

6.2.03
WORKSHOP IN POLITICAL THEORY
AND POLICY ANALYSIS
513 NORTH PARK
INDIANA UNIVERSITY
BLOOMINGTON, INDIANA 47405

Inducing sustainable governance of natural resources through participation: Fashionable or feasible strategy?¹ RF

Tell me and I'll forget; Show me and I may remember; Involve me and I'll understand.

Andrew Campbell- fifth generation wool grower from south-eastern Australia, describing the *Landcare* program, which has turned land conservation on its head in Australia over the past ten years or so. *Nature and Resources*, 31, 1995, p.47.

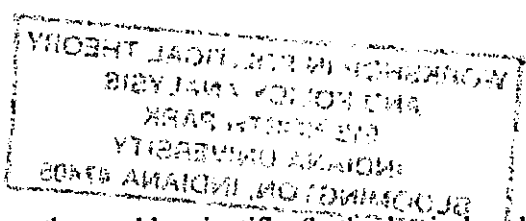
The last few decades has seen a sharp rise in the use of participation as a strategy to cope with social dilemma like problems arising in the use of natural resources. As shortcomings of earlier advocated strategies of centralization and privatization to exploit natural resources have become evident and instances where resources have been managed endogenously in a sustainable manner are no longer treated as anomalies of rational behavior, the strategy of using participation to induce sustainable governance of natural resources has taken on almost paradigmatic proportions. The expectation is that involving local users in the governance of natural resources will result in sustainable practices. Underlying assumption is that individuals have the capacity to govern their own lives and function most successfully when they develop skills in a self-sufficient manner to solve problems and implement innovation, i.e. cope with change.

Most international developmental agencies have made participation of local users in their projects and programs an article of faith (OECD 1991; World Bank 1994; IIMI (Merrey 1995)). To this account, a number of methods and approaches to enable local people "to share, enhance and analyze their knowledge of life and conditions, to plan and act" (Chambers 1993, i) have been and continue to be developed in order to ensure the involvement of local users and stakeholders in rural and economic development programs. Examples are participatory rural appraisal (PRA) (Chambers 1994, 1993, Pretty 1993), rapid appraisal of agricultural knowledge systems (RAAKS) (Engel 1995) and community development (Korten 1980).

The use of participation has not been limited to interventions in developing countries. The strategy of involving local users and stakeholders in "solving" social dilemma problems has struck home in many of the developed countries as well. Besides in origin central to the idea of democracy, participation is being pushed forward to manage of natural resources (Pinkerton 1989), produce of public services (Ostrom 1993) and develop and formulate policy (Renn et al 1996), among others. Terms as co-management, co-production, and interactive policy-making have been coined emphasizing the "participativeness" of these various approaches.

In addition, members of the scientific community have grown to realize that an objective scientific investigation and knowledge production does not exist. Constructivism perceives all understandings of

¹ Paper for the mini-conference april 24, 27, and 29, 1996.
Prepared by Marleen Maarleveld, visiting from the Department of Communication and Innovation Studies, Wageningen Agricultural University, The Netherlands



the world, scientific (both physical and social) and lay knowledge, to be socially constructed and the result of a politically, socially and normatively defined context. Even if one accepts scientific research more robust than other methods of inquiry, the social and political influences surrounding the conduct of the researcher implies that knowledge produced by this method is not socially and political neutral (Latour 1987). Also, the subjects (objects) of research are often in the process of understanding, interpreting and changing the world in which they live. This means that the researcher and the researched interact to some extent. Awareness of the constructed aspects of scientific knowledge and acknowledgement that the subject studied is an experimenter in his own right, has opened up the way for participatory approaches in scientific research.

In case of governance of natural resources, much remains to be learned and understood about the workings of ecosystems, human relations and their interlinkages. Local users, stakeholders, extension workers, policy makers and others however, often face problems that demand action. Soil erosion in various areas of the world demand measures as soon as possible, before the damage done is irreversible. Politicians face citizens demanding immediate clean-up of polluted areas and rivers. And those living far below subsistence level cannot wait. Deliberate efforts to solve these problems and conflicts are necessary but involve risk as not all consequences of intervention are known ahead of time. The use of participation to induce governance of natural resources seems innocent enough and desirable from a normative point of view. However, the question remains: Do practices that make use of participation contribute to sustainable governance of natural resources or are they a fashion soon to be outdated.

