

Trends in forest ownership, forest resources tenure and institutional arrangements: are they contributing to better forest management and poverty reduction?

Case studies from Orissa, India

By

K.D. Singh

Country Capacity Building in Forest Resources Assessment Programme,
Forest Resources Division, FAO, Rome;

Ashoka Trust for Research in Ecology and Environment [ATREE], New Delhi

and

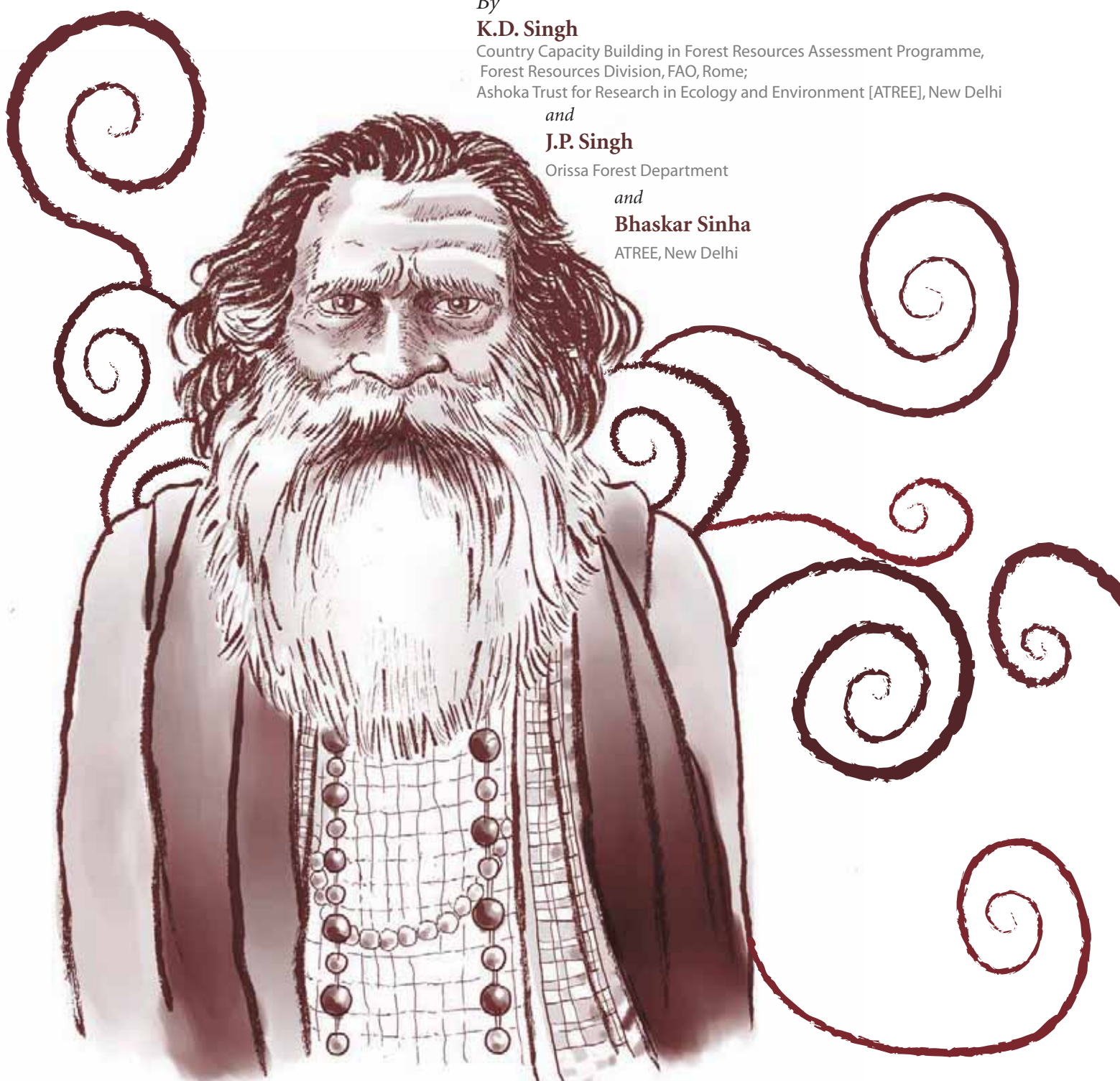
J.P. Singh

Orissa Forest Department

and

Bhaskar Sinha

ATREE, New Delhi



Summary

Orissa has a multiplicity of different forest tenure systems and provides an excellent opportunity for studying various aspects of forest management and tenure, particularly their contribution to sustainable forest management (SFM) and poverty alleviation (PA). The poverty of the people and the scarcity of livelihood opportunities have given rise to many community-driven (bottom-up) approaches and government (top-down) initiatives. This study presents six types of forest resources tenure, five of which occur on state lands: national parks and wildlife sanctuaries, two multiple-use forest management regimes, joint forest management (JFM) and community forestry initiatives. The sixth tenure type is industrial forestry on private land.

National parks and sanctuaries are classified under the Wildlife Protection Act of 1972 and cover 796 185 ha. Two multiple-use forest management regimes are classified under the Indian Forest Act of 1927: reserved forests cover 1 964 000 ha, and protected forests 2 401 000 ha. Reserved forests have clear boundaries and good management plans and constitute the state's most intensively managed forests. Protected forests are less clearly defined, and are beset by uncertainties. Among these, the unsettled nature of their boundaries is a source of serious public discontent, particularly in tribal communities, and is contributing to the rapid destruction and degradation of forests.

JFM is a recent initiative arising out of the 1988 National Forest Policy. It involves sharing forest benefits and forest management responsibility between the state and the community, and it currently covers 652 258 ha. Self-initiated community forest management (CFM) covers 186 900 ha, most of which is in protected forests under State control. The communities involved in CFM may be groups of households, individual hamlets or villages, clusters of villages or federations of 80 to 90 villages. Private forests cover 1 8471 ha of forest land, which is used for industrial objectives.

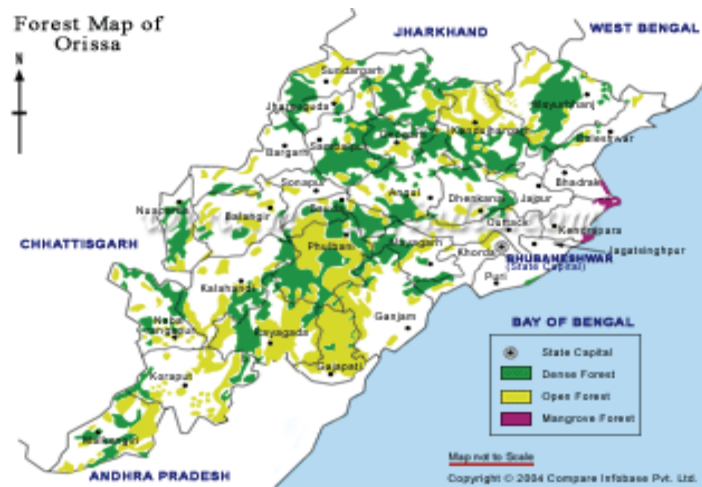
For each of these types of tenure, the paper provides a short description of the institutional arrangements, legal basis, current status and trends, and analyses the impacts on SFM and PA. It makes a comparative evaluation of the tenure types, and presents recommendations for the future.

Disclaimer: The aim of this paper is not to criticize or commend a particular system of forest management or the parties involved in it, but to assess how effective each system has been in maintaining the integrity of forest ecosystems and contributing to the socio-economic development of forest-dependent communities. The discussion aims to help guide the choice of appropriate options for different forest management situations and to improve existing systems of forest management.

The formal and legal basis

Orissa is located on the eastern coast of India and covers a total area of 15 570 700 ha. Its population of 37 million inhabitants (Director of Census Operations, 2001) works out at 2.4 people per hectare; Orissa accounts for 4.7 percent of India's total area and 3.6 percent of its population. The state is well endowed with natural – mineral, marine, agricultural and forest – resources, but has a high level of poverty at 55 percent of the population, compared with the national average of 39 percent (NCAER, 1999).

FIGURE 1
Forest cover in Orissa



Orissa has 5 813 600 ha of forest land, but only 4 836 600 ha of this is covered with vegetation (FSI, 2003). The main forest types are northern tropical semi-evergreen and moist deciduous; the main commercial timber species are sal (*Shorea robusta*), pia sal (*Pterocarpus marsupium*) and asan (*Terminalia tomentosa*); and among the main non-timber species are bamboo, kendu (*Diospyrus melanoxylon*), mahua (*Madhuca indica*) and tamrind (*Tamrindus indica*).

Orissa follows the National Forest Policy of India, which emphasizes the need for balance between ecology and local use rights. The Orissa Forest Act of 1972, which is modelled on the Indian Forest Act of 1927, provides the legal basis for forest management and serves as an important tool. Since the act was enforced, a number of additional laws and rules have been framed to control and manage various activities related to the planning, control and development of forests and wildlife resources (see Annexes 2 and 3).

In 1980, forestry became a matter for central government control, and the Indian Forest Conservation Act was passed. This act aimed to control indiscriminate deforestation by obliging states to obtain central government approval before forest land can be used for non-forestry purposes. States must also compensate for the forest land affected, by establishing plantations that are twice the size of the deforested area. The act has been very effective in slowing down the rate of deforestation, but less successful in controlling the process of forest degradation.

The Orissa Forest Department (OFD) was established in 1936, during the colonial period, and is currently headed by a Principal Chief Conservator of Forests. The forest area is divided into 27 forest divisions, each of which is under a divisional forest officer; the smallest management unit is a “beat”, which is under a forest guard. Working plans are updated every ten years, and research, extension and training services are involved in maintaining and improving the quality of forest management and ensuring a sustainable supply of goods and services. OFD has 280 professional officers and 3 171 forest guards, implying ratios of 21 000 ha per professional officer and 1 830 ha per forest guard.

Table 1 presents a summary of the forest ownership classes and management regimes used in this study. Annex 1 provides statistics on the state in matrix form.

