Stakeholder Workshops and Management applied to Sustainable Households: Results and Improved Methodology

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ABSTRACT

This paper will report results from a part of the SusHouse (Strategies Towards the Sustainable Household) project. This is an EU-funded research project concerned with developing and evaluating strategies for bringing about household activities that are more sustainable. This paper focuses on the results of the stakeholder workshops and stakeholder management that underpin the methodology used in the Project. Three household functions have been studied: Clothing Care, Shelter, and Shopping, Cooking and Eating (SCE). Each function was studied in three European countries, so the methodology, comprising two rounds of stakeholder analysis and two series of workshops, was applied nine times in total. The results are instructive for dealing with stakeholders in sustainability issues especially when searching for creative new ways of future need fulfilment.
For each household function studied in each country, an extensive process of *stakeholder identification* was performed, covering stakeholders on the demand side, the supply side, research bodies, government and public interest groups. Selected stakeholders participated in stakeholder *creativity workshops* aimed at identifying sustainable ways of future function fulfilment. The results were used for *scenario construction* (presented in separate paper by Ken Green and Philip Vergragt). These scenarios were used for a scenario-specific 2nd round of stakeholder identification. Old and newly identified stakeholders were invited to a second set of workshops in which implementation proposals, research agendas and policy recommendations were developed for achieving the scenarios. In both series of workshops *backcasting techniques* were applied. (Backcasting involves a description of the desired future, as a future 'vision' or a normative scenario, followed by the identification of the steps and changes that are necessary to achieve that future).

This paper describes the applied methodology and its background, presents and reviews results achieved in the 9 sub-projects before presenting conclusions and recommendations for an improved methodology. Finally, the relevance of the improved methodology for general use in innovation and change processes towards sustainability is discussed.

Key words: stakeholder identification; workshops; sustainable households; need fulfilment

1 INTRODUCTION

One of the major issues at the start of the 21st century is how to achieve sustainability, in the context of an increasing environmental burden, a growing world population and increasing global consumption. Some claim that we have to improve our environmental efficiency by a Factor 4, enabling the world to double its consumption while halving the environmental burden (Von Weizsäcker *et al*., 1997). Others, including the international Factor 10 club, the Dutch programme for Sustainable Technology Development and EU funded SusHouse project (Strategies towards the Sustainable Household) assume that we need at least a Factor 10 (Schmidt-Bleek, 1997) or even a Factor 20 (Vergragt & Jansen, 1993; Vergragt, 1999; Weaver et al, 2000). Factor 20 by 2050 is based on a doubling of the world population, combined with a fivefold increase of economic prosperity per capita, with a halving of the total global environmental burden. This would require not only substantial changes to existing production processes, but also significant adjustments in consumption patterns (for a review on household consumption and its environmental impact see e.g. Noorman and Schoot Uiterkamp, 1998).

Nowadays it is widely supported that the changes necessary to achieve sustainability or a Factor 20 requires the involvement of societal groups like the government, companies, public interest groups, the public and research bodies (e.g. von Weizsacker et al, 1997; Vergragt & Jansen, 1993; Weaver et al, 2000). As a matter of fact, involvement alone is not sufficient (but a condition) as each societal group should actively contribute to the necessary changes. But specific contributions are often difficult to be delivered by other societal groups or cannot at all. To illustrate this briefly, governments have to develop necessary legislation and regulation, companies have to develop and introduce sustainable products and production processes, public interest groups sometimes can represent the public or defend a specific public interest, the public has to buy sustainable products and research bodies should develop necessary knowledge. Additionally, sometimes unexpected alliances and partnerships are more successful or even necessary. Very often combinations of changes are necessary including technological, cultural and institutional innovations (for which we use the term system innovations here), while it requires contributions from all societal groups mentioned earlier. In addition, many plea that identifying and initiating system innovations towards sustainability requires new approaches which include the involvement of a broad range of stakeholders from different societal groups not only when defining the problem but also when searching for solutions and conditions.

Within this paper, such an approach involving companies, government, research bodies and public interest NGOs and using stakeholder workshops in combination with stakeholder identification, stakeholder management and scenarios is presented. It was developed and tested as a part of the EU funded research project 'Strategies towards the Sustainable Household (SusHouse)' involving 6 research groups in 5 European countries. The SusHouse project was concerned with developing and evaluating strategies for transitions to sustainable households. Three household functions where studied (see Table

1): Clothing Care, Shelter and Shopping, Cooking & Eating. The starting point of the SusHouse project was that a combination of technological, cultural and structural changes is necessary to achieve a Factor 20 environmental gain in the next 50 years through system innovations. Both consumption and its interconnection with production through products and product usage were taken into account. Another starting point was to involve stakeholders in the process of (re)designing the fulfilment of a household's needs compatible with the concept of sustainable development. Stakeholder workshops and stakeholder identification were the main vehicle to achieve this in the SusHouse project.

