Politics of Co-optation: Self-organized Community Forest Management and Joint Forest Management in Orissa, India

By

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A Thesis
Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
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THE UNIVERSITY OF MANITOBA

FACULTY OF GRADUATE STUDIES

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OF

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Abstract

The thesis considers the impact of introducing government co-management policy in the form of Joint Forest Management (JFM) in an area with a five-decade-old self-organized community forest management (CFM) system in Nayagarh District, Orissa, India. The objectives are: 1) to understand the nature of participation and the bundle of forest commons rights under community management vs. JFM arrangements; 2) to explore the impact of the shift from community management to joint forest management on cross-scale linkages and reciprocal rights; 3) to analyze the mechanisms by which decision-making power and control have changed, and effects of this on the adaptive ability of the community to resolve its own forest related problems. The objectives were addressed primarily through semi-structured interviews and focus group discussions along with participatory methods and tools.

The study compared the status of the bundle of forest commons rights and participation of local community members in the decision-making processes under both self-organized CFM and JFM, and the implications of this conversion for cross-scale linkages. Forest and institution management mechanisms developed under the self-organized CFM system were critical for both bundle of rights and peoples' participation. Two major changes were encountered: a) bundle of forest commons rights became restricted and the level of villagers' participation decreased moving from self-organized CFM to JFM; b) the self-organized CFM system had its own cross-scale links for reciprocal rights with other villages; JFM, by contrast, did not provide enough room for these linkages. The study also analyzed the status of decision-making power in the

context of CFM-JFM transition and its implications for equity. The thesis summarizes that the move was from a complex and diverse system of forest management under self-organized CFM to a simple and rigid system under JFM. It concludes that in addition to bridging the gap between policy and its implementation, the key issue was to make sense of the ways local community members perceive forest management and connect themselves to forests.

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CHAPTER ONE: Introduction

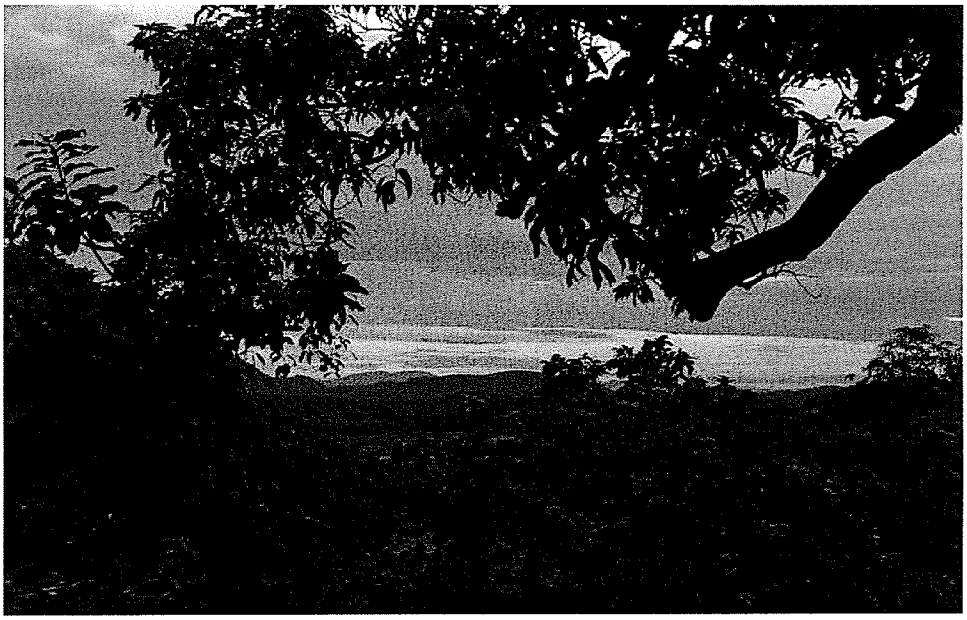


Plate 1: Contiguous hill ranges under community management

Plate 2: Community forest surrounded by agricultural land

The current context of natural resources management is characterized by an increasing involvement of local communities in managing the commons (McCay and Acheson 1987; Feeny *et al.* 1990; Ostrom 1990a; Bromley *et al.* 1992; Berkes *et al.* 2003). While there are still a number of challenges, the phenomenon of Community-Based Resource Management (CBRM) has already gained a unique position world over (World Resources Institute 2001; Nayak 2004). Community-based natural resource management is based on the premises that local populations have a greater interest in the sustainable use of resources than does the state; and that they are more cognizant of the intricacies of local ecological processes and practices; and that they are more able to effectively manage those resources through local or "traditional" forms of access (Brosius *et al.* 1998). In India, specifically, many communities have responded to the process of forest degradation by developing local arrangements that seek to regulate access and control over neighbouring forest patches (Saxena 1997; Sundar *et al.* 2001; Gadgil *et al.* 2003; Singh and Nayak 2003). How are these community institutions going to continue managing commons in the face of several challenges in the immediate as well as external environments?

In the recent decades a need has been expressed for a paradigm shift in the approach to environmental and natural resources management. An increasing focus on people-centered policies, bottom-up planning processes, and decentralized governance (Chambers 1994; Agrawal and Ostrom 2001) are seen as some of the key characteristics of this new paradigm. Such a move becomes obvious due to the ill effects of centralized control that led to massive resource degradation, alienation of resource users, and a

growing demand for a change in the approach in favour of community empowerment. This was indicative of the fact that the existing 'blueprint' approaches and strategies to natural resources management was increasingly being proved a misfit (Agrawal and Gibson 1999). The state regulated forest management in India, which remained biased towards a centralized and commercial focus for over a century, also had the same experience in this regard. Consequently, from the inception of state forestry in India, perceptive critics have argued for a democratization of resource control, for a correction of the commercial bias promoted by successive governments, and for a proper participation in management and decision-making by local user groups (Guha 2001).

The eastern state of Orissa, particularly, has a large number of self-organized Community Forest Management (CFM) initiatives that have been fairly effective in managing forests through local adaptive arrangements (Kant *et al.* 1991; Poffenberger 1996; Conroy *et al.* 2001; Sarin *et al.* 2003). These locally evolved arrangements possibly have insights to offer that have long been overlooked. Over the last decade there has been a constant tension between the self-organized CFM arrangements and the formal policy of the State of Orissa. Instead of building upon the tremendous potential offered by such community forestry initiatives, the state has sought to undermine these initiatives by restricting the local space for adaptive responses to changes in forest conditions and local environment. There is considerable tension in the process of formalizing the spontaneously evolved community forest management arrangements under the Joint Forest Management (JFM) framework. Steps to convert these local initiatives into JFM arrangements have adversely influenced the institutional sustainability of the CFM

arrangements. The paradox of limited success of state led devolution efforts and growing evidence of local community-based resource management arrangements demand closer scrutiny and analysis (Singh and Nayak 2003).

1.1 Initiation and development of Joint Forest Management in India

Large-scale degradation has been a turning point in the history of forest management in India. The inception of the process of forest degradation originally took place in the pre-Independence period when the British embarked on a series of land settlements followed by a process of marking, reserving and exploiting country's forests for commercial purposes. The advent of the forest department and formulation of the Indian Forest Act in the late 19th century institutionalized centralized administration and commercial focus in forest management (Gadgil and Guha 1993). Subsequently, independent India inherited the legacy of 'timber' and 'revenue' orientation from the British and continued with the same approach right till the third quarter of 20th century. Nayak (2003) observes that the exploitation of the forests for timber, the maximization of forest revenue, the centralization of the forest administration, and the exclusion of the local communities characterized this entire period. In the post-Independent India forests were seen as a source of capital to meet the developmental needs of the country, so they remained subject to the growing demands of urbanization, industrialization, agricultural land, increasing population. Consequently, vast tracts of forestland were degraded, reducing the total area of forest with continuous crown cover to less than 10 percent (Saxena 1997).

Forest degradation severely affected the rate of revenue generation by the forest department and the process of commercialization received a major set back. The worst impact of degradation, however, fell on the local communities who depended on forests for a variety of reasons, ranging from food and fuel to agriculture and animal husbandry. The areas predominated with forests and tribal population suffered badly due to the breakdown in the symbiotic relationship between the local people and their forests. Scarcity of fuel, shortage of food supply in terms of non-timber forest produces, short supply of leaf litter and manure for the croplands, end of water flow from the forests to the habitation and agriculture land not only led to the loss of livelihoods but also adversely affected the ecological environment. At this juncture, many villages took a collective decision to actively protect the adjacent degraded forest areas. The protection initiatives by a few encouraged other villages and soon thousands of hectares of forestland came under de facto community protection and management.

Around this time, there was a growing international concern on the pace of environmental degradation worldover. Various conferences and conventions adopted policy resolutions asking nation states to initiate immediate steps to halt the processes of degradation. Some of the important developments include the UN Conference on the Human Environment, Stockholm (1972), Brundtland Report - World Commission on Environment and Development (1987), Rio Earth Summit - United Nations Conference on Environment and Development (1992) which created pressure for significant policy changes pertaining to environmental governance. India was no exception and it had to commit itself for better environmental policies as a member of the United Nation.

A beginning was made in India with the formulation of the National Forest Policy, 1988 which laid the foundation of a more inclusive and decentralized process of forest management. It made a radical departure from the earlier focus of forest administration by recognizing that commercial forestry with a bias toward timber and revenue had not yielded any significant results. It shifted the focus of forest management from a highly timber and revenue orientation to "ensuring environmental stability, the maintenance of ecological balance and meeting the subsistence requirements of the local people" (National Forest Policy 1988). On the importance of ecological balance the policy states: "the principal aim of Forest Policy must be to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium which are vital for sustenance of all life forms, human, animal and plant. The derivation of direct economic benefit must be subordinated to this principal aim." Further, it focuses on local subsistence needs by stating: "The life of tribals and other poor living within and near forests revolves around forests. The rights and concessions enjoyed by them should be fully protected. Their domestic requirements of fuelwood, fodder, minor forest produce, and construction timber should be the first charge on the forest produce" (National Forest Policy 1988: Para 4.3.4.3). It aimed at "creating a massive people's movement" for achieving the objectives of participatory forest management and to minimize pressure on existing forests.

Following the footsteps of the National Forest Policy the Central Government issued more concrete guidelines in 1990 directing all the state governments to formulate guidelines on initiating participatory forest management. The Central Guidelines set the

objective for "involvement of village communities in the regeneration of degraded forestlands through institution building, community participation and access to usufructory benefits". This has unfolded a new forest management regime in India, which is commonly known as the Joint Forest Management.

The Government of Orissa responded to the National Guidelines by issuing a circular in 1993 which laid down the format for operationalising community involvement in the management of forests. However, the JFM guidelines did not create enough space for accommodating the existing Self-organized CFM groups (Guha 2001). Consequently, either parallel institutions were created in places where the self-organized CFM groups were in existence, or the self-organized institutions were converted into the formal Joint Forest Management. In practice such a move translated into structural, functional and normative alterations in the community institutions by redefinition of user groups and membership on the basis of revenue boundary, redistribution and reallocation of forest areas among communities thereby breaking the traditional resource boundaries, creation of confusion on allocation of forest benefits, and changes in the forest management focus. With these implications JFM soon created more confusion than establishing a system of partnership-based participatory management.

There were two specific effects of this transition on the self-organized CFM arrangements. One, the inherent strength of these systems to innovate, respond to crisis and their capacity to self-organize through processes of learning and adaptation received a set back. Two, their interactions and linkages with other villages and institutions were negatively affected. While there have been a few successes in some parts of the country,

there are concerns that JFM has not been able to reconcile conservation goals with livelihoods and welfare concerns. Recent studies indicate that JFM has not resolved continuing issues of state accountability, power asymmetries between the state forest departments and rural communities, power-inequalities within communities, and issues of equity and tenure (Saxena 1997; Sarin 2001; Sundar *et al.* 2001; Sarin *et al.* 2003; Singh and Nayak 2003). Therefore, one must remain alert to the contested and changing varieties of cultural and political agendas and contexts in which these programmes are being imagined or implemented (Brosius *et al.* 1998).

1.2 Purpose of the research and problem analysis

Why should a state that had so vehemently practiced top-down forest administration for over a century break away from its traditional centralized approach and embark on a process of participatory forest management? There is a growing perception that JFM is a governmental strategy to reinforce control over the forests that had increasingly moved towards a de facto management by local communities in the last few decades (Guha 2001; Sarin *et al.* 2003). Initially, the forest department did not interfere because the lands were so degraded that they doubted they would ever regenerate (Nayak 2003). Communities learnt from each other and soon large tracts of forestland were brought under their protection and management. Factors that came handy in the emergence of CFM on such a large scale included high dependence on forests for livelihoods and subsistence, presence of other village institutions and strong social capital for collective action, the lack of day-to-day presence of the Forest Department particularly in revenue forests, and the ripple effect that led villagers to emulate

neighbors who initiated forest protection (Sarin *et al.* 2003). Other studies not only support these factors but also emphasize the presence of village institutions, and their prior experience with managing common property resources, as major factors contributing to the emergence of CFM (Kant *et al.* 1991; Singh & Singh 1993; Jonsson and Rai 1994; Sarin and Rai 1998; Conroy *et al.* 2000).

Nayak (2003) observes two major developments during this time: "One, by their continued involvement in forest protection the communities not only developed critical stakes in the forests, but also realized that in order to sustain their forest management systems, the government had to grant specific rights concerning forests and its tenure. Two, the growing demand for secure forest rights had become a major concern for the state forest departments. From the forest department's view point it was clear that they were slowly losing control of the forests and that it would not be possible to reverse the trend unless immediate steps were taken to 'stop the rot'." This provided an immediate backdrop for formulation of a forest co-management policy in the shape of JFM. Thus, set in a larger policy and historical context, devolution policies emerge as a further extension of state control, at best a meager palliative for mobilized forest users, rather than a real move towards greater democracy, improved local livelihoods, and healthier forests (Sarin *et al.* 2003).

Guha (2001) aptly summarizes the intensions of the government in formulating the JFM policy by stating: "one serious problem with the JFM model, as currently promoted by the state and donor agencies, is that it allows the constitution of village

forest committees only on forestland with less than 40 percent crown cover. This is a deeply constricting rule, which reserves to the state, and the state alone, exclusive rights over the best-clothed lands of India. Thus forests situated close to hamlets cannot come under JFM regimes if they have more than 40 percent tree cover. Again, the regulations, strictly interpreted, would mean that if local communities were to effectively protect and replenish degraded lands, such that the crown cover was to come to exceed that magic figure of 40 percent, the state could step in and remove the area from JFM - which would be a perverse disincentive. Nor have changes in policy and orientation been accompanied by concomitant changes in legislation. Thus, the present regime is not flexible enough to allow for spontaneous community-initiated forest regimes to exist along with more orthodox JFM regimes."

Other studies have also made similar remarks. Some fear that JFM may provide an opportunity for forest departments to strengthen their control, co-opting NGO and community-based grassroots attempts to protect forest resources. They point to the reluctance to grant greater rights to forest protection groups, especially where forests are healthy and valuable (Poffenberger and Singh 1996). Thus, the Ministry of Environment and Forests (MoEF) has found it possible to support JFM on some land and simultaneously retaining other forestland as captive sources (Sundar and Jeffery 1999). A co-management approach like JFM also, of course, involves legal challenge to the structure or powers of forest departments, who expect to retain legal title to all the forests they currently own, including those managed under JFM (Poffenberger and Singh 1996). Consequently, in some parts of India, the Forest Department is casting a covetous eye on

areas well protected by village communities (Guha 2001) thereby unfolding a process of cooptation instead of an originally intended cooperative management of forests.

Given background, the overall purpose of the proposed research was to study the transition of self-organized CFM to formal JFM arrangement and its implications for institutional sustainability. Specifically, the elements, such as rights and participation were analyzed to understand their nature and level under both the community as well as JFM arrangements. The research examined the implications of this transition for the cross-scale institutional linkages, power relations and the adaptive capacity of the community institutions. It also addressed some of the policy gaps in linking community-based management with policy initiatives.

1.3 Objectives of the research

Broadly, the study focused on "what happens to the institutional processes when the self-organized CFM arrangements are co-opted into State sponsored JFM"? It analyzed the influence of such cooptation on the adaptive management processes with specific reference to community empowerment, i.e., peoples' ability to make decisions on matters that affect their lives. In this regard, the research focused on the changes in local power and control concerning forests due to the transition from community management to JFM and any effects it had on the adaptive capacity of communities to deal with forest related problems. An important aspect of the research was to examine the impacts of the CFM to JFM shift on cross-scale institutional linkages.

In order to achieve the overall purpose of this research, there were three specific objectives:

Objective 1: To understand the nature of participation and the bundle of forest commons rights under community management vs. JFM arrangements.

Objective 2: To explore the impact of the shift from community management to joint forest management on cross-scale linkages and reciprocal rights.