This paper is a preliminary study of some of the practices to induce self-governance through participation to cope with ecological, economic and social problems related to resource use. Reflecting on these types of practices can contribute to an improved understanding of the relationship between humans and nature and between humans, i.e. processes of participation, collective action and institutional change. The first part of the paper attempts to clarify the relationship between natural resource use, transformation processes and social dilemmas. In part two the notion of participation is discussed. Some practices using participation to induce self-governance are illustrated in part 3. In conclusion, reflections regarding the use of participation are presented in part 4.

I Natural resource use and potential social dilemmas

The current state of and pressure on the environment is a major driving force behind the quest for sustainable development. Increased awareness that the world we live in is not a cornucopia of never-ending resources and that technology might fall short of turning it into one, has lead to the realization that the sustainability of economic development is in part dependent on how well we are able to exploit natural resources in keeping with present and future needs. Actual and predicted trends that a greater number of people (will) use resources for basic subsistence as well as for enhancement of quality of life, requires that issues of sustainability and social justice are taken into account as scarcity and interdependence play a greater role in resource exploitation.² Currently however, human use of natural resources is often not in keeping with practices of sustainability and social equity. Instead, a number of stakeholders whose interest in the natural resource diverge and differ in intensity form a fragmented group and find themselves caught in (potential) social dilemma situations that can result in the destruction of the resource and the ecosystem it is part of.

² For example, for statistics on actual and predicted use of water resources see Gleick (1993).

A common practice for analytical purposes is to classify a good according to the degree to which the use of a good is subtractable, i.e. use of a unit of a good means that the unit is no longer available for others to use, and excludable, i.e. the benefits of the good can be withheld at no or a low cost. This general classification of goods is illustrated in figure 1.

		Subtractability	
		Low	High
Exclusion	Difficult	Public goods	Common-pool goods
	Easy	Toll goods	Private goods

Figure 1: General classification of goods (Ostrom et al. 1994, Picciotto 1995 among others)

Natural resources can be classified on a similar basis. The same resource, however, can take on a number of identities. For example, bottled water that one buys in the supermarket is a private good. Once bought, the bottle is no longer available to other shoppers. By means of a price mechanism, the benefits of the good can be withheld at no or low cost by the provider. The water in a swimming pool can be considered a toll good. One person swimming does not prevent another from doing the same. However, people can be excluded from use at relatively low cost. Water in an irrigation system is usually defined as a common pool good as the water is subtractable. Water used by one farmer cannot be used by another. Excluding users presents a costly problem though. The ocean can be classified as a public good. Use is considered neither subtractable nor excludable. Similarly a resource such as fish can be classified differently. Fish in hatcheries are private goods. The ones swimming in the aquariums in Sea World can be considered toll goods. The fish one sees while snorkeling in the ocean are on the one hand public goods as their benefit is available to all and their enjoyment is nonrival. On the other hand, they can be classified as common pool goods as the fish harvested by one fisherman can no longer be harvested by others. The subtractability as a consumer unit makes them a rival good.

To some extent, the degree of excludability and subtractability of a resource can be reduced to particular attributes of the resource. In part though, excludability and subtractability are linked to the way the resource is transformed for human use. As shown in the example of water above, excludability and subtractability are partly dependent on the manner in which water is used.

Unraveling the processes involved in transforming resources (inputs) into goods (private, toll, public or common pool) that jointly affect some set of individuals, can help to discern the manner in which a good is excludable and subtractable and to understand the potential social dilemmas individuals face when using natural resources. As illustrated in table 2, Ostrom and Walker (1996) distinguish eight transformation processes³.

³ This list does not presume to be exhaustive.

Production:	combining private and/or public inputs to yield one or more outputs
Distribution:	making outputs available
Appropriation:	taking, harvesting, or receiving one or more outputs
Use:	transforming one or more outputs into final consumption and waste (or through another production process into other outputs)
Provision:	the articulation of demand, the arranging for production, and the supplying of funding/inputs necessary for production
Organization/ governance:	devising rules and agreements about membership, distribution of obligations or and benefits, and how future collective action decisions will be made
Monitoring:	measuring inputs, outputs, and conformance to rules and agreements
Sanctioning:	allocating inducements or punishments related to conformance or lack thereof to agreements

Figure 2: Transformation processes (Ostrom & Walker 1996).

Generally, in the transformation of private goods (bottled water, hatchery fish) the costs and benefits of provision, production and consumption are undistorted, leading to optimal outcomes, i.e. alignment of individual and collective interests. Subtractability and excludability, in combination with competition provide the condition of free entry and exit resulting in market efficiency. The processes of production, distribution, appropriation and use are usually preminent. Market arrangements tend to suffice in "governing" use.

