Commons protected for or from the people

Analysis of strategies to establish protected areas in the Swedish Mountain Region

Theoretical Framework and Research Design

[for a PhD Dissertation]

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1 Introduction

1.1 Conservation versus use

To establish protected areas for the sake of nature conservation has been on the political agenda for more than hundred years now. In the end of the 19th century, areas of particular scenic beauty or uniqueness started to be set aside as national parks or nature reserves. The aim was not so much to preserve biodiversity, but rather to provide people with a refuge from the ills of civilization (Colchester, 1997:99). In more recent years the major argument for increasing the pace to protect land has been to conserve biodiversity - "the variety of life on Earth and the natural patterns it forms" (Secretariat of the Convention on Biological Diversity, 2000:2) - that is today seen as an issue of global urgency. Biodiversity is taken to be crucial to sustain viable ecosystems and their adaptation capacity (for a recent example of how, see Worm et al., 2006). Additional reasons for protection over the years have included social and recreational values, as well as education and research. The proposals to designate protected areas have, however, led to resistance in the local communities that will house the national park or nature reserve, caused by fear of loosing opportunities to use the area in different ways.

Over the last two decades an apparent ideological shift in natural resource management has occurred worldwide. One example of that is how ideas about conserving nature have changed. While conservation used to be to preserve an ideal state of untouched nature away from people, it is now increasingly recognised that conservation should be done *for* people and in particular to benefit the local population. The aim is to combine the often external wish to conserve and the local need to make a living. In order to achieve this, more participatory elements are being introduced in a policy area where central authorities traditionally used to be in charge of the whole process to establish and manage national parks. Hence, today the proposed solution for management of the commons is *co-management*, which means that some form of formalised partnership between authorities at different levels and among local resource users, represented by organisations or companies, is established. No formula exists as how to design a co-management arrangement, yet there are suggestions of how different resource and resource users characteristics as well as institutional features work together to create favourable conditions.

Many of the suggestions come from the common-pool resource research, and protected areas can be considered as common-pool resources like oceans, fisheries and forests. In our time of perceived environmental crisis, management of these resources is increasingly

attracting the interest of researchers, including political scientists. These resources are open to an always-present incentive to free-ride, since an individual can gain in the short-run perspective by using the resource in a way that severely degrades it. This is what is happening in many protected areas, contrary to the ambitions of strict nature conservation. Successful management of the commons demands cooperation in order to overcome this difficulty and to find a long-term win-win scenario for all parties – including user groups and the resource. The question is how social dilemmas like this can be solved. In political science, the prisoner's dilemma is an oft-quoted example of the situation. How to make people cooperate is indeed one of the fundamental questions political scientists try to answer. Common-pool resource theorists like Elinor Ostrom are questioning the rational logic stating that individuals are first and foremost concerned about their own self-interest. Research on the commons has shown that people often do succeed in creating institutions for cooperation.

Much of this research has concentrated on small-scale, single-use resources, but the most important contemporary environmental challenges are global, complex and require governance at all levels (Dietz et al., 2003; Edwards and Steins, 1998). In this dissertation the ambition is to find working hypotheses to investigate multi-level relationships influencing the designation of protected areas. The global response to preserve biodiversity is much focussed on the creation of protected areas. In addition, protected areas are also complex common pool resource systems comprised of different resources (such as for instance trees, fish, wildlife, and aesthetic values) that can be used for different purposes (subsistence, recreation, tourism etc.). User groups are therefore potentially diverse and heterogenous.

The physical study area in question is the Swedish mountain region, a region highly dependent on common-pool resources such as fish and game, a magnificent landscape and mineral resources. Increased competition and conflict over how these resources should be used characterise the situation in the region. A fundamental conflict dimension regards the above-mentioned question whether nature is to be conserved or used. The Swedish government has adopted a new, so-called coherent, nature conservation policy, which emphasises the possibilities to combine strict nature protection with careful use such as 'nature tourism', as well as citizen dialogue and communication (Regeringen, 2002). There seems to be ambiguity, however, when it comes to actually implementing the new policy. Local populations increasingly demand management responsibility for protected areas, while it looks like the authorities are rather reluctant to fulfil the promises of the new policy. Pressure for more influence also comes from the Sàmi communities. In addition to conflicts between users and the authorities, there are local conflicts as well since actors at the local

level sometimes pursue different interests. Could co-management be a way to solve these tensions?

1.2 Purpose of the thesis

This dissertation has both empirical and theoretical objectives. Empirically, the aim is to describe examples of how the 'new' Swedish nature conservation policy play out in practice and to analyze whether and how co-management could improve the establishment of protected areas in the Swedish mountain region. The overall theoretical objective is to study resource use institutions in order to develop certain aspects of the common-pool resource framework. These aspects have been pointed out as 'key understudied issues' by common-pool resource theorists (see Stern et al., 2002), and they are: conflict management, deliberative processes, and institutional linkages. The common-pool resource literature thus provides me with a general theoretical framework identifying what elements and relationships among these that need to be considered. Different theories will then be used to specify which elements are particularly relevant for my questions and to help building up working assumptions about them. In this paper it is mainly the general framework that will be outlined in order to set the stage for the detailed analyses that will follow.

1.3 Paper outline

This paper will commence by drawing up the overall theoretical framework for the dissertation. Some basic definitions will be provided as well as a brief discussion of earlier research. Next there is also an attempt to situate the common-pool resource research in political science. The critique of the framework, as well as the key concept of co-management, will be paid some extra attention. The third and last part will consider issues of research design and methodology, including a description of potential case studies.

