Natural Resource Management in Central Sulawesi: Past Experience and Future Prospects

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STORMA Discussion Paper Series

Sub-program A on

Social and Economic Dynamics in Rain Forest Margins

No. 8 (September 2002)

Research Project on Stability of Rain Forest Margins (STORMA)

Participating institutions:
Institut Pertanian Bogor
Universitas Tadulako
University of Göttingen
University of Kassel

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1. Introduction

1.2. Description of the Research Area

This discussion paper presents some preliminary findings in regard to natural resource management in three villages in the vicinity of the Lore Lindu National Park, Central Sulawesi, Indonesia.[1] Given the fact that there are more than 100 villages bordering the forest margin of the Park and that there is a high socio-cultural diversity to be found within the region, the external validity of our data must be rendered as rather low. Anyway it is hoped to draw some general conclusions that can offer some guidelines for further research in the area.

The empirical data are based on fieldwork that was conducted in the village communities *Sintuwu*, *Watumaeta* and *Rompo*. The villages – being selected on the basis of an urban-rural continuum - are located in three successive valleys on the eastern fringes of the National Park, the *Palolo, Napu* and *Besoa* valleys respectively. Irrespective of the fact that the present "institutional environment" is quite similar, the research villages show significant differences in regard to the collection of forest products (especially *rottan*), the availability of community forest reserves, the ratio of individually owned secondary forest available per household, the degree of encroachment into the National Park and the intensity of market penetration. Besides these differences in forest-man-interactions, a high variance exists also in terms of population density and in-migration (see table 1).[2]

V I L L A G E	Variables linked to man-forest interaction and population							
	Rattan collecting households (in %)	Availability of community forest Reserves	Household to secondary forest ratio	Encroachment into the National Park	Distance from provincial capital (km)	Perennial stands (in % of all cultivated land)	Population Density (per km^2)	Portion of migrants (in %)
S	67	No	0,4	High	60	66,3	65	35
W	34	No	0,7	High	102	14,5	9	63
R	3	Yes	1,6	Low	135	6,6	3	34

Table 1. General Characteristics of the Research Villages in regard to forest-man interaction and population

Four observations can be made from table 1. First, the collection of *rattan* still serves as an important supplement income in Rompo and Watumaeta, whereas its role is rather marginal in Sintuwu. Second, there is a considerable variation in regard to the availability of forest resources in terms of community forest and individually owned secondary forests. Villagers in Rompo are obviously better equipped than their fellows in Sintuwu and Watumaeta. Third, the availability of forest resources correlates negatively with encroachment into the National Park. On the other hand, encroachment seems not to be linked to population density. Fourth,

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[1] The research was integrated into a number of research activities under sub-project A2: "Social Organization and Processes of Ecological Stabilization and Destabilization" of the STORMA Research Program, a collaborative research program of the German Universities of Göttingen and Kassel and the Indonesian Universities "Institute for Agriculture" (IPB) in Bogor and Tadulako University in Palu, Central Sulawesi. Fieldwork was conducted during the time of March 2001 until April 2002. Within each village 25 households have been chosen as random sample.

[2] There is some difficulty in defining who is a migrant and who not. For reasons of lucidity, the Kaili who are the original group in Palolo, the Napu (Pekurehua), Besoa as well as the Kulawi people from the Western side of the Park have been categorized as "indigenous" or "local" people, whereas all groups that have their homeland outside the research region have been referred to as "migrants". Data on population density are taken from Anzdec (1997).

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market penetration is most strong in Sintuwu where more than 2/3 of all the land under cultivation is dedicated to the production of export crops (whereas it is only 15% and 7% in Watumaeta and Rompo respectively).

The official classification distinguishes between four types of forest according to formal protection status; namely (1) the "National Park" (*TNLL*), (2) the "Protection Forest" (*hutan lindung*), (3) the "Limited Production Forest" (*hutan produksi terbatas*) and (4) the "Community Forests" (*Hutan Wilayah Polisi Desa*). Only community forests are open for conversion of forest into agricultural land; whereas the protection forest is only open for the collection of rattan on the basis of official licenses. The National Park as well as the protection forest are formally declared as "prohibited areas" in regard to agricultural conversion. However, due to weak law enforcement and monitoring, the Park management has proofed incapable to protect the borders of the Park. The legal status of the forests surrounding the research settlements is summarised in table 2:

| *Village* | *Legal status of forest areas adjacent to research villages* | | | |
	National Park	*Protection forest*	*Production forest*	*Community forest*
Sintuwu	Yes	No	No	No
Watumaeta	Yes	Yes	Yes	No
Rompo	Yes	No	No	Yes

Table 2: legal status of forest zones adjacent to the research villages

Thus Sintuwu is surrounded by the National Park only, Watumaeta by the National Park and the production forest and Rompo by the National Park and community forest. In other words: with the exception of a more or less limited amount of individually owned secondary forests, in legal terms there are no forest resources left in Sintuwu and Watumaeta. Thus it is not surprising that tensions between the local population and the Park management over control and access to forest resources (*resource sovereignty*) are considerably strong in these communities.

Whereas it is in general the local populations that are conceived as "appropriators" in such conflicts, from an analytical point of view it is important to point out that actually *both* parties involved (the state as well as the local communities) are in a position of "claimants". Irrespective of the fact if claims of the state are formulated in terms of a "moralistic ethics" (bio-diversity conservation) or in terms of a "legalistic ethics", the discursive conflict is first of all a conflict between a "public interest" and a local interest defined in terms of "community security" (Lane 2001: 4-7, Burkard 2002: 23-25). The legitimacy of claims in terms of community security is either formulated directly by the village administration of Sintuwu or indirectly via the claims to a "domesticated forest" by the customary village council, the so-called *Lembaga Adat* in Watumaeta.

Besides, many villagers still follow the principle of "open access" to the forest. For the local population, the forest is perceived first of all as an economic security provider in cases of unexpected disasters. Further it functions as a basic safety-condition in regard to intergenerational access (Burkard 2002: 15-17). Three hypotheses can be formulated on the basis of the empirical situation: (1) As pointed out by Fremerey (2002), where such principles dominate, resistance against "any externally imposed limits to forest use will be considerably strong" (ibid: 4), (2) "graduated sanctions" will not work out if they imply no "graduated benefits" for those who are willing to comply with the rules and (3) any kind of external planning that strives for stabilisation of the forest margin – irrespective of the degree of participation it will concede to the village communities - must acknowledge the coexistence of state and local interests.

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1.2. Theoretical Framework

If one reviews the literature on resource management that has been published within the last twenty years, there are two outstanding factors that are believed to exert far-reaching impacts on local resource management practices in developing countries. The first is "security of tenure", the second is "population pressure". Influenced by Garrett Hardin´s theory of the "tragedy of the commons" (Hardin 1968) and Paul Ehrlich´s Neo-Malthusian notion of the "population bomb" (Ehrlich 1968), lack of security of private land ownership and population increase have been isolated as one of the most important conditions impairing sustainable development (see Vivian 1991). Analyses of the relationship between market penetration and environmental degradation (deforestation) are mostly similarly negative (see Agrawal and Yadama 1997: 436). However, the insight is gaining ground that both conceptions tend to link environmental degradation in a rather simplistic manner with mono-causal variables. In a comprehensive literature review on natural resource management, Jessica Vivian (1991) points out that:

> "It is clear that in many situations the conventional conception of a direct relationship between population growth and increased pressure on the environment holds true; such a relationship, however, is not inevitable. Examples are given of cases in which population decline has resulted in environmental degradation, and of other cases in which growing populations have been able to adapt their methods of resource management in a sustainable manner" (Vivian 1991: 3).

This finding is supported by an increasing number of macro- as well as micro-level studies. Thus in their overall discussion of the main causes of deforestation in developing countries, Allen and Barnes (1985, cited in Gibson et al. 2000: 2) could find no linear relationship between resource degradation and population pressure. Similarly, i.e. Varughese (2000) sees no clear connection between demographic changes and deforestation in his comparison of 18 hill communities in Nepal.

The same holds true for security of tenure and the related implication which holds that it is first of all the "commons" that are prone to over-exploitation. As Banana and Gombya-Ssembajjwe (2000) have shown for the Ugandan forests, a state property (government forest) and private forests can be as degraded as a common property regime (community forest) if there are no institutional arrangements and local organizations to monitor the forest and to enforce rules and sanctions in an effective manner. The lesson to be learned from the Ugandan example is that - irrespective of the *de jure* status a forest enjoys - if rules regulating access to forest resources are not enforced, the *de facto* situation remains (or becomes) one of "open access". It is clear that the label "National Park" should be no custodian against such a development either. It is important here to refer to a meaningful distinction made by McKean (2000: 29), who points out that goods in general and natural resources in particular can broadly be divided into four kinds according to their degree of "excludability" and "subtractability". These major "types" are (1) public goods, (2) private goods, (3) club goods and (4) common-pool goods (their respective characteristics are summarised in table 1).

