WORKING PAPER 140

INDIGENOUS INSTITUTIONS AND FOREST CONSERVATION: USER- GROUP SELF-INITIATIVES IN INDIA

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Indigenous Institutions and Forest Conservation: User-Group Self-initiatives in India[1]

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Abstract

This paper aims to explore self-initiatives in local resource management. Based on two village case studies, it suggests that the willingness of 'rational' individuals in a community to design their own institutions of collective action is based on the exigencies of their daily subsistence existence and the complex pattern of reciprocity built into their lifestyle over a lifetime of cohabitation. It limits itself to emphasizing possibilities of indigenous institutions and makes a case for recognizing them which otherwise are largely ignored under external development interventions.

Introduction

Environment needs *in situ* protection. Amongst the challenges to sustainable and effective protection of natural resources, none is more pertinent than understanding the conditions that determine collective action of user-groups in managing and conserving natural resources, particularly those used as common-pool resources (CPRs)[2]. In view of growing concerns over the need to sustain rural resource systems, against the backdrop of the advances in globalisation and the debate on the retreating state, the pertinence of the role of the community (user-group) through a participatory process is now a strong alternative.

Implicit in this is the need for suitable institutional[3] arrangements for resource management[4] and its regulated use – the rules, including social norms and conventions, and organizations (formal and informal) that govern individual actions and facilitate coordination among the users. A number of studies have tried to trace environmental problems to institutional failures, both market institutions and inappropriate government policies (for a succinct review, see: Dasgupta and Maler 1997). However, while development theory accepts the institutional dimension as the key to the success of community management of local resources, the limited success of initiatives imposed or induced from outside has necessitated a rethinking of the local institutions for such development initiatives.

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It is obvious that the policy-community is based on an assumption that we must extend our institutions and policies to all. This need not always be desirable or be the case. Particularly, this critique assumes relevance considering that forest management by local user-groups through indigenous institutions (that is, self-initiated strategies of user-groups) has, in recent years, become a major movement in South and Southeast Asia. This is in stark contradiction to the phobic apprehension of both development thinkers and practitioners about resource users' ability to evolve their own institutions for sustainable community use and conservation of local resources. Because of such preconceived apprehensions, development interventions are generally aid-powered, externally induced and come with a packaged formula delivering a semi-stitched product that the users/beneficiaries may fashion to their own specifications. Such interventions, particularly those aimed at conserving and protecting our natural resources, are often at variance with the larger local interest, ignoring traditional rights of the locals and disregarding their indigenous knowledge base and institutions.

Considering the reality of self-initiated or own indigenous institutions of user-groups in community forest management, there is a need to understand this institutional landscape and build upon its strengths in any endeavour towards establishing resource management and conservation strategies that enable collective action. For instance, when do the collective institutions at the user-group level emerge? What is it that makes members of a group cooperate for the common interest? How does the larger group give authority to the leaders in the collectives formed by the users themselves? Is authority in the community-based groups always legal-rational or can it also be traditional?

This paper on indigenous user-group institutions aims to explore some of these issues facing the hitherto relatively unexplored realm of self-initiatives in local resource management. The discussion in the paper is based on case studies of two villages from Orissa, India, conducted during 2001 - 2002. Indigenous institutions can be local traditional knowledge, customs and forms of organising practices embedded in the shared life of co-existing individuals. However, in this paper it is discussed as a local organization comprising self-evolved regularised practices grounded in the traditional knowledge, practices and understanding of a group of cohabiting people to take decisions, enforce regulations and resolve conflicts in order to adapt to precarious micro-environments to minimise risks.

Drawing on the 'moral involvement' argument, the paper

emphasises that the willingness of 'rational' individuals in a community to design their own institutions of collective action is based on the exigencies of their daily subsistence existence and the complex pattern of reciprocity built into their lifestyle over a lifetime of cohabitation. It stresses that the strength of self-initiated strategies lies in there being a close symbiotic relationship between the resource and the resource users, direct consumptive benefits from the resource to the user community and a system of consensual decision-making arrangement among the group members grounded in their traditions of cohabitation. The paper essentially limits itself to emphasising such possibilities with a view to deriving insights and suggesting prescriptions for recognising indigenous institutions to strengthen community management and conservation of resources used in the public domain.

The remainder of this paper is structured into five sections. The first positions the study on indigenous institutions in the context of the larger debate on participatory natural resource management and presents the focus of analysis. This is followed by a description of some methodological issues. The third provides a situational analysis of the community forest management process through institutions evolved by the resource users themselves in the two case studies. It spells out the organizing ability of the social group, describing the conditions underlying the emergence of the indigenous institutions, the locus of authority (leadership) in it and the manner in which it is assessed, bestowed and renewed. Finally, the paper presents a summary of the main observations, outlining the critical factors in the community, the resource and the indigenous institutions that influence cooperation among individuals in a situation of interdependence.

Positioning the Indigenous Institution Research

User-group initiated forest management and conservation efforts have been gaining momentum in recent years (Lynch and Talbot 1995). Literature on the institutional approach to development views such indigenous institutions as 'resource for achieving development' (Watson 2003; Uphoff 1996). As the modus operandi of these institutions in forest management is the protection of forest patches in the vicinity of rural habitation to allow natural regeneration, it implies a twin strategy– (i) regulated appropriation of resource units (usufructs) and (ii) conservation of the local tree species. In India alone there are thousands of such self-initiated protection groups that are protecting several hundred thousands

of hectares of state-owned forests[5] (Sarin 1995). They are primarily in the Gharwal Himalayas and in the central-eastern regions covering the states of Orissa, Bihar and Madhya Pradesh, and on a smaller scale in the western states of Gujarat and Rajasthan and southern states of Karnataka and Andhra Pradesh. Literature associates the existence of these micro-institutional forest management practices to largely two conditions – (i) to places where people continue to have strong economic dependence on forest and (ii) to where a tradition of community resource management is still surviving (Sarin 1995).

With the expansion of JFM (Joint Forest Management)[6] programme in India, there is, however, evidence of conflicts in the interface between State Forest Departments and many self-initiated forest protection groups. The latter very often refuse to participate in the JFM programme as final felling of mature forest (a central agreement of the JFM programme) and sharing timber with the Forest Department is not acceptable to them (Conroy and others 1999; Raju and Sarin 2001). Even if the villagers sign the JFM agreement, their traditional rights are submerged under the rules of protection and sharing laid down by the Forest Department. At the same time, most of the self-initiated strategies lack a legal status, as the forests are state-owned. The user-groups have only an acquired-privilege over the forest they are protecting, arising out of the right of their protection and management of it. Caught between this situation of the devil and the deep sea, the indigenous systems are slowly breaking down. The challenge thus being posed by such user-group self-initiatives to interventions from outside is that of strengthening the existing efforts of the community rather than moulding them into the official framework.