The transformation of toll, public and common pool goods is more complex. Due to nonexcludability and nonrivalness of the benefits, the costs and benefits to individuals of resource transformation are not as well-aligned as for private goods⁴ and individuals select strategies which are the least costly for themselves but which can result in sub-optimal outcomes from the perspective of the group, i.e. a social dilemma. Overcoming this problem requires joint action and can involve second and third order social dilemmas.

In case of public goods, excludability poses a problem. The fact that the benefits of the transformation of a public good are available to all, whether or not they contributed to the transformation process or for its use, distorts both the cost-benefit relation of the transformation and the preferences for the public good. In the case that all will benefit from the good, all will choose to free-ride on the contributions of others, resulting in the paradox that the good will not be provided as no one contributes. Since the good is desired, this is a sub-optimal outcome. To counter free riding and meet the actual preferences for the good, the transformation of the good involves additional processes, namely provision,

⁴ For an explanation of the processes involved see Ostrom et al. (1994) or any introduction to economics.

organization, monitoring and sanctioning. These arrangements require separate transformation processes of which the benefits are characterized by nonexcludability and nonrivalness. Their transformation can therefore be considered second or third order social dilemmas nested in the transformation process of the resource in question.

The transformation of a toll good requires the possibility of an affordable method to keep non-payers from benefiting. Once such an organization/governance arrangement is established (which include some form of monitoring and sanctioning), joint benefits generated can only be enjoyed by those who have paid the required "toll".

The transformation of common pool goods is more complex as use is subtractible and exclusion of beneficiaries is difficult. Consequently, appropriation of the benefits and maintenance of the good are problematic as the problem of nonexcludability in combination with subtractibility of the units can easily lead to overexploitation of the good (Ostrom et al. 1994). Optimal transformation of the common pool good requires additional processes of organization/governance, sanctioning and monitoring to exclude potential beneficiaries and coordinate allocation of the subtractible units. For example, with regard to an irrigation system, this would mean who gets how much water, when and where, monitoring appropriation behavior and sanctioning deviations. Establishment and maintenance of these processes constitute potential second and third order social dilemmas. In addition, the transformation of a common pool good can require provision in order to ensure maintenance of the good. In an irrigation system, this could entail contributing to the upkeep of the system. Benefits of this process are most often nonexcludable and nonsubtractable, disclosing another social dilemma.

Suboptimal appropriation and provision strategies (as can occur in the transformation of public, common pool and less frequently in toll goods) can be resolved through agreeing upon a joint strategy that increases optimality of outcome within the set of preexisting rules or by changing the rules affecting the structure of the situation (for example, resulting in changes in the degree of excludability and rivalness of the good being transformed). This means that voice mechanisms should be nurtured (Picciotto 1995) as it is through these mechanisms that individuals can influence choice of strategy or changes in rules. In this light, employing participation to induce governance of resource use seems a logical starting point.

II Governance through participation

The merits of participation as a means to cope with the various aspects of interdependence among people in a sustainable manner have long been praised in democracy theory. These merits have been grounded in functional as well as normative arguments. Historically, democratic political institutions appear to be the ones most conducive to human welfare (Clague 1996).

On a political level, the use of participation to induce a group of individuals to organize themselves to solve problems of institutional supply, commitment and monitoring has proven to be reasonably sustainable. Generally, modern democracies are endowed with institutional structures capable of dealing with conflicting interest, complexity, change and uncertainty without entering into unbounded strife destructive for all involved. In short, contributing, influencing, sharing or redistribution power, control, resources, benefits, knowledge and skills through beneficiary involvement in decision-making, i.e. exercising voice in varying choice situations, can be a sustainable way to determine how to regulate the interactions between group members in the face of evolving conditions.

This is not to say that the establishment of governance structures through participation is an easy process with a guaranteed stable outcome. As Sened (1991, 397) finely remarks: "Given what we know about the generic disequilibrium of tastes, or, interchangeably, of the multitude of equilibria in repeated games and other coordination problems, the existence of any stable institution comes as a surprise". Even today in countries where some form of participatory democratic governance has sustained over time, the level and form of participation and the current institutional arrangements continue to be evaluated and adapted as strategic and opportunistic behavior persist and/or preferences for outcomes change. Overall though, these governance structures have proven resilient in their ability to deal with complexity, change, uncertainty and unforeseen contingencies.