TABLE 1
Ownership patterns and forest management systems in Orissa

Ownership/contractual regime	Operational forest management regime
I. Public ownership	Owner is the exclusive manager: – national parks/sanctuaries; – reserved forests under multiple-use management; – protected forests under multiple-use management.
	Devolved management rights: – joint forest management (JFM); – community forest management (CFM).
II. Private ownership	Private forest management.

TYPE 1: NATIONAL PARKS AND WILDLIFE SANCTUARIES

National parks and sanctuaries cover 5 percent of the state's land area and 13.7 percent of its forest area, encompassing most critical habitats. Two national parks cover a total of 99 070 ha, and 18 wildlife sanctuaries cover 697 115 ha. Similipal Tiger Reserve has an area of 275 000 ha, which overlaps with Similipal National Park (84 570 ha) and Similipal Sanctuary (190 500 ha). The Wildlife Wing of the Forest Department, with its staff of wildlife wardens, is responsible for wildlife management under the Wildlife Protection Act of 1972.

TYPE 2: RESERVED FORESTS

At present, OFD manages 1 964 321 ha of reserved forests. These were constituted under the Indian Forest Act of 1927 (see Annex 3), which restricts communities' rights to the collection of fallen fuelwood and non-timber products from these forests. Reserved forests are well demarcated and managed according to a long-established written code, which is updated every ten years. Some of these forests have been managed since 1886, when grazing control and fire prevention were introduced and regeneration operations implemented.

TYPE 3: PROTECTED FORESTS

Protected forests constituted under the Indian Forest Act of 1927 cover 2 400 836 ha and are managed by OFD. The boundaries and rights of local communities for this group of forests are not yet clear, and the forests have transitional status only. Protected forests are divided into demarcated protected forests and undemarcated protected forests (see Annex 3), depending on the progress made in forest settlement.

According to law, the land is under the Revenue Department's control, while tree growth is under OFD. Most protected forests are close to or within the geographical boundaries of revenue villages and are recorded in the Revenue Department's Record of Rights as, for example, gramya jungle (village forest). This is confusing, as village forests are legal entities under the Orissa Forest Act.

Before independence, protected forests belonged to princes and landlords. The State annexed them after independence, declaring those with some evidence of earlier management "deemed reserved forests", and the others "protected forests". These forests are reported to include some shifting cultivation areas, which are used by approximately 150 000 tribal families. Land with a slope of more than 10 degrees has been declared government land and has not been surveyed, even though some tribes traditionally live on such hills. This has resulted in public unrest and fears of eviction in the communities that may be the rightful owners of the land.

TYPE 4: JOINT FOREST MANAGEMENT

In India, JFM was formally introduced with adoption of the 1988 Forest Policy, but participatory forest management has a much longer history in Orissa, which OFD has continued by encouraging local communities to protect and manage government forests close to villages. The Swedish

International Development Agency (SIDA)-assisted Social Forestry Project gave new impetus to the movement from 1984 to 1994, when timber, fuelwood and fodder plantations were established on village land in cooperation with local people. Village forest committees (VFCs) were officially constituted to protect and manage these newly created forests under the Village Forest Rules of 1985.

On 1 August 1988, the Government of Orissa issued a resolution making provisions for villagers to undertake legally defined responsibility for protecting the forests adjoining their villages in return for concessions that help them to meet their requirements for fuelwood and small timber, under section 24 of the Orissa Forest Act 1972. Divisional forest officers were made responsible for constituting forest protection committees (FPCs) for selected villages.

A further step was taken by a Government of Orissa Resolution of July 1993, following the Government of India resolution on JFM of 1990. The Orissa resolution provides detailed guidelines for local community involvement in the protection of forests through the formation of village-level forest protection committees, called Van Samrakshan Sammittees (VSS), with their own executive committees, duties and responsibilities. A state-level steering committee, chaired by the Forest Minister, was also constituted to monitor and guide implementation of the resolution.

These and other initiatives, taken at different times and by different agencies, gave rise to a movement towards participatory forest management, as summarized in Table 2. The statistics reported in Table 2 may differ significantly from reality because some communities and forest areas are included in more than one programme or have since disappeared altogether.

TABLE 2
Evolution of participatory forest management in Orissa

SN	Type of committee	Number	Area (ha)
1	Village forest committee (VFC), 1985	9 141	118 122
2	Forest protection committee (FPC), 1988 and 1990	4 928	1 007 705
3	Van Samrakshan Sammittee (VSS), 1993	1 473	142 318
4.	Unregistered forest protection group (CFM)	769	114 841

Source: OFD, 1999.

Participatory JFM arrangements for the protection and regeneration of degraded forests are now well established in Orissa. According to the latest available report, in 2003 (see Annex 4) 6 822 VSS were protecting 652 258 ha of forest. OFD's main responsibilities in JFM are: assisting in the selection/demarcation of the forest area for JFM; preparing the JFM micro-plan, and obtaining approval and budget for its implementation; transferring sound silviculture and soil conservation skills to VSS members; and guiding the implementation of JFM micro-plans. Recent resolutions indicate that there is a tendency towards greater decentralization and benefit sharing with communities (see Annex 5).

TYPE 5: COMMUNITY FOREST MANAGEMENT

Community forest management (CFM) represents the antithesis of State forest management, and is sometimes referred to as "self-initiated community forest management". In Orissa, CFM has no legal basis and is purely informal. Several local tribes are known to have their own active forest protection groups, but very little has been reported or written about these. However, according to a Directorate of Social Forestry survey, there were 2 509 CFM groups/villages in 1999, informally covering a total area of 186 900 ha throughout the state. CFM is more widespread in protected than reserved forests. A sample survey in three districts shows that local non-governmental organizations (NGOs), OFD and the communities themselves are all instrumental in initiating the CFM movement (Singh, Sinha and Mukherji, 2005). CFM is a very healthy sign that communities are taking responsibility for controlling forest degradation and deforestation.

The communities involved in CFM can be a group of households, a settlement or hamlet, a cluster of villages or even a federation of 80 to 90 villages; the areas under protection range from a few to 10 000 ha.

Planning and control of CFM appears to be steered by village or hamlet representatives, who are selected or elected according to local customs and traditions. These traditional institutions are responsible for organizing meetings, where rules and regulations for the management and monitoring of CFM forest resources are collectively decided. The committees also decide how benefits from the resources should be shared, and set punitive measures (social and monetary) for offenders. In CFM, all management issues are discussed and decided in the specific context of the village concerned, taking account of the local community's needs. This village-level operation makes CFM one of the most decentralized systems in existence.

TYPE 6: PRIVATE FOREST MANAGEMENT

Actors in the paper industry approached the government for allotments of forest land for plantations that would satisfy the industry's raw material requirements; so far, however, their requests have not been fully satisfied. Many paper mills are now encouraging farmers in Orissa to grow plantations of Casurina, Acacia and Eucalyptus species. The industry assists individual farmers by supplying seedlings and through buy-back arrangements. One Orissa company – the JK Paper Mill – helped farmers to establish 18 471 ha of plantations in 12 districts. To begin with, the mill had to struggle to encourage farmers to plant trees, but once a few successful plantations had been planted, more and more private farmers started to approach the mill, which expects to be procuring all its hardwood requirements from plantations in the near future.

Changes and trends

TYPE 1: NATIONAL PARKS AND WILDLIFE SANCTUARIES

Although the area of land set aside for conservation has remained relatively unaltered, the number of animals in the protected areas is reported to have increased significantly: tigers are up from 17 in 1972 to 99 in 2001/2002, and in 1999 the other animals reported included 67 leopards, 500 spotted deer, 450 wild elephants and 350 gaurs. Visits to the parks indicate that there is very good management of wild animals and forest cover.

TYPE 2: RESERVED FORESTS

OFD's gradual loss of authority over forests started soon after independence. At present, the management of forests through strict guidelines for sustained yields conflicts with local people's unauthorized cutting to satisfy their immediate fuelwood and grazing needs, which are estimated to have increased significantly since independence. Politicians often make policy decisions without consulting foresters.

The Indian Forest Conservation Act of 1980 and the logging ban are examples of the actions taken by the legislature and the judiciary, respectively, to prevent rapid deforestation and the overexploitation of forest resources. However, these measures have not been able to stop unsustainable fuelwood collection, grazing and timber smuggling by organized gangs, the impact of which is illustrated by the fact that in 2001/2002 a total of 58.98 million rupees (RS – slightly more than US\$1.37 million) of illegally harvested forest products were seized, together with 1 140 vehicles. This should be compared with the total revenue received by the state from timber and fuelwood in the year 1999/2000, which was RS52.1 million – less than the value of the smuggled goods seized.

Encroachment and shifting cultivation have become major problems in forest management. Table 3 shows the cases of encroachment offences that OFD booked in one reserve forest block in Rayagada Forest Division covering an area of 10 223 ha, with sal (*Shorea robusta*) as the dominant species. The quality of forest in this area is good, but shifting cultivation has already denuded some of the best forests and is now extending to new areas. Cases of encroachment or smuggling offences often take a long time to be settled and usually end in acquittals.

TABLE 3
Forest encroachments

Year	Cases booked	Area (in acres) encroached	No. of trees felled	Remarks
1999/2000	17	20	454	The case history does not record the area encroached, so the actual area is much greater than that recorded here.
2000/2001	14	3	1 267	
2001/2002	26	10	897	

Source: OFD 2005, field survey reports.

As a result of the logging ban, non-timber forest products (NTFPs) have become the main source of state revenue; their percentage share rose from 35 percent in 1981/1982 to nearly 90 percent in 2001/2002 (Table 4). Kendu leaves (*Diospyrus melanoxylon*) generated three-quarters of the total revenue from forests.

TABLE 4
Annual revenues from NTFPs

Year	Total income from forests (million RS)	Income from NTFPs (million RS)	NTFPs' contribution (%)
1980/1981	372.6	131.9	35.4
1990/1991	1 090.1	904.7	82.6
2000/2001	845.0	757.0	89.5

Source: OFD, 1991; 2005.

TYPE 3: PROTECTED FORESTS

The finalization of protected forest boundaries and rules has been very slow (Table 5). Statistics indicate that in the last 30 years only 119 000 ha of protected forests have been notified as reserved forests, and 640 000 ha have been transferred to other land-use categories (e.g., non-forest or degraded forest land).