However, while institutional arrangements are recognised as important inputs to guide resource use in the public domain, much of the existing theoretical literature[7] posits that though the role of transaction cost and property rights in shaping incentives cannot be ignored, the crux is in the net benefits perceived by the participants. There is, in other words, a prevalence of the rational choice premises in community resource management that underscore individual rationality and underpin the need to have externally induced micro-institutions to achieve the objective of users' cooperation in resource management. This argument presumes that outcomes chosen individually, either as an individual action or as a collective action, may be one of disequilibrium and that one way of overcoming it is through compulsory enforcement of the contracted outcome (Sen 1970).

At the same time, studies also recognise the far-reaching and often adverse implications of binding enforcement and acknowledge that this problem can be avoided by developing behaviour patterns such that people voluntarily stick to a contracted action (Sen 1970). This underscores the contention that the existence of conflicts arising from individual self-interest does not preclude the possibility of attaining unanimity in individual behaviour patterns, particularly when the object is to prevent external costs being imposed (Buchanan and Tullock 1962). In other words, there is a possibility of cooperation among users in the use and conservation of community resources which may stem from a need to internalise pervasive externalities (for example, overgrazing) so that the resource stock is maintained and the group jointly benefits.

This premise finds credence from extensive studies, which both empirically and theoretically establish that individuals voluntarily organize themselves under conditions of ecological interdependence to maintain the existing resource base (for citation details see: Martin 1992; Hess 1999). The fact that individuals may evolve and adopt their own collective action strategies implies that the existence of individual rationality does not preclude the possibility of group rationality to minimize risks (Ostrom 2000; Vira and Jeffery 2001).

Grounded in the 'moral involvement' philosophy propounded by Etzioni (1961), and drawing on the reality of user-group initiated resource management regimes, the 'communitarian' argument is thus emerging as an alternative theory of micro-institutions and individual behaviour determining voluntary cooperation in resource management. Much of the work from the communitarian perspective, while questioning the conventional view of mechanistic institutionalism in common pool resource management, emphasise the need for viewing local institutions as embedded in the socio-cultural and historical context of their location (Hayami 1981; Mosse 1997; Cleaver 2000; Ostrom 2000; McCay 2002).

It is within this notion of institutional embeddedness that the following discussion on indigenous institutions in community forest management is positioned. The paper looks at these collective action institutions as phylogenic practices based on choices made by rational self-interested individuals in a community as a reaction to and/or their perceptions of the location-specific conditions.

The underlying theme of the paper is that while individual choices determine the nature of institutions for cooperation, it is the societal conditions within which they cohabit that define the individual choices

and, in turn, shape the institutions of cooperative behaviour. While external factors like market forces, demographic pressures and state policies also influence micro-institutional arrangements for participatory resource management, here the effort is to focus explicitly on the process as an exercise within the cooperating community. Broadly, the analysis identifies three influencing inter-community factors – (i) the socio-economic characteristic of the group; (ii) the nature of their dependency on the resource; and (iii) the institutional provisions regarding leadership and rule formulation. This forms the local enabling environment for the evolution of the self-initiatives in the analysis.

Methodological Issues

Orissa is the central-eastern state of India. It is the second poorest state in the country with about 87 per cent of its total population of about 37 million living in rural areas and mostly dependent on agriculture and allied sectors of whom 50 per cent are below the poverty line (Mearns and Sinha, 1998 updated). Having a recorded forest area of 5.2 million hectares, constituting about 36 per cent of its total geographic area and a per capita forest coverage of about 0.23 hectares compared with the national average of 0.11 hectares, the state has more forest cover in the country than many other states.

By legal status, reserved forests in the state represent almost half of the forested area (47.37 per cent) and the remaining are protected and unclassed forests (FSI 2000). A little over half of the protected forest in the state is categorized as demarcated 'protected forest' and the rest is 'un-demarcated protected forest' including village forest (Mearns and Sinha 1998). While rights and privileges of local communities are restricted in reserved forest and are more liberal in demarcated protected forest, the un-demarcated protected forest is generally treated as an open access land and is therefore degraded except where community protection has started (Saxena 1996).

With a rich history in participatory forest management, Orissa was the first state in the country to issue the JFM resolution in 1988. At present, about 0.42 million hectares of forest in the state is managed by 3,704 Village Forest Committees under the JFM programme (FSI, 2000). However, interestingly, the state has among the largest number of indigenous community forest protection groups in the country. Though the number of such groups and accurate estimates of the forest area protected and regenerated by them are not available, roughly between

8,000 and 10,000 villages in the state alone are engaged in self-initiated forest protection[8]. The sheer magnitude of the people's efforts in the state has also made it the only state in the country to officially acknowledge their existence through its latest JFM order (1996), which refers to the relevance of community self-initiatives and suggests granting clear rights to villages to manage their forests.

Referred to as 'Community Forest Management' (CFM) as distinct from state-sponsored JFM, such self-initiatives have a long history in Orissa with some dating back to the early twentieth century which emerged as a reaction to large-scale government coupé felling witnessed during the period to support British industries. But in the last two decades, CFM in the state has taken the form of a people's movement. Today, in almost all the 30 districts of the state, villagers have come together to manage forests as a spontaneous response to a perceived environmental crisis caused by the degradation of forest surrounding their habitats (Mitra 1997). In an effort to strengthen the people's initiatives and increase their collective voice, federating efforts aimed at building networks of self-forest-protecting villages have been made, culminating in the formation of the 'Orissa Jungle Manch' in the year 2000.

The field study on which this paper is based was undertaken in the present Nayagarh[9] district of Orissa which has some of the major CFM efforts in the state. With a geographic area of a little under 3 per cent of the total state area and accounting for about 3.5 per cent of the recorded forest cover in the state (FSI, 2000), the district has around 600 villages where indigenous community forest protection exists[10]. The study was conducted in two purposively selected villages in the district: Koshaka (non-tribal) and Gundurabari (tribal). The profile of the two study villages is presented in Table 1.