2 Theoretical framework

2.1 Research on common pool resources

2.1.1 Defining a common-pool resource and its problematique

Oceans, forests, fisheries, the Internet, irrigation systems and the atmosphere are all examples of what Ostrom calls 'common-pool resources' or simply 'commons' – *"a natural or man-made resource system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries from obtaining benefits from its use"* (1990:30). These resources all share two important characteristics: 1) subtractability or rivalry, which means

that consumption of resource units removes those units from those available to others and 2) difficulty in excluding potential beneficiaries from access to the resource system, which creates a risk of free riders who may use the resource without contributing to its provision (Berkes, 1989:7; Ostrom, 1990:30; Ostrom et al., 1994:6). Preventing access by users who do not follow the rules is costly and thus exclusion cost is a core problem for the management of commons. There is also a limit to the number of resource units that can be produced by the common-pool resource. When this limit is approached, crowding effects are produced and in the long run the reproduction capability of the resource may be destroyed (Ostrom, 1990:30-33).

The sparsely populated mountain landscape in northern Sweden is vast and many people perceive it as wilderness. It houses the greatest amount of national parks and nature reserves in the country. These protected areas are hardly possible to parcel and fence in, not only physically and aesthetically, but also politically, since the mountains are thought of as belonging to everyone according to the traditional right of public access.[2] The basic resource system of a protected area is the landscape that consists of space, which is clearly subtractable (as in the case of parking space). Sten Anttila (1999) has for these two reasons; non-excludability and subtractability, suggested that the Swedish mountain landscape be viewed in terms of a commons in accordance with Ostrom's definition above.

Considerable confusion exists in the literature over the terms employed: some scholars use 'common property resources' (Berkes, 1989:7) or 'common property regimes' (Bromley, 1992:4) instead of common pool resources. 'Common pool resource' is a generic term adopted for resources used in common, which may or may not have formal and informal rights attached to them controlling their use. In contrast 'common property resource' (or more correctly 'regime'), attaches specified property rights for common usage (Edwards and Steins, 1999b:199). In general, four different types of property regimes have evolved in relation to common-pool resources: open access, communal or common property, state property, and private property. Much of the confusion stems from the meaning traditionally assigned to common property which refers not to property itself but rather to its absence, a more accurate term would be open access (McKean, 2000:29-30). It is this conception which inspired George Hardin's classic and oft-quoted image of 'the tragedy of the commons' (1968).

[2] What is in Sweden called "the right of public access" means that everyone has the right to be out in the countryside. But this freedom must not infringe upon the freedom of others. The landscape or animal life is not to be damaged, and consideration for both landowners and for others who are out in the countryside must be shown (Naturvårdsverket - http://www.allemansratten.se/templates/firstPage.asp?id=2058).

In the eyes of Hardin degradation was inevitable whenever many individuals use a scarce resource in common and he termed this situation a 'tragedy of the commons'. The tragedy was illustrated with the example of the rational herder who adds more and more animals to the common grazing lands. The herder will immediately receive the direct benefit of his own animals while he only will bear a small share of the costs resulting from overgrazing. Almost a decade earlier, H. Scott Gordon (1954) had concluded that "freedom in the commons means ruin to all". The answer for Hardin was to avoid this tragedy through privatisation or, preferably, centralisation of management decision-making.

Until the 1980s other scholars generally agreed with Hardin's and Gordon's analysis, but then a shift in research priorities began to occur. Many book-length studies and edited volumes concentrating on community-based management have been produced since then, leading to a serious rethinking of the common-pool resource problematic (Berkes, 1989; Bromley, 1992; McCay and Acheson, 1987; Ostrom, 1990; Ostrom et al., 2002; Pinkerton, 1989). A rich case-study literature has also evolved to document cooperation on common-pool resources (Gibson et al., 2000; Lam, 1998; Wade, 1988). This interest has been reflected in the great number of articles on the commons published recently, totalling in the year 2000 about a thousand (Dietz et al., 2002:7). Much of this research has been aimed at showing under what circumstances local management appears and succeeds, and it is clear that this is an existing alternative to privatisation and centralisation.

2.1.2 Political science in CPR-research

Research on the commons has been undertaken in many disciplines including ecology, economics, anthropology, and political science. For political scientists, the probably most important contribution is the Institutional Analysis and Development (IAD) framework, which was initially inspired by Harold Lasswell's conception of the policy sciences and his emphasis on the definition of terms (Jagger, 2004:4-5). The IAD framework has been used extensively in the efforts to better understand common-pool resources (see for instance Carlsson, 2000; Imperial, 1999; Oakerson, 1992; Rudd, 2004), but also to study other policy areas such as metropolitan organisation, infrastructure in developing countries and privatisation (Ostrom et al., 1994). At the roots of this framework is rational choice (although considered as *bounded*) and what would later be called new institutional economics, and thus it combines an actor-based perspective with attention to institutional rules, intergovernmental relations, and policy decisions (Sabatier, 1991). These social-science attributes are, however, combined with physical world attributes. Primarily the framework helps to answer the

question “how does this situation work to produce outcomes?” (Ostrom et al., 1994:36) and the final task for the analyst is to evaluate predicted outcomes (Oakerson, 1992).

In an analysis of an operational situation alone, the analyst assumes that the institutional rules are known and unchanging. However, this assumption is far from the truth and in order to analyse institutional change you need to consider three interacting levels; operational choice, collective choice and constitutional rules (Edwards and Steins, 1998:359; Oakerson, 1992:46; Ostrom, 1990:52). The first set of operational rules regulates the day-to-day use of the resource: when, where and how to yield resources; who should monitor; how and what information must be exchanged or withheld; and what rewards or sanctions will be utilised (Ostrom, 1990:52).