Table 1: Overview of where the household functions are being studied

	Clothing Care	Shelter	Shopping, Cooking & Eating
Germany	✔	✔	
Hungary			✔
Italy	✔	✔	
Netherlands	✔		✔
UK		✔	✔

Furthermore, this paper focuses on a part of the SusHouse project, namely the methodology and results of the stakeholder workshops and stakeholder management that underpin the overall approach used in the Project, while other papers at this conference focus on the overall conclusions of the project (Green & Vergragt, 2001) and present the full results of one of the nine subprojects (Quist, 2001). After describing the applied methodology and its background (in Section 2), this paper presents and reviews results achieved in the 9 sub-projects (in Section 3) presenting conclusions and recommendations for an improved methodology in Section 4. Finally, the relevance of the improved methodology for general use in innovation and change processes towards sustainability is discussed (also in Section 4). The basic results are derived from the 9 sub-projects for which we are grateful to the researcher who did a major part of the work and collected raw data.

2. WORKSHOP & STAKEHOLDER MANAGEMENT METHDOLOGY

2.1 Brief Description

The Project's approach was earlier applied from in the Sustainable Washing project (Vergragt & Van der Wel, 1998) before it was further developed, elaborated and extended. Here we describe it briefly focusing on the workshop organisation and stakeholder identification methodology in the project. For each household function studied in each country, an extensive process of *stakeholder identification* was performed, covering stakeholders on the demand side, the supply side, research bodies, government and public interest groups. Selected stakeholders participated in stakeholder *creativity workshops* aimed at identifying sustainable ways of future function fulfilment. The results were used for *scenario construction* (presented in separate paper by Ken Green and Philip Vergragt). The scenarios were used for a scenario-specific 2nd round of stakeholder identification, (and were also assessed in terms of environmental gain, consumer acceptance and economic credibility, but these parts of the overall approach is not dealt with in this paper). Old and newly identified stakeholders were invited to a second set of workshops in which implementation proposals, research agendas and policy recommendations were developed

for achieving the scenarios. In both series of workshops *backcasting techniques* were applied. (Backcasting involves a description of the desired future, as a future 'vision' or a normative scenario, followed by the identification of the steps and changes that are necessary to achieve that future). Both stakeholder workshops and two rounds of stakeholder analysis took place for each function in all countries involved in that function. Hence, the workshop and the stakeholder identification methodology was applied nine times in five European countries. An extensive elaboration of the workshop organisation and stakeholder part in the SusHouse project is given elsewhere (Quist, Pacchi, Van der Wel, 2000)
Figure 1 shows the overall SusHouse approach existing of 6 stages, while the 7th stage 'Realisation and Implementation' is actually not part of the SusHouse project. It was an important aim of the project to stimulate and generate follow-up (which is rather extensively dealt with in this paper), but not to actually do it. A more extensive elaboration on the overall SusHouse methodology are given by Vergragt (1999, 2000), Quist et al. (1999, 2001) and Green & Vergragt (2001).

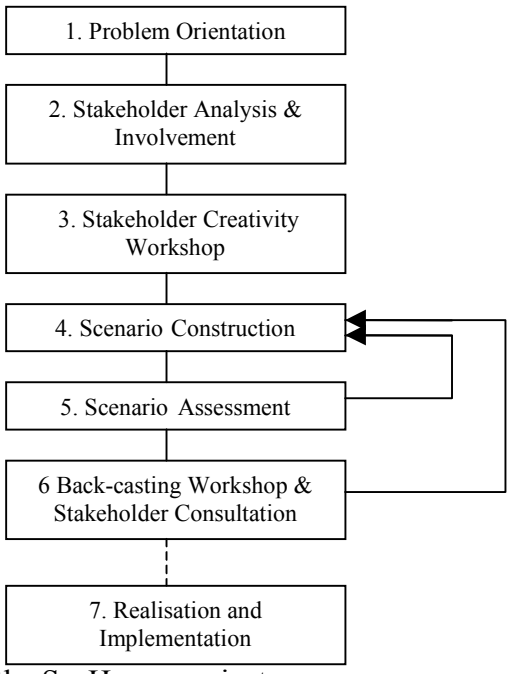

Figure 1: The stages in the SusHouse project.

When focusing on the workshop organisation and stakeholder management methodology, it can be extracted from the full SusHouse approach. Five steps were distinguished when developing the methodology during the project:
1. stakeholder identification, 1st round
2. stakeholder involvement & stakeholder creativity workshop
3. stakeholder management & communication,
4. 2nd round of scenario specific stakeholder identification
5. stakeholder strategy & implementation workshop

A few remarks can be made here with respect to the five steps of the workshop organisation and stakeholder management methodology. The first one is that stakeholder involvement can both belong to the workshop organisation step and the stakeholder identification step (but not at the same time). Next, the 3rd step was only little developed.

