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Inclusive Risk Governance: Concepts and Application to Environmental Policy Making

Ortwin Renn and Pia-Johanna Schweizer

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"Multi-level Governance of Natural Resources: Tools and Processes for Water and Biodiversity Governance in Europe"

(GoverNat)

Objectives

The **overall objective** of GoverNat is to develop new solutions for multi-level environmental governance and to facilitate their use by decision makers in an enlarged EU. The **central research objective** is to test the hypothesis that certain participatory processes and analytical decision tools are particularly useful for improving multi-level environmental governance. **Specific research objectives** therefore address the enhanced understanding of multi-level governance of natural resources, the development of methods of public and stakeholder participation to be used in such contexts, the effective utilisation of specific analytical decision tools in multi-level governance, and the reflective evaluation of such use. These four tasks are necessarily interdisciplinary. The **central training objective** is to give 9 doctoral and 3 post-doctoral fellows an interdisciplinary training 1) in research on environmental governance, particularly of biodiversity and water, in Europe, and 2) in designing legitimate and effective solutions for communication between policy makers, scientists and the public in science/policy interfaces.

Consortium

1. UFZ – Helmholtz-Centre for Environmental Research, Germany (F. Rauschmayer);
2. ECOMAN - Ecological Economics and Management, Lisbon, Portugal (P. Antunes);
3. NERI - Danish Environmental Research Institute, Copenhagen, Denmark (M. S. Andersen);
4. SRI - Sustainable Research Institute, Leeds, United Kingdom (J. Paavola);
5. ICTA – Institute for Environmental Science and Technology, Barcelona, Spain (S. van den Hove);
6. CSWM – Centre for the Sustainable Water Management, Lancaster, United Kingdom (W. Medd);
7. UStutt - Institute for Sociology, Stuttgart, Germany (O. Renn);
8. IF - Institute of Forecasting, Slovak Academy of Sciences, Bratislava, Slovak Republic (T. Kluvánková-Oravská);
9. IELM-SIU - St. Istvan University, Budapest, Hungary (G. Pataki);
10. IREAS - Institute for Structural Policy, Slovak Republic (V. Chobotova).

Characteristics

– EU Marie Curie Research Training Network with 9 doctoral and 3 post-doc fellows
– Duration: 4 years (10/06 – 9/10)
  o Doctoral fellows: 4/07-6/10
  o Post-docs: 7/07-1/10
– 10 partners and several praxis affiliates in 9 European countries
– Coordination: Helmholtz-Centre for Environmental Research – UFZ (Dr. Felix Rauschmayer)
– Total contribution of European Commission: 2.4 Mio €

Links water and biodiversity, participation and decision tools in a governance perspective

Contact

Dr. Felix Rauschmayer
coord.governat@ufz.de

Helmholtz - Centre for Environmental Research – UFZ
OEKUS - Division of Social Science
Postfach 500136
04301 Leipzig
Germany

Tel.: ++ 49 - 341 - 235 1656
Fax: ++ 49 - 341 - 235 1836
http://www.ufz.de/index.php?de=1660

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Ortwin Renn[1], Pia-Johanna Schweizer[1]

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[1]   Institute of Social Sciences
      University of Stuttgart
      Seidenstr. 36
      70174 Stuttgart
      _____

Corresponding author:

Ortwin Renn
ortwin.renn@sowi.uni-stuttgart.de

Abstract:

The concept of inclusive risk governance is based on a normative belief that the integration of knowledge and values can best be accomplished by involving those actors in the decision making process that are able to contribute all the respective knowledge as well as the variability of values necessary to make effective, efficient, fair and morally acceptable decisions about risk. In the risk arena the major actors are: governments, the economic sector, scientific communities and representatives of civil society. The paper addresses the conceptual issues of how to integrate the contributions of the different actor groups in risk governance. Who and what is or should be included in the deliberations and how is closure accomplished or can be reached in such settings? The main thesis in the paper is that these two questions can only be answered in the context of six underlying concepts of deliberation in democratic societies.

Keywords: risk governance, public participation, concepts of democracy, deliberation, analytic-deliberative decision making; stakeholder involvement

1.   Introduction

Deciding about the location of hazardous facilities, setting standards for chemicals, making decisions about clean-ups of contaminated land, regulating food and drugs, as well as designing and enforcing safety limits have one element in common: these activities are collective endeavours to understand, assess and handle risks to human health and the environment. These attempts are based on two requirements. On the one hand, risk managers need sufficient knowledge about the potential impacts of the risk sources under investigation and the likely consequences of the different decision options to control these risks. On the other hand, they need criteria to judge the desirability or undesirability of these consequences for the people affected and the public at large (Rowe and Frewer, 2000; Horlick-Jones et al, 2007). Criteria on desirability are reflections of social values such as good health, equity, or efficient use of scarce resources. Both components – knowledge and values – are necessary for any decision-making process independent of the issue and the problem context.