Collective-choice rules decide the interactions between the collective decision-makers and consequently they indirectly affect the operational choices. Resource users, their elected representatives or external authorities use these rules to create policies (which are then translated into operational rules) about how the resource should be managed (Ostrom, 1990:52). Institutions are established to enforce the operational rules, resolve conflicts, monitor and modify the existing set of operational rules. Collective-choice rules regulate membership in the collective arena and specify the scope of the rules, the positions within the management system, the ways in which decisions can be grouped to link different decisions together, rule changing procedures and how information should be collected and used.

Finally, the last set of rules, called constitutional-choice rules, determines who is eligible to participate in the system and what specific rules are to be used in crafting the set of collective-choice rules. Constitutional-choice rules could, for instance, specify the terms of reference of a management body (Edwards and Steins, 1998:361; Ostrom, 1990:52). Even though operational rules are apparently nested in collective-choice rules, which in turn are nested in constitutional-choice rules, in reality self-organising individuals switch back and forth between operational-, collective- and constitutional-choice arenas, which mean that the analysis must be conducted at multiple levels (Ostrom, 1990:50-52).

Today, there seems to be a rather high degree of consensus among common-pool resource researchers that the increased interconnectedness of the biophysical world across scales and of the society across levels requires more complex institutions linking multiple levels. Environmental systems do not neatly match the boundaries of the social management systems (Dolšak and Ostrom, 2003:338; Stern et al., 2002:463). There is no single institutional form that is generally best at achieving a sustainable management of natural resources. What will work in one setting does not necessarily succeed in another; it depends on the specific

characteristics of the resources, the users, the external factors and the details of the institutional design. Certain general challenges concerning the institutional design itself have been identified, including the questions that will be dealt with in this dissertation. How can conflicting values and interests be reconciled? How should appropriate linkages among institutions look like? What role does deliberation play in the dynamics of resource management institutions (Stern et al., 2002)? More research is needed to fill in this gap in the common-pool resource framework.

2.1.3 Are resource systems small and local or large and complex?

The research on common pool resources is a continuing process, where suggestions frequently are being made on how to widen and deepen the perspective. Some common-pool resource scholars have, for instance, argued that the field is too focused on locally-situated small user-groups and communities (Agrawal, 2001; Agrawal and Gibson, 1999; Edwards and Steins, 1998). According to Arun Agrawal, the reason is that the objective of this research has been to show that common property arrangements actually can result in efficient use, equitable allocation and sustainable conservation (2001:1650).

In particular, Agrawal and Clark C. Gibson (1999) have criticised the community focus for assuming that communities are small spatial units with a homogenous social structure and shared norms. In small groups sharing the same geographical space, regular and more frequent interactions occur which can lower the cost of making collective decisions. But territorial attachment could also make small groups *inappropriate* managers for particular resources because the resource size could be larger than a small community could ever hope to control. Also, even though homogeneity is normally expected in small communities, where local populations may hold similar occupations, depend on the same resources, speak the same language and belong to the same ethnic or religious group, *all* human groups are stratified to some extent. Agrawal and Gibson draw the conclusion that more attention should be focused on three critical aspects of communities: "the multiple actors that make up communities, the processes through which these actors interrelate, and, especially, the institutional arrangements that structure their interactions" (1999:636). Interactions such as negotiating the use of resources, implementing decisions, and resolving conflicts are irreducibly influenced by the existing power distribution and the structure of incentives within a social group (Agrawal and Gibson, 1999). Marshall M.W. Murphree (1997) also criticises the common pool resource theory for ignoring the contested issues of appropriate locations of power and responsibility along a line from centre to periphery.

The multiple-use framework developed by Victoria Edwards and Nathalie A. Steins (1998; 1999a) is primarily a reaction to the prevailing emphasis on what they term "'single-use' commons, where the resource system is used for extraction of a single resource unit" (Edwards and Steins, 1998:349). Their argument is linked to that of Agrawal and Gibson, since the single-use perspective is connected with the limited scale of small locally-situated communities. Edwards and Steins insist that the commons, as they evolve, are used for different purposes by different actors and governed by different management regimes. Resource degradation and conflicts among user groups may occur in this situation since multiple-uses of one resource system overlap. Increasingly, it is acknowledged that the key management issue is the balancing of the interests of multiple uses and users (Edwards and Steins, 1999a:209).

Recent volumes (Dolšak and Ostrom, 2003; Gibson et al., 2000; Ostrom, 2005; Ostrom et al., 2002) show that the common-pool resource research is indeed moving into the directions proposed by these scholars changing. More attention is being paid to multi-level governance issues and many multivariate studies have appeared, but the focus on power dimensions that Agrawal and Gibson, as well as Murphy, asked for still seems to be lacking in most studies.

2.2 The co-management alternative

2.2.1 Defining and defending the concept

In co-management research, which can be considered as a sub-field of common-pool resource research (Baland and Platteau, 1996; Jentoft, 1989; Pinkerton, 1989), the power aspects are much more present. Co-management is often pointed to as a solution for the future by common-pool resource theorists (Berkes, 1989; Berkes and Folke, 1998; Jentoft, 1998; Pinkerton, 1989; Stern et al., 2002). It can be seen as something in between centralisation and privatisation. Many examples of successful co-management of common-pool resources have been analysed and shortcomings have also been described. In this paper, the focus is on the advantages, not because there are no disadvantages but to show why it is an interesting concept to study.

Co-management has been used to cover a wide range of arrangements, but at a minimum it can be defined as "*the sharing of power and responsibility between government and local resource users*" (Berkes et al., 1991, my emphasis). Svein Jentoft (2003) includes research institutions into the analysis of co-management regimes, and Tracy Yandle (2003) also sees market actors as possible stakeholders as in various systems of individual transferable quotas.

