Participation in mountain forest management – the role of group building for the outcome of participation processes: two case studies from Bavaria

Dominik Himmler, Klaus Wagner & Michael Suda

Abstract

Participation of the public in decision-making processes in complex and controversial projects in mountain and protection forests in the Alps has been growing in importance. In order to understand the outcome of time-consuming participation strategies the paper explores the role of group building processes on the basis of the evaluation system *DEEL*. We recognise a shift of actor-oriented individualistic goals -for enhancing the effectiveness and efficiency of resulting solutions- to group-oriented goals with aspects of legitimisation and democratisation. Furthermore, some participants are influenced by the participation process and it becomes possible to build up a new reference group. These outcomes are influenced by the facilitation style, informal leaders, changes of the membership, the information flow and the management culture of the participants' member group systems.

Keywords: participation, goals, protection forest, planning, impacts, groups

1   Introduction

Constantly changing ecological, economic and social conditions mobilise an increasingly individualised society in making its voices heard in public decision-making. Current experiences in environmental planning show that the representative democracy with its standard planning instruments is no longer sufficient for taking decisions with a long-term impact to satisfy public's demand for transparency and involvement. This is caused by a lack of trust in the existing advisory and their decision-making mechanism (Selle 1994; Carter 2005). Recently, the terms like "risk dialogue", "sensitive land management" and the need for "self-responsibility" also entered the natural hazard management field. Especially, mountain forest management is increasingly confronted with the challenge of handling a plurality of interest groups and their claims on mountain forests. This is caused by the increasing heterogeneity of forest owner interests (Härdter 2004; Suda & Schaffner 2008; Krause 2010), intensification of recreation use and new modes of nature conservation (e. g. Natura 2000). Sectoral programs like hunting plans, Natura 2000 or protection forest management plans often ignore these heterogenic und conflicting interests.

Participation is proposed as a solution. Planning goals, like conflict solving, acceptance or long-term goals like sustainable cooperation and trust between land users and authorities could be achieved by using participation methods which are driven by interaction and communication (Selle 1994). The current literature offers a deep insight into participation methods and their implementation. Yet if we

look at goals of participation, the scientific literature is fragmented and offers only a few holistic evaluation systems (Newig 2005; Zellhuber 2006) In our contribution, we will analyse long-term participation processes on the basis of a holistic evaluation system that we call *DEEL-System*. It conceptualises participation not only as an appropriate instrument to improve the quality and strengthen the legitimacy of planning, but also as the result of democratic theory and culture. Furthermore, we will explain the outcome of the participation processes by using the group development model of Tuckman & Jensen (1977) in combination with the reference group theory (Newcomb 1957; Hyman & Singer 1968; Merton 1968). The results of two case studies in Hinterstein and Oberammergau, communities in the alpine part of Bavaria, show the possibilities and hindrances within and along participation groups.

2   Case studies

Hinterstein (HS), a small village of 600 citizens, is endangered by rockfalls and avalanches. In 1954 an avalanche triggered and caused damage to various buildings and roads in the valley. Since then, protection forest rehabilitation (total cost € 1.0 million) and diverse technical protection measures (total cost € 1.5 million) were implemented (Müller 2006). Due to the high damage caused by red deer and chamois, the relevant stakeholders agreed to take part in a mediation process in 2002, which took about 1½ years and consisted of 12 sessions. The mediation procedure was chosen because the standard participation models in forestry management and their solutions, which were implemented previously, were not successful and conflicts prevailed. The mediator who was hired to organise the process followed typical mediation steps, including the change of perspective, questioning and heterogenic working groups (Müller 2006).

Oberammergau (OAG), with its 3000 citizen, is endangered by flash floods from the torrent "Großen Laine" and to some extent by rockfalls and debris flows in the area of "Schaffelberg" The nearly pure spruce forest in the catchments is highly vulnerable. Therefore, the regional forest office initiated a so-called Mountain Forest Offensive project within the Bavarian Climate Change Adaption Strategy 2020. Herein, the "Mountain Forest Panel Oberammergau" was established to develop and to discuss silviculture, hunting, and other measures in order to facilitate efficient joint implementation, throughout the program implementation period (2009–2011). From 2009 to 2010 three plenary sessions took place. These sessions were accompanied by several meetings of thematic working groups on hunting, forest pastures and nature protection/tourism. Both, the mountain panel and the working groups, were led by an external facilitator.