Here the analysis assumes an association between the institutional and group characteristic (the social context) conditioned by the latter's nature of dependency on the forest (the biophysical context), which influence conformance with the self-evolved institutional strategies for resource management and reinforce co-operation (Figure 1). The community participation in the resource management activities is viewed as an outcome of this association. In this analysis, 'community' refers to an assemblage of common-pool resource users, taken here as synonymous with a village community

Table 1: Profile of the Study Villages

Details	Koshaka	Gundurabari
1) Basic statistics		
a. Approximate area (in hectares [a])	800	30
b. Distance from road (approximate)	1 kilometre	No road (almost inaccessible – surrounded by mountains)
c. Distance from nearest town/ market	5 kilometres	3 kilometres
d. Size of the user-group number of households)	51	25
e. Ethnic composition (caste structure)	Multiple caste	Primarily tribal (Kondhas)
f. Demographic characteristic –		
(i) Total population	383	105
(ii) Household size	7.51	4.20
(iii) Sex ratio (females per thousand males)	948.82	972.67
g. Percentage of literate households [b]	81.32	38.58
h. Economy –		
(i) Village economy	Agrarian economy	Agrarian economy
(ii) Agriculture landholding	Mostly marginal and small farmers [c] (60.8 per cent households)	Mostly landless and marginal farmers (60 per cent households)
2) Basic Institutional Information		
a. Year of formation	Early 1960s, but formalised in 1970 with definite institutional strategies	Since 1970s, but formalised in 1987 with definite institutional strategies
b. Reason for emergence	Perceived reduction in the availabilityof 'goods' from the forest because of visible threat to the resource from exploitation by 'outsiders'	Result of a demonstration effect on the community from neighbouring communities where protection measures had been initiated
c. Initial input for institution formation	Village youths	Village Pradhan (informal village leader)

Contd....

Details	Koshaka	Gundurabari
d. Village meetings	Approximately 1 meeting in a month compulsorily and as and when necessary	Approximately 1 meeting in a month compulsorily and as and when necessary
e. Records maintained	Income and expenditure record; Loan book; Visitors record	Only meeting record
f. Leadership	Selected by villagers	Selected by villagers
g. Protection system	Voluntary protection through stick rotation *(thengapalli)*	Community vigilance (social fencing)
3) Basic resource related information (bio-physical context)		
a. Area of forest protected (approximate)	410 hectares	200 hectares
b. Type of forest	Mixed deciduous and Sal forest	Mixed deciduous forest
c. Forest density (approximate number of trees per hectare)	2000	5000
d. Major forest resources available	Bamboo, fuel wood, Mohula flowers and seeds, fruits & tubers, fodder, Sal leaf, Reed and honey	Bamboo, fuel wood, Mohula flowers and seeds, fruits & tubers, fodder, Reed and honey

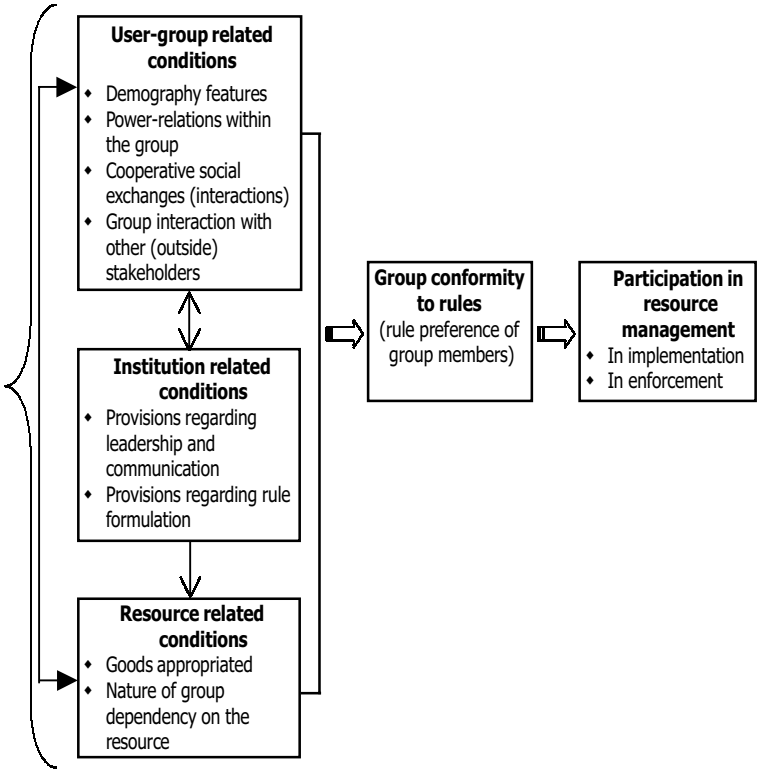
Note: a. 1 hectare = 2.5 acres (approximate).

b. Household with at least one literate person is defined as literate household.

c. Marginal farmers - Less than 1 acre landholding; Small - 1 to 2 acres.

The analysis takes off from the point that community participation in resource management exists in the selected villages. First, the group members' preferences for the self-designed rules-in-use and their consequent rule conformance is analysed. The members' rule conformance is then studied as a phenomena influenced by three processes - the societal conditions contributing to the emergence of self-initiated resource management strategies; groups' dependency on the resource; and the members' participation in the management process. The members' rule conformance is, in turn, studied as determining the cooperative endeavour.

Figure 1: A Framework for Analysing Self-Organized (Indigenous) Participatory Resource Governance Regimes



Self-Initiated Resource Conservation: A Situational Analysis

A pattern of relationship between the indigenous institutions and community involvement in conserving forests was observed in the two study villages. At the outset the rule preference among the primary user-group members (the households in the village and henceforward simply referred to as the 'user-group') is analysed to have an insight into their institutional robustness. Undoubtedly, as the self-initiated forest protection efforts in the two villages were in operation for quite some time (Table 1), the duration of their existence is itself an alibi of the institutional robustness. But what is the preference among the users for the rule-structure and their conformance to it in such indigenous systems? Considering that the indigenous institutions are user-group centric in terms of their evolution and continuation, the members' preference for

the rules is central to the strength of such micro-institutions. An understanding of the rule-preferences among the resource users therefore becomes essential for a better understanding of the institutional robustness of user-group cooperation in their conservation efforts.

A listing of the major rules for the resource management under the two self-initiated strategies was first attempted for the purpose. Sixteen rules in all were identified and listed for each of the two villages (Appendix I). The rules were broadly categorised as –

- Rules for delineating the leaders and the members;
- Rules specifying guidelines for resource maintenance and protection; and
- Rules laying down access, use and enforcement guidelines.

These rules formalised user-interactions apropos to the protected forest, not only within the protecting community but also with other village communities in the vicinity (secondary user-groups). The first set of rules specified the manner in which the larger group ordained authority (both managerial and consumer authority) within the collectives. The second and the third set of rules laid down the norms for resource consumption and users' conformance to the conservation efforts.