Types of Resources	*Excludability*	*Subtractability*
Public goods	No	No
Private goods	Yes	Yes
Club goods	Yes	No
Common-pool goods	No	Yes

Table 1. Differentiation of resources according to their excludability and subtractability (McKean 2000: 29).

Within this typology it is the "common-pool goods" that come most close to the actual situation in regard to the protected forests in the Lore Lindu region. Common pool-resources

are defined as resources that are characterised by (1) the fact that "exclusion" is difficult, which means that they can be kept from potential users only at a great cost and that (2) at the same time are "subtractable" or "rivalrous" in consumption, which means that they can be depleted with people using them more or less randomly (Gibson et al. 2000: 6, McKean 2000: 28). As McKean (ibid: 29) argues, without institutional mechanisms that address "excludability" and "subtractabilty" existing, common-pool resources will inevitably turn into de facto "open-access" resources.

As I have pointed out elsewhere, the village communities under study enjoy well-defined and rather secure property rights to their lands, allowing them to make capital investments, to rent out their plots to others and to transfer them to their children through an established procedure of inheritance (Burkard 2002). But despite their secure property rights to land, the communities have not created elaborate "microinstitutions" to regulate resource use in the past. Traditional rules on forest resource use are almost absent, little restrictions on forest use were developed and no well defined traditional mechanisms to regulate resource use among community members have been created. Such institutions have only recently come into being with the establishment of the political "village council" (*Badan Perwakilan Desa,* short: *BPD*) that is formed by virtue of state regulations . Whereas a certain degree of freedom is granted to the villages to develop their own regulations, the overall aim however is strictly defined by the state: rules must aim at the conservation of the forest cover of the Park and sanctions must be enforced for those who transgress the rules. Thus while each community operates under the same legislation, its impact on the forest however differs substantially. Differences in overall regulations can hardly be made responsible for the variances observed. The argument made in this paper is that the responsiveness of local communities towards outer incentives aimed at resource preservation is highly influenced by socio-cultural factors. Further it is argued that it is not first of all the market, population pressure or technological factors "that affect individuals directly without first being filtered by local institutions" (Gibson et al. 2000: 4). Following a model suggested by Agrawal and Yadama (1997: 442), the theoretical framework adopted can be summarised in the form of the following diagram:
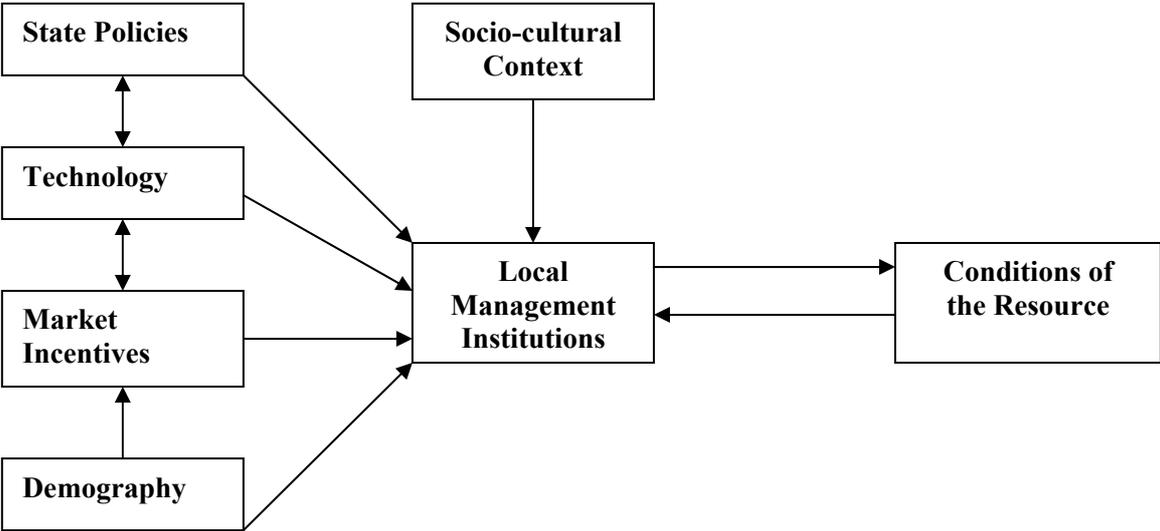
Diagram 1. Factors influencing Resource Management and Resource Conditions (model of Agrawal and Yadama 1997: 442).

Thus state policies, technology, market incentives and demographic factors all contribute to a certain degree to the condition of the forest resource. But the strength of their impact is mediated by the robustness of local management institutions which are - irrespective of those "external" factors - on their part shaped by "internal" socio-cultural factors such as degree of

villagers co-operation, legitimacy of leadership, size of village, ethnic heterogeneity and positive experiences in resource management in the past.

After a short description of the general principles of access practised under the conditions of shifting cultivation (section 2), the actual situation will be discussed under four headings: Section 3 deals with the *institutional environment* of resource preservation and the major institutional problems village committees face in fulfilling their task; section 4 tries to isolate the *characteristics of councils and rules* that can support sustainable development; section 5 puts special attention to the *paradoxes of participation* as they manifest themselves in the research villages and section 6 discusses the overall *contextual factors* that foster or impair successful resource management. Finally, section 7 summarises the major findings and discusses some possible priorities of further research.

2. The Past: Shifting Cultivation and the "horobo" - Swidden Groups

Before discussing the role of present village organisations and institutions in regard to natural resource management, it is necessary to present a short summary on social organisation and resource use as it was practised the past. In Watumaeta and Sintuwu "shifting cultivation" was replaced by an upland fallow system and permanent cultivation in the seventies as a consequence of land registration and the introduction of land taxes.[3] "Slash and burn" was still practised in Rompo until the mid 90ties, but the reasons for its demise are less clear in this village. Thus shifting cultivation was the initial type of agrarian production in all the villages. Clearing of primary forest happened only during the pioneer phases and when the land under cultivation was extended. The general pattern was one of "established swiddening" (Conklin 1957) with people living in permanent settlements, periodically rotating on secondary forest plots.

In a well-known article, Dove (1983) has identified much of the scientific cliches on shifting cultivation as merely "myths". Two of those myths are of special concern in regard to the research area, namely (1) the believe that swidden agriculturalists own their land communally, and (2) that they also work their land communally. These myths provide a good point of reference in discussing the management principles practised under the conditions of shifting cultivation in the research villages.

Forest resources surrounding the village were divided into "tracts" with each of them being claimed by a certain "cultivation group" (called *horobo*). In its efforts to expand its territory the *horobo* was free to choose its locality without asking permission, as long as it did not conflict with claims of other groups. Whereas a rough correspondence between "social" (*horobo*-organisations) and "physical" (resource) boundaries did exist, *horobo*-groups were not very closed groups with outsiders joining freely. There exist two versions about the composition of the *horobo* and the principles on which it was formed. Part of the village elders in Watumaeta and Rompo referred to the *horobo* as an extended kinship group; whereas others pointed out that kinship did not play an important role in the groups formation. This difference is one of nuances rather than a fundamental one with most supporters of the "kinship-theory" asserting that permission of membership to outsiders was often granted as well. Individual households within these groups rotated on secondary plots that laid fallow for four years after every one year of cultivation. Plots left behind were marked by the planting of pepper (which was still existent after three years) or coffee (*robusta*). Similarly to the *dampa-*

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[3] The distinction between "shifting cultivation" and what is already an "upland fallow system" is difficult. In this report we refer to "shifting cultivation" when the fallow period is done on a systematic cycle with fallow periods being longer than cultivation periods. Fallow periods are not very systematic in the area and are not done on the basis of an established rotation cycle. In upland fallow systems cultivation periods are longer than fallow periods.

system of the Iban of Sarawak described by Freeman (1970), temporary huts (*bambaru*) moved with the fields, providing the living habitat during the agricultural peak seasons. The location of the core housing inside the village on other hand was fix and never moved, irrespective of the fact if people lived in individual houses (Sintuwu, Rompo) or in longhouse-organisations (Watumaeta). In all villages one had only to ask formal permission from the village leader (or the *longhouse-chief* in Watumaeta) if one wanted to cut primary forest and the wish to open new land was rejected only when certain "holy" places within the forest were affected. Those places were scattered inside the forest with having rather narrow boundaries and they did not constitute a preservation shelter over large forest areas. Individual families obtained rights to land via three major principles of access:

- *mapandulu* relates to access by opening primary forest on ones own. Because of the mystical aspects associated with primary forests and because of the hard work of opening them it was only the "spiritually robust" men (*karunya*) who opened them that they often granted after clearing to others on a long-term borrowing basis. In general, this kind of "pioneer swiddening" was only done when the group wanted to expand its territory.