The main focus of this paper is on inclusive risk governance and its application to environmental policy making. This concept is based on a normative belief that the integration of knowledge and values can best be accomplished by involving those actors in the decision making process that are able to contribute all the respective knowledge as well as the variability of values necessary to make effective, efficient, fair and morally acceptable decisions about risk (Tuler and Webler, 1995; Webler, 1995; IRGC 2005).

Section 2 of the paper will explain the concept of inclusive governance using the key terms inclusion and closure. Different concepts of inclusive governance are described in section 3. The distinction is made in functional, (neo)liberal, deliberative, anthropological, emancipatory, and postmodern concepts. In section 4 we will focus on a combination of deliberative and functional approach called the analytic-deliberative process (Stern and Fineberg, 1996). Such a process is designed to provide a synthesis of scientific expertise, a common interpretation of the analysed relationships and a balancing of pros and cons for regulatory actions based on insights and values.. Section 5 summarizes the results and points out various policy implications of the paper.

2.   Inclusion and Closure

Each decision-making process has two major aspects: what and whom to include, on the one hand, and what and how to select (closure), on the other (Hajer and Wagenaar, 2003; Stirling, 2004). *Inclusion and closure* are therefore the two essential parts of any decision- or policy-making activity. Classic decision analysis has been offering formal methods for generating options and evaluating these options against a set of predefined criteria. With the advent of new participatory methods, the two issues of inclusion and selection have become more complex and sophisticated than purported in these conventional methods.

Inclusive governance is based on the assumption that all stakeholders have something to contribute to the process of risk governance and that mutual communication and exchange of ideas, assessments, and evaluations improve the final decisions rather than impede the decision-making process or compromise the quality of scientific input and the legitimacy of legal requirements (see similar arguments in Webler, 1999, pp55–71; Renn, 2004, pp289–366). As the term governance implies, collectively binding decisions cannot be confined to governments. Rather it involves the four central actors in modern plural societies: governments, economic players, scientists, and civil society organisations.

The interplay of these four major players can result in a more adequate representation of pluralism of perspectives, knowledge claims and values (**see** Engelen et al. 2003: 396; and Rauschmayer at al. in this volume). Inclusive governance, as it relates to the inclusion part of decision-making, requires that there has been a major or clear attempt to (Trustnet, 1999; Webler, 1999; Wynne, 2002; Renn 2008, p274):

- involve representatives of all relevant actor groups (if appropriate);
- empower all actors to participate actively and constructively in the discourse;
- co-design the framing of the (risk) problem or the issue in a dialogue with these different groups;
- generate a common understanding about the framing of the problem, potential solutions and their likely consequences (based on the expertise of all participants);
- conduct a forum for decision-making that provides equal and fair opportunities for all parties to voice their opinion and to express their preferences; and
- establish a connection between the participatory bodies of decision-making and the political implementation level.

If these conditions are met, evidence shows that actors, along with developing faith in their own competence, start to place trust in each other and have confidence in the process of risk management (Kasperson, 1986; Beierle and Cayford, 2002: 30f; Viklund, 2003). This is particularly true for the local level where the participants are familiar with each other and have more immediate access to the issue (Petts, 1997). Reaching consensus and building-up trust on highly complex and transgressional subjects such as biodiversity management is, however, much more difficult. Being inclusive and open to social groups does not, therefore,

guarantee constructive cooperation by those who are invited to participate. Some actors may reject the framing of the issue and choose to withdraw. Others may benefit from the collapse of an inclusive governance process. It is essential to monitor these processes and make sure that particular interests do not dominate the deliberations and that rules can be established and jointly approved in order to prevent destructive strategizing.

Inclusive governance also needs to address the second part of the decision-making process as well (i.e. reaching closure on a set of options that are selected for further consideration, while others are rejected). *Closure* does not mean to have the final word on a development, a risk reduction plan or a regulation. Rather, it represents a process that enables participants to reach a final product or agreement. The problem is that the more actors, viewpoints, interests and values are included and, thus, represented in an arena, the more difficult it is to reach either a consensus or some other kind of joint agreement.

The potential benefits resulting from inclusive governance depend upon the quality of the participation process. It is not sufficient to gather all interested parties around a table and merely hope for the catharsis effect to emerge spontaneously. In particular, it is essential to treat the time and effort of the participating actors as spare resources that need to be handled with care and respect (Chess et al, 1998; US EPA/SAB, 2001, p12). The participation process should be designed so that the various actors are encouraged to contribute to the process in those areas in which they feel they are competent and can offer something to improve the quality of the final product.

