

# REPORT

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*POLICYMIX - Assessing the role of economic instruments in policy mixes for biodiversity conservation and ecosystem services provision*



## Three types of environmental justice:

**From concepts to empirical studies of social impacts of policy instruments for conservation of biodiversity**

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## Abstract

In this paper we show how the topic of social impacts of conservation can be divided into the concern for three types of justice: 1) *distributive justice*; 2) *procedural justice*; and 3) what we call *sense of justice*. We specify the three concepts with the needs of the social impact part of PolicyMix in mind. The paper suggests how the case-based evaluations of social impacts can be dealt with and specified within each of the three categories of different concerns for justice. PolicyMix intends to build on Ostrom's modelling of social-ecological systems. The paper draws attention to the seemingly absence of understanding of the importance of power and social construction in Ostrom's modelling. We consider these dimensions as constituting key features of social-ecological systems. With the elaboration of the social impacts element of PolicyMix as here suggested, we can explore the possibility of involving the dimensions of power and social constructions in the modelling.



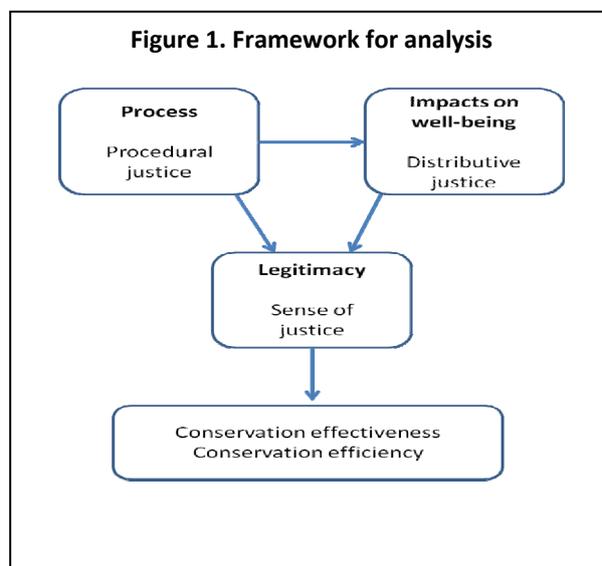
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# 1 Introduction

Our aim with this paper is to establish main lines in a conceptual framework for the study of social impacts in PolicyMix and to indicate how the empirical investigations can be elaborated on this basis. We have chosen the literature on *environmental justice* as a starting point. The core notion of *justice* is based on normative judgements<sup>1</sup>. A major distinction within environmental justice is usually drawn between *distributive justice* and *procedural justice* (Ikeme 2003, Walker 2010). The first of these implies judgement of distributions among people of negative and positive outcomes (costs and benefits), while the second type encompasses evaluation of the fairness of the process of decision-making. For our purpose, we find it crucial to add a third element that we call *sense of justice*. This element encompasses the ways affected people themselves perceive and judge the intervention. Thus, investigations of sense of justice provide information of the legitimacy of specific actions. We find the three elements to cover key concerns on social impacts related to environmental interventions.

**Figure 1** below illustrates how we see the three elements as related to each other. We find it likely that both procedural and distributive justice influence on sense of justice, and procedural justice also influence on distributive justice. Sense of justice again probably influence on conservation in terms of effectiveness and efficiency. We see the four elements in the figure as important aims on their own grounds, while the three first elements can also be seen as means for achieving conservation.



<sup>1</sup> In moral philosophy these judgements are divided into deontological and consequentialist types. The first of these consists of judgement of the way specific actions are carried out, while the second is concerned with end results of actions. Ikeme (2003) argues that environmental justice of both distributive and procedural kinds may be reasoned by both a deontological and a consequentialist moral philosophy.

The academic writing on environmental justice focused in the 1980s on the establishment of toxic waste disposals and polluting industries in areas of the US populated by poor people and ethnic minorities. Later on, the conceptualisation of environmental justice has been applied to other topics, such as management of biodiversity and impacts of climate change. This literature most often deals with evaluations of environmental interventions that are seen as degradation. However, it sometimes also focuses on policies to restore or prevent degradation, such as in the case of policies to mitigate climate change.