3   Methods

For the development of the categorical system of participation goals, we reviewed the existing literature on participation methods, case studies, evaluation studies of participation processes, planning and democracy theories.

For both case studies, we performed a content analysis of the protocols and other documents compiled by process managers (informal ex ante documents and protocols of Dr. Gaby Müller (HS) and Dr. Klaus Wagner (OAG)) and conducted 24 semi-structured interviews with participants and non-participants. During one to two hour long interviews, the respondents described their perceptions of the participation process, of their goals and of the results that were achieved. We transcribed the interviews and analysed them using a qualitative method developed by Mayring (1995). In addition, we attended three meetings of the group in HS in the continuation phase after the project.

4   Results

4.1   Analysis of the goals with the DEEL-System

When evaluating a participation process the basic question is what participation-related goals derived from the literature or planning discourse should be achieved with a local participation process. We distinguish the following fundamental categories (short excerpt of Table 1):

1. *Effectiveness and efficiency:* An early involvement of stakeholders in an interactive process leads to an accumulation of local lay & expert knowledge and opinions. The discussion with all relevant interest groups within a communicative process can avoid or solve conflicts and decrease transaction costs. As a result, the quality of decisions, as well as their implementation, can be improved (Newig 2005).
2. *Legitimisation:* Provided that the results of the participatory process are taken seriously and considered in the superior formal procedures – e. g. final plan approval – (Fürst et al. 2001), a balanced and timely participation of stakeholders foster the degree of acceptance of the plans in society (Selle 1996).
3. *Democratisation:* The discursive interaction process should activate a mutual learning process among all participating actors (Selle 1994). The process empowers the participants and lead to a better understanding of actors' own responsibility by strengthen the personal and social competence (Lehmann & Nieke 2000; Zellhuber 2006).

The participants in HS and OAG, who were asked about their goals they want to achieve, mainly mentioned actor-oriented or particularly egocentric interests *(interest perception)* and the desire to find a solution for the existing problems *(solution identification)* before the participation process. Especially the representatives of authorities pointed out, that they want to use the participation process as a one-sided *knowledge transfer* (1) to sensibilise the local population and other participants for the risk of

Table 1: The DEEL-System, grey boxes = mentioned, white boxes = not mentioned.

DEEL-System				HG ex a.	HG ex p.	OAG ex a.	OAG ex p.
effectiveness & efficiency	short- to medium-term (project-oriented)	quality of decision	knowledge transfer (expert- & lay)	(1)	▓	(1)	▓
			(mutual) interest perception	▓	▓	▓	▓
			conflict management and interest balance		▓		▓
			(creative) solution identification	▓	▓	▓	▓
		quality of implementation	identification/acceptance		▓		▓
	long-term (cross-project oriented)	trust	respect & appreciation	(2)	▓		▓
			conflict-solving		▓		
	transaction costs	resource effort			▓		▓
		(legal-) dispute costs			▓		▓
legitisation	integration into formal planning procedures				▓		▓
	compliance with existing legal standards						
	control and tranparency through…	information		(1)	▓	(1)	▓
		involvement of (non-) organised interestgroups			▓	(1)	
democratisation	distribution of power	systemic democratisation			▓		
		actor based democratisation empowerment/ acquirement of competence	personal competence		▓		▓
			technical competence		▓		
			methodical competence		▓		
			social competence		▓		▓

natural hazards. Only one person in HS mentioned the improvement of communication and the mutual trust relationship (2).