3.   Six concepts of inclusive governance

When designing procedures that represent the goals of inclusive governance one needs to answer the question of whom and what should be included and by which means and procedural rules a final product is reached. Furthermore, one needs to specify what outcome to expect from a participatory exercise. Is the goal to reach a consensus or just a snap shot of diverse opinions? Should participants be educated before reaching a conclusion or should they rely on their given preferences to make public choices? Should everybody have an opportunity to shape the final product or only those with special knowledge about the subject or those who are most affected by the decision?

These questions cannot be answered without referring to the concepts or even philosophies of participation and collective decision making. It all depends on which school of thought one implicitly or explicitly belongs. One can differentiate between six distinct prototypes of structuring processes that channel public input into public policy-making. These prototypes can be labelled as functionalist, neo-liberal, deliberative, anthropological, emancipatory and post-modern (Renn 2008, 294ff; Renn and Schweizer in press). These six prototypes have to be looked upon as abstractions from real world interaction to the extent that no participation process would be considered as belonging exclusively to one of these categories. Rather, they are ideal types in the Weberian sense (Weber, 1972). Originally, the perspectives on

participation were derived from philosophical traditions. Today they serve as mental constructs of social reality, thus empowering research into a variety of participation methods that can be linked to the concept from which they were inspired.

Functionalist concept

This approach to citizen participation draws on the functional school of social sciences and evolutionary concepts of social change. Functionalism is originally based on the works of Bronislaw Malinowski and Alfred R. Radcliffe-Brown, the founding fathers of British and US functionalism (Radcliffe-Brown, 1935; Malinowski, 1944; reviews in Coser, 1977, p140ff; Lenski, 2005). Functionalism conceptualizes society as a complex structure, recognizing essential functions for social survival either from an individual actor's perspective (Malinowski) or from society's point of view (Radcliffe-Brown). Each social action is assumed to be functional in assisting society's survival (Hillmann, 1994, p252).

As a later development primarily associated with Talcott Parsons and Robert K. Merton, structural functionalism presumes that a system has to meet functional imperatives (adaptation, goal attainment, integration and latent patterns maintenance). These functions are performed by certain structures (Parsons, 1951). Therefore, society is a stratified system of structures securing functional needs. Social differentiation produces structures that specialize on the fulfilment of specific functions (Münch, 1996, p21).

In this sense, participatory exercises are necessary in order to meet complex functions of society that need input (knowledge and values) from different constituencies. Nevertheless, even well-ordered societies change over time. Structural functionalism conceptualizes social change as social evolution. As societies evolve, their subsystems become ever more differentiated. Neo-evolutionary theorists such as Neil J. Smelser and the later Talcott Parsons assume that these new subsystems are more adaptive towards changed social prerequisites than their predecessors. Therefore, they differ in terms of structure and functional significance (Ritzer, 1996, p247).

Turning towards participation, the main objective is to avoid missing important information and perspectives, and to ensure that all knowledge camps are represented. Participation is, therefore, seen as a process of getting all the problem-relevant knowledge and values incorporated within the decision-making process. The functionalist approach can be subdivided into two major functional goals: first, to collect all the necessary knowledge to solve a problem, and, second, to avoid political paralysis by demonstrating openness to all stakeholders. Functionalist decision-making is clearly oriented towards goal achievement and synthesizing knowledge and values towards achieving a pre-defined goal. In terms of the basic functions of society as outlined above, the model is designed to improve and enhance the *effectiveness* of decision-making. It assumes that representation and inclusion of diversity will result in the improvement of environmental policy-making with respect to the quality of the decisions made. Methods of participation suitable for this approach are expert Delphi methods, negotiated rule-making, hearings and citizen advisory committees (Coglianese, 1997; Webler et al, 1991; Hadden, 1995; Gregory et al, 2001). These methods of participation

are especially suited for the functional perspective because they emphasize the inclusion of various kinds of information for strategic planning.

Neo-liberal concept
This approach to citizen participation draws on the philosophical heritage of liberalism and Scottish moral philosophy (Jaeger et al, 2001, p20ff). Neo-liberalism conceptualizes social interaction as an exchange of resources. In this concept, deliberation is framed as a process of finding one or more decision option(s) that optimizes the payoffs to each participating stakeholder. In order to reach this objective positions need to be transformed into statements of underlying interests (for a general overview, see Fisher and Ury, 1981; Raiffa, 1994; critical review in Nicholson, 1991; review of pros and cons in Jaeger et al, 2001, p243ff; Schweizer, 2008). The rational actor paradigm understands humans as resourceful and restricted individuals who have expectations, engage in evaluation and maximize options.