TABLE 5
Forest areas by legal class

Legal status	Forest area (ha)			
	1957/1958	1972/1973	1981/1982	1999/2000
Reserved	2 246 000	2 590 000	2 504 000	2 709 000
Protected	4 316 000	3 885 000	3 492 000	3 008 000
Total	6 562 000	6 475 000	5 996 000	5 717 000

Source: Sahu and Das, 1997.

Because of these unsettled conditions, no effective forest management can be introduced in this vast forest territory. A 1972 report noted with concern that “this valuable asset is being ruined at a much greater rate than is normally imagined. The low level of production of 0.17 m³/ha speaks of a very low level of management. The forests are surely capable of producing at least twice as much, if not more. The revenue would also correspondingly double itself. If timely steps are not taken, this valuable asset will be lost for ever” (Ministry of Environment and Forests, 1972).

TYPE 4: JOINT FOREST MANAGEMENT

During the last ten years, JFM has spread very rapidly in Orissa, and OFD has taken concrete measures to create local institutions for forest protection and management. The nature of usufruct sharing is evolving constantly, and when committees are constituted, women’s representation is ensured. There are reported to be 6 822 JFM committees protecting a forest area of 652 258 ha, compared with 1 473 VSS protecting 142 318 ha in 1999 (see Annex 4).

Forest development agencies (FDAs) at the forest division level represent an innovative mechanism for decentralizing power in forest protection, development and expansion. FDAs pass all money for development activities directly to the communities or JFM committees concerned. In order to reduce the demand for fuelwood, cooking gas is being supplied to forest and forest fringe dwellers, free of cost to start with.

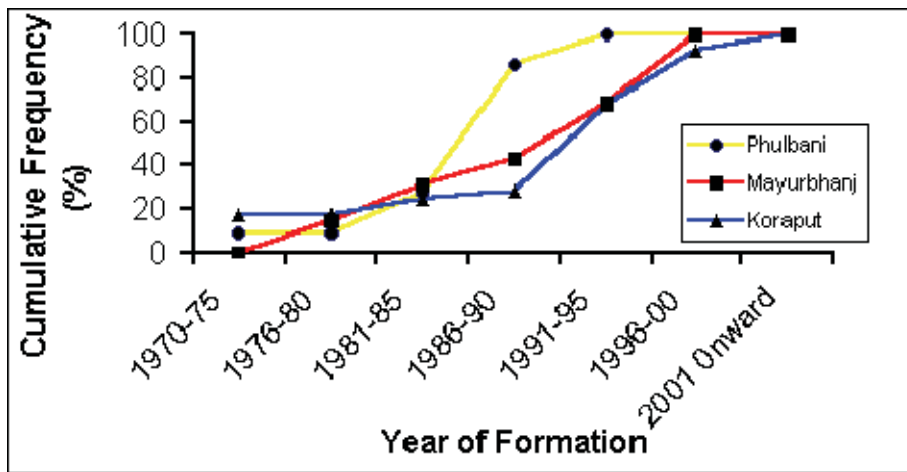
The lack of progress in forest settlement is the main bottleneck for the further advancement of JFM. Land is the main source of livelihood for rural people in Orissa, and the non-settlement of rights poses the greatest threat to JFM. While the exact number of people whose rights are affected is not known, it is likely to be large.

TYPE 5: COMMUNITY FOREST MANAGEMENT

CFM was initially concentrated in Dhenkanal, Mayurbhanj, Koraput and Sundergarh districts, and is now spreading rapidly to others. Singh, Sinha and Mukherji (2005) report that CFM has become a mass movement in Orissa, even though it lacks any legal basis. From a field survey of three districts,

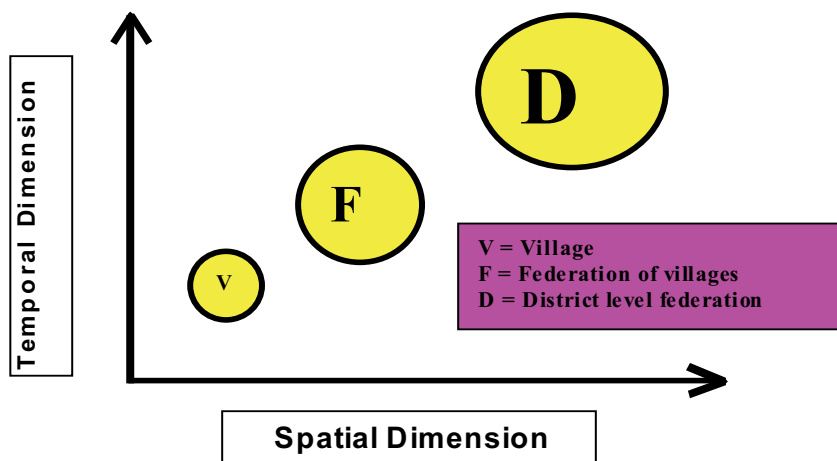
the authors found that 69 to 75 percent of the existing committees were formed in the last 15 years (Figure 2). This trend indicates the strength of demonstration in spreading CFM.

FIGURE 2
Evolution of CFM in three districts of Orissa



As well as spreading from village to village, the CFM approach is also showing a trend towards the formation of federations, which provide smaller, village-level institutions and communities with better protection and bargaining power for their NTFPs. The formation of Budhikhamari federation was supported by OFD and the local politician, while collective action at the village level has also led to inter-village cooperation and the development of federations of CFM groups (“F” in Figure 3), which are playing an important role in addressing livelihood concerns.

FIGURE 3
Evolution of CFM in Orissa



The Nayagarh federation provides a good example of the challenges faced by federations at the district level (“D” in Figure 3). This is a large federation, but because it is a forum and not a registered society, OFD contests that a small number of people are using it for their own vested interests. The exercise of rights over forest is beyond OFD’s control, and such alienation may create a situation of chaos when the timber value of the forest has been fully realized. It is therefore felt that OFD should be able to mobilize and harmonize CFM, including by increasing communities’ sensitivity to forests.

TYPE 6: PRIVATE FOREST MANAGEMENT

When it became difficult to procure bamboo and royalty rates increased, the paper mills started to use different technology and reduced their need for bamboo. In the past they used 50 percent bamboo and 50 percent hardwood for paper making, but now they rely mostly on locally grown plantations of Eucalyptus, Acacia and Casurina species, and the proportion of bamboo has declined to 15 percent. Home-grown bamboo is preferred because it requires fewer chemicals than forest bamboo. Currently, the paper industry procures 3 500 tonnes of home-grown bamboo from Assam and Bengal and produces 350 tonnes of paper per day.

Status and impact of different forest management regimes

TYPE 1: NATIONAL PARKS AND WILDLIFE SANCTUARIES

In general, wildlife management has been very effective, as reflected by the increasing numbers of animals in parks and sanctuaries. The Wildlife Protection Act is an important legal instrument in protecting wildlife against the pressures of a growing population and the commercial interests of poachers. All of India is dedicated to conserving its rich biological diversity.

The government-sponsored Eco-Development Programme is playing an important role. This programme combines conservation measures with economic development of the people residing in and around sanctuaries and national parks, in order to reduce their dependence on forest products and improve the ecological health of the protected areas. The aim is to increase the productivity of land and forest resources so that alternative sources of employment and income become available to forest dwellers. Examples of the measures introduced include developing agriculture, improving land productivity, developing minor irrigation schemes, establishing fodder and fuel plantations, livestock care and improvement, introducing fuel-saving devices, providing medical care and family planning, and building environmental awareness.

TYPE 2: RESERVED FORESTS

There is no doubt that the Indian Forest Act of 1927 prevents the major loss of reserved forests by providing a sound basis for the settlement of boundary disputes, the protection of local rights and the effective control of illegal activities. However, a side-effect of OFD's strict implementation is the arousal of public anger and increased threats to forest staff.

OFD acknowledges that the "reserved forests are not fully stocked and moist deciduous forests are changing to dry deciduous types and becoming more vulnerable to fire. It is estimated that 50 percent of reserve forests are under various stages of degradation, with 30 percent being in severely degraded state with a canopy cover less than 20 percent". Among the reasons cited for the degraded condition of forests are increased smuggling, shifting cultivation, head loading and other biotic pressures. Since enactment of the Forest Conservation Act in 1980, about 26 608 ha of forest has been converted to industrial and other development projects.

The ongoing ban on green logging (since 1992) is a response to the perception throughout India that forest harvesting in the past was unsustainable and adversely affected the long-term ecological and environmental balance. Table 6 sums up the most important strengths, weaknesses, opportunities and threats (SWOT) in state forest management in terms of forest area. The system seems to be facing a great challenge that is unprecedented in India's history of forest management. An ideal solution would be for the state and communities to join hands, as described later in the section on lessons learned.

TABLE 6
SWOT analysis of forest sector administration

Strengths	Weaknesses
Disciplined, organized staff	Short tenure, lack of staff continuity
Long history, tradition and culture	Poor motivation, no incentives for doing good work
Technically sound, well-trained personnel	Use of obsolete technology, poor application of research in the field
Operational, even in remote, isolated areas	Work in isolation, poor communication skills, lack of publicity
Well laid-out forest policy, legislative support, rules and regulations	Inadequate funds and investment

Opportunities	Threats
Increased public involvement in forestry and the environment	Increasing human, livestock and biotic pressure on forests
Funding from international and national agencies	Encroachments on forest and regularization of encroachers
Access to modern technologies to improve resource management	Low government priority to forestry
Growth of agroforestry and farm forestry	Political interference
Work with other agencies and sectors	Conflict of policies with other sectors

Source: D' Silva, 1995.

TYPE 3: PROTECTED FORESTS

While reserved forests occur in large blocks, protected forests (which are also called revenue forests as the land is under the control of the Revenue Department) occur in small patches interspersed with habitation. Table 7 illustrates the distribution of population in forest areas of various sizes.