Two approaches are helpful in highlighting some of the determinants of human choice and action that are important in to take into account when inducing governance through participation.

Structural determinants of human choice and action

One way to better understand human behavior is to look at the features of individuals' environment. Regularities that govern human behavior can be explained by the environmental constraints they face. While the actual cause of an individuals behavior might not be explained, causal structure can be identified. In these cases individual behavior is embedded in the structure they face, i.e. switching individuals has no affect on the behavior exhibited (Satz & Ferejohn 1994).

New institutional economics combines institutional analysis and a transaction cost perspective to explain the emergence and existence of institutional structures that constrain people's choices and action. Institutional arrangements are viewed as the rules that structure repetitive and interdependent relationships among people (Kiser & Ostrom 1982). Rules create a framework within which individuals make decisions and act. Changes in rules lead to changes in incentives individuals face. Over time, resulting changes in behavior can eventually lead to adaptations of institutional arrangements.

From a transaction-cost perspective, institutional arrangements can be viewed as systems of rules and relations that rational agents construct to reduce transaction costs, defend themselves against fraud and exploitation, and reduce uncertainty and complexity. As it is costly to consider all possible actions and their likely outcomes, institutional arrangements help to simplify the decision situation individuals face by creating constraints. Institutional arrangements also facilitate credible commitments and recurrent transactions. Thus, coordination, information and strategic costs are lowered. However, it is impossible to prevent all shirking and free-riding behavior and take into account all possible future contingencies (Tang 1993).

For this reason, the ability to acquire and process information about circumstances of specific time and place is a crucial factor in the sustainability and performance of institutional arrangements (Tang 1993). It is at this point that participation can contribute to the viability of the institutional structure and to the reduction of transaction costs. With regard to natural resource exploitation, local users can provide the detailed information on the state and uses of the resources enabling attentive governance of the resource. Opportunistic behavior can be checked more closely and contingencies can be discerned faster. In case of changes, the individual and collective interest can be realigned by adapting the institutional arrangements. In short, participation can help in tailoring the institutional arrangements to the circumstances of specific time and place, ensuring effective performance and viability of those structures.

Individual and cognitive determinants of human choice and action

Although structural influence can explain a great deal of human behavior, this approach is limited in

addressing questions at the level of a single individual's behavior or concerning the origin of certain structures (Satz & Ferejohn 1994). The way we think about our goals and constraints, about our strategies, and about ourselves can be crucial determinants of behavior. One of the ways in which institutions change is that people change their mental models of how the world looks. Uphoff (1992, 332) found that although "persisting or average patterns of behavior are best explained by *structural* variables, innovative changes, those at the margin, which are what we seek in development, are more often accounted for by more *cognitive*, individual or normative factors".

The structural approach captures some individual and/or cognitive determinants of our behavior by assuming that humans are fallible and limited information processors. However, individual skill and knowledge to be able to identify and evaluate incentives and constraints are often taken for granted. Research in psychology (cognitive and social among others) provides evidence that this assumption should be reconsidered.

As acknowledged, people have very limited abilities to process information on a conscious level, particularly social information. This cognitive limitation can lead to the inability to understand or fully grasp the utilities in a social dilemma situation other than those that are most obvious- those connected with the payoffs. Manipulations that enhance the salience and understanding of social information could increase cooperation. Greater knowledge could yield greater cooperation (Dawes 1980).

The manner in which individuals attribute outcomes to actions affects their choices and behavior. In general, individuals are assumed to be capable of critically analyzing their situation and think of it objectively as something that can be altered through their own action. However, some individuals do not recognize a contingency between their own behavior and outcomes in their environment. They feel they cannot exert control over their own lives. Often, such a person attributes failure to control events internally. As a result, an individual becomes passive not only in the original situation, but also in others requiring initiative (Peterson et al 1993).

This phenomenon was first observed in dogs. In an experiment, dogs that previously received a series of inescapable shocks failed, when tested later in different apparatus, to learn to escape by jumping over a hurdle. These dogs passively accepted the shocks without looking for a means of escape. In contrast, dogs that had either received no shocks or ones that they could turn off by pressing against a bar learned quickly to jump over a hurdle (Seligman et al, 1968). This type of behavior can be observed in people as well, and contrary to structural approach predictions, changes in incentive structure will not lead to alteration in behavior in these cases. This can be seen in situations where users have no sense of the relationship between their actions and the degradation of a resource. In addition, learned helplessness can also be found in areas where users have become dependent on external agents to think of, initiate and finance ways of development.