Both these definitions are rather broad, which is necessary according to Jentoft (2003) since co-management must mean different things in different settings. Distinct governance styles and specific ecological, social and cultural contexts are reflected in models of co-management arrangements. A danger arises, however, when co-management is used as a term for all alternative models where different stakeholder groups are included (Campbell, 1996; Pinkerton, 1989), since the concept could loose its edge. In reality, it has indeed become a 'catch-all term' (Berkes, 2002) bearing so positive connotations that all management initiatives want to have this label.

The primary argument for co-management is that it is believed to reduce conflicts between stakeholders with varying interests since the formalisation of the process provides them with a forum where issues can be thoroughly discussed and disputes settled (Haaland and Skogen, 2003:43; Osherenko, 1988:42; Pinkerton, 1989:29). There are even scholars who consider conflicts as one of the major *reasons* to why co-management emerges in the first place (Baland and Platteau, 1996; McCay, 2002:369-70; Wilson, 2003:202) . Already in 1985 conflict resolution mechanisms were emphasised as one of three key questions setting up the agenda for future research on the commons (Dietz et al., 2002:15), and recently they were defined as a "key understudied issue" (Stern et al., 2002:469).

Deliberation can be a way to solve conflicts (Dietz et al., 2003). It has also been argued in green political theory that public deliberative processes are required to achieve sustainable development (Barry, 1996:118). Experts alone cannot make decisions that need to be based upon ethical consideration. Common-pool resource settings are characterised by multidimensionality of outcomes, value conflict and a need to act even though scientific uncertainties are unresolved. Such situations benefit from analytic deliberation in the decision-making process (Stern et al., 2002:470). As with conflict resolution mechanisms, the thought of deliberation is not widely studied in the common-pool resource research, and there is apparently a need to stress this aspect. In this thesis, deliberation will consequently be one of the three major variables that may illuminate some important process mechanisms leading to successful co-management.

There are many other potential benefits in addition to conflict resolution, which are mentioned in the literature in relation to co-management. More flexibility, and more efficient management, are also probable outcomes because of a lower level of decision-making and fewer formal procedures than in a government-run process. Efficiency is a result of the increased interaction among the stakeholders, breeding trust and increasing the ability to develop and implement enforcement regimes. The legitimacy of the efforts is perceived as

much higher, and rule compliance is consequently higher too (Berkes et al., 1991; Jentoft, 1998:9; Ostrom, 1990; Pinkerton, 1989). Decision-makers become more sensitive to the needs and concerns of the users, such as issues of social justice (Berkes et al., 1991:16; Jentoft, 1998:10). Some studies point toward personal transformations in co-management processes – participants experience changes in their understandings of other stakeholders, new relationships and altered identities (Poncelet, 2001).

What is lying behind these rather pragmatic reasons are some general tendencies; top-down management of natural resources is proving not to work well enough, cost reductions of public administrations result in decentralisation reforms, and finally there is an ideologically driven trend toward increased participation in order to vest "power of government in the people being governed" (Jentoft, 2003; Plummer and Fitzgibbon, 2004).

2.2.2 Power sharing a must in co-management

Steve Selin and Deborah Chavez (1995:189) argue that cooperation is hindered when significant power differences exist, or when certain parties are not perceived as having a legitimate right to participate. The local community is usually the least powerful actor which needs to be granted greater authority and power, if the process is to be community-based and protected against arbitrary actions by governments and other stakeholders (Agrawal and Gibson, 1999:641). Redistribution of power is also necessary for local participation to work, since otherwise there is a great risk that the local community will perceive the process as empty and frustrating (Arnstein, 1969:216). The partnership must give user groups a sense of ownership and responsibility for the system's success, and that sense is created only if they can really participate in the decision-making (Osherenko, 1988:42).

Even though the definition of co-management is wide, the notion of *power sharing* in Fikret Berkes' definition is crucial. In the edited volume "The Fisheries Co-management Experience" (Wilson et al., 2003) the conclusion is that co-management is to be reserved for arrangements where a substantial amount of power is vested in the resource users. Hara and Nielsen (2003), for instance, show that unless users are genuinely allowed and empowered to participate in the setting of management objectives on equal terms with government, co-management cannot really be considered as a institutional innovation. According to Jentoft (2003:4) this implicates that not all forms of user-participation qualify as co-management, as the 'co' in co-management stands for co-operative and not consultative practices. User-organisations should be able to make autonomous decisions about at least certain management functions, and not act as mere agents of decisions made at a higher level.

All this points to the importance to include power aspects when analysing co-management, while at the same time be aware that there are not one single design that fits all situations. Many questions remain to be answered, however, about what it means in practice that the local communities should be given more power in co-management arrangements. Two examples of issues are: Which management tasks are better handled cooperatively among user-groups than by government and which functions should remain a government responsibility? How does unequal distribution of power among stakeholders impact on decisions made (Jentoft and McCay, 2003)?

2.2.3 Co-management of protected areas

There are already examples of co-management of protected areas, in particular in Australia and Canada, and I will describe a few of them in order to show what it can imply. I will also mention some of the critical standpoints that have occurred.

Most of these partnerships have been created with indigenous peoples rather than with local populations, often as recognition of the sufferings that the state has inflicted upon them. The division between 'indigenous' and 'local' is not absolute, however, since the difference in practice is diffuse, but protected area partnerships have most often been part of the settlement of land claims (Stevens, 1997). In Australia and Canada, where land claims processes have taken place on a large scale, there are examples of management committees that have 50 percent or more of indigenous members. For instance, Australian Ayer's Rock, now named Uluru-Kata Tjuta, has a management board with an indigenous majority that shares authority with the park chief administrator and the federal government. In Kakadu National Park 10 out of 14 board members are indigenous. The Aboriginal majority in these boards is a consequence of the fact that the Aborigines, after settlement of Aboriginal title, actually own the land that is then leased to the government for use as national parks (Stevens, 1997:50-51, 277-278). A few protected areas represent full sovereignty, self-determination and decision-making authority according to Stan Stevens (1997). He considers the Wildlife Management Areas of Papua New Guinea, the Annapurna Conservation Area in Nepal and the Miskito Coast Protected Area in Nicaragua as examples of such indigenous management (1997:273).