- *rape bolo* refers to access on the basis of borrowing. Initially this was one of the most common ways of access when people obtained the right to use a plot opened by others.

- *sosora* is land that is obtained by an inheritance procedure. Only plots planted with perennials could be inherited. Plots not planted with at least some perennials could neither be inherited nor be individually claimed as *sosora*. Plots without perennial proofs reverted to an "open access" resource after some time if not actively cultivated.

From the perspective of the village, forests of different vegetation ages were located around the settlement in four concentric circles with short fallows (*holua*) dominated by grass and bush vegetation most close, followed by young secondary forest (*lopo lehe*), old secondary forest (*lopo matua*) and (most far) primary forest (*pandulu*) These circles were cross-cut by "spheres of control" of different *horobo* demarcated by natural boundaries like rivers, hills and valleys (see diagram 2).
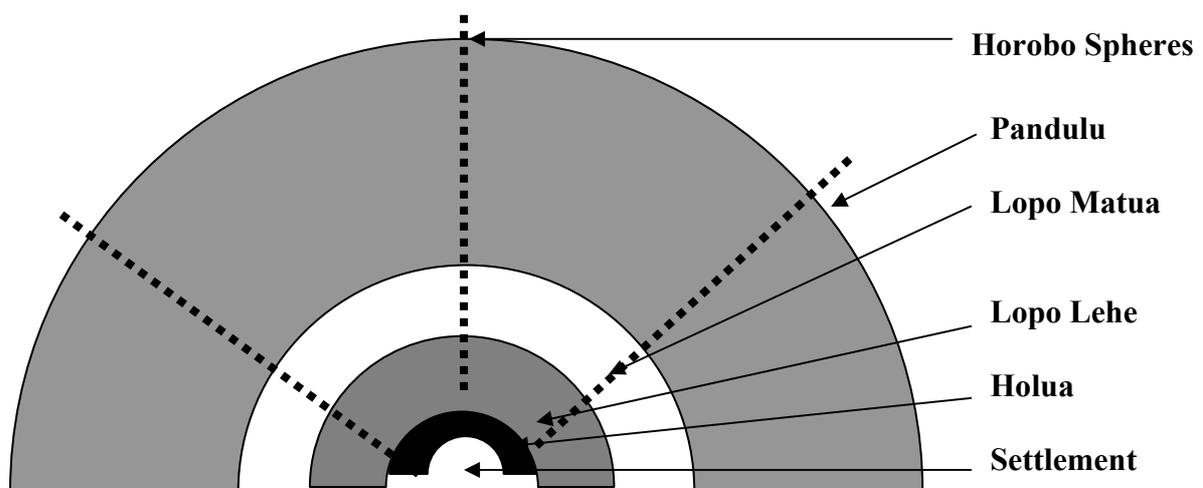

Diagram 2. Vegetation zones and *horobo*-spheres under shifting cultivation.

As Freeman (1970) has observed among the Iban of Borneo, the economic core unit was not the "swidden group" as such, but the individual household. Families worked their plots not

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only on their own responsibility, but also transferred them to their offspring by inheritance. The high degree of independence individual families enjoyed, is also reflected in the fact that they could join and leave the *horobo* freely. Families lived from and consumed the products of their own fields, but they lived not from the products of a common resource regulated by deliberate rules of access to products. Thus the popular belief that shifting cultivation correlates with a "common property regime" is proofed to the contrary, at least as far as our research villages are concerned.

Based on the existence of multi-household work groups in many societies of the shifting cultivation type, it is often assumed that swiddeners work their land in common. This conclusion obviously mixes up "communal labour" with "reciprocal labour". As Dove (ibid: 88) points out for the Kantu of Kalimantan:

> "In the course of a typical agricultural year, there are work seasons in which the available labour resources are under great pressure in the swiddens followed by seasons in which labour is forcibly idled. … a household which cuts one swidden from secondary forest will experience an average of over 100 days during the year on which none of their labour can be used in that swidden, while a household cutting primary forest instead will experience almost 200 such days. The Kantu diminish these numbers of idle days by their participation in inter-household labour arrangements. On some of the idle days in a given households swidden, it will work in the swidden of another household; and when this latter households swidden is idled it will pay back this labor by working in the swidden of the first household" (ibid: 88).

The proto-type of the current working groups in the villages was the *morambanga* (literally "walking together to perform a task") which has meanwhile become extinct. These work-sharing groups worked on the basis of "exact reciprocity" with members moving from one field to the next in times of working peaks. The major characteristic of the *morambanga* in difference to other, more recent arrangements (which have emerged in the context of more permanent cultivation) is exactly the fact that in the latter one is not allowed "to use calculation" (*pakai perhitungan*), whereas in *morambanga,* a principle of "exact reciprocity" was applied concerning the working time one did spend on the fields of others. The labour input of each household seems to have been reckoned separately. Thus co-operation within the *horobo* did not exceed what is known from other societies of the shifting cultivation type, but rather conforms with what is to be found in other anthropological case studies (i.e. Freeman 1970, Dove 1983). In spite of the fact that ownership rights were not very elaborated under the given circumstances, the dominant property type was one of "individual ownership" rather than "common ownership". These individual ownership rights emerged from an "open access-system" rather than a "common property regime". Individual plots were managed by strict reciprocal co-operation between households, but not by some sort of communal labour.

Given the prevalence of a principle of "free access" to the forest, no "institutional demand" for the creation of "grass-roots organisations" in resource management existed. Thus the role of the "customary community council" (*Lembaga Adat*) in resource management was not a paramount one under traditional conditions. Because the villages lack a history of joint rule making and because the procedures, costs and benefits of "institution building" (Gibson and Becker 2000:139) are not known to the present council members - at least as far as our research villages are concerned - the promising strategy to build up on existing "indigenous structures" in the formation of new resource management institutions is not practicable under the given socio-cultural conditions.

3. Resource Preservation and the Institutional Environment

3.1. Some General Remarks on social Organizations and Natural Resource Management

It is often believed that once local communities are integrated into wider markets, market pressures will inevitably lead to a higher rate of deforestation, especially when infrastructure is improved by road construction and transportation links (Agrawal and Yadama 1997: 436). Such a situation is for sure to be found in the villages, especially in Watumaeta where market penetration was accompanied by a high rate of in-migration since the mid nineties. Not only did the population in this village rise rapidly when a vast number of migrants came to the area lured by low land prices, all-weather road access and the high cocoa prices during the economic crisis, also were large areas of flat land formerly covered by secondary forest converted into annual-perennial mixed stands by locals and migrants (see Burkard 2002). Notwithstanding the high rate of deforestation to be observed in this community, future resource degradation is not inevitable, but will depend on the responsiveness of the population to respond to outer incentives of institution building and rule creation. This in turn will to a high degree be linked to the overall socio-cultural patterns prevailing within the community such as legitimacy of leadership, ethnic tension and the willingness of the actors to recognize the coexistence of different security interests in the community (see Burkard 2002).

As I have pointed out elsewhere (Burkard 2002), because of the absence of village organizations with clear responsibilities and regulations, village heads in the past could exert almost unlimited power in the distribution of resources. This is changing at the moment with a new organization, called BPD (*Badan Perwakilan Desa*) emerging, which is increasingly counterbalancing leaders power. Despite the various approaches used in addressing micro-institutional solutions to resource degradation, most social scientists agree in their conclusion that "institutions matter" (see Agrawal and Yadama ibid: 436). The problem lies in the fact that it is often difficult to draw abstract conclusions on the basis of case studies, given the high degree of cultural variance and socio-economic differentiation to be found between local communities. In general, formal organizations are believed to be more likely robust than informal ones with the characteristics desired including clearly specified user groups, agreed upon rules and resource boundaries, a system of graduated sanctions and formalized ways of peaceful conflict resolution (Ostrom 1990, Blunt and Warren 1996, Hobley and Shah 1996, Gibson et al. 2000). The formation of village organizations is intrinsically linked to issues of participation in these studies. In general it is assumed that people will create such organizations more likely if their community enjoys a history of rule making together, since the benefits and techniques of institution building are well known to the actors involved (Gibson and Becker 2000: 139). However, processes of externally induced organization building have not always been "praised", especially when local social organizations have been created by the state. Thus in their analysis of participation and power in the "Western Ghats Forestry Project" in India, Hildyard et al. (2001) conclude that: "Far from being a transformative process in which local people are able to exert control over decision making, participation becomes a well-honed tool for engineering consent to projects and programs whose framework has already been determined in advance – a means for top-down planning to be imposed from bottom up. Grassroots organizations thus become the human "software" through which investments can be made with least local opposition".(ibid: 59). Further, as Cleaver (2001: 42) points out, in relying on organizational and participatory models it is often ignored that most interactions of local people take place **outside** of organizations and institutions with people using "organizational arrangements" in an ad hoc manner according to circumstances; arrangements which do not necessarily match with project activities or state directives. A lot of work is still to be done to "disentangle" such complexities and to identify

those aspects of participation and local organization which really "count" in natural resource management on the local level.