Objective 3: To analyze the mechanisms by which decision-making power and control have changed, and effects of this on the adaptive ability of the community to resolve its own forest related problems

1.4 Study area and the setting

The study was conducted in the State of Orissa, situated in the eastern coast of India. Specifically, the study village is situated in the Ranpur block (an administrative unit) of Nayagarh district. It lies at a distance of approximately 73 kms towards south from the capital city of Bhubaneswar.

Orissa is situated on the eastern coast of India, with a tropical climate. The principal forest types are: tropical moist deciduous, tropical dry deciduous, tropical semi-evergreen and sub-tropical broad-leaved hill forests (Orissa State Gazetteer, Vol. III 1990). Forest constitutes around 47000 sq. km (38%) of the total geographical area of the

state. As per the Forest Survey of India report (1999), Orissa has a total of 46,989 revenue villages, out of which 29,302 villages have their own forest areas. A total of 17,79,953 hectares of forest are situated within the revenue boundary of these villages. Apart from these revenue forests, about 12,000 villages have Reserve Forests adjoining their revenue boundary. However, continued degradation has reduced the actual forest cover in the State to about 12 percent at present (Rao 1999).

The advantage of having vast forest areas close to their homes has favorably influenced the communities to take up protection and management activities. Initiation of forest management by communities was primarily a result of large-scale destruction of forests leading to loss of forest-based livelihood. Important species of value to local people include: *Shorea robusta, Terminalia tomentosa, Terminalia arjuna, Diospyros melanoxylon, Anogeissus latifolia and Madhuca indica.* The forest types, their species composition, rainfall, and, especially, the presence of root-stocks in the degraded forests that are capable of coppice and sucker regrowth, make regeneration of degraded forestlands easy and reliable when facilitated by community protection.

Community Forest Management is generally understood as 'the active protection of a forest area and regulation of its use by a community' (Conroy *et al.* 2001). Orissa has more than ten thousand self-organized Community-based Forest Management arrangements, perhaps more than anywhere else in the world of comparable size. A large proportion of these have been in existence for more than 20 years - some for as long as 40 - 50 years. Available literature suggests that in some cases village communities in Orissa

initiated forest protection as far back as the 1930's (Sundar *et al.* 1996). Forests are an important livelihood and subsistence source for the people living in forest rich areas, and most of these villages derive more than one-fifth of their total monetary income from the sale of forest products (Vasundhara 1998). Another study calculated the income from forests for four sample villages in forest rich areas, and concluded that the village households obtained 26.4% to 68.5% of income from forests (Singh 1997).

1.5 Organization of the thesis

The thesis is organized into five main chapters. Following this introductory **Chapter 1**, I present a review of literature (**Chapter 2**) that helps to put community-based resource management in perspective and outlines the main lessons important for the purpose of this study. It is specific in its focus on preparing the conceptual and theoretical base of the research and analysis of its outcomes. **Chapter 3** outlines the methodological approach to the research and the various methods and tools used in the study. It discusses the guiding principles, sampling and sources of data collection, conceptual frameworks used, various participatory methods and tools used in collecting data, and the process of analysis following the fieldwork. The chapter concludes with a brief description of some of the challenges and limitations faced in the field and during data analysis.

Chapter 4 begins with a description of the unfolding of self-organized CFM arrangement in the study village and the process of its shift to JFM. It then presents analysis of the outcomes of the study in relation to the three study objectives. The

specific components of this chapter include: one, it compares the status of the bundle of forest commons rights and participation of people in the decision-making processes under both self-organized CFM and JFM; two it examines the implications of CFM to JFM conversion for cross-scale institutional linkages; three, it presents the perceptions of people on what constitutes power within the context of community-based forest management and discusses the mechanisms through which local power and control have changed, and the extent to which this change has influenced the adaptive abilities of the community.

In **Chapter 5,** I discuss some of the main findings based on the specific objectives of the study and present alternate options for strengthening the policy and practice of community-based forest management and forest co-management.

CHAPTER TWO:

Community-Based Resource Management in Perspective

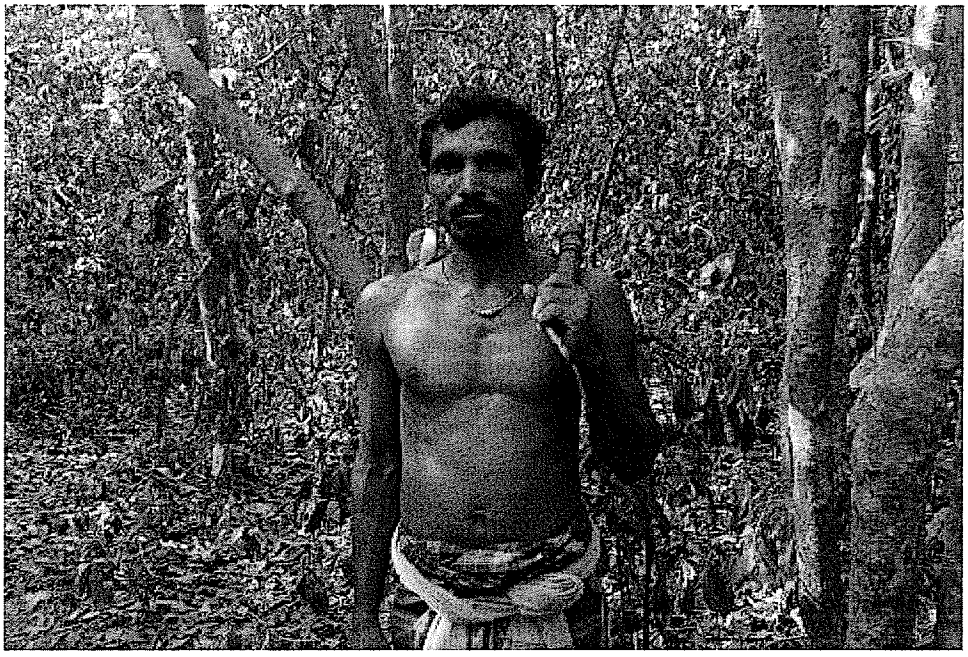


Plate 3: Community forest watcher of Gadabanikilo on duty

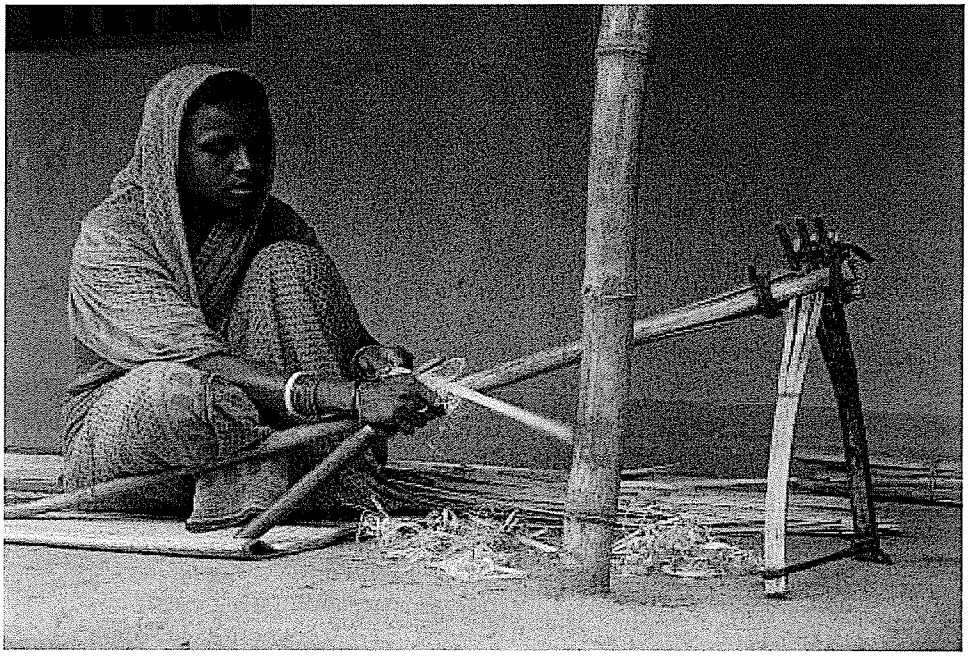


Plate 4: Bamboo weaving is an important livelihood activity

2.1 Commons, Property Rights and Complex Systems

2.1.1 Community forests in commons debate

Common property resources have two important characteristics: a) exclusion or the control of access of potential users is difficult, and b) each user is capable of subtracting from the welfare of all other users (Feeny *et al.* 1990). In the context of community forest management excludability and subtractability have remained a much controversial issue. Forests have remained under two broad legal categories in India. One, reserved forests, those under the exclusive control of the state and managed under the State Forest Act of 1972, where any involvement of the public is prohibited by law. The reserved forests are located outside the revenue boundary of the village. Two, revenue forests, those under the control of the revenue department but allow significant access and usufruct rights to the communities, which are located within the revenue boundary of the village. Consequently, it is easier to define access in the revenue forests thereby making genuine exclusion eminently possible and, in most cases, mutually acceptable across communities. However, in the reserved forests, due to its location and historical ambiguity of community access rights, exclusion is often conflict ridden. Therefore, the physical nature of the resource is such that controlling access by potential users may be costly and, in the extreme, virtually impossible (Feeny *et al.* 1990).

Even though, in such situations, historical dependence and proximity factors often influence the decisions regarding who has greater access to which forest areas, there is inherent confusion associated with this. The underlying factor which influences a clear decision regarding boundaries of forests between communities is the historical

phenomena of most forests being exclusively owned by the state. In essence, forests are still held under the state property. Thus, a transition from a complete state ownership to greater community access obviously leads to several confusions pertaining to who is in and who is out. While excludability or control of access is already an important characteristic of commons, such historical and current phenomena pertaining to ownership regimes make it more critical for the CFM institutions to deal with membership issues. Consequently, exclusion of beneficiaries (users) through physical and institutional means becomes especially costly (Ostrom *et al.* 1999) and not free from contestations.

Confusion on who should be included and who should not apparently leads to uncertainties on who is eligible to subtract and how much from the forest resources. In majority of the cases CFM begins from degraded forests where the chances of any significant benefit flow remains low at least in the initial few years of protection. However, competing tendencies for resource exploitation makes each user capable of subtracting from the benefits of other users. The threat that exploitation by one user may reduce resource availability for others (Ostrom *et al.* 1999) drives this competition among all the users in a community forestry situation. Moreover, the diversity of resource needs by the several of social and economic groups within the community has implications for the notion of subtractability, which, in this circumstance, would mean that the nature of resource exploitation by one particular group may not only affect the quantity of resources available to the other groups but also the quality of such resources. Owing to the degraded state of the forest under community protection and its long gestational

growth period to be able to provide a range of products and services, it could be concluded that "even if users cooperate to enhance the productivity of their resource the nature of the resource is such that the level of exploitation by one user adversely affects the ability of another user to exploit the resource (Feeny *et al.* 1990).

Dealing with the two problems of excludability and subtractability makes the common property management systems complex. Berkes (2004) has suggested that commons management should be understood as the management of complex systems. This implies that complexities make it necessary for common property management to operate at multiple levels.

2.1.2 Forest commons and property rights

In the literature distinction has been made between four different categories of property regimes within which common property resources are held: open access, private property, communal property, and state property (Berkes and Farvar 1989; Feeny *et al.* 1990). Open access is the absence of well-defined property rights where access to the resource is open to everyone. Individual rights to exclude others and regulate the use of the resource are known as private property. Under state property, rights are vested in the government to decide access to and levels of exploitation of the resource. Communal or common properties are held by an identifiable community of interdependent users who exclude outsiders while regulating use by members of the local community (For a detailed discussion on categories of property regimes see Berkes and Farvar 1989; Feeny *et al.* 1990; McCay 1987; Bromley 1992; Ostrom 1990a).

It is clear from the distinction of property regimes that each category of property enjoys a set of rights that differentiates it from the others. In regard to the use of common property resources, Ostrom and Schlager (1996) have discussed five types of property rights:

1. **Access:** The right to enter a defined physical area and enjoy nonsubtractive benefit.
2. **Withdrawal:** the right to obtain the resource units or "products" of a resource.
3. **Management:** The right to regulate internal use patterns and transform the resource by making improvements.
4. **Exclusion:** the right to determine who will have an access right, and how that right may be transferred.
5. **Alienation:** The right to sell or lease either or both of the above collective-choice rights.

Ostrom and Schlager (1996) make an interesting observation that individuals or collectives may, and frequently do, hold well-defined property rights that do not include the full set of rights listed above; but to hold some of these rights implies the possession of others as, for example, the exercise of withdrawal rights is not meaningful without the rights of access; alienation rights depend upon having rights to be transferred. Consequently, they discuss the importance of a 'bundle of rights' rather than any single right (See **Table 1**).

Table 1: Bundles of rights associated with positions

Property Rights	Owner	Proprietor	Claimant	Authorized user	Authorized entrant
Access	X	X	X	X	X
Withdrawal	X	X	X	X	
Management	X	X	X		
Exclusion	X	X			
Alienation	X				

Source: Adapted from Schlager and Ostrom (1992:252); Ostrom and Schlager (1996)

The Research analyzed the status of these five property rights under the JFM regime. Several studies have indicated that JFM only allows limited or negligible property rights to the forest managing communities whereas important rights, such as tenure rights, are grossly absent from this arrangement (Poffenberger and Singh 1996; Guha 2001; Sarin *et al.* 2003; Kumar and Kant 2005). Consequently, the existing rights are proving meaningless and ineffective. Moreover, there is an emphasis in the JFM related literature on the differences between the policy and actual practice of participatory forest management in India (Jodha 2001; Sundar and Jeffery 1999; Edmunds and Wollenberg 2001; Sundar *et al.* 2001). Pertinently, how the property rights and the position of the village communities may differ both under the policy as well as actual implementation of JFM was explored. In this context, the research addressed issues such as: What are the property rights available under JFM? What are the missing property rights and what are some of the implications of these missing rights for the full realization of the existing property rights as well as for general forest governance? In making this analysis the framework of 'bundle of rights', as advocated by Ostrom and Schlager (1996), was useful in conceptualizing the overall status of property rights under

JFM regime and their implications. Comparatively, an assessment was done to ascertain the status of these property rights under the self-organized CFM systems. Additionally, data were collected to comprehend what are some of the desirable property rights for strengthening community-based forest management systems.

2.1.3 Principles and conditions for commons management

Several scholars have provided explanations for commons' management to succeed. However, the most common explanation pertains to the building of a strong community institution as a precursor to other activities. Ostrom (1990b) suggests a number of preconditions that needs to be commonly shared among users before the initiation of collective action. They include: (1) individual exploitation will seriously harm a resource which is important to all of their survival; (2) the opportunity exists for them to coordinate their resource utilization in order to prevent the degradation to the common-property resource; (3) those participating in the management organization can trust other members to abide by the agreed upon rules, in other words trusting others not to cheat the system; (4) the costs associated with participating in the common-property management institution is less than the benefits which members can expect as a result of their participation. Based on her long-standing work with community institutions, Ostrom (1990a) offers a set of eight design principles that are critical for long enduring common property institutions. They are as follows: Clearly defined boundaries, Proportional equivalence between benefits and costs, Collective-choice arrangements, Monitoring, Graduated Sanctions, Conflict-resolution mechanisms, Minimal recognition of rights to organize, Nested enterprise.

Agrawal (2002) has analyzed the comprehensive work of Wade ([1998] 1994), Ostrom (1990) and Baland and Platteau (1996) on theoretically informed generalizations about the conditions under which groups of self-organized users are successful in managing their commons dilemma. He examined the robustness of their conclusions by comparing them with findings that a larger set of studies of the commons has identified. Agrawal (2002) records more than 40 critical enabling conditions for sustainability on the commons under broad categories such as resource system characteristics, group characteristics, institutional arrangements, and external environments. The large number of variables potentially affecting the sustainability of institutions that govern common resources has important theoretical implications for the research.

2.1.4 Forest commons and complex adaptive systems

Complex Adaptive Systems theory provides a strong conceptual base to analyze the complexities involved in both social-ecological systems, and helps in understanding processes of change, learning and adaptations. Complex adaptive systems are defined as "systems with inherent uncertainty in their dynamics that tend to have multiple stable states and that exhibit self-organization" (Resilience Alliance 2004). A complex system often has a number of attributes that are not observed in simple systems, including nonlinearity, scale, self-organization, uncertainty and emergence (Levin 1999; Gunderson and Holling 2002; Berkes *et al.* 2003). These attributes of a complex adaptive system not only make the system healthy but also lead to the emergence of certain important properties. Resilience is one such emergent properties of a complex adaptive system, one that cannot be predicted or understood simply by examining the system's parts.

Resilience is the ability of complex systems to absorb shocks, self-organize, learn, and adapt to change (Berkes, 2003; Berkes *et al.* 2003). Holling (1986) referred to a system's resilience as a critical factor in environmental management.