In the following sections, we will look at each of the three categories. We start each section with a presentation of the main concept, and afterwards we draw the attention to main aspects of the topic that are to be investigated in each of the case studies. This provides a contribution to the specification of guidelines from WP5, and thereafter for the field guide for the case studies. At the same time, the paper also offers theoretical perspectives and concepts that may facilitate interesting perspectives for the comparison and publication of results of the social impacts part of PolicyMix.

In relation to Ostrom's modelling of social-ecological systems (SEs) (Ostrom et al. 2007, Ostrom 2007), case-based knowledge on the three types of environmental justice should first of all be seen as "Social performance measures" under "Outcomes". However, it may be important to investigate whether some of these outcomes also may constitute influences on "Ecological performances".

## 2 Distributive justice

Johansson-Stenman and Konow (2009) provide the following definition of distributive justice:

"Distributive justice, which we use here interchangeably with fairness, concerns moral preferences over the distribution of social and economic benefits and burdens among a group of individuals" (2010: 7).

Distributional justice (also referred to as equity theory in psychology, sociology and political science) provides criteria for normative judgments. Walker (2010:317) describes the situation in the UK where "attention is rarely given to the social distribution of environmental outcomes in impact assessment processes". Thus, Walker calls for analyses of "who is to benefit and who is to be burdened as a result of projects, plan and programme decisions" regarding the environment (Walker (2010:317).

The following are some principles that in given situations may be considered to guide such judgments:

- a) Equal distribution of goods and/or burdens amongst relevant parties.
- b) Distribution according to contributions is a principle to distribute goods and/or burdens according to positive and/or negative contributions to the situation. One example is payment of salary to workers according to how much they have produced. Another example is the principle of having polluters paying the costs of cleaning up.

- c) Distribution according to needs is a principle based on a normative view that every human being has the right to fulfil basic needs. This principle may be connected to one of the definitions of sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED 1987). Furthermore, a connection may here be made to the capability approaches of Sen (1999) and Nussbaum (Nussbaum 2000, 2006, Holland 2008).

### **How to study distributive justice in the PolicyMix cases**

Economic gains and losses must be investigated in each of the cases of PolicyMix. The following are types of questions that the research may address: Does the output of the distribution in each case resemble any of the above mentioned principles of justice? Are there groups that benefit substantially economically, and other groups that lose substantially? Can the gains and losses be judged as reasonable in comparisons to contributions? Are there people who experience losses from the case of policy mix to the extent that it may have consequences for their ability to fulfill their basic needs?

Furthermore, in co-operation across WP5, on the one hand, and WP3 and 4 on the other, it will be useful to study distributive justice not only as an outcome, but also how/to what extent distributive justice may influence other outcomes such as cost-effectiveness of conservation and the main objective of conservation. The following is a hypothesis that could be tested empirically in selected case study sites: H1: The cost-effectiveness of economic instruments for forest conservation (e.g. PES) is the same for high income and low income landowners. This hypothesis can be evaluated in three ways (at least):

1. Poverty alleviation is often discussed as side-objective of PES, with targeting of PES to areas with low development indicators (Pagiola et al.2005). Distributional impact of PES is here an effectiveness evaluation criterium in its own right. H1.1: PES makes a significant (direct or indirect) contribution to income generation in poorer households.
2. Income distribution may be seen as an explanation for effectiveness of conservation. Eg. H1.2 PES has been more cost-effective in lower income than in higher income areas? (Miranda 2003). For example, PES in Costa Rica has shown some effect in terms of afforestation in the last couple of decades, whereas no significant effect on avoided deforestation. Were areas with more afforestation also those areas with more small scale (and poorer) farmers than large (richer) farmers? Did small scale farmers choose more ‘afforestation promoting’ PES modalities - agroforestry and forest management -- relative to large scale farmers who may have chosen mainly forest protection modality?
3. Finally, income distribution may be taken as an explanation for costs of conservation. For example, H1.3: Transaction costs per hectare of administering a PES program are higher in areas with many small farms, than in areas with large farms. Or, H1.4: Compensation per hectare required to forego agricultural land uses is greater for small scale farmers than for large scale farmers (perhaps because small scale farmers opportunity costs are higher due to a livelihoods dependence on the land that large scale farmers don’t have). But small farmers lacking



negotiation power may still be of the opinion that actual compensation/hectare is lower than for large landowners (link to “sense of justice” criteria below).