The existence of value orientations independent of structural constraints also indicate the possible role for individual agency. In experimental research, several value orientations, i.e. stable preferences for certain patterns of outcomes for oneself and others, have been distinguished: Cooperative, individualistic and competitive (McClintock et al 1973, 1988; Van Lange 1991). Individuals with a cooperative social value orientation have a preference for outcomes that are the most optimal for the collective. Those with a individualistic outcome are interested in those outcomes that provide the highest payoff for themselves. Actors who have a competitive social value orientation are not only interested in the highest payoff possible but also desire that the difference between their own payoff and that of other(s) is as large as possible. Different social value orientations lead to different choices of action, something that

can be of influence in social dilemma situations.

Individuals are, however, neither free agents who become whatever they choose nor powerless objects controlled by environmental forces (Bandura 1977). The manner in which individuals seek to improve their circumstances by designing and adopting changes in institutional arrangements is determined both by the structural constraints they face and their cognitive and individual abilities and state of minds. To sustainably govern natural resources, individuals must learn about the circumstances they find themselves and the consequences of their choices and actions. It is important to note that human beings can only learn, grow and develop by directly interacting with and reflecting upon the world (Bopp 1994). Experiential learning has proven to be most effective.

When focussing on participation as a means to induce sustainable governance both the structural and cognitive determinants of behavior need to be addressed as well as possibilities for experiential learning. In order to induce sustainable governance to cope with the aforementioned complexities, change, uncertainty and future contingencies, participation strategies must encompass:

A-Empowerment

Help people to develop self-respect, confidence and pride in their knowledge and capabilities. Develop the ability to selectively incorporate, adapt and take advantage of external technologies and ideas, if wanted (Thrupp 1989).

B-Building of horizontal ties and vertical ties

The existing of ties between people increases trust and facilitates credible commitments. Horizontal ties are important as they lead to greater information sharing and ultimately greater trust than vertical ties (Putnam 1993). Vertical ties should not be neglected however, as they are crucial in linking different levels.

C-Informed decision and rule making

Capacities in information gathering, analysis and documentation, including the effective use of information should be developed. Competence in planning, management, leadership and preparing proposals as well as skills for facilitating and negotiating between different interest groups need to be addressed.

D-Development of a (local) collective information/knowledge base

Information/knowledge and sharing it, is important. Creation of a information/knowledge base can result in the collective exploration of multiple learning trajectories (Clark 1995).

Participation strategies that accommodate these aspects should be able to lay a strong foundation for sustainable governance.

III Experiments in inducing governance of natural resources through participation.

A number of practices that employ participation to induce governance of a natural resource can be distinguished. Only a few of them are illustrated here. These examples are not in depth and exhaustive analysis of the practices, but serve to give an impression of the potential uses and effects participation can have in the induction of governance of natural resources. (A more extensive and systematic evaluation of the practices is being worked on.)

Participatory appraisals

Participatory rural appraisal (PRA) is an example of one of numerous participatory approach used in developmental rural projects to involve beneficiaries in projects. This method has been used in the area of natural resource management, agriculture, poverty and social programs and health issues (Chambers 1994). Unlike earlier appraisal methods, participation of beneficiaries is not only sought in providing information to researchers but also includes exploring visions and solutions by the stakeholders themselves. By making use of a number of visual methods, interviews and group dynamics methods, the knowledge, ideas and various standpoints of the local stakeholders are articulated and discussed.

A program that employed PRA in its projects is the Aga Khan Rural Support Program (AKRSP). This non-governmental organization was established in 1985 to promote and facilitate natural management in Gurajat, India. Part of the AKRSP is directed at soil and water conservation. At the start of the implementation process of the watershed program, a lot of time was taken to enable local communities to participate in the appraisal and planning of the program. In order to make an inventory of the natural resources in the village and study the local institutions and existing management systems, a joint appraisal exercise was undertaken involving an external team and local people. Applying a number of participatory methods including transect walks, equity appraisal and well-being ranking, and focus group discussions, the collaborative analysis ensured that the knowledge and innovations of the local users formed the basis for planning the watershed program. The participatory appraisal concluded with the preparation and presentation of a simple proposal by community members. The program has been evaluated and results indicate that participation of the farmers at all stages (extending beyond the PRA) resulted in "crop and livestock productivity have significantly increased, measures and practices have persisted beyond the life of the project; attitudes of both the professionals and the local people have changed, and the communities have received wider benefits" (Shah 1994, 118).

