

THE ISSUE OF EQUITY IN THREE INSTITUTIONAL STRUCTURES IN INDIA

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ABSTRACT

Management of forests by communities has completed a full circle in India. Beginning with ‘forests under communal ownership’ till 19th century, passing through ‘state’ ownership during and after the British era, once again the involvement of communities in resource management has come into practice. Real participation of communities as a result of participatory policy adopted by the Government of India varies from state to state and from ‘name sake’ or ‘on paper’ participation to decentralization of decision making in real sense. While *de jure* decentralization in forest management is less than 15 years old, in the form of Joint Forest Management (JFM) in India, there are instances of *de facto* community managed forests, initiated either by communities themselves or by non-governmental organizations (NGO). This paper is based on primary data collected from three case studies, each representing one of the three types of forest management regimes namely the Government’s JFM program, NGO promoted, and community initiated. The data has been collected using IFRI protocols. The three communities are located in central India and are similar in geo-physical, socio-politico-economic and demographic set-up, and hence are comparable. Strategies adopted towards benefit sharing by the three types of management systems are apparently not very different. Although equitable distribution of benefits is an important determinant for collective action to succeed in any types of management regime, the field study revealed that it is not an immediate consideration for the communities for initiating collective action. Despite being a government sponsored, well thought out program, even JFM is insensitive towards distributional aspects as it treats the community as one cohesive group and ignores intra-community. Its emphasis seems to be on ‘equality’ and not ‘equity’.

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●INTRODUCTION

Decentralization of governance of common property resources like forests and water are becoming more and more acceptable in developing countries like India. Active role of ground level institutions for protection and sustainable appropriation of natural resources is being increasingly recognized and promoted by policy makers through initiatives like Joint Forest Management (JFM). With the introduction of JFM in 1990, management of forests by communities has completed a full circle. Beginning with 'forests under communal ownership' till 19th century, passing through 'state' ownership during and after the British era, to the involvement of communities in forest management once again in recent years. . After experiencing the outcomes of British and post-British policies for more than a century that broke the symbiotic relationship between man and forests by alienating the forest dwelling communities and their stakes in these natural resources, introducing participatory management has come as a welcome change. The participatory approach is all the more significant because there are 200,000 villages in India that depend on forests with a total population of 350 million people. (Bahuguna, 2001). JFM is also seen as a response to the severe degradation of forests and acceptance of the centralized authority that the resource cannot be effectively managed exclusively by itself (Ballabh *et al*, 2002; Balooni, 2002; Kumar, 2002; TERI Report¹). Although participation of communities as a result of the participatory policy varies from state to state and from 'name sake' or 'on paper' participation to total decentralization of decision-making, it is never the less a positive step towards decentralization. And with three subsequent Government Resolutions², each one more liberal than the earlier, it is evident that co-management of forestry resources in India is here to stay.

Although 'participatory' forestry is a modern concept, polycentric 'community' management is not new to India. As is the case of societies that have long history of co-habitation, traditional

² No.6.2/89-Forest Policy, June 1, 1990; No.22-8/2000-JFM(FPD), February 21, 2000; Strengthening of JFM Programme, Guidelines, by MoEF, on December 24, 2002

rule structures were common and rule compliance was a norm. Most of the communities had developed social laws and norms that made sure that extraction by human beings did not hinder the natural growth of the forest (Gadgil and Guha 1992; Roy Burman, 1985). Although most of these practices were eroded with centralization of authority, there are instances indicating the existence of communities who have consciously maintained and managed the forests within their village boundaries at their own initiative (Gadgil and Berkes, 1991; Gadgil and Subhash Chandra 1992; Ghate 2000a.; 2002, 2004; Sarin 1996). While *de jure* decentralization in forest management in the form of JFM is less than 15 years old, *de facto* community management of forests initiated either by communities themselves or through NGOs has been witnessed for more than three decades. These informal community institutions emerged “parallel to, and often preceding state initiative” (Sarin, 1998). More such self-initiated protection groups are still evolving due to various socio-economic-political reasons like scarcity of forest products without access to alternatives, revival of traditional practices, for establishing tribal identity and traditional rights on forest products. Similarly, NGOs working at the grass-root level with varying agendas have also mobilized communities for forest protection and conservation, engraining a sense of belonging and ownership towards the resource. Thus three distinct institutional arrangements: community-initiated, NGO promoted and state sponsored JFM, have emerged in India in less than three decades. With growing popularity of JFM, especially because of the legal sanctity and incentive funds it provides at the outset, all the informal institutions too are keen to join the state sponsored program. However, study of institutional arrangement and provisions in the self-initiated and NGO promoted efforts of community management provide insight for further policy changes.

In most of the developing countries participatory resource management is being viewed as a solution to many problems related to centralized management and a tool for attempting poverty alleviation. Yet, certain issues that are intrinsic to participation are not sufficiently addressed. One such issue is that of equity or equitable distribution of benefits, which is considered necessary for sustainability of collective action based institutions. In this paper/chapter I intend to focus on the issue of ‘equity’ as reflected in the functioning of three institutional structures. Beginning with the background of JFM as a major decentralization policy, role of equity as reflected in the literature on commons is discussed. This is followed by brief accounts of three

case studies, each representing a type of institutional structure: self-initiated, NGO promoted and state sponsored JFM. Analysis, and conclusions come at the end of the chapter.

● **DECENTRALIZATION IN INDIA'S FORESTRY SECTOR**

From the early days of planning in India, the 'cooperative' has been perceived as the most important form of peoples' institution for the promotion of equity, social justice, and economic development. Accepting the role of decentralized institutions, the Approach Paper to Ninth Five Year Plan (1997-2002) clearly enumerates the essential ingredients of successful institutions as: ownership and management by users/stakeholders, producers, or beneficiaries; accountability to the community; capacity to become self-reliant over a period of time; capacity to diagnose the needs of areas, to interact with government agencies in order to draw need-based local-level plans, and to implement these plans in close cooperation with the administration; and integration of various segments of society for the achievement of common development goals. JFM is an attempt along these lines where partnership between the forest department and the local community is foreseen. Recognizing that communities may have the ability to enforce rules about forest use, policymakers have turned to various ways of developing authority over forests to local people (Gibson, 1999) and JFM is one such effort. While communities have had rights to access usufructs for long, the linking of specific groups of people to specific patches of forest has the intended effect of changing an open access resource to a common pool resource (Agarwal, 1997). Foundation of JFM was laid in the first ever pro-people forest policy of 1988, which prescribed the changeover from "protect from the people" to "protect through the people", an approach very different from the earlier National Forest Policy, 1952. Continuous degradation and deforestation was experienced in spite of the National Forest Policy of 1894 and the Indian Forest Act, 1927 during the British period. This continued even after independence and was causing serious concern for environmentalists and policy makers in the country. One wonders if participatory approach to forest management would have been adopted had the forests in India not degraded to large extent (Balooni, 2002).

