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Forest conservation and livelihood generation through joint forest management in India

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Abstract
Forest is one of the most important natural and renewable resources for the very survival of human beings, especially those who are living in and around the forest. Forests are known as green gold as forest not only assures ecological security but also in providing livelihood support to a sizable tribal and other forest dependent population. However, one of the major reasons for its depletion is unsustainable exploitation often by the same very people whose survival depends on the forests. Several attempts have been made in different countries to save this invaluable resource. The total forest cover of India is believed to be 69.8 million hectares which constitutes about 22 % of the total geographical area of the country. There are at least 200,000 villages that live inside or on the fringes of forest and an estimated 275 million people significantly depend on forests for their sustenance and livelihood. But, forests alone cannot sustain the livelihood of the people. This research paper attempts to highlight that alternate livelihood support to the communities not only provide employment opportunities but also results in conservation of forests over which they are traditionally dependent. To attain the objectives of the study secondary sources of information published by Government and Non-Government organization were collected. Thus an Integrated approach for development of forest dependent population and natural resource conservation through the Joint Forest Management (JFM) by promoting forest and non-forest livelihoods brings significant attitudinal change in communities.

Keywords: joint forest management, forest conservation, livelihood generation

Introduction

Forestry in India

Forest is one of the most important natural resources for the very survival of human beings, especially those who are living in and around the forest. Forests are known as green gold. However, one of the major reasons for its depletion is unsustainable exploitation often by the same very people whose survival depends on the forests. Several attempts have been made in different countries to save this invaluable resource. Forestry in India is an important rural industry and a major renewable resource. India is one of the ten most forest-rich countries of the world along with the Russian Federation, Brazil, Canada, United States of America, China, Democratic Republic of the Congo, Australia, Indonesia and Sudan. Together, India and these countries account for 67 percent of total forest area of the world. According to the report (MoEF, 2010)**,** the total forest cover of the country is 69.09 Mha—about 21.02 % of the total geographical area. Of the total forest area, 8.34 Mha is very dense while almost half of it (31.9 Mha) is moderately dense and the rest being open forests and mangroves. The report further claims that there has been an increase of 3.13 Mha of forest cover in the country since 1997, i.e., from 65.96 Mha to 69.09 Mha. There are close to 200,000 villages that live inside or on the fringes of forest and an estimated 275 million people significantly depend on forests for their sustenance and livelihood (World Bank 2006).India's forest cover grew at 0.22% annually over 1990-2000, and has grown at the rate of 0.46% per year over 2000-2010, after decades where forest degradation was a matter of serious concern. People living in these forest fringe villages depend upon forest for a variety of goods and services. These includes collection of edible fruits, flowers, tubers, roots and leaves for food and medicines; firewood for cooking (some also sale in the market); materials for agricultural implements, house construction and fencing; fodder (grass and leaves) for livestock and grazing of livestock in forest; and collection of a range of marketable non-timber forest products. Therefore, with such a huge population and extensive dependence pattern, any over exploitation and unsustainable harvest practice can potentially degrade forest. Moreover, a significant percentage of the country's underprivileged population happened to be living in its forested regions (Saha and Guru, 2003).It is very well known that there is a high scope for illegally denuding the forests of its possessions credit goes to the inordinate callousness shown by Indian officials and politicians in this regard. This has no doubt endangered many a species of plants and animals.

Joint Forest Management in India

Joint Forest Management as "the official and popular term in India for partnerships in forest management involving both the state forest departments and local communities. Joint Forest Management (JFM) in India, one needs to look into the evolution of the forest policy and legislations in the country. Though the initial set of policies and laws on forestry date back to the colonial period and the immediate post-independence period, one notices a paradigm shift in India's forest policy and legislations in the 1980s, with the passage of the Forest (Conservation) Act 1980. This Act highlighted the primacy of conservation of forests over the previous emphasis

on utilizing 'forests' for meeting the requirements of agriculture and industry. The National Joint Forest Management Policy came out after the successful experience of Arbari hills in Midnapore district of West Bengal during the early 1970s where local communities formed forest protection committees to conserve their forest resources at a very early stage. The concept of joint forest management was discovered accidentally by the innovative Divisional Forest Officer of Midnapore District, West Bengal, A.K. Banerjee, in 1972. In response to the continued grazing of cattle by local villagers in an area of new plantation, thereby jeopardising the crop, Banerjee asked the locals to refrain grazing in the plot, in return for a share of the final timber harvest. The strategy was found to work, to the benefit of the Forest Department, and the local community alike. It was therefore 'discovered' possible to devolve responsibility for protection of forest land to people, providing they had a stake in it. Banerjee also launched a 'Socio-Economic Project' in the same Arabari Block, where eleven villages became engaged in protecting areas of sal coppice, in return for subsistence NTFP's, preferential employment, and a 25% share in the profits from sale of short rotation sal poles. 618 families initially participated, in protecting 1272 ha of forest. (Malhotra and Deb, 1998). The success of JFM spread quickly throughout the state, and by July 1990, 1611 Forest Protection Committees had been formed, protecting 195,000 ha of forest lands in the three southwest districts of West Bengal; Bankura, Midnapore and Purulia - 47% of the total forest land (Malhotra and Deb).