Conservationists have, however, continued to express concerns, particularly in regard to changing patterns of indigenous settlement and land use. Changing ways of life and population growth is expected to lead to a decline in biodiversity. Justification for this concern can, to a certain extent, be found in such examples as the use by indigenous peoples everywhere of outboard motors, snowmobiles or all-terrain vehicles in their hunting and

fishing activities (Morrison, 1997:275). One approach has been to authorise only 'traditional' land uses, though this is criticised for being coercive and paternalistic since it may impinge upon human rights and reduce development possibilities (Stevens, 1997:270). Others ask if all this romantic primitivism is really necessary. More efficient technologies imply that it is possible to harvest resources in less time than with the traditional means and thus free productive labour for other activities. This does not automatically threaten the sustainability. Patrick C. West and Steven R. Brechin (1991:380-381) insist that local people have the right slowly to adopt appropriate new technologies within the ecological bounds.

2.3 Extended IAD-framework

I find the IAD-framework (see figure 1 below) useful to give structure and sense to the overall design of my analysis. Alike Dolšak and Ostrom (2003) the institutions governing resource use are at the core of the analysis, although my interest is in the *emergence* of new institutions in relation to existing ones. Aspects of institutional linkages constitute a challenge to explaining successful co-management, and that has guided my choice to focus on the *process* where new institutional arrangements are formed. This approach corresponds to the second step of wider analysis that Ostrom (2005:15) suggests to be undertaken, when an effort have been made to understand the initial structure of an action arena. The first step is to more deeply investigate the exogenous variables, and the second, thus, to analyse how action arenas are linked. The second approach situates the analysis in the right side of the figure, in the *Interactions* box marked with grey, but I would argue that, since this analysis includes action arenas *in plural*, the current framework does not cover this kind of analysis.

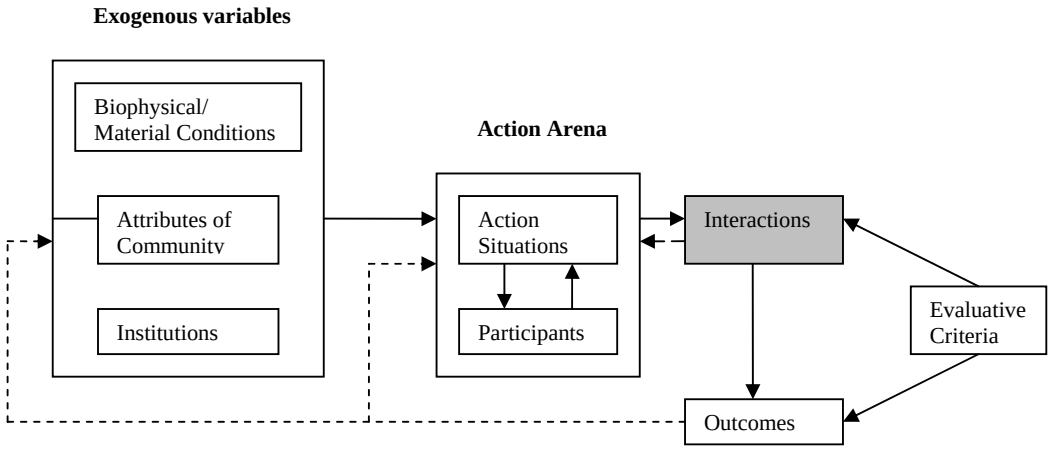

Figure 1. The Instutional Analysis and Development Framework (Ostrom 2005:15)

However, in order to set the stage, the framework in its current shape points to the important factors, and therefore I will briefly describe them here.

2.3.1 Exogenous variables

The characteristics of the resource and its users, as well as external economic and political environments, are found within the group of exogenous or contextual variables (the left column) (Dolšak and Ostrom, 2003; Edwards and Steins, 1999a). Considerable consensus exists that the following biophysical or resource-related attributes are favourable: (R1) the resource is not so close to deterioration that it is useless to organise or so underutilised that little advantage results from organising, (R2) reliable and valid indicators of the condition of the resource are available, (R3) the flow of resource units is relatively predictable, (R4) the resource system is sufficiently small (Ostrom 2000), and (R5) low heterogeneity in the use of extraction technologies (Dolšak and Ostrom, 2003). When it comes to market factors, it is sufficient to state here that commerce has reached even the most remote outposts of the world and market pressures can reshape demand for local resources (Dietz et al., 2003). Exogenous attributes relate to macro-phenomena such as technology development, general economic trends and the like, which can of course greatly influence whole societies.

Certain attributes of the local community have been shown to positively affect the outcome; (U1) users are dependant on the resource system for a major portion of their livelihood, (U2) ousers have a common understanding of the resource and of how their actions affect each other and the resource, (U3) users' relations are built on trust and reciprocity (direct communication), (U4) users have prior organisational experience and local leadership (Ostrom, 2000). Two more attributes are often discussed as well, but the results on their impact are ambiguous. These are group size and the extent of homogeneity in the community (ethnicity, gender and interests), related to the distribution of resources (Baland and Platteau, 1996; Bardhan and Dayton-Johnson, 2002; Ostrom, 2005). In my research, the effect of heterogeneity in terms of local power structures will be crucial to take into account. Two examples: Do interests representing professional activities (such as tourism entrepreneurs) have more resources and influence than interests representing leisure activities (such as hunters and fishers)? Is such heterogeneity also present when it comes to insiders and outsiders?