The partnership under JFM is based on joint management objectives in which communities are expected to share both responsibilities and benefits that would be generated. In a way, it is partially promoting common-property regimes as a means of restraining degraded forests and

building up a community resource base (McKean, 2000). The Government of India (GOI) provided the impetus for peoples' involvement in forest management by issuing a circular on June 1, 1990 that stated guidelines on the basis of which different state governments developed their respective regulations. The circular also provided for participation of voluntary organizations to facilitate participation of village communities in protection and development of degraded forests. Encouraged by the gradual growing demand for joining the program, a JFM Monitoring cell in the Ministry of Environment and Forests in 1998 was set up. The Ministry also created a JFM network in the year 2002 for obtaining constant feedback from various stakeholders. Almost a decade after the first guidelines of 1990, GOI issued another notification (No.22-8/2000-JFM (FPD), dated 21st February), extending JFM to good forest areas. It also gave official recognition to self-initiated groups involved in forest protection. Thus, it is evident that the government is serious about its decentralization effort in forest management and is ready to extend the purview of people's participation gradually. Communities are also increasingly getting interested in the program due to official backing and recognition to their efforts, the incentive money and employment generation that may come through afforestation under JFM. The number of Forest Protection Committees (FPC) registered in 2000 was 36,130, covering 10.24 million hectares of forestland (Bahuguna, 2000). This number increased to 64,000 FPCs in 27 states managing 22 per cent of India's 63.73 million hectares of forest in 2002 (GOI, MOEF, Annual report 2002-2003).

The growing popularity of JFM does not mean that it is bereft of problems. It is a widely researched area and several scholars have been keenly raising issues related with JFM right since its inception. To begin with, the reasons for the government's shift from a centralized management system to decentralization in the form of participatory JFM have intrigued various scholars. Thompson (1995) best summarizes the probable reasons: fiscal crisis, exacerbated by structural adjustment/economic liberalization policies; pressure from donor agencies for greater accountability and transparency; the recognition of the failure of past approaches by state agencies; and the demonstration effect of successful pilot efforts by non-government organizations or other government agencies in other sectors. Environmental activists and the rural communities too have been skeptical about the intentions of the government in sharing powers with the people, because forest sector is one of the revenue-generating sectors. It is a

common experience that although JFM implies an increase in the collective ability of the communities adjacent to forests to manage, grow, and equitably share common resources, there have been few efforts to involve people in the planning process or in establishing plan priorities. Rarely are the communities consulted on the species that are to be taken up for plantation. There is no correlation between the amount of land that is brought under JFM and the amount of land required to meet the biotic requirements of people and livestock (Ghate, 2000b.). The participation envisaged in JFM is more in execution than in planning, “the structures more puppetish than autonomous” (Lele, 1998). The fact that village-level institutions might be better able to manage these commons is accepted, but the fact that the management objectives of the locals may be very different and may not coincide with those of the state (Ligon and Narain, 1999) is totally neglected. Another important aspect that is criticized as being neglected is the lack of acknowledgement of women’s special values, knowledge, and uses of forest produce (Locke, 1999). Gender relations are neither understood nor are there any special provisions to accommodate women’s specific knowledge, needs, and capacities in the JFM program.

Apart from the fact that in JFM the role of community is restricted as ‘implementers’ rather than ‘decision makers’, another important drawback is its insensitivity towards intra-community variations regarding forest dependence. Under JFM formation operative rules are left to the community. The impact of these rules on different segments of a community is not paid any attention. Resultantly the main losers are fuel wood head-loaders who often form the poorest subgroup within the village (Hill and Shields, 1998). It is the richer members of the community who tend to dominate local politics and organizations in India. Thus, benefits from local institutions such as JFM accrue mainly to richer sectors of the community (Saxena, 1989). A study (Kumar 2001, 2002) has revealed that the protection cost of JFM is borne disproportionately by the poor. The disparity in sharing of costs becomes more acute when the user fees charged under JFM are taken into account. This asymmetry is even more evident when value of grazing and local ecological services is considered.

The ‘equity issue’ in JFM is discussed in two contexts: equity in participation and equity in benefit sharing. Benefit sharing can further be envisaged in two ways: sharing of benefits between Forest Department and communities, and benefit sharing between the community

members. Equity in participation by all members including women, poor and the landless has been well defined in the Forest policy, 1988. The two bodies under Forest Protection Committees constituting of community members are – General body and Executive body. While all the households are represented in the General body, it is suggested that elected members of executive body should have at least 33 per cent of women members and representation of poor and landless. While the JFM agreement talks about sharing long-term benefits from timber, the harvesting of non-timber forest produce and sharing its returns is not discussed. It thus remains hazy as to what the fate of the forests will be after they have been successfully regenerated (Arora & Khare, 1994). Benefit sharing within the community is an issue left to the community itself without ensuring that the deprived sections get equal share. The fact that ‘community’ may not always be in a position to enforce fair distribution because the community may be highly differentiated in socioeconomic terms (Lele, 1998) seems to have totally escaped the attention of the policy makers.

This paper/chapter is restricted to the principle of equity in benefit and cost sharing amongst the community members. The importance of the equity principle is discussed in the following section with the help of already existing literature.

EQUITABLE DISTRIBUTION OF COSTS AND BENEFITS

Though there have been a number of theoretical and empirical studies on the successes or failures of collective action, relatively few have paid attention to equity and distributional implications of common property institutions (Adhikari, 2003, Agarwal, 1997). Tests that would gauge the relative importance of factors important to sustainability, equity, or efficiency are quite uncommon (Agrawal, 2002). Studies have focused in general on communities as opposed to households to judge the success of CPR management where it has been taken for granted that distributional aspects would be taken care of by the communities in more or less equitable manner. (Adhikari, 2003). Communities in fact vary enormously in how equally or unequally they distribute the products of the common to the eligible users (McKean, 2000). These communities have various forms of heterogeneities including inequalities in income, in terms of sacrifice made by members in cooperation, in benefits derived from common-pool resources, cultural heterogeneity and locational difference that might influence an individual’s incentive to

cooperate (Bardhan and Dayton-Johnson 2000). Kant 2000 emphasizes on reflection of socio-economic inequalities on the heterogeneity of preferences for forest resources, which in turn brings heterogeneity in purpose or objectives towards the resources. Typically, the shares in the benefits provided by the CPR can be unequally distributed since they depend on access.

Discussion on community based forest management often draws on the literature on CPR to examine how collective action is generated and sustained, and how conflicts and equity considerations in the distribution of costs and benefits are managed (Sundar *et al*, 2001). Among the various attributes of successful common-property regimes the distribution of benefits, decision-making rights and use rights have also been recognized to play a role in the successful functioning and sustainability of collective action. Need to incorporate the issue of equity and justice in environmental decision making is well accepted (Bryant, 1995). Emphasis is on ‘fairness’ of distribution of forest resources as those who do not find it so would be unwilling to participate in decision-making, collective effort to monitor and protect the resource, and refuse to bear their share of cost. For sustainability of any institution it is necessary to ensure fairness lest collective action would fall apart. “Rules that award more benefits to those who invest more, and no benefits to those unwilling to invest, seem to have the best chance of winning the allegiance of both the rich and the poor” (McKean 2000). Therefore, policy choices that encourage fairness in the allocation of benefits from the commons play an important role in ensuring robustness of institutional performance (Agrawal, 2002). The way different participants share the benefits and the costs resulting from its use is what really matters for collective action in a CPR (Baland & Platteau, 2003). Ostrom in her second design principle of ‘congruence’ indicates that users who contribute more for the development and maintenance of the resource system should receive more benefits from the system. Pointing at a crucial aspect of ‘perception of the people’ involved, she adds that these rules should be considered fair and legitimate by the participants themselves (McGinnis and Ostrom, 1996). Results of experiments in community management too have taken cognizance of distributional problems in CPR management by communities (Kumar, 2002).