A low level of disagreement with the existing rules was observed in the two case studies, primarily with regard to the rules determining access to the resource (Table 2). The existing access guidelines in Koshaka village totally prohibited entry into the protected forest area during the initial five years of protection and subsequently imposed seasonal restrictions on usufruct collections[11]. In Gundurabari village, on the other hand, though the existing access rule permits usufruct rights to the user-group members from the beginning of the protection activities, the collection of timber was allowed on payment of a nominal fee to the village fund. Under such conditions of regulated access, the relatively poor[12] among the villagers showed some disagreement with the rule, instead preferring unrestricted usufruct rights from the beginning of the conservation activity (Table 2: Preferred Rule I). But interestingly, the people expressed a willingness to pay a collection charge for timber collected for domestic use from the protected forest (Table 2: Preferred Rule II). What needs to be recognised here is that this willingness is for a forest product that, though important, did not directly have an impact on their livelihood. As the Preferred Rule II is the existing rule in Gundurabari, in Table 2 there are no entries under it for this village. However, the fact that more than 50 per cent agree with the existing rule in Gundurabari, also suggests their willingness to pay a small collection

charge for 'timber', and this willingness is more evident among the economically disadvantaged.

Table 2: Rule Preference Regarding Access Guidelines
(In percentages)

Village	Landholding Class	Existing Rule[a]	Preferred Rule I [b]	Preferred Rule II [c]	Total
Koshaka	Marginal	60.0	26.7	13.3	100.0
	Small	43.8	12.5	43.8	100.0
	Medium	60.0	26.7	13.3	100.0
	Large	80.0	0.00	20.0	100.0
	Total	56.9	19.6	23.5	100.0
Gundurabari	Landless	66.7	33.3	-	100.0
	Marginal	75.0	25.0	-	100.0
	Small	50.0	50.0	-	100.0
	Medium	50.0	50.0	-	100.0
	Large	0.00	100.0	-	100.0
	Total	60.0	40.0	-	100.0

Note: a. *In Koshaka village* – total restriction on entry and collection during the initial years of protection and subsequent seasonal restrictions. *In Gundurabari village* – Unrestricted entry from the beginning to group members, but collection of timber on payment of a nominal fee.

b. Unrestricted entry and usufruct rights to user-group members from beginning.

c. Unrestricted entry from the beginning, but collection of timber on payment of a nominal fee.

The analysis shows that an important ground reality often ignored by development protagonists is that there are certain areas where, despite inequalities, people residing in a particular locale do act together for a common cause. This is often in the realm of scarce natural resources, such as forests, used as 'commons' where there is a perceived flow of benefits to the community and wherein everyone loses out in the absence of cooperative efforts to preserve it. The important issue here is the flow of benefits from the resource, which give the user-community the incentive to contribute to its protection. The indigenous forest management initiatives in the two villages ensured this by not only providing rules aimed at conserving the resource but also guaranteeing that the villagers

received benefits from it. At the same time, it also needs to be stressed that the rules specifying restrictions on access in the two villages were location-specific perpetration shaped by indigenous reasoning and hence did not face much opposition (Box 1).

Box 1: Location-Specific Indigenous Reasoning for Access Rules

Access to the protected forest in Koshaka was restricted during the rainy season when locals were less dependent on the forest for their livelihood because of the possibility of income for the households from labour in the paddy fields. This made the people more willing to accept the loss incurred from restrictions on collections from the forest during the rainy season. The need for such a provision restricting access was also grounded in a perception of the local situation - the forest, primarily consisting of Sal trees, had good economic value, carrying the risk of theft of trees that got uprooted during the heavy rains. By restricting access to the protected patch during the monsoon months, the thefts were checked while allowing for natural regeneration. Likewise, in Gundurabari the collection charges on timber were nominal and the people did not oppose it as the money collected was used for the annual village festival in honour of the village deity, a religious sanctity attached to an economic activity.

Broadly, three conditions were identified as influencing the group members' preferences ('for' or 'against') regarding the existing rules and their consequent choices vis-à-vis the collective effort, namely - the social, biophysical and institutional context of their daily existence.

Social Condition

A two-pronged approach was adopted in this analysis to have an insight into the social characteristic of the user-groups and what social condition explained the high rule preference (agreement) among the members within indigenous institutions. First, the socio-economic characteristic of the groups was examined. Second, the structure of mutual exchanges among the households was studied.

From the basic village statistics presented in Table 1, it is evident that while Gundurabari was a very small village both in area and in number of households, Koshaka village was relatively larger in both respects. In terms of social composition, Koshaka village was a mixed caste community with the forward castes also forming the numerically dominant group, constituting about 82 per cent of the total households (Table 3). Gundurabari village, on the other hand, had a primarily homogenous social composition with the Kondha tribals constituting about 84 per cent of the total households, the remaining belonging to Backward and Scheduled Castes.

The economic characteristic of the groups was examined by taking into consideration the agriculture landholding of the households, the pattern of their agriculture production and their reported annual income in Indian rupees[13] . With regard to their agriculture landholdings, the majority of the households in both villages belonged to the marginal and small farmer categories (Table 3). The number of large landholders was low, accounting for less than 10 per cent of the total households in both villages. Likewise, on the basis of their reported annual income, a condition of generalised poverty existed in the two villages with very few of the households belonging to the better off. While in Gundurabari village all the households were below the national poverty line, the majority of the households in Koshaka village belonged to this category. The average reported income of Koshaka village was about Rs.22, 765 and that of Gundurabari village was Rs.10, 184, revealing low-income inequality in both the cases. A major share of the household income in both villages was from agriculture and agriculture-related labour, reflecting backward agrarian-subsistence economies.

This socio-economic profile of the villages studied (Table 3), thus, reveals their backwardness. It is this backwardness that appears to be the crucial ingredient in building the collectives in the two villages. The elite in both cases (particularly in terms of the households' economic status assessed from landholding size) comprising medium and large agriculture landholders (about 40 per cent in Koshaka and 24 per cent in Gundurabari), cohabited with the less privileged in an environment of cooperation aimed at mutual help for mutual gains. The pattern of cohabitation reflected what could be termed as benevolent feudalism – systems of cooperative cohabitation wherein interdependencies and traditions of co-action overcome conflicts arising from inequalities, making disparate interest groups cooperate. The following analysis of mutual exchanges gives ample evidence of such cohabitation in the two villages.

Table 3: Socio-Economic Details of Households in Study Villages

Particulars	**Koshaka (N=51)**	**Gundurabari (N=25)**
CASTE (in percentage)		
Forward Castes:		
Khandayat Chasa	35.3	-
Pani Kundua Chasa	13.7	-
Panachagadia Chasa	31.4	-
Karana	2.0	-
Backward Castes:		
Barika	2.0	-
Gudia	5.9	4.0

Contd....

