiée à l'alimentation reste dérisoire et les ménages à plus faible revenu qui doivent souvent cumuler plusieurs emplois. En effet, il y a quarante ans, le coût et la qualité de l'alimentation commençaient à poser question ; aujourd'hui, selon les derniers chiffres, la part de l'alimentation dans le budget des ménages à moyens revenus atteint près de 45%. D'où le succès grandissant de nos 'communautés alimentaires' qui se sont créées depuis une trentaine d'années un peu partout dans le monde au départ d'initiatives communales rurales, urbaines, ainsi que de ce qui étaient parfois à l'origine des réseaux virtuels, issus de forums internet ciblés sur l'alimentation et les alternatives. L'objectif principal des pionniers était d'avoir accès à une alimentation de qualité, à un coût décent pour tous les citoyens (producteurs et consommateurs) ainsi que pour leur cadre de vie. On constate aujourd'hui, plus que jamais, qu'elles facilitent la vie des ménages en remplaçant le coût de l'alimentation et la charge de travail associée, par une mise en commun de ce temps et de cette force de travail, qui assure à chacun d'entre vous au minimum une ration équivalente aux besoins nutritionnels de base, et plus encore.

alimentaires au profit de la communauté. Contrairement à d'autres communautés, chez nous, l'un n'est pas formellement la contrepartie de l'autre et, en pratique, tout le monde a accès aux repas préparés dans les cuisines collectives. La fédération européenne des LMWG s'est penchée sur la question et calcule qu'en moyenne la fraude n'excède pas 3 à 5 % de la population locale. Au vue des résultats de cette étude, et suivant les conclusions de la fédération européenne, votre LMWG estime que ces *free riders* ne constituent à l'heure actuelle pas une menace pour notre fonctionnement et constitue au contraire, dans une certaine mesure, un élément de diffusion de nos pratiques vers des personnes n'ayant pas opté pour notre mode de vie et qui se trouvent en difficulté face aux prix élevés de l'alimentation qui sévissent en dehors des « communautés alimentaires ».

COMMENTAIRES (Extraits Choisis)

Personnellement, je ne vois pas d'objection de principe, mais d'un point de vue pratique, les communautés alimentaires ne me semblent pas pouvoir dépasser un certaine taille : comment gérer l'afflux de nouveaux citoyens ?

Rédigé par : Alex | 28/09/2050 à 14h23

En effet, Paul ! Je suis de Navers, et l'augmentation de la taille de notre communauté ces dernières années a généré quelques problèmes par rapport à la philosophie d'origine. Par exemple, le principe de l'agro-service qui était à la base volontaire a été rendu obligatoire afin de mieux assurer la transmission des principes des Communautés Alimentaires aux nouveaux venus… Et ce n'est pas du goût de tout le monde…

Rédigé par : Malik | 28/09/2050 à 17h09

[…]

Cher délégué, je ne sais pas si c'est lié à l'afflux de nouveaux arrivants, mais, ces derniers temps, et en particulier durant la période des fêtes de fin d'années, il a été extrêmement difficile de réserver une plage horaire dans les infrastructures des cuisines collectives pour l'un ou l'autre moment de cuisine en famille : ce qui a notamment fort déçu ma petite fille de 10 ans qui voulait apprendre à préparer des cakes à la carottes façon Papy-Raph pour son devoir d'école 'les recettes de familles' !

Rédigé par : Raphaël | 27/01/2051 à 23h11

28 JANVIER 2051 - ACCÈS AUX CUISINES COLLECTIVES

Raphaël, merci de soulever cette question. Vous n'êtes pas le seul, de nombreuses réclamations nous sont parvenues dernièrement, liées à des problèmes d'occupation des espaces-cuisine. Nous nous en excusons et nous attachons à identifier et régler le problème vraisemblablement d'origine informatique.

En effet, si la majorité des gens mangent plusieurs fois par semaine (sur place ou chez eux) les repas préparés dans une des cuisines de quartier, nombreux sont ceux qui, pour les diners entre amis ou en famille, veulent bénéficier des infrastructures d'une cuisine collective pour préparer leurs produits frais ensemble. En tant que pisciculteur, j'aime moi aussi cuisiner mes propres produits et en faire profiter mon entourage. Cependant, nous devons également aider le LMWG dans cette tâche organisationnelle. Si la plupart d'entre nous ont renoncé à une cuisine personnelle et ne dispose plus chez eux que d'un micro-onde, c'est parce que nous profitons des préparations et infrastructures collectives la plupart du temps. Je vous demanderai, en tant que membre de notre communauté alimentaire, de réfléchir en conséquence à la manière dont vous gérez votre temps de cuisine personnelle. Etant donné un temps de travail 'food' et 'non-food' cumulé de 28h en moyenne, ainsi que des horaires relativement flexibles, il nous est possible d'être également flexible en termes de temps de cuisine et de repas. Vérifiez d'abord les disponibilités avant de fixer vos rendez-vous, et préférez lorsque c'est possible, les heures creuses aux heures chargée du midi et du soir.

