

Transition to Participatory Forest Management in an Era of Globalization – Challenges and Opportunities

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Abstract

Environmental degradation affecting the livelihoods of millions of poor has been a major concern the world over. Several national governments, especially in developing countries, have responded to this situation by decentralizing natural resource governance to promote local people's participation in resource management. New and innovative strategies such as joint forest management, community-based management, and participatory management have increasingly come into place in several countries, often with the active support of international agencies and donors.

In an era of globalization, however, there appears to be a challenge to the viability of such approaches that rely heavily on community management – especially where the immediate benefit to local people is small – and where the public good value is significant. It stands to reason that local people need to benefit in some way if they are to manage common pool resources to meet the broader societal goal of environmental improvement. The current global market dynamics and associated pressures are bringing about fundamental changes in community characteristics, societal values, and livelihoods that greatly influence local people's need, ability, vision, and willingness to work collectively for common property management. Very few studies have however analyzed the dynamics of implementing participatory resource management policies under these circumstances.

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This study analyses the incentives for local people for their involvement in restoring degraded state forests based on an in-depth analysis of Joint Forest Management program in Tamil Nadu, India. This paper also documents the limited scope of on-site forest product benefits to support local community needs and interests, and explores the prospects of revitalizing the program through compensating forest fringe communities for providing environmental services. Elaborating on these challenges and opportunities, the paper discusses the need for developing appropriate institutional mechanisms to integrate conservation and development efforts for the participatory management initiatives to succeed and sustain.

1 Introduction

While Hardin's (1968) tragedy of the commons suggested either privatization or complete state intervention to manage common pool resources, a third possibility of their management through collective action of communities gained prominence later (Wade, 1988; Ostrom, 1990). Arguments for community-based natural resource management include local people's familiarity with the resource and their ability to adopt flexible and site specific management strategies. In view of community-based management's potential to meet local as well as national interests, several governments have in recent years embarked upon this decentralized management approach (Davis and Richards, 1999) in various forms and names such joint forest management, participatory forest management (PFM), and co- management. In addition, there has also been a significant thrust from donor agencies for promotion of forest management strategies that dwell on collaborative approaches.

Alongside academic work that demonstrated the potential of PFM (Bahuguna et al., 1994; TERI, 1998), there also however existed a concern over the success and sustainability of these co-management initiatives. Especially when applied in wider scales and broader contexts,

the performance of this strategy has been found to be varying (Jeffery and Sundar, 1999; Lele, 2000). There is also a strong perception among the donor community that the participatory forest management policies and programs have not had their desired effect (Davis and Richards, 1999).

One of the prerequisites for successful PFM is local people's active and continued participation (Lise, 2000). Such a sustained participation in resource management however is a function of incentives available to the participants. "Few organizations, committees, or cooperatives will evolve in a voluntary manner before it is known what will be gained by joining," argues Andersen (1995). There is currently however, inadequate understanding of the role of various incentives in influencing people's participation in PFM (Davis and Richards, 1999). Specifically, the role of incentives when PFM is introduced in low value forest areas is unclear. The issue of incentives becomes complex not only due to the diverse biophysical nature of the resource and the multitude of stakeholders interests, but also due to the impact of several non-forest sectoral influences (Corbridge and Jewitt, 1997; Varalaxmin et al., 1999). While there exist some studies on how the cost benefits of PFM are shared by different community groups, few studies have focused on the perspectives of key stakeholders on the issue of incentives entailed in PFM (Davis and Richards, 1999). Is PFM a viable option when introduced in low productive forestlands? What kinds of incentives best meet the interests of various stakeholders and make the PFM sustainable? The objective of this paper is to address these questions and provide a critical analysis of the role of various incentives in promoting people's participation in PFM. An in depth analysis of the perceptions of foresters and villagers involved in Joint Forest Management (JFM) program in Tamil Nadu, India, forms the basis for the observations drawn.

The next section provides a conceptual framework for the analysis of incentives in PFM. Section 3 describes the study area, the JFM program and the incentive provisions in the study

area. In section 4, data collection and methods are described. The outcomes of JFM and the perceptions of agency employees and villagers are presented and in section 5. Implications of these findings on the success and sustainability of PFM approaches are discussed and based on overall analysis, some conclusions are drawn in the final section (section 6).