Neo-liberal decision-making consequently focuses on individual interests and preferences (Schweizer, 2008). It is assumed that people pursue their individual goals according to their available resources. However, the role of society is not to provide integration, but to grant security for property and personal well-being (Dunn, 1969; Ayers, 1991; Rawls, 1999). Public preferences are seen as varying and unstable. Stakeholder and citizen participation therefore consist primarily in the collection and representation of (well-informed) public preferences.

The market is the place where these preferences can be converted into the appropriate actions under the condition that choices between different options are open to all individuals and that the selection of options by each individual does not lead to negative impacts upon another individual's resources (absence of external effects). If, however, the aspired good requires collective action by many individuals, or if an individual good leads to external costs and benefits, the market mechanism will fail and public policies, including collectively binding norms and rules, are needed. These policies should reflect the preferences of all the individuals who are affected by the decision (Fisher and Ury, 1981). Since not all preferences are likely to represent identical goals and the means of achieving them, a negotiation process must be initiated that aims at reconciling conflicts between actors with divergent preferences. Within neo-liberal theory, individual preferences are given so that conflicts can only be reconciled if, first, all of the preferences are known in the proportional distribution among all affected parties and, second, compensation strategies are available to recompense those who might risk utility losses when the most preferred option is taken (O'Hare, 1990). The two ideal outcomes of negotiation are, hence, to find a new win-win option that is in the interest of all or at least does not violate anybody's interest (Pareto superior solution), or to find a compensation that the winner could pay to the losers to the effect that both sides are at least equally satisfied with respect to the two choices: the situation before and after the compensation (Kaldor-Hicks solution which does not demand that the payment is actually done but would lead to a higher amount of overall utility if done).

Deliberation helps to find either one of the two solutions and provides acceptable trade-offs between overprotection and underprotection with respect to human health and the

environment. Under these conditions, participation is required to generate a most truthful representation of public preferences within the affected population (Amy, 1983). The measurement of preferences is, however, linked to the idea that individuals should have the opportunity to obtain the best knowledge about the likely consequences of each decision option (concept of informed consent). Therefore, public opinion polls are not sufficient to represent the public view on a specific public good or norm. Appropriate methods for revealing informed public preferences are referenda, focus groups, (internet) forums, roundtables and multiple discussion circles (Ethridge, 1987; Dürrenberger et al, 1999). For the objective to generate win-win solutions or acceptable compensation packages, negotiation, arbitration and, especially, mediation are seen as the best instrumental choices (Amy, 1983; Bingham, 1984; Baughman, 1995). These methods correspond with the neo-liberal emphasis on bargaining power and balancing individual interests. The main contribution of neo-liberal participation models is to be more *efficient* and, to a lesser degree, to be more *reflective of social values and concerns*.

Deliberative concept

Deliberative citizen participation is mainly influenced by Habermasian discourse theory (Habermas, 1984, 1987a; Webler, 1995; Cohen, 1997; Renn and Webler, 1998, pp48–57). Discourse theory and discourse ethics advocate more inclusiveness for legitimate and sustainable political decision-making. Modern societies are characterized by a plurality of values and world views. According to Habermas (1996, p20), conventional politics and political decision-making cannot deal with this heterogeneity adequately. Modern societies lack moral cohesion that could guide political decision-making. Although mutually binding norms and values are non-existent at the surface, people can allude to their shared reason and experience as human beings. Here, the joined heritage of Habermasian deliberation and 'communitarism' becomes obvious (Bohman, 1997). Consequently, political decision-making has to find mechanisms that could serve as guidance instruments by enabling citizens to engage in joint rational decision-making.

Habermasian discourse ethics offers a solution to this dilemma. In discourse ethics, only those political and judicial decisions may claim to be legitimate that may find the consent of all affected parties in discursive opinion formation and decision-making processes (Habermas, 1992, p169; Corrigan and Joyce, 1997). Accordingly, legitimate political opinion formation is conceptualized as a process of the competition of arguments. As a result, the procedure of decision-making decides on its legitimacy (Schweizer, 2008). Habermas claims that in communication, people always make one or more factual, normative or subjective knowledge claims (Habermas, 1999). The basic premise of the theory of communicative action is that people are capable of coming to a rationally motivated agreement (i.e. agreements free of coercion of any kind) if they are provided with the optimal discourse setting. Communicative acts are inherently social since they engage two or more speakers and listeners in a social relationship, and are, when conducted in the proper discourse setting, fully dialogical. This setting, where actors can openly and critically reflect, was originally described by Habermas as the 'ideal speech situation', but is now referred to as 'communicative competence' (Habermas, 1970) and 'unconstrained discourse conditions' (Habermas, 1991, p113; see also the critical remarks in Warren, 1993).