COMMENTAIRES (Extraits Choisis)

Je tiens à dire qu'en ce qui me concerne tout se passe vraiment très bien. Je mange quotidiennement les repas préparés dans la cuisine collective locale avec ma famille, mes amis, ou en me joignant à une tablée déjà installée (où je retrouve le plus souvent, un voisin, un collègue ou l'une ou l'autre personne rencontrée aux assemblées mensuelles du LMWG). Quand je réserve une plage horaire dans la cuisine locale, c'est le plus souvent pour des activités de groupes, et on n'a jamais eu de problème. Merci pour l'organisation ;-)

Rédigé par : Béa | 29/01/2050 à 15h14

Personnellement, je suis dans le projet de la communauté de Wolixucbeek depuis le tout début. J'ai contribué à la mise en place des structures et des principes de base, mais j'ai toujours voulu garder mon autonomie : pour moi, mise en commun des efforts, ne signifie pas pour autant collectivisation de tous les moments de vie…

Rédigé par : Dounia | 29/01/2050 à 18h47

[…]

17 SEPTEMBRE 2051 - MAUVAISES RÉCOLTES CETTE ANNÉE : MOINS DE BLÉ, PLUS DE TUBERCULES

Suite aux sécheresses du mois de juillet et aux pluies abondantes au moment des récoltes, une partie du grain est inutilisable, ce qui a des répercussions sur les stocks disponibles de féculents. Comme cela a été diffusé via les journaux online, les autorités nationales demandent aux autorités locales d'adapter leur production et menus en conséquence. Les travailleurs des filières dépendantes du blé, en particulier les boulangeries locales, sont priés de s'informer au plus vite des possibles réaffectations auprès du délégué planification de leur LMWG. Sachez d'ores et déjà que nous avons pris dès le mois d'août les mesures qui s'imposaient en matière de production de denrées à teneur nutritionnelle équivalente. Les cuisines collectives locales seront cette année davantage approvisionnées en tubercules et légumineuses. Cependant, nos réserves des années précédentes sont tout à fait suffisantes pour assurer une production plus que minimum de produits de base (pain, pâtes, etc.). Par ailleurs, notre jumelage avec la Guatille nous fournira un petit supplément de farine de maïs et de tubercule de manioc.

S'ensuit une augmentation du besoin en main d'œuvre dans les productions horticoles de la communauté. Par conséquent, le service des jardiniers de quartier ne sera pas assuré ce mois-ci. Nous faisons donc appel à votre collaboration :

1°] les personnes dans l'incapacité de prendre soin de leur parcelle privée (personnes âgées, à mobilité réduite, en agro-service à l'étranger, etc.) sont priées de faire appel à tout membre du voisinage ou de la famille disponible, et le cas échéant de signaler le problème au LMGW.

2°] nous demandons à tous volontaires de se manifester pour assurer l'entretien des arbres fruitiers des espaces publiques ; le cas échéant, nous désignerons sur base des emplois du temps 'food', 3 à 4 responsables par quartiers (une dérogation étant selon le règlement habituel toujours acceptable sur base de l'emploi du temps 'non-food').

[…]

4 DÉCEMBRE 2051 - LES ÉTUDES MÉDICALES CONFIRMENT

Les dernières études publiées par le Centre Européen des Nutritionnistes confirment les observations du secteur de la santé. Cela fait maintenant près de trente ans que les premières communautés alimentaires ont été mises en place. Nos chercheurs ont pu observer que les enfants ayant grandi dans ces communautés ont moins souffert de problème de surpoids et, une fois adultes, ont moins développé de problèmes cardiovasculaires, de diabète, etc. La consommation de produits frais, de peu

de sucre et de sel ajoutés (présent en quantité dans les produits manufacturés issus des grandes chaines de production et de distribution des années 2000) ainsi que la modification dans les repas de la proportion entre produit animaux et végétaux semblent être des éléments centraux expliquant les résultats observés aujourd'hui. Cela fait dire au délégué de l'HoReCo que nous allons maintenir la forme actuelle des repas chauds quotidiens fournis dans les cuisines collectives de quartier, à savoir un assortiment de plats proposant, en plus d'une ration appropriée de féculents et légumineuses, un grand choix de légumes et une portion limitée de protéines animales.