When the participants were asked about what they achieved through the participation process, it becomes evident, that the actor-oriented interests before the process were shifted into common group interests and goals. The aspects of respect and appreciation ("let's talk together, not at each other!"), of developing trust ("…yes it is a trusty relationship, we know we can cooperate."), of the knowledge transfer ("I recognised many things, which I didn't know before"), of a mutual interest perception ("You have seen that there are differences about the participants.") and the equal cooperation *(systemic democratisation)* between experts and lay persons, as well as authorities and private persons, were noted. This change is also pointed out by the language of the respondents (e.g. ex ante: "I want that…", "The hunters should…"; ex post: now our goal is…").

In both case studies the legitimisation played a subordinated role. However in the ex post evaluation the interviewees pointed out, that they appreciated the personal contacts to the amount of other stakeholders. In HS also non-organised groups were involved as a result of the mediation design. In addition to that, the signing of a formal binding contract in HS and the relationship to the formal planning procedures in OAG was highlighted by the participants (integration into formal planning procedures). The results of the analysis also show that the interviewees in OAG pointed out the unexpected rapid procedure and the objectification of the discussions. Whereas in HS the aspects of conflict solving by the common communication act and the impacts of a mutual social learning process, with its empowerment of competences of the individuals, took a higher part.

4.2   Group building process

To understand this change between ex-ante goals and ex-post outcome the group development model of Tuckman & Jensen (1977) is helpful. It identifies five fundamental stages of group development:
1. Forming: In this phase the participants get to know about each other. First problems are mentioned and goals are defined.
2. Storming: The participants try different strategies to achieve their individual goals. At the end of this phase, a change in the perspective among the participants may occur if the participants are able to understand the interests of others.
3. Norming: In this phase the group cohesion develops. The participants define common group norms, recognize and acknowledge similarities, and start cooperating with each other. The discussions become less emotional and more substantive.
4. Performing: The potential for joint problem-solving and decision-making develops. A constructive cooperation on specific tasks becomes possible. Groups` solidarity and openness develop.
5. Adjourning: This phase represents the break-down of an established group after the completion of the task.

For our research, we modified this model to make it applicable to the participation process and added another phase to it. We call it Pre-Norming. Our version of this group development model now allows a better analysis of the process of change revealed by the *DEEL-System*.

For this propose, it is necessary to analyse the context of the participation process. In both case studies, the attempts to solve the existing problems had been previously undertaken. In HS latent conflicts among the participants existed because of the past measures, including restructuring of hunting districts. The implementation of these measures has changed the structure of the open space in the community, as well as its social system. In contrast, a consensus emerged among the central actors in OAG that the problems of forest pasture and hunting management have to be solved as soon as possible. However, because of a lack of the personal and financial resources and the failure of facilitators that were not accepted by the citizens, these problems remained unresolved.
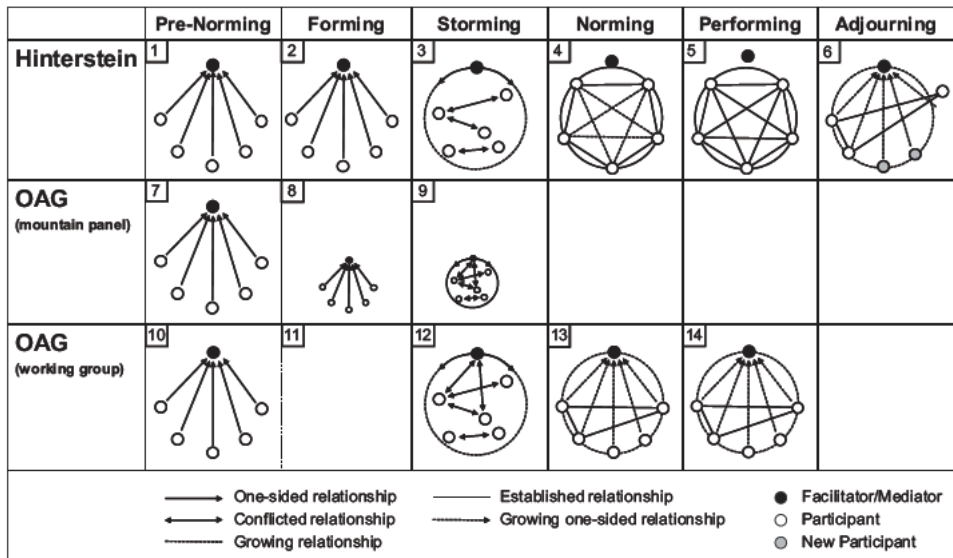
	Pre-Norming	Forming	Storming	Norming	Performing	Adjourning
Hinterstein	1	2	3	4	5	6
OAG (mountain panel)	7	8	9			
OAG (working group)	10	11	12	13	14	