Thus, factual, normative and expressive knowledge claims are settled by alluding to the common rationality of communicative action provided by an appropriate organizational discourse structure. Of course, no real world discourse can reach the prerequisites of the ideal speech situation (Webler, 1995); yet, practical discourse can aspire to this goal. Discursive decision-making is therefore oriented towards the common good and seeks the rational competition of arguments. It looks for diversity in participants and perspectives in the sense that all potentially affected parties should be able to agree with its outcome. All relevant arguments need to be included in the deliberation regardless of the extent of their representation within the population. The objective here is to find the best possible consensus among moral agents about shared meaning of actions based on the knowledge about consequences and an agreement on basic human values and moral standards (Webler, 1995, 1999). The results of discursive decision-making then draw their legitimization from the procedural arrangements of the discourse. Participation methods aim at facilitating mutual understanding and transparent decision-making, thus adding legitimacy to the whole process of policy-making. The best-suited instruments refer to citizen forums, multiple stakeholder conferences and consensus-oriented meetings (Dienel, 1989; Kathlene and Martin, 1991; Stewart et al, 1994; Crosby, 1995; Rowe and Frewer; 2000; Rowe et al, 2004). The main contribution of deliberative models to society is to enhance *legitimacy* and to reflect *social and cultural values in collective decision-making*.

Anthropological concept
Anthropological citizen participation is mainly influenced by pragmatic Anglo-Saxon philosophy. It is based on the belief that common sense is the best judge for reconciling competing knowledge and value claims. Pragmatism was mainly influenced by the works of Charles S. Pierce and John Dewey (Pierce, 1867; Dewey, 1940; review in Hammer, 2003). Pragmatism postulates that ideas are to be judged against their consequences in the social world. Pierce states that ideas, theories and hypotheses can be experimentally tested and inter-subjectively evaluated according to their consequences (Riemer, 1999, p463). According to Dewey, the thinking process develops over a series of stages from 'defining objects in the social world, outlining possible modes of conduct, imaging the consequences of alternative courses of action, eliminating unlikely possibilities, and, finally, selecting the optimal mode of action' (quoted after Stryker, 1980; Ritzer, 1996, p328).

For participatory decision-making, this approach has far-reaching consequences. The moral value of policy options can be judged according to their consequences. Furthermore, each citizen is capable of moral judgement without relying on more than their mind and experience. When organizing discourses of this kind, however, there is a need for independence, meaning that the jury has to be disinterested in the topic and there should be some consideration of basic diversity in participants (such as gender, age, and class). The goals of decision-making inspired by the anthropological perspective are the involvement of the 'model' citizen and the implementation of an independent jury system consisting of non-interested laypersons, who are capable of employing their common sense for deciding on conflicting interests (Stewart et al, 1994; Sclove, 1995). Participatory methods granting this kind of commonsense judgement are consensus conferencing, citizen juries and planning cells

Dienel, 1989; Andersen and Jaeger 1999; Joss, 1998; Einsiedel and Eastlick, 2000; Abels, 2007). The group of selected individuals can be small in size. Most methods do not require more than 12 to 25 participants to accomplish valid results (Stewart et al, 1994). Within that small number, there should be a quota representation of the entire population, thus including the general perspectives of all citizens. The main focus of the anthropological model is to reflect *social values and concerns* in public policy-making.

Emancipatory concept
The basic ideas of emancipatory participation are derived from a Marxist or neo-Marxist social perspective (Ethridge, 1987; Jaeger et al, 2001, p232ff). The goal of inclusion is to ensure that the less privileged groups of society are given the opportunity to have their voices heard and that participation provides the means to empower them to become more politically active (Fischer, 2005). In the long run, participation is seen as a catalyst for an evolutionary, or even revolutionary, change of power structures in capitalist societies (Forester and Stitzel, 1989; Fung and Wright, 2001).

The main motive for participation is the revelation of hidden power structures in society. This motive is shared by the post-modern school. Yet, the main emphasis in the emancipatory school is the empowerment of the oppressed classes to, first, acknowledge their objective situation, and then become aware of their own resources to change the negative situation in which they live, develop additional skills and means to fight these unjust structures, and, lastly, be prepared to continue this fight even after the participatory exercise is completed. The thrust is the awakening of individuals and groups to make them more politically active and empowered (Skillington, 1997). Here, the emancipatory perspective's roots in classic Marxist positions become obvious.

Methods within the emancipatory concept include activist-driven public meetings, tribunals, science shops, community solidarity committees, and others (Kopmans, 1996; Wachelder, 2003; McCormick, 2007). The main emphasis is on making sure that the powerless in society are heard and then empowered to fight for their own interests and values. Although the focus of this concept is on transforming society, it does add to a more balanced *reflection of social and cultural values* in the policy-making process.