### 3 Procedural justice

Procedural justice is a normative judgment of the fairness of the process of decision-making. This boils down to questions that, in environmental decision-making, often are referred to as “participation”. In other contexts, a process of decision-making is regarded as fair if it is based on a democratic fundament in which all affected people have the possibility to be informed, express their opinions and influence decisions. There may be large gaps between processes of “participation” in decision-making on conservation and the ideal of a fair democratic process. It may be relevant to evaluate procedural justice for various groups of affected people or stakeholders (e.g. local people as a totality and/or divided into social categories based, for instance, on ethnicity, class, gender).

Pretty (1995) presents a typology for local participation related to conservation<sup>2</sup>. The typology consists of seven distinct levels of participation by local people:

#### **1) Manipulative participation**

Participation is pretence where local people have “representatives” on official boards, but these are not elected, and they have no influence on decision-making. Almost no interaction occurs between local stakeholders and managing institutions.

#### **2) Passive participation**

Local people participate by being told what has been decided or has already happened. There are unilateral announcements by an administration or project management, but responses from people are not taken into real consideration. The information offered is that of external professionals.

#### **3) Participation by consultation**

People participate in terms of being consulted or by answering questions. External agents define problems and information gathering processes, and they control analysis. This process does not grant people any share in decision-making, and professionals are not obliged to adhere to people's views.

#### **4) Participation for material incentives**

People participate by contributing resources, e.g. labor, in return for food, cash or other material incentives. This is commonly called participation, yet people have no opportunity to prolong practices when the incentives end. Decisions are made by the managing institutions alone.

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<sup>2</sup>There are also other classifications similar to Pretty's typology. See especially the ladder of citizen participation by Arnstein (1969).



### **5) Functional participation**

Participation by local people is seen by external agents as a means of achieving project goals, especially reductions in costs. People may form groups to meet pre-determined objectives. This participation may be interactive and may involve shared decision-making, but tends to arise only after major decisions have been made by external agents. Local people may be co-opted to serve external goals.

### **6) Interactive participation**

People participate in joint analysis, development of action plans and the formation, or strengthening, of local institutions. Participation is seen as a right rather than just a means of achieving project goals. Formalized decision-making structures such as management councils involve local stakeholders and meet on regular basis. Local people take control over local decisions and determine issues such as the use of local resources.

### **7) Self-mobilization**

Local people take initiatives independently of external institutions to change systems. They develop contacts with external institutions. There is transfer of authority and responsibility for the resources.

## **How to study procedural justice in the PolicyMix cases**

In PolicyMix, procedural justice may be investigated by comparing each case to a typology for participation. Such a typology may be established for the specific study of PolicyMix and based on existing typologies from other empirical investigations, such as that presented above of Pretty (2005).

Furthermore, in such case studies it is often important to specify the main issues and arenas for decision-making and evaluate – in comparison with the typology - the degree of influence (participation) by local people and categories of these, and possibly also other stakeholders.

The following might be a relevant joint WP5/WP4 hypothesis: H2: Compensation for forest conservation agreements, have higher short-term transaction costs, but lower long term costs in terms of fewer conflicts. This hypothesis has been proposed by Skjeggedal et al. (2010) with data from voluntary conservation in Norway. In our reading of this hypothesis, transaction costs are assumed to be an indicator of procedural justice. On the short and long term transaction costs have different empirical interpretations. Short term transaction costs may be quantified by looking at 'time spent' by contract holders in administrative procedures, or by PES contract approval time for example. Long term transaction costs may be indicated by conflict levels that would be described qualitatively, and perhaps explained using Pretty's (1995) scale/typology of participation.

## 4 Sense of justice

In the two previous sections, we have defined the concepts of distributional and procedural justice and made these the starting points for two core elements of empirical studies of social impacts of policy instruments in PolicyMix. These are elements to study with a *critical realist* approach where we as researchers are to describe and evaluate aspects of outputs and decision-making on policy instruments for conservation.