2 Incentives for Local People in Participatory Forest Management

Of late, local communities' involvement in forest management has become a fundamental aspect of natural resource governance. The failure of highly centralized government systems in protecting these resources is often attributed as the main motive behind such policy shift. It however stands to reason that local people need to benefit in some way if they are to protect forests to meet the broader societal goal of environmental improvement. Thus, in all PFM initiatives, the participating villagers receive benefits for their efforts in forest management. These include forest products such as timber and NTFP, or other associated outputs such as wildlife and irrigation water. In highly productive areas with relatively low population, the needs and interests of local stakeholders can relatively be met, as adequate returns to investment can be achieved. Past studies indicate positive association between local collective action and good forest condition (Lise, 2000; Varughese, 2000). Operation of such a self-paying incentive mechanism could be reasonably simple and sustainable although it would face typical collective action challenges (Wade, 1998; Ostrom, 1992; Baland and Platteau, 1996).

On the other hand, the involvement of local people and sustaining their interest in resource management is more complicated when the benefits are not high, immediate or widely distributed (Kerr, 2002). Villagers' anticipate high economic returns to justify their time and labor (Sinha, 1999). Poor productivity of the forests leading to low tangible benefits to the community was identified as one of the reasons for past PFM failures (Sreedharan and Sarkar,

1998). Interest in such a low value forest areas also gets diminished if the local people have other profitable alternative land uses. This reluctance could be particularly so in the context of current global market dynamics and associated pressures that are significantly transforming community characteristics, values, traditions, and livelihoods (Jodha, 1998; Sundar, 2000). These transitions greatly influence local people's need, ability, vision, and willingness to work collectively for forest management – especially where the immediate benefit to local people is small- and where the issue of public good value is significant. For example, diversification of livelihoods increases the cost of collective action to manage natural resources and reduces its benefits to individuals busy pursuing other economic activities. This factor particularly highlights the positive relationship between provision of incentives in which villagers are interested and the success and sustainability of PFM.

Although these areas with low productivity offer low on-site benefits to the local people, they are very significant in terms of their ecological value to the overall landscape. Forest restoration and improvement in these areas provide several environmental benefits such as climate regulation, watershed protection, and biodiversity conservation that crucially represent regional, national, and global benefits. In view of meeting these vital interests, protecting and restoring them receives significance.

Adopting PFM strategies in these areas thus may requires heavy investments in the initial years not only to improve the productivity of the area but also to provide some non-forest incentives, such as development interventions, to local people to ensure their participation. Currently, however, there is not much consensus on the role of these incentives. For example, some studies highlight their positive role in meeting some of the challenges associated with PFM (Dhar, 1994; Corbridge and Jewitt, 1997; Varalaxmi et al., 1999). Some authors, however,

discount the benefits of such interventions taking into consideration the complexities involved in their implementation and the ambiguity of conservation benefits they generate (Kerr et al., 1999; Ferraro, 2001).

A critical analysis of the literature on factors influencing the motivation of individuals for participation in natural resource management indicates several actors at play. Besides how an individual values and uses forests, which has a significant bearing on the economic returns, other factors in an individual's calculus include the social and psychological benefits he/she expects for himself/herself and his/her community (Sundar 2000). It is in this context, the issue of incentives goes beyond simple 'returns to labor' and drawn into wider social issues such as community development, social recognition, and institutional building (Gadgil and Berkes, 1991; Agrawal and Yadama, 1997; Baker, 1998). While some past studies highlighted the influence of these factors, there is a shortage of systematic analyses that link the processes or activities to the outcomes. It is particularly not clear as to what extent different incentives bring in success or otherwise to PFM, analyzed from the perspectives of key stakeholders.