COMMENTAIRES (Extraits Choisis)

Bien sûr, les effets sur la santé sont indéniables et importants. Mais, si je me suis engagée dans les « Communautés Alimentaires Locales » à l'époque, c'était pour construire une nouvelle dynamique de vie. Et, avec du recul (je vais sur mes 69 ans), je pense que nous somme parvenus à améliorer notre qualité de vie, d'un point de vue environnemental et physiologique, bien sûr, mais surtout humain et relationnel !

Rédigé par : Dounia | 4/12/2051 à 20h58

[…]

29 JANVIER 2052 - EDUCATION CIVIQUE ET IDENTITÉ MULTIPLES

Je suis assez fier, en tant que délégué, et à titre personnel (en tant qu'ancien élève), de vous annoncer que l'école primaire et secondaire *Toots I* a reçu le prix européen *Tapioca* pour son programme d'éducation civique : leurs élèves ont fait les meilleurs scores lors des évaluations de fin de primaires et de secondaires pour les catégories « Droits et Devoirs Civiques » et « Local-Global : Identités Multiples ». Au travers et au-delà des habituels cours de langues, de mathématique, de compostage, de semis, d'histoire, de géographie, etc. ils ont réussi à inculquer à leurs élèves une connaissance théorique et pratique, un respect des ressources environnementales et un sens aigu des droits et devoirs des citoyens dans une 'communauté alimentaire'. Les professeurs, en collaboration avec le conseil des parents et une locale de quartier des 'Retraités-Conseil' ont mis sur pied plusieurs activités centrées d'une part sur l'histoire et les acquis des communautés alimentaires, et d'autre part des rencontres multimédia avec nos communautés jumelles au niveau international.

De manière générale, ces évaluations ont également mis en évidence l'importance de la collaboration des écoles avec les 'fermes urbaines' et l'implication des élèves dans les systèmes de 'distribution directe aux ménages' comme moyen de renforcer et d'activer leurs acquis en matière agricole et de gestion. Espérons que les universités inter-communautés essentiellement axées sur les sciences et techniques de bio- et agro-productions et de planification sauront faire fructifier leurs acquis théoriques, pratiques et humains.

Laissez un commentaire

Nom (obligatoire)

EMail (Ne sera pas publié) (obligatoire)

Food Community

Soumettre

3. SUFFICIENCY SCENARIO (FLEMISH)

Episode 1. Mijn aankomst

November 2050, ANNO een jaartelling. De tekenen van de voedsel crisis zijn verdwenen. Later besefte ik hoe crisis ook iets positief kan zijn: als we ze nu eens zouden kunnen voor zijn dacht ik. Als we het gegeven crisis nu eens gebruiken en het zoveel mogelijk ontdoen van haar negatieve aspecten… dan zien we een soort willekeurige simpliciteit, een bewust balanceren met grenzen.. Maar het werkt beter als iedereen samen overschakelt en dat gebeurt nu eenmaal niet zo gauw. Is er altijd een vorm van externe crisis nodig? … Ik loop op de zaken vooruit.

Sinds vorige week ben ik hier. 'De vreemdelinge', zij die een andere nationaliteit heeft. Meer dan dat. Andere wereld, zelfs al woon ik op dezelfde planeet. Ik voel mij geen indringer. Het 'gezin' waar ik verblijf lijkt blij met mijn komst. Ik hoorde mijn gastheer gisteren zeggen: "Ze straalt als ze leert,ze leeft bij de gratie van het verschil." Ik glimlachte, hun sacrale interpretatie van het begrip 'sufficiëntie', wat een opmerkelijke geloofsovertuiging: omgaan met een steeds veranderende vorm, zonder contact te verliezen met een steeds aanwezige materiële basis. De mensen hier hebben ook zoveel verandering meegemaakt: een voedselcrisis, het tijdelijke verlies van bijna alle technologische mogelijkheden, een energieschaarste, de breuk tussen de oude en nieuwe generatie , ontwenning- en afkickverschijnselen. Er is afgeleerd, bijgeleerd en terug aangeleerd.

Ik leer voorlopig vooral bij, alles onderga ik met stijgende verbazing.