*Sense of justice* constitutes a third element that also is crucial to examine when studying social impacts of changes such as those imposed by sets of policy instruments for conservation. Here, a perspective of *social constructivism* implies that the researchers engage in describing how people affected by the changes themselves perceive and evaluate the changes. Thus, as researchers we can first describe and evaluate degrees of distributive and procedural justice through a critical realist approach. Then we can apply a social constructivism approach to describe the evaluations and evaluation criteria that local people and other stakeholders apply. We can expect, but not take for granted, that distributive and procedural justice play central roles in the formation of senses of justice of many stakeholders. In order to get a sound understanding of the views of various groups in the specific case in question, it is necessary to grasp how these views may be connected to broader ways of thinking in terms of discourses and ways narratives are produced in connection to such discourses.

We apply a definition of *discourse* in which it constitutes a manner of perceiving and presenting a particular issue that is produced and reproduced by more than one person. Each discourse involves assumptions, claims and arguments. Discourses can be seen as lenses through which the subject is viewed. The production of discourses takes place through written and spoken statements. Within each discourse, contributions have some similarity in content, and they may also be marked by use of the same types of expressions such as certain metaphors and manners of narrating about specific examples (Hajer 1995, Dryzek 1997, Adger et al. 2001, Benjaminsen and Svarstad 2010). Furthermore, we define *narrative* as a story that contains a course of action and involves one or more actors. The narratives are created and recreated by narrative producers who relate to certain structural frames that offer norms of how to narrate (Svarstad 2009, Benjaminsen and Svarstad 2010).

Investigations of sense of justice provide information of the *legitimacy* of specific elements of governance. Max Weber's concept constitutes the point of departure for most thinking on legitimacy, as explained by Frank Parkin:

*"Legitimations are the claims that dominant groups make about themselves – claims that they would naturally wish everyone else to accept. Legitimacy, on the other hand, refers to the condition in which such claims have in fact been accepted and endorsed by subordinate groups. That is, the grounds upon which obedience is claimed and are accepted as valid by those who are expected to do the obeying. Legitimations emanate from on high, but legitimacy is bestow from below"* (Parkin 2002: 77-8).



Bernstein defines legitimacy as “the acceptance and justification of shared rule by a community” (Bernstein 2005:142). He argues that legitimacy from a sociological perspective is “rooted in a collective audience’s shared belief, independent of particular observers” (Bernstein 2005:156). Furthermore, “insights from the sociological perspective suggest that criteria of legitimacy ultimately are contingent on historical understandings at play and the shared norms of the particular community or communities granting authority” (Bernstein 2005:162).

*Political trust* constitutes a relevant aspect of legitimacy. This is a belief that political institutions and other societal actors function well. Political trust is based on normative expectations (Tyler, 2003; Grönlund & Setälä, 2007). Currently, there seems to be a tendency of diminishing trust in institutions and organisations in the developed nations (Pharr, Putnam, & Dalton, 2000). People are increasingly dissatisfied with their political systems, and researchers in many fields currently investigate the possible consequences of this diminished trust. A decreased level of trust in the political system has often been identified as one reason for the low level of citizens’ political activity (Dalton, 2005). In the context of environmental issues, the public tend to mistrust governments, businesses, industry and sometimes experts even if people ascribe a great deal of responsibility for controlling environmental risks to these actors at the same time (e.g., Lorenzoni & Pidgeon, 2006; Zwick & Renn, 2002).

A low level of trust and disappointment in a political system can lead people to look for alternative ways to influence the status quo. Distrust in political parties has been shown to increase personal non-institutional political participation, not the least in environmental issues (Kaase, 1999; Putnam, 2000; Lubell, Vedlitz, Zahran, & Alston, 2006). Poortinga and Pidgeon (2003) suggest that there may be a healthy type of distrust what they call ‘critical trust’ which allows a personal engagement in environmental action (Lorenzoni & Pidgeon, 2006). For example, people who report high confidence in scientists feel less responsible for global warming (Kellstedt, Zahran & Vedlitz, 2008). In addition, young people who trust NGOs are more eager to participate in political activity at municipal level, but those who trust political parties, are not so eager to become involved (Paloniemi & Vainio, 2010).

### **How to study sense of justice in the PolicyMix cases**

The sense of justice and, concomitantly, the degree of legitimacy, can be investigated through qualitative methodology. Eventually, one may also add a quantitative element. A strategy only of a quantitative investigation, however, will not produce data to understand adequately the way of thinking and, thus, the sense of legitimacy among various relevant groups.