Another critical aspect of PFM is the role of donor funding in its promotion. Currently there is a strong association between donor funding and adoption of PFM strategies by various governments. The cost of initial investment appears to be the driving factor in choosing donor assistance for PFM adoption. This could be because of the *apriori* assumption that only such heavy investments that result in forest-based incentives to local people will attract them to PFM. When forest enhancement objectives are sought to be achieved through foreign funding they particularly take the form short-term afforestation projects. The consequence of such project-based PFM efforts that are initiated at the behest of donor funding is that they cease to exist as soon as the funding is over (Kumar, 2002). This *ad hoc* approach is quite contrary to the concept

of PFM that needs to emerge as a lasting feature through sectoral reform and new institutional arrangements. There is however, not much information on the potential of institutional efforts that endeavor to integrate conservation and development in the context of PFM.

3 Study Area and Description of Incentive Provisions

As mentioned earlier, this paper draws on the insights gained from a study of JFM implementation in Tamil Nadu, India. Forests constitute 17.4% of the total geographical area of Tamil Nadu as against India's national average of 23.4%. The per capita forest area is a meager 0.04 ha, half that of the national figure. From an ecological point of view, however, these forests are of immense value to the state, which is located in a rain shadow region. In recent years, these forests have been exposed to severe degradation. Biotic pressure, in the form of fuelwood collection and cattle grazing, on these forests is immense. The areas are also exposed to regular forest fires, set by cattle herders to get fresh growth of grass. Heavy removal of young vegetation for green manure and occasional encroachments for agriculture along village margins are a few other causes of forest degradation. As a result of these pressures alone, about 25,000 ha are estimated to be getting degraded every year (TNFD, 1997). Barren land at the start of the rainy season has resulted in reduced moisture infiltration leading to acute drought conditions, even depriving people of drinking water in several places.

It is under these circumstances that JFM was initiated in Tamil Nadu, with a theme of "save the forests to save the water", as part of a \$100 million project in 1997 under the Japanese Overseas Economic Co-operation Fund (OECF). Of the 3000 villages abutting the 7000 sq km of forests that were identified as severely degraded, JFM was introduced in about 1000 villages over five years. Watershed development through large-scale afforestation and water harvesting activities undertaken on a micro-watershed basis with the active involvement and cooperation of

local communities formed the core component of JFM. In each identified village, the Village Forest Council (VFC) consisting of a male and a female member of all willing households function as the people's representative body for JFM (GoTN, 1997).

The project funds meet all the costs related to afforestation and water harvesting. Like many other JFM initiatives, Tamil Nadu JFM provides forest products as the major incentive to the participating villagers. All the forest produce such as fuel, fodder, green manure, and NTFP that can be harvested from the restored forests on a sustainable yield basis goes to the VFC members free of cost (with a priority to the poor and landless). Any surplus produce can be sold by the VFC, and the sale proceeds thus obtained are to be distributed equally among the VFC members after remitting 25% of it to a specially constituted fund called the Village Development Fund (VDF) (GoTN, 1997). The other potential incentive is the increased moisture realized through large-scale water harvesting activity undertaken in the project areas.

In view of the long gestation period involved in harvesting any substantial forest products out of JFM, the program provided seed money of Rs 300,000 in the first year, Rs 200,000 in the second year, and Rs 100,000 in the third year (\$1 = Rs 45 approx) to the VDF. There is an assumption on the part of program planners that forest protection would generate enough on-site benefits in JFM to pay for itself after three years. The VDF is wholly at the disposal of the VFC and is used by it to undertake village development and individual assistance activities in JFM villages. The village-level activities include laying roads, providing drinking water facilities, and constructing community halls etc. About 70% of the VDF is also spent on individuals or small groups to compensate those who were dependent on forests but lost access to them due to restrictions on grazing, etc. after the onset of JFM. Similar individual incentives are also provided to some community members who work for JFM to compensate their time and effort.

Common activities under this individual benefit component include establishment of self-help groups, provision of micro-credit, and vocational training etc.

4 Data and Methods

Most literature on the problems and prospects of PFM has been mostly drawn from community based natural resource management (CBNRM) theory and analysis. Unlike the CBNRM, where collective action is the result of strong community action and local interaction, the group formation and institutional development in PFM is an induced activity (Sekher, 2001), mostly sponsored and supported by the state agencies. While the crucial role of these agencies in enabling the co-management approach has been highlighted in several studies, (Sinha, 1999; Lise, 2000), systematic studies on their perspectives on challenges involved in making this strategy sustainable, are lacking (Vira, 1999).