3.2. The special Situation in regard to the National Park

The Lore Lindu region offers a special situation in regard to natural resource management since most forest areas bordering the villages are now incorporated into the "prohibited area" of the National Park. The Park was not formally established before 1995, after three major protected forest areas have been united to become one entity. Besides the fact that the borders of the Park seem not to have been communicated sufficiently to the villagers, "cultural" perceptions of the borders are of prominent concern. As Little (1999: 253-284) has pointed out, **place** is often a politicized socio-cultural construct, a social production of locality. As pointed out in section 2 in our discussion of the *horobo* swidden-groups, in the past, local people invented their "homes" or "homelands" in relative absence of territorial and national limitations. Whereas the Park management defines borders on the basis of exact "area zonation", at least a part of the local population defines borders in terms of "domestication" of the forest, a phenomenon which is not free from outer incentives as will be argued below. Thus in Watumaeta the village council (*Lembaga Adat*) legitimates its claims to the forest with the alleged existence of "ancestral land" (*tanah adat*) located inside the Park. Various proofs of former settlements (planted bamboo and coffee stands, stone mortars, relicts of housings, leguminous plants that are used as home lot markers) have been "found" inside the protected area. Where such "convictions" (even if they are politically motivated) prevail, the legitimacy of the Park in general is at stake. Further, rangers are not much motivated to monitor and enforce rules with the effect that farmers who do not comply with the law can escape detection easily. As Ostrom (1990) has argued, in order to comply with rules, farmers must observe that individuals who abstain from illegally obtaining forest products do not compete with neighbors who obtain substantial income from illegal forest products. What is observed here in regard to forest products, holds true as well in the case of conversion of forest into agricultural land with the observation to be made that deforestation is continuously expanding.

Sometimes it is heard from village officials and Park rangers alike that more funds are necessary to equip the National Park in order to intensify ranger patrolling. However, there are two major problems with this opinion: First, more rangers does not mean more legitimacy in the eyes of the related population, but can even have negative effects on peoples opinion about "those above", especially in a situation where people feel deprived of traditional rights by the establishment of the National Park. As McKean has pointed out "where people still live near the forests that their lives depend on, the transfer of traditional rights in the resources to others does not simultaneously transfer the physical opportunity to use these resources" (McKean 2000: 35). Thus even if the number of rangers would double they would not be able to patrol the large forest tracts with people still being able to cut forests without detection. Second, this opinion assumes implicitly that villagers are either not able or not willing to protect their forests on their own, an assumption that cannot be proofed as long as villagers have not been given the opportunity to do so. Instead, without any stake in the tenure of the resource (or at least a monitoring right), local people will continue to convert the forest opportunistically.

3.3. The limited Role of the "Lembaga Adat" in Natural Resource Management

Before discussing the processes of organization building and rule creation in the villages in more detail, it must be noted that the *Lembaga Adat* (LA) did not play an important role in land and resource matters in the past and that its involvement in such issues is a new

development in which the LA is not – as one could assume – loosing ground because of substitution through state rules, but is given wider responsibilities in the new established communal rules. In the research villages no "grass-root-level" organizations in regard to forest use could be found. Being the only "traditional" organization, the LA has only recently become an actor in resource management. But the degree of its involvement in resource regulation differs widely within the three villages. Sintuwu is an ethnically mixed resettlement community since it was established in the early sixties. Thus its LA is rather weak and does not seem to play any role at all in the utilization of resources. In Watumaeta the LA has become a sort of "voice" of the local population and is actively involved in the "struggle" over resources in claiming ancestral land (*tanah adat*) in the National Park and is envisaged to enforce sanctions in case of rule infraction in the future. Rompo offers yet another example with the LA actively participating in the creation and enforcement of village rules.

The task of "making rules" is actually vested within the new *Badan Perwakilan Desa* (BPD), but an active involvement of the LA in village legislation is foreseen in the state regulations. That the LA is not a strong institution at all is not only reflected in the fact that its members are not known by many people in Sintuwu, but also in its composition in Watumaeta and Rompo. Many members in Watumaeta are former village officials and in Rompo the LA is even formed on the basis of political leadership. Thus it consists of all the neighborhood heads (*Ketua RT*), two members of the BPD and the head of the "welfare mother movement". Further it is headed by the village head as "general manager" (*ketua umum*) and the former village head as "operative manager" (*ketua urusan*). Thus it is obvious that - as far as our three sample villages are concerned - the administrative "political council" (*lembaga desa*) is much more strong than the "traditional council" (LA). Until today, the role of the LA is mainly confined to advice giving in ritual and in enforcing sanctions in case of social misbehavior such as theft and infidelity. The central conflict resolving institution is the village administration represented by the village head (*kepala desa*). Thus the members of the LA in Watumaeta and Rompo are consulted primarily for the purpose of identifying original plot borders[4] which should be linked to their old age rather than to their formal membership in the council. Further it must be stressed that the LA is a relatively new institution anyway. Thus it was not established in i. e. Rompo before the mid sixties.

3.4. The Creation of a local Institution: the BPD

The BPD (*Badan Perwakilan Desa* = "village representative body") forms the basic rural institution within the new area of regional autonomy (*otonomi daerah*) and was established as a substitute for the former village council called LMD (*Lembaga Masyarakat Desa* = "body of the village society"). But in contrast to the LMD which mainly served as a forum to promote government programs, the functions of the BPD are much further reaching and can be summarized under four headings:

1. to collect, organize and give voice to the aspirations of the common people (*menampung dan menyalurkan aspirasi masyarakat*)
2. to upkeep and foster local adat (*mengayomi adat masyarakat*)
3. to explain regional regulations to the people (*sosialisasi peraturan daerah*) and
4. to plan and install village regulations, which means that the BPD is actively involved in legislation (*legislasi*).

According to the law, the BPD must be chosen by all villagers and its members are not allowed to have other functionary positions in the village. In case of misbehavior of village

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[4] Information obtained from Sylvia Ebersberger, personal communication.

officials the BPD is obliged to send a report to the regency head (*bupati*) with a copy sent to the head of the county (*camat*). In theory all relevant groups in the village should be represented in the BPD according to sex, religion, age group and profession. Of course, this can seldom be achieved in reality. But what is to be stressed is that the BPD works close together with the village head, whereas on the other hand it has a relatively high degree of autonomy compared with the LMD. The broad parameters that define the crafting of rules and the management practices of this institution are based on the rules of the Minister of Internal Affairs No. 3 from 1981 about village decisions, the National Law No. 22 on regional autonomy and are laid down in the district rules from 2001.

First one must point out that the common belief that government resolutions often miss flexibility for site-specific adaptations does not hold true in this case. If one reads the regulations one gets the impression that a lot of freedom is granted to the villages to develop their own rules. But as far as the concrete implementation of the law is concerned, it turns out that freedom is only granted in regard to the content of the rules, whereas the aim of the rules should conform with the interests of the state: to preserve the forest cover and to sanction those who do not comply with the rules. On the one hand the state seems to follow a "participatory approach" in allowing local variations in regulations and in delivering the task of rule creation to a council chosen by the common people. On the other hand this kind of participation is intrinsically linked to the formation of an institution which mirrors bureaucratic structures and which "channels participation in predictable and recognizable ways" (Cleaver 2001: 40). Local aspirations are thus "domesticated" in formal manners, or in other words: Targets of participation are oriented upwards to justify political goals and a public interest, for which local political support is mobilized (see Mosse 2001: 27). The dilemma stemming from this "duality" is that the state facilitates the crafting of rules and the maintenance of the forest cover, whereas it grants no authority or autonomy at all to the villages to enforce their rules. As far as the "National Park" is concerned, monitoring remains exclusively vested in the government.

As it is known from various empirical settings (see Gibson et. al. 2000), processes of rule creation are intrinsically linked to problems of enforcement and monitoring. Thus in all villages a call for more participation of villagers in monitoring is formulated. To the point: the BPD is expected to create village rules and enforcement procedures for rule breakers that enter the forest. But different from successful examples in Nepal (Hobley and Shah 1996), where villages were given the right to create councils to control forests, the BPD has no mandate to do so. Thus a general problem exist in terms of plausibility. The communities of Rompo and Watumaeta have contributed much time and effort to craft rules. Even if rules are not yet written down, there are many discussions to be performed, conflicts to be settled and divergent opinions to be harmonized before an agreement among all decision makers is reached. Thus the question arises "why should we invest so much time and effort to make rules if it is not we who later control and monitor the rules we have made".