Mijn gastheer, Johan, is een man van eenvoud. Ondanks zijn hoge positie in de agrotaire dienst hangt hij een sobere levensvisie aan. Niet ascetisch noch Spartaans. Eerder nederig en creatief. Nederig ten opzichte van de overweldigende complexiteit en creatief ten opzichte van de mogelijkheden. Als socioloog is hij echter gefascineerd door hypermoderne consumptietijdperk (zoals dat er nog altijd is in mijn contreien.) (Het isolationisme van deze maatschappij is aanvaard omwille van een sterke politieke heroriëntering in de jaren dertig..)

Ik ben reeds jaren bezig met het onderzoek naar behoefte en consumptie, en ik blijf mij verbazen over de aard van de logica om de cultivering van inwisselbare objecten door bevoorrechte subjecten te verkiezen boven de cultivering van unieke gelukkige subjecten door middel van objecten.

Maar laat ik wat duidelijkheid scheppen. Ik ben geen antropologe maar kunstenares. Kunst is voor mij altijd een vorm van zelfexpressie geweest. **Spelen** met vormen en **uitgangspunten** om pure substantie te vervormen tot iets **unieks**, een betekenis waar ik waarde aan hecht. Dat spelmatige is een overeenkomst tussen religie en kunst, denk ik. In rituelen wordt een religieus tafereel nagespeeld, bijvoorbeeld zoals in een toneelstuk. Toch is er hier een merkelijk verschil met religie zoals ik ze ken. Hun rituelen staan niet vast maar ze zijn dynamisch, net zoals de steeds evoluerende stijl en werken van een kunstenaar. Dit , zo vertelde Johan mij, is een gevolg van het principe van sufficiëntie; openheid en flexibiliteit van de mogelijke combinaties, alle opties steeds open houden om de diversiteit aan mogelijkheden steeds aan te scherpen.

Niet iedereen is hier bezig met geloofsovertuigingen en religie, velen zijn meer individualistisch of aanhangers van de wetenschap, maar wat mij onmiddellijk opviel is dat is dat de wereld van voedsel hier voor abnormaal veel mensen 'a common work of art' is. Mijn voorlopige veronderstelling: het

dagelijks leven met de crisis heeft - in zijn naglans - eten centraal achter gelaten in de beleving- en genotwereld.

Van leven met limieten naar creëren met limieten

Men zegt 'need is the mother of invention' maar hier is de 'uitvinding' het begrip 'behoefte' zelf. Doorheen de tijdelijke crisis werd men kunstenaars in ***behoeftemanagement*.** Voor een stuk is dit de reden waarom er in deze merkwaardige maatschappij (door velen) een quasi absoluut onderscheid gemaakt wordt tussen **eten en voeden**

Eten gebeurt bijna altijd samen, met zichtbare spijzen en sauzen, met een opgeluisterde tafel en in bekend gezelschap. Men noemt dit simpelweg ***eetmomenten*** en hecht er grote waarde aan[22].

Voeden daarentegen gebeurt altijd strikt individueel, vaak als er weinig tijd is, bijvoorbeeld in allerlei soorten (nood)situaties van lichamelijke zwakte, afzondering of tijdsdruk. Dit voeden gebeurt met compleet gestandaardiseerde gezondheidspakketten (vaak in de vorm van bars) , zo gesimplificeerd, effectief en adequaat mogelijk voor de taak in het verschiet. (Dit is rationele gezondheid sufficiëntie)

De productiecycli van beide praktijken zijn georganiseerd in parallelle circuits. (zie box POPED_Analyse) Bij de eerste praktijk is er vooral auto-sufficiëntie, bij de tweede praktijk een hoog gestandaardiseerd en sterk gecontroleerd industrieel productieproces.

Eetmomenten hebben dan wel een simpele naam, maar dat zijn ze allesbehalve: het is veel meer dan eten. Als men zich bijvoorbeeld toevallig juist heeft gevoed en er doet zich kort daarna toch een eetmoment voor, dan kan men hier altijd aan deelnemen, zonder effectief iets 'substantieel' te moeten eten. Iemand kan meetafelen en nutriëntarme dranken zoals bijvoorbeeld gemberthee of zonnebloemwater nuttigen. Hoeveel smaakbrengers men hier heeft! Oneindige vermenigvuldiging van het zoethouteffect. Vorm, smaak , psychologisch welzijn en sociale interactie (eetmomenten zijn bvb. vaak bewuste katalysators van innovatieve ideeën) georganiseerd voor maximale sufficiëntie. (zie box resocioalisatie)