The attributes of a complex adaptive system are inherent in the management of forest commons. Forest ecosystems remain subject to severe natural variations, and are characterized by cycles of growth and depletion which make them both unpredictable and uncertain. The management of forest occurs at multiple scales and the management options vary widely depending on the context. A forest ecosystem has a tendency to reorganize at critical points of instability thereby making self-organization its defining property. One thing that remains crucial in the realization of all these complex system attributes by forest commons is a high level of integration between the social-ecological systems. Borrowing from the experiences of Berkes (2003) in the management of small-scale fisheries, the forest commons may be termed as complex systems of humans and nature, the management of which is an interdisciplinary subject.

2.2 Cross-scale Linkages and Resilience

2.2.1 Cross-scale linkages and panarchical relations

Scale refers to more appropriate structures and levels of governance which focus on the match and mismatch between the scale of a management institution and the scale of the ecosystem (Berkes 2003). Scale is critical in natural resource management because it defines the scope of an issue and also affects people's understanding and perception of natural and social systems (Hull *et al.* 2002). Scale has three important facets: spatial

(dealing with physical extent), temporal (refers to a specific time period), and organizational (pertains to the scope of management activities and institutional hierarchy). One of the biggest challenges in addressing natural resource management problems is the mismatch between organizational scale and spatial or temporal scale of the problem (Cash and Moser 2000). Additionally, most environmental problems do not maintain any distinct spatial or temporal scale; rather they tend to occur at multiple scales. This has greater implications for natural resources management.

All complex systems are hierarchically scaled (Berkes *et al.* 2003). Consequently, the adaptive cycles function in a complex interdependent and interlocked manner instead of being independent of each other. The cycles occur at a number of scales and the social-ecological systems exist as *panarchies* – adaptive cycles interacting across multiple scales (Walker *et al.* 2004). Holling (2001, p. 396) defines *Panarchy* as "a representation of a hierarchy as a nested set of adaptive cycles." It is used to capture the dynamics of adaptive cycles that are nested within one another across space and time scales (Gunderson and Holling 2002; Holling 2001). The concept of *panarchy* is important as it illustrates clearly how smaller faster cycles may intervene in larger, slower ones through the 'revolt' connection as a result of collapse in the smaller system; and how slower larger cycles may intervene in smaller, faster cycles through the 'remember' connection (Holling 2001). The 'revolt' connection between scales can cause a critical change in one cycle to cascade up to a stage in a larger and slower one. The 'remember' connection facilitates renewal and reorganization by drawing on the memory that has been accumulated and stored in a larger, slower cycle (Berkes *et al.* 2003). In this way, the

smaller, faster cycles may act as agents of change and innovation within an ecosystem and the larger, slower cycles act as a buffer which protects the ecosystem across multiple scales from destabilization (Holling 2001). *Panarchy*, therefore, is both creative and conservative, and allows the systems in question to reach sustainability (Holling *et al.* 2002). These cross-scale effects of *panarchy* are of great significance in the dynamics of social-ecological systems (Walker *et al.* 2004).

The cross-scale angle is relevant, particularly to the study of cooptation of local institutions by higher-level government organizations under what is known as a forest co-management arrangement. Berkes (2002) observes that commons literature is full of examples of the impact of the state on local institutions which includes centralization of decision-making; shifts in systems of knowledge; colonization; nationalization of resources; increased participation in national and international markets; and national-level development projects. Recently, commons literature has developed on forms of institutions with potential for cross-scale linkages. The research drew substantially from these theoretical observations such as impact of higher scale on lower scale, and forms of commons institutions to deal with these cross-scale problems.

2.2.2 Resilience

Resilience is an emergent property of complex systems, i.e. a property that cannot be predicted or understood simply by examining the system's parts. Resilience, as applied to integrated systems of people and nature, is a measure of (a) the amount of change the system can undergo and still retain the same controls on the functions and structure; (b)

the degree to which the system is capable of self-organization; and (c) the ability to build and increase the capacity for learning and adaptation (Resilience Alliance 2004). Berkes (2002) observes that resilience is a crucially important property of a system because the loss of resilience moves a system closer to a threshold, threatening to flip it from one equilibrium state to another. Use of resilience is based on the assumption that cyclic change is an essential characteristic of all social and ecological systems.

The level of resilience in a system significantly influences its vulnerability. A system which is more vulnerable may still function and appear to be normal, however, when subject to disturbances or shocks these systems are more likely to shift into another, possibly less-desirable, state (Folke *et al.* 2002). As a system loses its resilience, it can flip into a different state when subjected to even small perturbations (Levin *et al.* 1998). Thus, resilience is concerned with the magnitude of disturbance that can be absorbed or buffered without the system undergoing fundamental changes in its functional characteristics.

Management actions have the capacity to alter the characteristics of a social-ecological system and, as a consequence, can alter the resilience of social-ecological systems (*Folke et al.* 2002). Resilience is an important element of how societies and institutions may adapt to both internally and externally imposed challenges. This is particularly true in the context of community-based forest management systems where the instances of such challenges are not only high but also frequent, making these local systems susceptible to change. What may be critical in making these institutions long

enduring is building and maintaining required levels of resilience. Because, the greater their resilience, the greater is their ability to absorb shocks and perturbations and adapt to change (Berkes *et al.* 2003). Conversely, the less resilient the system the greater is the vulnerability of institutions and societies to cope and adapt to change (Adger 2000). Resilience thinking is particularly relevant to this research as it "helps to look beyond institutional forms, and ask instead question regarding the adaptive capacity of social groups and their institutions to deal with stresses as a result of social, political, and environmental change" (Berkes 2002).

2.3 Politics of Cooptation, Participation, Power Relations and State-Community Interface

2.3.1 Politics continues: Cooptation is the key

In India, the debate between centralization and decentralization in forest administration is as old as state forestry itself. Guha (2001) aptly summarizes this debate into three distinct phases. First, "politics of blame" where the forest officials and the local communities held each other responsible for forest degradation. Second, "politics of negotiation" that brought the forest department and its critics somewhat together to see each other's point of view and seek acceptable solutions. Third, 'politics of collaboration" where the previously authoritarian government officials joined with previously suspicious villagers to successfully regenerate degraded forest areas. However, this trend did not end with the visualization of a final phase by Guha, what he termed as the "politics of partnership" in the forestry debate of India. What we are increasingly witnessing is a more intense and overarching process that can be termed as

"politics of cooptation" where the state machinery superimposes, through the instrument of JFM, alien institutional structures and rules over the already existing local arrangements thereby making it possible to regain control over the vast forest areas that are already under the de facto management of communities. Unfortunately, devolution policies have largely reinforced state control over forest users, giving the relationship new form rather than changing its balance of power or reducing the conflict between state and local interests. The reassertion of Forest Department control over local initiatives represents an extension of centralization rather than any devolution of authority and entitlements to local levels (Sarin *et al.* 2003).

2.3.2 Decentralization and participatory management

Recognition of community-based forest management entails further democratization and decentralization in the way forests have been governed to date. This has implications for both present as well as future processes concerning the governance of forests. This in essence means a "highly political process since it seeks to redistribute power and resources within the territorial confines of a given nation-state" (Agrawal *et al.* 1999:2). It could be more critical in the context of tropical forests not only because of the history of colonial rules and extreme centralization of forest governance (Murali 1995; Gadgil and Guha 1993) but, as observed by Thornber *et al.* 1999, the rights and obligations here are often tangled and unclear. Consequently, in such situations, agreement and consensus is often more essential for action than is scientific insight. McCool and Stankey (2001) further this argument by stating: "there needs to be a political agreement on what and how it should be managed."

Undoubtedly, achievement of political agreement and consensus largely depends on the form and level of participation by all stakeholders, which has remained a much-contested term in natural resources management. Focusing on the distortions in the way participation has been effected, Agarwal (2001) refers to it as "participatory exclusion" (that is exclusions within seemingly participatory institutions) which often stem from systemic factors and can, in turn, unfavorably affect both equity and institutional efficiency. While stressing on the perspective of who participates, what effect this has, and what factors constrain participation, she outlines a typology of levels of participation that includes six different types of participation as outlined in **Table 2**.

Table 2: Typology of participation

Form/Level of participation	Characteristic features
Nominal participation	Membership in the group
Passive participation	Being informed of decisions ex post facto; or attending meetings and listening in on decision-making, without speaking up
Consultative participation	Being asked an opinion in specific matters without guarantee of influencing decisions
Active-specific participation	Being asked to (or volunteering to) undertake specific tasks
Active participation	Expressing opinions, whether or not solicited, or taking initiatives of other sorts
Interactive (empowering) participation	Having voice and influence in the group's decision

Source: Adapted from Agarwal (2001:1624)

In its narrowest sense, participation could mean only a nominal membership, and at its broadest sense, it implies a dynamic interactive process in which the members have voice and influence in decision-making. Using the above framework the processes of "participatory exclusions", resulting from the cooptation of self-organized Community Forestry systems into JFM, was analyzed to understand its major determinants, implications, and ways of how participation could be made more inclusive.

2.3.3 Power relations and state-community interface

Another important area within the discourses of community-based forest management pertains to the power relations between actors and the resulting complexities in defining access and control, and building effective checks and balances. Power is the ability to influence processes by which individuals create rules, make decisions, implement and ensure compliance, and adjudicate disputes. This in itself is critical for effective decentralization which depends not only on opportunities to access power but also on the context, including the social situation and related institutional arrangements in which power is exercised (See Agrawal and Ribot 1999). Applied to the arrangement of participatory forest management in India, the policies focus on formalized opportunities to influence power relations both within and between the communities as well as between community and the state departments. However, these policies actually provide little scope for achieving effective power balance among all the stakeholders and the format of checks and balance heavily tilts towards government control. The examination of certain important questions within the existing forest management scenario may provide a better understanding in this regard. Some of those questions include: What are the various agendas? Who are the key actors? Who has the control?

Ribot and Peluso (2003) have argued that property relations constitute only one set of mechanisms amongst many by which people gain control, and maintain resource access. They move beyond the "bundle of rights" notion of property to a "bundle of power" approach to access and have advocated for locating these "powers" within the

social and political- economic contexts that shape people's abilities to benefit from resources. Therefore, effective community-based forest management here would imply the unfolding of processes and mechanisms, both at local as well as policy levels, which not only address consolidation of power across scales but also facilitate positive power relations and autonomy for the exercise of power by stakeholders in their specific contexts.

Community-based forest management increasingly swings towards local and pragmatic issues and concerns (See Gale and Corday 1994; Wijewardana *et al.* 1997). It means creating governance regimes that not only empower communities but also create several enabling processes and conditions for the present as well as future management of forests. It certainly should promote an environment that facilitates the interaction and negotiations between the various forces within the society and often help them to create common ground for moving ahead rather than getting stuck on controversial issues. Such conditions should enable better negotiation processes involving community to community and community to government dialogues.

The notion of community-based forest management has critical connotations for minimizing centralization, rationalizing control and access in favour of user communities, building consensus and positive power relations, addressing equity issues, and bringing in place unambiguous and people centered policies. Such a move would lead to stronger institutional relationships and make the governance systems flexible thereby promoting long-term processes of grass-roots capacity building and empowerment.

2.3.4 Commons cause tragedy: Can the state bring doom?

Theoretically, the notion of centralized administration or absolute state control has found its ultimate goal in Garrett Hardin's hypothesis of "the tragedy of the commons". Hardin (1968) argued that users of a commons are caught in an inevitable process that leads to the destruction of the resources on which they depend. Alternatively, he proposed either private enterprise or socialism (control by government) as the only available solutions to avoid the tragedy (Hardin 1968 and Hardin 1978). Hardin claimed that if we do not accept one of these two ways, we "acquiesce in the destruction of the commons (Hardin 1968). Ostrom *et al.* (1999) remarks that the starkness of Hardin's original statement has been used by many scholars and policy-makers to rationalize central government control of all common property resources and to paint a disempowering, pessimistic vision of the human prospect.

The growing body of literature on common property resources provides enough proof that the users are able to restrict access to the resource and establish rules among themselves for its sustainable use (Berkes and Farvar1989; McCay and Acheson 1987; Berkes *et al.* 1989, 2003; Ostrom 1990a; Bromley *et al.* 1992). This definitely indicates that more solutions exist than those proposed by Hardin. Based on both theoretical propositions and evidences from field realities, several scholars have argued against the state control of natural resources, and they indicate towards a situation where a state property regime, instead of common property regime, may inevitably lead to a 'tragedy' (Feeny *et al.* 1990; Ostrom 1999; Holling and Meffe 1996).

The scene in the Indian context is no different. The work of Indian scholars has demonstrated with authority that the century-old history of state forestry in India must be reckoned a failure, in both an ecological and social sense (Guha 2001). Even under the current regime of participatory forest management the forces of centralization are very active (Nayak 2004). So long as the de facto control over forests by local communities is not adequately covered under policy provisions, the inherently centralized approach to forest management could upset traditional patterns of resource control and the village governance structure over resource use (Guha 1996). In this context, the state laws must create an environment conducive to devolution of rights and set in place a decentralized forest management system by modifying the existing laws governing forests and enacting new legislation that recognizes community rights over forests as the cornerstone of a decentralized and sustainable forest management in India (Nayak 2003).

The above discussion clearly puts forward a set of evidence that clarifies the ill effects of state control and creates significant ground for natural resource management under common property regime. Unless such a balance is achieved, continuous and uncontrolled state regulation may lead to a greater tragedy than originally envisaged by Hardin in the context of commons.

CHAPTER THREE: Methods

Plate 5: A meeting of the forest management institution in progress

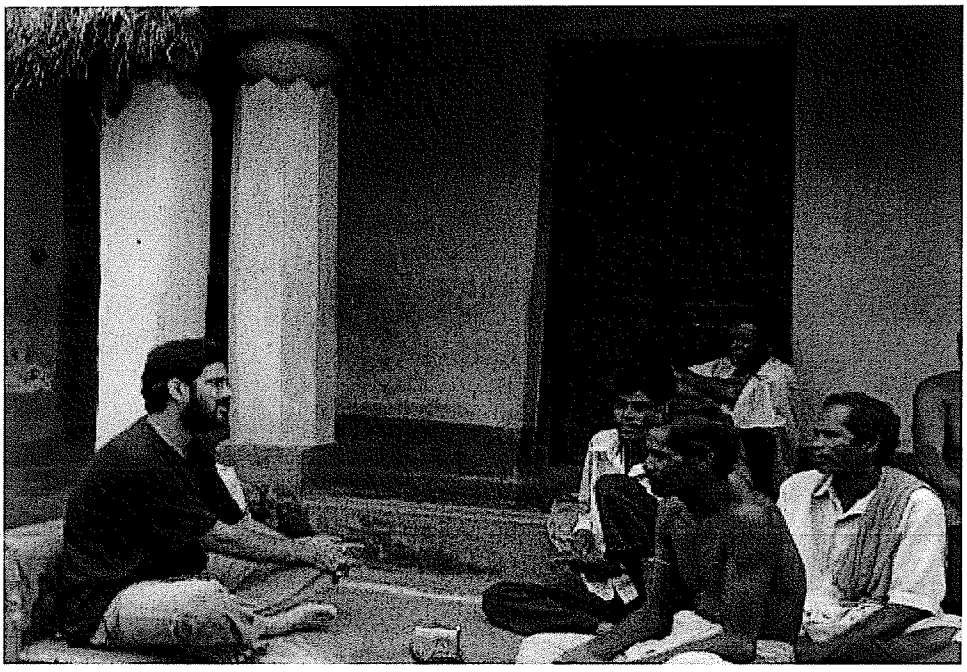
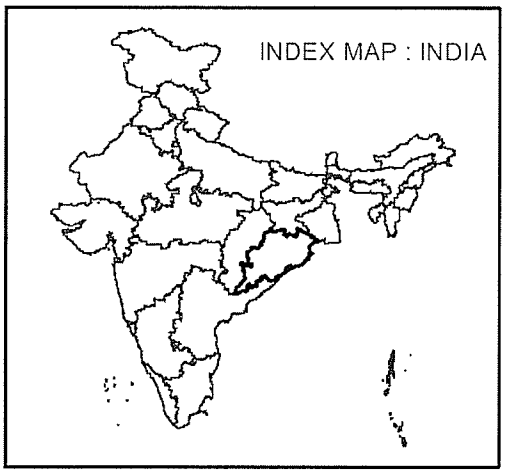