The study sample consisted of ten Divisional Forest Officers (DFO), ten Range Officers (RO) and five Foresters, drawn from among the FD staff who are involved in JFM in five forest districts where JFM has progressed farthest in the state. DFOs, ROs, and Foresters are the FD staff who interact with the villagers and actually implement the program at the ground level. Selected foresters² were asked questions on how they perceived and valued JFM and community involvement in forest management and what they considered as important challenges in JFM, employing a semi-structured interview questionnaire. The responses of the key informants were coded and analyzed following the procedure outlined by Miles and Huberman (1994) to identify relevant themes and concepts. Three senior foresters (CCF and CFs) who are involved in planning and supervisory functions were also interviewed to get additional insights on policy issues. Direct quotes of study participants are presented to provide insight on key points.

² While the term 'forester' is used to represent FD personnel of any rank, the term 'Forester' is used to refer exclusively to this rank of foresters in FD.

Data were also collected following a 10% random sampling from 268 villagers from 13 hamlets³ located in the five forest divisions. The survey enumerators individually contacted the identified participants and obtained their responses in face-to-face interviews using a pre-tested questionnaire. In view of the low literacy levels prevailing in the area, open-ended questions were used to facilitate data collection. Pertinent documents and correspondence related to JFM were also analyzed for an improved understanding of the implementation of JFM. This paper addresses a subset of the findings that focuses on the incentives available to villagers for their efforts in JFM.

5 JFM Outcomes and Stakeholders' Perspectives on Incentives

5.1 JFM Outcomes:

Several local and regional studies indicate significant positive impact of JFM on the local ecology. Large-scale soil and moisture conservation activities undertaken have not only checked erosion and impounded water, but also revived many natural springs, despite harsh agro-climatic conditions prevailing in the project areas (Sivanappan, 2002; Swaminathan and Vidhyavathi, 2002; Business Line, 2000). In 20 of the sample watersheds where hydrological observations were made, an increase of 3.8% to 14.2% in ground water table was recorded (Sreedharan, 2002). With the increased moisture, barren areas were put into productive purposes, and positive changes were observed in agricultural yields and cropping patterns in several project areas (Neelakantan, 2000). Heavy investments made in forestry and active cooperation of villagers harnessed through JFM in protection of plantations are attributed as the major reasons for success. Significant reductions in goat population, cattle grazing, wildfire occurrence, and forest encroachments were also recorded in almost all the JFM villages (TNFD, 2002c). As many FD

³ Hamlet is a small village or out-skirt of a big village, often with a distinct identity of its own.

officials and VFC presidents recall, villagers came in hundreds to put out forest fires in JFM areas. The support of local leaders for forest protection, sometimes braving several political and economic hardships in the villages, was extensive.

Another significant outcome of JFM is the institutional development and local resource management achieved through VFCs. The VFCs' control rendered the forests the status of a property and they were no longer treated as open access resources. The regulations on the use of forest resources through peoples' institutions brought in a general feeling in the villages that forests are of some 'value' and not free for all, unlike the previous situation. Further, the political processes and the interactions among the villagers after the onset of JFM in villages has not only led to the development of an opportunity for discussion and debate over forest uses or abuses but also to substantial collective action in the villages resulting in forest protection. Elections to the VFCs became a prestigious issue as could be seen from the heat the VFC elections generated in the villages. VFC presidents and other functionaries proudly display their status on wedding invitations and at other local functions. Formation of self-help groups, strengthening micro-credit and income generation institutions, and ensuring women's participation and capacity building led to considerable community mobilization and organization. JFM villages have also developed significant tie-ups with local commercial banks and other professional development institutions.

As detailed in section 3, the incentives available to the VFCs for their participation in JFM are primarily the forest produce and its sale proceeds maintained as the VDF. However, in almost all the cases, despite the resurgence of vegetation, the degraded forests failed to produce enough forest produce to be harvested by the VFCs. The areas under JFM are characterized by very little topsoil, low nutrient availability, and severe soil compaction caused by decades of cattle movement. Thus, although the JFM program document (GoTN 1997) elaborately talked of

estimating and distributing forest benefits to VFCs, no forest benefits came out of JFM forests in significant quantities anywhere in the state (TNFD 2002b).

