Summary

Participation of stakeholders, or to be more precise, interaction between different stakeholders to exchange knowledge, ideas and opinions has frequently been proposed as a way to deal with unstructured societal problems. This study is about methods to facilitate such stakeholder dialogues on unstructured problems.

Examples of unstructured issues are how to deal with climate change, biodiversity, water management and energy supply. The unstructured problem that is central in some of the empirical parts of this study is energy from biomass. For some stakeholders, the goal of policy for energy from biomass should be security of energy supply, whereas for others it should be CO2 reduction or positive impacts for developing countries. These different problem perceptions imply different strategies and solutions, which may very well conflict. Unstructured policy problems are characterized by uncertainty with regard to the knowledge that is needed to solve the problem, as well as with regard to the values that are at stake. This means that actors have different perceptions of what the goal of policy should be, as well as what the relevant means are for attaining that goal (e.g. which policy measures). It is therefore in such cases unclear who the relevant experts are, as well as what their positions are.

Unstructured problems require policy as learning. In order to get a better understanding of the problem and its potential solutions a problem structuring process is needed, i.e. an open exploration and examination of divergent knowledge claims and viewpoints. Such an approach requires a high degree of stakeholder participation. Participation for unstructured problems takes a different form than for problems that are more structured. In a negotiation process for example, it is clear who the stakeholders are and what their positions and preferences are. Participation takes place to negotiate a solution that is acceptable to the involved parties. In case of an unstructured problem however, it is not clear who owns relevant expertise, and hence, who is a stakeholder and why. As a consequence, preference negotiation cannot take place.

Stakeholder dialogue is a transdisciplinary research method that can contribute to a political learning process. ‘Transdisciplinary’ means that this method not only integrates
different scientific disciplines -as an interdisciplinary method does- but also knowledge, values and interests of stakeholders outside the scientific domain. A stakeholder dialogue is defined as an organized meeting of stakeholders with different perspectives, knowledge and backgrounds, who would otherwise not meet (or not all together), structured to a greater or lesser extent by means of specific methods, tools or techniques. A stakeholder is someone involved in, affected by, knowledgeable of, or having relevant expertise or experience on the issue at stake. This definition encompasses different types of actors, such as scientists, citizens, actors from large companies, small entrepreneurs, policy makers, NGOs et cetera. The affiliation of a stakeholder is however not of primary importance for stakeholder selection; it is the perspective of a stakeholder that makes him or her relevant.

The aim of a stakeholder dialogue is to enhance learning through problem structuring. Learning in stakeholder dialogues thus means that participants gain an improved understanding of the diversity of perspectives on the problem and its potential solutions. A perspective is defined as the integrated whole of beliefs, values and presumptions that a person, or group of persons, uses to make sense of a particular problem. A perspective shapes people’s perceptions and determines how someone perceives a particular problem and its solution.

Learning in stakeholder dialogue requires an atmosphere of constructive conflict. Participants are not required to reach consensus or agreement. Constructive conflict means that participants confront claims with other claims, unravel argumentations, and make (implicit) assumptions explicit in order to jointly develop new ideas that are more robust. Conflict is not in any form beneficial for stakeholder dialogues. Three issues appear to be important in order for conflict to be constructive. Firstly, conflict is more constructive when it is authentic rather than artificial, such as in role-playing techniques or devil’s advocate approaches. Secondly, conflict needs to be issue-related (or cognitive) rather than personal (or affective). Personal conflict can have a detrimental effect on learning in stakeholder dialogues. Thirdly, conflict needs to be manageable. People should not feel overwhelmed by it. This may imply that differences in opinion or perspective can be too big, or that very divergent opinions need to be bridged by intermediaries.