Particulars	Koshaka (N=51)	Gundurabari (N=25)
CASTE (in percentage)		
Scheduled Castes:		
Dhoba	2.0	-
Pana	7.7	12.0
Scheduled Tribes:		
Kondha	-	84.0
AGRICULTURE LANDHOLDING (in percentage)		
Landless	-	12.0
Marginal (less than 1 acre)	29.4	48.0
Small (1 - 2 acres)	31.4	16.0
Medium (2 - 5 acres)	29.4	16.0
Large (above 5 acres)	9.8	8.0
REPORTED INCOME (in Indian Rupees) **OF HOUSEHOLDS per annum** (in numbers)		
Below 20,000*	32	25
20,001 - 40,000	13	-
40,001 and above	6	-

Note: As per 9th Plan Survey of India (1997 – 2002), households below poverty line are those with an income of less than Rs.20, 000 per annum (Government of India, Department of Rural Employment and Poverty Alleviation).

Two types of mutual-help exchanges were observed – labour exchanges and capital exchanges including money (Table 4). While about 23.5 per cent households in Koshaka village were involved in commodity exchanges among themselves, in Gundurabari they constituted about 60 per cent of the total households in the village. This commodity exchange among the households was primarily observed with regard to the exchange of bullocks and ploughs during the agriculture season. A household having one bullock would tieup with another household also having only one bullock and both would use the bullocks on alternate days. Likewise, 27.5 per cent of households in Koshaka were engaged in labour exchanges among themselves while in Gundurabari it was 28 percent. The labour exchanges were also observed primarily for agricultural purposes. Though 25 per cent of the households in Koshaka used hired labour (with no parallel outflow of labour from the households), this also showed their dependence on labour.

Table 4: Structure of Exchanges in the Villages

Village	Outflow / Inflow	No assistance	Commodity exchange	Only Labour exchange	Labour hired	Total
Koshaka	No assistance		3.9	3.9		7.8
	Commodity exchange	13.7	23.5			37.3
	Hired labour	25.5			2.0	27.5
	Only labour exchange			27.5		27.5
	Total	**43.1**	**27.5**	**27.5**	**2.0**	**100.0**
Gundurabari	Commodity exchange	12.0	60.0			72.0
	Only labour exchange			28.0		28.0
	Total	**12.0**	**60.0**	**28.0**		**100.0**

It needs to be reiterated that such mutual exchanges among the households in the two villages arose from a complex system of personal relationships aimed at supporting each. The exchanges were in the nature of cooperation for security and survival. The partners were involved in a two-way process of exchange involving an outflow from one or more partners arising from their individual needs followed by a corresponding inflow from the other partner or partners, resulting in the mutual satisfaction of all. The mutual-help relationships did not, in any way, reflect the superior-subordinate power relationship often described in studies of rural societies and seen as entrenching inequalities, a simplistic analysis made to argue for state directed-community development strategies. Although kinship relations are important, the community tie is based on the fact that the villagers lived together in the same location and cooperated for their individual gains.

Such patterns of mutual exchanges based on traditions of co-action for minimising risks in the immediate microenvironment are often found in small subsistence-based peasant communities with households having meagre resource endowments and low productivity. The exchanges facilitate the emergence of other cooperative behaviour patterns among the households for the use of scarce resources and for tackling local problems through customary rules and institutions, as evident in the two study villages (Box 2). Thus, the strong tradition of cooperative action and the consequent enduring social relationships observed in the two villages can be viewed as the social base that conditions cooperative endeavours among the group members leading to the emergence of the self-evolved institutions.

Box 2 : Cooperative Practices in the Study Villages

In Koshaka village there was a concept of 'kotha sampathi' (village common property) referring to communal goods like the village temple, the 'kotha ghara' (community hall), a mango grove and a pond (in addition to the forest managed by them). The maintenance of these public goods was the responsibility of the entire village. Similar cooperative efforts were also seen in Gundurabari village, such as the management of the village temple and the temple fund, the village tank and a 'thrift fund' managed exclusively by the village women. In this village there was also a practice of supervised cattle grazing in the protected forest wherein households, by rotation, had the responsibility of taking all cattle from the village for grazing.

Dependency on Forest

The second contextual factor assumed to be influencing the user-group members' conformance with the rule structure for protecting and managing the forest is the nature of their dependency on the resource. Based on Barrett's (1988) categorisation of use values derived from the actual use of species and eco-systems (cited in Jakobsson and Dragun 1996: 53), it is assumed here that the people depending on the forest derive two types of direct use values, namely, a consumptive use value and a productive use value. While the consumptive use is more a livelihood support system mainly involving produce-collection activities, the direct productive use involves material flows through forest-related economic activities.

Accordingly, the households' dependency on the forest in the selected villages was analysed taking into consideration the type of direct benefit derived by them from it. Other benefits (indirect benefits) from the forest such as benefits from the ecological function (for example, watershed benefits) were not taken into account in this analysis of benefits. A forest product valuation was done, estimating the gross value of products (timber and non-timber) appropriated by households. To assign the products a monetary value, their existing price in the related market was made use of. In the case of products with no market, a price was imputed using the value of a close substitute (Godoy and others 1993). To gather information on goods extraction and the type of benefit derived, the research relied on recall information. The main products extracted by the households from the protected forest, their estimated value and the purpose for which they were used are listed in Table 5.

To assess the forest dependency of households for fodder, an

estimation of the livestock (cattle) population in the two villages was carried out. For this, the livestock population was converted to animal units using the cattle equivalence from Mishra and Sharma (1990), while their economic feeding rates were derived using Shah and others (1980) estimations (cited in Chopra and Kadekodi 1999: 160 and 163, respectively).

Table 5: Major Forest Products Extracted and their Estimated Monetary Value

Name of the Product	Substitute	Unit	Value (in Indian Rupees)	Use Type
1. Fodder (green herbage)	Hay	1 bundle = 3 kg [a]	3.00	Full consumptive
2. Fuelwood	-	1 bundle = 15 kg	25.00	Full consumptive
3. *Mohula* flower	-	1 kg	5.00	Partially consumptive
4. *Mohula* seed (used for extracting *Tolo* oil)	Mustard oil (as substitute for Tolo oil)	1 litre	22.00	Partially consumptive
5. Sal leaf	-	1 bundle = 100 pairs	1.50	Full Productive
6. Reed	-	1 bundle = 40 reeds	16.00	Full Productive
7. Honey	-	1 litre	100.00	Partially consumptive
8. Food (roots, shoots, etc)	Potato	1 kg	3.00	Full consumptive
9. Bamboo	-	1 pole	75.00	Full consumptive
10. Other timber	-	1 piece of processed log	500.00	Full consumptive

Note: a. kg = kilograms

The analysis showed that the households in the two study villages derived high consumptive use value from the forest (Table 6). However, the consumptive use was more in Koshaka village with almost the entire landholding class deriving more than 90 per cent consumptive value to the total value of the products collected. Comparatively, in Gundurabari village the households derived some productive use value ranging between 10 and 40 per cent of the total value. Its predominant tribal population explains the better productive use value derived by residents of Gundurabari. It is a known fact that culturally tribal communities are gatherers, having a tradition of collecting and selling minor forest produce for their livelihood. However, what is interesting here is that, despite the

differences in their economic status, the households in both villages derived a high tangible flow of benefits from the forest. But the reliance on monetary transactions in the benefits appropriated by the households from the forest was less in both villages.