TABLE 7
Village populations in forests areas of various sizes

Forest area	No. of villages	Total forest area (ha)	Population
< 100 ha	24 861	580 308	13 067 735
100–500 ha	4 036	841 184	2 445 513
> 500 ha	405	358 461	411 520
Total	29 302	1 779 953	15 934 768

Source: FSI, 1999.

Protected forests are affected by local rights and privileges, and subject to heavy shifting cultivation. The protection and management of forests that are less than 100 ha and surrounded by villages poses a formidable challenge, and it is generally accepted that forests are degrading under immense biotic pressure.

The present situation has enormous implications for forest management. For a start, OFD is unable to develop any kind of management plan for protected forests, and in the absence of working plans, the department is prevented from harvesting any timber from these forest lands by a Supreme Court ruling. Thus, even if the current State ban on felling in protected forests were lifted, OFD would not be able to undertake harvesting operations. Its ability to do so in the future is also doubtful unless forest surveying and boundary settlement are completed.

TYPE 4: JOINT FOREST MANAGEMENT

Many questions have been raised about the sustainability of JFM. Most forestry institutions still retain the titles, structures and functions designed during colonial times, and there has been little change in the training and terms of references of staff members such as conservators of forests, working plan officers, divisional forest officers, range officers and forest guards.

JFM is an innovation that places sustainable forest management (SFM) within the framework of integrated area development, where it can contribute to poverty alleviation (PA) in the forested regions of the country. Any forest management system must have a strong element of community participation if it is to be sustainable; the government is taking steps to increase community involvement in forest management, as reflected in successive government orders and resolutions since the new Forest Policy was declared in 1988. The challenge is for JFM to become a real people's movement, as described in the next section, and for OFD to assume the role of facilitator, adviser and capacity builder in the greening of India.

TYPE 5: COMMUNITY FOREST MANAGEMENT

CFM groups recognize that their operations have no formal or legal basis. On their own, they have little chance of survival, so they are forming federations in order to mobilize cohesive support. CFM

groups also acknowledge that OFD has an important function in supporting CFM efforts, but they are not willing to change from community governance to OFD-controlled JFM. The following observations on CFM forests were made during a sample survey (Singh, Sinha and Mukherji, 2005):

- The forests under most CFM groups are well-stocked, with canopy of more than 60 percent.
- The stands are regenerating naturally, indicating strict protection.
- The dominant species of most CFM stands in Khandamal and Mayurbhanj is sal.
- Strict measures to regulate fires and felling have been introduced.
- Soil moisture has increased, owing to leaf litter accumulation.
- Biodiversity has been enhanced by the protection of fruit and NTFP-bearing trees.
- Trees for household construction are marked and felled under the supervision of concerned members.

Collective action for forest protection has strengthened local institutions and enabled villagers to take up the management of other common pool resources. In some cases, women's involvement in forest protection has increased their self-confidence and ability to deal with the outside world, including government officials.

Singh, Sinha and Mukherji (2005) used a sampling approach coupled with remote sensing to collect their data on CFM. The use of a multi-date remote sensing survey provided change matrices for the years 1990 to 2000 and revealed that CFM practices are – on the whole – contributing to significant increased forest. The CFM system was found to be effective and self-sustainable.

Part of the fieldwork was aimed at identifying communities' awareness of and responses to VSS; their responses regarding different aspects of JFM were mixed. People's reasons for participating in community-driven conservation varied, and only 30 percent of the villages sampled in Kandhamal opted for CFM because it gave them symbolic rights over a patch of forest for conservation, thereby helping them to protect it from neighbouring villages. Some communities felt that VSS had been formed too quickly and involved too few people. In Mayurbhanj, some villages stated that they were willing to join VSS for two main reasons: to obtain symbolic rights over forest patches, thereby helping to protect them from other villages; and in anticipation of grants for village development.

Rural livelihood sources were broadly categorized into agriculture, forest and daily wage labour. Agriculture is the main source of livelihoods in all three survey districts, with the highest value recorded for Koraput (Table 8). The scope to enhance agricultural productivity in the study area is limited because most agricultural land is rainfed. The focus on developing village infrastructure through various government-sponsored programmes over the last decade has created increasing wage labour employment for local people, and this now constitutes a significant proportion of the overall rural economy. In the absence of other opportunities, however, forest is still an important component of livelihoods; its contribution to livelihoods is greatest in Mayurbhanj and least in Koraput, while wage labour's contribution follow the reverse pattern.

TABLE 8
Forest's contribution to livelihood in the three survey districts

	Kandhamal	Koraput	Mayurbhanj
Total population	648 000	1 178 000	2 223 000
Forest as main livelihood source (people)	194 000	94 000	911 000
Current forest area (ha)	539 000	148 000	413 000
Forest as main livelihood source (people/ha)	0.37	0.64	2.20

Source: Singh, Sinha and Mukherji, 2005.

Among CFM's most important contributions is its reversal of the historic trend of deforestation in the study area. Two of the three districts surveyed – Kandhamal and Mayurbhanj – registered

increased forest cover since 1990, particularly Kandhamal. Koraput, on the other hand, showed a continuous decline from 60 to 17 percent over the past 40 years, but there are signs of this reaching a plateau. The continuous decline in Koraput is mainly the result of rampant shifting cultivation.

Per hectare, forests in Mayurbhanj provide the greatest contribution to local livelihoods (Table 8), as the communities in this district are the best organized for processing and marketing NTFPs and have good institutions for forest protection and harvesting. The ranking of social capital from forest protection and resource use in the three districts is Mayurbhanj first, followed by Kandhamal and then Koraput.

TYPE 6: PRIVATE FOREST MANAGEMENT

The development of forests under private ownership and in close cooperation with forest industries is very encouraging, and follows the recommendations of the 1988 Forest Policy that “forest industries should raise the raw material needed for meeting their own requirements, preferably by establishment of a direct relationship between the factory and the individuals, who can grow the raw material”. Although limited in area (18 471 ha), private forests are making a useful contribution to forestry development.

Visits to the Eucalyptus plantations around Rayagada showed that progress has been made. Some of the plantations had been harvested, and the coppice crops were close to harvest, promising increased yields with no or only very little extra cost to farmers. The paper mill publishes annual reports on the farmers who have benefited from the plantations. On average, Eucalyptus plantations grown from ordinary seedlings yield 50 tonnes/ha after six years, and the second rotation crop is expected to yield 50 percent more than this. Clonal plantations are expected to yield twice as much. The net income per hectare ranges from RS57 000 to 87 000 (US\$1 300 to \$2 000) with a six-year rotation. This income makes plantations attractive to farmers, particularly on land where agricultural crops cannot produce comparable incomes in the absence of reliable irrigation facilities.

Farmers are reaping significant benefits from the paper mill’s plantation programme, and it would be beneficial to find some way of involving the poor people who depend on cutting down forest for shifting cultivation in such plantation programmes. In some areas, good agricultural land is being used for forest plantations, while in others natural forest is being cleared to make way for agriculture. It would be worthwhile looking at the whole scenario of land-use practices.

CONTRIBUTIONS TO PA AND SFM

The concept of poverty has evolved over time, with the emphasis shifting from economic development (e.g., income and consumption) to social issues such as education, health and the vulnerability and powerlessness of poor people. Poverty is now seen as depriving people of their basic human capabilities, rather than merely forcing them to survive on low incomes. Among forest dwellers in India, poverty is the result of small agricultural holdings, lack of irrigation facilities, poor soil, weak infrastructure and facilities, and remoteness from markets. Given the poor returns from agriculture and the limited opportunities for enhancing productivity, forests can play a vital role in reversing poverty, provided that policies are integrated with the social, ecological and economic needs of the society.

Forest management’s contribution to PA requires the empowerment of forest-dependent communities, the building of their social capital, and mitigation of the constraining factors that make them more vulnerable to drought and disasters. The more involved the community is in the management system, the greater that system’s impact on poverty reduction. CFM has not received much government attention, especially in OFD. Some NGOs have carried out a survey of CFM, but OFD regards this survey as poorly designed and its findings as biased. OFD has always asserted that communities protect their own forest patches, but systematically destroy forests outside these areas.

The concept of SFM has also evolved. In the early stages, sustained timber production was the main goal, then NTFPs came to prominence, and later environmental services. NTFPs have a major impact on the economy of tribal communities, but many NTFPs are used for subsistence only, and their contribution has not been properly accounted for. A holistic view of all the factors concerned is required before the role of forest management systems in SFM and PA can be properly evaluated.

Table 9 presents a subjective evaluation of the contributions of six forest management regimes to PA and SFM in a scale from 1 to 5, defined as follows: 1 = very poor; 2 = poor; 3 = satisfactory; 4 = good; and 5 = very good.

TABLE 9
Subjective scores of different forest management systems

Management system	Average score (%)	Contribution to PA	Contributions to SFM		
			Ecological	Economic	Social
1. National parks and sanctuaries	50	1	5	3	1
2. Reserved forests under multiple-use management	70	3	4	4	3
3. Protected forests under multiple-use management	30	3	1	1	1
4. JFM	75	4	3	4	4
5. CFM	80	5	3	3	5
6. Private forest management	55	3	1	5	2

In Table 9, CFM, JFM and state forest management score fairly highly for both PA and SFM; the management of national parks and sanctuaries and of private forestry score low for PA, but have the highest marks in their respective fields – conservation and contribution to production forestry, respectively. Protected forests have the lowest overall score, as they are not sustainable and contribute relatively little to PA.

Lessons learned and future challenges

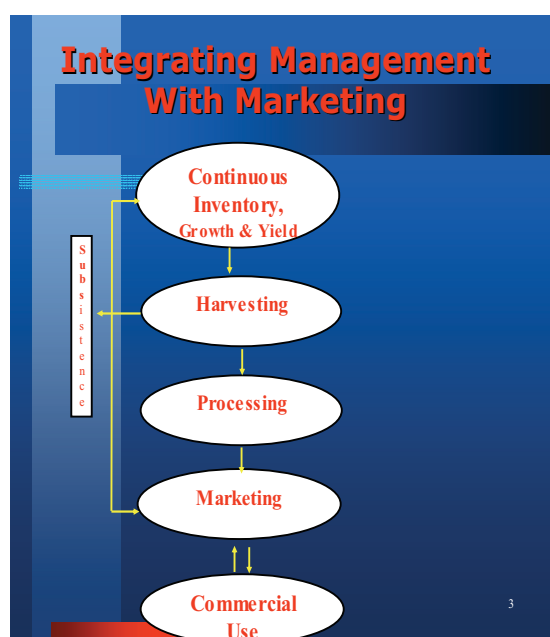
Two major issues for the future can be highlighted. The first relates to the development of an SFM system for NTFPs, and the second is concerned with the empowerment of forest dwellers.