Households and communities in India are entrenched with inequalities on the basis of gender, caste and income, which reflect in the management of natural resources and distribution of

benefits from these resources. Equity in distribution of benefits in such an iniquitous society can arise only when distribution principles are formed keeping these inequalities in mind. If the principle is the 'ability to pay' alone, the poor and women would suffer. If the basis for benefit distribution is contribution made by each member, which depends on the extent of power and bargaining strength the contributors have, the lower segments of the community including women would be left out. Similarly, the principle of distribution known as 'according to one's requirement' also does not follow the equity path as bigger households which are normally the wealthier ones in rural communities would extract more from the forest as compared to smaller and poorer households. Some scholars posit that compared to the non-poor, the poor may depend more on the commons in relative terms but in absolute terms their dependence could be lower (Dasgupta, 1993; Singh *et al.*, 1996; McKean, 1992; Chopra *et al.*, 1990; Adhikari, 2003). There is evidence that the wealth endowment of households affects private benefits from commons since productive wealth creates opportunities for better-off households to use biomass resources (Adhikari, 2003). This could be because the rich have more land and more cattle so they would require more green manure and more fodder for the cattle. More land would also mean more relative income and therefore bigger houses that would require more timber for construction as well as maintenance and more thatching grass (Kumar, 2002).

Absence of equity indicates asymmetry in distribution of wealth and income, sacrifices or cost borne and benefits shared by members of a community (economic sense), power (political sense), access due to caste or ethnicity and gender (social sense) (Kant, 2000; Bardhan and Dayton-Johnson, 2002). Any fair principle of distribution needs to take cognizance of the fact that for women and the poor forests play an important role in their subsistence, since most of them are landless. Women are the primary collectors of firewood, livestock needs of fodder and minor forest products for the households. The poor households require forest products for subsistence needs like fruits, vegetables, household implements and minor forest produces as a source of income along with various forestry related employment activities. Jodha (1986, 95) has estimated that common-pool resources contribute about 15 to 25 per cent to the total income of poor households. Yet when the issues of distribution of benefits and cross-sectional participation in decision-making activities related to natural resources arises women and poor (including members from lower caste) are alienated. Apart from these, there can also be inequalities in

constitution of the governing body, in provisions of rules and procedures, which can exclude women and the poor (Agarwal, 2001). These iniquitous sharing of costs, benefits and participation in deciding the cost/benefit sharing rules may still ensure cooperation as “because these are imposed by some on others through the exercise of social and/or economic power. Here people might follow the rules out of coercion rather than consent” (Agarwal, 2001).

Present study focuses mainly on economic aspect of equity. It has been viewed from two different perspectives: ‘ability to pay’ and ‘payment towards the cost of benefit accrued’. According to the principle of fiscal equivalence those who benefit from services should bear the burden of financing it. And re-distributional equity takes into consideration differential abilities to pay (Imperial, 1999). The major benefits in the form of forest products for typical Indian forest dwelling and even rural communities are: timber for house construction/repair, fodder for cattle, thatching grass, fuel wood and non-timber forest products like flowers, fruits, medicinal herbs etc. In an agrarian economy, it being subsistence economy, size of land holdings is the best indicator of inequality. Households that own bigger pieces of land, naturally harvest more forest products than others. The cases studied here are all tribal dominant communities, therefore the social as well as gender hierarchy is not prominent. Therefore, four economic indicators i.e. land under cultivation, cattle ownership, size of house and other assets like TV and radio or music system, have been chosen for comparison between the members of the executive committees and other members of village. (Appendix-I, Table-1)

METHODOLOGY

Data for this study has been collected from two sources: IFRI protocols and household survey. Research instruments developed by the International Forestry Resources and Institutions (IFRI) research program, based at the Workshop in Political Theory and Policy analysis, Indiana University in USA, has developed a set of ten research instruments to facilitate collection of information about demographic, economic, and cultural characteristics of communities dependent on forests. These pre-structured questionnaires, that make inter-regional comparisons possible, are filled in using rapid appraisal and traditional interview method.

Household survey for 40 per cent of the randomly selected households in each village was done with the help of pre-structured questionnaire. It also included the members of the executive committee. The field study was completed in the year 2002.

● STUDY SITE

Gadchiroli, the district from which the three villages were selected is one of the eleven districts of Vidarbha, in Maharashtra State (India). Most of the forest in the State is concentrated here. Yet, the per capita income of Gadchiroli district is 48 percent less than the State average. The total geographical area of the district is 14412 sq. kms, which works out to 4.68 percent of the State. Of the total forest yield, 61.34 percent comes from this district. Population density of the region is very low, only 0.99 percent of the State's population resides in this district, and 38 percent of it is tribal population. It is important to note that more than half of Gadchiroli district's population is below poverty line despite being surrounded by the rich resource. This district has been specifically selected for the study for two reasons. One, of the total forest area (66 percent of its total geographical area), around 71 percent is classified as 'Protected Forest' and 24 percent as 'Reserved Forest'. In Protected forest local communities have comparatively more rights on forest produce including fuel and fodder. Through the 73rd amendment to the Indian constitution, management rights of 14 items of minor forest produce have been transferred to the local *Gram Sabha* (village council) in scheduled areas, and Gadchiroli district falls in this category. By doing so, increased stakes of local communities in forest have proved to be an incentive for the locals in protecting the resource. Secondly, for making the three case studies comparable it was necessary to control for the demographic, social, and geographical variables. Gadchiroli being a forest-abundant district, it provided case each from all the three categories of institutional structures: community-initiated (Deulgoan), NGO supported (Ranvahi) and JFM sponsored (Markegoan) (see location map, Appendix-II). Three communities studied here are predominantly indigenous communities with comparable dependence on forest (for more details of villages see table-2 in Appendix-III). These are basically agrarian communities owning small, fragmented pieces of land with little or no irrigation. Like most of the villages in the vicinity, these villages also experienced erosion of traditional practices and it is only in last decade and half that collective action in resource management, self-initiated or otherwise, has set a foothold here.

● PROFILE OF THE THREE CASE STUDIES

Community-initiated institution: Village Deulgaon

This is a small heterogeneous village of thirty-three households dominated by Gonds, a dominant tribe of Central India. The other ethnic community that exists in the village is *Kunbi* that constitute about thirty percent of the population. The main occupation of the people is agriculture, where most of the households own land, but there are a few who have encroached on common lands. The average land holding is about three acres though few households own more than five acres of land. Forests play a very important role in the subsistence and livelihood needs of all the people of Deulgaon as for most of the families agricultural produce is not sufficient for their annual subsistence needs. Thus sale of minor forest products like Tendu (*Diospyros melanoxylon*) leaves, char (*Buchnarea lanzan*), Moha (*Maduca Longifolia*), hirda (*Terminalia chebula*), awala (*Phyllanthus emblica*) etc. provides them the supplementary income. Their other needs like timber for house construction and repairs, agricultural implements, livestock sheds, furniture; fuel wood, fodder and fruits, roots, tubers as food supplements are met by the forest. This continued diverse and significant dependence on the forest on the one hand and continuous degradation of the resource due to indiscriminate extraction by neighboring communities as well as by some members of the community, on the other, was the starting point of conservation activities. Ill effects of degradation of forest on other natural resources was also been felt when water scarcity hit the village. All this started to worry the people of Deulgaon. At the same time, income from daily wages from extraction of Tendu (*Diospyros melanoxylon*) leaves and their sale (also known as '*bidi*' leaves, in which country cigarettes are rolled) was also dwindling. This activity is a major source of cash in this tribal dominant area. The *tendu* contractors selected by Forest Department were extracting leaves through hired labor not belonging to Deulgaon, thereby reducing employment opportunities for the locals. But the community of Deulgaon remained mute spectator to all this as they were not sure whether the forest was within their village boundary or not. This was because no land survey had taken place since 1922. Immediately after the land survey in 1988, the local Police '*Patil*' (a person nominated by the Police Department) of the village, one Mr. Raoji Dev Madavi' along with a local resident Mr. Marutrao Kaluram Gedam spoke to the people. Many informal meetings took place to decide on the steps to be taken and strategies to be used to bring an end to this constant pressure. It was in