Post-modern concept
This approach to citizen participation is based on Michel Foucault's theory of discourse analysis. Discourse analysis rests on the three basic concepts of knowledge, power and ethics. Foucault is interested in the constitution of knowledge. He assumes that knowledge formation is a result of social interaction and cultural settings. Truth then depends upon historically and socially contingent conditions (Foucault, 2003).

The archaeology of knowledge shows the underlying sets of rules that determine the formation of knowledge (Schweizer, 2008). The conditions of discourse are, therefore, not determined once and for all but are open to (social) change. The relativity of truth and knowledge leads Foucault to the next question. What influences knowledge and truth to develop in the specific way in which they have grown so far? The answer to this question and

the second assumption of discourse analysis is that knowledge is constituted and legitimized through power (Foucault, 1979, p39). Power is ubiquitous and permeates society. Power and knowledge are interlinked to the extent that power supports the creation of knowledge, whereas knowledge legitimizes power structures and their social manifestations.

By means of genealogy, Foucault provides an examination of dynamic power structures that permeate society. Individuals are therefore faced with the complex social structures of interlinked knowledge and power formation. Ethics and the self-constitution of the individual are Foucault's third topic of interest. It is the task of every person to reflect on the knowledge and power structures surrounding and conditioning them. Insight into the restraints and possibilities of knowledge and power, and how they relate to him or her, transform a person into an individual (Foucault, 1986). However, individuals do not need to accept the conditions of society once and for all. Rather, they have the power to shape the social structures surrounding them.

Thus, ethics and individual 'self-constitution' form the backbone of discourse analysis. In this respect, discourse analysis informs citizen participation with an analytical focus on social power and knowledge formation. In this sense, post-modern decision-making aims at revealing the hidden power and knowledge structures of society, thus demonstrating the relativity of knowledge and values (Fischer, 2005, p25). Far from resolving or even reconciling conflicts, deliberation, according to this viewpoint, has the potential to decrease the pressure of conflict, to provide a platform for making and challenging claims, and to assist policy-makers (Luhmann, 1989). Deliberations help reframe the decision context, make policy-makers aware of public demands and enhance legitimacy of collective decisions through reliance on formal procedures (Freudenburg, 1983; Skillington, 1997).

Participatory decision-making seeks especially to include dissenting views and social minorities, thus illustrating the relativity of knowledge and power. Appropriate participatory methods include framing workshops, discussion groups, internet chat rooms and open forums because they do not set rigid frames for decision-making (Stirling, 2004). Rather, they provide insight into stakeholder interests, knowledge bases and power structures. Accordingly, the main function of post-modern discourse is to enlighten the policy process by illustrating the *diversity of factual claims, opinions and values*.

Implications of the different concepts for practical discourse
This review of different background concepts for public participation in environmental decision-making is more than an academic exercise. Organizers, participants, observers and the addressees of public participation are implicitly or explicitly guided by these concepts. Often, conflicts about the best structure of a participatory process arise from overt or latent adherence to one or another concept. Advocates of neo-liberal concepts stress the need for proportional representation (i.e. representativeness) of participatory bodies, while advocates of deliberative concepts are satisfied with a diversity of viewpoints.

Concept	Main objective	Rationale	Models and instruments
Functionalist	To improve quality of decision output	Representation of all knowledge carriers; integration of systematic, experiential and local knowledge	Delphi method, workshops, hearing, inquiries, citizen advisory committees
Neo-liberal	To represent all values and preferences in proportion to their share in the affected population	Informed consent of the affected population; Pareto-rationality plus Caldor-Hicks methods (win–win solutions)	Referendum, focus groups, internet-participation negotiated rule-making, mediation, etc.
Deliberative	To debate the criteria of truth, normative validity and truthfulness	Inclusion of relevant arguments, reaching consensus through argumentation	Discourse-oriented models, citizen forums, deliberative juries
Anthropological	To engage in common sense as the ultimate arbiter in disputes (jury model)	Inclusion of non-interested laypersons representing basic social categories such as gender, income and locality	Consensus conference, citizen juries, planning cells
Emancipatory	To empower less privileged groups and individuals	Strengthening the resources of those who suffer most from environmental degradation	Action group initiatives, town meetings, community development groups, tribunals, science shops
Post-modern	To demonstrate variability, plurality and legitimacy of dissent	Acknowledgment of plural rationalities; no closure necessary; mutually acceptable arrangements are sufficient	Open forums, open space conferences, panel discussions

Table 1: **The six concepts of stakeholder and public involvement and their salient features**

For advocates of the anthropological model, representativeness plays hardly any role as long as common sense is ensured. Models driven by emancipatory concepts will judge the quality of participation by the degree to which underprivileged groups have gained more access to power, whereas functionalist models will judge the quality of the process by the quality of the outputs compared to either technocratic or decisionistic (synthesis of knowledge from experts and values from politicians) decision-making models. While neo-liberal concepts will take public preferences as a given prerogative to participatory decision-making, deliberative

models are meant to influence preferences and change them through the process. Table 1 provides an overview of the six models, their main rationale and some of the instruments which can be associated with them.