MANAGEMENT, UTILIZATION AND MARKETING OF NTFPs

The issues related to NTFPs are the same in all forest resource tenure and management systems, and therefore need to be tackled from a broad viewpoint. Management of NTFPs is not included in any of the existing management regimes, despite NTFPs' vital importance for SFM and PA. As shown in Figure 4, all the phases of NTFP management contribute to the development of local communities. An integrated (sustainable) management and marketing system for NTFPs needs urgently to be developed.

Harvesting (collecting) from the wild is the most primitive way of benefiting from an area's resources. Cultivation implies modernization and includes soil preparation, sowing, planting and breeding. Irrigation and fertilization sometimes change the relevance of natural production factors drastically, and usually entail temporary or permanent changes to the quality of natural sites.

FIGURE 4
Integrating the management and marketing of NTFPs



NTFPs are currently divided into the following three categories of regulation:

- *Nationalized NTFPs*: Three items – kendu leaves (*Diospyrus melanoxylon*) since 1963, sal seeds (*Shorea robusta*) since 1973, and bamboo (*Dendrocalamus strictus* and *Bambusa arundinacea*) since 1988 – are nationalized forest products, whose procurement and trade are directly controlled by the government.
- *Lease barred items*: Most of these are items whose harvesting affects the trees – bark, leaves, oilseed and gums. They are restricted and directly controlled by OFD.

- *Deregulated NTFPs*: The procurement and trade of these 68 NTFPs have been largely freed from OFD's regulatory control. Ownership was transferred to local governing bodies called Gram Panchayats (GPs) in March 2000, and the Minor Forest Produce Administration Act was passed in 2002.

The results of deregulating 68 NTFPs have been mixed. Only a few are traded in significant quantities, and prices have declined for many. In addition, the system has increased uncertainty for traders, as there are usually many players at the local level, which creates competition. In most areas, OFD staff would like to renationalize these NTFPs, but NGOs are of the opinion that capacity building for GP institutions and the self-help groups of primary collectors could address some of the anomalies.

In the meantime, GPs are neither equipped nor well-placed to handle the procurement and trade of denationalized NTFPs, even after four years of the new arrangements. The following questions have been raised about the effectiveness of GPs in controlling and regulating local trade and traders:

- Have GPs been able to initiate a process to create multiple buyers to replace the previous monopoly?
- Have GPs encouraged and motivated producers' cooperatives, primary groups and people's organizations?
- Are primary collectors receiving fair prices for their produce?
- Have GPs succeeded in controlling illegal trade and exploitive harvesting?
- Are primary collectors protected from cheating by intermediaries?
- Will the new rules promote the sustainable management of NTFPs?

The answers to these questions need to be assessed carefully in order to identify the next steps in improving the capacity of primary collectors to benefit from deregularized NTFPs.

EMPOWERMENT AND SUSTAINABLE DEVELOPMENT OF FOREST FRINGE DWELLERS

After 120 years of forest management, Orissa is leading the nation by introducing several new forest initiatives. At the time of independence, the state's forests covered nearly 6.6 million ha, broadly classified into two legal categories: reserved forests, with well-defined boundaries and very limited local rights; and protected forests, with unsettled boundaries and unformalized local rights. At the end of the millennium, state forests still covered 5.7 million ha, thanks to strict control by a well-organized forest service (now OFD) with a long history of planning and management. One important lesson learned from the history of forest management is the need to take expeditious action to settle uncertainties about the legal issues affecting forests; as population pressure increases over time it becomes more and more complex to settle rights, because emotive issues start to affect rational decisions. Regarding directions for the future, the following issues are emerging as very relevant:

- OFD should cede more forest management responsibility to communities by taking up a more advisory and extensionist role and giving communities more control over planning.
- OFD should develop innovative strategies for monitoring and evaluating SFM. Local communities should be empowered to manage their forests, with micro-plans acting as guides rather than mandatory documents.
- Local communities should be allowed to sell their forest produce according to their own preferences and convenience, with social safeguards from the government.
- The relationship between VSS created for JFM and local village-level institutions responsible for overall development needs to be clearly defined.

The situation is most precarious in protected forests. In the absence of recognized rights over land, people have been displaced without compensation. Examples of this are the Soil Conservation Department's establishment of cashew plantations for lease to private parties on 120 000 ha of tribal cultivated land, and the Supreme Court's ban on forest activities on slopes of more than 10 degrees,

for soil conservation reasons. These acts of omission and commission have led people, especially tribal people, to continue cultivating and living on lands over which they have no valid title.

CFM is a bold experiment with a promising future. The most remarkable feature of CFM is that it is born out of communities' desire to meet their own forest-related needs in response to changing socio-ecological conditions, uncertainties and livelihood insecurity. However, the role of CFM as a valid forest management system can be questioned for two main reasons. First, the concept is confined to the protection of small patches and is sometimes associated with the destruction of forest in the surrounding area, so the question of sustainability remains unresolved. Second, CFM institutions have no formal basis, and communities and OFD are suspicious about one another. The concept could be extended to larger areas if communities were made aware of the more sustained incomes they would achieve and if government departments supported communities' use of forests to increase socio-economic development. The role of the government has to be redefined and redesigned on the basis described earlier in this paper.

Of the forest management systems discussed, CFM seems to represent the largest input of social capital, which is a necessary condition for the successful implementation of PA programmes in the long term. Most schemes and programmes aiming at development fail to achieve their targets because the design of development packages does not take account of the social capital available. This was illustrated by the trends of forest cover change reported in the three districts surveyed by Singh, Sinha and Mukherji (2005).

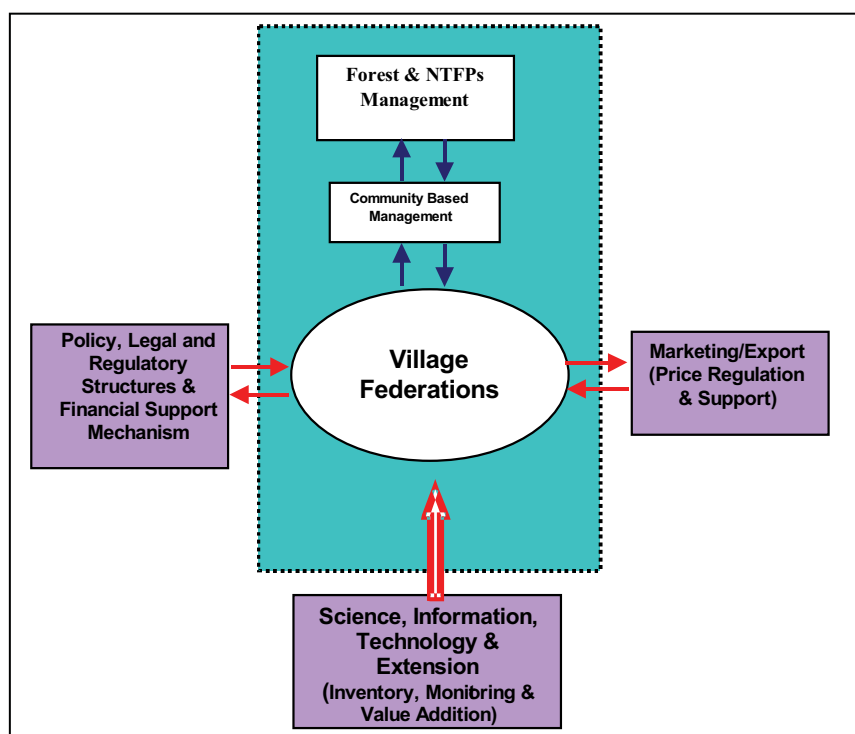
The 73rd Amendment to the Indian Constitution of 1992 made it mandatory for all states to decentralize governance through a three-tier structure of state, district and local bodies. This constituted an important landmark in the democratization of India in constitutionally recognizing village councils and empowering them to safeguard and preserve local traditions, customs, cultural identity, community resources and customary modes of dispute resolution. Among the 29 functions recommended for decentralization, three relate to forestry – social forestry, fuelwood plantations and NTFPs – so the legal basis for effective people's participation in forest protection and management is now available. However, the modalities of this process and the working relation between JFM and local bodies are still to be formalized.

There is an urgent need to change the system of forest governance, as there is for all aspects of civil administration. According to Rangachari and Mukherji (2000), "the post-independence administration has merely continued from where the colonial government had left. It can be plausibly argued too that the new administration has introduced complexities not only in forest management or the role of the tribes with reference to their habitat, but also the relationship of the citizen to the government. It has done this by introducing a multiplicity of functions and jurisdictions without any real or effective local self-government. In the process, matters have become complicated for the citizen owing to a proliferation of sub-departments with functions pertaining to a narrow focus".

The authors also state that "if indeed the progression to a more holistic and people-centred system of resource management takes place, as envisaged in these pages, the eventual withdrawal of the government from roles other than that of a facilitator of the programme may well be in prospect. Meanwhile, while JFM may be a process-oriented activity, structure is also important as long as the government remains in the saddle, and this needs to be appreciated".

There is need to create innovative institutions based on adaptive management and a more equitable and inclusive decision-making process. The potential of NTFPs to contribute to tribal economies is immense and not yet fully realized. Figure 5 illustrates the framework of an SFM system, including the technical, ecological, social and economic dimensions. This model is currently under experimentation in Orissa's Baripada Development Block.