An open exploration of divergent ideas is not something that happens ‘automatically’ when people are put together. There are all kinds of mechanisms that hamper learning in stakeholder dialogues. These hampering mechanisms exist because of an intrinsic characteristic of stakeholder dialogues: the interaction between people with different perspectives, interests, background, expertise and status. So, ironically, the very reason why stakeholder dialogues are thought to be valuable is also a reason why an open dia-
Dialogue is difficult to achieve. Four hampering mechanisms, or biases, are discussed in this study. Firstly the ‘bias of attitude’. People tend to take up information that underlines their initial ideas and that is in line with their own perspective and opinion, rather than information that conflicts their initial ideas. Secondly, the ‘bias of phrasing’ refers to those instances in which particular input has a higher (or lower) probability of playing a role in the dialogue because of the way it is phrased. The use of jargon may for instance lead to situations in which some people fully understand what is meant and others not. Thirdly, the bias of source refers to the influence that characteristics of the person who brings in specific information in the dialogue may have on the probability that this information enters or plays a role in the dialogue. The bias of source for instance plays a role when certain input is more likely to be discussed in the dialogue because the stakeholder is very powerful, or less likely to be discussed because the respective stakeholder has a marginal position. Fourthly, groups tend to discuss information they share rather than information that is unique, i.e. owned by only one or a few persons in the group. This has been referred to as the bias of shared information. These four biases each disturb in a different way the open exploration of divergent perspectives and claims and can as such hamper problem structuring in stakeholder dialogues.

In order to facilitate problem structuring in stakeholder dialogues, methods are needed to stimulate an open exploration of divergent perspectives. A participatory methodology for problem structuring should firstly incorporate methods to select stakeholders who reflect the diversity of perspectives on the issue under consideration. Secondly, these perspectives should all have an equal opportunity to play a role in the dialogue. As the hampering mechanisms may prevent specific perspectives from being articulated, a participatory methodology should thus incorporate methods that can help to put a broad range of relevant points of view, knowledge and values on the table and that can make sure that these are being clarified for, and evaluated by participants in the dialogue.

Although many participatory methodologies exist, none of these include techniques or procedures to in order to live up to these two requirements. This study therefore aims to develop an overarching participatory methodology for problem structuring in stakeholder dialogues: Constructive Conflict Methodology. Firstly, Constructive Conflict Methodology incorporates specific methods that can be used to identify and select stakeholders who reflect a diversity of perspectives on the issue under consideration. Secondly, it incorporates methods to facilitate problem structuring through 1) the articulation of diversity in terms of divergent perspectives and, 2) confrontation of claims that result from these divergent perspectives. Thirdly, Constructive Conflict Methodology should be assessable, so that its application can be evaluated. The evaluation of Constructive Conflict Methodology concerns the question whether Constructive Conflict Methodol-
ogy enhances learning in stakeholder dialogue, i.e. whether it supports participants’ understanding of the diversity of perspectives on the issue.

*Constructive Conflict Methodology* comprises four steps: 1) stakeholder identification & selection, 2) articulation of the diversity of perspectives, 3) confrontation of presumptions and knowledge claims of stakeholders with divergent perspectives, 4) synthesis. *Constructive Conflict Methodology* relies on the use of specific social science methods to support each of the steps within the methodology. Methods discussed in this study are for example Repertory Grid Technique, Q methodology, Policy Delphi, Cognitive mapping, Dialectical methodology and Toulmin model of argument.

In the first and second step of *Constructive Conflict Methodology*, the aim is to identify the diversity of perspectives in a bottom-up fashion. This means that diversity is not assumed through some kind of classification (such as actor type, demographic variables, or predefined value orientations), but rather the outcome of an empirical analysis. There is no fundamental reason to assume that representation of different actor types results in representation of diverse perspectives. In fact, this study shows that this assumption is incorrect. In order to stimulate constructive conflict, three properties of diversity should be addressed through stakeholder selection. Firstly, a variety of perspectives should be included in the dialogue. This induces more divergent thinking, consideration of multiple perspectives, and consideration of higher proportions of unshared information. Secondly, constructive conflict is stimulated by including disparate perspectives in a dialogue. The more different an idea is, the larger is its potential learning effect. As such, the inclusion of marginal perspectives is critical for learning. Thirdly, the various perspectives should be balanced, in order to increase the probability that unique information is discussed and to reduce groupthink. This means that each perspective should be represented by an equal number of participants in the dialogue, regardless how dominant or marginal the perspective is.