Hoe dat **strikte onderscheid** precies is ontstaan begrijp ik nog niet helemaal. Gisteren zat ik aan tafel met de grootmoeder. Zij was een van de laatste 'van beide werelden'. Vanuit haar verhaal, dat helaas abrupt werd onderbroken, kan ik het volgende al opmaken:

Het is zo dat in de jaren 20 van deze tijdstelling zich iets zeer merkwaardig heeft voorgedaan. Door een ingewikkelde myriade van omstandigheden van internationale aard was er een langdurige nationale energie- en materiaal schaarste. Niet één dag zonder tv zoals bij een stroompanne, maar maanden en maanden! Energie en materie zijn op zich ook voedsel voor technologie. Het was niet de technologische kennis die verloren ging maar wel de middelen om ze te doen werken.

In die periode van overbrugging was men aangewezen terug te keren naar een veel beperktere vorm van landbouw en voedselproductie.

Door deze uitzonderlijke situatie van tekort kregen alle producten of applicaties die niets te maken hadden met **basisbehoeften** automatisch minder waarde toegedeeld. (Oma vertelde hoe zij haar passie voor informatica moest laten varen.) De schaarste had als specifiek gevolg dat men alles zeer sterk ging herwaarderen in functie van voedsel, ongetwijfeld moeder van alle basisbehoeften. Een

[22] In de eetmomenten wordt ook status uitgedrukt. Niet iedereen wordt toegelaten tot gelijk welke eetmomenten.[Dit kan ook worden gezien als een toepassing van het principe van sufficiëntie, in de (negatieve) zin van 'distinction'.]

lamp niet om te lezen maar om een plant te doen groeien. Auto's enkel en alleen voor vervoer van levensmiddelen. Het agrarische wonen hipper dan ooit. Dieren voor sommigen heilige schepsels, voor anderen de luxe van melk en vlees voor de schaarse schranspartijen. Oude meubelen als dankbare vuurbrengers voor de hernieuwde magie van het koken.

Die laatste zin drukt veel uit: De hernieuwde magie van het koken.

In dit proces van her- en opwaardering gebeurde er iets bizar en tegelijkertijd wonderbaarlijk. Allerhande rituelen, ontspanningsmomenten en praktijken worden cultureel ingebed in de cyclus van het voedselproces. Het is plotseling terug uniek om landbouwer te zijn, vlees en kaas zijn absolute luxeproducten, groeten zijn kostenefficiënt, gastronomie kent een ongekende creativiteitsboost . Stadslandbouw is alom aanwezig. De overheid huurt landbouwers in om mensen op te leiden. Grond op bedrijventerreinen wordt aangewend voor groentekweek.

Oma vertelt over 'de bevrijding'. Hergewonnen vrijheid van het gebruik van al die fantastische mogelijkheden van de technologische verwezenlijkingen van de mens. Aangezien het onbeheerste en bandeloze gebruik van hulpmiddelen alsook de hoogdravende drang tot implementatie van technologische 'innovaties', aantoonbare oorzaken voor de crisis bleken te zijn, ging men een voorzichtigheidsbeginsel invoeren. (link met decommodificatie) Men ging beseffen hoe veel je kunt doen met zoveel energie en dat je goed moet nadenken wat je er mee doet. Daarnaast, en dat was doorslaggevend beklemtoonde grootmoeder, was dat de **mensen het als een zinvol spel gingen zien om creatief te zijn met weinig**. Het voorzichtigheidsbeginsel was dus behoeftemanagement maar dan op een ander niveau…. (scene wordt abrupt onderbroken)

Ondanks de beperkte informatie was mij toch iets duidelijker geworden. Voedsel was terug in het **'menselijk spel'** gekropen. Ik maakte ooit een kunstwerk over de twintigste-eeuwse huisvrouw. Het was een werk dat de verveling en eindloze herhaling van de huishoudelijke **taak** symboliseerde. De vrouw die ik had afgebeeld slaagde er niet in haar dagtaak van eten kopen, koken en opruimen telkens opnieuw als een creatieve uitdaging te zien. Vaak alleen, wachtmomenten van verveling. Zij vertegenwoordigde op zichzelf de gehele productiestructuur van het huishouden. Nu gebeurt het hele proces in groep, waardoor de ervaring steeds scheppend en artistiek (in de ruime zin) wordt gepercipieerd. De consumptiestructuur is niet langer het huishouden, de taak is geen taak meer. Eten is spelen, feesten en leren en tegelijkertijd serieus.