FIGURE 5
Conceptual model for the management of NTFPs



The large rectangle in Figure 5 shows communities' increased share of responsibility for forest management; the other three rectangles show the role of government, which includes:

- establishing legal, regulatory, conflict resolution and enforcement structures for the management of forest and common land resources, including a mechanism to redirect part of the revenues from the management of forests to local communities and to compensate communities for loss of revenue due to closure of areas for regeneration or other technical reasons;
- organizing science, information, technology and extension services to support the planning, monitoring and evaluation of forestry development and PA programmes, and periodic reporting on the progress and constraints in PA;
- marketing, processing and value addition: in the case of NTFPs, there is market as well as institutional failure; there are possibilities for private–public partnerships for the cultivation, processing, value addition and marketing of timber and NTFPs.

According to Singh and Marzoli (FAO, 1996), OFD has to make some difficult decisions in order to change forestry institutions by fostering a sense of social responsibility and a focus on meeting the economic and social needs of people. Among the many pessimistic scenarios regarding India's forests, there is a more positive scenario wherein technical and social goals can be harmonized. This option calls for the intensive management of forests within an overall framework of integrated area development, an appropriate institutional environment and ideological change, in which investment, technology and people's participation constitute inseparable parts.

It is hoped that the lessons learned from this study will be useful in realizing the twin goals of SFM and community development: the dream of "village republics" that the Father of the Nation – Gandhi – described in 1963 in *The village reconstruction*.

References

- D'Silva E. 1995. *The role of forest departments in the 21st century*. Washington, DC, World Bank, Economic Development Department.
- Director of Census Operations. 2001. *Census of India*. Orissa.
- FAO. 1996. *Forestry in India: yesterday, today and tomorrow in the framework of country capacity building project in forest resources assessment*, by K.D. Singh and A. Marzoli. Rome.
- FSI. 1999. *State of forest report 1999*. Dehradun, India, Forest Survey of India (FSI), Ministry of Environment and Forests.
- FSI. 2003. *State of forest report 2003*. Dehradun, India, Forest Survey of India (FSI), Ministry of Environment and Forests.
- Gandhi, M.K. 1963. *The village reconstruction*. Bombay, Bhartiya Vidya Bhavan.
- Ministry of Environment and Forests. 1972. Legal status of forest areas in a few selected states. Agenda for the Meeting of Study Group 5, 14 July 1972. New Delhi.
- NCAER. 1999. *India human development report*. New Delhi, Oxford University Press.
- OFD. 1991. *A decade of forestry in Orissa, 1981–90*. Aranya Bhawan, Bhuwaneshwar, Orissa, India.
- OFD. 1999. *Capacity building for participatory and sustainable management of degraded forests in Orissa*. Bhuwaneshwar, Orissa, India.
- OFD. 2005. *Orissa forest status report*. Aranya Bhawan, Bhuwaneshwar, Orissa, India.
- Rangachari, C.S. & Mukherji, S.D. 2000. *Old roots new shoots, a study of joint forest management in Andhra Pradesh*. New Delhi, Ford Foundation.
- Sahu, N.C. & Das, B.N. 1997. Forest policy in Orissa: A third visit. In P.M. Mohapatra and P.C. Mohapatra, eds. *Forest management in tribal areas*, pp. 43–57. New Delhi, Concept Publishing.
- Singh, K.D., Sinha, B. & Mukherji, S.D. 2005. *Exploring options for joint forest management (JFM) in India*. Rome, FAO and Washington, DC, World Bank.

ANNEX 1: FOREST OWNERSHIP IN ORISSA

Matrix 1: Cumulative forest ownership data

	Owner as exclusive manager (ha)	Forest operation contracted/ partnerships (ha)	Devolved management rights (ha)	Other (ha)	Total (ha)
1. Public	5 161 342		652 258		5 813 600
2. Private	18 471	Nil	Nil	Nil	18 471
3. Community/group-owned	Nil	Nil	(186 900)	Nil	(186 900)
4. Owned by indigenous or tribal people	Nil	Nil	Nil	Nil	Nil
5. Other types of ownership	-	-	-	-	-
Total	5 179 813	0	652 258 (186 900)	0	5 832 071 (186 900)

Sources: * FSJ, 2001.

** India forestry statistics, 2000.

Matrix 2: Public ownership

	Owner as exclusive manager		Forest operation contracted/partnerships	Devolved management rights			Total (ha)
	Strictly limited, no extraction rights for others (ha)	User rights, customary rights, permits to hunt, gather dead wood and NTFPs (ha)		Forest operation contracted/partnerships	Community forest leases, forest management concessions	Private company leases, forest management concessions	
1.1 Country			Area (ha) Duration (years) Number Access: yes	Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access	-	
1.2 Province	796 185*	4 365 157**	Area: 652 258 ha*** Duration: 10 years Number: 6 822 Access: yes	Area (ha) Duration (years) Number Access	Area: 186 900 ha**** Duration: 10 years Number: 2 509 Access	Area (ha) Duration (years) Number Access	5 813 600 (186 900)
1.3 Local governments: villages, municipalities	-		Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access	-	
1.4 Other public bodies (Revenue Department)	-		Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access	-	

* Area includes national parks (99 000 ha) and wildlife sanctuaries (697 000 ha).

** Area managed by OFD for multiple uses.

*** Area under JFM.

****Area protected by the community in form of CFM. The figures have not been taken into the arithmetic of this table.

Source: National Wildlife Database, WII, 2005.

Matrix 3: Private ownership

	Owner as exclusive manager		Forest operation contracted/partnership				Devolved management rights				Others	Total			
	Strictly limited rights for others (ha)	User rights, customary rights, permits to hunt, gather dead wood and NTFPs (ha)	JFM with communities timber concessions/licences	Private company volume permits, logging concession schemes	Community forest leases, management concessions	Private company leases, forest management concessions	Area (ha)	Duration (years)	Number	Access	Area (ha)	Duration (years)	Number	Access	(ha)
2.1 Individual			Area (ha) Duration (years) Number Access	Area: 18 471 ha Duration (years) Number Access	Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access					Area (ha) Duration (years) Number Access				18 471
2.2 Industries	Included in above		Area (ha) Duration (years) Number Access	n.a.	Area (ha) Duration (years) Number Access	n.a.					Area (ha) Duration (years) Number Access				
2.3 Others	Included in above		Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access	Area (ha) Duration (years) Number Access					Area (ha) Duration (years) Number Access				

Additional information on the legislative framework

Ownership of forest resources vs. ownership of forest land			
In compiling the matrix, were you able to provide information on the ownership of the resources, or you reported data on the ownership of the land?	The data reported are on ownership of forest land		
Does the ownership of forest resources correspond to the ownership of forest land?	Yes	No ✓	
If not, briefly indicate in which case			
Public forests			
Does the legislation envisage any form of consultation, involvement of the citizens in the formulation of forest management plans?	Yes ✓	No	
If, yes at which level?	National	Regional district	Village communes, municipalities ✓
Does the legislation foresee the possibility of devolution of forest management competencies from the state to local levels?	Yes ✓	No	
If yes, to which level?	Local authorities	Village communities ✓	Others: (specify)
Private forests/community/group-owned forests			
Does the legislation require compilation of a forest management plan for private and other non-publicly owned forests? If yes, above which forest area?	Yes, for private forest land		
Who is responsible for compiling forest management plans?	Forest administration	The owner ✓	
If the state is responsible, does the legislation envisage any form of public consultation/ involvement?	Yes ✓	No	

* In India, approximately 98 percent of total recorded forest land is under government control. As such, ownership of forest resources on government land is with the government. Only about 2 percent of total forest land is in private holdings.

ANNEX 2: FOREST LAWS

1. Introduction
2. National Forest Policy, 1952
3. National Forest Policy, 1988
4. National Zoo Policy, 1988
5. Recognition of Zoo Rules, 1992
6. Indian Forest Act, 1927
7. Forest (Conservation) Act, 1980
8. Forest (Conservation) Rule, 1981
9. Orissa Forest Department Code, 1979
10. Orissa Forest Act, 1972
11. Orissa Timber and other Forest Produce Transit Rules, 1980
12. Orissa Forest Produce (Control of Trade) Act, 1981
13. Orissa Forest Produce (Control of Trade) Rules, 1983
14. Orissa Forest Contract Rules, 1966
15. Orissa Forest (Detection, Enquiry and Disposal of Forest Offences) Rules, 1980
16. Orissa Forest (Fire Protection) Rule, 1979
17. Orissa Forest (Grazing of Cattle) Rule 1980
18. Orissa Forest (Management of Coastal Shelter Belt Plantation Raised on Private Lands) Rules, 1980
19. Schedule of Rate for Forest Produce in Orissa Rules, 1977
20. Orissa Forest Rest House Occupation Rules, 1983
21. Orissa Saw Mills and Saw Pits (Control) Act, 1990
22. Orissa Saw Mills and Saw Pits (Control) Rules, 1993
23. Orissa Forest Saw Pits and Saw Mills (Control) Rules, 1980
24. Supply of Bamboos to Artisans including Cooperative Societies (Orissa) Rules, 1980
25. Orissa Kendu Leaves (Control of Trade) Act, 1961
26. Orissa Kendu Leaves (Control of Trade) Rules, 1962
27. Orissa Kendu Leaves Manual, 1973
28. Orissa Communal Forest and Private Lands (Prohibition of Alienation) Act, 1948
29. Orissa Communal Forest and Private Lands (Prohibition of Alienation) Rules, 1949
30. Orissa Protection of Scheduled Castes and Scheduled Tribes (Interest in Trees) Act, 1961
31. Orissa Excise (Mahua Flower) Rules, 1976
32. Broad's Excise (Fixation of Fees on Mahua Flower) Rules, 1976
33. Orissa Preservation of Private Forests Act, 1974
34. Orissa Preservation of Private Forests Rules, 1963
35. Orissa Village Forest Rules, 1985
36. Orissa Forest Service Class I (Recruitment) Rules, 1980
37. Orissa Forest Service, Class II (Recruitment and Conditions of Service) Rules, 1984

38. Orissa Forest Service, Class II (Appointment by Promotion) Regulations, 1985
39. Orissa Forest Service, Class II (Recruitment by Competitive Examination) Regulations, 1985
40. Forward Contracts (Regulation) Act, 1952
41. Wild Life (Protection) Act, 1972
42. Wild Life (Protection) Act, 1972
43. Wild Life (Transactions and Taxidermy) Rules, 1974
44. Wild Life (Protection) Licensing (Additional Matters for Consideration) Rules, 1983
45. Cattle Trespass Act, 1871
46. Wild Life (Protection) (Orissa) Rules, 1974
47. Wild Birds and Animals Protection Act, 1912
48. Wild Life (Stock Declaration) Rules, 1974
49. Elephants. Preservation Act, 1879
50. Orissa Elephants' Preservation Rules, 1953
51. Orissa Elephants' Preservation (Ex-Madras Area) Rules, 1953
52. Prevention of Cruelty to Animals Act, 1960
53. Wild Life (Specified Plants – Conditions for Possession by Licensee) Rules, 1995

ANNEX 3: DEFINITIONS OF FOREST AND MANAGEMENT TERMINOLOGY

Classification of forests

The following are the classes of forest over which the Forest Department exercises control:

1. reserved forests;
2. village forests;
3. protected forests:
 - a. demarcated protected forests;
 - b. undemarcated protected forests;
4. unclassified forests.