1990 that the villagers decided to protect the forest that lay within their revenue (administrative) boundary. Steps to control harvesting practices of neighboring villagers along with imposing restrictions on itself were decided upon which involved simple operational rules. The population-mix of the community interestingly ensured fair representation of the ethnic groups of the community in the decision-making. Although men mostly made the decisions, women took active part in the implementation of these rules.

To start with rules were made that restricted felling of trees. Monetary sanctions were introduced for felling of valuable trees like Tendu (*Diospyros melanoxylon*), Moha (*Madhuca longifolia*) and gum yielding trees for self-consumption as well. These trees have multiple uses and are sources of leaves, flowers and, fruits. Even though the forest was in a degraded state and the people could feel the scarcity of the forest products, no particular strategy for distribution of forest products was made. Since the forest was in a highly degraded state and over all productivity was low when protection began, the adversely affected group was that of the land less and the poor who used to earn small income from selling fire wood and minor forest products. Yet, no special provision was made for them to compensate for their loss of income. Even today each household is allowed to harvest according to its genuine requirement. Emphasis was on harvesting of forest product sustainably. Monitoring of compliance to rules was ensured through introduction of daytime patrolling by both men and women members of the community. Two persons were sent from two households everyday, throughout the year on rotational basis. A penalty of Rs. 20 for all rule breakers was imposed if a member refused to do the work. All these activities were undertaken without a formal association or governing body.

The informal efforts of the community continued in the form of ‘protection’ and ‘self-restriction’, allowing natural regeneration alone, as they had no access to funding or technical know-how for increasing the stock and quality of the resource. This changed when the Forest Department invited the community to join JFM. It was after several community meetings discussing the pros and cons of joining JFM, that a consensus was reached and the villagers decided to register under JFM. They were happy to learn about the benefits offered under JFM especially employment generation from plantation activity taken up by the department. It also promised incentive money coming at the outset of JFM activities as a fund at the disposal of the

community Share of fine collected from illegal harvesters when caught by the community, and fifty percent of the proceeds from the sale of timber harvested from the plantations were also defined as other benefits. In 1998, Forest Protection committee was set-up under JFM (constitutional level). In 2000 it was formally registered under the name of '*Samyukt Van Vyavasthapan Samiti*' (Joint Forest Management Committee). Plantation was done with the department's assistance, where species that the forest lacked or the villagers desired, were planted. Due to the formalization of the collective efforts of this community under JFM a structure was prescribed to the informal functioning of this eight-year old forest conservation work, but the spirit and the indigenously developed methods of functioning remained as earlier. Following the procedure of institutional set-up under JFM an executive committee was elected and a general body was formed. This constituted both men and women. According to JFM stipulations one male and one female member from each household were made members of the general body with 33 per cent representation of women in the Executive body. But none of the women elected in the executive body have led the committee as president or have held any decision-making post in the two terms that the association has functioned so far. The economically better off male members of the community have had these posts. Even the elected women members of the committee are from economically better off families.

The community still gets together to decide and take decisions on forest related activities. Only difference now is that they have a routine according to the JFM guidelines which lay down a once a month meeting of the general body members along with the executive body that also includes the Forest guard (employees of Forest Department). Suggestions from all members are invited but unanimity on acceptance of these suggestions remains an important factor. For example in case anyone requires more than her/his daily need, especially for any special occasion, a written request needs to be submitted at the monthly meeting where decision to accept or reject it is taken unanimously. Due to growing clarity of purpose over the years and strict implementation of the rules with monetary sanctions right from the beginning, compliance has always been high. A sliding scale penalty structure has been built wherein the fine graduates with the frequency of the infraction. The Fine now has been increased to Rs. 51 in case of first infraction. A repetition involves a higher monetary sanction. The community is thus continuing with its own rule structure evolved over the years and has now adopted some of the rules laid

under JFM e.g. trees of a certain minimum girth can only be harvested, thus protecting smaller trees and ensuring sustainability. For fuel, only dead wood and fallen branches are allowed to be collected. Sale of timber, fuel wood and fodder are not allowed. Since the procedure for framing of rules remains same as earlier almost everyone in the community is aware of these rules and finds them clear to understand, flexible to the needs of the people. Equality in treatment of all offenders has brought respect and acuity of fairness for the rules. In case of persistent non-compliance, rules provide that the offender be taken to the police, though not to the Forest Department. Ever since the formation of FPC, communication and coordination with the Forest Department has not been very good. This is mainly because there is no cooperation from Forest Department in sanctioning pilferers of forest products from neighboring villages, even after the poachers are caught by the community and taken to the local FD office with the seized products along with the equipment used by the poachers. Though sharing of income from timber sales is still some time away, sharing of short-term income collected through fines between department and communities is not in keeping with the agreement between the two.

State sponsored Institution under Joint Forest Management: Village Markegaon

Markegoan is a small tribal village where all the families belong to the Gond tribe. Economically people are at the same level where 3.72 acres is the average land holding with the exception of only a couple of households that have joint families and big land holdings. Agriculture is the main occupation and paddy is the major crop grown. Forest plays an important role in the lives of people of Markegoan. Being away from town, with only a dust road connecting to a small town of Dhanora, alternatives to forest products have not reached the village yet. A forest dependence survey of this village found that villagers depend on timber and non-timber forest products for most of their needs. Nearly 10 timber species were identified that were used by the people for house construction, livestock sheds, fencing of house and agricultural fields, agricultural implements etc. The villagers mentioned about 55 species of non-timber forest products that are used for food, beverages, medicines, pesticides, roofing etc. (Ghate and Mehra, 2003). Access to forest and forest products has had always been easy due to low density of population, limited pressure from neighboring villagers and abundance of forest surrounding the village. Especially it being a old forest the biomass content is very high. Thus the need for forest protection and restrictive use of forest products never occurred to the people. But one Mr.

Chatura Halami did realize that the forest would not be able to cope with the constant population increase in the surrounding villages. Even after two years of efforts Mr. Halami could not convince the community to take up protection work and restrict self-use. It was only after the village was covered under JFM that protection could be initiated through forming the Forest Protection Committee in 1997. The incentive was the benefits offered by JFM like fund for the community and employment generation due to plantation work in the village. In the first meeting of the FPC, the villagers decided to lay two main restrictions at operational level, one on grazing (*Chara Bandi*) and other on tree felling (*Kurhad Bandi*). An executive committee of the association constituting of eight men and three women was elected and general body constituting one male and one female from each household was formed. The proportional representation of women was kept at the predetermined level as given under JFM guidelines. No effort has come either from the men or the women of the community to increase this level of representation. Neither has effort been made to elect or consider women for the leading posts of president, vice-president or treasurer.