As regards the second step, methods should be able to uncover the implicit or taken-for-granted elements of perspectives. People are for instance often not well aware of the assumptions that lie at the basis of other people’s, but also their own, ideas or claims. Articulation of perspectives means that these assumptions are made explicit and clarified in order to stimulate learning. The third step in *Constructive Conflict Methodology*, confrontation of knowledge claims and presumptions, aims to enhance constructive conflict by confrontation on a specific level. This means that the discussion revolves around specific technological or policy options and that confrontation takes place on the level of knowledge claims rather than perspectives.
The first empirical part in this study concerns the H\textsubscript{2} Dialogue. The H\textsubscript{2} Dialogue was set up in order to explore the possibilities of a hydrogen economy for the Netherlands (in an international context), and to explore what kind of strategies and interventions can be developed to stimulate the transition towards a hydrogen economy in the Netherlands. The H\textsubscript{2} Dialogue ran from 2004-2008. The dialogue consisted of an extensive preparation phase and a series of six workshops. This study reports on how Repertory Grid Technique was used in the H\textsubscript{2} Dialogue for step 2 of Constructive Conflict Methodology: articulation of perspectives. Repertory grid technique originates from construct psychology and has mainly been used in clinical settings to increase the psychologist’s understanding of how an individual (a patient) views the world. The basic idea of the method is that the minds of people are composed of ‘construct systems’, which reflect their constant efforts to make sense of the world. The repertory grid procedure is best characterized as a structured interview in which the respondent is confronted with a triad of elements from a larger set of elements and is then asked to specify some important way in which two of the elements are similar and different from the third. This characteristic that describes similarity and difference is referred to as a construct. In the case of the H\textsubscript{2} Dialogue, the elements are ten different hydrogen visions that were derived from the interviews in the preparation phase, and the constructs are the qualities that stakeholders use to distinguish between the hydrogen visions, for instance ‘sustainable’ versus ‘not sustainable’. The bipolar construct is then presented on a scale (e.g. a five-point scale, with one pole of the construct at score 1 and the other pole at score 5). The respondent is asked to rate the elements, in this case the hydrogen visions, on this scale and to indicate which pole of the construct he or she prefers. After this, the interviewer moves on to a next triad of elements. Typically, these steps are repeated until the respondent mentions no new constructs anymore. Repertory grid technique was used in the kick-off workshop to articulate diversity of perspectives, by 1) identifying the variety of concepts that stakeholders use in order to frame future hydrogen visions, and 2) by identifying three disparate (most different) future hydrogen visions out of the ten visions that were derived from the interviews in the preparation phase. These three visions were used to form subgroups within the dialogue that each worked out one of the three visions in the course of the dialogue. The dialogue also involved a confrontation between these three groups.

The major part of the empirical work in this study is based on the Biomass Dialogue, a stakeholder dialogue on energy options from biomass in the Netherlands. The Biomass Dialogue took place in 2007-2008, and consisted of three workshops in which about 30 stakeholders participated. Constructive Conflict Methodology was used for the overall design of the dialogue. Q methodology was used to identify the diversity of perspectives on energy from biomass in the Netherlands and to select participants. Q methodology can uncover, in a bottom-up fashion, patterns of perspectives that exist within a particu-
lar (policy) field. Q methodology involves a sorting task, in which respondents have to rank-order a broad range of (subjective) statements on a particular issue (in this case energy options from biomass in the Netherlands). Data are factor-analyzed, which results in a number of factors that can be interpreted as perspectives.

In the preparation phase of the Biomass Dialogue, seventy-five Dutch stakeholders were interviewed with Q methodology. This resulted in six perspectives on energy-options from biomass and an overview of stakeholders’ positions with regard to those perspectives. Forty respondents, who reflected the six perspectives in a balanced way, were invited to take part in the dialogue. As such, Q methodology was a useful and tractable approach for stakeholder selection.