Reserved forests

Reserved forests are state lands that have been dealt with or deemed to have been dealt with in accordance with the procedure laid down in Chapter II and Chapter XI of the Orissa Forest Act 1972 and finally notified in the State Gazette to be reserved forests.

Register of reserved forests: A copy of every such notification mentioned in Rule 157 shall be kept in each Division in a bound volume called the *Register of reserve forests* in Code Form No. 13.

The following are the instructions with regard to the maintenance of the *Register of reserve forests*:

(i) Each notification with the corresponding statement of rights will be numbered separately, according to the dates from which the forest has been declared a reserve forest. The register for each forest shall commence with an area statement and several pages of the volume shall be allotted to it, so as to afford space for additions and corrections. It is desirable that a sketch map on a small scale or a copy of the notified map should form part of the record for each reserve.

(ii) A copy of every subsequent order that affects the constitution of any reserve, as well as of every order under the Forest Act or Regulation by which rights are modified or regulated or further rights and concessions are granted within the reserve, should be inserted immediately after its promulgation, in the same volume, under the reserve to which order relates. A copy of the notification along with a map of the area declassified should be kept in the register.

(iii) A register of reserved forests for the entire circle shall also be maintained in the circle office, separately for each division in the circle. The register maintained in the circle office should be tallied with the register maintained in the divisional office at the time of annual office inspection by the conservator, and both the registers should be brought up-to-date with respect to all orders issued since the last inspection.

(iv) An index shall be provided to the register of reserved forests in which all corrections or alterations noted above should be entered so as to ensure that all such subsequent amendments have been duly inserted against the reserve to which they apply.

(v) As far as practicable, a map of each reserve shall be left in the office of the chief conservator/conservator/divisional forest officer.

Village forests

Village forests are those that are constituted under Section 30 of the Orissa Forest Act. At present, no such village forest has been constituted.

A register of village forests should be kept in each division in the same manner as detailed in Rule 158.

Protected forests

Protected forests in the state are government lands not included in reserved forests but over which the state government has notified under Section 33 of the Orissa Forest Act that provisions of Chapter IV of the act are applicable or over which the provisions of the said chapter have been declared to be applicable under Section 90 of the said act. This includes all lands at the disposal of government to which the provisions contained in Chapter III of the Madras Forest Act 1882 were

applicable immediately prior to coming of the Orissa Forest Act 1972, and all Khesra forests, village forests or protected forests, or forests other than reserved forests in whatever name designated or locally known in the merged ex-State territories as provided under Section 81 (4) of the act.

Protected forests are classified into demarcated protected forests and undemarcated protected forests. The demarcated protected forests are those that have been declared to be closed under Section 34 (c) of the Orissa Forest Act. All reserved lands declared under the Madras Forest Act are also termed as demarcated protected forests. These are under the management of the Forest Department. All other protected forests and all unreserved lands are termed as undemarcated protected forests.

Forest growth on the undemarcated protected forests is under the management of the Forest Department, while the land is under the management of the Revenue Department.

A register similar to the one prescribed in Rule 158 for reserved forests will be kept for demarcated protected forests.

So far as the available data permit, a register should also be opened on the same lines for undemarcated protected forests, and this should be kept up-to-date year to year after recording the leases granted therein for each protected forests by the Revenue Department.

Unclassified forests

All lands owned by the Forest Department outside the reserved or protected forests and with the Forest Department's title to them are included under unclassified forests. These include lands used for forest roads, forest buildings, sites for nurseries, zoos, wildlife parks and other miscellaneous purposes.

Register of unclassified forests: A register of all such lands will be maintained in Code Form No. 14 in every divisional office.

The following instructions shall be followed in preparing the register:

- (i) The headings should be written horizontally.
- (ii) The register should be bound as the *Register of reserved and protected forests*, and the index should normally be classified under three main heads: A Compounds, B Roads, and C Miscellaneous, e.g., plantation sites, depots, etc. Separate serial numbers should be given to the lands entered under each of these heads, a page or more being devoted to each serial number.
- (iii) In all cases, areas in the possession of the department should be shown on the 16 inches to 1 mile cadastral sheets of the settlement maps, which should be properly attested by the divisional forest officer. The sheets of the settlement maps in question should be kept in a folder or in a map almirah with a note in the register that the maps are in the folder or almirah giving the number of sheets and the collection in which found.
- (iv) A special folder or map almirah should be made and copies of settlement maps showing Forest Department properties should be kept in it.
- (v) The Settlement Department is likely to give one plot number to the whole road running through a village. If within one village, a road given one plot number is held by the Forest Department under different methods of tenure, the different sections shall be shown on the map as (a), (b), etc. to indicate the different kinds of tenure.
- (vi) Each range officer should have a register showing records of land in his/her range, the maps to be filled in for the range register being copies of the maps in the divisional register.

Demarcation

The following are the instructions for initiating proposals for reservation of forest:

- (1) When the divisional forest officer has decided to demarcate a forest for the purpose of reservation or for creation of demarcated protected forest, he/she shall place the proposal before the collector and shall, after obtaining consent, start demarcation of the forest.
- (2) While demarcating the boundaries of the proposed block, attention should be given to making boundaries as straight as possible and as easily and cheaply maintained as possible for

clearing, fire protection and inspection purposes. Attempts should be made to use natural features such as rivers, canals and roads as boundaries. Under no circumstances should the demarcated boundary line be within 100 m of the *bastee* site. All cultivated or other private lands included within the external boundaries of the proposed block shall clearly be demarcated and pillars numbered. General rules for the demarcation of blocks are given in Appendix 19.

Preparation of preliminary map

After demarcation of the boundary is completed, a map in 1 to 1 000 scale should be prepared for submission of the proposal for notification under Section 4 of the Orissa Forest Act. This map should indicate all such areas mentioned in Rule 162, in addition to the external boundary of the proposed block.

Boundary description

Along with the preparation of the maps, a detailed and complete description of the boundary should be made, mentioning therein the position of the boundary with respect to important physical features and indicating the position of the boundary pillars with respect to the existing survey pillars. The compass bearing of each boundary pillar with respect to the adjacent pillars and the distance between them should be recorded so that during the time lag between the demarcation survey and the appointment of the forest settlement officer if any boundary pillars are removed or found missing, they can be replaced immediately at the proper places.

The description should start from the northwestern corner of the block and continue in a clockwise direction. This will be convenient for retracing the boundary and will ensure uniformity.

Proposal for notification under Section 4 of the Orissa Forest Act

- 1) After completion of demarcation, the divisional forest officer shall obtain the consent of the chief conservator for initiating the proposal for reservation of the block, and then submit the draft notification – along with the maps – to the collector.
- 2) On receipt of the draft notification from the divisional forest officer, the collector shall forward the same to the revenue divisional commissioner, along with the views already given by him/her at the initial stage. The revenue divisional commissioner shall forward the draft notification, along with his/her views, to the director of land records and survey and the Board of Revenue, suggesting the officers to be appointed as forest settlement officer and appellate authority.
- 3) The director of land records and survey will obtain the recommendations of the Board of Revenue and transmit the proposals to the government in the Revenue Department, with a copy to the Forest and Animal Husbandry Department.
- 4) The Forest and Animal Husbandry Department, after taking the orders of the government, will intimate the Revenue Department for further action.

On receipt of the government orders in the Forest and Animal Husbandry Department, the Revenue Department will issue a notification in the Orissa Gazette under Section 4 of the Orissa Forest Act 1972 declaring that it is proposed to constitute such land as reserved forest and appointing a forest settlement office for the purpose.

(a) After the forest settlement officer has concluded his/her enquiry and finalized the proposals, he/she shall submit a draft notification under Section 21 of the Orissa Forest Act 1972 specifying definitely according to boundary marks erected or otherwise the limits of the forest that is to be reserved, along with copies of such reports, maps and registers as have been prescribed under the Forest Settlement Rules, to the director of land records and survey through the collector and the revenue divisional commissioner.

(b) The director of land records and survey shall then forward the draft notification, along with relevant documents and the views of the Board of Revenue, to the Revenue Department with a copy to the Forest and Animal Husbandry Department for necessary action.

5) (a) The Revenue Department will then issue a notification under Section 21 of the Orissa Forest Act 1972 with the concurrence of the Forest and Animal Husbandry Department declaring the forest to be reserved from a certain date fixed in the notification.

(b) From the date so fixed such forests shall be deemed to be reserved forests.

Forest settlement

After the Section 4 notification is issued by the state government and the forest settlement officer appointed, the forest settlement officer will proceed as per the provision of the Orissa Forest Act 1972 until the final notification under Section 21 of the said act has been issued by the state government.

After completion of all the proceedings by the forest settlement officer, the state government shall issue a notification under Section 21 of the Orissa Forest Act 1972 declaring the forest a reserved forest.

A complete list of rights and concessions allowed by the forest settlement officer and the exact boundary of the reserved forest so constituted shall also be published in the Orissa Gazette in the above notification.