JFM has no standard rules for governance that can be applied to all villages. As per provisions, the operative rules are to be made by the members of the forest association in the presence of a forest department official to ensure that the rules are in line with the objectives of JFM. Such rules were made in Markegoan regarding harvesting of forest products for subsistence needs, complete ban on outsiders from harvesting, restricting sale of forest products and voluntary patrolling on rotational basis. Harvesting and distribution of forest products did not involve any specific approach to ensure equitable distribution as JFM has not considered this as a concern and like other rules this has also been left to the community to decide. To begin with the community formulated the simple rule by allowing each one to harvest according to ones need. But adherence to this rule of forest-use has proved to be ineffective in the absence of any active support from the forest department in fixing of penalties or dealing with infractions. During one of the recent visits it was found that the association was becoming more active and was formulating more self-restrictive rules (mainly by a group of interested persons) without being prompted by the Forest Department. The rules now involve ban on cutting of new trees, especially valuable trees like *Tendu*, *Awala*, *Moha*; restricting timber use by allowing only one pole per year per family for house construction; permission to collect only fallen wood and stems

for fuel, the quantity being restricted to one cartload in a year. Penalties too have been increased, yet infractions to the rules do take place as people collect more than what the limit. Leniency in imposition of penalties can be observed where the offender (s) is let off in the first couple of instances. Thus even though there are rules to ensure equitable distribution of benefits it actually does not happen due to non-compliance. This is mainly because the community knows well that although they are protecting forest, it belongs to the Government. There is no sense of ownership. The FPC is aware that unless FD backs committee's decisions, they have no legal standing. Indifference of the FD official, including the Forest Guard who is *ex officio* secretary of the FPC, has weakened the collective level activities. Any representative of the Forest Department rarely attends meetings of the forest association. As a result neither is the community completely aware of the provisions of JFM, nor is the department aware of the decisions taken by the association. The 'joint ness' in day-to-day decision-making is totally missing. Yet the villagers feel that registration under JFM has been beneficial to them, as without it they would never have started the protection work. It is due to JFM that the villagers came to know about the importance and techniques to stop forest fires and received funds for various developmental works.

Institution supported by NGO: Village Ranvahi

Ranvahi is the largest and the oldest village among the three case studies. About ninety six percent of the population is Gond. The village is divided into two sections with 62 households in one settlement that is the main Ranvahi village and 19 households in the other settlement known as Ranvahi Toli. Like the other two villages, agriculture here is also the dominant occupation of the people. 62 households out of 81 own land and others who are landless subsist as farm workers and casual labor. Along with this forest also meets their subsistence and livelihood needs. Resource dependence of this community is slightly low compared to Deulgoan and Markegoan but fuel wood, fodder and housing timber needs are fulfilled from the adjoining forest itself. Therefore forest protection remains a priority for the community and a local NGO '*Amhi Amchya Arogya Sathi*' (AAA) has helped initiating the collective activity. It all started from a '*Sakhi mela*' (an all women get-together) that was organized in 1995 by Mrs. Shubhada Deshmukh of AAA. Many women from nearby provinces came for this 'Mela'. Each woman representative was asked to share the positive and negative developments in her village. Ranvahi

also had a representative named Umakantabai, who spoke of the problems that Ranvahi had to face, especially the problem of indiscriminate felling by timber contractors and neighbors. She was impressed by the experiences of other villages that had taken initiative in forest protection. After returning to the village, she narrated her experiences to some fellow villagers who then collectively decided to work towards convincing the community to take up forest protection. Simultaneously efforts by the NGO also continued. Dr. Gogulwar of AAA called a meeting of the community and spoke to the villagers about the need of forest protection, JFM and its advantages. Convinced of the need for forest protection the community reached a consensus and applied to the Forest Department for joining JFM. After receiving the application, the Deputy Conservator of Forest sent his deputy to hold a meeting with the people of Ranvahi and to get a first hand feel of their commitment.

In the meantime the community started protection work on its own. This was mainly against poachers of forest products from the neighboring villages poaching forest products from the forest area belonging to Ranvahi. While the outsiders were prevented successfully from harvesting from this forest, wasteful harvesting by the Ranvahi community itself, continued. Encouraged by the suggestions from the NGO (AAA), some villagers tried to estimate the usage of forest products by each household and found that extraction was way beyond the actual requirement. It was then that a rule was made that the community members would collect only what was genuinely required. Since then sale of forest products is banned. More such decisions took place either in the '*Gram Sabha*' (village meetings) that was held on regular intervals, or in informal meetings as and when the need to get together and take an operative level decision, arose. Initially only male member from each household could participate in these meetings. On the suggestion by AAA, women were also encouraged to participate. The community has taken up round the clock vigilance through volunteers. In 1998 Forest protection committee was set up under the JFM and was formally registered in 2001.

Under its formal set-up, an executive committee and general body of the association were formed. two women and five men were elected in the executive committee. The choice of members has taken care of representation of landless, women, and minority ethnic group. Meetings of the executive and the general body now take place on a monthly basis and are

attended by almost all the members of the association. In these meetings, normally the decisions about the extra requirements for forest products are made. Forest patrolling for monitoring of forest use by outsiders is taken very seriously and strategies to deal with the problem are also taken up for discussion. Conflicts within the group have decreased over the years, but this could be due to leniency shown in imposing penalties. In case of forest activities taken up by the Forest Department, the members work on daily wages. Now the community is contemplating an arrangement wherein the Forest department would be assigning a lump sum amount for protection work, which will be distributed among the households through the association. Revenue earned through forest contracts, is distributed between households according to the work done. Neither in the activities taken up by the Forest Department nor in the contract work taken up by the community (e.g. growing seedling in nurseries with a buy-back guarantee by the department), special care is taken to employ the poor on priority.

The community has formulated other forest-related rules, which include ban on felling of trees for fuel wood. In case of timber for construction of houses, ten poles per year per household are permitted. Up to 50 poles can be harvested after permission is sought by applying to the committee. Over and above this limit, poles have to be bought at the rate of Rs. five per pole. In case of fodder, there is no limit fixed on the quantity that can be harvested, and open grazing is generally practiced. Only certain parts of the forest are closed for grazing, like the 60-hectare plantation set up under JFM, . These rules have been formulated with guidance from the NGO (AAA). The members of the user group generally follow these rules, but infractions do take place as fuel wood or timber is often collected in excess of the limit. For such infractions the provision is to pardon the offender on the first and second instances with a warning, and expel the offender from the association on the third instance. However, no member has been expelled so far. Although FD officials are not called to enforce penalties on the community members, whenever the neighboring villagers are caught stealing from the Ranvahi forest, they are taken to the Malewada Range forest office where a fine is imposed, and a certain percentage is shared with the association. This speaks of the good relations that the community of Ranvahi has with the Forest Department, which has provided guidance on forest governance and improvement techniques. Ranvahi also has the advantage of the constant presence of AAA through its volunteers. With the help of the NGO, some ‘study groups’ on wildlife, agriculture, medicinal

plants, trees etc. have been set up. These are indirectly helping the community members to realize the benefits that are available to the community through forest. As a result the level of awareness regarding their rights is also increasing.