Plate 6: Author conducting a focus group meeting



Map Showing Study Area

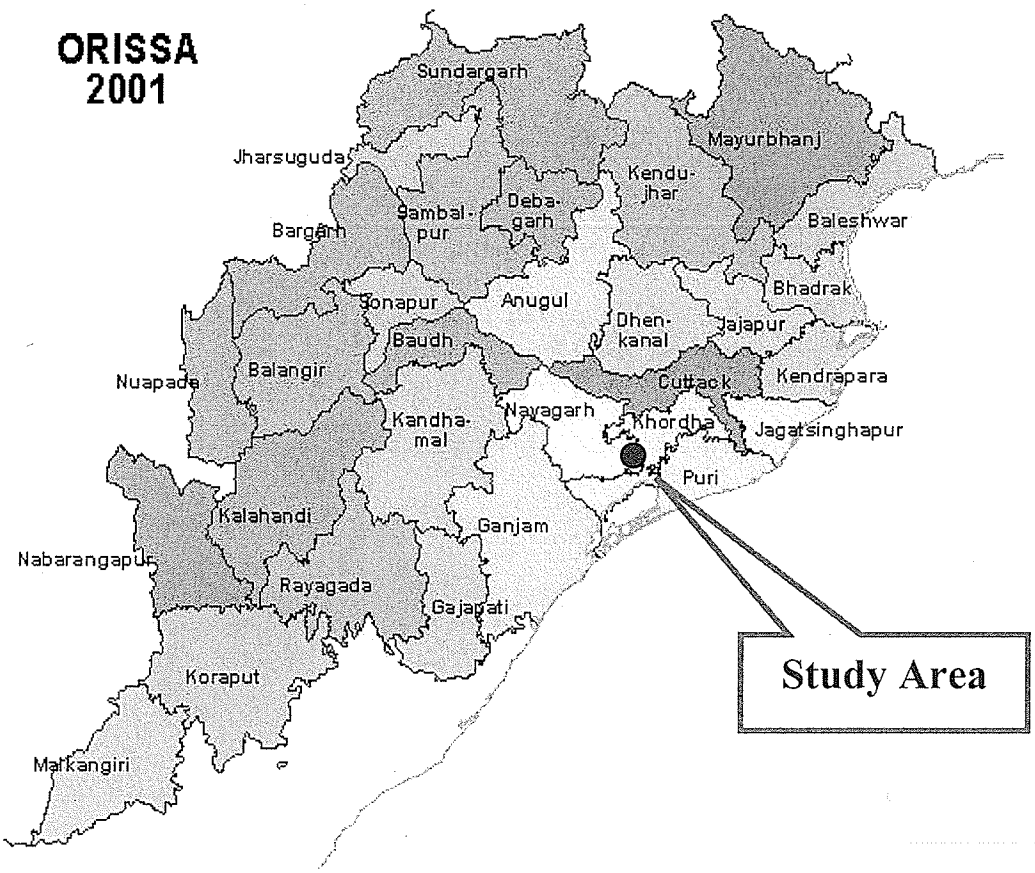


Figure 1: Map of the study Area

Source: *http://www.censusindia.net/results/2001maps/ori01.html*

3.1 Introduction

Field research was conducted in one forest managing revenue village, named as Gadabanikilo, in the Orissa state of India over a period of three months (**Figure 1**). Gadabanikilo is a mixed caste village of 165 households that initiated forest management in the 1940's as their forest resources became scarce. It is considered as one of the first and the oldest self-organized CFM villages not only in the region but also in the entire state. Based on local criteria, determined by the villagers through a wealth ranking exercise, the households can be subdivided as 69 rich, 40 median and 56 poor (See **Table 3**). However, irrespective of these classifications every household in the village is dependent on the forest to varying degrees, i.e. about 40 percent earn about 60 percent of their livelihoods from forests.

Table 3: Status of households as per wealth ranking by villagers

Category	Households	Criteria
Rich	69	More than 5 acres of agriculture land Have surplus agriculture produce (after own consumption) Employ wage labour in their agriculture fields Have ancestral property (primarily land) Either cement or asbestos house One of the family members is in service (government or non-government) Have some bank balance
Median	40	Less than 5 acres of agriculture land Agriculture production is sufficient of own consumption only Most ancestral property (mainly land) has been sold Work in their own agriculture fields Engage in occasional wage labour during the year and sometimes migrate out for labour work
Poor	56	Mostly landless and some have less than half an acre land Thatched and mud houses Depend on forests, daily wage labour and out migration for livelihoods Some are engaged in share cropping

Source: Based on wealth ranking by JFM institution members and two focus group discussions

The study village was selected using purposive sampling method based on specific criteria. Gadabanikilo was selected as it originally started as a self-initiated CFM and latter was converted into a JFM arrangement. This provided the scope to understand and compare the status of rights, participation and decision-making power and control under both the systems of forest management. For the purpose of data collection a wide variety of sources were accessed. Written records of the forest institution during both self-organized CFM and JFM were studied. Government orders, management plans and other policies concerning JFM were analyzed to understand the overall policy and administrative environment for forest management. Discussions with the village elders, some of whom were actively involved in the initiation of CFM in the village, formed another important source of information. One of these elders is about 100 years of age now and he was the first forest watcher who continued in the post for about forty years since the inception of CFM. Interviews with the members of the forest management institution both under self-organized CFM and JFM were conducted, focus group discussions were held to elicit views of women and forest dependant households. Views of NGO and forest department officials, and representatives of forest federations were collected to understand perceptions of a cross-section of stakeholders. A list of interviews and focus group discussions has been annexed as Appendix 2. The interviews and discussions were mostly at group level represented by members of households. The study covered about 40 percent of households from the study village whose representatives participated in the various interviews, discussions and other participatory exercises used for data collection.

3.2 Approaches and methods used in the field

The research was conducted within the broad parameters of a qualitative research approach because it made available a number of possibilities to the researcher (Creswell 1994). These possibilities included: 1) focus primarily on process, rather than products or outcomes; 2) importance on meaning, i.e. how people made sense of their lives, experiences, and the structures of their world; 3) researcher became the primary instrument for data collection and analysis; 4) fieldwork allowed the researcher to observe behaviour and conditions in a natural setting; 5) facilitation of descriptive ways because meaning and understanding were gained through words, pictures and other mediums; 6) focus on inductive approach, meaning that the researcher built abstractions, concepts, hypotheses, and theories from details observed.

3.3 Participatory Rural Appraisal

The research adopted a set of participatory methods within the definition of qualitative research. The motivation to use participatory methods came from the inadequacies of the conventional questionnaire methods which suffered from several problems such as identification of important research issues and their relevance to local people, invariably a large number of questions and a long time period to administer. In using participatory approaches the study followed a set of common principles ass discussed by Pretty 1994 that included: 1) defined methodology and systemic learning process; 2) multiple perspectives; 3) group learning processes; 4) context specificity; 5) facilitating experts and stakeholders; 7) leading to sustained action.

3.4 Participatory methods and tools

Semi-structured interviews are a central part of all participatory methods (Pretty and Vodouhe 1997) and these also formed the primary means of data collection during the field research. Twenty-three semi-structured interviews, spanning individuals and groups at community, NGO, forest federation and forest department levels, were conducted during the entire field research. During the semi-structured interviews an interview guide was employed, the questions asked were content focused and dealt with the issues that were judged to be relevant to the research question. These interviews were informal and conversational in nature, but these were actually carefully controlled through the use of an interview checklist. In addition, open-ended questions and probing were also used during the semi-structured interviews. .

Focus group discussion may be defined as an interview style designed for small groups where the researcher strives to learn through discussion about conscious, semiconscious, and unconscious psychological and socio-cultural characteristics and processes among various groups (Basch 1987; Berg 2004). Nine planned focus groups were conducted at different stages of the research in order to gain critical inputs from the community into the research process. Two of these focus groups were used to commission the research at the community level and to present and verify the research findings at the end of the field research process. Focus groups were also conducted to gather information on specific aspects pertaining to caste, forest dependent and women groups. A few focus groups were used to discuss the impact of JFM with the JEM committee executive council members. The focus groups allowed me flexibility, scope

for observation of interactions, collection of substantive content within limited time frame, and access to various sub-groups within the community.

Participatory maps were an effective way of data collection and interpretation. It engaged the community members in illustrating the social and physical conditions both within and outside the village (Pretty and Vodouhe 1997). Two maps, one village and one forest resource, were drawn by the villagers during the course of the study. It was not only the maps as an output of the mapping exercise but also the process of creating the maps in diverse social groups which provided me opportunity to get an understanding of the social and resource related dynamics in the community. *Venn diagrams* were prepared with the involvement of the community to get insights into the status of cross-scale institutional linkages. It was effective in understanding the relationships of the forest institution with other key institutions and individuals outside the village and how these relationships have been influenced by the JFM arrangement.

Historical analysis included recording the accounts of the past, of how things have changed, particularly focusing on relationships and trends (Pretty and Vodouhe 1997). Three timeline formulations were done to understand the initiation of self-organized forest management, how it was converted into JFM, and with what consequences. *Transect walks* were effective in involving key informants in discussions on topical issues in an informal setting, i.e. walking through the forest. Three transect walks were undertaken, two with the forest watchers and one with committee members, in selected areas of the forest and the village. *Scoring and ranking exercises* with the

community members were used to record their priorities and preferences pertaining to the management of the forest. Based on this information it was convenient to analyze how co-management arrangement has impacted some of the priorities and preferences of the community. Moreover, such exercises also highlighted some of the ways in which community prefers to manage its forest as well as the institution.

3.5 Conceptual Frameworks for Data Collection and Interpretation

For the purpose of data collection, analysis and interpretation the research adopted the following conceptual frameworks provided by a number of scholars.

3.5.1 Participatory exclusion

The framework of assessing "participatory exclusion", i.e., exclusions within seemingly participatory institutions (Agarwal 2001), was used to understand the nature and level of participation under both community management and joint forest management arrangements. The specific characteristics of the six types of participation (discussed under section 2.3.2) were further discussed and tested in the community to make them contextual in order to analyze the nature of participation including who participates, what effect this has, and what factors constrain or facilitate participation. Through the "participatory exclusion" framework it was easier to determine the level at which both self-organized CFM and JFM arrangements fit in the participation typology consisting of nominal, passive, consultative, active-specific, active and interactive participation (Agarwal 2001). A more detailed discussion of 'participatory exclusion" framework can be found in section 2.3.2.

3.5.2 Bundle of rights

The "bundle of rights" framework (Ostrom and Schlager 1996) provides five types of property rights, i.e., access, withdrawal, management, exclusion and alienation, that is useful to determine the position, i.e., owner, proprietor, claimant, authorized user and authorized entrant, of community members within a given common property resources management system. The research used this framework to understand the nature of the bundle of forest commons rights both under community management and joint forest management. Additionally, through this framework I analyzed how the set of five property rights and the position of the village communities may differ in the policy and implementation of JFM. A more detailed discussion of the "bundle of rights" framework could be found in section 2.1.2.

3.5.3 Bundle of power

Ribot and Peluso (2003) have argued that property relations constitute only one set of mechanisms amongst many by which people gain, control, and maintain resource access. They move beyond the "bundle of rights" notion of property to a "bundle of power" approach to access and have advocated for locating these "powers" within the social and political- economic contexts that shape people's abilities to benefit from resources. Therefore, effective community-based forest management here would imply the unfolding of processes and mechanisms, both at local as well as policy levels, which not only address consolidation of power across scales but also facilitate positive power relations and autonomy for the exercise of power by stakeholders in their specific contexts.

3.5.4 Conditions for sustainable management of commons

Based on the comprehensive work of Wade ([1998] 1994), Ostrom (1990) and Baland and Platteau (1996), Agrawal (2002) has discussed a number of enabling conditions for sustainability of commons management. Agrawal (2002) has categorized these conditions under resource system characteristics, group characteristics, institutional characteristics, and external environment. Some of these conditions are crucial in terms of their influence on the nature of participation and the bundle of rights. The research borrowed from the conceptual work of Agrawal (2002) to examine how formalization of local institutional arrangements under the government system may have affected some of these conditions of commons management thereby impacting the nature of participation and the bundle of rights. A more detailed discussion on the conditions for sustainability of commons management could be found in section 2.1.3.

CHAPTER FOUR: Transition from self-organized CFM to JFM: Impacts and Emerging Trends

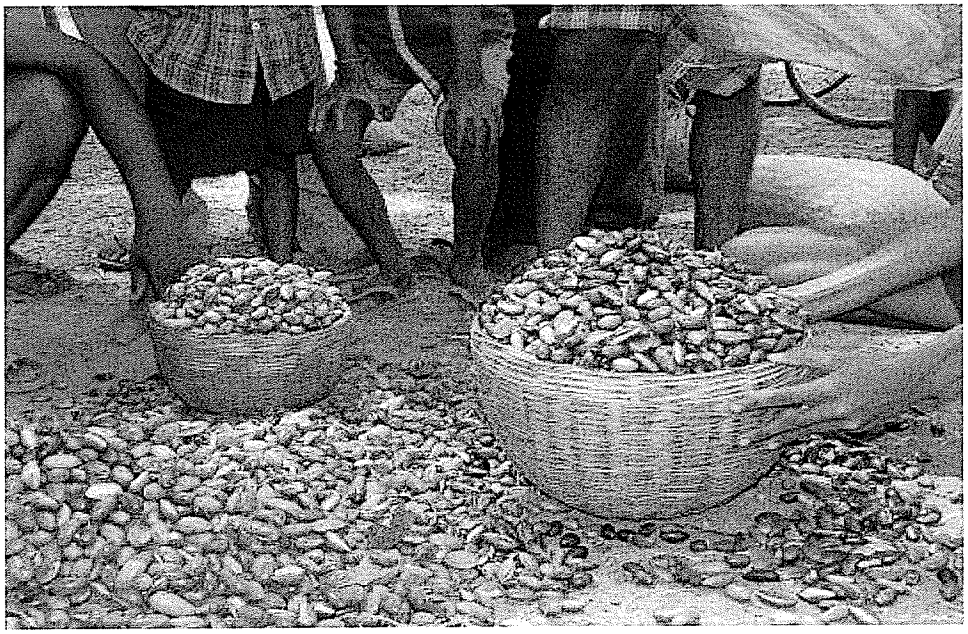


Plate 7: Village level distribution of Mohua fruits (edible oil seed)

Plate 8: A community nursery raised under the JFM programme

In this chapter I provide an analysis of the outcomes of the study in relation to the three objectives. It compares the status of forest commons rights and participation of people in the decision-making processes under both self-organized CFM and JFM. It then examines the implications of self-organized CFM to JFM conversion for cross-scale institutional linkages and how reciprocal rights are influenced by such changes. Finally, I discuss some of the key mechanisms through which local power and control have changed. In order to provide a background I begin here with a description of the self-organized CFM arrangement in the study village and the process of its shift to JFM.

4.1 Unfolding of self-organized CFM in Gadabanikilo

The active protection of a forest area and regulation of its use by a community is generally understood as community forest management (Conroy *et al.* 2001). The initiation of forest management by Gadabanikilo village dates back to the 1940's which took place as a result of the growing scarcity of forest products for a primarily peasant community. Moreover, the success of a local peoples' movement that claimed rights on 'fish' and 'tree' from the king around that time made it easier for the villagers to assert their rights over the surrounding forest areas and brought it under their direct possession. Forest management started as an informal protection activity by a small group of people in the village who were then in a leadership position. They declared a few patches of the forest as restricted and opened up other forest patches for firewood and grazing. A watcher was appointed for forest patrolling with a household contribution of two paisa per month. While protection activities continued uninterruptedly, a village committee

with ten members formally took charge of forest management within years of its initiation.

Even though it is one of the several hundred villages engaged in forest regeneration in the region, the story of forest management in Gadabanikilo is unique in more than one way. Gadabanikilo is the first and the oldest village in the region to have 'self- initiated' forest protection and it has also earned the credit of successfully continuing such initiatives unhindered for more than six decades. I tried to explore the factors that may have contributed to the shaping of this unique forest management arrangement at a community level. I gathered that three distinct factors have led to the unfolding of forest management in Gadabanikilo. They include: 1) crafting of an inclusive institution, 2) fairly successful negotiation with neighbours, and 3) creation of several mechanisms for both forest and institutional management. A brief discussion of these factors is attempted below.

First, successful resource management in any context largely depends on the suitability of the institutional arrangement. The forest management institution in Gadabanikilo is considered an inclusive arrangement not only because it has all adults of the village as members in the general village assembly, but it also deals with the management of other natural resources and cultural events of the village. Most CFM arrangements begin with a singular focus on forests only and they continue to do so year after year. However, in this case the institutional arrangement concerning forests quickly spread over to include the management of fisheries, ponds, mango orchards, village funds

as well as several annual cultural and religious events. It encompassed all facets of community life within the context of Gadabanikilo.

Second, the role of neighbours has been considered critical in crafting a successful resource management arrangement. Negotiation with about twenty villages surrounding Gadabanikilo, who might have otherwise posed a threat to the protection activities, and gaining their support formed a part of the forest management arrangement. The forest dependent tribal villages were specifically targeted as they posed a serious threat to the already degraded forest. 'Giving certain benefits to neighbouring villages' was used as a strategy for better forest protection and management by the Gadabanikilo village.

Third, the most important factor for the continued success of forest management in Gadabanikilo pertained to the mechanisms for both forest and institutional management that catered to the needs of both forest as well as people. These mechanisms were primarily created in the areas of decision-making – both rule making and its execution, forest management and forest benefit distribution. These mechanisms provided enough space and opportunity to the villagers to get involved in all aspects of forest management as well as fulfill their forestry needs. **Table 4** highlights some of the key characteristics of the forest and institution management mechanisms created by the forest management committee, including the purpose they serve.