The six perspectives and the analysis of participants’ positions with regard to the perspectives were presented at the first workshop of the Biomass Dialogue. The perspectives were furthermore used to form subgroups of ‘like-minded’ people for specific tasks and exercises in the dialogue, e.g. to elaborate upon argumentations for the sustainability of specific biomass chains. Also in the workshop reports, the project team linked the findings of the dialogue to the perspectives, for example by indicating that stakeholders with different perspectives use different reference situations for evaluating the sustainability of specific biomass chains. Hence, diversity of perspectives was emphasized throughout the dialogue, as a consequence of which participants felt that they were ‘allowed’ to disagree. Participants indicated in the evaluation after the workshops that the way the perspectives were used throughout the dialogue contributed to a constructive and open dialogue and that it helped them to better understand other people’s viewpoints.

Apart from its use as a method to facilitate the dialogue, Q methodology was used to evaluate the learning effect of Constructive Conflict Methodology in the Biomass Dialogue, i.e. to what extent participants gained an improved understanding of the diversity of perspectives as a result of participating in the Biomass Dialogue. The analysis was based on a quasi-experimental design. Eleven participants conducted a second Q sort after the dialogue. In addition, a control group was formed. This control group consisted of twelve stakeholders who also conducted a Q sort before and after the dialogue, but who did not participate in the dialogue. The quasi-experimental design enabled a statistical analysis of the extent to which participants’ agreement with the six perspectives changed as a consequence of taking part in the dialogue. The analysis showed that the dialogue had a significant effect: on average, the agreement with the six perspectives increased due to taking part in the dialogue. This was interpreted as an increased understanding and acknowledgement of the six perspectives. The results of the analysis in-
dicate that the Biomass Dialogue was a problem structuring process: a learning process brought about through the articulation and confrontation of divergent perspectives. Problem structuring in the Biomass Dialogue can be understood as a process of convergence to the six perspectives. Rather than reaching a consensus on a particular perspective, there seems to be consensus on the fact that a diversity of perspectives exists.

Summarizing, this study shows the importance of using methods that enable a stakeholder selection based on perspectives, rather than for example actor type. It is emphasized that stakeholder identification and selection is a critical step in the design of a stakeholder dialogue. Furthermore, the use of methods that facilitate the identification of perspectives in a bottom-up way, and that can make the taken-for-granted elements of perspectives (e.g. implicit assumptions) explicit is emphasized. Results from the Biomass Dialogue show the importance of using concrete objects for discussion in the dialogue; it is only at the concrete level that participants with different perspectives can agree on something without necessarily sharing the underlying motivations, such as values or interests. Although the abstract level of perspectives is not the level on which conflicts can be resolved, it is at this level that people better understand why other people pay attention to specific elements of the problem. Clarification of perspectives provides an understanding of underlying values and worldview. This proved a good basis for discussing specific options and competing knowledge claims. As such, the perspectives can serve as anchor points in a dialogue that focuses on concrete objects of discussion. In addition, the specific options should be discussed within a specific context, i.e. ‘situated learning’, as this enlarges informational richness. Situated learning means that people learn about a specific option within a specific context. It means asking the trivial, yet often unasked, question: What is actually happening in the situation in which this option is applied? Dialogues should as such entail a process of joint fact-finding on specific options in specific situations. Finally, this study shows, on the basis of a combined quantitative and qualitative evaluation, that participants better understand and acknowledge the diversity of perspectives on biomass as a result of taking part in the Biomass Dialogue. This enabled them to better grasp the complexity of the biomass issue.

This study underlines the importance of a methodological approach to the facilitation and evaluation of stakeholder dialogue. It shows how specific social scientific methods can be used to enhance learning in a stakeholder dialogue. This study and the *Constructive Conflict Methodology* it presented, is thereby relevant for researchers and practitioners working in the field of participatory assessment, participatory policymaking and sustainability planning and policy.