Table 6: Proportion of Consumptive and Productive Value from Forest to Households by Landholding Class

(In percentages)

Village	Size of landholding	Consumptive value	Productive value	Total
Koshaka	Marginal	93.18	6.82	100.00
	Small	94.93	5.07	100.00
	Medium	93.34	6.66	100.00
	Large	100.00 [a]	0.00	100.00
Gundurabari	Landless	71.72	28.28	100.00
	Marginal	61.22	38.78	100.00
	Small	67.11	32.89	100.00
	Medium	70.39	29.61	100.00
	Large	85.78	14.22	100.00

Note: a. The 100 per cent consumptive value derived is because the households collected only timber, permitted for domestic use.

Four categories of consumptive uses were identified in this study, namely, grazing and green fodder, food, fuelwood and timber including bamboo. In terms of its proportion to the total consumptive value derived, the dependency on the forest was more for livelihood purposes, particularly for food and fuelwood – the two basic needs for rural livelihood. The dependency on the forest for fodder was comparatively lower in both villages with emphasis being generally on dry fodder (stall-feeding), although the quantity of green herbage consumed through collection and grazing activities was relatively higher in Gundurabari. Considering the livelihood-centric consumptive nature of the dependency, the self-initiated strategy to conserve the forest was thus the community's response to a perceived threat to this important resource and a consequent desire to preserve the continued flow of benefits from it.

Institutional Conditions

The question that arises now is– what institutional provisions make individual members of a group cooperate and conform to the rules evolved for the common interest? The institutional conditions underlying group

cohesion for collective well-being was examined in the light of two important institutional provisions that studies have shown to have a strong bearing on user-group compliance with resource management strategies: (i) the provisions regarding leadership and communication; and (ii) the provisions for decision-making and rule formulation (Sekher 2001).

(i) Leadership: In the two study villages, the choice of leadership was determined by a process of informal selection through a procès-verbal system wherein the villagers gave their unanimous support to some villagers, based on their ability and the respect they enjoyed, to act as 'managers' in the resource management process. They constituted the executive body called the 'Jungle Committee', with a responsibility to manage and conduct the day-to-day affairs pertaining to the forest protected by the village. In Koshaka village five persons were assigned this responsibility to act as 'managers' including a sabhapati (president) and a secretary whose main responsibility was to maintain the record books. This record-keeping responsibility also involved keeping an account of the income generated from the forest through fines levied and proceeds from the sale/ auction of dead and broken trees to the locals for domestic use. At the time of this field study, the income record showed an income of approximately Rs.13, 000 in the 'jungle fund' of the village. The money from this jungle fund was used to give loans to the 51 households who constituted the user-group in this village, as and when they needed. On the other hand, in Gundurabari village, the 'Jungle Committee' comprised four members including the sabhapati. There was no position of a Secretary in this village as the practice of record keeping was almost non-existent (see Table 1). Whatever income was generated from the forest through fines levied and the occasional sale of timber was kept in the village temple fund for which no formal records were maintained.

Leadership qualities and the persons' willingness to pay a cost by continued positive contributions (mainly in terms of time expended) were the main consideration in selecting the leaders, irrespective of their social (caste) and economic background. Being poor peasant societies, the leadership qualities were community-defined, based on the larger group's assessment of the individual's ability to communicate and interact not only with the locals but also the outsiders (the visitors who may come to see and study the protected patch, and forest department officials). In other words, the communities had their own situation-specific reasoning which influenced their choice of the executive members. Their office term was flexible, depending on performance and the community's support. Invariably, discussions with villagers showed that the leaders

held office for more than one year until they themselves voluntarily stepped down, often in the face of strong public request not to do so.

One important fact about these village collectives is that women were not selected as executive members. Social restriction, arising mainly from the highly conservative patriarchal Orissian village society observed in the two villages, can be an important reason for their non-involvement in the management of the forest. Though the restriction on women's interaction with men outside their family was more evident among the forward caste households than in the socially backward households where women were also 'providers' for their family and went out to work, they generally enjoyed very limited public space in these backward village communities. However, this limited role of the women in the public sphere did not imply that they had no influence. Their influence was mainly indirect through their male counterparts who attended the meetings. Within their domestic domain, the women appeared to have a strong influence in family discussions and freely expressed their opinions that had some influence on the latter's public role (Box 3).

Box 3 : Indirect Influence of Women in the Indigenous Collective-Action Strategies

In Koshaka village, the sabhapathi voluntarily gave up his position in the Jungle Committee after holding office for many years in the face of immense pressure from the community to reconsider the decision. It was his wife who advised him to hand over his responsibilities to someone else in the village so that a new leadership is groomed and he would have some time to attend to urgent domestic needs arising from their daughter's marriage. In Gundurabari village, on the other hand, one of the key informants for this study was an elderly woman who frequently attended the village meetings and listened to the discussions. The villagers here openly expressed that her advice was often sought and even considered in resolving village problems.

(ii) Rule Formulation: A two-tiered decision-making structure existed in the two villages. The day-to-day affairs relating to managing the forest was the responsibility of the executive members. However, there was a general body, comprising one representative from each household in the village, mostly the household head, where all decisions regarding formulation of rules on utilisation and conservation of the forest were taken by consensus. This mechanism in the indigenous institutions provided the individual user-group members, and not only the leaders, the option of direct participation in core decision-making. This decision-making process had a bearing on the institutional provisions and the conformance of the group members to the rules that formalised the

groups' activities and responses. The rules were unwritten and were evolved by the villagers on the basis of their own indigenous knowledge and understanding of the resource condition and local needs (Appendix 1). It is thus obvious that an important institutional strength of indigenous strategies for resource (forest) management lies in its broad-based consultative, rather than representative leadership, wherein decision-making was consensus-based.