Importance of Forest for Rural Community and State wise forest under JFM

Forests in India form the second largest land use after agriculture (Afreen *et. al.*2011).According to the report (MoEF, 2010)**,** the total forest cover of the country is 69.09 Mha—about 21.02 % of the total geographical area. Of the total forest area, 8.34 Mha is very dense while almost half of it (31.9 Mha) is moderately dense and the rest being open forests and mangroves. The report further claims that there has been an increase of 3.13 Mha of forest cover in the country since 1997,i.e., from 65.96 Mha to 69.09 Mha. There are close to 200,000 villages that live inside or on the fringes of forest and an estimated 275 million people significantly depend on forests for their sustenance and livelihood (World Bank 2006). People living in these forest fringe villages depend upon forest for a variety of goods and services. These includes collection of edible fruits, flowers, tubers, roots and leaves for food and medicines; firewood for cooking (some also sale in the market); materials for agricultural implements, house construction and fencing; fodder (grass and leaves) for livestock and grazing of livestock in forest; and collection of a range of marketable non-timber forest products. Therefore, with such a huge population and extensive dependence pattern, any over exploitation and unsustainable harvest practice can potentially degrade forest. Moreover, a significant percentage of the country's underprivileged population happened to be living in its forested regions (Saha and Guru, 2003). It has been estimated that more than 40 per cent of the poor of the country are living in these forest fringe villages (MoEF, 2006). The forest cover and area under JFM is shown in Table-1,which reveals that Jharkhand has highest percentage (72.94) of forest under JFM followed by Bihar (71.42) and Madhya Pradesh 70.62 percent. All 28 State Governments and Andaman and Nicobar Islands have adopted JFM by July 2005.There are 84632 JFM Committees covering 28 States in India. The area co-managed by these committees is more than 17 million ha. About 83, 84,788 families are involved in the JFM process.

Table 1: State wise forest cover and area under JFM in India.

States	Recorded forest area (ha)	Area under JFM (ha)	Forests covered by JFM (%)
A & N Islands	7,17,100	262	0.04
Andhra Pradesh	63,81,400	15,19,000	23.8
Arunachal Pradesh	51,54,000	1,00,377	1.95
Assam	26,83,200	52,499	1.96
Bihar	6,47,300	4,62,333	71.42
Chhattisgarh	59,77,200	33,19,000	55.53
Goa	1,22,400	10,000	8.17
Gujarat	18,92,700	4,14,151	21.88
Haryana	1,55,900	41,188	26.42
Himachal Pradesh	37,03,300	2,05,056	5.54
Jammu & Kashmir	20,23,000	38,736	1.91
Jharkhand	23,60,500	17,21,700	72.94
Karnataka	38,28,400	8,08,020	21.11
Kerala	11,26,500	2,07,404	18.41
Madhya Pradesh	94,68,900	66,87,390	70.62
Maharashtra	61,93,900	24,03,344	38.8
Manipur	17,41,800	1,66,767	9.57
Meghalaya	9,49,600	17,245	1.82
Mizoram	16,71,700	55,990	3.35
Nagaland	9,22,200	42,929	4.66
Orissa	58,13,600	11,48,676	19.76
Punjab	3,05,800	1,78,333	58.32
Rajasthan	32,63,900	8,58,614	26.31
Sikkim	5,84,100	88,518	15.15

Tamil Nadu	22,87,700	7,56,446	33.07
Tripura	6,29,400	2,41,138	38.31
Uttar Pradesh	16,58,300	1,83,393	11.06
Uttarakhand	34,65,100	5,64,221	16.28
West Bengal	11,87,900	6,46,084	54.39