5.2 Villagers' Perceptions of JFM and Various Incentives Entitled in it

All the hamlets surveyed are predominantly rural communities dominated by agriculturists (54%) and daily wage laborers (25%). The other professions include employees and businessmen (11%), rural artisans, and housewives. The average age of the participants is about 40 years while the average number of years of education is close to four years. The mean landholding size is 0.74 acres. To the question, *what is the most important problem in your village*, while a majority of the villagers (38.4%) identified developmental issues such as lack of roads, health, and unemployment, an almost equal number of people (37.7%) identified drought and water scarcity as their most pressing problem for the village. About 20% of the participants either said no problem (15.5%) or could not identify any problem (4.9%). Only 3.7% of the participants, however, identified problems related to forests such as lack of grazing lands or shortage of fuel wood. This question was asked to examine how villagers differ in their knowledge and assessment of the problems in their community and to see if the members identify any problems related to environment/ natural resources. This measure helps us examine the demand among villagers for programs that aim at addressing these problems. Survey participants were also asked to indicate *the most important reason for joining JFM* from the point of benefits the program intended to provide to the village. This question helps us understand villagers' expectations out of JFM. As is evident from the responses of the first question, persistent drought and lack of enough water for drinking and irrigation is a concern for many villagers. Yet, very few participants (15.7%) identified forest development or environmental improvement as the prime reason for their joining JFM. While 10.4 % envisioned

village development through JFM, a significant segment of the participants also expected loans (18.3%) and employment (3%) to the villagers through the program. A majority of them however, could not provide definite answers as to the reasons for their joining JFM.

Although the program did not provide enough forest products to the villagers to share and benefit, several other benefits such as improved moisture realized through watershed protection, village development, and individual assistance serve as potential incentives. Villagers were asked to indicate the most important *benefit they had actually obtained out of JFM*. Despite the program's major objective being watershed improvement and greenery, and despite a major investment being made in these areas, only 13% of the participants felt benefits in these areas, indicating perhaps difficulties entailed in visualizing this benefit. On the other hand, a majority of those who perceived benefits, reported loans, forest labor, and village development as the benefits received by them. A significant number (42.5%) however reported no receipt of any benefit at all.

Overall, while 35.1% of the participants felt positive about the program, 39.6% wanted improvements. The suggestions made by these 136 participants are dominated by requests for more loans and employment opportunities and village development activities (46.3%). Few participants however also noted lack of grazing facilities (6.6%) and the need for more plantations and protection of existing plantations (6.6%). Interestingly, for 16.2% of participants, inequity in JFM activities and benefits was a concern. This resentment appears to be due to lack of enough provision for extending individual assistance to all the poor and erstwhile forest users. Insufficient assistance to those who received such help seems to have also led to such ill feelings about equity. About 11% of the participants who wanted improvement suggested the need for more information on the program.

5.3 Forester' Perceptions on Incentives for People's Participation

5.3.1 Forestland based benefits:

Senior FD officials (CCF and CFs) concur with the project objective and emphasize regeneration of degraded forests. They assert the notion that is commonly echoed in broader policy circles saying, “it is imperative at this juncture to improve the degraded forests that are on the verge of becoming deserts to save the livelihoods of thousands of rural people dependent on them”. They however note that the areas under the program cannot produce any substantial tangible benefits to the community in the next ten years. Interestingly, the senior officials also emphasize the psychological benefits that are commonly cited in literature as the major incentives for villagers to involve in JFM. Stating that since the forest areas are completely transferred to villagers under a written agreement, they emphasize the “sense of belonging to the forests” and “having a stake in the management of resources” as the motivational factors for villagers in JFM. Field staff (DFOs, ROs and Foresters), on the other hand, mostly emphasize the economic aspects involved in implementing JFM in areas with low forest productivity. “Unless we produce economically viable solutions, we fail. That means as soon as we (project) withdraw, things will be back to normal”, asserts a DFO.