Het Diner.

Groot feest! Voor allen: vandaag staat alles in het teken van het heden De quota zijn ruimschoots gehaald, we kunnen alle basisingrediënten aanleveren om dit jaar de gehele bevolking te voorzien van gezondheidspakketten. Tevens kan ik bijkomend goed nieuws melden: ***kennisland***[23] *heeft gemeld dat er een doorbraak is in de alternatieve energiesector, zonnepanelen met ongekende efficiëntie versterken ons productieproces…*

Johan heeft me meegenomen naar dit afscheidsdiner van de afgestudeerde agrotairen. Agrodienst is voor iedereen verplicht zoals vroeger een militaire dienst. Het is eigenlijk aanvullend op het gangbare onderwijs maar naast de meer traditionele technieken komt men ook in contact met de

[23] Kennisland is een afgesloten gemeenschap van academische onderzoekers, volledig gescheiden van enige commerciële implementatiedruk en gewaarborgd door verschillende **voorzorgprocedures**. Een psychologisch team zorgt voor monitoring om kennis contraproductieve attitudes detecteren (status, geld,..). Men werkt hier vrijwillig en heeft de wil om pure kennis te bekomen.

andere kanten van voedselproductie (slachten van dieren, monotone industriële arbeid ..). Maar wat het vooral is , is een vorm van vooruitgeschoven belasting (in werkuren) voor de consumptie van voeding.

Ik probeer hier kort weer te geven hoe mijn avond verliep. Drie toch wel buitenissige figuren waren mijn tafelgezelschap. De eerste was hedonist , de tweede rationalist , de derde sacralist.

Hedonist*: Welkom juffrouw. Het is een eer u bij ons aan tafel te mogen hebben. Mag ik u vragen: hoe bevalt u verblijf hier?*

Ik: *Ik moet zeggen , tot nu toe fantastisch, jullie hebben een bepaalde kijk op de wereld die mij wel aanstaat.*

Hedonist: *Prachtig , maar alles is hier niet rozengeur en kalfjespraat. Neem nu die agro-dienst waar ik eindelijk vanaf ben. Ik heb me niet geamuseerd, dan kan ik wel stellen ..*

Rationalist: *Piet-Joris alsjeblieft! Vanavond niet!*

Hedonist: *Weet je wat, je hebt gelijk. Vanavond niet. Toch, ik begrijp niet hoe men productie en genot zo kan loskoppelen.*

Eten wordt opgediend. Al gauw raken de heren in vervoering. Ik hou mij sterk op de achtergrond (komen hier toch wat antropologische trekjes naar boven?)

Hedonist: *Jongens dit is waarlijk fantastisch niet? Dit stuk vlees van de koe is werkelijk verrukkelijk, die heerlijk malse textuur dat krokante korstje, die sappige stukjes vet.. dit is een schouwspel voor mijn zintuigen, een geschenk uit de hemel.*

Sacralist: *De hemel, hmm. Ik heb respect voor het **genot** dat je ervaart- jouw basiseenheid van het begrip sufficiëntie- maar vergeet niet wat voedsel eigenlijk is. In mijn onbezonnen periode at ik soms zonder er bij stil te staan. Nu besef ik dat voedsel de meest fundamentele motor van ons bestaan is. De werking van natuur maakt ons toch elke dag opnieuw duidelijk dat sufficiëntie voortschrijdt uit de ontelbare levenskringlopen die haar begeleiden. In tegenstelling tot het deïsme moeten we ons geloof niet baseren op iets onzichtbaars. Maar op iets zichtbaars dus: het leven! Vergeet niet dat die koe ook leven is.*

Rationalist: *Dat is interessant maar zichtbaar associeer ik toch vaak ook met 'vaststaand' of 'te controleren' , wat toch ook vaak het gevaar van religie is/was. Sufficiëntie houdt ook in dat je opties constant openhoudt.*[24] *Wat vandaag een sufficiënte (optimale) opeenvolging van onderdelen is kan dat morgen niet meer zijn.*

?? (vragende blikken)

Rationalist: *Bijvoorbeeld. Zoiets als het auto tijdperk zou moeilijk realiseerbaar zijn vanuit sufficiëntie oogpunt. De afhankelijkheid van één soort , eindige brandstof is op lange termijn niet interessant. Daar mag je geen ingrijpende functionele structuur op baseren. Dat is niet sufficiënt. Daarnaast had men ook problemen met kwantitatieve barrières van sufficiëntie, vooral ten opzichte van co2 uitstoot.*