There are two major implications related to this "institutional dilemma". First, fines for infractions flow into the common village budget, but are not at all devoted to the enforcement of rules or monitoring, a situation often to be found in forest margin areas (see Gibson et al 2000: 24). Further, because villagers themselves are not mandated to monitor, village leaders are reluctant to introduce contributions on households. If fines and contributions would be spend on monitoring performed by the villagers, this would not only lead to higher funds available, but would evoke a higher interest of contributors that rule breakers must be punished (see Agrawal 2000).

Second, with no rights to monitor and with no funds for monitoring at hand, villages can neither pay guards nor provide guards on a rotational basis. Therefore village rules must rely on "mutual control" with every villager prescribed to report infractions of others to the village administration. This policy is prone to create increasing distrust among the villagers, because

with no well defined "duty" to report (as in the case of patrolling tasks) people will report the misbehaviors of those they dislike but - as one respondent put it - will be "quiet" (*diam*) in case of infractions done by their fellows. Thus locals may report infractions of migrants but not of members of their own group, Christians will rather report encroachments of Muslims than of members of their own religious confession and so forth. People not reporting the failures of their fellows are difficult to punish but people who have the duty to monitor can be made responsible for not fulfilling their task. Thus active participation of villagers in monitoring is essential for the future.

Institutional problems can also be found in the unclear time of tenure for BPD-members. Membership in the BPD may become a live-long position like that of the village secretaries or LMD-members. Villagers have no means to force the formation or dissolution of the BPD council. Thus mismanagement or even rule infractions from council members (that happened in Watumaeta) are not at all prone to "democratic supervision". Further, rule infractions by council members will lead to a decrease of rule compliance. Thus the specification and public announcement of tenure times in the BPD will be essential for the future success of this new institution.

Given the bureaucratic nature of the councils, BPD-members often perform other duties in the local and regional administration, as i.e. the administration of development projects. As Agrawal (2000: 63) has observed in rural India, leaders often give higher priority to development tasks than to duties related to resource management and forest protection. Thus for example, the profits as a supervisor (*mandor*) in the state-financed *CSIADCP* development and conservation project are quite high but there are hardly any material benefits to be expected from the engagement in the LA or BPD.

3.5. The ambivalent Role of "Local Knowledge" in Resource Management

A central feature of many participatory approaches in rural development is the focus on the integration of "local knowledge" into development planning (Banuri and Marglin 1993, Berkes et al. 1995). Thus a stronger emphasis on issues of local knowledge is also envisaged in the context of future Storma-research activities. A wide spread assumption is that attention to "local knowledge" is necessary in order to restructure the relationship between local communities and external development agencies and the state. Thus adhering to the principle of local knowledge is often perceived as a promising strategy to reverse hierarchies of power in development planning (for further discussion see Mosse 2001). Whereas we do not doubt that there are cases where the integration of local knowledge in development efforts has led to successful outcomes in regard to sustainable resource management, even within the research area (see Fremerey 2002), the notion of local knowledge has often been portrayed in too idealistic manners, especially what concerns its "origin". Further, no agreed upon definition of "local knowledge" seems to exist so far. The point to be made is that, as noted by Mosse (ibid: 17), local knowledge should be conceived **relationally**, that is as a product of social practices rather as in terms of a fixed commodity. In the Indonesian context, local knowledge is primarily portrayed in terms of local beliefs and customs (*adat*).

Whereas no systematic investigations on local knowledge have been conducted within the framework of our research, there are three "empirical hints" which lead us to the assumption that what is often perceived as local knowledge - far from being an indigenous conception - is probably itself "constructed" in the context of development planning and community-state interactions. As pointed out in section 3.4., one of the major functions of the BPD is to upkeep and foster local *adat* with an active role of the *Lembaga Adat* in rule crafting and enforcement being envisaged in the state regulations. Thus the new village rules made in Rompo, despite the fact that they were created on behalf of the state and irrespective of the fact that they aim at the fulfillment of externally imposed obligations, are referred to by the local population not

in terms of rules or administrative regulations, but in terms of *adat*. In fulfilling the requirements of the state, rule makers in Rompo made the decision that for all rule infractions there are two things to be separated: the first is *punggutan* what constitutes a form of "fine" (or "fee" in case of land transactions) to be paid to the village administration, the second is *sanksi* (sanction) in form of cattle, water buffalo or other items of value handled by the *Lembaga Adat*. Besides that in the first place local people felt difficulties in distinguishing the two concepts, this dualism seems indeed "artificial". The popular assumption that there is always a clear separation and often conflict between local laws and customs on the one hand and the positive, national law on the other proofed to the contrary in this case. Rather than local knowledge is enhanced, there seems to be a process at work by which political support is mobilized by the re-interpretation of political concerns into "locally authorized categories" with local people acquiring "planning knowledge" rather than "peoples knowledge" is being integrated into development planning (see Mosse 2001: 27).

Much of the discourses on "local knowledge" and "ancestral land" (*tanah adat*) that can be observed in the research area seems to be influenced by what is called the "Katu case". With high support from local NGO´s, the inhabitants of the enclave of Katu, located in the Besoa valley, have not only resisted resettlement plans of the state, they have also successfully re-claimed part of the forest as ancestral village land, called *tanah adat*. But the impact of the "Katu case" on other village communities seems not to have been a uniform one, as can be seen in the different ways this outer "impetus" was dealt with in Watumaeta and Rompo. As pointed out in section 1.1., forest reserves are still more or less abundant in Rompo with no demand to land claims in the National Park existing. In several efforts a local NGO named *Tanah Merdeka* ("Free Land") tried to convince Rompo that it should claim "ancestral forest" on the basis of several stone megaliths that are scattered in the vicinity of the village border. Surprisingly for the NGO advocates and the researcher alike, this "advice" was rejected in harsh form by the village leaders. A leading NGO activist, under the threat of being beaten, was even forced to leave the village after explaining his plan to the villagers. The argument made by the villagers was that the megaliths are remnants of an old past, another time (*jaman*) when the area was inhabited by people who have no common background with the present population. Referring to a certain villager from Katu who was invited by the NGO to a work shop on indigenous rights in China, the head of the *Lembaga Adat* commented that "we do not need the advice of people who want to import the Chinese tradition to Rompo".

Whereas the impact of the "Katu case" was reversed in Rompo, despite intensive NGO advocacy and the fact that the villages are located only six kilometers from each other, villagers and Park authorities agree in their view that the claims to ancestral land which are formulated by the *Lembaga Adat* in Watumaeta without the interference of local NGO´s are directly linked to the "Katu case". Planted bamboo, stone mortars and old coffee stands have been "found" in the Park and have been interpreted as the remnants of the settlements of the ancestors. Inspired by the "success story" of Katu, people learned that the increasing land scarcity in their village can best be addressed if claims to land are formulated in terms of "local knowledge" about a "domesticated forest". This examples show that "local knowledge" is indeed not a just local commodity ready for integration into development planning, but is in many cases "invented" either as a means to obtain compliance with state prerogatives or as a means that can be manipulated to legitimize claims to protected forest areas. Thus in the formulation of future research topics, more attention must be paid to the social processes of local knowledge production in the area. The question in how far local knowledge can really contribute to a reversion of hierarchical relationships or in how far it merely reflects the inequality of local communities and outer planning agencies is of primary importance in this context.

3.6. Resource Characteristics, socio-cultural Heterogeneity and the Making of Alliances

A third problem of resource preservation lies in the characteristics of the resource itself. Physical and legal boundaries must not only be clear, but should ideally overlap (Hobley and Shah 1996). Thus in Toro, "zoning" is rather easy because different kinds of forest still correlate with physical boundaries and the establishment of use rights related to resources is plausible (see Fremerey 2002). In Sintuwu, Watumaeta and Rompo on the other hand the boundaries of resources are more unclear because of the splitting up of forest types. Thus the *holua*, *lopo* and *pandulu* types are meanwhile mixed up due to a shortening of the cultivation cycle and the fact that people have cut vast tracts of primary forest as well. Thus the common pattern of distribution is often for patches of secondary forest to be scattered throughout areas of primary forest or cultivated area. Thus it is rather difficult to develop resource use rights in regard to a given forest as i. e. *holua* and *lopo* is open for agricultural conversion, *pandulu* is open for harvesting certain products only and so on. With no physical correlation between larger areas and vegetation type existing, deliberate rules of resource use which have proofed as successful means in resource preservation in other settings such as temporal restrictions of harvest, multiple species management, resource succession and rotation (see Berkes et al. 1995: 414-435) are difficult to establish.