Participation in Resource Management

Analysed as an 'output' of the institutional conditions influencing rule preference and conformance, participation is seen here as the users' input in management activities, broadly categorised as implementation and enforcement activities. This assessment is based on the users' (each household) perception of their involvement in the various management activities ranked as 1, 3 and 5 such that stronger involvement corresponded to the higher value '5'; moderate involvement corresponded to the value '3'; and, low involvement to the value '1'. For each participation category (high, moderate and low) a mean score was arrived at.

Both the villages recorded high group involvement in almost all activities relating to the resource management (Table 7). High involvement was particularly observed in three activities, namely, (i) attendance in village meetings to discuss modalities of resource use and protection, which also acted as a platform for group members to not only get information but also to express grievances; (ii) conforming to the rule structure in support of the group initiative; and (iii) organising and undertaking activities to maintain the resource 'stock' (for example, protecting the forest from theft or natural calamities like forest fire). Almost total involvement of the members in these activities was observed in both villages amounting to about 95 per cent in Koshaka village and 100 per cent in Gundurabari village. This shows that self-initiated strategies of user-groups for managing scarce natural resources, involving a high level of group conformance with existing rules, provide an institutional base wherein there is high involvement of members in management activities implying high cooperation within the groups.

High-to-moderate level of involvement was observed in the members' assessment of their involvement in rule formulation activities. Although the members rate attendance in village meetings as high, their involvement in actual decision-making is rated as relatively moderate. This is because physical presence in the meetings did not necessarily suggest actual involvement in decision-making, though it provided a

system whereby the group members came to know about decisions taken, had an opportunity to express opinions in the ensuing discussion and grievances in the event of disagreement or discontent. Formulating rules and taking policy-decisions pertaining to the regulated resource use was basically limited to the executive members (the leaders), although they undertook this function in the village meeting in the presence of all concerned. This was viewed as a specialized activity by the larger public, comprising mainly illiterate peasants, involving a degree of 'expertise' acquired from an empathy with the local needs, and an accord with the larger concern for resource conservation – an 'expertise' presumed to be with the leaders.

Involvement in enforcement activities was rated as 'high' by the resource users in Koshaka village as against the group members' moderate involvement in this activity in Gundurabari. The low involvement in the second village was attributable to the absence of regularised enforcement mechanisms in the village. The situation was more institutionalised in the first village (for example, protection by rotation) necessitating regular involvement of all concerned. As regards 'involvement in liaison activities' (interaction with officials from forest department and other visitors/ authorities related to the forest), it is not surprising that it is rated as 'low' in both villages. The group members generally did not involve themselves in such outreach activity because of inhibitions arising from their own secluded existence, though they may all have made a physical appearance when there was a visitor to the village. It was normally left to the Jungle Committee members (mainly the sabhapati) to engage in liaison activities.

Table 7: Percentage of Household Involvement in Various Participatory Activities [a]

Participation Variables	Koshaka			Gundurabari		
	Low	Moderate	High	Low	Moderate	High
Involvement in Organizing Activities						
Rank on involvement in deciding appropriation guidelines	0.00	52.94	47.06	0.00	36.00	64.00
Rank on involvement in devising membership rules	0.00	47.06	52.94	0.00	44.00	56.00
Rank on involvement in devising entry rules	0.00	52.94	47.06	0.00	40.00	60.00
Rank on Involvement in leadership identification	0.00	56.86	43.14	0.00	32.00	68.00

Contd....

Participation Variables	Koshaka			Gundurabari		
	Low	Moderate	High	Low	Moderate	High
Involvement in Management Related Activities						
Rank on involvement in mobilization activities	13.73	54.90	31.37	40.00	48.00	12.00
Rank on attendance in village meetings	0.00	5.88	94.12	0.00	0.00	100.00
Rank on involvement through conformance with entry and use guidelines	0.00	1.96	98.04	0.00	0.00	100.00
Rank on involvement in organized group activities for resource maintenance	1.96	3.92	94.12	0.00	0.00	100.00
Rank on involvement in liaison activities	80.39	9.80	9.80	92.00	4.00	4.00
Contributions in monetary terms for the resource maintenance	1.96	52.94	45.10	96.00	4.00	0.00
Contributions in the form of labor for the resource maintenance	5.88	9.80	84.31	12.00	76.00	12.00
Involvement in Enforcement						
Rank on involvement in deciding penalties	1.96	31.37	66.67	0.00	24.00	76.00
Rank on involvement in information sharing	1.96	3.92	94.12	0.00	12.00	88.00

Note: a. Percentages are mean results and may not add up to 100 due to rounding.

The overall means scores of household perceptions of their involvement in various participation activities are shown in Table 8. The figures corroborate the above analysis, strengthening the argument that indigenous institutions of user-groups provide a basis for high user-involvement in the management process. The low rate of standard deviation indicates fewer inequalities in the participation process.

Table 8: Mean Score of Peoples' Involvement in Various Participation Activities

Activities	Mean	Standard Deviation
Participation in organizing activities	4.05	0.80
Participation in managing activities	3.65	0.56
Participation in enforcement	4.59	0.66
Over all	4.10	0.48

Conclusion: Rationalizing Self-Initiatives as Alternative Micro-Institutions for Resource Management

It would not be incorrect to presume that the locals have an innate desire to protect and conserve a resource system traditionally used by them and on which their livelihood depends. The foregoing analysis reveals that the self-evolved indigenous institution of users is a manifestation of this desire. It is, thus, a coalition of the willing where the cooperative behaviour of individuals is a kinship of need, cloaked by a resolve to preserve what is available and is presumed to be theirs. Within such homegrown institutions for collective resource management, as against institutions transplanted from outside, the group conformity to the rules for regulated resource use is a self-assumed mechanism of the community to enrich its collective capital.

The following is a configuration of possible requirements that can underlie robust indigenous institutions of user-groups for collectively managing their scarce natural resources used in the public domain:

- Subsistence-based local economy.
- A strong tradition of cooperative action that builds enduring social relationship.
- Multiple channels of involvement between group members based on indigenous knowledge, and locality-specific reasoning, traditions and understanding.
- Mutual assurance among 'rational' individuals in the community reinforcing cooperation so that the collective good becomes the accepted means for securing the individual good.

- A predominantly direct consumptive use value, rather than productive use value, derived from the resource by the user-group that has an emphasis on the local livelihood system.
- A rule-structure evolved by the community with emphasis on resource conservation coupled with provision (that is, a flow of benefits).
- Perceived flow of benefits by the group members and awareness that everyone loses out in the absence of cooperation.
- Community-defined leadership in the collectives and a consensus-based consultative decision-making process.