Sacralist: Een van de *uitgangspunten van onze overtuiging is diversiteit. Soms **moet** je echter keuzes stellen.*

Rationalist: *Zeker en vast.* …. (stilte) *Iets anders. Gisteren was ik nog even aan het surfen op mijn digifood 7.7. : sectie geschiedenis. Wist je dat men vroeger agro-brandstoffen liet maken?*

Rationalisten hebben vaak een meet en informatie apparaat. De digifood is er een voorbeeld van en meet constant de werking van het lichaam en de verhouding tot de opname van K CAL, nutriënten, enzovoort. Dit om een optimaal eetpatroon te garanderen. Daarnaast is het een intelligente encyclopedie. Het kan dus zowel als informatie-middel als welness coach worden gebruikt. Het is vooral dit laatste gebruik dat dergelijke ingrijpende veranderingen heeft teweeggebracht.

Sacralist*: Agro-brandstoffen wat zijn dat? Een soort van bewerkte mest om gewassen sneller te doen groeien?*

Rationalist: *Neen helemaal niet , het is voedsel dat wordt gebruikt om een auto te doen rijden.*

Sacralist: *Wat! ?*

Rationalist: *Ja, volgend citaat geeft verklaring: "Het voedsel dat men gebruikt om een tank te vullen- voornamelijk graan en koolzaadolie - waarmee men 100 kilometer kon rond rijden, stond equivalent aan de eetmomenten van een kleine groep mensen voor 2 maanden."*

Hedonist: *Twee maanden eetmomenten!!! Dat zijn honderden broden, belegen met de fijnste en duurste waren, allerlei soepen, smaakbrengers tot in de vierde orde. Dat kan niet, was dat een keuze??*

Sacralist: *Dat is geen keuze, dat is een misdaad. Wat deden die mensen dan met hun auto dat zo fantastisch was dat het dat allemaal waard was? Het wereldvoedselprobleem oplossen,het land beschermen,… ??*

Rationalist: *Neen, niet echt, globaal gezien twee redenen. (1) Om naar het werk te rijden en (2) om producten te vervoeren. Onder ander ook voor het vervoeren van voedsel. Auto's waren vroeger heel belangrijk...*

Hedonist: (droomt weg) *al die eetmomenten.. eclairs, dame blanche, en ooh wijn ..*
Sacralist: *Hoe verklaart je digifood dat op zijn sufficiëntie-meter, meneer de rationalist?*
Rationalist: *Eens kijken*. Haalt zijn Digifood© boven.

Gezondheidsparameter: (een enorme) potentiële energie (voedsel) onbenut **(-1100)** //// (gemiddelde)functionele ruimteverplaatsing (zonder fysieke inspanning) **(+30)** //// culturele statusvoordelen **(+20)** //// subjectieve auto-irritatie (files,stress…) **(-10)**

= - 1060

Sociale cohesie parameter: potentiële sociale interacties en kapitaal in de vorm van eetmomenten (**-2600)** / gemiddeld aandeel in de bevordering van het welzijn (functionele verplaatsvoertuigen zoals ziekenwagens, bevordering van lange afstand contacten,ETC.) **+250**

= -2350

milieu parameter: Regeneratieindex = o,…

= ERROR 797: INSUFFICIENT MEMORY. TOO MANY VARIABLES

Verdorie, mijn Digifood© slaat weer tilt: 'onvoldoende geheugen ,te veel variabelen'.. ik moet toch dringend eens de nieuwe versie aanschaffen.

Dit is ook maar één interpretatie.. (een holistische rationalist!)

Hedonist: *Jij altijd met je onvoorwaardelijke geloof in die digitale babysit van je, denk zelf toch eens na. Je hebt dat niet nodig om de absurditeit hiervan in te zien. Als ik gezellig hele namiddagen kan genieten van samen eten met vrienden dan ga je toch niet stomweg in de file gaan staan zeker?!*

Rationalist: *Je begrijpt het niet helemaal, vroeger was dat vrij belangrijk in de file staan. Een neveneffect van verhoogde mobiliteit.*

Hedonist: Hooow…

Sacralist: (Grijpt in) *Jongens laat ons op deze heugelijke dag niet afwenden van de zaak juist voor ons. Laat ons stilstaan bij deze spijzen… Het voedsel , oooh het voedsel… de energie van alles.. . **Voor het leven** was er voedsel..Zelf de eerste eencellige had voedsel nodig om zich te kunnen reproduceren, dus was er eerst voedsel en dan pas leven… Voedsel is de oorsprong van alle leven.*

Hedonist: *Daar gaat ie weer.. **Geniet** van wat je **nu** aan het eten bent in plaats van er altijd maar over te spreken. Hou je metafysische bedenkingen voor het natafelen met de cognac. Tegen mij : inderdaad u hoort het goed beste dame, straks krijgen we cognac.*

Ik glimlachte. Ik hield mij voorlopig afzijdig en was geïntrigeerd door hun passioneel gesprek.