The diversity of concepts and background philosophies is one of the reasons why participatory processes are so difficult to evaluate in terms of overarching evaluative criteria (Rowe et al, 2004; Renn 2008, 320ff.; Rauschmayer et al. In this volume). Although some of these models can be combined and integrated, there are at least differences in priorities. It is obvious that within the functionalist school, the main evaluation criterion is the quality of the output, whereas the models inspired by post-modernism and emancipatory schools are not interested in output but, rather, in the changes that were induced in the minds of the participating people (raising awareness and emancipation).

Given this mix of models driven by different concepts, many participation analysts and practitioners have advocated hybrid models that combine elements of different models. One of these models is the analytic-deliberative approach (Stern and Fineberg, 1996). But there are many other attempts at combining different concepts with new models. Endeavours to combine the neo-liberal with the deliberative concept include the deliberative polling method which has been widely used in several areas of environmental policy-making (Ackerman and Fishkin, 2004). More complex hybrid models try to include even more than two concepts, such as the cooperative discourse model (Renn, 1999).

4.   The need for an analytic-deliberative process of participation

Within the field of environmental policy making, there has been a strong preference for the functionalist and neo-liberal view of participation. Many environmental risk management agencies have been, and still are, primarily interested in input from the relevant stakeholders in order to improve the quality of the decisions and to make sure that conflicting values could be resolved in proportion to the representation of the people who are or feel affected by the decision (Fiorino, 1990). More lately, there has been a shift towards deliberative and emancipatory forms of participation (Bohman, 1998). The discussion on environmental justice, as well as on social capital, has served as a catalyst for these more intense forms of argument-based participation (Dryzek, 1994). In parallel, the anthropological concept has inspired many organizers of participation to model participation in accordance with the well-established jury format of the US judicial system (Crosby 1995).

In our view, a combination of the functional and deliberative concepts is most suitable for dealing with problems of biodiversity and landuse management. One suggestion for combining functional and deliberative decision making is the model of analytic–deliberative decision making. This idea belongs to the most promising suggestions for developing an integrative approach to inclusive risk governance based on the inclusion of experts, stakeholders and the general public (Stern and Fineberg, 1996; Chess at al, 1998; Tuler and Webler, 1999; Webler et al, 2001; Renn 2004). Such a process is designed to provide a

synthesis of scientific expertise, a common interpretation of the analysed relationships and a balancing of pros and cons for regulatory actions based on insights and values.

Analysis in this context means the use of systematic, rigorous and replicable methods of formulating and evaluating knowledge claims (Stern and Fineberg, 1996: 98; see also Tuler and Webler, 1999: 67). These knowledge claims are normally produced by scientists (natural, engineering and social sciences, as well as the humanities). In many instances, relevant knowledge also comes from stakeholders or members of the affected public (Horlick-Jones et al. 2007).

Deliberation highlights the style and nature of problem-solving through communication and collective consideration of relevant issues (Stern and Fineberg, 1996:73 and 215ff; original idea of discursive deliberation from Habermas, 1970, 1987). It combines different forms of argumentation and communication, such as exchanging observations and viewpoints, weighing and balancing arguments, offering reflections and associations and putting facts into a contextual perspective. The term deliberation implies equality among the participants, the need to justify and argue for all types of (truth) claims and an orientation towards mutual understanding and learning (Habermas, 1987; 1991; Dryzek, 1994; Cohen, 1997; literature that applies to risk management includes the following: Kemp, 1985; Tuler and Webler, 1995; Webler, 1995, 1999; IRGC, 2005; Renn 2008, pp284ff).

What are the advantages of analytic-deliberative models of participation in the field of environmental policy making? First, deliberation can produce common understanding of the issues or the problems based on the joint learning experience of the participants with regard to systematic and anecdotal knowledge (Webler et al, 1995). Furthermore, it may produce a common understanding of each party's position and argumentation (rationale of arguing) and thus assist in a mental reconstruction of each actor's argumentation (Warren, 1993; Tuler, 1996).