This list of requirements for indigenous institutions in local resource management is basically confined to the conditions internal to the group and constitutes its local enabling environment. It does not address the conditions external to the group like recognition of the groups and user rights by the government (the legal environment) and what Ostrom (1990) refers to as 'nested enterprises' – that is, the linkages between these self-evolved community-based institutions and others, both formal and informal. Nonetheless, the study illustrates that more than the nature of the community composition (whether homogeneous or heterogeneous), it is the nature of the group's dependence on the resource that is pivotal to the emergence of the self-initiatives, cemented by the pattern of inter-exchanges among members and a consultative decision-making structure.

It is true that the JFM programme in India, with massive foreign assistance, has succeeded in creating significant interest and awareness in forest management among rural communities. However, it has not met with similar success in building the bridge between the people and the forest department through collaborative forest management efforts, mainly because of a number of shortcomings inherent in the programme that have failed to generate a trust in the local communities for the programme. These are – lack of autonomy to government-engineered village forest committees constituted under JFM; failure to recognise the traditional rights of the people over the forest; and the system of sharing produce (timber) as end-product between the community and forest department, which is often not acceptable to the protecting community. Because of this there is often opposition by local forest protecting communities to becoming signatories of the JFM agreement with the forest department, as witnessed in a large number of cases in Orissa. On the other hand, where the communities have joined the JFM programme, their traditional rights, knowledge and institutions are buried under the

all-env**Notes**

[1] This paper has been developed from a study carried out during 2001 - 2002 under a Robert S. McNamara Fellowship award from the World Bank. The author acknowledges this support. The author is also grateful to the villagers of Koshaka and Gundurabari, Bubu Panda and his colleagues in the Jungle Suraksha Mahasanga, and Sanjoy Patnaik at the Regional Center for Development Cooperation, Bhubaneswar, for their support and help. The useful comments of the anonymous referees on earlier versions of this paper are also acknowledged.

[2] For an understanding of these resource-management regimes, see: Ciriacy-Wantrup and Bishop 1975; Ostrom 1990; Dasgupta and Maler 1997; Bromley 1992.

[3] There are definitional ambiguities about what constitutes 'institutions'. But the most common usage is to refer to them as formal rules and informal constraints (social norms, conventions and codes of conduct) and their enforcement mechanism (the structure) that shape individual behaviour and facilitate coordination among people aimed at achieving the desired outcomes (North 1991). For a brief description of 'what are institutions', see: World Bank 2002 (pages 6 and 7). In this study the words 'institution' and 'organisation' are used interchangeably.

[4] The word management implies a process of administrative and operational control to gain influence and meet specified goals, often with limited resources (Concise Oxford Dictionary 1998). This general definition involves a wide gamut of management systems, from simple rudimentary structures to highly structured and complicated forms. In this study, where the focus is on people managing natural resources, 'management' is used in its broadest sense to refer to unstructured and simple cooperative arrangements of resource user-groups.

[5] As per the State Forest Report 1999 (FSI 2000), the recorded forest area of India is 76.52 million hectares, which constitutes 23.28 per cent of the total geographical area of the country. The forest area has been classified into Reserved, Protected and Unclassed forests constituting 54.44 per cent, 29.18 per cent and 16.38 per cent of the total forest area, respectively. In Reserved forests all activities are prohibited, unless permitted. In Protected forests local villagers are allowed to exercise certain rights, unless prohibited. In Unclassed forests locals have free access. Interspersed within the recorded forestland, there are patches of 'revenue land' that can be privatised. While the ownership of forests rests mainly with the Government, in practice communities have *de facto* access to the states' Unclassed forests, rights and privileges in the Protected forests and limited access to Reserved forests. Contd....

[6] The JFM programme represents a historical shift towards decentralisation of forest management in India through the New Forest Policy of 1988. Coming into effect in June 1990, it involves a participatory forest management system between the village community (the resource users) and the State Forest Department. Under this system, the rules and regulations regarding protection of forest, formation of the village forest protection committee and sharing of the forest usufructs are laid down by the State Forest Department (at the village level this involves participatory management through 'government-engineered local organisations' called Village Forest Committees). For details on India's JFM programme see: Sarin 1995; FSI 2000.

[7] For a succinct review of collective action theorization for managing natural resources used as common-pool resources see: National Research Council 1986; Runge 1986; Olson, 1965; V. Ostrom and others 1988; E.

Rule Type	Rules-in-Use	
	Koshaka	**Gundurabari**
	10) No restrictions for user-group members on collection of minor forest produce and timber (a fixed quantity decided at village meeting) for domestic use	10) No restrictions on collection of minor forest produce for user-group members (collection of timber restricted)
	11) Neighbouring village communities permitted only collection of fuelwood, fodder and other non-timber produce. Timber collection for domestic use only on payment of a fee	11) Neighbouring village communities permitted only collection of fuelwood, fodder and other non-timber produce. Timber collection for domestic use only on payment of a fee
	12) No collection charges for user-group members for the allotted timber/ bamboo. Nominal fee for collecting timber in excess of the allotted quantity	12) Only collection of timber (for domestic use only) on payment of nominal fee
	13) Conflicts resolved by selected leaders at village meeting	13) Conflicts resolved by selected leaders at village meeting
Forest Protection Guidelines	14) Rotation basis	14) Social fencing
Enforcement Guidelines	15) Social ostracism and fines corresponding to offence	15) Social ostracism and fines corresponding to offence
	16) Regular and frequent village meetings to address community	16) Regular and frequent village meetings to address community

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[7] For a succinct review of collective action theorization for managing natural resources used as common-pool resources see: National Research Council 1986; Runge 1986; Olson, 1965; V. Ostrom and others 1988; E. Ostrom 1990 and 2000; Alston and others 1996.

[8] Rough estimates of the number of villages having indigenous forest protection, as reported during the field study by functionaries of the Regional Centre for Development Cooperation (RCDC), a local non-government organization working as a support organisation with forest protection communities in Orissa for several years. It is currently engaged in estimating the number of indigenous forest protection groups in the state.

[9] The total number of districts in Orissa has increased to 30 following district/ subdivision reorganisation between 1992 and 1994.

[10] The figures are as per the records of '*Jungle Surakshya Mahasangha*' – a networking forum of indigenous forest protection village groups at the district level constituted during the 1990s.

[11] Every year restrictions are imposed on collections for about two months after summer to allow for natural regeneration during the rains and also to prevent theft of fallen trees or trees burnt in the summer heat.

[12] In this analysis landholding of the villagers was taken as a proxy for household economic status.

[13] In this study, 1 US $= Rs.48, approximately.

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