Table 4: Key mechanisms created by the self-organized CFM institution

Categories of Mechanisms	Mechanisms	Purpose
Rule making: Operational and collective-choice rules	Village Institution: General Assembly, with all adults as members, has main rule making role Executive Council, with a few elected / selected members, makes operational rules	Broad-based decision-making by creating space for all adults to involve themselves in decision-making
Rule enforcement	Village Institution: Executive Council has main role followed by General village assembly with overall monitoring responsibility	Create layers of institutional arrangements for effective rule implementation
Forest management	Mohua fruit collection and distribution	Management of Mohua trees for regular flow of non-timber forest products
	Forest maintenance ("Forest Cleaning")	Facilitates forest growth by eliminating undesirable trees as well as making space for preferred trees to grow well
	Protection of preferred tree species	Create a valuable reservoir of diverse tree species that may cater to the varied forestry needs of the people
	Cattle grazing	Facilitates seed regeneration and makes available compost from the visiting herds
Equity and benefits	Mohua fruit collection and distribution	Equitable distribution of an important forest product
	Forest maintenance ("Forest Cleaning")	Supply of firewood for all households in the village
	Cattle grazing	Supports fodder needs of cattle from Gadabanikilo and many neighbouring villages
Others	Use of Village Fund	Expenditure on general village development, and cultural and religious festivals met with. Provision for soft loans to needy villagers.

Source: Based on a focus group discussion with members of the CFM institution that existed prior to JFM

While it is clear that all the three factors have contributed to the success of forest management in Gadabanikilo, villagers linked the success more to the set of forest and institution management mechanisms than the other two factors. Several villagers commented that, "without the mechanisms our forest management system would not have continued for so many years. Each of these mechanisms play double roles by combining forest management with fulfillment of our forestry needs." To investigate more specifically how do these mechanisms develop within the context of a self-initiated CFM arrangement, I discussed with the villagers their notions about what factors shape such mechanisms, which are detailed in **Box 1**.

Box 1: Basis of forest and institution management mechanisms

- Requires adequate time to shape up (not a one time decision)
- Determined by the villagers (no role of outsiders)
- Based on needs of villagers
- Considers specific histories and dynamics in the community (context specificity)
- Do not undermine the needs of immediate neighbours (value of multiple scales)
- Do not undermine the external threats to forest: Value of multiple scales
- Consider how much the forest can give: Develop mechanisms that are in harmony with the status of the resource
- Decision by majority villagers
- Develop mechanisms that are flexible in nature – Scope to learn and modify
- Mechanisms developed are unique to the village and its forest
- Operationalization of mechanisms by villagers themselves
- Subsistence as the driving force

Source: Compiled from several semi-structured interviews, focus group discussions and personal interviews with key informants

However, the situation changed dramatically after JFM was introduced in Gadabanikilo in the year 2002. A new institution was created and a completely different set of rules and mechanisms replaced the existing CFM arrangement. Massive plantation activities were initiated without any heed to the fact that only protection under CFM was

able to regenerate the forest to its present growth. The forest department determined the species for plantation that did not include the species generally preferred by the villagers. **Table 5** compares the species preferred under CFM and the species planted under JFM. The CFM preferred list has a large number of species mainly based on local importance where as there were only three different species planted under JFM.

Table 5: Preferred species under CFM and species planted under JFM

Forest Management Regimes	Species
CFM Preferred list	*Aegle marmelos, Azadirachta indica, Cassia fistula, Diospyros melanoxylon, Embilica officinalis, Dioscoria pentaphylla, Lagerstroemia parviflora, Lagerstroemia flos-reginae, Lannea coromandalica, Bassia latifolia, Petrocarpus marsupium, Petrospermum heyneanum, Semecarpus anacardium, Streblus asper, Strychnos nux-vomica, Syzygium cumini, Terminalia bellerica, Terminalia chebula, Aasan,* Jayasandha, Jhadapan, Kala Sahaj, Mungai
JFM List	*Tectona grandis, Acacia nilotica, Cassia siamea*

Source: Rai et al. 2002, forest watcher and JFM nursery verification

The difference in the choice of species only comes up as a small example of how the perceptions and preferences of CFM village and forest department significantly differ. In fact, based on a number of factors, the study analyzed that their entire worldview stands opposed to each other. **Table 6** shows the contrast in self-organized CFM and JFM worldviews by analyzing the factors for assessing success under both the systems. In rest of this section this contrast of worldviews between self-organized CFM and JFM provides the basis for analysis and discussion.

Table 6: Format for assessing success: CFM - JFM contrasts in worldview

Self-Organized CFM	Joint Forest Management
Size and types of forest landscapes available	How many hectares reforested?
Kinds of tree species available *(Diversity in focus)*	How many trees planted? *(Number in focus)*
How much man and material available with the village? Capacity of the village in undertaking the task without any external dependence on funds.	Size of budget for management unit *(Focus on money - Greater the amount better)*
How many households contribute voluntary labour? How many households get share in the forest benefits?	How many jobs generated?
If the work was done within the available resources.	Total expenditure *(Focus on money - Greater the amount better)*

Source: Based on the meetings with members of the CFM institution, members of the JFM institution, interview of the secretary of local forest federation and interview of NGO staff

4.2 Bundle of Forest Commons Rights and Participation

4.2.1 People's perception of rights and participation

The villagers of Gadabanikilo participate in the forest management activities for a variety of reasons. While most participate due to environmental, e.g. to address degradation and facilitate regeneration of forest, and livelihood, i.e. expectation that protection can lead to economic benefits, reasons; for a selected section of people the reason for participation remains political, e.g. for gaining power and prestige. A cross-section of villagers was interviewed to understand their notion of participation and rights. Two specific questions were posed, one regarding the conditions that encourage participation, and the other on their definition of rights over forest.

On participation one villager commented that, 'if our basic forest-based needs such as firewood, small timber, grazing, Mohua fruits, and medicinal products are available to us we would not indulge in the destruction of the forest.' Several other villagers voiced similar understanding of the notion of participation during focus group discussions and interviews. Thus villagers talked about participation by linking it to their role in safeguarding the forest, as against their indulgence in forest destruction. On rights villagers said that, "forest is our life and it is our responsibility to protect it. Our rights are secured if we are able to get firewood, house repairing and fencing material, medicinal herbs, Mohua fruits and other Non-timber forest products every year." Thus community members considered rights as their entitlements to a series of forest products because they have taken up the responsibility of protecting the forest. One forest dependant (Scheduled Caste) member of the community said, "I feel responsible towards the forest and its protection because the committee (institution) allows me to take seasonal forest products." This indicated that the villagers also linked these concepts to a sense of responsibility. As a matter of fact, there is hardly any significant distinction the villagers made between the ways they approached to understand the notions of participation and rights. It is evident that villagers talked about participation and rights by making frequent references to their roles and responsibilities in forest management and benefits they should be able to derive from the forest. There was also a particular emphasis on the frequency and continuity of these factors as one villager put it, "we are forest dependent people. We require not one or two but many types of forest products and we need those products several times in a year. It is the responsibility of the committee to create systems so that everyone in the village get forest products without having conflicts." Thus they

connected these concepts to the existence of enabling conditions for continued enjoyment of forest benefits.

The discussions with the villagers on these two questions revealed that people generally do not make any significant difference between participation and rights. They linked these two concepts by explaining that rights are actually the conditions that facilitate their active participation in forest related matters. Even in terms of local definitions of participation and rights villagers talked at length about a number of forest benefits and how systematically they are made available to them each year. As a result, one is given to understand that rights imply the extent to which villagers are able to access several benefits from forest and participation denotes a sense of security that they will remain involved in availing such benefits uninterruptedly. While this does not provide a clear definition of these terms, they provide us a notional understanding of the perceptions villagers hold regarding participation and rights.

4.2.2 Key mechanisms that influenced rights and participation

Mechanisms developed by the community for forest and institution management over the years are critical for maintaining both the bundle of rights and participation of people. The mechanisms are actually rules, norms, procedures, and practices developed and used by the community over a period of time. For the purpose of the study these mechanisms have been categorized into making of operational and collective-choice rules, rule enforcement, forest management, equity and benefits, and others (see **Table**

4). **Table 7** shows the status of various forest and institution management mechanisms under both self-organized CFM and JFM.

It was observed that the nature of the mechanisms had undergone drastic changes after JFM was brought in place. Some of the main changes and their implications for rights and participation are outlined below:

1. Adoption of auction method for Mohua fruit was considered as the most radical step as these fruits were equitably distributed to all the households free of cost under CFM.

2. Stopping of annual forest maintenance ('cleaning' operations) which used to be the only major source of firewood for villagers during CFM.

3. Ban on cattle grazing in the forests and other common lands due to new plantations on it, while under CFM the entire forest used to be free for grazing and there were grazing routes within the forest determined by the village institution.

4. With regard to medicinal plant products, from a situation of free for all, which included neighbouring villages also, these products were auctioned to a single individual.

Table 7: Mechanisms that facilitate or impede participation and rights

Mechanisms	Under Self-organized CFM	Under JFM
Mohua Fruit Collection and Distribution	• Distributed among all the households	• Auctioned to a single individual
Forest Maintenance ("Cleaning")	• Twice a year, i.e., before rains and after rice harvest, to facilitate forest growth and supply firewood	• Completely stopped
Cattle Grazing	• Entire forest was free for supervised grazing • Herds form neighbouring villages also allowed • Forest supported approximately 2000 cattle with varying levels of dependence	• Major grazing routes and places banned • No explicit system of forest grazing determined • Plantation on the grazing routes and places • Entry of neighbouring villages' herds banned
Collection of Medicinal Plant Products	• Free for collection without any charges • Neighbouring villages were allowed to collect • Both personal use or sell allowed	• Auctioned to a single individual who sold it outside • • Neither insiders or outsiders were allowed to collect
Decision-making at Village Institution Level	• Village Institution with all adults as members was in charge	• 11 member JFM institution in charge • Forest Department representative in the JFM institution
Use of Village Fund	• Village Fund was initiated around 1945 with contributions from the villagers • Expenses on village development including forests met from this source • Provided easy loans to needy villagers	• Village Fund exhausted during the 2004 and 2005 • JFM institution is planning to sell trees to generate money for the Fund
Barriers at Forest edge (Declared as 'not-to-be-cleaned-ever' locations)	• Certain areas on the forest edge left untouched since beginning of protection • The patches are used as barriers against intrusion of human and animal from neighbouring villages	• No strict adherence to the concept of 'not-to-be-cleaned-ever' patches in the forest • Chunks of these patches have been cleaned out for plantation under JFM
Protection of preferred trees species **(What can and what cannot be cut)**	• A list specifying preferred species was maintained • Preferred species were protected during the forest cleaning and firewood collection	• CFM preferred list not valued • Several CFM preferred species were cut to create space for plantation under JFM • Selection of species for plantation under JFM does not include a single species from the CFM preferred species

Source: Based on interviews with groups of villagers, interview with the first forest watcher of village and village records

5. Decision-making in the village committee, which consisted of all the adults of the village, was shrunk to a thirteen member JFM committee.

6. Natural barriers on the forest edge (declared as 'not-to-be-cleaned-ever'), which controlled intrusion of both people and cattle from neighbouring villages, were cleared for plantation purpose.

7. Use of village fund for developmental activities and providing of easy loans to needy villagers was stopped as the entire fund got exhausted after coming of JFM.

4.2.3 General effects of changes in the mechanisms

Changes in the forest and institution management mechanisms under JFM arrangement had far reaching consequences for the nature of rights and participation by people. Adoption of auction method for Mohua fruit and medicinal plant products was considered the most radical step as these were equitably distributed to all the households free of cost under CFM. When a selected few got the rights to these forest benefits the left out groups gradually lost interest in the forest. Consequently, money became a major determinant for participation and rights, which affected the poorer sections most.

With the ban on forest 'cleaning' an important interaction of the community with the forest stopped. People were forced to realize that they were not involved in decisions concerning their forest. Firewood needs remained unfulfilled and this gradually led to increase in the instances of firewood theft from the forest which eventually included theft

of other valuable species from the forest. **Table 8** shows that there was manifold increase in the number of forest offence cases with the initiation of JFM in 2002. Other than cessation of 'cleaning' frequent change of forest watcher was reported as an important reason for increase in forest offences. Written records of the village revealed that between 1940's and 2001 the self-organized CFM institution had changed the forest watcher six times only, whereas the JFM institution had already changed the forest watcher six times between July 2002 and July 2005. In addition, there were no forest watchers for about four months between June - September 2005 under JFM. Moreover, the study also found that severe irregularities in payment of monthly salary to the watcher by the JFM institution led to infrequent forest patrolling and a consequent increase in the number of forest offences. **Table 9** gives details of the payments made by the JFM institution to the forest watcher during 2002 - 2005.

Table 8: Trend in forest offence cases

Year	Total cases	Firewood and fence	Construction & agriculture	Others	High value timber	Remarks
1998	62	62	-	-	-	1 watcher
1999	105	83	7	11	4	1 watcher
2000	21	21	-	-	-	2 watchers, change in rules
2001	48	28	10	10	-	1 watcher
2002	186	131	30	16	9	Transition to JFM, no forest 'cleaning' for firewood, irregular or no payment to watchers
2003	263	148	39	15	61	JFM institution in charge, no forest 'cleaning' for firewood, no watcher from June - September 2003, irregular or no payment to watchers

Source: Based on village records on forest offences and written reports of forest watchers on forest offences

The staff of the local NGO observed that the poor in the village were most affected because of the ban on 'cleaning' and unavailability of firewood while the rich depended on private trees on their farm bunds and other lands. Based on available data from village record books I calculated that the village poor, i.e. the forest dependent scheduled caste and other economically disadvantaged groups, indulged in forest offences six times more that other better off groups. Moreover, forest management was affected as 'cleaning' used to be an important silvi-cultural activity during the year.

A sudden ban on cattle grazing in the forest had adverse impacts on the practices of animal husbandry in the village. The village cattle damaged the new plantations raised on other village common lands under the JFM programme. At least five respondents mentioned that they had sold their cattle due to lack of grazing space; a trend that was later confirmed by a few members of the forest federation who agreed to an increase in the instances of cattle sell after the onset of JFM. Because of the ban on grazing and restrictions on the collection of forest products by outsiders in Gadabanikilo forest the traditionally maintained linkages with the neighbouring villages were discontinued. Clearing of the natural barriers on the forest edge for plantation now makes way for timber smuggling from Gadabanikilo forests. The exhausted village fund, which previously acted as the financial backbone for many needy households in the village, has forced several households to borrow from more expensive and exploitative sources.

Table 9: Frequency of payment to forest watcher since the start of JFM

Month and year of payment	Amount paid (*in rupees*)
July 2002	445
August 2002	250
September	250
October 2002 – February 2003	No payments
March 2003	125
April – May 2003	No payments
June 2003	362 +170
July – August 2003	No payments
September 2003	150
October 2003 – January 2004	No payments
February 2004	2500
March – August 2004	No payments
September 2004	550
October 2004	700
November – December 2004	No payments
January 2005	2100
February – May 2005	No payments
June 2005	2000
Note: During this period the salary of the watcher was rupees 500 (USD 12) per month	

Source: Village financial records for the period 2002 - 2005

It is evident that JFM has severely affected the forest and institution management mechanisms either by altering or bringing in completely new mechanisms within a short span of time. Apart form its impact on the day-to-day management of the forest and the institution; this has also had several implications for the bundle of rights people held under self-organized CFM arrangement and their level of participation in the forest related matters. I examine below the overall impact of these changes on bundle of forest commons rights and level of people's participation.

4.2.4 Specific impacts of the changes on bundle of rights

The mechanisms pertaining to forest and institution management, which were developed under the self-organized CFM, played a critical role in securing the bundle of

forest commons rights to the villagers. However, large-scale changes in these mechanisms have drastically altered the nature of bundle of forest rights people enjoyed and the way they exercised them. Some of the serious impacts were recorded at the level where villagers held rights as rights to withdraw forest benefits were transferred to a single individual through auction method. This was reported as a significant move from the earlier mechanism of equitable distribution of forest benefits to all households under the close supervision of the CFM institution. While the auction holder sold most of the forest products especially the medicinal plant products outside the village, it was different in case of Mohua fruits. It was observed that a section of the village, only 40 households who could afford to pay, purchased the rights to withdraw Mohua fruits from the auction holder. Thus money came up as a major determinant for who can have rights to forest benefits. In the business of buying and selling of rights the poor households were the worst affected. Rights to access and withdraw were totally banned in the case of some other forest benefits like firewood and grazing. Since the CFM mechanisms were designed to combine both forest management and withdraw of benefits the denial of withdrawal rights also affected their rights to manage the forest. With regard to decision-making in the village committee the rights of all villagers except for those who became members in the JFM committee were badly affected. Thus from a earlier situation of every adult having the right to manage the village institution it ended up in restricted or no rights to most adults in the village. What was reportedly unacceptable to the villagers was the Forester acting as the Secretary of the JFM institution which gave him the authority to influence the types of rights villagers hold in relation to their forests.