One-sided relationship   Established relationship   ● Facilitator/Mediator
Conflicted relationship   Growing one-sided relationship   ○ Participant
Growing relationship   ◯ New Participant

Figure 1: The group building process and the role of facilitation in the case studies.

Group building processes normally proceed simultaneously on a content, a socio-dynamic and a psycho-dynamic level (König & Schattenhofer 2010). The results of the case studies show that different participatory designs, goal settings and facilitation modes led to a different group building process. At both the content and the socio-dynamic levels in the group building process developed in the opposite directions.

(1) The phase of Pre-Norming can be recognised in both case studies (Figure 1: 1, 7, 10). The framework elements of the participation process, e. g., the goals of participation, the power of decision-making, the structure and the rules of behaviour, were set in order to ensure the transparency of procedures and the confidence among the participants. In the Mountain Forest Panel OAG, this occurred during the first meeting of all stakeholders. In the mediation process, the outcomes of this phase were shaped by high complexity and the formal character of the process (mediation contract and agreement). In order to build up a foundation for trust in HS, the participants and the mediator had to work much more intensively than in OAG. The facilitator/mediator assumed an active and leading position within the group in both case studies. (2) The phase of Forming was characterised by disorientation and scepticism, caused by the novelty of the process and the presence of new representatives who some of the participants did not know and whose jobs, education level and position in the social hierarchy was different. In this phase the facilitator/mediator also assumed the active leading part (Figure 1: 2).

In OAG the Pre-Norming took place at the same time as the Forming, i. e., during the first plenary meeting of all stakeholders. Due to the early initiation of working groups – this means that the participants from the same organisation knew each other – it was impossible to identify the Forming phase during the group meetings (Figure 1: 11). The division of the stakeholders into working groups for solving

topic-oriented problems, led to a convergence of topic-oriented norms, values and ideology among the participants. The common perception of the problems and therefore the common interest in finding a solution with an external facilitator advanced the (3) Storming on a content level. In this case the Storming process supported the knowledge transfer in the small working groups (Figure 1: 12). In HS, ten different stakeholders, with different norms, values, ideologies, problem perceptions and goals came together in every meeting during this phase. According to the participants, four to five meeting were necessary to discuss on a content level, i. e., free of individual positions and reproaches, in order to understand the interests of every participant at the end. The Storming is characterised by a high level of social dynamism. The mediator had to build up a framework, in which the participants discussed the different points of view and conflicts. Using typical methods of mediation the participants had a chance to talk about personal disputes in the atmosphere of mutual trust and security (Figure 1: 3). Most of the participants experienced this phase as uncomfortable breaking test. (4) In the phase of Norming the group cohesion developed for the first time. The participants mentioned a feeling of belonging together. In HS, we recognised a development of common norms, values and goals. The mediator detached herself from the group slowly and tried to engage the group system to manage the process. In addition to that, the new roles of participants were visible and duties and responsibilities were agreed upon. The group as itself assumed control functions due the growing consensus (Figure 1: 4). In OAG this phase went different from HS. The facilitator adhered to his leadership and was also involved in the search for a solution. He also organised further activities, including a call for tenders for example (Figure 1: 13). As a result, fewer activities had been managed by the participants themselves. The group became dependent on the strong position of the facilitator. In the (5) Performing phase the facilitator in OAG was also actively involved in the group system (Figure 1: 14). In HS, the mediator left the group system and stepped out. She supported the group, now almost independent, but remained in the background (Figure 1: 5). (6) The Adjourning phase (Figure 1: 6) can only be identified in HS of the complete group development process. After the end of the mediation process, the participants decided to keep the group in order to control the measures and to support the social relationships that developed among the participants. The facilitation of the annual meetings after the end of the project was assumed by a group member. The analysis of the group structure indicates that the amount of participants declined permanently during the six years after the participation process. Because several core group members left and new participants joined the group the percentage of newcomers increased to 50% till 2010. This fact caused a loss of knowledge about the original mediation process, i. e., the loss of technical skills, on the one hand, and social skills on the other hand. These skills were based on the participants' own cognitive experience of the group building process. The group building process was not familiar to the newcomers. As a result, a lack of knowledge in form of information and also informal relationships emerged. This caused a lack of understanding of the initial situation that led to the mediation arrangements. In the end, the group system was disturbed and disbalanced. This fact reduced the ability of the group to act and solve new problems.