● **SELECTED INDICATORS**

As has been mentioned earlier, four indicators namely land under cultivation, cattle ownership, size of house and asset ownership, were chosen to compare the economic status of an average household and that of members of executive committee for the Forest Protection committee. Instead of land ownership land under cultivation was preferred because of encroachments that have taken place in Markegaon and Deulgaon. It is interesting to observe that the average size of land under cultivation of the members of EC in Markegaon is 5.6 acres and that of an average household is 3.72 acres (Table-1). The difference is present in Deulgaon also. Only in case of Ranvahi average land cultivated is same for EC members and other households. The average difference in the size of houses between EC members and other households is prominent in all the three villages. While majority of the houses in the three villages are made of mud and bricks, one house in Deulgaon is of cement and bricks, which belongs to the treasurer of the FPC of Deulgaon village. Cattle ownership is higher for EC members in Deulgaon, but lower in case of Markegaon and is the same in Ranvahi. This indicator does not support the argument that the better off or lesser poor are the members of the EC. From asset ownership however it is clear in Deulgaon and Markegaon that the richer households are more likely to become members of EC. Only in case of Ranvahi the EC members seem to own assets that are more or less equal to the average family in the village. It needs to be mentioned here that the NGO in the village had encouraged the community to select the members consciously, and due to its suggestion one landless member and one member from the minority caste is included in the EC. Number of women members in the EC in all the three villages is in keeping with the guidelines issued under JFM. Not one of the office bearers in any of the three villages is a woman.

● **OBSERVATIONS AND CONCLUSIONS**

As is clear from the discussion above, in all the three case studies no special attention has been paid to purposive strategy of equity in benefit sharing. Although equality is being practiced as far

as benefit sharing under JFM provisions is concerned, operative rules in all the three case are seemingly immune to intra-community differences. Although NGO promoted Ranvahi village has taken care that one person representing the landless category is included in executive body, self-initiated effort has been negligent in this regard. It is logical to assume that better off households need more forest products and so harvest more from CPR. Therefore the simple operative rule of 'each household can harvest as much as it needs for self-consumption', accepted by all the three representative case studies, is not an equitable or equal benefit sharing arrangement. Because the cost of protecting the CPR is equal in the form of labor and time put in by each member in guarding and patrolling. Similarly, introduction of new rules, as is evident from Markegaon, like introduction of user fees for pole extraction or higher fines for violation of local operative rules, result in higher cost for the landless and marginal farmers. The poor do not resist or object to this arrangement for two reasons. One, the availability of forest products has increased in comparison from the past, due to the common efforts. Therefore there is overall satisfaction. Secondly, the majority of the poor is indirectly dependent on the better offs in the village who are also providers on farm employment. With the purpose of not antagonizing the providers of employment, injustice is generally not challenged. The poorer households irrespective of the institutional structure are losers either because they do not know it, or even if they know it, they lack the power to prevent the less poor from imposing costs on them (Boyce, 1994). With further probing, persons of richer class in one village argued that since the poor collect more NTFPs from forest while the land owners are working in their own fields, the share in benefits is fair and just. Oblivious of the iniquitous nature of the present arrangement, the poor and the landless in all the three villages perceive it as equitable. Even in case of JFM it is apparent that it undermines equitable distribution of benefits among various economic classes as well genders (Tusr and Dinar, 1995) by totally ignoring intra-community differences and dealing with each village as a whole. In fact policy needs to address the question of equity because greater inequalities of power and wealth lead to more environmental degradation (Boyce, 1994).

Another source of inequality in practice is in the way infractions are treated. Apart from the basic rule of harvesting according to one's needs, more elaborate rules of sharing of forest products have been made in all the three case study villages but in Markegaon and Ranvahi these are not strictly implemented. When the rule breakers are allowed to go scot-free without being

penalized, dissatisfaction brews amongst the members who follow the rules because the rule breakers accrue disproportionately more benefits. Only in case of Deulgoan there are strict restrictions (i.e. appropriate rules along with their strict implementation) on the quantity of a forest product that can be harvested by any household. Deulgoan is the only village among the three that actually imposes a fine on breaking of any such rule. Since no one is allowed to corner forest produce or collect more than what is required, in this limited sense the community perceives benefit distribution as equitable. Forest conservation and management in the community that is spearheaded by NGOs does try and encourage participation of all sections in the decision-making process, (Ghate 2003). But in the end these delicate social issues are left for the community to take care of, which in turn follows its social norms. Thus help from NGOs can come only in a limited way. This could also be because NGOs may have their own agenda to follow and any threat to the pursuance of this agenda naturally limits the role any NGO can play in the social dynamics of a community.

JFM does not have provision for addressing the question of intra-community distribution of benefits, though it has tried to ensure participation of women by incorporating a fixed percentage of membership for them in the executive body and the general body of the Forest Protection associations. It does not give any priority to the land less and poorest of the poor in forestry work like plantation activity done with government funds. Rules regarding product use are to be framed and implemented by the community members and infractions are to be dealt with by the community under the guidance of FD. Even the sharing of revenue from harvesting of timber is contemplated between the Forest Department and the community as a whole. The MOU does not cater for the intra-community differences.

Among these three institutional arrangements Deulgoan has been found to possess all the ingredients necessary for successful collective action. They have shared understanding, effective monitoring of use, implement rules strictly, understand the salience of the resource (Ghate, 2003). Even though no strategy for equity in forest product distribution exists, there is no dissatisfaction amongst the poor in the community. All the members perceive the arrangement to be fair and just. Similarly, Markegaon community promoted by JFM and Ranvahi community supported by an NGO, do not express any urgency to address the question of equity. Collective

efforts in the three cases are seven to 12 years old and yet the issue of equitable distribution of benefits and costs has not come up in any of the three institutional arrangements. This indicates that benefit distribution is not a first order condition for collective action irrespective of institutional arrangements.

It is true that successful experiments in community management of natural resources has dispelled the initial skepticism regarding peoples' capability and it is now widely accepted that suitable institutional frameworks are designed by the locals to secure beneficial outcomes. Similarly, writings on the commons indicate that locally evolved institutions are efficient and equitable in benefit sharing because it is easier for the local population to relate with them (Ostrom 1992; McKean, 1992; Agrawal, 1999). But findings of this study indicate that decentralization may not automatically ensure equitable benefit sharing within communities. Even in case of self-organized resource governance systems where social norms are acceptable to all, reciprocity is high and indigenously framed rules have high compliance level (Ostrom, 1999), a small group with more power – social, economic or political, can influence crafting of institutional structures to its own advantage. In the long run the education and awareness level of members would improve, improved forest condition would make commercial revenue possible. Therefore, neglecting the issue of equity in benefit sharing can endanger collective action in any institutional structure. As is rightly put by Balooni (2002), “ensuring equity in representation and participation of the marginalized classes (such as poor), equitable benefit sharing between the Forest department and village communities and within the communities themselves, are issues which, if not addressed now, could jeopardize the future progress of participatory forest management”.