Bundle of rights became restricted and the bundle was disturbed as it moved from self-organized CFM to JFM. The study tried to understand the bundle of rights by analyzing them under three distinct regimes of forest management, e.g. self-organized CFM, JFM policy and JFM field implementation. Under the self-organized CFM villagers enjoyed customary rights while both JFM policy and JFM implementation brought in a set of statutory rights. Villagers voiced that "the department (meaning the Forest Department) could have simply recognized the rights we have been enjoying for decades instead of redefining them against our interests." **Table 10** shows the status of the bundle of rights as the village moved from self-organized CFM to JFM implementation.

It was observed that under the self-organized CFM arrangement, the bundle of rights included access, withdrawal, management and exclusion rights and thereby accorded a status of 'proprietor' to the people. In the case of JFM, however, the same rights supposedly exist, but the nature of the bundle of rights has changed. For example, even though there is access rights for all in the village, the right to withdraw has been restricted to a few. Let us consider the case of Mohua fruit collection where the earlier system of collection by all households has been replaced by a system of auction to a single individual. This indicates that the withdrawal rights for this forest product finally gets restricted to a single individual and only a few well-to-do households can avail this right. Interestingly, the JFM policy also talks about providing access, withdrawal and management rights, as a bundle, to the people. In case of exclusion rights, decisions have been completely taken over by the government. Therefore, while all the three systems,

i.e. self-organized CFM, JFM policy and JFM actual implementation, provide access, withdrawal, management and exclusion rights as a bundle, their nature differs under each of these regimes.

Table 10: Bundle of rights under different regimes of forest management

Bundle of rights	Self-organized CFM	JFM policy	JFM implementation
Access	X X X	X X	X
Withdrawal	X X X	X	X
Management	X X X	X X	X
Exclusion	X X X	-	-

Source: Framework adapted from Ostrom and Schlager (1996)

4.2.5 Specific impact of the changes on participation

Similar findings were also obtained with regard to the level of people's participation that became restricted moving from self-organized CFM to JFM. **Table 11** provides details of the forms of participation under different regimes of forest management. The nature of rights on forest commons and the level of villagers' participation in its management are also influenced by the nature of rights one is entitled to and level of participation one enjoys on other commons within the village boundary and vice versa. The villagers of Gadabanikilo have never looked at forests as an isolated patch of resource; rather they talk holistically by linking forests with all other natural resources in the village. The study tried to explore this further by linking the perception of villagers on interconnected resources with issues of rights and participation. It was found that just like they link forests with other resources, villagers also consider their rights as stronger when they hold rights over a range of resources within the village

boundary and not just on the forests. Similarly, their perception of good participation is linked to their effective involvement in the management of other resources in the village along with forests. These facts were ascertained by analyzing how conflicts on other resources in the village have often affected forest management.

The study recorded that two recent conflicts involving the ownership of village pond and village fisheries significantly impacted forest management by creating three distinct opponent groups within the village: one group held the power to manage forests under JFM, another group was restricted from having any rights on the forests, and the third group kept themselves out of any business of forest as a sign of protest. Therefore, it became evident that confusions involving one or a set of resources within the village permeate to affect rights and participation in forest management. Similarly, conflicts over forests have a tendency to influence the rights and participation concerning other resources within the village.

Another aspect of the analysis pertained to the nature of institutional arrangement involving multiple natural resources and its implications for rights and participation. In the case of Gadabanikilo, it was found that till the advent of JFM a single village institution was managing all the commons in the village, including forests. Villagers thought that under one institutional banner it was possible to strike a balance and ensure proper coordination between the nature of rights and levels of participation of villagers with regard to all the commons managed by the institution.

Table 11: Forms of participation under different regimes of forest management

Areas of Participation	Types of Management Regime		
	Self-organized CFM	**JFM Policy**	**JFM Implementation**
Operational and collective choice rules	Village assembly has the supreme role: Everyone has a chance to participate in rule making	Both specific and broad contours of rules set in JFM guidelines Executive Council makes rules with a provision for scrutiny by the Village assembly	Most rules already set by the JFM guideline and operational directives of forest department Executive Council has supreme role: Only members of the Executive Council participate in rule making
Rule enforcement	Executive council has primary responsibility and village assembly monitors execution A set of forest and institution management mechanisms offer everyone chance to participate Social watch on rule implementation is stronger	Executive council has major responsibility Forest Department directly involved in rule execution and monitoring of overall execution of rules	Executive Council has the sole authority to implement rules Forest department executes some rules directly and monitors overall execution
Forest management	Mechanisms like forest cleaning, grazing, etc offer everyone a chance to participate	Management through a forest department approved management plan Undertaken under the direct supervision of the forest department	Mechanisms like forest cleaning that ensured everyone's participation are stopped Participation of few as wage labourers
Equity and benefits	Benefit sharing mechanisms in place: every household has a chance to participate in obtaining forest products	Final harvest to be shared 50:50 between forest department and JFM institution All intermediary forest products go to the JFM institution	Participation restricted to a few villagers: Mechanisms that ensured everyone's participation in obtaining forest benefits are either stopped or radically altered Participation in obtaining forest benefits has a cost now

Source: Based on interviews with members of CFM institution and JFM institution, two semi-structured interviews and two focus group discussions, village records, Orissa Government Order on JFM 1993

In other words, since all resources were being managed by one institutional structure, the institution was able to resolve conflicts in any particular resource area more effectively thereby containing in advance any negative implication for rights and participation of people in other resource areas. However, with the JFM institution taking exclusive charge of forests the frequency of resource overlapping conflicts has increased while the rate of their resolution stands at an all time low.

With this development, peoples' perceptions on the interconnected rights and participation over a range of commons within the village have lost meaning. Under the current arrangement different power groups have taken up the management responsibility of different resources thereby making coordination on ensuring rights and participation to people all the more difficult.

4.3 Cross-scale Linkages and Reciprocal Rights

4.3.1 Reciprocal linkages across villages

The self-organized CFM arrangement has its own cross-scale links like reciprocal rights with other villages as opposed to JFM, which is simple, predictable, and there is no room for outside linkages. The study village is located in a place where more than 80 percent of the villages either have their own forest areas and/or they are involved in protection and management of a piece of forest. These CFM forests not only vary in their size but there is also a significant difference in the kind benefits they produce. For example, some forests are rich in medicinal plant species and important non-timber forest products; some others have species that are good as material for house construction and

agricultural implements; while others are a significant source of fuelwood and grazing. Even some forests are a significant source of bamboo (considered as poor persons' timber) which is a largely sought after species especially by the Scheduled Caste and Scheduled Tribe households primarily engaged in weaving of bamboo craft. The study found that this diversity in forest types and the varied benefits they offer act as triggers for stronger cross-scale linkages between CFM villages. Discussion with a number of neighbouring villages, including some that do not have their own forest areas, revealed that these villages depend on Gadabanikilo forest for a number of products throughout the year, especially medicinal plant products, fuelwood, Mohua fruits and grazing. Similarly, households of Gadabanikilo depend on the forests of other neighbouring villages for benefits such as grazing, construction materials, bamboo, etc. However, even though these reciprocal transactions have been going on for several years now the formal forest management rules of the village do not have any specific mention about them. Moreover, the existing cross-scale linkages between CFM villages are strongly visible in terms of only reciprocal rights over forest benefits, and the same do not extend to forest management related decision-making. It was also observed that the CFM villages have a high sense of mutual respect and recognition of ownership over their respective forest areas. This led me to conclude that such reciprocities exist only informally but their unobtrusive continuity over a longer period of time has turned them into stronger linkages between villages.

Giving certain rights to the neighbouring forest dependent villages and ensuring their participation, mostly at benefit sharing level, was found to be an effective strategy

for better protection. Villages, like Gadabanikilo, with bigger and older forest patches often have to deal with outside pressures on the forests which could be typically high in certain seasons of the year. Gadabanikilo village is more prone to such pressures because fourteen villages surround its forest area and forest dependent groups including tribals inhabit about 6 of them. The villagers mentioned that one of the important factors contributing to the initial forest degradation was excessive pressure from these surrounding villages. As an antidote the CFM institution made informal arrangements to ensure that these villages get certain forest benefits during the year which proved effective in containing their pressure on Gadabanikilo forests. Over the years these surrounding villages have developed a stake in Gadabanikilo forest and, even if they are not formal members in the forest institution, play an equally important role in providing protection to the forests form their strategic location of being on its edges. This is a unique example of cross-scale linkages between villages.

4.3.2 Cross-scale linkages under JFM

In contrast, both JFM policy and implementation make forest protection too village specific. "It teaches the village that this forest is yours and yours alone thereby impacts or alters most cross-scale linkages that the CFM village might have developed over a period of time" - commented one of the forest federation members. An analysis of the relevant policy provisions in this regard revealed two factors responsible for this. One, the JFM policy recognizes only revenue villages as the unit of management and two, it provides for formal demarcation and allocation of a specific forest area (in most cases about 200 hectares) to this unit. Once under JFM, both the management unit and

the allocated forest area are treated as exclusive to each other, especially by the Forest Department. In doing so there is no consideration made for existing use rights, both formal and informal, of several other surrounding villages in this patch of forest. Nor does the policy take cognizance of the web of relationships and linkages that exist between and amongst the CFM villages concerning their forests. Compartmentalization of forests under JFM may make good sense from a property rights point of view, but it largely undermines the social values for sharing forest benefits across village boundaries. The "one-size-fits-all" approach of JFM does not have any built in mechanisms to facilitate already existing arrangements of mixed and reciprocal rights between several CFM villages.

The study also observed that scale-based linkages are affected because the JFM villages are largely dispersed in nature. It found that not all the villages with forests in the area have been included in JFM as they are handpicked by the Forest Department based on certain criteria. The local forest official told that only villages with a good track record of forest protection and without any conflicts were included in JFM. Moreover, the number of villages to be brought under JFM in a particular year is determined based on the amount of funds available with the forest department. This would mean that not all the potential villages are included under JFM thereby leaving a majority of them still under CFM. Figures collected from secondary sources indicate that out of a total of 317 CFM villages in the forest range only 31 villages have been brought under JFM over the last decade. Similar figures for the state indicate that out of a total of more than 10000 CFM villages less than 2000 were brought under JFM during the last decade. This

analysis is not to suggest whether or not CFM villages should and must be brought under JFM? The purpose here is to examine the implications of this for cross-scale interactions and linkages between villages under CFM and villages under JFM. The study found that the cross-scale linkages receive a major set back once some CFM villages move to JFM arrangement within a given area that previously had all CFM villages. It was observed that once a particular CFM village is brought under JFM arrangement a process of extrication begins which either makes the linkages between the CFM and JFM villages weak or brings an end to it. In other words, what used to be an interaction between two or among a set of CFM villages quickly turns into an interaction between formal JFM and informal CFM arrangements, which, because of their distinct structural and normative dispositions, do not go well together. The study compared the status of cross-scale linkages both before and after the intervention of JFM to conclude that while CFM - CFM interaction was significantly successful, similar linkages between CFM and JFM villages have been discouraging in nature. Therefore, the type of institutional arrangements at the village level, i.e. either formal or informal, has a direct bearing on success of cross-scale linkages.

4.3.3 Multi-level linkages under CFM and JFM

Not only horizontal linkages suffer due to conversion of CFM arrangements into JFM arrangements. The vertical linkages of the forest institution with several outside organizations are also affected as a result of such conversions. The study compared the status of institutional cross-scale linkages under the two different arrangements of CFM and JFM to ascertain the extent of impact due to conversion of CFM to JFM

arrangements. As depicted in **Figure 2**, under the CFM arrangement the forest institution had stronger links not only with neighbouring CFM villages but an equally stronger link was observed in case of its linkages with higher level institutions, e.g. local forest federation and NGOs. The study village was a member of the local forest federation and the NGO was actively supporting the village in forest resource assessment and its management. Interestingly enough, the study also found that each of these higher-level institutions had their own cross-scale linkages with several other institutions, and once the study village was linked to them it had obvious access to all those layers of institutions and the facilities and opportunities they offered. However, the self-organized CFM institution did not have any direct cross-scale linkages with the Forest Department. In fact, several earlier requests by the Forest Department to implement JFM were turned down by the self-organized CFM institution because the villagers viewed the involvement of the Forest Department as interference. **Box 2** lists a number of reasons of why JFM and, for that matter, the Forest Department were not generally acceptable to the self-organized CFM villages.

Box 2: Perceptions of community members on "why they do not want JFM"

- Discouraging experiences of other villages who participated in JFM
- Outside money generates conflicts: Chances of misappropriation of money
- Threat of damage to existing natural forest
- Do not need anymore plantation: Plantations would cover up available common land
- Do not want artificial jungle
- Only protection would lead to forest
- FD takes percentage from funds made available
- Outside interference will increase
- Our management style will not be acceptable to forest department
- JFM would mean sharing ownership and other benefits of the forest

Source: Based on an interview with the representatives of 30 households who opposed and did not participate in JFM

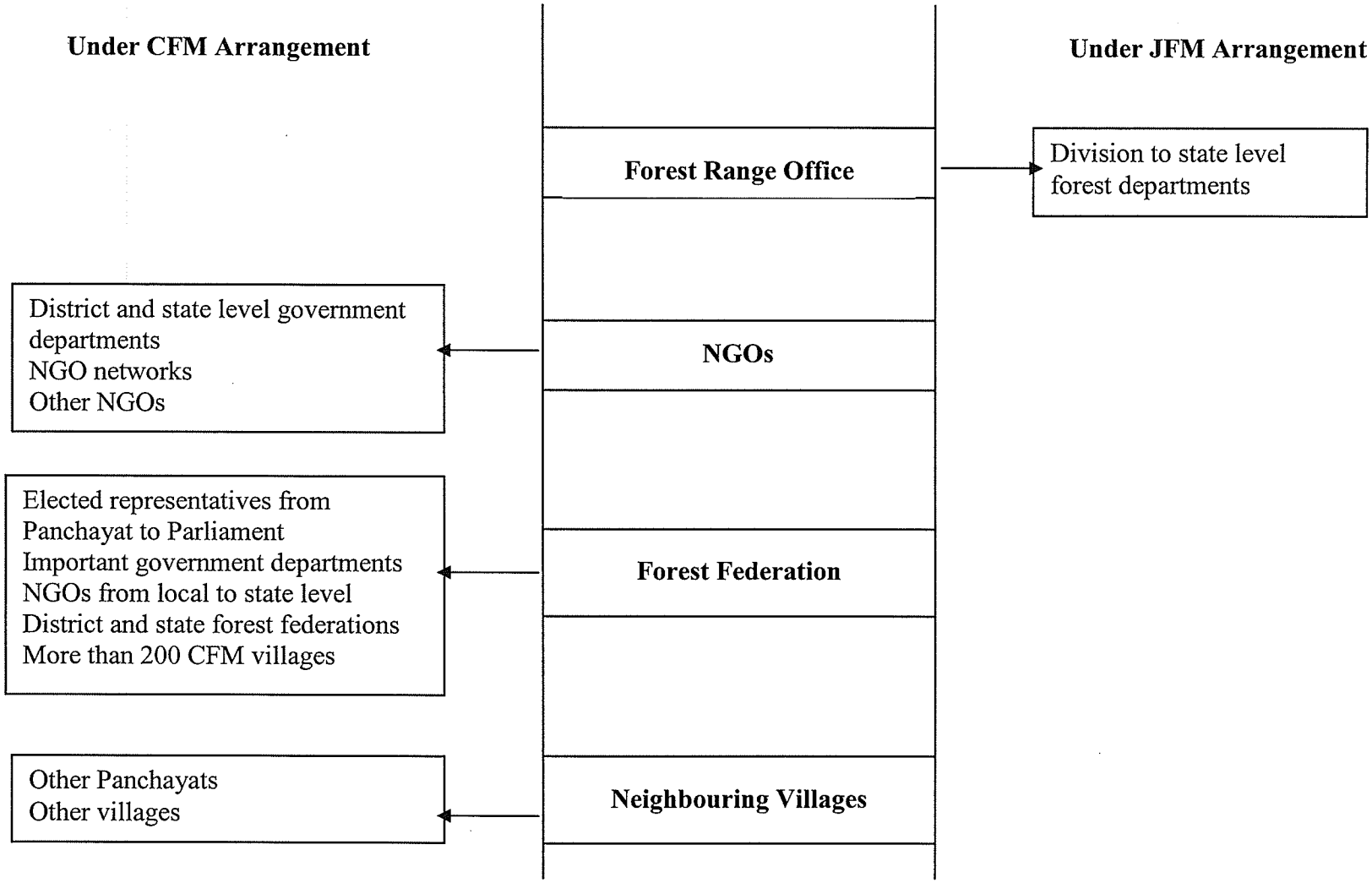


Figure 2: Institutional cross-scale linkages under two different forest management arrangements

This scenario changed dramatically after the self-organized CFM was converted into a JFM arrangement. Because of the policy restrictions and the style of implementation the newly formed JFM institution could not retain all the cross-scale linkages that was developed under the CFM arrangement. The study found that the village had completely disengaged itself from any association with either the NGOs or the local forest federation after the onset of JFM. Instead, the JFM institution maintained strong linkages with the Forest Department only. The Members of the Executive Council of the JFM institution said, "we will maintain relations only with the Forest Department because it is giving us monetary support which neither the NGO nor the forest federation ever provided. Organizations that does not offer us money are not our friends anymore." However, a section of the village that do not support the implementation of JFM in place of CFM are critical of the sudden inflow of money into the village under JFM which, in their view, has a tendency to initiate corruption and lead to conflicts.