As Agrawal (2000) points out, social science has preliminary focused on the internal dynamics of groups, but external dynamics are important as well. Councils engaged in resource management are based on village boundaries with each village making its own rules. The problem of missing overlap between village boundary and resource boundary has already been touched upon above. Given our conviction that more participation of villagers in monitoring is necessary, small villages will have greater difficulties in raising funds than larger villages. As it is well known from examples in India, groups of adequate size can often be more successful than small groups (Agrawal and Yadama 1997, Agrawal 2000). First, because they are more likely able to raise the necessary funds, second because they can also be more effective in dealing with higher authorities. The argument made is that small councils are disadvantaged in their efforts to generate sufficient human and financial resources to monitor and enforce local rules: "We suggest that larger groups possess greater capacity **to hire a guard** because they can raise a greater overall surplus to this end. Smaller user groups, even if they are very interested in protecting their forests by hiring a guard, may simply not possess enough resources to set aside the amounts necessary to allocate sufficient labor and time to protect their forest effectively" (Agrawal and Yadama 1997: 454). Even if a monitoring mandate would be given to the communities, the problem that the role of the BPD is confined to one village remains. Thus Rompo is small and poor, and because its BPD is confined to the village boundary, it will always have difficulties to generate the necessary surplus for monitoring.

Thus the question arises in how far can small villages co-operate in enforcing rules and monitoring. Fortunately, settlements within the research area are not very dispersed, so that at least in theory some co-operation should be practicable. On the other hand, such co-operation is often hampered by the different "sociopolitical spheres" to be found in the area. For instance, co-operation between Rompo and Katu will be difficult, because the cultural perceptions about the Park differ substantially. Katu has successfully claimed ancestral land (*tanah adat*) in the Park whereas the existence of *tanah adat* is definitively denied in Rompo. Whereas Katu is dominated by the "*adat* sphere", Rompo is dominated by the "political sphere" with its *Lembaga Adat* built up on the basis of administrative leadership. Further, a kind of "war of maps" (Little) is governing the relationships between the villages. Katu relies on a map made by *Tanah Merdeka* based on traditional lines, whereas Rompo relies on a

political map issued by *The Nature Conservancy* (TNC). Such differences will make common fund raising and monitoring a rather difficult exercise. Besides, the boundary of the resource to be monitored is still unclear, i. e. what happens if a person from village A enters the forest bordering village B, which village should apply sanctions (Katu or Rompo?). Thus in both villages rule breakers more and more (i.e. rattan gatherers) shift their rule infractions to neighboring villages. If a settlement forms an association for its own forest area (*wilayah polisi*) it seems not to be very successful because it leads automatically to conflicts over boundaries with other villages.

4. Crucial Characteristics of Councils and Rules in Resource Preservation

4.1. Characteristics of Village Committees engaged in Resource Management

The Importance of agreed-upon Rules and their Meaning

Rompo was the first village on the eastern side of the Park that established written village regulations on resource use. But the rule making process, driven by a motivation for fast action, suppressed differences in interest in favour of consensus, and action was given priority over a detailed design acknowledging the coexistence of different interests. The regulations were made on a discussion basis with the village head, five members of the *Lembaga Adat* (out of nine) and the members of the recently established BPD.

Agrawal (2000) has made an important distinction in regard to collective action in showing that (1) the achievement of forming a group is not identical with (2) the achievement of the objectives for which the group was formed. Thus the successful formation of the BPD refers to the first kind of achievement, succeeding in the creation of village rules is another matter and refers to the second achievement. In further developing Agrawal`s point we add a third kind of achievement, that is the effective enforcement of the rules created. In accordance with the law at least 70% of the population must vote the BPD. This was more or less fulfilled in Rompo, but in Watumaeta only 28 families participated in the election, most of them belonging to the influential families of Watumaeta. Thus a high degree of distrust and lack of legitimacy was already given before the BPD started to work. Rompo on the other hand, being a small and homogenous community, was faster in achieving point 1 (formation of the group). Formation was in line with the law and its legitimacy is not questioned, but – in case a higher degree of autonomy in monitoring should be granted in the future – Rompo could probably encounter more severe enforcement problems than Watumaeta due to the lacking capacity of fund raising for monitoring referred to above. Besides, rules have been made almost too fast with major revisions made afterwards that – in the long run - can undermine the present legitimacy. As far as our research villages are concerned, the actual situation can be summarised in a "continuum flow-chart":

Village	Formation of BPD	Creation of rules	Enforcement
Sintuwu	not formed at all yet	no rules created yet	no enforcement yet
Watumaeta	formed with deviations from the national law	creation under way with discussion going on	no enforcement yet
Rompo	formed in accordance with the national law	rules created, with major revisions under way	rules partly enforced

The first thing in successful resource management is the importance of commonly understood rules and their enforcement. Besides the agreement on **which** rules people follow, it is of the

same importance that they agree on the fact **why** the rules have been adopted (Gibson et al. 2000: 22). Rules will only work as long as people believe that there are enforceable sanctions and only committees which have a common legal basis can threaten insiders who transgress the rules or deter outsiders from resource use, especially in a case where pressure from outsiders increases as the value of resources (land prices) increases (see Hobley and Shah 1996: 7). As pointed out by Gibson et al. (2000), Ostrom (1990), McKean (2000) and others, if this agreement is missing, not too much incentive to compliance will be given. Thus as Gibson and Becker (2000) have shown in their case study of Loma Alta in Western Ecuador, forests which lack an agreed-upon set of rules are prone to be overexploited.

In Rompo a rule was made that land not cultivated is prone to be withdrawn by the village. In their effort to create village rules as fast as possible (the new village head had to demonstrate his concern for preservation to the state agencies), the rule makers did not specify the clear procedure in terms of how and for how long land should be withdrawn. Whereas all members of the village council (BPD, village administration, *Lembaga Adat* and other functionaries) agreed to the rule, their interpretation about it was quite different. The village head and the head of the BPD (political decision makers) interpreted the rule in terms of a total withdrawal of ownership rights. This caused protest among the villagers because land certified would not be withdrawn, whereas land only registered and taxes not paid or land not registered could be withdrawn. For most villagers this rule was too close to "state law" and did not take into account that fallow land was still an important source of fuel wood, fodder and leaf litter for them. The operative head of the *Lembaga Adat* interpreted this rule quite different: First, it cannot be applied to inherited land (*sosora*). Second, it can only be withdrawn for lending it out to others until the owner will cultivate it. Similar interpretations of the same rule could be observed in Watumaeta where *adat*-leaders strongly rejected the potential withdrawal of *sosora* and did only approve temporary withdrawal (fortunately for Watumaeta people take the time they need to discuss such divergent opinions before the rules will be written down). The effect was that Rompo has already dropped this rule which could influence the legitimacy of future rules which can – at least in theory – be interpreted as "fast shots" as well in case they are not very popular.

   The problem is further enhanced by the typical Indonesian style of decision making called *mufakat* and *musyarawah* (discussion and consensus) – a procedure of reaching minimal agreement by endless talking. The achievement of *musyarawah* is not based on the fact that people vote on a certain decision, rather are different interests harmonized by a process of convincing members with divergent opinions to agree with the decision. Thus "free decision" is hampered because private opinions, interests and identifications are sacrificed in favor of an overall cultural goal of "communal harmony" (see Peacock 1978: 110). This procedure which allows no simple majority decisions, but rests on general agreement, can always provide room for personal interpretations of what was decided upon afterwards.

In the case of land not cultivated so far Watumaeta has managed better than Rompo. Watumaeta is a village where conflicts lines are rather clear. There is conflict between the villagers and the administration and conflict between migrants and locals. Thus migrants with their specific experiences have clear ideas about what has to be written down in the village regulations. Their concern is primarily with securing plot borders, ownership rights and land use. Due to harvest failures and crop devastation caused by fires from neighbouring plots being cleared, the awareness for mutual regulation of land use in Watumaeta has risen. Owners want other owners to use their land compatible to their own, in order to minimise crop failures and to optimise productivity. It was the concern of the Bugis that the cultivation of unused land should be preliminary aimed at fallow plots surrounded by cultivated land and that punishments should not be draconian and a graduated procedure should be envisaged.

Thus an owner not cultivating his plot should be convinced to cultivate it at least two times before withdrawal is at stake. Withdrawal should be done temporarily with lending out the plot to others, but the plot should be returned if the owner is willing to cultivate it (migrants and the *Lembaga Adat* agree in this question that land should not be "confiscated" in a draconian manner). Knowing that most people owning fallow land are locals, Bugis made the offer that any new migrant buying land and not cultivating it after three months will loose his residence rights and is prone to be expelled from the village. Thus the willingness to share the same consequences among i. e. ethnic groups is essential for successful rule creation.