Second, deliberation can produce new options for action and solutions to a problem. This creative process can be mobilized either by finding win–win solutions or by discovering identical moral grounds on which new options can grow (Fischer and Uri, 1981; Webler, 1995, 1999). Each position within a deliberative discourse can survive the cross-fire of arguments and counter-arguments only if it demonstrates internal consistency, compatibility with the legitimate range of knowledge claims, and correspondence with the widely accepted norms and values of society. Deliberation clarifies the problem, makes people aware of framing effects, and determines the limits of what could be called reasonable within the plurality of interpretations (Skillington, 1997).

Third, deliberation can also produce common agreements. The minimal agreement may be a consensus about dissent (Raiffa, 1994; Renn and Webler, 1998, p64). If all arguments are exchanged, participants know why they disagree. They may not be convinced that the arguments of the other side are true or morally strong enough to change their own position; but they understand the reasons why the opponents came to their conclusion. At the end, the deliberative process produces several consistent and – in their own domain – optimized

positions that can be offered as package options to legal decision-makers or the public. Once these options have been subjected to public discourse and debate, political bodies such as agencies or parliaments can make the final selection in accordance with the legitimate rules and institutional arrangements, such as a majority vote or executive order. Final selections can also be performed by popular vote or referendum. In addition, deliberation creates 'second-order' effects on individuals and society by providing insights into the fabrics of political processes and creating confidence in one's own agency to become an active participant in the political arena (thus indirectly serving the emancipatory model of participation). By participating they can enhance their capacity to raise their voice in future issues and become empowered to play their role as active citizens in the various political arenas.

Lastly, deliberation may result in consensus. Often, deliberative processes are used synonymously with consensus-seeking activities (Coglianese, 1997). This is a major misunderstanding. Consensus is a possible outcome of deliberation, but not a mandatory requirement (compare van den Hove, 2007). If all participants find a new option that they all value more than the one option they preferred when entering the deliberation, a '*true*' consensus is reached (Renn and Webler, 1998: 69). It is clear that finding such a consensus is the exception rather than the rule. Less stringent is the requirement of a *tolerated* consensus. Such a consensus rests on the recognition that the selected decision option might serve the 'common good' best, but at the expense of some interest violations or additional costs. In this situation, people who might be worse off than before, but who recognize the moral superiority of the solution, can abstain from using their power of veto without approving the solution. In our own empirical work, deliberation has often given rise to tolerated consensus solution, particularly in siting conflicts (one example is provided in Schneider et al, 1998). Consensus and tolerated consensus should be distinguished from *compromise*. A compromise is a product of bargaining, with each side gradually reducing its claim to the opposing party until they reach an agreement (Raiffa, 1994). All parties involved would rather choose the option they preferred before starting deliberations; but since they cannot find a win–win situation or a morally superior alternative, they look for a solution that they can 'live with', well aware of the fact that it is the second or third best solution for them. Compromising on an issue relies on full representation of all vested interests.

5.   Conclusions

The objective of this paper was to address the need for inclusive governance when it comes to dealing with complex environmental risks. For this purpose, the paper explained different concepts of stakeholder and public involvement, and characterized the main features of, and conditions for, an analytic–deliberative process applied to risk problems. Organizing and structuring such a process goes beyond the well-meant intention of having the public involved in risk decision-making. The mere desire to initiate a two-way communication process and the willingness to listen to public concerns are not sufficient. Discursive processes need a structure that ensures the integration of technical expertise, regulatory requirements and public values. Decisions on risk must reflect effective regulation, efficient use of resources, legitimate means of action and social acceptability.

These inputs can be provided by the different systems of society: efficiency by economic markets; knowledge on effectiveness by scientists and experts; legitimacy by the political institutions; and reflection of values and preferences by including social actors. The objective is to find an organizational structure so that each system contributes to the deliberation process the type of expertise and knowledge which claim legitimacy within a rational decision-making procedure. It does not make sense to replace technical expertise with vague public perceptions, nor is it justified to have the experts insert their own value judgements into what ought to be a democratic process.

For evaluating the potential impact of deliberative processes on policy-making, it was useful to distinguish six different concepts for including stakeholders and the public in the decision-making process. These concepts were labelled as functional, neo-liberal, deliberative, anthropological, emancipatory and post-modern. Each of these concepts has a specific philosophical foundation and expresses a different point of view with respect to what democracy means and what role participation can play in this context (Schweizer, 2008). These concepts also suggest corresponding instruments and techniques for structuring and organizing participatory processes. Two of the concepts, the functional and the deliberative, lend themselves to forming what the 1996 National Research Council report on characterizing risks has coined an analytic–deliberative process (Stern and Fineberg, 1996). This combination promises to be particularly well suited to dealing with risk problems as they demand scientific expertise, structured thinking and excellent deliberative skills.

6.   References

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