Since the JFM institution rearranged its cross-scale linkages with various outside institutions after it received financial support from the Forest Department, monetary incentive was observed as a major driver for the diversity of cross-scale linkages maintained by JFM institutions. In contrast, similar linkages under CFM arrangement were largely determined by historical, cultural and other reciprocal factors. The study dealt with the question of whether more linkages are likely to evolve under the current JFM arrangement. It was found that what used to be an interaction between two, or among a set of, CFM villages prior to JFM quickly turned into an interaction between formal JFM and informal CFM arrangement. Because of their distinct structural and

normative dispositions, the linkages between JFM and CFM did not go well together. However, because there is precedence for several cross-scale linkages under CFM, the JFM system may come to be supplemented by informal linkages in the coming years. Moreover, since JFM implementation follows five year phases, during which there is a more direct control by the Forest Department, some or most of the earlier linkages could be revived.

4.4 Equity, Decision-Making Power and Control

An important area within the discourse of rights and participation pertains to the power relations between actors and the complexities in defining access and control, and building effective checks and balance. To analyze the factors that influence power relations within the institutional arrangement of the community the study examined some key questions: Who are the key actors? What are the various agendas? Who has the control?

4.4.1 Equity in decision-making

Power is the ability to influence processes by which individuals create rules, make decisions, implement and ensure compliance, and adjudicate disputes. This in itself is critical for community-based resource management which depends not only on opportunities to access power but also on the context, including the social situation and related institutional arrangements in which power is exercised (See Agrawal and Ribot 1999). Analysis of the institutional space for different groups in the community revealed that the CFM decision-making structure has remained solely under the control of the

higher caste male members of the community. As depicted in **Table 12**, data from 1997 to 2005 on the caste and gender composition of the executive council of the CFM institution revealed that there was no representation of the Scheduled Caste (Harijan) (constitute 35 percent of the village households) and women (constitute 45 percent of the village population) during this period. In fact, villagers reported that these two specific groups were never a part of the formal decision-making arrangement within the village, especially related to the forests, even prior to 1997 and since the inception of forest management in the 1940's. Even within the higher castes, only one particular caste group, i.e. the Khandayat caste, has continuously held about 80 percent of the membership in village decision-making structure with the exception of the 2005 village institution where this group holds all the 11 seats in the executive council.

Table 12: Caste and gender composition of self-organized CFM institution (Executive Council)

Year	Total Members	Castes		Gender
		General	Scheduled Caste	
1997-1998	11	11	-	All men
1998-1999	11	11	-	All men
1999-2000	11	11	-	All men
2000-2001	11	11	-	All men
2001-2002	10	10	-	All men
2002-2003	10	10	-	All men
2003-2005	10	10	-	All men
2005- Current	11	11	-	All men

Source: Meeting book of the self-organized CFM institution

However, JFM brought in significant structural changes in the way village institution was being constituted. The JFM policy makes it mandatory for representation of Scheduled Castes and women in the executive council of the JFM institution. However, in practice, mere representation of these groups in the decision-making

arrangement has not led to any significant changes on the ground. Therefore, while different from the local precedence, the executive council of the JFM institution of Gadabanikilo has now both Scheduled Caste and women members in it, in practice, provides little scope for achieving effective power balance among all the stakeholders as decision-making control solely rests with the higher caste male members. In the total of nine JFM institution meetings conducted for the purpose of this study there was not a single instance of any women or Scheduled Caste members attending these meetings. This provides evidence that while JFM has brought in structural arrangements for inclusion of various groups in the community there has not been any appropriate follow up actions on the actual reflection of these provisions in the field. Male members justified the absence of women by stating that "they (women) cannot speak in public, especially in the presence of elderly male and they are good within their households." Discussion with women members of the JFM institution revealed that there was not enough encouragement and cooperation from the male members for their regular involvement in the decision-making of the JFM institution. In the case of the single Scheduled Caste member in the JFM institution, he either cannot attend the meetings because most of the time meetings are held at the village temple where he is not allowed to enter or he remains voiceless in a dominant group of higher caste members in the JFM institution. The obvious question then is if these power imbalances have any impact on the nature of decision-making on forest management?

While JFM policy has done a wonderful job of creating structural spaces for various groups in the community to get involved in the decision-making arrangement, its

implementation has not been effective enough to keep up the good intensions expressed in it. Even the little structural arrangement to include women and other caste people did not have any influence on the recent reconstitution of the traditional village institution which used to look after forests along with other village matters prior to JFM. The traditional village institution that was reconstituted in July 2005 (during the course of the study) had all the eleven members from the single Khandayat caste without any women or Scheduled Caste representation (see **Table 12**). This clearly indicates that experiences of JFM or the presence of the Forest Department did not have any impact on the ways villagers perceive about governance related equity issues. Village leaders opined "we had to include women in the JFM institution because that was the legal requirement without which the funds would not have been released to our village. But village institution is our own and we will manage it in the way we want." The forest department seems contained with only enlisting a few names of women and Scheduled Caste members in the JFM institution without any concern for actual results, told by the Secretary of the forest federation.

It was worthwhile to analyze how the self-organized CFM with its iniquitous power and control elements was able to achieve such exemplary forest management for over five decades. More specifically, the study focused on how equity issues in forest benefit distribution, and villagers' rights and participation in the management of forests were addressed adequately by the self-organized CFM arrangement? Three interrelated factors were found in this regard.

One, even though the executive council of the self-organized CFM had only higher caste male in it, the general village assembly, which had all adults irrespective of caste and gender, provided both structural and functional space to a wider section of the village for involvement in the decision-making system. While this does not fully justify the continuation of an all-male-higher-caste dominated executive council, the key to success was found in the way the executive council was made answerable to the general village assembly of the village. In the words of two senior leaders in the village: "the general village assembly was the foundation of the institutional arrangement under self-organized CFM which formulated all important management rules and monitored their proper execution by the executive council. In fact, the executive council had the primary responsibility of execution of rules set by the general village assembly with virtually no power to make rule. Moreover, the executive council remained answerable to the general village assembly through periodic reporting."

In contrast, the JFM arrangement is heavily biased towards a stronger executive council in which the forest officer is designated as the secretary. The executive council is responsible for making and executing rules with virtually no answerability to the general village assembly that consists of one male and one female from each household. To analyze the fact that the general village assembly was in control of the forest management under self-organized CFM I calculated the number of meetings it held in a year before and after JFM. I found that the number of general village assembly meetings averaged to more than one per month under the self-organized CFM as against no general village assembly meetings under JFM since it began in 2002. However, I also learnt that women

in the village were never an active part of the general village assembly meetings under self-organized CFM. This analysis leads to the conclusion that the self-organized CFM not only provided better opportunities for involvement of a larger section of the village in decision-making but it also maintained an effective checks and balance mechanism where a stronger general village assembly continuously monitored the moves of the executive council. In contrast, even though JFM brought in better structural arrangements for involvement of caste and gender groups in the executive council it actually put in place a weak and ineffective general village assembly.

Two, since the general village assembly nominated the members of the executive council under the self-organized CFM it ensured that the acceptable leaders take charge. The study also recorded specific criteria used by the self-organized CFM for selection of members. In contrast, JFM does not follow any specific criteria for selection of leaders and the executive council gets formed along party lines. These differences in the selections of leaders influences power equations significantly.

Three, instead of the inequities found in the decision-making of the self-organized CFM arrangement it was successful because of the continuous flow of forest benefits to all villagers in a significantly equitable manner. I have already discussed the various mechanisms which facilitated this under the self-organized CFM. This analysis leads the study to conclude that equity and power issues concerning decision-making arrangement may not be linked to equity in benefit sharing.

4.4.2 Changing perceptions of power

Perceptions of villagers on what constitutes the sources of power within the specific context of Gadabanikilo village provided interesting insights into the analysis of decision-making power and control, and equity related issues. As shown in **Box 3** villagers identified at least ten factors that determine who in the community has power and, as a result, exercise control on the decision-making processes.

Box 3: Perception of people on what constitutes power in Gadabanikilo context

- Caste group one belongs to
- Religious group one belongs to
- Economic status: Land owners and those doing jobs outside village
- Gender group one belongs to: Male holding more power compared to women
- Level of education
- Political affiliation: Aligning with the party in power
- Positions in the village institutional structure
- Those aligning with government programmes like JFM
- Long periods in office in village institutions
- Contractors: as potential source for wage

Source: Based on the results of six personal interviews and three focus groups (including caste groups) in the village

The conventional sources such as caste, religion, gender, economic status (primarily land holding), etc are still considered key determinants of the nature of power each or a group of individuals exercise within a community. However, these determinants of power stand eroded as compared to their status couple of decades back. Instead, political affiliations work as the biggest source of power and control within the decision-making structure of the community. An individual or a particular group grows powerful depending on the scales at which their affiliated political party holds power, i.e. runs the government. The groups wield more power if their affiliated political party has government at all the levels starting from Panchayat to provincial as compared to if it has

government at one or a few levels only. Analysis was done to understand how one particular political group in Gadabanikilo village grew powerful with their affiliated political party holding office at different tiers of governance i.e. Panchayat, Block, District council, State/Province levels. Incidentally, this group now holds forest management power under the JFM arrangement with nine out of thirteen seats in the JFM institution executive council, while the other political party in the village has only four seats.

I found that political affiliations lead to increased access by the group to the government offices in terms of both information and funds. Because their affiliated political party is in office members of this group get a hold of all government contractor work that enable them to create a good volume of wage opportunities for the villagers. As a result, most of the villagers, especially the wage dependent poor, align with this group, as they would not like to lose the opportunities for wage. Villagers also need occasional help in dealing with matters at the local police, land revenue department, courts, and other local offices for which they depend on these political groups. Consequently, these groups within the village exercise a lot of power for the duration for which their affiliated political parties remain in office. In support of this analysis I found that the affiliated political party of the powerful group in Gadabanikilo has governments starting from Panchayat to state level. Moreover, the Naib-Sarapanch (second-in-command) in the Panchayat is from Gadabanikilo village who also belongs to the same political party. This in itself is a great addition to the power of the group.

However, political parties and their related dynamics are not a new concept for villages of India. In case of Gadabanikilo, there have been two political parties since 1990 and prior to that the entire village aligned with only one political party. **Table 13** shows the shifts in political affiliation of individuals and households in Gadabanikilo village. In this context, the study dealt with an important question. Why did the political affiliation and its related dynamics not affect the self-organized CFM over a period of five decades, when it did so with the initiation of JFM in the village?

Two primary reasons were established to support this. One, JFM made a deviation from the traditional institutional arrangement in the village by creating a new forest management institution. Under the self-organized CFM the village institution, which was entirely a choice of all the villagers, had the responsibility of forests. JFM institution, being a government-sponsored entity, soon became a symbol of power and money thereby attracting the attention of all political groups.

Table 13: Trend in the changes in political affiliation in Gadabanikilo

Period of Affiliation	Political Parties in the Village	Voters and Voting Pattern		Household Affiliations to Political Parties	
		Party A	Party B	Party A	Party B
Till 1987	Party A	840 (100%)	-	165 (100%)	-
1991 - 1995	Party A Party B	725	115	135	30
1995 - 2000	Party A Party B	580	260	100	65
2000 - Current	Party A Party B	520	320	90	75

Source: Village voter list, timeline exercise with key village leaders
Note: In 2005 the total voters in Gadabanikilo are 840 and the same number is taken as constant for all the previous years. Total households in the village are 165 and the same is taken as constant for all the election years.

Two, JFM promised to bring hefty amounts of funds to the village and, as remarked by a villager, "everyone jumped in and wanted to have a share in the big money it promised to bring and associated power." Interestingly enough, under the self-organized CFM the village institution was regularly handling an annual budget of the amount more than what the JFM related funding has brought to the village in the last two years of its implementation. Why then funds under JFM became such a big attraction for many in the village? Discussion with a cross-section of villagers revealed that they make a lot of difference between village money and outside money. In making these categories there was an obvious reference to the sources from where these moneys came from. In case of self-organized CFM the funds were generated mostly through periodic contributions from villagers for the good of their forests as well as village. Everyone looked at it as own money and pressures were always high for judicious use of it. Accounts were maintained and presented to the General Village Assembly making it available for public scrutiny. In contrast, funds under JFM were viewed as forest department (out side) money, which a section of the village stated, "provides a good scope for malpractices that actually starts with a percentage cut taken by the department at the time when funds are released." Moreover, the financial accountability of the JFM institution is to the Forest Department with no control of the village institution on the funds and the financial transactions.

CHAPTER FIVE: Conclusions

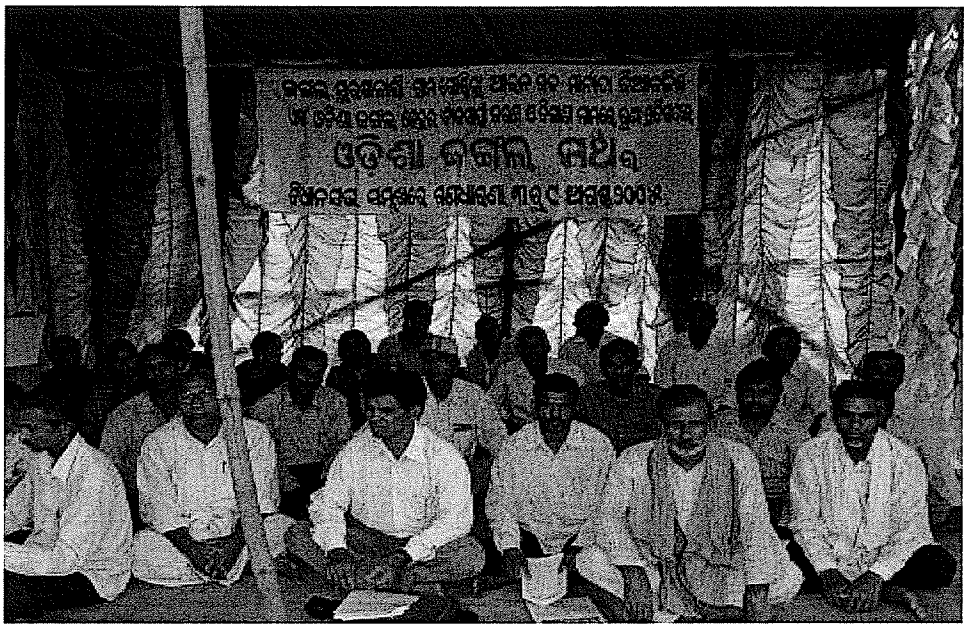


Plate 9: A protest rally by CFM groups in front of State Legislature

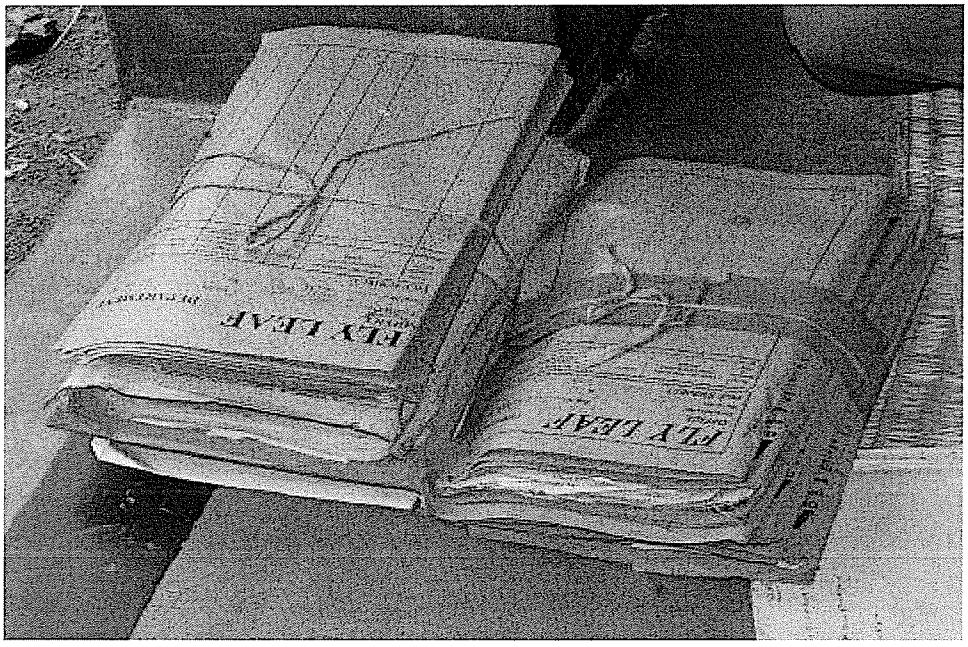


Plate 10: Decades' old documents maintained by the CFM institution

5.1 Introduction

In this chapter, I examine the findings emerging from the research and draw conclusions by identifying some of the alternate policy options for strengthening community-based forest management and forest co-management. However, it is important to mention here that the conclusions drawn in this chapter are limited by the findings obtained through the study in one particular village only. Moreover, the outcomes and comparisons are based on three years of JFM implementation but a similar study after a longer period of JFM may yield different results. The general applicability of the findings of this study is limited. A study over a larger area including more villages, a longitudinal (time depth) study would produce results that would be more generalizable. In view of these limitations my effort in this chapter would be to draw some of the signs of learning and improving from both the experiences of self-organized CFM and JFM, and identify factors that may either constrain or facilitate these processes. I start with specific conclusions pertaining to each of my three objectives followed by more general conclusions.