There is a unanimous opinion at the field level that it is impossible to sell the message of JFM to local people and seek their participation in forest management with forest products as incentives when the condition of the forest is so poor. Many field level foresters question the concept saying how they can go to the villagers and ask their involvement when they do not have any forest benefit to offer. This is how a DFO remarked on the predicament being faced by the field staff in this respect. “When will the plants we planted grow and give benefits? Even if you say that to people, they (villagers) are laughing at us”, says a DFO. Further, many officials

emphasize that the direct forest benefits such as fuel, fodder, and non-timber forest produce that would be available at the end of the project do not adequately compensate the villagers' opportunity cost incurred by joining JFM. Many officers also highlighted the villagers' consideration of uncertainty and risk involved in the forestry enterprise under the collective management.

Some DFOs emphasized creation of high yielding biological assets through the introduction of appropriate species and techniques to produce quick and tangible forest products to entice villagers to JFM. Some staff, particularly those at the lower rungs of the forest agency hierarchy such as ROs and Foresters, noting villagers' desire for fast growing commercial species, wondered how this villagers' demand could be reconciled with the project's biodiversity conservation and native species regeneration objectives.

Another important forestland-based incentive that could potentially benefit villagers is water augmentation. Foresters interviewed expressed the unanimous view that water augmentation is a major benefit of improved forest management even if benefits from forest products are low. They perceive that this aspect of JFM has produced a significant impact in improving local agriculture and thus the village economy. Many foresters observe that JFM's water harvesting aspect is of paramount importance in view of the water scarcity prevailing in almost all villages. Independent scientific studies and publications (TNFD, 2002a) on how this particular JFM component augmented local water supplies abound in local literature, supporting foresters' claims. Despite the potential of this activity to provide some opportunities to involve the public in JFM, there seem to be some challenges in harnessing it in the field.

Firstly, foresters perceive that villagers do not really make the connection between forest improvement and water augmentation. They say that this is because the increased moisture is

mostly realized in ground water augmentation and is often far away from the actual site of afforestation/ water harvest. Further, they also attribute this lack of widespread appreciation of this benefit among villagers to the absence of any extension facility in the agency that would make this link explicit to people. Secondly, the water harvesting structures are placed in and around forest areas according to the terrain of the area and not according to the needs or interests of individuals who might benefit from them. So, for the people farming nearby, this increased water availability is construed just as an accidental benefit rather than something born out of JFM. Some DFOs observe that even if these beneficiaries know that they are benefiting from these structures, they may not actively participate in JFM as there is nothing to prevent them from benefiting even if they don't participate.

5.3.2 Development Interventions:

As elaborated in section 3, some development interventions were undertaken during JFM with the seed money provided during the first three years of the program to the VFCs. These activities include both that are undertaken at the individual level and those at the village level. Opportunities and challenges associated with these incentives are discussed below.

About 70% of the budget under VDF is meant for individuals and small groups. Benefits provided under this component include promotion of self-help groups, provision of micro-credit, training in alternate vocations etc. These incentives are mostly given to existing forest users such as goat herders to take up alternative employment and reduce dependency on forests. In view of the limited budget, the money was advanced to these individuals or small groups as loans by the VFC. In the absence of any income from forests, this loaning and its rotation to maintain a 'common- pool of money' with the VFC, became crucial in sustaining the program. Concerns on

how to incorporate forest dependency while selecting candidates for these benefits however, seemed to have posed a challenge in making this incentive work well in the field.

Almost all the foresters stress that the customs and privileges of the traditional and low profile forest users such as honey collectors and herb and medicinal plant gatherers were never opposed by the general public or VFCs even after the initiation of JFM. Uncontrolled cattle grazing and goat herding however came up as major threats to forest health in almost all VFC meetings. And as indicated by some foresters, these two major users opposed the introduction of JFM in many places. Foresters say that they were able to overcome this opposition in several instances by offering them some individual benefits, and through a lot of explanation about the benefits that the program would bring to the village and to society as a whole. They say that in several instances the program got substantial help from other villagers in convincing these users to refrain temporarily from sending their animals into forests. Provision of incentives to these forest users however raised some resentment among general villagers as, according to the later, it amounted to rewarding the offenders. A DFO describes general public's response to this provision saying, "In fact, there are a lot of people in the village who are cursing the Forest Department for being blind, negligent, and lenient all these years to these people (cattle and goat herders)".