In a nutshell, a complete group development process according to Tuckman & Jensen (1977) is only detected in HS (Figure 1: 1–6). The mediation is characterised by a strong socio-dynamic level, which is the foundation for transforming conflicts on a content discussion level and a long-term mutual cooperation. Any external disturbance of the group system pushes the group development process backwards. Hence, the role of facilitators in each phase is different and has to be recognised and modified ad hoc. It was apparent that the group building process in the mountain panel OAG did not occur because of the early division into working groups and the long periods between the common meetings of all participants. These events provided a forum for knowledge transfer on a content level but disturbed the discussion on a deep socio-dynamic level (Figure 1: 7–9). The topic-oriented working groups facilitated avoiding the forming phase and shorten the storming phase. The reduction to one interest group and the active involvement of the facilitator led first of all to strengthening and accelerating the discussions on a content level. But at the same time, the group building process was limited because of a lack of social interaction. The typical group building process by Tuckman & Jensen (1977) did not occur because of the active participation of the facilitator during the phase of Norming and Performing (Figure 1: 10–14).

4.3   Building up a reference group – possibilities and hindrances

The case study in HS indicates that the success of the participatory process is dependent on the type of representation of stakeholder groups. It has to be distinguished between formal and informal leaders of a stakeholder organisation. In this way, it is not as a matter of course that the member of a stakeholding organisation that had been formally elected to represent it (e.g., leader of an alpine pasture cooperative) is the best to go into the group building process and to make decisions that will be accepted by his membership. In HS, there were informal leaders behind the elected representatives who recognised in the course of the participation process how they would benefit from the process. Internal power struggles within the member group emerged and led to slow down and even blocking of the group building process for a short time.

In general, the motivation of a participant to join a participation process and cooperate with others depends on his individual interests, norms, values and ideology, his perception of the problem, his personal resources and his potential influence within the participation process (Newig 2005). A group building process based on interaction and communication offers a possibility to transform pre-existing individual, actor-specific interests and goals into common group interests and group goals *(cf. DEEL-System)*. It is possible to establish a new group through a group building process that can provide a participant with comparable or advantageous reference points compared to his own experience in the member group. As result the individual behaviour patterns can be changed and/or fostered by the new reference group (Gukenbiehl 1980: 83). In one case in HS the individual behaviour patterns have clearly been changed and fostered by the new reference group. The group building process produces new group norms and values, attitudes and evaluation

standards, as well as sanctions if necessary *(Norming)*. It, therefore, has the potential to influence the individuals' actions (Gukenbiehl 1980: 93). In this case the characteristics of socio-dynamics within a group building process, play a prominent role in the phase of Storming. This phase is especially beneficial for a participant, when he formulates his needs and objectives, because he gains a more differentiated view towards the group reality. The ideas that prevent him from communication and interaction with others lose their relevance (Stahl 2007).

The case studies show that the characteristics of the socio-dynamics have to be adjusted flexible according to the conflict potential in order to create the foundation for a participants' reference group and to advance the group building process.