Boundary register and maps

a) A permanent record of the boundaries of all reserved forests, village forests and demarcated protected forests shall be maintained in a separate register for the purpose of checking the position of boundaries, if necessary, in case of disputes arising in future. The register will be maintained in all divisional and range offices.

b) All forest boundaries should be shown on the village land revenue maps, as these maps take precedence in a court of law over all Forest Department records. Steps should be taken to get this done during survey and settlement operations, or it should be done at some other time.

c) Boundaries should be classified as-

1. artificial: demarcated by cut lines and pillars;
2. natural: not requiring artificial demarcation;
3. semi-natural: demarcated by pillars without cut lines, e.g., along roads and small nallahs.

d) Copies of certified reservation maps showing positions of all pillars should be maintained in each range and divisional office.

e) Any alteration that may from time to time be made in the boundaries shall be accurately recorded on the maps and in the registers so that the records are always up to date.

Upkeep of boundaries

The clearance of boundaries and repairs to the boundary pillars shall be done on a five-year cycle in a rotational method. The working plan/working scheme should prescribe a definite programme for the maintenance of boundary lines in the case of the boundaries of reserved forests.

Inspection of boundaries

i) All boundary marks shall be maintained in a good state of repair. In order that this may be done, systematic and frequent inspection of boundaries must be carried out. The working plan should prepare a ten-year programme of boundary inspection by the divisional forest officer.

ii) It shall be the duty of the beat officer and section officer to inspect all boundaries within the limits of their charges at least once a year and to report to their range officer cases of encroachments or wilful removal of or destruction of boundary marks or repairs that are found to be necessary.

iii) Range officers should inspect at least 20 percent of the boundaries in their ranges and submit a report to the divisional forest officer when they have done so. The range officer should also report to the divisional forest officer encroachments, if any, and the immediate repairs required to the boundary pillars as per the report of the beat officer (see paragraph ii above).

iv) The divisional forest officer will inspect the boundaries of the division in a ten-year cycle programme as laid down in the working plan/working scheme.

v) The divisional forest officer will submit to the conservator of forests by 15 April each year a certificate to the effect that he/she has inspected the boundaries of (name.....) blocks and found those in order, and that there has been no encroachment. If encroachments have been detected, their nature and extent should be specified and action taken in this respect.

Amendments to description of boundaries

It sometimes happens that the original description of boundaries has proved unsatisfactory and it is necessary to renotify amended descriptions of the boundaries of forest reserves already notified under any forest enactment. In such cases, the boundaries should be redescribed and renotified in the appended form of notification, provided that the fresh notification merely provides for the substitution of a more exact and definite description of the boundaries than was originally notified, without in any way affecting the area of the block by either inclusion of new area or exclusion of part of the block, however small the area in question may be.

Notification

With reference to notification No..... dated..... published under Section..... of the..... at page..... of the..... State Gazette of the..... declaring the forest to be a reserved forest, the Government of Orissa is pleased to direct that the following amended and more accurate description of the boundaries of the said forest be substituted for the description contained in the said notification.

Notification of boundaries

Copies of all notifications issued by government constituting or modifying the boundaries of reserved village and demarcated protected forests, together with indicative tracings of sketch maps, should be supplied immediately after they are issued to the deputy director of surveys, Orissa for the purpose of enabling him/her to make the requisite additions or alterations in the corresponding maps in his/her office.

Procedure for submission of proposal for declassification

In submitting proposals for declassification of forest to the state government under Section 29 of the Orissa Forest Act 1972, the proposal should be submitted in the following form, and should be accompanied by a map and the recommendations of the forest authorities.

Draft notification

In exercise of the power conferred by Section 29 of the Orissa Forest Act 1972, the state government does hereby direct that the forest area of..... ha specified below out of a total area of ha of forests that were declared reserved under Act.....of.....in notification of..... Government of.....Department No.....dated..... shall cease to be reserved forest with effect from the of

Specification of land declassified

Name of reserved forest or portion thereof	District	Tahsil	Mauza or village	Area in hectares

Boundaries:

Brief description:

Reasons for declassification:

Consequent upon declassification, the boundary description of the original block will have to be amended. In such cases, the amended boundary description should be notified at the same time as the notification of declassification in the following form:

Consequent upon the disforestation of the area noted above, the following boundary description of the reserve should be substituted for that given in notification No..... dated..... under which the forest was declared a reserve.

All such boundary descriptions must be prepared by an officer not below the rank of forest ranger, and the divisional forest officer should carefully check the amended boundary descriptions before they are forwarded to the higher authorities. The divisional forest officer should give a certificate to the effect that he/she has checked the revised boundary description and found it to be correct on the field.

Land required by other departments

i) When land lying within the limits of reserved forests or forests already notified under relevant sections of the forest enactments is required by the Public Works or Irrigation and Power Department for construction of roads, canals and dams, it is not invariably necessary that a formal notification declassifying the land should be issued under the relevant sections of the Orissa Forest Act. An executive order of the state government permitting the requisitioning department to utilize the exact extent of land required for the project will suffice. The land shall continue to be a reserved forest.

ii) Necessary entries to this effect indicating the area and a map of the area so utilized shall be made in the register of reserved forests maintained in the office of the divisional forest officer and the conservator of forests, duly attested by the head of the office.

All forest growth on such land shall be disposed of before the land is allowed to be so utilized.

If the land in question is urgently required by the requisitioning department, and sufficient time cannot be given to the divisional forest officer for the disposal of the forest produce on the land, the divisional forest officer will prepare an estimate of the value of the trees as per the joint enumeration list, based on the sanctioned schedule of rates, and shall issue a demand equivalent to four times the royalty so calculated and send it to the requisitioning department through the conservator. On payment of the above royalty by the requisitioning department, the land in question will be handed over for use, along with the tree growth as per the joint enumeration list.

In such cases, the concerned requisitioning department shall dispose of the forest produce, after obtaining necessary permits from the divisional forest officer. If the disposal price is higher than the value already paid, the Forest Department shall be eligible for the difference.

The same procedure shall apply in the case of village forests and protected forests.

Compensatory plantation

Whenever a part of any reserved forest is dis-reserved or whenever any part of village or protected forest is transferred to another department or released for mining purposes, the requisitioning department or the mining lessee, as the case may be, will pay to the Forest Department an amount of money equivalent to the plantation cost at a rate sanctioned by government for plantations from time to time.

Procedures for forest survey, maps, etc.

The rules regarding the procedure to be followed in connection with forest surveys and obtaining forest map are given below:

(1) (a) The survey of forest areas is carried out as part of the topographical survey, which is gradually being extended over the whole of India.

ANNEX 4: JFM IN ORISSA (1 MARCH 2003)

Sl. No.	Divisions (preorganization)	No. of VSS	Area assigned to VSS
1	2	3	4
Angul Circle			
1	Angul	111	17 196.58
2	Athgarh	110	9 734.26
3	Dhenkanal	177	22 134.49
4	Athamallik	52	3 773.00
5	Keonjhar	110	11 880.12
	Total	560	64 718.45
Berhampur			
6	Baliguda	235	13 980.00
7	Boudh	112	10 600.16
8	Ghumsur South	102	16 229.30
9	Ghumsur North	78	11 546.00
10	Nayagarh	15	1 434.00
11	Paralakhemundi	516	46 639.00
12	Phulbani	473	29 614.00
13	Puri	27	3 699.00
	Total	1 558	133 741.46
Koraput Circle			
14	Bolangir	378	46 386.00
15	Kalahandi	611	46 142.97
16	Khariar	381	35 283.00
17	Jeypore	481	35 076.00
18	Nowrangpur	95	33 325.00
19	Rayagada	930	60 274.39
	Total	2 876	256 487.36
Sambalpur Circle			
20	Bamra	258	25 685.00
21	Bonai	120	8 551.00
22	Deogarh	143	11 632.44
23	Rairakhol	102	10 252.00
24	Sambalpur	423	58 941.11
25	Sundagarh	483	50 248.00
	Total	1 529	165 309.55
STR Circle			
26	Baripada	276	2 9958.00
27	Karanjia	21	2 043.00
	Total	297	32 001.00
Grand total		6 820	652 257.82

ANNEX 5: GOVERNMENT OF ORISSA RESOLUTIONS ON JFM

With the increasing population and improved standard of living, the demand for forest items has increased massively, resulting in serious problems of protection. As the forest cannot be protected or managed properly without the involvement of local village communities, the state government has started to take steps to protect the forest through the JFM approach, and has issued a series of resolutions and guidelines.

Government of Orissa Resolution No. 47/88 17240 FFAH

The first step in involving people in forest protection was Resolution No. 10F (Pron)-47/88 /17240 FFAH of 1 August 1988, which was made by the Government of Orissa's then Forest, Fisheries and Animal Husbandry Department. This resolution assigned specific roles to villagers in the protection of reserved forests adjoining their villages; in return the villagers were granted certain concessions in meeting their requirements for fuelwood and small timber, as under section 24 of the Orissa Forest Act 1972.

Government of India Resolution No. 6-21/89-FP

This resolution was issued by the Government of India on 1 June 1990 and regards the involvement of communities and voluntary agencies in the regeneration of degraded forests. In this resolution all state governments were given guidelines for the protection of forest with the involvement of communities and NGOs. The resolution paved the way for the states, which subsequently issued their own guidelines for the protection of forests in their states through JFM.

Government of Orissa Resolution No. 10 F (Pron) 4/90 29525/ FFAH

The 1988 Resolution was superseded by this resolution on 11 December 1990, in which protected forests were included for assignment to adjoining villages and it was decided that forest protection committee shall include women and people belonging to the scheduled caste, scheduled tribe and landless categories.

Government of Orissa Resolution No. 10 F (Pron) 16700-10 F 20/93 F&E Department

This resolution, of 3 July 1993, aimed to make the involvement of local villagers in forest protection more effective and transparent. It superseded previous resolutions dealing with the involvement of local communities in protecting adjoining forests, including the formation, duties, responsibilities and functions of VSS. It also provided for the constitution of a state-level steering committee, chaired by the Forest Minister, to monitor and guide implementation of this scheme.