5.2 Rights and participation

In an arrangement of self-organized CFM the nature of forest commons rights and participation takes shape based on the kind of perceptions people hold with regard to these concepts. The study established that people do not make any significant distinction between the ways they understand the notions of rights and participation. In fact, rights imply the extent to which people are able to access several benefits from the forest and participation means a sense of security that they will continue to involve themselves in

the enjoyment of such benefits. In contrast, JFM brings into force a set of predetermined forest rights and ways of ensuring people's participation without consideration of the perceptions people already have on these concepts. This often results in deprivation of people from exercising their forest rights and participating in the processes of forest management. In view of this, it is essential to ensure that people's perceptions of rights and participation receive a center stage in an arrangement of government co-management.

Another important aspect pertained to the fact that forest commons rights and participation evolved over a period of time depending on the specific context. What facilitated them is a set of enabling mechanisms that developed over a fairly long period of time. While these mechanisms played a key role in leading self-organized CFM to success the introduction of JFM completely altered them. This had far reaching implications for the nature of rights and participation of people in the management of forests. The study found that the bundle of forest commons rights became restricted and the level of villagers' participation decreased moving from self-organized CFM to JFM. These findings indicate that the key is in strengthening these time-tested forest and institution management mechanisms rather than stopping or replacing them with completely new ones, as has already happened under JFM.

In case of rights, the study established a strong relation between various types of forest commons rights (Ostrom and Schlager 1996), which constituted a bundle under the self-organized CFM arrangement. It further analyzed how the absence or weakening of

one particular right in the bundle, under JFM arrangement could affect the effectiveness of other rights. For example, the absence of withdrawal rights under JFM has made access and management rights almost non-existent. The study cautions that either we can have all forest commons rights as a bundle or there is going to be no rights at all. In other words, if they were not held in a bundle then they would manifest as a set of distorted rights without much practical relevance. The key is then to protect the bundle of forest commons rights both in policy as well as through good implementation.

The notion of participation was observed as complex and critical basically because it is linked to several other elements rooted in the cultural, economic and socio-political foundation of the village. In a society that is already divided along caste, class, gender and political lines participation does not come to prevail in a single day. In terms of participation, members of the community start at different levels of the participation typology, as discussed by Agarwal 2001, and the critical aspect is to facilitate each of their movement to the most desirable level of participation. This obviously takes time. While self-organized CFM created forest and institution management mechanisms to facilitate this movement, the JFM arrangement provided structural spaces for various caste and gender groups in order to achieve higher levels of participation. There is meaning in both and combining these factors could be essential for the success of forest co-management arrangement.

Looking at forests in isolation would not provide answers to the issues involved in forest commons rights and people's participation. In this regard, the study concluded that

the nature of forest commons rights and people's participation are also influenced by the nature of rights and participation people enjoy on other commons within the village boundary. What can effectively link them is an institutional arrangement that involves multiple natural resources within the village. The study found that JFM brought in a singular focus on forest, where the institutional arrangement along with people's rights and participation exclusively dealt with forest related matters thereby creating a gap between forests and other commons within the village.

5.3 Cross-scale linkages

Villages in an area are culturally and historically connected that has resulted in several linkages and reciprocal relationships concerning forest resources. Several reciprocal linkages between the self-organized CFM villages were recorded during the study. It observed that these villages had a system of maintaining reciprocal rights over forest benefits while the same did not extend to forest related decision-making. The study also found that giving rights over forest benefits and ensuring participation of neighbouring villages was used as an effective strategy for better protection. However, with the initiation of JFM, forest management became too village specific thereby altering the reciprocal linkages with the neighbouring villages. The JFM policy did not take cognizance of the web of relationships and linkages that existed between the self-organized villages concerning their forests. It is important to understand these linkages and safeguard them against any drastic reconfigurations. Policy protection to these important aspects of forest management needs focus.

Under the self-organized CFM the forest management institution had stronger links not only with neighbouring villages but an equally stronger link was observed in case of its linkages with higher level institutions including NGOs and forest federations. Each of these higher-level institutions has its own cross-scale linkages with several other institutions; once the study village was linked to them it had obvious access to all those layers of institutions and the facilities and opportunities they offered. Therefore, not only horizontal linkages it is also important to facilitate stronger vertical linkages.

Literature has the evidence that JFM emerged as a result of the experiences of the ongoing self-organized CFM activities on a massive scale. When the government initiated JFM policy in 1993 there were already several thousand self-organized CFM villages in the state. However, an analysis of the JFM policy reveals that the existing CFM experiences have not been incorporated. This goes against the popular belief that only official recognition to CFM, without significant structural, functional and normative changes, would have provided a good basis for initiating government co-management. We should not run away so quickly from these experiences that, in fact, could act as the foundation of the government co-management regime. Attempts to compartmentalize the CFM diversities will not only end flexibilities but also soon lead to failure.

5.4 Power and control

There is a perceptive change in the power dynamics and control aspects of Gadabanikilo village in the recent decades. While conventional sources of power such as caste, religion, and economic status stand eroded, political affiliation is emerging as the

biggest source of power and control within the decision-making structure of the village. However, it was interesting to observe that political affiliations did not influence self-organized CFM over the six decades of its continuation, while it has negatively influenced the institutional arrangement under JFM. This can be ascribed to two different reasons. One, creation of a new institution under JFM separately from the existing village institution under self-organized CFM made the former a symbol of power. Two, flow of external funds into the village that became the center of attraction especially when people made a distinction between village money and outside money. In case of village money the CFM institution remained accountable to the village assembly whereas in case of external funding the JFM institution has to report to the Forest Department without any scrutiny by the village assembly. This opened ways for financial malpractices.

The vulnerable and disadvantageous groups like women, Scheduled Caste and forest dependent poor in the village often get excluded from the mainstream decision-making process. The study revealed that there was no representation of Scheduled Caste (constitute 35 percent of the village households) and women (constitute 45 percent of the village population) in the executive council of the self-organized CFM institution since its inception in the 1940's. In contrast, the JFM policy provides for the representation of both Scheduled Castes and women in the executive council of the JFM institution. The creation of this structural space for representation in the decision-making structure is definitely a positive development. This is also a good example of enabling policy framework that supports strengthening of CFM. However, such structural spaces have not translated into actual participation in decision-making by these groups in the case of

Gadabanikilo. Even though JFM provides for structural space there is still a need to safeguard the interests of the vulnerable and disadvantageous groups in the village as they tend to get affected most by any changes.

The study dealt with the important question of how forest management became successful with an iniquitous institutional arrangement under the self-organized CFM. It was observed that a strong general assembly, with all adults as its members, provided structural and functional space for a wider section of the village to get involved in the decision-making processes. The executive council remained accountable to the general assembly with the primary responsibility of execution of polices set by the general assembly. In contrast, JFM promotes a strong executive council and the general assembly mostly remains non-functional. The concept of a stronger general assembly came up as an attractive proposition to deal with inequities and power imbalances, especially in heterogeneous village communities.

5.5 General conclusions

The study not only ascertained that there were significant differences in the perceptions and preferences of self-organized CFM village and the Forest Department; it also found that their entire worldview stood opposed. With differing worldviews it may not be possible to initiate and continue a regime of government co-management. Therefore, the foremost challenge is to effectively combine the worldviews of both CFM and JFM without which the ongoing efforts in government co-management may not bear desirable results.

The discussions pertaining to self-organized CFM and JFM lead us to one most important conclusion, i.e. transition from the former to the latter signifies a move from a complex and diverse system of forest management (self-organized CFM) towards a simple and predictable system (JFM). This forms the crux of the cooptation problem that makes the processes of change, learning and adaptation difficult. Based on the characteristics of complex and simple systems, **Table 14** provides an analysis of how the process of transition from complex to simple forest management has occurred in case of Gadabanikilo and with what consequences. The key challenge is to maintain diversity by nurturing the characteristics of a complex system. This has the potential to lead to sustainability of government co-management arrangement.

The analysis of both the JFM policy and its implementation represented a "one-size-fits-all" approach that has made it easier for forest management control to move from the village to the Forest Department. A range of management decisions, from the size of the forest management unit to the sharing of benefits is pre-determined at the Forest Department level. This has also significantly altered and restricted the diversity of options available under self-organized CFM. The predetermined rules and regulation provide a fixed format for each aspect of forest management. Moreover, management action by the villagers now has to go through extensive and rigorous bureaucratic processes. As such, forest management by communities is undergoing a process of bureaucratization. However, considering that JFM is only three years old in Gadabanikilo there is room to evolve. If JFM evolves in such a way that allows accountability and

transparency, then it can provide scope for establishment of an effective co-management arrangement.

Table 14: Transition from complex to simple system of forest management

Characteristics of Complex Adaptive System	Characteristics of Forest Management Systems		Characteristics of Simple System
	Self-Organized CFM	JFM	
Non-linearity	Each unit of management is considered unique: Variation in institutional arrangements - structure and rules - across villages	One-size-fits-all approach: Single institutional structure and rule system across contexts	Linearity
Scale	Stronger cross-scale linkages: Reciprocal rights with neighbouring villages and strategic relationship with NGOs and forest federation Rules evolve based on the growth of the resource	Revenue village as fixed unit of management Village linked to the forest department only Predetermined institutional rules without consideration of forest status	Lack of Scale
Self-organization	A flexible institutional arrangement where the structure, function and rules took shape over a period of six decades Institutionalized responses to emerging conflicts within the village and with neighbours	A rigid institutional framework with fixed members and preset rules to deal with challenges Crisis in the management system often dealt with dissolution of the JFM institution by the Forest Department	Mechanistic
Uncertainty (Multi-equilibrium)	Institutional efforts to management often involves severely degraded forests thereby making results largely unpredictable Heterogeneous character of the community makes social and institutional processes uncertain Continuous experiment to achieve alternate stable states with emerging signs of uncertainties	Policy outlines all details of forest management which are strictly adhered in order to make the arrangement highly predictable and results indisputable Uncertainties considered as a sign of failure - no recognition of stable states other than originally intended	Predictability/Certainty (Single equilibrium)
Emergence	Management institution imbues several emerging properties in the course of dealing with the process of self-organization	All properties of the management institution are predetermined and highly controlled through uniform policy provisions and their rigid implementation	Non-emergence /Controllable

Source: Based on Gunderson and Holling 2002; Berkes et al. 2003; Orissa Government Order on JFM 1993; Interviews with three village elders

The study found several references to the criticality of proper institutional arrangement for sustainable resource management. Institutional arrangements under both

the self-organized CFM and JFM were found with several inadequacies pertaining to the structure, function and norms. The study also reinforced the idea that there is no such thing as a 'perfect institution'. Institution building must be understood as a continuous process that takes shape based on the specific context. The key is to craft an institutional arrangement that nurtures rights and participation, promotes scale-based linkages both at the horizontal and vertical levels, and addresses equity and power issues on a continuous basis.

In conformity with the popular opinion in the state that the forest management policies, including JFM, are inefficient my study also found several inadequacies in the JFM policy. However, the study also significantly hinted at the ways of implementation of such policies in the field and provided evidence to conclude that efficient implementation of polices in the field would not only increase the chances of success but also provide opportunity for rectification and improvement in the existing policies. The gap between policy and implementation needs to be bridged.

To put the debate between self-organized CFM and JFM in perspective it is important to mention how people perceive these systems of forest management. During the course of the study, the various explanations given by villagers on the situation emerging from the CFM to JFM conversion in Gadabanikilo lead me to make an important observation, i.e. under the self-organized CFM the villagers perceived forest management as a "way of life" where as they considered JFM as a "formalized way of life". The obvious choice for them was the former as they continuously struggled with

some of the odd manifestations of the latter. This has critical implications for people's rights over forest commons, their participation in its management, reciprocal linkages with others and power dynamics within the village.

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Appendix 1

Research Questions for Semi-structured Interviews

1. Status of commons' characteristics

- How are the rules of excludability and subtractability determined under Self-organized Community Forest Management and Joint Forest Management arrangement? How are excludability and subtractability impacted through cooptation?

1. Who decides who is in and who is out?
2. Who decides rules for restricting access?
3. Who decides the limits of subtraction?
4. Who deals with infraction?

2. Nature of property rights

- What is the overall status of property rights under the current situation? How has cooptation influenced the 'bundle of rights'?

1. What are the property rights available under Joint Forest Management?
2. What are the property rights missing from Joint Forest Management arrangement?
3. What are some of the implications of the missing property rights for the full realization of the existing property rights as well as for general forest governance?
4. How was property rights held by the community under the self-organized Community Forest Management arrangement?

5. What are some of the desirable property rights for effectively strengthening community-based management?

3. Enabling conditions for sustainable commons' institution

- How are the principles of commons management determined under both Self-organized Community Forest Management and Joint Forest Management arrangements? What are the various enabling conditions for sustainable commons' institution under both the arrangements? How do these conditions influence participation and property rights?

1. How are the resource and institution boundaries determined?
2. How are operational and collective-choice rules formulated?
3. Are there conflicts between local rules and the rules formulated at the policy level?
4. Who has the responsibility of monitoring?
5. What are the conflict resolution mechanisms and who decides these?
6. What is the status of recognition of the commons' institution by the state?
7. Is the government undermining local authority?
8. What is the level of external aid (skills, funds, information, etc.) provided to the community?
9. How are local forest management groups nested at multiple layers?

4. Cross-scale institutional linkages

- What is the scope for effective cross-scale institutional linkages under the current forest management regime? How is the local institution linked to other institutions across communities as well as government and other agencies? What is the level of impact by higher scale institutions on lower scale institutions?

1. How do forest department and the forest institution share power, authority and accountability?
2. How the self-organized forest management system have been accommodated in the current co-management arrangement?
3. What roles do other agencies, such as NGOs, funding agencies, other government departments, Panchayat, forest federations, perform?
4. How is the community forest institution nested with other similar institutions, i.e., membership in the forest federation?
5. What role do the forest federations perform in the arrangement of community-based forest management?
6. What are some of the mechanisms to deal with conflicts resolution at a community level and with the forest department?

5. Resilience, adaptability and transformability

- How resilient is the current arrangement of forest management? What are some of the major determinants of resilience in the community institution? What is the level of adaptability and transformability in the institutional arrangements of the Self-

organized Community Forest Management systems in the face of growing influence of Joint Forest Management?

1. What are the challenges faced by the community institution and how it has been dealing with such challenges?
2. What is the extent of change the community institution has undergone since its conversion to Joint Forest Management (Latitude)?
3. How easy or difficult it is to change the self-organized Community Forest Management systems (Resistance)?
4. How close the state of the system is to a limit or "threshold" (Precariousness)?
5. How is resilience of the community institution facilitated by actors at different scales (Panarchy)?
6. What is the collective capacity of the community members to manage or influence resilience?
7. What is the collective capacity of the community members to create new institutional arrangements to deal with problems of co-management?

6. Decentralization, participation and power relations

- What is the extent and nature of devolution of forest management authority from the forest department to the community institution? What is the level of participation: who participates, what effect this has, and what factors constrain participation? How are equity issues across scales dealt with?

1. Has there been significant transfer of power and authority to the community institution?
2. What are the factors facilitating or hindering full participation of community members in the institutional processes?
3. What are some of the effects of cooptation on the level of participation by local people?
4. Are there better ways to enhance or facilitate local peoples' participation in forest management?
5. What are some of the equity concerns, how are they being managed and what are some of the effective ways to resolve them?

Appendix 2

List of Semi-structured Interviews and Focus Groups

Category	Description and sample size
Members of JFM institution	N = 4 in Gadabanikilo village
Members of self-organized CFM institution	N = 4 in Gadabanikilo village
Key leaders / individuals	N = 3 in Gadabanikilo village
Village women involved in bamboo weaving	N = 2 Scheduled Caste hamlet of Gadabanikilo
Forest watchers	N = 2 Watchers employed in year 2005 in Gadabanikilo N = 2 Watchers employed in previous years in Gadabanikilo
Neighbouring villages of Gadabanikilo	N = 1 in Sanapathuria village N = 1 in Godabandha village N = 1 in Gunduria village
Members of the local forest federation	N = 5
Staff of local NGOs	N = 5 at Ranpur, Bhubaneswar and Angul
Staff of the forest department	N = 2 at Ranpur Range Office