These foresters argue that in view of the changing socio-economic situation, cattle and goat owners need to find other sources of fodder. Saying that in most cases the cattle are owned by wealthy people but grazed by hired labor such as small children and old people who keep switching their work, some ROs and Foresters say that in some cases VFCs had difficulty in identifying these people for benefits. Some officials affirm that the concerns of cattle owners were not forgotten at all in JFM as some VFCs made ample provisions to cut and collect grass

freely from forests. These officials contend that such people are finding it difficult to follow the new practice as previously they freely sent cattle into forests. Thus, unlike in other places where the emphasis in JFM is on establishing forest user groups and promoting forest use, JFM in Tamil Nadu is primarily interested in reducing forest dependency.

The incentive provision seems to have become further complicated in view of the concerns to meet equity in JFM. Poverty alleviation is implied in JFM. While there are guidelines on how the forest benefits need to be distributed to the poor, there are no such instructions with respect to non-forest benefits. Moreover, several poor and disadvantaged members of the community did not have much relationship with the forests. In the absence of specific guidelines on how to incorporate this poverty dimension, many officials faced challenges. Lack of enough budget provision to help an individual to really change his livelihood or to cover all the needy individuals in a village, was reported as the biggest challenge related to this provision. In most cases, the activities are new and the capacities of the people to make them work are low. Low budget provision and the need to pay back the money to the VFCs common pool quickly, seems to have further confounded the situation.

According to most foresters interviewed, development activities undertaken at the village level by the VFCs with the seed money, on the other hand, were a much bigger attraction to villagers. These interventions particularly became popular because of lack several basic necessities in many JFM villages. “The moment we go to the village, their immediate concern is water. Their condition is poor. There will be a school without walls or a roof. The children are sitting in the Sun and rain”, says an RO describing the situation when he enters a village with JFM message.

Another reason for these activities' popularity among the public is their ability to satisfy the general interests of many villagers rather than just a few as in the case of individual incentives. Accordingly, there are fewer problems with benefit distribution and transaction costs were low. Some officials also assert that catering to villagers' long pending development concerns helped in attracting influential people, rendering much visibility and functional stability to the program. Several foresters also express similar views about these activities and narrate how development interventions such as helping the villagers get a high school built or a drinking water tank fixed significantly contributed to JFM.

According to all the foresters interviewed, low budget provision was the biggest challenge here too, in ensuring sustained people's participation. Also, in many cases, besides monetary contributions, local people's development needs and interests such as health, education, and road construction, required the cooperation and assistance of other agencies dealing in these activities. In view of this constraint, many foresters consider that there is an acute dependence on other government departments, agencies, and influential persons for help. Foresters stress that since the JFM is treated as an activity of the forest agency with no mechanism for sectoral integration, they received little support from other agencies. Some foresters have also pointed out lack of an apparent connection between the incentive provision and JFM's ultimate objective of forest improvement in some cases, as noted by some authors earlier (Kerr et al., 1999; Ferraro, 2001). Despite this challenge, a majority of them view that extending these development incentives for a period of five to seven years would allow enough time for the revival forests and flow of some tangible benefits to the people ensuring the program to sustain.

5.4 Financial Flow and Functional Stability of VFCs

As detailed earlier, the forests directly generated no funds that the VFC could tap. As mentioned in section 3, the seed money was available to the villages only for the first three years, which is a very short period compared to the long gestation period required for the plantations to yield any substantial forest produce. Whatever the money that was distributed to individuals as loans from the seed money was locked up with the borrowers. In majority of the villages, thus, the VFC funds (VDF) began to run dry after three years. As the non-existence of promised forest benefits has become apparent, the interest and involvement of the local villagers has drastically declined after the 3rd year, undermining the concept of co-management that seemed to have worked well initially.