Community development

Community development approaches look to the community controlled organizations as instruments to involve local beneficiaries in improving their situation. Initially, community development was directed at improving the situation of the rural poor in developing countries. More generally, the approach is directed towards building local social and technical capacity. Blueprint planning is left at the drawing board, and a learning approach is undertaken with a capacity to embrace error and learn with the people. Joint action is undertaken to build new knowledge and institutional capacity (Korten 1980).

An example of a community development approach to induce governance of a natural resources is the *Landcare* program in Australia (Campbell 1994). In response to the depletion and degradation of natural resources, financial difficulties of most agricultural sectors and rapid decline of rural communities, the major farmers' union and the peak conservation lobby jointly approached the Prime Minister demanding that scientists and public officials share the challenge and costs of sustainable agriculture with the Australian community. This resulted in a national ten-year funding program and a phenomenal spread of Landcare groups throughout the country. In its attempt to blend elements of community, environmental and production issues, the program targets land users at a community level to cooperate to tackle environmental issues and develop more sustainable systems of land management. Groups and the activities they undertake are quite diverse. Many activities are directed at the increase of land literacy. Through a number of activities, land users relearn to read and interpret the signs of nature and develop an ethic of land stewardship which has not only lead to the ability to deal with current land degradation problems but also to the prevention of future problems. The activities of Landcare groups are complemented by an extensive and growing array of innovative environmental monitoring tools and research and education programs directed at increasing the visibility and appreciation of land

degradation problems. Involvement of users at a community level in collecting and monitoring information has increased the speed and effectiveness of transmission of local environmental knowledge, taught people to observe the health of the land beyond their property boundaries and democratized technology. Landcare group members feel ownership of the information and are (thus) committed to deal with its implications. In addition, they are much more able to formulate questions for and demand action of scientists and regulators.

Interactive policy-making

A number of governments have sought to involve citizens, stakeholders and interest groups in policy formulation. Currently, environmental policy, for example, often fails to catch on as it is based on objective scientific analysis and does not take knowledge of those most familiar with the problem into account. As a result policy fails due to both unpopularity and incompetency. In case of interactive policy-making, government policy makers invite relevant parties to participate in the policy development process, taking up the role of a facilitator involved in helping the parties articulate, discuss and align interests, problems, needs and possibilities (Renn et al 1995).

An attempt to involve the general public in the formulation of policy is illustrated by the national debate (BMD) on the future of energy policy that took place in The Netherlands in 1981-1983 (Midden 1995⁵). Earlier, energy policy had stagnated with regard to the siting of a number of new nuclear power plants. A national debate was proposed by a triad of organizations to permit the creation of a widely socially accepted policy. A plan for the organization of the debate was designed by a governmental advisory body and sent to parliament for approval. In parliament, this proposal was made more comparable to the one proposed by the initiators of the debate. For specific details of the procedure and scope of the debate see Midden (1995). More generally, the procedure could be divided in two phases. The information phase inventoried opinions, beliefs, arguments and such which could be relevant for a balanced energy policy formulation. Views of informed citizens and organizations were solicited, and a number of hearings and controversy sessions were organized. In addition, studies were undertaken to gain knowledge where gaps or controversies existed. To ensure fairness and competence of the debate, subsidies were available for those parties that needed to develop information or acquire presentation skills. As initial credibility of the debate was quite low, mainly due to the growing nuclear controversy and distrust of government, an extra effort was made to explain the goals and process of the debate to the public. The information phase was concluded with the publication of a widely distributed interim report and brochures, creating a common information base.

The discussion phase encompassed the debate itself. A questionnaire was developed which was distributed, discussed and completed at meetings organized by communities, labor unions, political parties, religious organizations and schools. Conclusions and recommendations of the debate were that more energy conservation is desirable; renewable energy resources should be applied to a larger extent; natural gas should be used more; no new nuclear power for the moment; decentralized power generation systems should be promoted. As the outcome of the debate had no more than "advisory status" to government and parliament, 50% seriously doubted political impact. The skeptics were proven right. Even though the outcome of the debate was thought to fairly represent dutch society's opinion on the direction in which energy policy should lead, the political parties in power decided to continue the earlier plans to build new nuclear plants. "Two years of debate seemed to be washed away in one day" (Midden 1995, 317). The debate was reignited when formal participatory procedures for site selection

⁵ This illustration relies on Midden (1995) as primary sources could not be consulted.

to which the government is legally bounded took place. Citizens felt fooled and hearing ended in turmoil and protest. Eventually, plans had to be adapted and frozen as all political basis for them had vanished.