Finally, it was found after the project during the evaluation of the results that a post 2nd workshop step was missing, which will come back in the last section.

2.2 Background

So, in the SusHouse project, workshops were the main vehicle for interaction with stakeholders. The approach in the SusHouse project also implied that technical knowledge has to be complemented by the knowledge of those involved in the actual household functions. This means that expert knowledge about possible more sustainable future scenarios was matched by the knowledge of those directly involved in the functions during the workshops.
The workshop organisation and stakeholder management methodology as applied in the SusHouse project has links with a number of disciplines and theories including (constructive) technology assessment, (participatory) policy analysis, future studies, stakeholder theory social constructivism, creative problem solving and group dynamics. Some of the concepts, basic definitions and background theories that are related to the SusHouse approach of involving stakeholders and applying workshops are briefly dealt with below.

Stakeholders, stakeholder analysis & future stakeholders
Stakeholders are defined as all those people and organisations who have an interest at stake in a specific topic, problem, solution, field etc which can effect that stakeholder or that can be effected by that stakeholder. Following common actor definitions, stakeholders have interests and objectives (leaving out here the 'resource' part from actor-theories). However, while actors are assumed to play an active role, stakeholders can be passive and still be affected. Concerning interests and objectives, it is important to emphasise it concerns the interests & objects as perceived by that specific stakeholder.
In the SusHouse project the term stakeholders was preferred over the term actors. Stakeholders were defined as all those people or organisations who are either affected by or who can affect the performance of the household functions studied in its specific national context. This meant that each function in a specific country had a specific national set of stakeholders. This can be illustrated as follows. Consumers in different countries can have partly the same objectives, but will also have partly different objectives due to their specific national context and in fact that is also true for farmers and many other stakeholder groups. Even multinational companies present in each country where a household function was studied, may have different interests in each country. However, it is possible to define stakeholder categories that are more specific than the societal groups referred to earlier and that are generally applicable in each country for a specific function, while some categories were applicable for each function. General stakeholder categories included household members, different types of authorities, environmental movement, consumer groups, research bodies and relevant stages of the supply chain.
While for the identification of present stakeholders quite some methods and approaches are available from public policy analysis and some other fields, much less is known and available from the identification of possible future stakeholders. In addition, even if they can be identified, involving them while they do not know they have an interest yet, might be even more challenging than involving present stakeholders. However, the field of future studies and forecasting was of some help in combination with the constructed scenarios. First of all the scenarios could be scanned for new stakeholders, while it could also be asked to experts and present stakeholder. In addition, future studies revealed that also

normative scenarios have particular driving forces (those key trends that strongly support or enhance developments leading to the realisation of that specific scenario). Those driving forces were analysed for their impacts on stakeholders and their possible future stakes, but could also reveal information about new future stakeholders.

Interactivity, constructivism, technology assessment & learning

It was assumed in the SusHouse project that the participatory approach would lead to interaction between stakeholder and exchange of knowledge, opinions, values etc. what would stimulate learning. Interactivity was based on a constructivistic or discourse paradigm in which results stem from processes of social interaction involving various social actors. Both in policy sciences and the field of technology studies it led to the development of different kind of social network theories in which actors negotiate for their interest and (can) create a social construction. Those theories were, for example applied in the methodologies of Constructive Technology Assessment (CTA) (Schot & Rip, 1996) and Interactive Technology Assessment (ITA) (Grin *et al*., 1997) that were meant to broaden the design process both for technology and policy development. In the SusHouse project we aim to broaden the design process of the scenarios that also can be seen as a constructions based on the creative ideas and opinions from stakeholders from different societal groups.

Social interaction between actors and negotiations can lead to (societal) learning processes including values, attitudes and underlying convictions. This is called higher order learning, and was for example conceptualised by Sabatier (1987). It is necessary in case of complex problems with opposing actors having a different mental framework. This is aimed to in the practice of CTA and ITA, and would be very helpful when looking for acceptable creative solutions for present problems with opposing actors involved, as was proposed by Grin *et al.* (1997). However, it could also be very helpful when searching for acceptable creative solutions for future problems like sustainability, where different societal groups have also their own perception of sustainability and how sustainability problems should be solved. The normative scenarios in the SusHouse project, being the result from a broadened design process (through workshops and interviews) can be seen as such solutions in their 'vision' state. Therefore, the normative scenarios should be credible for the different stakeholder groups because they do not only incorporate their ideas but also some of their opinions and values. Of course, it is not likely that the constructed scenarios would contain all creative ideas, values, elements and visions of the participating stakeholders. So, it is necessary to check if the scenarios are considered to be attractive and under what conditions they could be acceptable for the different stakeholder groups.