***Source*:** ICFRE, 2011

Impact of Joint Forest Management on the Rural India

A key objective of JFM is to protect and regenerate forests with the community's help and, in turn, contribute to their livelihood enhancement. Forest conservation, aided by programmes like JFM, is expected to improve the socio-economic conditions of forest-fringe communities in various ways. Forests are expected to serve as a more secure source of meeting basic needs related to fodder, fuel wood, and other minor forest products. While regeneration efforts can increase wage-employment opportunities for the poor, bio-mass increase can enhance the scope for additional employment and income generation through the collection of NTFPs. Improved green cover serves to boost soil and water conditions in and around forests leading to greater farm productivity. At the same time, the restrictions accompanying protection measures can, potentially, curtail the access and customary rights of forest-dependent communities affecting their livelihoods negatively thereby. Findings on forest regeneration prove that any significant livelihood impact of JFM is likely to have been constrained. The micro studies reviewed on livelihood impact by JFM confirm this by revealing a diverse scenario across the country. Positive and negative consequences of JFM have been observed, though, in varying degrees. Dhar (1994), in his study based on Haryana, observed that besides improved tree cover annual fodder yield had gone up from 0.04 ton/ha to 2.00 ton/ha. Also, combining watershed activities with forest rehabilitation had improved soil fertility and irrigation conditions, incentivizing people to participate in forest protection proactively. The studies of Shylendra (2002) and Ravi Shanker (2009) revealed that JFM increased fodder production in the villages of Gujarat although no significant gains were observed in fuel wood. A major change observed as a result of JFM was the resolution of a contentious inequality issue concerning access to fodder. JFM increased the equity in fodder sharing between various sections through collective action. The JFMCs working through a user-group model were able to take up, through support gained by promoting NGOs, water-harvesting and other developmental activities benefiting the community significantly. Combining water harvesting with JFM helped increase bio-mass outside the forest, reducing pressure on forest land thereby. However, factors including preference for teak while ignoring the people's current needs and uncertainty in the context of sharing the final harvest served to curtail potential impact. Besides capturing general improvement in livelihood conditions, many studies have highlighted the predominant role of forests in the livelihoods of the very poor along with the role of JFM in augmenting the latter.. Sahu and Rath (2010) revealed that micro-plans based on strong community participation in Orissa created considerable employment and income opportunities that helped reverse stress migration, a resultant of environmental degradation, on the part of the poor. The study reported that the poor and landless gained maximum benefits with small and marginal farmers also benefitting from the protection. The poor and landless registered an income increase ranging between `4,000 and `9,700 and an employment increase between 94 and 192 days annually. Sarker and Das (2008), studying FPCs in the Bankura district of West Bengal, concluded that JFM had created a beneficial impact both for the community and FD. There was a positive change with income from the forest going up by 40 to 89 per cent across various categories. As far as the poor are concerned, including the landless and marginal farmers, over 80 per cent of their net income comes from the forest with NTFP, forestry wage, and timber as the primary sources. Improved access caused the share of illegal sources in net return to decline overall within the FPCs, signifying the need to improve returns for the poor from sources like NTFP. The positive impact observed on the part of JFM, too, seems to have influenced the performance of FPCs.

Table 2: Average Livelihood opportunities generated Through JFM in different states of India

States	No. of JFMC	Total no. of families	Annual employment generated in lakh mandays
Andhra Pradesh	7,718	14,38,000	100.00
Arunachal Pradesh	1,013	33,048	2.64
Assam	1,184	52,499	4.88
Bihar	682	2,11,674	4.72
Chhattisgarh	7,887	11,17,000	70.00
Gujarat	2,195	4,17,032	182.76
Haryana	2,487	66,036	7.05
Himachal Pradesh	1,023	2,63,024	2.70
Jharkhand	9,926	4,29,796	8.60
Karnataka	3,848	2,72,805	74.90
Kerala	576	78,501	4.00
Maharashtra	12,665	27,09,000	91.37
Manipur	665	24,102	6.43
Meghalaya	285	39,210	16.04
Nagaland	951	1,59,587	2.60

Punjab	1,224	91,850	8.00
Rajasthan	5,316	5,71,051	51.35
Tamil Nadu	3,487	4,82,269	16.99
Tripura	920	79,445	39.00
Uttar Pradesh	3,426	7,06,050	17.23
West Bengal	4,386	5,05,149	38.46
Total	71,864	97,47,128	749.72

***Source*:** ICFRE, 2011

Conclusion

Joint Forest Management has been successful in sensitizing the local forest dependent communities towards the importance and need of forest conservation and their proper management. JFM has been able to convert the community from users to custodians. JFM process in India needs to be appreciated and analyzed from a wider philosophical perspective that partakes of the issue of changing property rights over forest resources entailed by the process. Such a perspective can provide better appreciation of the changing policy intent of the Central Government noticed since the National Forest Policy of 1988 and the circular of June 1990. However, it seems that villagers who are dependent on the forest for their livelihoods would first like to be assured of a continued source of income for their daily subsistence. People who have little or no dependence on the forest may look for indirect benefits like their recognition by others. Or they may protect the forest because it appeals to their genuine concern for the environment. There are also cases where people have sacrificed their immediate tangible benefits (which were important for them at that point in time) for the long term and intangible benefits, if they were assured of getting these. Forests have provided and will continue to provide livelihood support to a significant proportion of the Indian Population, Particularly tribal's and other forest dependent communities. International initiatives and environmental campaigns with in the country have helped in halting degradation and loss of forest area to some extent. But it has also been realized that it is only with the active involvement of local communities in planning, implementation and monitoring of forest management strategies that sustainability of forest resources can be ensured.

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