Also institutional arrangements restrict actors' behaviour. In the common pool resource framework institutions are often referred to as *rules* (see for instance Oakerson, 1992).

"Rules are shared understandings among those involved that refer to enforced prescriptions about what actions (or states of the world) are *required, prohibited,* or *permitted*", according to Elinor Ostrom and Victor Ostrom (2004). To map formal rules-in-use is the first step. Also informal rules-in-use are important, but often too difficult to get information about since they are often unconscious. The next step is to clarify the relevant political and administrative arrangements that regulate or impact on the resource use. One example is the official attitude concerning decentralisation measures. To assess how tasks are divided between national, regional and local level is the third step. This mapping includes the legal basis for co-management arrangements, such as legislation and administrative decrees. The last step is to look at power structures outside the communities which have an impact on local power structures, for example political leaders (ICLARM and IFM, 1998). External political processes can provide moral support and/or economic incentives and resources, create formal conflict-resolution mechanisms, and clarify rights (Berkes, 2002).

2.3.2 Action arena

An action arena is constructed whenever two or more individuals are faced with a set of potential actions that jointly produce outcomes. Some examples are legislators making legislative decisions about future laws and users of a common-pool resource withdrawing units. In the action arena, action situations interact with participants, who can be single individuals or groups functioning as corporate actors, and they are assumed to be rational, though in imperfect circumstances characterised by uncertainty and incomplete information rationality is bounded (Ostrom and Ostrom, 2004).

2.3.3 Outcomes and evaluative criteria

Evaluation of outcomes, both those that are achieved and those that are likely under alternative institutional settings, is a central feature of the IAD-framework. To do this we need to choose evaluative criteria out of a substantial amount of potential criteria (Ostrom and Ostrom, 2004): economic efficiency, ecological sustainability etc. From my perspective, the most important aspect is that the arrangement invented is accepted by most concerned parties and thus legitimacy becomes central. Legitimacy is strongly connected to *equity*, which is a criteria almost always put forward (see for instance Oakerson, 1992; Ostrom et al., 1994). To evaluate equity involves the degree of fairness and inclusiveness with which resources are being distributed, opportunities afforded, and decisions made (United Nations, 2001).

2.3.4 Patterns of interactions – conflict resolution mechanisms, deliberation and multi-level linkages

As already said, the main focus of this thesis is on the patterns of interactions that shape a process, and in particular three aspects of these; deliberation, multi-level linkages and conflict resolution mechanisms. In this initial overview I will only provide you with some brief strands of thought on how to understand and operationalise them.

I think that the design principles originally defined by Ostrom (1990) offer a point of departure in thinking about these aspects. The design principles have been used extensively to evaluate the chances of success for institutions regulating the use of common pool resources. However, the principles should be divided into two different groups since some of them regard operational features, while others are process variables. The operational principles are then number one to four (following the version in Dietz et al., 2003), and the process principles are number five to eight. These process principles actually summarise the main aspects (conflict resolution mechanisms, deliberation and multi-level linkages) rather well. The design principles imply, in the version of Thomas Dietz et al. (2003), that: (1) rules are congruent with ecological conditions, (2) the boundaries of resources and user groups are clearly defined, (3) accountability mechanisms for monitors are devised, (4) graduated sanctions are applied for violations, (5) low-cost conflict resolution mechanisms are used, (6) interested parties are involved in informed discussion of rules (analytic deliberation), (7) authority is allocated to allow for adaptive governance at multiple levels from local to global (nesting), and finally, (8) mixtures of institutional types are employed (institutional variety). The two first principles are of a multidisciplinary character demanding ecological knowledge that I do not possess, so they will be dealt with in a very speculative manner in this dissertation or rather as a part of the background. Principles three and four are quite easily evaluated and do not require further problematization at this stage.

Deliberation

Design principle six, analytic deliberation, may be interpreted as a conflict resolution mechanism, together with a range of governance approaches spanning over a spectrum with passive engagement in the form of ballots and polls in one end, through formal legal procedures as a mid-alternative, and intense interaction and deliberation in the other end (see Dietz et al., 2003). In addition to having a conflict-solving function, deliberation can contribute to information-building and -sharing, to increase rule compliance and to encourage

adaptation and change (ibid). What is the role of deliberation in processes leading to establishment of protected areas?

Multi-level linkages

The two last principles; nested authority and institutional variety, both consider aspects of influence at and between different levels and I will treat them in an integrated manner. What the design principles do not spell out loud is how, and on what premises, power should be distributed, and here the co-management perspective offers insight. As outlined saw above, in section 2.2.2, real power-sharing implicates that the local-level partner(s) have substantial possibilities to participate in decision-making concerning all three rule levels; the operational, collective-choice and constitutional. In order to operationalise power differences I will use a co-management ladder, developed from Sherry R. Arnstein (1969), Berkes (1994) and (Sandström, 2004).

Conflict resolution mechanisms

As described in section 2.2.1 conflict resolution mechanisms are understudied in the common pool resource research. The literature of conflict management can probably offer valuable insights, and will be used as a point of departure, in particular the environmental policy stream of this literature. In issues of nature conservation there is a clear division between place-based and interest-based stakeholders, which can also be expressed in terms of subsistence and recreation interests, and one pertinent issue is how this difference in interests can be handled. A co-management system claiming to be democratic must relate to the fact that actors' stakes are different in kind and strength (Jentoft et al., 2003).