IV Reflections

As the examples illustrate, it would be naive to think that participation can guarantee sustainable governance of natural resources. Besides the fact that the rhetoric of participation far outstrips its practice (Narayan 1994, 63), achievement of meaningful and effective participation is extremely difficult. Communication problems, difficulties of breaking away from old roles and patterns, discrepancies between local and external agents' point of view, duration of visible development, the need to meet project deadlines, local structures that obstruct change, and threats to existing bureaucracies and political systems are only a few of the practical problems that can impede the induction of governance of natural resources through participation.

Participation goals are often stated in very general terms and ambiguous with regard to which aspects of participation, which type of processes and which order of social dilemma problems they are addressing. This hinders operationalization in terms of activities undertaken for what goals as well as in terms of measurable (not necessarily in terms of efficiency) indicators. This can result in the unfounded creation of expectations with regard to the effects of the participatory effort on behalf of the beneficiaries, even if unintentional or beyond control, and destroy a lot of goodwill and trust as illustrated by the national debate example. Before a deliberate intervention is made, the possibilities for participation need to be carefully and realistically inventoried.

Although positive effects of participation have been found, successful interventions seem to be more haphazard than the rule. Attributes of success are often unclear and very dependent on abilities of the facilitator involved in the participatory approach. In addition to general statements regarding the intended goal of participation, the means to achieve participatory governance is rather ambiguous and unsystematic at times. Where PRA ends and community development starts, for example, is often unclear. This leads to confusion not only on a theoretical and practical level, but also in the evaluation of the effects of the approach.

Nonetheless the examples do point out the importance of a strategy which leads to governance structures that can adapt to evolving conditions. Time issues and geographic scale of ecological sustainability and the political, economic and social aspects of changing, for example in the Landcare illustration, land use systems, require new social and institutional competencies. Participatory approaches do not provide a recipe on how to achieve these competencies, but do provide the means. The development of the aspects of participation as mentioned on p. 8 provide a fecund basis for coping with evolving conditions of sustainable governance of natural resources.

For participatory practices to be feasible however, both structural and individual/cognitive determinants of choice and action need to be considered. Individual change on a local level is not sustainable if incentive structures are not adjusted in accordance with the behavior. For example, sustainable agriculture on a farm level will only persist if it is supported by national level policy (Pretty 1995). The effect of a charismatic leader can lead to a apparently successful practice, but if the resulting performance cannot be channeled into and reinforced by predictable structures it is not sustainable. Changes in institutional arrangements might require development of skills and knowledge on an

individual level if the incentives are to have effect. In addition, complexity and uncertainty need to be balanced with structural scaffolds while individual/cognitive determinants need to be developed to discern and cope with future contingencies and evolving conditions. For the strategy of participation to induce sustainable governance of natural resources to remain fashionable and become feasible, the knife of intervention needs to be sharpened on both the structural and individual/cognitive side if a deliberated incision is to have the intended effect.

References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Campbell, Andrew (1994). *Landcare. Communities shaping the land and future*. St. Leonards, Australia: Allen & Ulwin.
- Chambers, Robert (1993). *Participatory rural appraisal: Challenges, potentials and paradigm*. Institute of Development Studies.
- Chambers, Robert (1994). *The origins and practice of participatory rural appraisal*. Sussex: Institute of Developmental Studies.
- Clague, Christopher (1996). Conclusions and implications for donors. In C. Clague (ed.), *Institutions and economic development: Applications of the New Institutional Economics to growth and governance in less-developed and post-socialist countries*.
- Clark, A. (1995). *Economic Reason: The interplay of individual learning and external structure*. Draft of paper in honor of Douglas North, Washington University in St. Louis.
- Dawes, R.M. (1980). Social Dilemmas. *Annual Review of Psychology*, 31, 169-193.
- Engel, Paul (1995). *Facilitating Innovation. An action-oriented approach and participatory methodology to improve innovative social practice in agriculture*. Wageningen: Dissertation.
- Gleick, P. (1993). *Water in crisis: A guide to the world's fresh water resources*. New York: Oxford University Press.
- Gunderson, Lance H., C.S. Holling & Stephen S. Light (eds.) (1995). *Barriers and Bridges to the renewal of ecosystems and institutions*. New York: Columbia University Press.
- Kiser, L.L. & E. Ostrom (1982). The three worlds of action. A Metaphorical Synthesis of Institutional approaches. In E. Ostrom (ed.), *Strategies of Political Inquiry*. Beverly Hills: Sage.
- Korten, David C. (1980). Community organization and rural development: A learning process approach. *Public Administration Review*, 480-510.