Workshops, Creative Problem Solving & Backcasting

Workshops are a powerful tool for achieving stakeholder involvement (Street, 1997), and they are regularly applied. Here, we mention local scenario workshops (Andersen & Jaeger, 1999) e.g. applied on local sustainable living & cities (Street, 1997; Mayer, 1996; Elle et al, 2000), and in the Netherlands for science forecasting (Tijink, 1999) and stakeholder workshops for sustainable technology applied in different need areas in the STD programme (Weaver et al, 2000). However, in fact workshops must be seen as a part of a participatory process design or full approach comprising more aspects than only a single workshop.

The enhancement of creativity, necessary to stimulate really new solutions, ideas and directions, was based on insights and approaches derived from the field of Creative Problem Solving (CPS). CPS is the common name for methods that utilise creativity

techniques for achieving goals and solving problems within an organising framework (after Isaksen, Dorval & Treffinger, 1994). Main components in this organising framework are defining the problem (or the challenge), the generation of ideas and the preparation for action, though these components can be combined in different orders (Isaksen, 2000; Isaksen, Dorval & Treffinger, 1994). Enhancement of creativity in the design process and the workshops is necessary in order to arrive at new ideas and creative solutions, as was also emphasised by Grin et al. (1997). To achieve this, workshop participants and other interested actors need to think outside their existing frameworks and are stimulated to examine how that can lead to new creative innovations including combinations of cultural changes and technological innovations. So, we aim to broaden the design process in two ways:

- by enhancing creativity when thinking about new solutions; and,
- by including the ideas and opinions of a number of societal groups.

Application of the methodology of back-casting means that first, the desired sustainable future vision or normative scenario is constructed after which, it is possible to define the steps or the trajectory of how to reach that sustainable future or proposal that fits in that future. Back-casting enhances the possibility of identifying radical innovations and changes compared to thinking from the present situation. The methodology of back-casting was applied before in the STD programme (Weaver *et al.*, 1999; Vergragt, 1998). In the SusHouse project back-casting techniques were applied in both series of workshops in combination with elements from the CPS approach.

2.3 Applied methodology: stakeholder identification and management

The general aims of the stakeholder identification task were:

- to identify who are the stakeholders which are at present involved in the Shopping, Cooking and Eating, Shelter and Clothing Care functions in the different countries, in a way that is relevant to the household level.
- to imagine who could be the relevant stakeholders in the future normative scenarios the different research groups will sketch for each function in each country.

Starting from the definition of stakeholders as ”all those people or organisations who are either affected or who can affect the performance of various functions at the household level”, a number of steps can be distinguished with respect to the stakeholder identification. Furthermore, it has to be mentioned that the first and second round of stakeholder identification shared a number of steps, while the second round was more extensive as it contained two more steps focusing on specific scenarios (that could be constructed only after the 1st stakeholder workshop). Table 2 shows the steps for both rounds or stakeholder identification, while below each step is briefly described

Table 2 Steps as applied in the two rounds of stakeholder identification

1st round of stakeholder identification
step 1. Identification and assessment of present stakeholders
step 4: identify appropriate contact persons & names for each stakeholder.
2nd round of scenario (specific) stakeholder identification
step 1. Identification and assessment of present stakeholders (UPDATE)
step 2: identification driving forces in scenarios
step 3: identification of future stakeholders for each scenario
step 4: identify appropriate contact persons & names for each (new) stakeholder.

1st step: Identification and assessment of possible present stakeholders
A first round of assessment of possible present stakeholders. In this phase, stakeholders are selected on the basis of their global objectives, which means the objectives that draw them into the field at all. This can be realised by analysing the interests at stake and the objectives of different potential stakeholder groups.
2nd step: identification driving forces
Understand in which way different driving forces will act upon present stakeholders in future scenarios The second step takes place after construction of scenarios has taken place. Each scenario, as a matter of fact, will entail the participation or at least the presence of particular sets of stakeholders.
3rd step: identification future stakeholders
Identify which present stakeholders can give us an idea of future ones in each scenario. This step is a strategic one in order to understand how to involve possible representatives of future interests in our project. In this phase a bit of creativity should be used, and the possible directions can be: imagining if today there is a niche of consumers or producers that will possibly play a major role tomorrow in one of our scenarios, or understanding if there is today some kind of underrepresented interest among consumers, producers or regulators that could play a significant role in the future.
4th step: identifying appropriate contact persons and names for stakeholders
Select people to contact among the general stakeholders' definition. I.e. put real names beside broad definitions of stakeholders such as "communitarian movement", "dishwasher producers R&D department", "housewives", "trendy singles". Not each and every stakeholder at a strategic level will become someone actually involved in the Sustainable Household project, either as a participant to the workshops or as a contact point.

Stakeholder management
Although it was noted that stakeholder management was very relevant between the two series of workshops, due to lack of capacity no structured approach was developed (apart from a proposal for establishing a so called technical committee for which experts and stakeholder could be invited to monitor the research and give feedback), while researchers doing the actual work for a specific function in one of the national research teams had also lack of capacity as they had to assess the scenarios as well and it appeared difficult to combine that with stakeholder management.