3 Research design and methodological considerations

3.1 Within-case analysis and small n-study

The ambition of this thesis is to explore possible causal mechanisms that can explain how and why certain understudied process characteristics contribute to successful cooperation in common-pool resource dilemmas. My primary research strategy is therefore to conduct heuristic within-case analysis of single cases, which is motivated when the objective is to identify causal mechanisms behind phenomena that are not yet well understood (Huberman and Miles, 1998:191-193). According to Robert K. Yin, "case studies are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little

control over events, and when the focus is on a contemporary phenomenon within some real-life context" (1994:1). Also Stephen Van Evera underlines that case studies say more about *why* theories hold than large-n studies do (1997:55). Case studies are in this way very suitable to build and develop theories (Lijphart 1971), in particular when deviant or outlier cases (where a variable is at an extreme value) are selected (George and Bennett, 2005). The analysis in each case of this dissertation will focus on the causal path in that single case, primarily through process-tracing – a method that offers the possibility of making a strong test of the theory (Van Evera 1997:65).

However, it is increasingly agreed that the strongest means of drawing inferences from case studies is to combine within-case analysis and cross-case comparisons within a single study (p. 18). The variable-oriented approach of controlled comparisons is still the dominant method for cross-case analysis (p.151), although it is also useful to compare individual case studies by applying a common theoretical framework (178). In fact, George and Bennett (2005) argues that careful within-case analysis is essential to the viability of small-n studies. My choice is to conduct a small-n study based on within-case analysis of individual case studies, where the common-pool resource framework will offer the overall structure. The primary approach will therefore be inductive, but at the same time theory-driven. Thus, relevant variables and their possible relationships will to a certain extent be defined beforehand, in order to structure and focus the study, but some variables might be excluded, exchanged or modified during the research process. The analysis of each case will be structured around a set of 'standardized general questions' that focuses selectively on those aspects of each case that are relevant for the research question.

The central problem of this thesis, as previously explained, concerns the process characteristics that may facilitate co-management of natural resources, or, more particularly, of protected areas. Sweden is chosen out of a wish to study co-management in an unusual context and setting. There are few co-management studies done in a Swedish, Nordic and even European context, compared to the rest of the world. Much research in this field has been performed in North America (USA and Canada), Australia and in so-called 'Third World' countries in Africa and Asia. Thus the following question is pertinent: are results from these studies also applicable in a Swedish context?

Co-management of protected areas are, as already emphasised, still rather unusual in the Swedish context, but there are a few possible cases in the mountain region and I plan to study three of them; Funäsdalen, Fulufjället, and Southern Jämtland. Tyrestaskogen and Likskär are other examples from outside this particular region, but I have chosen to restrict my range of

cases within it. The conflict on how land in the mountains are to be used is more acute than in other parts of Sweden, and therefore I consider cases there as more crucial for developing theories on co-management and common-pool resources. The mountain region is interesting also because it is the traditional homeland for the indigenous people of Sweden, the Sàmi, which adds another conflict dimension. It also houses the great majority of the total surface of protected areas in the country, while at the same time it is highly dependent on using its natural resources. To choose cases from within the same region also mediate, to some extent, the effects of different contexts. However, even though the study is limited to the Swedish mountain region, the ambition is to find results that could, even if not be valid on a wider scale, at least constitute pathways for further research. Theoretical generalisation is possible with single-case or small-N studies according to Yin (1994:10).

3.2 Presentation of the three cases

Funäsdalen

In the western, mountainous part of Härjedalen called Funäsdalen, land owners, tourist entrepreneurs, reindeer herders, snowmobilers and nature conservationists have agreed to establish a municipal regulation area for snowmobiling that is run by a local company. Visitors are only allowed to ride along trails and have to pay fees while the local inhabitants are free to ride as long as they respect the decided responsibility rules.

Since the early 1990s central authorities have sought to reduce snowmobiling in the mountain region in different ways, and Funäsdalen was early mentioned as an area where restrictions were needed. Those state initiatives led to widespread protests in the area, but some years later the issue had become a conflict at the local level. Snowmobiling has negative impacts on forestry in several ways, for instance by increasing the costs for snow clearance of forest roads, mechanic damages in particular to tree seedlings and the frost period in the ground can become prolonged (SOU 1994:16). Cross-country skiers are disturbed by the presence of snowmobiles, which interfere with their expected experience, because of their smell and their noise primarily (Lindberg et al. 2001). Landowners started engaging in activities to find a solution to the conflict, and when the municipality started a local Agenda 21-project in the area this issue became the top priority. Also tourist companies rallied against snowmobilers out of concerns to loose guests; mainly cross-country skiers. Other involved actors were the snowmobile club, the Swedish Society for Nature Conservation, and reindeer herders.

The Agenda 21-project was characterised by bottom-up deliberation in small working groups where all local interests were equally represented. Decisions were made in consensus, after substantial dialogue also with the different organisations. The cooperation between the community and the involved administrative levels was good, and the community seems to have had substantial influence. The project received EU funding of 7,5 million SEK to put in place the new improved snowmobile trail system. To sum up, Funäsdalen has so far been considered a very successful example of local cooperation.

Fulufjället

Fulufjället National Park is the newest in Sweden, inaugurated in September 2002, and it is located in the county of Dalarna in the southernmost part of the mountain region. Since 1989 the Environmental Protection Agency (EPA) had been trying to realise the national park, but local resistance was compact in the beginning. Local attitudes changed when a development project was initiated by a joint effort of the EPA and the municipality, which resulted in a new road and a tourist camping site. The project also meant a shift in priorities and a close dialogue was established with the local population of 364 persons. Increased tourism and more employment opportunities were in particular emphasised. At least 27 million SEK have been spent on the project that is now described as a very successful example of a national park designation process.