The qualitative investigation may be a conventional type based on structured or semi-structured interviews and with a more or less fragmented presentation of the views on each topic identified as important to the informants. The strategy of a *discourse-connected narrative analysis* would make it possible to capture a sound understanding of people’s perspectives on the case in question and the broader ways of thinking that frame these perspectives (Svarstad 2008, 2009). Here, various sources and methods can be employed, such as document analysis, relatively open or semi-structured interviews, focus groups.

Besides, a *deliberative approach* can be involved by inviting selected citizens to take part in small groups to value ecosystem services and their effects on people (Wilson & Howarth 2002). However, the researchers have to keep in mind that such a methodology provides a small number of persons with the opportunity to express their views on behalf of various groups, although these individuals do not necessarily have the same ways of thinking or interests as the groups they are seen to represent.

Interpretations of “sense of justice” may be used to explain the reasons behind why the hypothesis on distributive and procedural justice are rejected. For example transaction costs may be correlated with a stakeholder’s position/power in an actors’ network; despite short term transaction costs of a PES scheme being relatively low, a small scale landowner may have a perception of procedural injustice explained by the farmer’s self-perception of influence in deciding terms of the PES contract. *Discourse-connected narrative analysis and deliberative approaches may be complemented by quantitative methods in some cases.* For example, sense of justice may stem from factors other than simply distribution of income, or transaction costs of participation in a PES programme; to the extent that “sense of justice” factors can be quantified they can be tested for as confounders of the distributive and procedural justice hypotheses discussed above.

#### **Critical comments to Ostrom’s SES framework**

It seems like power is not addressed adequately in the attempted SES modelling by Ostrom (Ostrom 2007, Ostrom et al. 2007). Research by PolicyMix on the element of procedural justice as well as the other two elements concerning justice may contribute to improve this aspect.

Furthermore, Ostrom does not seem to put emphasis on the role that social constructions by various groups of people have for the working of social-ecological systems. Instead, it seems like she applies exclusively a *realist* perspective. The inclusion in PolicyMix of the sense of justice element may examine how such aspects may be incorporated in a SES framework.

The lack of adequately dealing with the questions of power and social constructions constitute major shortcomings of the modelling of SES. Here, PolicyMix may contribute to the elaboration of a more sound modelling.

When seeing distributive, procedural and sense of justice as “social performance measures” in the SES framework, it is appropriate to ask what constitute possible explanatory factors. These may be factors already specified in the SES framework, but there may also be additional factors.

#### **Further specifications towards guidelines and field guides from WP5**

Research questions as well as methodologies must be specified for each of the three elements. Thereafter, guidelines can be elaborated. Finally, case-based field guides must be specified. For the project it will be vital to gain empirical data that is possible to compare across the various cases. On the other hand, it is important to adjust the investigations to the contexts of each case.