Rationalist: *Volgens mijn Digifood© is praten goed tijdens het eten... het verhoogt de kans op een lager kauwratio wat de metabolische processen met een factor van 0.03 bevordert wat leidt tot een gastro..*

Hedonist: (nu echt op dreef) *Dat de metablablabla van de gastro bla bla. Weer gebabbel. Ik kauw altijd traag, elke hap savoureer ik alsof het mijn laatste is. Elke micro-nutriënt is een orgasme op mijn tong. Ik leef volgens de kunst van de kauw / Malend de warmte van de smaak / (geeft lofzang op de smaak)*

Rationalist: *U ziet het juffrouw we zitten hier met twee romantici opgescheept.*

Wat een gekke bende dacht ik. Hun fascinatie voor voedsel is haast een obsessie maar dat lijkt alleen maar zo , eigenlijk zijn ze bezig met zoeken.. het zoeken naar een uitdrukkings - of ervaringsvorm die zo goed mogelijk past bij de steeds verschuivende vormen en applicaties van een eindige materiële basis.

WORDT VERVOLGD…

ANNEXES

The different Working Papers, on which this final report is based, are developing further each of the particular research strands, and can be consulted and downloaded from the website of the Belgian Science Policy (www.belspo.be/FEDRA) and from the website of the research project (http://consentsus-project.pbwiki.com/).

Working papers of the Consentsus project

Annex 1:
Boulanger, P.M. (2007), *Sustainable consumption: a general framework for transition management*, working paper for the CONSENTSUS project, IDD, Ottignies (Work Package 1)

Annex 2:
Boulanger, P.M. (2008), *Three strategies for sustainable consumption*, working paper for the CONSENTSUS project, IDD, Ottignies. (Work Package 1)

Annex 3:
Goeminne, G., Mutombo, E. (2007), *The Field of Scenarios: fuzziness as a chance for building appealing future visions*, working paper for the CONSENTSUS project, CDO-UGent/CEDD-ULB, Gent/Brussel (Work Package 2)

Annex 4:
Mutombo, E., Bauler, T. (2008), *Investigating the functions and utilization of scenarios*, working paper for the CONSENTSUS project, CEDD, Bruxelles (Work Package 3).

Annex 5:
Lefin, A.-L. (2008), *Food consumption and sustainable development: an introduction*, working paper for the CONSENTSUS project, IDD, Ottignies (Work Package 4)

Annex 6:
Lefin, A.-L., Boulanger, P.-M. (2008), *Towards integrated sustainable consumption strategies: a Q Methodology study*, working paper for the CONSENTSUS project, IDD, Ottignies (Work Package 4)

Articles and conference communications:

Annex 7:
Bauler, T., Mutombo, E., Wallenborn, G., (2007), "Long Term Strategizing for Sustainable Development: Discussing the difficult linkage between prospective and planning endeavours". Communication for the *European Society for Ecological Economics Conference 2007 'Integrating Natural and Social Sciences for Sustainability'*, 5-8th June 2007, UFZ - Centre for Environmental Research in Leipzig, Germany.

Annex 8:
Bauler, T., Mutombo, E., Wallenborn, G. (2008), "The Impact of Long-Term Scenario Exercises on Sustainable Development Policy-Making", Communication for the *Conference on the Human Dimensions of Global Environmental Change, 'Long-term Policies: Governing Social-Ecological Change',* Berlin, 22-23 February 2008.

Annex 9:
Bauler, T., Bonifazi, A., Mutombo, E. (2008), "Sustainability Evaluations in the Context of Long-Term Strategizing. Crossing Insights from Urban Development and Transition Management", Communication for the *EASY-ECO Vienna conference 'Governance by Evaluation : Institutional Capacities and Learning for SD',* 11-14 March 2008, Vienna.

Annex 10:
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Annex 11:
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