Latour, B. (1987). *Science in action*. Milton Keynes: Open University

McClintock, C.G., D.M. Messick, D.M. Kuhlman & F.T. Campos (1973). Motivational bases of choice in three-choice decomposed games. *Journal of Experimental Social Psychology*, 9, 527-590.

McClintock, C.G. & W.B.G. Liebrand (1988). The role of interdependence structure, individual value orientation and other's strategy in social decision making: A transformational analysis. *Journal of Personality and Social Psychology*, 55, 369-409.

Midden, Cees J.H. (1995). Direct participation in macro-issues: A multiple group approach. Analysis and critique of the Dutch National Debate On Energy Policy, Fairness, Competence and Beyond. In Ortwin Renn, Thomas Webler & Peter Wiedemann, *Fairness and competence in citizen participation. Evaluating models for environmental discourse*. Dordrecht: Kluwer Academic Publishers.

Narayadan, Deepa (1994). *The contribution of people's participation: Evidence from 121 rural water supply projects*. UNDP-World Bank Water Supply and Sanitation Program, World Bank: Washington D.C.

Organization for Economic Cooperation and Development (1991). *Development Cooperation*. Paris: OECD.

Ostrom, Elinor (1993). Covenanting, co-producing, and the good society. *The Newsletter of PEGS (Committee on the Political Economy of the Good Society)*, 3, 7-9.

Ostrom, Elinor & James Walker (1996). Neither markets nor states: linking transformation processes in collective-action arenas. In *The handbook of public choice*.

Ostrom, Elinor, Roy Gardner & James Walker (1994). *Rules, games and common-pool resources*. Ann Arbor: University of Michigan Press.

Peterson, C., S. Maier & M. Seligman (1993). *Learned Helplessness*. New York: Oxford University Press.

Pinkerton, Evelyn (1989). *Co-operative management of local fisheries. New directions for improved management and community development*. Vancouver: University of British Columbia Press.

Picciotto, Robert (1995). *Putting institutional economics to work: From participation to governance*. World Bank Discussion Papers, no. . Washington D.C.

Pretty, Jules (1995). *Policies and institutions that work for a more sustainable agriculture and regenerated rural economies*. Sustainable Agricultural Programme, IIED: London.

Pretty, Jules (1994). Alternative systems of inquiry for a sustainable agriculture. *IDS Bulletin*, 25, 37-48. IDS: University of Sussex.

Renn, Ortwin, Thomas Webler & Peter Wiedemann (1995). *Fairness and competence in citizen participation. Evaluating models from environmental discourse*. Dordrecht: Kluwer Academic

Publications.

Satz, D. & J. Ferejohn (1994). Rational Choice and Social Theory. *Journal of Philosophy*, 71-87.

Seligman, M., S. Maier & J. Geer (1968) Alleviation of learned helplessness in the dog. *Journal of Abnormal Psychology*, 73, 256-262.

Sened, I. (1991). Contemporary theory of institutions in perspective. *Journal of Theoretical Politics*, 3, 379-402.

Shah, P. (1994). Participatory watershed management in India: The experience of the Aga Khan Rural Support Program. In I. Scoones & J. Thompson (eds.), *Beyond farmer first. Rural people's knowledge' agricultural research and extension practice*. London: IT Publications.

Tang, Shui-Yan (1994). Building community organizations: Credible commitment and the New Institutional Economics. *Human Systems Management*, 13, 221-232.

Thrupp, Lori Ann (1989). Legitimizing local knowledge: 'scientized packages' or empowerment for Third World People. In, D.M. Warren, L.J. Slikkeveer & S.O. Titilola (eds.), *Indigenous knowledge systems: Implications for Agriculture and International Development*. Ames, 138-153.

Uphoff, Norman (1992). *Learning from Gal Oya. Possibilities for participatory development and post-Newtonian Social Science*. Ithaca: Cornell University Press.

Van Lange, P. (1991). *The Rationality and Morality of Cooperation. The influence of own social value orientation and perceptions of other's personality characteristics on cooperation in a social dilemma*. (Dissertation) Groningen.

World Bank (1994). *World Development Report 1994. Infrastructure for Development*. Washington, D.C.: The World Bank.