The Problem of Group Composition, Frequency of Meetings and informal Forums

According to the law BPD-members should not have other functions in the village. The rationale behind this regulation is that institutional overlap can often become a barrier for the process because of conflicting interests. In general this must not be the case and institutional overlap is no barrier for effective organisation building and rule creation. The fact that Rompo built its new village council on existing institutions and personnel that has at least some experience in negotiating conflicts and in dealing with government institutions is probably better than inventing wholly new institutions among people who never worked together before and who are not experienced in management at all (see Gibson et al. 2000). Thus Rompo has achieved point 1 (formation of the group) very fast irrespective of the mistakes that were made in regard to rule specification.

Agrawal (1997, 2000) has argued that "frequency" of meetings is essential to successful management of forest councils. Based on our own observations we disagree. Too much meetings can reduce the quality of meetings, because the more meetings the more often no real important issues arise to be discussed with the effect that people will render meetings as less important with the number of absent people rising. More important seem regular meetings on an informal basis where minor land conflicts can be settled between people having long-established relationships to each other. Such a forum are i.e. the church meetings in Rompo which are formed on a neighbourhood basis. This forum does not only lessen the workload for village officials and formal institutions, it has also the advantage that persons with multi-layered relationships can find a compromise more fast (see Gibson et al. 2000 who come to a similar conclusion). This observation is directly linked to issues of participation and institution building, because there exits the realistic possibility that important decisions are made outside of formal organizations.

The Question of socio-cultural Heterogeneity and Leadership

It has often been argued that homogenous communities are more effective than heterogeneous ones. This must not necessarily be the case as a comparison between Sintuwu and Watumaeta shows. Important seems not the existence of heterogeneity as such, but how this heterogeneity is structured. Sintuwu is characterised by "blurred heterogeneity", no clear demarcations about who is perceived as a migrant and who is a non-migrant exists. Migrants and locals live often in the same neighbourhoods and have intermarried. Further there is no clear leadership for certain interest groups established with people not knowing whom to address in case of conflict. This situation differs with Watumaeta where boundaries of socially positioned groups are rather clear. Bugis and Sundanese are perceived as migrants by locals and define themselves as migrants in relation to the Napu and Besoa groups. Further most of them live in clearly demarcated compounds or hamlets and no intermarriage happens. Clearly identifiable groups can formulate and defend their interests more easy in regard to others because they have not to consider multi-layered relations. Further, leadership is well established. Locals are represented by the *Lembaga Adat* and migrants by the Buginese hamlet head (*kepala dusun*).

Due to careful politics and clever strategies the migrants` head is accepted by the local population. His legitimacy is reflected in the fact that village meetings are also held in his house. Migrants have made their wishes for the crafting of village rules very clear, at the same time they made offers to the local population. Some of those offers include the promise to limit the number of newcomers, or the issue of temporary residence cards (*KTP*) for the period of three years before full residence rights are given to new migrants. Thus trouble makers and "free riders" are prone to be expelled from the village in case they transgress any rules during that time. Thus the organisational capacity of heterogeneous groups can be quite high when the group boundaries are clearly defined and when the groups are represented by their respective leaders, given the condition that their legitimacy is not questioned. Further, groups must be willing to share risks and consequences for rule breakers among their own group. If these preconditions are given, marked boundaries between groups can be helpful in the rule making process. On the other hand, if social cohesion is too strong, the process may well be impaired by long-lasting commitments between the actors involved. Thus a great deal of conflicts prevailing in Watumaeta are not solved because people do not want to risk serious troubles with their relatives, especially in those cases where one of the parties involved is a member of the family of the village head.

4.2. Clearness and Simplicity of Rules, graduated Sanctions and experimental Flexibility

As the Rompo example shows, rules must be clear and specified. Further, as Gibson et al. (2001) have pointed out, there should be as many "simple" rules as possible which can easily be understood by the related population. This seems especially true in a situation where the monitoring of vast forest areas is not guaranteed, either because of lack of manpower or because of the extend of the forest area involved. Thus Rompo made the simple rule that people are not allowed to carry a power saw into the forest. This rule is not only easy to monitor, it can also have a positive "psychological" effect because everybody carrying a power saw out of his house is visible to others and thus aware that he brakes the rule. Graduated sanctions for repeated infractions are important as well. Thus the Watumaeta procedure of land withdrawal (if it will be enforced) is more promising than the Rompo "hard-liner rule" which had to be given up totally afterwards.

The general problem with the Rompo regulations was that on the one hand they introduced a first written system of more or less graduated sanctions in regard to the active cultivation of plots, but – due to a lack of funds and the limited economical capacity of the village - it implied no graduated benefits for those who re-cultivated their plots. With rules not being strictly enforced, those who complied with the rules did gain no direct advantage over those who did not take care of the regulations. One positive element of the current *institutional environment* is for sure, that local communities can apply sanctions without the permission from higher level government officials and that fines can be applied without the consent of the person involved, a precondition which is still far from being fulfilled in other regions of the world (see Agrawal 2000: 62).

Issues of graduated sanctions are intrinsically linked to issues of adequate punishment and "experimental flexibility". Fines for the cutting of trees inside the National Park have been proofed as insufficient because they were too small. Thus at least one rule breaker understood the rule in terms of a "fee". His argument was that he can take the tree with him and sell it because he had already paid for it! After this incidence the fines for taking trees out of the forest were raised and the village rules were extended by another regulation, stating that forest products which have been taken out of the Park are confiscated by the village administration which has the exclusive right to sell them with the profit flowing into the common village budget. Thus on the one hand rules should be simple and clear, whereas on the other hand a

certain flexibility of adjusting sanctions to circumstances should always be possible. Village councils can thus learn from own experiences by a continuous process of "trial and error".

5. The Paradoxes of Participation in Development Planning

The general aim of participation in development is to involve marginalized people in decisions-making over their own lives (Cooke and Kothari 2001: 5). This recognition for the involvement of peoples perspectives and aspirations is generally adopted as an alternative to an "outsider-driven", top-down development. Participatory approaches are thus first of all justified in terms of "empowerment". Until recently critical discussions of participatory approaches focused primarily (1) on its objectives, i.e. the question whether it is a means or and end and (2) on the various myths of "community" as homogenous units underlying many participatory discourses (see Cooke and Kothari 2001).

The crux is that the idea of participation is often aimed at targets which are external to the locations in which they are applied. Thus "insurgent planning" has become a central focus in critics on participation. Insurgent planning is defined as planning which challenges existing relations of power. Thus it goes beyond participation in projects having externally imposed targets (Lane 2001). A range of factors may inhibit the efficacy of indigenous participation. Such constraints are not exhausted with cultural barriers and consultation fatigue (Lane ibid: 4), but include a wide range of variables. Thus participatory development often conflates social structures with institutions with the question arising **"who** actually is to be empowered?" (Cleaver 2001: 37)

Also, the motivations of individuals to participate or not are often based on simplistic assumptions about the rationality of participation. Thus formal participation of commoners in village committees is not at stake in the communities. By virtue of government regulations and residence in a certain village, people are already members of various groups such as the farmers group, the neighborhood group, the church group, the working group and so forth with people often complaining that group activities are "steeling their day" (*curi hari*). The problem they face is not how to join a group, but how expensive it is in social and political terms if they do not join yet another group (see Agrawal 2000: 76). Whereas the virtues of participation in rural development have been praised by a vast amount of literature since at least the eighties (Chambers 1983, Rahman 1984, Uphoff 1986, Chaiken and Fleuret 1990), little research has been done on "group processes" and the peculiarities of "group dysfunction" in participatory approaches. In a lucid article Cooke (2001) made use of four psychological concepts (*risky shift*, the *Abilene paradox*, *groupthink* and *coercive persuasion*) in order to show how the feelings and behaviors of individuals are shaped by the presence of others. The rationale behind Cooke´s argument is that participatory processes can lead people to take collective actions that are more risky than those they would take individually. Further they can lead people to make decisions on the basis of what they think what the other participants want; even if the opposite is the case (the *Abilene-paradox*). Decisions are often based on the conviction of the inherent morality of what is decided, thus leading to "self-censorship" and outcomes which are harmful in effect – at least for "outgroup" members (*groupthink*). The manipulation of group processes can further imply negative changes in consciousness. This is what the participation critics call *coercive persuasion* (ibid:: 102-121).