2.4 Applied methodology: stakeholder creativity workshop (WS1)

The aim of the first workshop was to develop broadly endorsed 'proto-scenarios' of future sustainable fulfilment of the household functions S*helter*; *Shopping, Cooking and Eating* and *Clothing* C*are* with help of participating stakeholders. The objectives for the 1st workshop could be stated as follows:

- numerous ideas for the future sustainable fulfilment of household functions
- creativity and enthusiasm among participants
- Clustered ideas elaborated into proto-scenarios
- Involvement of relevant stakeholders from different societal groups (companies, government, public interest groups, research bodies and universities)
- Exchange their ideas, visions, attitudes and knowledge with respect of the household functions between different stakeholders and societal groups

Methods and creativity for WS1

To enhance creativity, a rather well known brainstorming approach was applied in the first series of workshops. However, brainstorming for generating new ideas is actually only one of the steps in a process towards a new design – in companies often a novel product - in SusHouse and only one of the possible techniques to be used. A more general description is Creative Problem Solving (CPS). CPS is the common name for methods that utilise creativity techniques within an organising framework. Important steps that can be distinguished in a CPS process and that were followed in the SusHouse creativity workshop are:

- preparation and problem definition: what is the problem to be solved
- divergence (idea generation and brainstorm)
- convergence (in SusHouse, clustering and filtering)
- further elaboration
- further results processing (in SusHouse, by constructing Design Orienting Scenarios)

Table 3 Programme and workshop organisation stages for WS1

Preparation stage	- Familiarising the function in its national context - Test workshop (creativity session) - Expert interviews - Stakeholder identification, - Stakeholder interviews and involvement, - Practical workshop organisation: facilitator and development facilitators script, - Practical organisation: writing input documents
Workshop programme	- Welcome, introduction + facts and figures, - Brainstorm session (divergence) - Convergence: clustering and filtering - Convergence: elaboration into proto-scenarios - Final discussion and evaluation
Post workshop	- Evaluation among participants and among organisers - Report in country language - SusHouse internal report - Spin-off - Result processing (construction of scenarios, following scenario task format)

2.5 Applied methodology: implementation and strategy workshops (WS2)

While the goal of the first series of workshops was to bring together several stakeholders relevant to a specific household function and to generate creative solutions aiming at sustainability on the long term, the overall goal of the second series of workshops was to invite stakeholders to formulate concrete, short term oriented steps towards the implementation of viable concepts, derived from the scenarios based on the outcomes of the first series of workshops and to identify barriers and conditions (in terms of technical, cultural and policy terms). The 2nd series of workshop had an emphasis on implementation and strategic issues, thereby influencing the desired profile of the stakeholder target group. For instance, it was aimed to involve people of more executive level assuming that commitments would be stronger as would be their intentions for alliances. Secondly, scenario specific stakeholder analysis was likely to reveal new relevant stakeholder groups that would be important for realisation and implementation and therefore import to enroll.
The objectives were formulated as follows:

- stakeholder feedback on scenarios and assessment results
- increasing stakeholder support and enthusiasm for scenarios and results

- involvement of new and 'old' stakeholders relevant for the realisation of scenarios
- identification of necessary changes and related research agendas for lacking knowledge
- elaboration of implementation proposals and concrete projects
- concrete stakeholder co-operations around implementation proposals and projects
- policy recommendations supporting the necessary changes and concrete proposals.

Methods for WS2

For the evaluation of the scenarios there were numerous methods available, all of them structuring the reactions, feedback and discussion with help of guiding questions. For the elaboration and implementation subgroup sessions, the methodology of back-casting was available. Back-casting means that, first, the desired sustainable future vision or normative scenario is constructed, after which it is possible to define the steps or the trajectory of how to reach that sustainable future or proposal that fits in that future.

Table 4 Programme and workshop organisation stages 2nd workshop

Preparation stage	- New round of DOS specific stakeholder identification, - Stakeholder re-involvement - Enrolment new stakeholders - Practical workshop organisation and development facilitators script - Writing input document
Workshop programme	- Welcome and introduction - Presentation of DOSs and assessment results - Appreciation and evaluation session (plenary) - Modification of scenarios (subgroup or plenary) - Subgroup back-casting and identification necessary changes - Subgroup development implementation and follow-up proposals - Subgroup policy recommendations - Subgroup presentations, final discussions and evaluation
Post workshop	- Evaluation among participants and among organisers - Report in country language - SusHouse internal report - spin-off - *result processing (construction of proposals and policy recommendations)** - *post-workshop stakeholder management**

* Those activities were developed after the 2nd workshop, but were only in a few cases (partly) done.