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REFERENCES

- Adhakari, B. (2003). *Property rights and natural resources: Socio-economic heterogeneity and distributional implications of common property resource management*. SANDEE (South Asian Network for Development and Environmental Economics) Working Paper no. 1-03, Nepal.
- Agarwal, B. (2001). Participatory exclusions, community forestry, and Gender: An analysis for South Asia and a conceptual framework. *World Development*, 29(10), 1623-1648.
- Agarwal, C. (1997). Economic analysis of Joint Forest management in India: A methodology. Unpublished.
- Agrawal, A. (1999). *Greener pastures: Politics, markets, and community among a migrant pastoral people*, Durham, NC: Duke University Press.
- Agrawal, A. (2002). Common Resources and Institutional sustainability. In E.Ostrom, T.Dietz, N.Dolsak, P.C.Stern, S. Stonich, & E.U. Weber (Eds.), *The Drama of the Commons*, (Pp.41-85). Washington D.C.: National Academy Press.
- Arora, H., & Khare, A. (1994). Experience with the Recent Joint Forest Management Approach. Paper prepared for the IN workshop on India's Forest Management and Ecological Revival, New Delhi, February.
- Bahuguna V.K. (2000). JFM: An instrument for sustainable Forest management. Paper presented at India's forests beyond 2000 – Commonwealth Forestry association (India).
- Bahuguna V.K. (2001). Production, protection and participation in forest management. An Indian perspective in achieving the balance". In *proceeding of the Commonwealth Forestry Conference on Forests in a changing landscape*, 1-16, Canning Bridge, Australia: Promaco Conventions Pty Ltd.
- Baland J.M. & Platteau, J.P. (2003). Collective action on the commons: the role of inequality. In Jean-Marie Baland, Pranab Bardhan and Samuel Bowles (Eds.) *Inequality, collective action and environmental sustainability*, <http://www.santafe.edu/files/gems/sustainability/sustain02.pdf> (forthcoming)
- Ballabh, V., Balooni, K., & Dave, S. (2002). Why local resources management institutions decline: A comparative analysis of *Van (forest) Panchayats* and Forest protection committees in India. *World Development*, 30(12). 2153-2167.
- Balooni, K. (2002). Participatory Forest management in India – An analysis of policy trends amid 'Management Change'. *Policy Trend Report*, 88-113.
- Balooni, K. & Ballabh, V. (2000). Managing village plantations through tree growers co-operatives: emerging issues and policy implications. *Agricultural Economics Research Review*, 13 (1), 52-70.
- Bardhan, P. & Dayton-Johnson, J. (2000). *Heterogeneity and commons management*. Department of Economics, University of California, Berkley, USA.
- Bardhan, P. Dayton-Johnson, J. (2002). Unequal irrigators: heterogeneity and commons management in large scale-multivariate research. In E.Ostrom, T.Dietz, N. Dolsak, P.C.Stern, S.Stonich, & E.U. Weber (Eds.), *The Drama of the Commons*, (Pp.87-112), Washington D.C.: National Academy Press.
- Boyce, J.K. (1994). Inequality as a cause of environmental degradation. *Ecological Economics*, 11. 169-178
- Bryant, B. (Ed.). (1995). *Environmental justice: issues, policies, and solutions*. Island Press: Washington DC.

- Chopra, K., Kadikodi, G., & Murty, M. (1990). *Participatory development: people and common property resource*. Studies on Economic Development and Planning, No. 52, Delhi, India: IEG and Sage publications.
- Dasgupta, P. (1993). *An enquiry into well-being and destitution*. Oxford: Clarendon Press.
- Gadgil, M. and Fikret Berkes (1991), 'Traditional Resource Management Systems.' *Resource Management and Optimization*, Vol. 8 (3-4): 127-141.
- Gadgil, M. & Guha, R. (1992). *This Fissured Land: An Ecological History of India*. New Delhi, India: Oxford University Press.
- Gadgil, M. & Subhash Chandra, M.D. (1992). 'Sacred Groves.' *Indian International Center Quarterly*, 19 (1-2), 183-87.
- Ghate, R. (2000a.). *The Role of Autonomy in Self-Organizing Process: A Case Study of Local Forest Management in India*. Working paper no. W00-12, Workshop in Political Theory and Policy Analysis. Indiana University, Bloomington.
- Ghate, R. (2000b.). Joint Forest Management: Constituting New Commons: A Case Study From Maharashtra, India. Paper presented at IASCP, Bloomington, USA.
- Ghate, R. (2002). The Saga of Saigata. *Wasteland News*, 17 (2), 24-27, November 2001- January 2002.
- Ghate, R. (2003). *Ensuring 'Collective Action' in 'Participatory' forest management*. SANDEE Working paper no. 3.03, South Asian Network for Development and Environmental Economics, Nepal.
- Ghate, R. (2004). *Uncommons in the commons: Community initiated forest resource management*, New Delhi, India: Concept Publishing co.
- Ghate, R. & Mehra, D. (2003). Bio-diverse economic dependence of indigenous population: A study from Gadchiroli district of Maharashtra State. Paper presented at conference on "Biodiversity and Quality of life", Indian Society for Ecological Economics, 18th to 20th December, IIM-Kolkata, India.
- Gibson C.K. (1999). *Dependence, scarcity, and the governance of forest resources at the local level in Guatemala*. Working paper no. W99-16, Workshop in Political Theory and Policy analysis, Indiana University, USA
- Government of India (2003), *Annual Report 2002-2003*, Ministry of Environment and Forests, <http://envfor.nic.in/report/0203/chap-03.htm>
- Hill, I. & Sheilds, D. (1998). *Incentives for joint Forest management in India: analytical methods and case studies*, World Bank Technical paper 394, World Bank, N.W. Washington, DC USA.
- Imperial, M.T. (1999). Institutional analysis and ecosystem-based management: The institutional analysis and development framework. *Environmental Management*. 24(4), 449-465.
- Jodha, N.S. (1986). Common property resources and the rural poor in dry regions of India. *Economic and Political Weekly*. 21, 169-181
- Jodha, N.S. (1995). Studying common property resource, biography of a research project. *Economic and Political Weekly*. 30, 556-559.
- Kant, S. (2000). A dynamic approach to forest regimes in developing economies. *Ecological Economics*. 32, 287-300.
- Kumar, S. (2001). Indigenous communities' knowledge of local ecological services. *Economic and Political Weekly*. 36 (30), 2859-2869.