## 5 References

- Adger, W.N., T.A. Benjaminsen, K. Brown & H. Svarstad (2001): Advancing a political ecology of global environmental discourses. *Development & Change* no. 4, vol. 32:681-715
- Arnsten, C. (1969): "A Ladder of Citizen Participation," *JAIP*, Vol. 35, No. 4, July 1969: 216-224.
- Benjaminsen, T.A. and H. Svarstad (2010): *Political ecology: Environment, people and power [in Norwegian]*. Oslo: Universitetsforlaget. Under translation to English.
- Bernstein, Steven (2005): Legitimacy in Global Environmental Governance. *Journal of Law and International Relations* Vol. 1 (1-2): 139-166.
- Dalton, R. J. 2005. 'The social transformation of trust in government'. *International Review of Sociology* 15: 133–154
- Dryzek, J. (1997) *The Politics of the Earth: Environment Discourses*. Oxford University Press, Oxford.
- Grönlund, K. and M. Setälä. 2007. 'Political trust, satisfaction and voter turnout'. *Comparative European Politics* 5: 400–422.
- Hajer, M. A. (1995): *The Politics of Environmental Discourse. Ecological Modernization and the Policy Process*. Clarendon Press, Oxford:.
- Holland, B. 2008. Justice and the Environment in Nussbaum's "Capabilities Approach". Why Sustainable Ecological Capacity Is a Meta-Capability. *Political Research Quarterly* 61(2): 319-332.
- Ikeme, J. (2003): Equity, environmental justice and sustainability: incomplete approaches in climate change politics. *Global Environmental Change* 13 (2003): 195-206.
- Johansson-Stenman, O. and J. Konow (2010): Fairness Concerns in Environmental Economics – Do They Really Matter and if so How? Working paper presented at the workshop *Behavioral economics: What can it contribute to environmental and resource economics?* In Bellingham 2009. File URL: <http://hdl.handle.net/2077/21425>
- Kaase, M. 1999. 'Interpersonal trust, political trust and non-institutionalized political participation in Western Europe'. *West European Politics* 22: 1–21.
- Kellstedt, P. M., S. Zahran and A. Vedlitz. 2008. 'Personal efficacy, the information environment, and attitudes toward global warming and climate change in the United States'. *Risk Analysis* 28(1): 113–125.
- Lorenzoni, I. and N. F. Pidgeon. 2006. 'Public views on climate change: European and USA perspectives'. *Climatic Change* 77: 73–95.
- Lubell, M., A. Vedlitz, S. Zahran and L. T. Alston. 2006. 'Collective action, environmental activism, and air quality policy'. *Political Research Quarterly* 59: 149–160.
- Miranda, M., Porras, I. T., & Moreno, M. L. (2003). The social impact of payments for environmental services in Costa Rica: a quantitative field survey and analysis of the Virilla Watershed. *Markets for environmental services* No.1. London, UK: International Institute for Environment and Development (IIED).
- Nussbaum, M. 2000. *Women and human development: The capabilities approach*. New York: Cambridge University Press.
- Nussbaum, M. 2006. *Frontiers of justice: Disability, nationality, species membership*. Cambridge, MA: Belknap Press of Harvard University Press.
- Ostrom, E. 2007. A diagnostic approach for going beyond panaceas. *PNAS* 104(39): 15181-15187.
- Ostrom E., M. A. Janssen, J.M. Anderies. 2007. Going beyond panaceas. *PNAS* 104(39): 15176-15178.
- Pagiola, S., A.Arcenas, and G. Platais (2005) Can Payments for Environmental Services



- Help Reduce Poverty? An Exploration of the Issues and the Evidence to Date from Latin America. *World Development* Vol. 33, No. 2, pp. 237–253, 2005
- Paloniemi, R & Vainio A. 2010. Why do young people participate in environmental action? *Environmental Values*, in press.
- Parkin, Frank (2002): Max Weber. London: Routledge.
- Pharr, S. J., R. D. Putnam and R. J. Dalton. 2000. 'A quarter-century of declining confidence'. *Journal of Democracy* 11: 5–25.
- Poortinga, W. and N. Pidgeon. 2003. 'Exploring the dimensionality of trust in risk regulation'. *Risk Analysis* 23(5): 961–971.
- Putnam, R. D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Pretty, J. 1995. Participatory learning for sustainable agriculture. *World Development* 23(8): 1247-1263.
- Sen, A. (1999) *Development as Freedom*. New York: Knopf.
- Skjeggedal, T. et al. (2010) "Frivillig vern av skog – evaluering av arbeidsformen". Samarbeidsrapport NIBR/NINA 2010.
- Svarstad, H. (2008): Narrative analysis: A concept note for the EKOSIASA and PAPIA projects. Unpublished project paper. Oslo: NINA.
- Svarstad, H. (2009): *The sociology of narrativity [in Norwegian]*. *Sosiologi i dag* 39(4).
- Tyler, T. R. 2003. 'Trust and democratic governance', in V. Braithwaite and M. Levi (eds.), *Trust and Governance*. (New York, Russell Sage Foundation), pp. 269–294.
- Walker, G. (2010): Environmental justice, impact assessment and the politics of knowledge: The implications of assessing the social distribution of environmental outcomes. *Environmental Impact Assessment Review* 30 (2010): 312-318.
- Wilson M & Howarth R. (2002): Discourse-based valuation of ecosystem services: establishing fair outcomes through group deliberation. *Ecological economics* 41 (3): 431-443
- World Commission on Environment and Development (WCED). 1987. *Our Common Future*. Oxford: Oxford University Press.
- Zwick, M. M. and O. Renn (eds.) 2002. *Perception and Evaluation of Risks. Findings of the Baden-Württemberg Risk Survey 2001*, joint working report by the Center of Technology Assessment in Baden-Württemberg and the University of Stuttgart, Sociology of Technologies and Environment, Germany.