3 RESULTS

3.1 Results stakeholder identification and management

As far as the stakeholder identification is concerned, for each household function in each country where it was studied a relevant number of stakeholders were selected for preliminary contact (varying from 200 to 50); these selections were based on existing personal contacts, literature review, participation in both academic and commercial events (conferences and fairs), use of snowballing method. In most cases, those stakeholders sets were well balanced in the different categories down the supply chain, on the demand side, and included policy makers, researchers and experts in the field. Most stakeholders were also interviewed (by phone or face-to-face), and this appeared to be a valuable resource from the point of view of both scientific and interactive knowledge, while it also contributed positively to stakeholder involvement in the 1st series of (stakeholder) creativity workshops.

Though most stakeholders were identified in 1998 during the first round of stakeholder identification before the first round of workshops, the resulting list has been subsequently updated in 1999 mostly in an ongoing process between the two series of workshops. In addition, there was in most cases a second round of scenario specific stakeholder identification before the second series of (strategy & implementation) workshops. This revealed in all cases new relevant stakeholders, while in some countries it led to a complete update and change of the set of stakeholders to be invited for the 2nd workshop.
As far as the stakeholder management is concerned, apart from circulating materials and documents from the first series of workshops little has been done by the SusHouse researchers between the two rounds of workshops, due to lack of time and resources,. However, in most countries, activities were done that can be considered as stakeholder management. At the end of the project after the 2nd series of workshops, the relationship with stakeholders has been put back on the agenda. It was felt among the research group that further stakeholder management would be necessary for stimulating follow-up activities contributing to implementation. This will come back in the section dealing with the results of the 2nd workshop and in the section where the conclusions are discussed.

3.2 Main results concerning stakeholder creativity workshop (WS1)

In total, 9 stakeholder creativity workshop were organised in the period November 1998 – January 1999. Experienced professional facilitators led all creativity workshops, while in most workshops SusHouse members led subgroup sessions. For all workshops, SusHouse researchers managed to enrol stakeholders from the main societal groups (companies, NGOs, government and research bodies and universities), while there were differences in the share of different societal groups at specific workshops.
All workshops resulted in numerous creative ideas concerning the future sustainable fulfilment of the specific function in that specific country. Within the overall brainstorm framework a wide variety of creativity techniques was applied. In addition, in all workshops, clustering and filtering of the ideas was successful, while all workshops led to proto-scenarios that were the starting point for the construction of Design Orienting Scenarios. For clustering, filtering and elaborating a wide variety of tools and methods were applied including back-casting techniques. Considerable momentum and enthusiasm were generated during the workshops, in general people were eager to stay involved. A few workshops led to (indirect) spin-off or follow-up including participation in appropriate networks.
It appeared that an important condition is to structure the programme sufficiently and to give each session a clear focus. In other words, there are strong indications that adequate structuring and skilled facilitation in both creativity and filtering/clustering is much more important than enhancing creativity by giving elaborated examples. It also seemed that results were considerably broadened by the presence of wide variety of stakeholders and stakeholder groups. The workshop organisation format was useful as a starting point, but required elaboration and adjustment to local circumstances and customs. In all participating countries, test workshops were carried out in order to get acquainted with the approach and possible results, while in most countries detailed facilitator scripts were developed for the actual workshop. Both were evaluated very positively by the research teams and have contributed significantly to achieving desired workshop results.

3.2 Main results from the strategy and implementation workshops

For each function in each country, a stakeholder strategy and implementation workshop was organised in the period December 1999 – February 2000. In total, 9 strategy and implementation workshops were organised. A few research teams organised a test workshop. SusHouse researchers managed to re-involve 'old' stakeholders and enrol new stakeholders in the 2nd series of workshops. Most research groups managed again to enrol stakeholders from the main societal groups, though there were differences in the share of different societal groups at different workshops. In most countries, the number (and level) of participants increased which is quite positive.
The 2nd series of workshops resulted in interesting results, both with respect of the process and the content. All workshops resulted in stakeholder feedback on the DOSs, while in most cases improvements or new innovative ideas were suggested. In a few workshops serious redesign processes took place. All workshops resulted in implementation proposals policy recommendations, and to a lesser extent in research and action agendas. However, results and proposals were not concretely elaborated. Further result processing and elaboration seems necessary to reveal more concrete policy recommendations and action agendas for implementation. This would require additional activities and also post-workshop stakeholder management and could eventually lead to desired follow-up and stakeholder co-operation.
The workshop organisation format was useful as a starting point, but required elaboration and adjustment to local circumstances and customs. Experienced professional facilitators were hired for most workshops of the 2nd series. A variety of methods, including a number of varieties of back-casting, were applied.