- Kumar, S. (2002). Does "Participation" in common pool resource management help the poor? A social cost-benefit analysis of Joint Forest management in Jharkhand, India. *World Development*, 30(5), 763-782.
- Lele, S. (1998). Why, Who, and How of jointness in Joint Forest Management: theoretical considerations and empirical insights from the Western Ghats of Karnataka. Paper presented at the International workshop on Shared Resource Management in South Asia, Anand, Gujarat, India, Feb 17-19.
- Ligon, E. & Narain, U. (1999). Government Management of Village Commons: Comparing Two Forest Policies. *Journal of Environmental Economics and Management*, 37(3), 272-89.
- Locke, C. (1999). Constructing a Gender Policy for Joint Forest Management in India. *Development and Change*, 30(2), 265-85.
- McKean, M.A. (1992). Management of Traditional common lands (Iriaichi) in Japan. In D. Bromley (Ed.), *Making the Commons work: Theory, practice and Policy*, (p.p. 63-93), San Francisco: Institute for Contemporary Studies.
- McKean, M.A. (2000). Common Property: What Is It, What Is It Good For, and What Makes It Work?. In C. Gibson, M.A. McKean, & E. Ostrom (Eds.) *People and Forests: Communities, Institutions, and Governance*. (pp. 27-45), Cambridge, MA: MIT Press.
- McGinnis, M. & Ostrom, E. (1996). Design principles for local and global commons. In O.R. Young (Ed.), *The International political economy and International institutions* (pp. 467-493), Vol.2, Cheltenham, U.K: Edward Elgar publishing.
- Ostrom, E. (1992). *Crafting institutions for self-governing irrigation systems*. San Francisco: ICS press
- Roy Burman, B.K. (1985). Issues in Environmental Management Cantering Forest, Role of Tribal Communities. *South Asian Anthropologist*, 6(1), 41-48.
- Ostrom, E. (1999) 'Coping with Tragedies of the Commons', *Annual Review of Political Science* 2:493-535.
- Sarin, M. (1996). From Conflict to Collaboration: Institutional Issues in Community Management', In M. Poffenberger & B. McGean, (Eds.). *Village Voices, Forest Choices*. (pp 165-203). Delhi: Oxford University Press.
- Sarin, M. (1998). Grassroot priorities Versus official responses – The delimmias facing community forestry management in India. In *Community forestry at the crossroads: Reflections and future directions in the development of community forestry*. Proceedings of an International seminar, held in Bangkok, 17-19th July 1997, RECOFTC report no. 16, edited by M.Victor, C. Land and J. Bornemeier, 19-26, Bangkok, RECOFTC.
- Saxena, N.C (1989). *Degraded lands in India, Problems and prospects*. Bangkok: FAO
- Sundar, N., Jeffery, R., & Thin, N. (2001). *Branching Out: Joint Forest Management in India*, New Delhi: Oxford University Press.
- Singh, K., Singh, N., & Singh, R. (1996). Utilization and development of common property resource-a field study in Punjab. *Indian journal of Agricultural economics*, 51, 249-259.
- Tsur, Y & Dinar, A. (1995). *Efficiency and equity consideration in pricing and allocating irrigation water*. Policy research working paper 1460, Washington DC: World Bank.
- Thompson, J. (1995). Participatory approaches in government bureaucracies: Facilitating the process of institutional change, *World Development*. 23(9), 1521-1534.

¹ Study on Joint Forest management conducted by TERI for Ministry of Environment and forests, www.envfor.nic.in/divisions/forpr/terijfm.html

APPENDIX-I
TABLE-1:TABLE OF INDICATORS

Villages → Indicators of Equity ↓	Markegoan		<u>Deulgoan</u>		Ranvahi	
	Executive Committee average	Village average	Executive Committee average	Village average	Executive Committee average	Village average
EC strength	11 = 8 men and 3 women	Male = 82 Female = 79	10 = 7 men and 3 women	Male = 87 Female = 88	7 = 5 men and 2 women	Male = 206 Female = 187
Land holding (acres)	5.6	3.72	4	3	4	4
<i>Cattle ownership</i>	5	6	5	4	3	3
<i>Asset ownership</i>	Music systems- 2 members	No one in the village has these.	TV – 2 members	No one in the village has these.	None that EC members have that other villagers do not.	Posses nearly the same assets as the EC members
<i>Size of house (sq.ft)</i>	992 (mudbrick)	886 (mudbrick)	845 (Mudbrick, Treasurer – cement-brick house)	784.61 (mudbrick)	866 (mudbrick + cement)	775 (mudbrick + cement)

Appendix: II : Maps

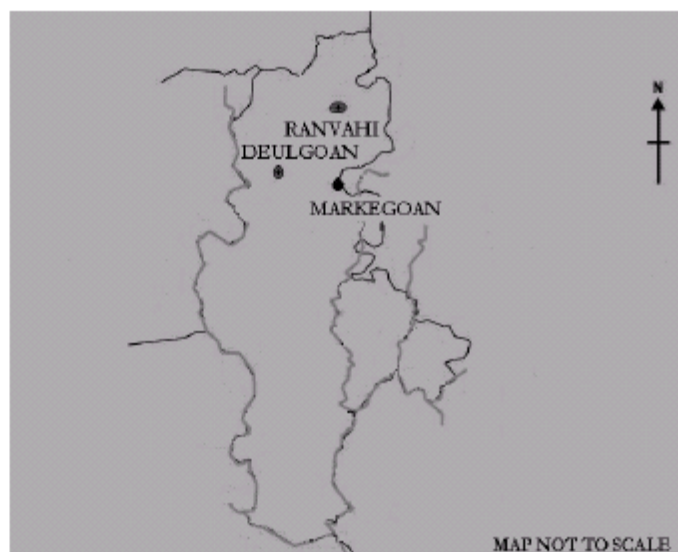
Map-I - Map Of India



Map-II - Map Of Maharashtra State



Map-III: Map Of Gadchiroli District



Source: www.mapsofindia.com

APPENDIX – III: Table-2: Indicators

Villages →	Deulgaon (Self-initiated)	Ranvahi (NGO promoted)	Markegaon (JFM Program)
Latitude	20°15'16.0' latitude	N 20°30'22.8' Latitude	20°14'42.3' latitude
Longitude	80°11'41.4' EO longitude	80°21'37.7' EO Longitude	80°19'59.6' EO longitude
Mean sea level	230 meters ASL.	250 meters ASL	250 meters ASL
Location	18 kms from Dhanora, the sub-district (Taluka) of Gadchiroli district of Maharashtra State	25 kilometres from Kurkheda town, the Subdistrict of Gadchiroli district of Maharashtra.	5 kilometers from the sub-district center that is Dhanora in Gadchiroli district of Maharashtra state.
Geographical area	718.48 hectares	924.43 ha.	530.29 hecares
Forest area	601.37 hectare	641.71 hectares	431.44 hectares
Per capita forest	3.5 hectares	2.4 ha.	2.7 hectares
Population	173	393	161
Number of households	33	81	32
Three main Ethinc/caste groups	70% = Gond (tribals) 30% = kunbi (OBC)	96% = Gond 1% = Scheduled Caste 1% = nomadic tribe 2% = Others	Gond = 100%
Languages spoken	Marathi and Gondi	Marathi and Gondi	Marathi and Gondi
Literacy	51%	62.84%	48%
Houses	Mud and brick with tiled or thatched roofs.	Mud and brick & concrete houses with tiled roofs.	Mud and brick with tiled or thatched roofs.
Main occupation	Agriculture	Agriculture	Agriculture
Land owners	33 households	62 households	30 households
Land holding (average)	3 acres	4 acres	3.72 acres
Crops grown	Paddy, <i>tur</i> , <i>lakhori</i> (pulse), jawar, chana etc	Paddy, chana and tur, cilliy (cash crop).	Paddy, tur, mung, urad, beans, kurat
Own crop consumed	8-9 months	8-9 months	8 months
Forest dependence	Fuelwood, fodder, timber, wildlife, minor forest products like <i>awala</i> , <i>hirda</i> , <i>moha</i> , <i>Tendu</i> leaves, char etc.	Fuelwood, fodder, timber, bushes, grasses, leaves (<i>tendu</i>), water, wildlife, fruits, vegetables, bamboo, <i>Moha</i> flower, gum etc.	Fuelwood, fodder, timber bushes, grasses, leaves (<i>tendu</i>), water, wildlife, agricultural implements, hunting gears, herbs to make pesticides for crops, storage utensils, kitchen implements, livestock sheds, furniture, toys, headgears for marriage purposes and other items like carved pillars made especially for marriages, grain crushing implements etc.