Indirectly, at least some of those psychological processes seem to have influenced decision making in Rompo; notwithstanding the fact that the borders between them are often blurred and that they are rather difficult to proof in terms of exact data or observed events. One assumption made by Cooke (2001: 107) is that some individuals will be high risk takers in order to enhance their status in the group. In our case the advocates of certain rules (i.e. withdrawal of ownership rights in case of uncultivated plots) did not differ from the common

people in terms of taking greater individual risks, but in terms of their insistence on "obeying the law". Further, it was less the status within the group which should be enhanced, but the willingness to cooperate with state and NGO agencies in the eyes of significant outsiders. As I have pointed out elsewhere, uncultivated plots play an important role in peoples perceptions of "community security" (Burkard 2002). Farmers perceived the rule of a possible withdrawal of ownership rights as a real threat for their security. Given the fact that one member of the rule making group owns about 10 ha of uncultivated land, it is no overstatement if we assume that the decisions collectively made were definitively more risky than those that members of the group would have taken as individuals. Because the issues discussed in the decision making process (forest preservation, plot intensification, the fight against drinking habits by making active cultivation obligatory) were perceived as "the good thing", a high degree of "self censorship" is inevitable with people being in a situation unable to publicly contest their divergent opinion in regard to particular rules. This process is intensified by the Indonesian style of decision making referred to above. Further, the presence of "mind guards" (Cooke) in form of NGO-activists and state officials during some of the sessions and the dependence on government subsidies in agriculture which could – at least in theory – be impaired if rules are not in line with the objectives of the state, leads to a situation that people who disagree are at the same time less "empowered" to control their own development (see Cooke 2001: 111).

The *Abilene*-paradox refers to the fact that organizations often make decisions that are definitively in contradiction to their genuine aspirations. Group members – especially peasants - are not all able to communicate their aspirations, thus acting opposite to it and leading one another to make the wrong conclusions about the aspirations of others (ibid: 109). Such misperceptions of the collective reality are more likely, the less specified the rules created are. Thus while the interpretation of the head of the *Lembaga Adat* on the "confiscation rule" discussed in section 4.1. was objectively different from the one given by i.e. the village head, he was absolutely sure that other village officials interpreted the rule in the same way, whereas the village head insisted that the head of the traditional council had agreed on exactly the same conditions of the rule as him. Whereas there is no doubt that "agreed upon rules" are essential, further in-depth analysis on "group dynamics" and the socio-psychological processes underlying decision making is necessary.

That the paradoxes of participation are often masked in social science lies in the fact that participation is treated in a too undifferentiated manner. Agrawal and Yadama (1997: 457) point out to a significant distinction which is necessary in order to disaggregate the quagmire of participation: **decision making** and **implementation**. Thus while active participation of the masses in rule creation (decision making) is not a practical solution in the villages, given the rationality of non-participation under the conditions of various group activities, some strong arguments for more community participation in monitoring (implementation) have been discussed in section 3.4. While on the one hand participatory decision making seems often to be constrained by socio-psychological factors, participation in implementation on the other hand remains crucial. The clue is that as long as local people have no mandate to participate in the active protection and control of their surrounding resources (monitoring), the potential advantages (despite of socio-psychological constraints) inherent in participatory decision making will be - at least in "critical" villages like Watumaeta and Sintuwu - impaired as well.

6. Some Contextual Factors in Natural Resource Management

Much has been written on the attributes of forest users, social organisations and local institutions that "count" in natural resource management. In section 3.6. the uneven distribution and scattered appearance of different resource types and vegetation ages of the forest have been isolated as one major **attribute of resources** which may impair sustainable

resource management. In the summary of their book "People and Forests", Gibson, Ostrom and McKean (2001) have, among others, mentioned two attributes of resources whose validity could be proofed in the research area. These are (1) predictability, and (2) perceptions of the relative value of a resource. We want to complete our discussion with a short discussion of this two issues.

Predictability

Gibson et al. (ibid: 229, 230) have defined "predictability" exclusively in terms of the availability of forest products. Within the research region the gathering of forest products is mainly confined to the collection of rattan. Predictability does not seem to play a prominent role in these activities. More important is the legal and ecological predictability of the forest because it influences in how far people are willing to support its preservation. The dilemma is linked to insufficient monitoring and a weak enforcement of sanctions. As long as access to the forest resource is not effectively restricted at the same time the future legal situation is not **predictable** (i.e. will there be a stronger enforcement of sanctions or not, will part of the protected area be returned to the village or not), people will not only try to obtain as much land as possible, but they will also try to obtain it within a short time period. This trend has partly been stimulated by vague promises on behalf of the park management made in 1995. With no clearly defined rights to the forest resource, "people will lose their incentive to protect it or to report on others that invade it, but are rather in a race to compete with others to extract as much as possible from it" (McKean 2000: 35). This is especially to be expected in a situation where land claims are to a high degree linked to issues of "intergenerational access" (see Burkard 2002). Further it seems that "legal unpredictability" precedes "ecological unpredictability". Thus i. e. in Watumaeta and Sintuwu people are rather doubtful if their fellows will comply with rules in the future. If a high number of "free riders" is perceived as being given, the predictability of a "healthy forest" is low and people will not feel much incentive to support its preservation (Gibson et al. 2000: 213). Thus legal predictability and ecological predictability are intrinsically linked to each other.

Perceptions of the relative Value of a Resource

The perception of "benefit" must not necessarily be linked to the resource in question itself, or the costs of its day to day management as pointed out by Gibson et al. (ibid: 229), but can also be linked to its impact on **other resources** that must be perceived as **"valuable"**. Thus in Rompo the awareness of resource degradation has risen rapidly, as the water supply for wet rice cultivation improved since people stopped cutting forest on slopes close to their wet rice fields. Thus the acquisition of knowledge about the connections of deforestation and security in water supply was probably more efficient than the formation of a village institutions or the crafting of deliberate rules on resource use and forest access. In principle, in this case the perception of the relative value of the forest resource was intrinsically linked to the "predictability" of the subsistence resource.

7. Summary and Conclusion

Many of the aspects of natural resource management discussed in this paper have explorative character. Thus they should better be understood as guidelines for future research hypotheses than in terms of final findings. However, some general constraints of successful resource management have been isolated in the previous sections.

First, the formation of village institutions for managing resource use cannot be build up on existing "grass-roots"-organizations. In the past, villages practiced shifting cultivation on the basis of "open access" with no institutional demand for the creation of such organizations existing. The only "traditional" institution, the *Lembaga Adat,* did not play a decisive role in forest management in the past. Thus the basic assumption of the research proposal, that local communities are deprived of traditional sanction mechanisms by substitution of state regulations is proofed to the contrary in the villages. Of course, this is not to say that this finding holds true for all villages in the research area. For instance, Fremerey (2002) has found quite a different situation in the community of Toro. The same holds true in regard to "local knowledge". Far from being a "fix commodity" which is integrated into development planning by rural participation; it is relationally constructed in the context of village-state interactions. Whereas in Rompo *adat* is integrated into the village rules in rather artificial manners, villagers in Watumaeta have learned to manipulate local knowledge in order to support their claims to a "domesticated" forest.

Creation of rules is intrinsically linked to enforcement and monitoring. Whereas the targets of rule making are externally defined by the state, in difference to i. e. Toro (Fremerey 2002) villagers are not at all mandated to monitor the forest with a certain "plausibility crisis" emerging. However, the option of a monitoring mandate is endangered by two factors: (1) small communities will be at disadvantage due to the problem of fund rising, (2) the existence of different baselines for boundary demarcation fosters a "war of maps" rather than cooperation between villages which is a necessary precondition for successful monitoring. Thus the question arises: how can alliances between villages established under the given circumstances? Which villages should cooperate and on what terms should they do this?

Whereas participation in implementation seems necessary, participation in decision making is not at stake in the villages. The "paradox of participation" is further intensified by socio-psychological and socio-cultural parameters which deserve more attention in future research. This because of two reasons: Firstly, these parameters are linked to the strength of agreement on rules which is essential. Second, agreed-upon rules are a crucial pre-condition of rule compliance. Rules should be simple, sanctions graduated and smooth and experimental flexibility for trial and error should be granted.

Building village organizations on the basis of administrative and political structures must not necessarily hamper the process. Also is social and ethnic heterogeneity not always a disadvantage for rule creation, if the parties involved are identified by clear boundaries and if reliable representation in form of legitimate leadership is given.

If we compare our research villages with the community of Toro, a major difference can be found in the "attributes" of the surrounding resources. The most crucial attributes identified are (1) the extend of the various resource types which, in case they are too small, hamper the establishment of deliberate rules of use, (2) the legal and ecological predictability of resources and (3) the perception of the relative value of resources which must not necessarily be linked to the forest as such, but is more conductive when the impact of the forest on the subsistence base is at stake.

Five major research topics emerge in regard to future activities in the field:

- What problems face villages which have created rules in regard to intruders from other villages and how can neighboring villages be persuaded to cooperate?
- What are the exact variables which foster or impair the making of village alliances?
- How can "rules of use" be established if resources are split up into small pieces?
- How do socio-psychological constraints in participation relate to power structures?
- What other variables are there which count for participation or abstinence in decision making?

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