Some VFCs, realizing the potential of JFM in improving the local environment, tried innovative ideas to augment their resources and thus sustain people's interest in JFM. These included levying tax on farmers farming near the water harvesting structures constructed under JFM for their use of the enhanced water supply, a tariff on fodder collected from forest areas, and selling silt obtained from the water tanks in forest areas. All these measures to generate money from forest improvement however met with little success. The challenges included problems associated with devising proper pricing mechanisms, general reluctance of the people to pay for anything from the forest, and poor institutional enforcement related to these forest-based benefits. On the other hand, some VFCs that took up activities such as construction of buildings or shopping complexes with seed money to rent them to the public to ensure a steady supply of income to make the program sustainable, met with some success.

6 Discussion and Conclusions

The overall analysis of villagers' and foresters' perceptions indicates that the degraded forests on their own are of insufficiently attractive to local people to make them to be enthusiastic partners in JFM. People are skeptical of uncertain benefits that might come at an uncertain future. As can be observed from the perceptions of key stakeholders as well as other independent studies, JFM has helped the local ecology. The problem however, seems to be in ensuring its sustainability in the absence of some immediate and perceivable benefits to the local people involved. Watershed benefits though show some potential to attract local people's interest in drought prone areas, as Kerr (2002) pointed out, they must be attributable to the watershed protection for the program to sustain. Demand for other forest-based products such as silt and cut-fodder are too low for a strong institutional development to emerge. Moreover, in view of the ongoing economic transitions, the local people do not seem to be much interested in collective efforts that concentrate on such benefits.

There is however a vital necessity for JFM to work in areas where environmental degradation is a concern. And for such arrangement to work in low productive areas, there seems to be no other alternative but to employ some non-forest incentives. Besides the need to compensate the villagers for low on-site benefits, non-forest incentives are necessary because the local people are actually interested in them. As indicated by the present study, the forests are degrading because of the current pattern of their usage (for example, indiscriminate cattle grazing). Hence the solution lies in changing this pattern (Corbridge and Jewitt, 1997). The experiences of some eco-development projects in India (Chopra, 1998; Mishra, 1999; Pandey and Wells, 1997), and others elsewhere (see Brown et al., 2002) indicate that it is possible to

conserve forests through development interventions and government services and not necessarily through provision of forest products.

However, as discussed in section 5.3.2, there are some drawbacks in the way these non-forest incentives are currently employed in JFM that may not promote sustainable forest protection. These are particularly: i) the scattered and scanty nature of provision of these incentives, ii) the restriction on their provision to just a few years compared to the long gestation involved, and iii) heavy dependence on other agencies for some of these interventions leading to considerable uncertainty and delay. These factors are perhaps contributing to the problem of absence of an explicit linkage (Ferraro, 2001; Kerr et al., 1999) between provision of these development incentives and conservation benefits they need to generate. Such a relationship requires not only that people perceive that the development benefits are received in exchange for their participation in JFM but also their actual involvement in the process of obtaining such benefits. Involvement means not just identifying the benefit but contributing some time, money, and effort toward getting it.

The disconnect between development and conservation however, appears to be acute due to absence of appropriate institutional arrangements to integrate these two efforts at the policy level rather than to any inherent deficiencies with the development interventions as such. A major flaw in the current PFM approach is its application as a foreign-funded project with fixed targets and tenure rather than a demand driven policy prompted by long-term commitment to the philosophy of decentralized management. A key assumption in this observation is that such a policy discourse will set off dynamics and result in an increased recognition of the public good value of forests at the state level and in ensuring a sustained flow of funds to the forest-fringe communities for their services in forest protection. If decentralized governance, rather than

receiving foreign assistance, is the main motive behind PFM, there could be several incentives that could be provided by national and regional governments on their own to promote it. The human habitations around forests are relatively backward in socio-economic development. In areas where this is a concern of the local people, environmental improvement can be achieved by developing appropriate institutions that integrate these two objectives. Wherever possible and necessary, the donor funding can complement these efforts. That way, the relationship between resource conservation and socio-economic development becomes direct and an in built feature in local planning. In the absence of such an affirmative action at the policy level, it may be unrealistic to expect a few foresters or some local villagers to bring in phenomenal changes in the way the forests are currently governed or in ensuring their sustainable management.

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