As a result of the participation of the local population this is the first national park in Sweden where zoning is used. There are three zones with different degrees of protection. The so-called unspoiled zone constitutes 60% of the park and all nature disruptive activities (such as snowmobiling, hunting, fishing etc.) are forbidden. The remaining 25% of the park is an activity zone, where fishing, snowmobiling and some helicopter landings are allowed. Most trails and camping sites are found there. For the local population, moose hunting is permitted in the forest land, as well as small game hunting during a transition period of ten years.

Reindeer herding is not allowed at Fulufjället, except under exceptional circumstances (emergencies), and therefore its heaths of brush, grass and lichen are unique in the Swedish mountains. The Sàmi use is regulated in the Declaration of Idre from 1993, and this is to be respected in the management of the park. However, the Sàmi criticise the EPA for not having communicated the park management plan with them and they mean that it does not fully take into account the declaration (Miljö- och Jordbruksutskottet, 2001/2002).

In 2004 Fulufjället National Park became a Pan Park, which is a status accorded by a European network run by WWF and two Dutch companies. This is an initiative to raise the

interest for national parks and also to develop the national park concept to be more open for cooperation with the local community (for more information see www.panpark.org). An advisory committee is thus established where local interests are represented. A local network of companies (Fulufjällsringen) has also been formed in relation to the initial project.

Southern Jämtland

In the same national park plan that the EPA introduced in 1989 and that contained the suggestion of Fulufjället National Park, it was also proposed to establish a national park in the southern parts of Jämtland. The regional authorities started to work on the establishment plan in 1992 and in 1997 it was presented. It was rejected by the local reference group because people in the area felt that they had not had enough possibilities to participate in the process. The reindeer industry was one of the major opponents to the plan. At the core of the resistance was fear of loosing hunting rights and of restrictions in snowmobiling.

A new process began in 1998, this time called the "Local People's National Park" (Nationalpark på bygdens villkor), as an EU funded project. Three local working groups were appointed to participate in the preparations. The national park would include land in two municipalities, Berg and Åre, and they participated in the process as well. These two municipalities are rather different, Åre is the major winter ski resort in Sweden with many tourists while Berg tries to keep a small-scale wilderness profile. Like in Fulufjället, development of the local employment opportunities became a central theme.

In 1999 reindeer herders, the local branch of the Swedish Society for Nature Conservation, and recreation organisations formulated a joint protest against that the local population was not treated as a major interest in the process. After this, the municipality of Berg declared that a national park was not on their agenda any more. The community of Ljungdalen, where snowmobile tourism is very important, was also against the plans. Reindeer herders demanded that a national park must not impact negatively on the herding industry, that they should have a major role in the management of the national park and that they should be allowed to broaden their range of activities to include tourism business. Recreation organisations stated that the plan was too commercial, with too much emphasis on fees, tent camping, and parking space. After these statements the process was stopped.

The process in Southern Jämtland aimed at including all relevant stakeholders and at being participatory, but it still has come to a halt. One reason could be that local participation seemed to be primarily about inventories, and not so much about overall goals and

management forms. The process was also blocked by disagreement between the two concerned municipalities, and between different local interests.

3.3 Material

To map processes, it is a good start to study official documentation such as archive material (project documentation, meeting minutes, decisions, and debates) from the concerned regional authorities, municipalities, the Swedish Environmental Protection Agency, the parliament and the government. Relevant government commission reports (SOU) are also important, both for specific information of the cases and to get an understanding of the general context. Other written sources are newspaper and magazine articles, documentation done by individuals or associations involved (for example letters, memoranda, and agendas) and previous research reports. These sources may not always be accurate, but together they show how an issue has been interpreted by different sides.

In order to reveal mechanisms behind the result of the processes and also how people outside the processes perceived them, I think it is necessary to complement the written sources with interviews. Informants will be identified from the written material, but also by the so-called “snowball technique” which is a method of non-randomised selection (Esaiasson et al., 2004) where key informants propose other people to interview. The interviews will be semi-structured in order to include all relevant issues, yet open-ended and rather fluid.

Finally, I will also use quantitative material collected within the Mountain Mistra Programme, which consists of a mail survey to 11 418 persons including a national sample and samples from the four mountain counties. Questions about who should manage protected areas, opinions about nature protection in general and about the amount of protected areas in the mountains will be analysed in order to set a background for the case studies. This material will thus be analysed by statistical methods such as logistic regression.

To use material from multiple sources - triangulation - is a very important feature of the case study design since converging lines of inquiry are developed. Findings are likely to be much more convincing and accurate when they are confirmed by different sources (Yin 2003:97-98).

4 Dissertation outline

This dissertation will contain separate papers and the introduction will therefore outline the uniting frame, which will build on the theoretical framework described here, as well as the

overall conclusions of the dissertation, in particular those derived from cross-case comparisons. The papers will develop the understanding of *certain aspects* of the framework by studying them in empirical cases. Each paper will primarily concentrate on one particular aspect and one case. The first paper will, however, be different, since it is a quantitative analysis of the general and specific attitudes towards co-management and protected areas in the mountain region. As such, it provides a background for the coming case study-based papers.

Introduction and conclusions	Theoretical framework, methodology, and conclusions
1. Who Should Manage Protected Areas in the Swedish Mountain Region? A Survey Approach to Co-management	Quantitative background paper
2. Deliberative Democracy and Co-management of Natural Resources: The Case of Funäsdalen Snowmobile Regulation Area	Case study-based paper
3. The Designation of Fulufjället National Park : Nested, Polycentric Governance?	Case study-based paper
4. Southern Jämtland National Park Proposal	Case study-based paper

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