The number of stakeholders which are involved into a group building process is also an important factor for the proportion of socio-dynamic elements because of the participants' varying interests, norms, ideologies, values, resources and personal skills and knowledge. In HS, the case study indicates a development of mutual understanding for the interests of others, which is generated in the common plenary meetings with all stakeholders. This fact strengthens the participants' perception of the whole group as reference point. In OAG this can only be found within the working groups, whereas the common conflict management and the perception of mutual interests between the different stakeholders can only be recognised in the people that occupied positions in more than one organisation.

Both case studies demonstrate that participants with a high degree of identification with the reference group are also more likely to contribute better to information flow in their member organisations and actively engage in the achievement of the agreed-upon group goals. This includes mainly the activities in their own member groups, e.g., adopting hunting strategies in neighbouring hunting districts, motivating others to develop new concepts of their organisations and inviting other stakeholders to their internal member group meetings.

The results in HS also show that the reference group can also have a negative impact on the participants. Negative reference arises, if the group building process can not generate a binding between representative and the participation group.

Although it will be possible to make common decisions and contracts because of the growing group conformity, the participants with a negative reference can hinder the implementation of the participation process. Particularly, the implementation of measures after the project is endangered because of the weakening of the group structure and solidarity *(cf. Group building process – Adjourning)*. The original individual goals start predominating again. The reference to the group goals becomes insufficient. As a result, the participants maintain the information flow within their own member organisation.

Yet the permanent information flow from the participation group into the member group of a representative is important for reaching results that can be sustained over time. It helps to close the gap between the representatives and their members – the actual implementing actors (e.g. hunters) – and thereby fosters the implementation of the decisions made in a participatory process. In OAG, the participation design, with its topic-oriented working groups, effectively addresses more land-users in the decision-making process. In HS, a formal procedure was established in which

only the representatives and directly affected land-users are involved. Thus, the information flow into the member group had to be managed by the representative autonomously. This process depended on the relationship of the representative with the reference group.

In undemocratic member group systems, organised in an authoritarian top-down hierarchy, the representatives offer less information about the reference group concerning the decisions, made in the participatory process. The reason could be the lack of identification with the reference group but two other reasons may also be important: (1) The existing relationship between the representative and the member is characterised by a long-term trust to the representative. His decisions are not questioned. (2) The representative actively blocks the information flow to the group members because of his authoritarian leadership style. Hence, the decisions made in the participation process are not received by the group members of the organisation from the beginning to the end of the participation process and their understanding of the development of the decisions is limited.

5   Conclusion

The everyday business of natural hazard management is accompanied by conflicting interests. These obstruct a proper implementation of protection measures. The increasing role of dealing with conflicting interests in natural hazard management leads to a resource expensive process management justified by the political goals and participation strategies. Sustainable effects, including building up mutual cooperation among the stakeholders to produce greater cost efficiency and effectiveness in future, are based on trust and mutual appreciation. We developed the *DEEL System* – a holistic evaluation tool – to analyse the changes within a participation process. Furthermore, the *DEEL system* can also be a basic instrument for supervising of process managers and controlling efforts of participatory planning goals, in the future.

In general, participation processes can not only be seen as a communicative and interactive act. It should be also seen as a group development process within a participation process. Our case studies show different expressions of the group building process that depends on the goals of participation process, the context, the participation methods and the role of facilitation. Tuckman & Jensen's (1977) model of group development can be an important tool for facilitators to explain what is going on in a long-term participation process. It can also be helpful for reflecting on the role of facilitators and their behaviour within the process, which is crucial for reaching the desired goals. In the end, the group building processes demonstrate the possibility to build up a reference group for the participants that can amplify the individual's social action and responsibility in the management of protection forests. This matter is a necessary element for strengthening the bonds between the representatives within the participation group and their own membership of their organisations that in turn help achieving sustainable implementation of management measures.

The implementation of group development processes in long-term participation processes requires significant effort and expertise from the responsible agencies. Therefore, the partners of the INTERREG project *"Schutzwaldplattformen und -foren in Tirol und Bayern"* designed and implemented a series of training seminars for the staff of the forest service of both countries to improve their skills and expertise in public participation. Additionally, it would be helpful to install participation experts within the agencies themselves who could supervise the responsible staff and offer support to them in difficult questions of guiding participation and group development processes.

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