4 CONCLUSIONS

In this paper we have described a workshop organisation and stakeholder management methodology that was developed as part of the SusHouse project. It has been tested in 9 participatory processes in five European countries focusing on the future sustainable fulfilment of three household functions, namely Clothing Care, Shelter and SCE (Shopping, Cooking and Eating). Each participatory process existed of two series of workshops having a different focus, two rounds of stakeholder identification and (some) stakeholder management between the two series of workshop. The application of this workshop organisation and stakeholder management methodology in the SusHouse project has been successful in identifying and enrolling relevant stakeholders from different societal groups like companies, public interest groups, research bodies, government. During two occasions these stakeholders actually gathered during two workshops, and stakeholders were not only willing to participate, but also they were willing to share their creativity, ideas, and opinions with respect to sustainable function fulfilment with each other and the research teams. With help of professional facilitators, a structured and well prepared programme interesting and useful results were achieved both with respect to the content and the process.
As far as the stakeholder identification is concerned, in each function in each country a relevant number of stakeholders has been identified with help of different methods. In most cases those stakeholders were well balanced in different categories, down the supply chain, on the demand side, and including policy makers, researchers and experts. Of course not all identified stakeholders could be enrolled in the workshop, so sometimes the groups of

participants was less balanced than the set of stakeholders derived from the stakeholder identification. Furthermore, while the first round of stakeholder identification was a general one, the second round of identification (before the 2nd series of workshops) was scenario-specific leading in most cases to the identification of new stakeholder groups that were relevant for the future realisation of the scenario but missing, while some of them could be seen as future stakeholders. In most cases, this 2nd round of scenario also led to changes in the participating stakeholders at the 2nd workshop. In most countries the number (and averaged level) of participants increased.

All stakeholder creativity workshops (1st series) resulted in numerous creative ideas concerning the future sustainable fulfilment of the specific function in that specific country and all workshops led to proto-scenarios. Within the overall brainstorm framework a wide variety of creativity techniques was applied while different clustering, filtering and elaborating techniques including back-casting varieties were used as well. It appeared to be very important that the interaction between participants is structured, in order to obtain more and better results contributing to both the efficiency and the effectiveness, while different techniques were successfully used.

Concerning the 2nd series of workshops, focusing on implementation and strategies, not only 'old' stakeholders were re-involved but newly identified stakeholders in the 2nd round of stakeholder identification were enrolled as well. Quite a variety of methods for generating feedback and elaborating implementation were applied in the 2nd set of workshops including several varieties of back-casting. All workshops resulted in stakeholder feedback on the DOSs, while in most cases improvements or new innovative ideas were suggested. In most cases also implementation proposals and policy recommendations were developed. However, it appeared to be quite difficult to make them very concrete or to prioritise them, while stakeholder co-operation around concrete proposals was even more difficult. It is still not fully clear if the goals of this single day workshop were too ambitious, or that an improved workshop structure would improve the results. Nevertheless, in general policy recommendations were 'hidden' in the 'plain' workshop results requiring further elaboration, while there were also opportunities for concrete stakeholder co-operation and alliances reported.

The 2nd series of workshops can be seen as an efficient way of communicating results with stakeholders and giving them the opportunity to reflect on and to influence the results and direction, while they also get acquainted with the opinions, visions and ideas of other stakeholders and other societal groups. While there are other means for generating feedback without organising stakeholder workshops, all beneficial effects (especially higher learning) of the mutual acquaintance with the opinions of others is difficult to be replaced by other means not gathering groups from different societal groups. The 2nd series of workshops has significantly contributed to broader support and endorsement (stimulated by the possibility to modify the scenario design and to contribute to the elaboration of implementation proposals), for which not only the results but the group dynamics and generated enthusiasm and momentum are very important as well.

With respect to the process while in most cases not only considerable momentum and enthusiasm was generated during both series of workshops, but in most cases led to active networking as well. Participants were often eager to stay involved and in some cases extended their network. However, the momentum faded away after the workshop and while there was no opportunity or capacity to keep it.

When discussing such a methodology it is important to evaluate not only the positive features, but also to identify elements, parts and elements that can be changed in order to

improve the methodology. Based on the results and the discussion above, the following remarks and recommendations can be made:

- The interval between the two workshops (one year of more) seemed too long. Next time when applying he SusHouse approach, it is recommended to decrease the time interval between the 1st and 2nd series of workshops.
- Additionally, the methodology could be improved by developing and applying stakeholder management activities in order to keep in touch with and to maintain the stakeholder network between the two series of workshops. As a matter of fact considerable added value lies in the process of stakeholder interaction during the 1st series of workshops, (provided that there is a form of stakeholder management after the workshop). Examples of stakeholder management and communication activities are a stakeholder committee which could meet occasionally for supervising and giving feedback on progress and results, getting preliminary feedback on scenarios with help of questionnaires and interviews and making use of stakeholder knowledge for the economic analysis. In addition, more methods might be available from network management in the field of policy making. Here we refer to work published in the Netherlands (De Bruijn & Ten Heuvelhoff, 1995, 2000), though it is necessary to remark that not all methods from the field of policy making can simply be applied in voluntarily participatory processes as initiated in the SusHouse project. There are a number of differences, of which we only mention power relations here. Further elaboration seems very interesting, but has to wait for future work.
- Concerning the 2nd workshop, it is recommended the structure (workshop design) should be modified in such a way that the results will be more concrete (this is something that might not be possible within time constraints and require a longer workshop of 1.5 or 2 days), or follow-up meetings in smaller groups (for instance) on request of stakeholders) on single scenarios of topics which can be part of a post-workshop step.
- It is also recommended to add a result processing step after the 2nd workshop for elaborating (more concrete) policy recommendations, implementation proposals, follow-up activities and action and research agendas. This would be quite comparable to the scenario construction step after the 1st creativity workshop. First steps towards implementation would not only require additional activities after the 2nd workshop but post-workshop stakeholder management as well aiming at follow-up and stakeholder co-operation.
- The two workshop organisation formats stand too much on their own; it is strongly recommended that the two workshops and the two rounds of stakeholder identification be integrated into a more connected workshop organisation and stakeholder management methodology including stakeholder management between the workshop and after the 2nd workshop.
- Further analysis of results with respect to stakeholder learning and possible relations between specific process designs and outcome is recommended. The former could increase the insight into the role of stakeholder learning in relation to achieved results (especially follow-up), while it seems that learning contributes to attitude change with respect of sustainability issues could be seen as a result as well which can be achieved and could be worthwhile in itself (even without concrete follow-up and spin-off). The latter could increase our insight into local conditions and cultural differences, which might require the development of a more extensive analysis format for cross-cultural comparisons.

Table 5 shows the improved stakeholder workshop and management methodology based on the results in the SusHouse project and the discussion and recommendations above. It contains a more serious stage of stakeholder management between the two series of workshops and a extensive result processing and stakeholder management step is added after the 2nd series of workshops. This would enable results of improved quality and might stimulate stakeholder alliances and partnerships around concrete implementation proposals.

Table 5 improved and integrated stakeholder workshop and management methodology

Step	**Activities**
1. strategic problem orientation	Familiarise function in its national context
2 stakeholder identification and involvement	Stakeholder identification (step 1 and step 4 as described in Section 2.3) Stakeholder interviews (including experts)
3 stakeholder creativity workshop	1. preparation stage 2. Adjust workshop format to local circumstances, but inclusive a creativity session, a clustering and filtering session, and an elaboration session using back-casting techniques for generating proto-scenarios 3. Workshop evaluation (participants and organisers) and distribution workshop report 4. Elaboration of proto-scenarios into more comprehensive scenarios
4 stakeholder management	Getting a structured feed-back from stakeholders on scenario development Setting up a technical committee that works alongside the project Stay involved in relevant networks and participate in related processes (if possible) Other stakeholder management & communication activities
5 scenario-specific 2nd round of stakeholder identification and new stakeholder involvement	Step 1-4 from the stakeholder identification methodology as described in Section 2.3
6 stakeholder implementation and strategy workshop	1. Preparation stage 2. Workshop day (containing a structured scenario evaluation and feedback session, and an elaboration session aiming at an action agenda containing implementation proposals, research and development agendas, policy recommendations) 3. Workshop evaluation and distribution workshop report
7 post workshop stakeholder management aiming at follow-up and implementation	1. Elaboration workshop results making them more concrete (action agenda, implementation proposal, research agenda, policy recommendations) 2. Communication results with stakeholders asking for feedback and verify their interest in parts of the action agenda. 3. Act as a broker between stakeholders interested in similar implementation proposals

In addition, this paper has presented a methodology which has the potential for applications in other situations to explore not only sustainable fulfilment of household functions, but innovations towards sustainability in general, using the knowledge and interaction of stakeholder groups. This methodology could be interesting to apply in other fields like the development of sustainable business, issues of local sustainability (for instance as an extension to present agenda 21 approaches) and industrial ecology. It has already been applied in India for Ecodesign innovations in a brief version of just a few days. Results from this will also be presented at this conference (Vergragt et al, 2001).

The methodology has also potential as a participatory EU policy instrument supporting sustainable development in general. It could be applied as a European bottom-up approach bringing visions, scenarios, innovations, policy recommendations etc. from the national level to the European level, where they can be used for policy making processes (taking into account both the similarities and the differences). Of course, when implementing EU policies, they should be customised on the national level taking into account the relevant national differences.

Finally, we would like to remark that this paper focuses on a part of the SusHouse project, namely the workshop organisation and stakeholder management methodology (for a full

review, see Quist, Pacchi & Van der Wel, 2000). In addition, the overall approach applied in the SusHouse project comprised also scenarios construction and three assessments of the scenarios: an environmental assessment using indicators, consumer acceptance research using focus groups and an economic analysis using a questionnaire. However, these results are published elsewhere (Manzini & Jegou, 2000; Bras-Klapwijk, 2000; Bode, 2000), while summarising conclusions are given by Vergragt (2000) and in the paper by Green and Vergragt also presented at this conference (Green & Vergragt, 20001).

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