



Joint Forest Management in India: Present Status & Suggestions for Successful Implementation

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Abstract

The problem of forest conservation and protection can't be separated from the local people living in and around the villages of forests and forest dwellers itself too. Local communities have symbiotic relationship with forest and should be accepted as a partner in the forestry development efforts. JFM in India has emerged as an important intervention in the management of forest resources. This research paper attempts to analyse the impact of JFM and an attempt to forge a partnership between the forestry department and local communities based on common management objectives. JFM programme has been adopted by the Indian Government for the sustainable development of forests and betterment of livelihood of peoples living in and around the forest. Issues that are very useful and essential for successful implementation of JFM Programme in the forests areas have been discussed in this article. The article suggests way and means to reduce ecological, environmental, management and economical imbalances and to improve forest productivity for the growth of economy and also to raise living standard of the local communities. An attempt has also been made in this paper for the absolute success of JFM programme, sustainable development of forests, betterment of livelihood of peoples and elimination of poverty from the country, the given suggestions, improvements and measures can prove a guide to those involved in forestry activities even people living in and around the forests. Thus, the paper concludes that secured peoples participation, clear cut forest policy is the key requirement for the success of India's participative forest management known as JFM.

Keywords: JFM, VSS, FD, Forests, Villagers, Local Communities, Peoples Participations

INTRODUCTION

“All the planning and the management techniques will be in vain if there is no commitment to sustaining the many different values provided by our forests. There must be a stewardship ethic among government policy makers, the corporate levels of forest industry, and those who plan and manage forest resources on the ground. This stewardship ethic should cover the environmental, social, and economic values of our forests. These different and sometimes conflicting issues cannot be separated if we are to achieve sustainable use and development of our forests.” (Kimmins, 1997).

Greatest threat facing humanity is the ecological disturbances, imbalance and its resultant impact. Of late, the forest cover is treated as an index of ecological balance of any society, and it has also become one of

the most important indicators of Life safety. Today's not only India even the whole world is facing an unprecedented environmental crisis of which deforestation is a typical example. The world is losing its forests at an alarming rate. India has recognized this long back and as a result of which forest cover of 33.3 per cent of total geographical area was suggested in the National Forest Policy of 1952 (**Reddy et. al., 1997**). As compared to this suggested level, the actual forest cover was only 19.5 per cent of the total geographical area. This figure is highly inflated when the crown density is taken as a criterion. In fact, only 60.2 per cent of this is having a crown density of 40 per cent and above (**GOI, 1995**). Development activities like heavy construction of housing and multipurpose hydel projects, mining, furniture, etc. and industrialisation have brought tremendous pressure on forest with the result there has been drastic reduction in forest area. Because of all these reasons, the country is facing shortage of forest produce. Heavy and uncontrolled exploitation of forest for this above said purposes brings environmental imbalances. All over the globe, many people now suffer from the destructive process that deprive them of the benefits from the natural resources on which they have always sustained their livelihood (**Arnold, 1992; Fisher, 1995**). Forests provide a wide range of timber & non-timber produces including fuelwood, fodder, food, and medicines etc. which act as natural resource inputs for converting them into economic outputs and thus contribute towards the livelihood of the people. The quality of forest and the pattern of forest management will determine its productivity and flow of natural forest products for generating livelihood options for the people. The productivity and sustainable harvesting pattern will determine the flow of forest resources available for the livelihood of the community who are dependent on forest. Thus, there is direct link between the quality of forest resource base available and the sustainability of livelihood of the community for their survival provided the forest is managed on sustainable basis. Most JFM communities use the surrounding forests mainly as a safety net or for regular or seasonal subsistence production of fuelwood, fodder, and minor nontimber forest products, such as fruits and medicinal plants. Commercial sales of forest products by the communities are very limited and not well integrated into larger urban and national markets. While the link between the forest resource base and livelihood of the people cannot be denied, many more factors which are responsible for sustainable forest management, will determine the sustainability of livelihood of the people.

India is the largest democracy and the second largest most populous country in the world. As per Census 2011, the population of the country has crossed a figure of 1200 Million which is multiplying 20 million per annum. As per an estimate, above one fourth population is still living below the poverty line and mostly in and around the forests. These peoples heavily depend on forests for subsistence needs and income gathered forest produce. Forests have been recklessly exploited all over the world and India as well to meet the various demands, including illegal removal thereby resulting in the degradation of natural forests. Fast Urbanizations, need of timbers for construction purposes heavily raises after liberalization and it has also been becomes main factor of fast forest degradation in the country. Because of all these reasons and deforestation, peoples living in and around the forests have been affected and percentage of poverty rises even after fast industrialization and various developmental programmes to be taken after the 1991. Thus, the first and foremost issue of concern for India's JFM programme is whether or not it helps to alleviate poverty given the existence of socio-economic inequality in Indian villages. There are around 200,000 villages with more than 350 million total populations of India on the fringes of India's forests which they earn from fuelwood, fodder, poles, and a range of nontimber forest products, such as fruits, flowers, and medicinal plants. Seventy percent of India's rural population depends on fuelwood to meet domestic energy needs. Half of India's 89 million tribal people, the most disadvantaged section of society, live in forest fringe areas, and a significant percentage of India's 471 million livestock are sustained by forest grazing or fodder collected from forests. The rationale for JFM programmes would increase the flow to communities and reduce rural poverty and thereby strengthen social security. The links between poverty and the environment are conditioned by the interaction of economic, social, demographic and even climatic factors too. An examination of India, one of the world's largest and most populous countries, is essentially an examination of a microcosm of the earth. Its populace encompasses the entire range of the income and education spectra, its culture consists of diverse religions, languages,

and social systems, and its geography is a sample of almost every terrestrial climatic zone of the planet. It is this variation that makes India's environment so interesting. India holds the dubious honour of suffering from poverty-induced environmental degradation at the same time, pollution from affluence and a rapidly growing industrial sector. The first and overriding priority of developing countries like India is economic and social development and poverty eradication recognizes that environmental degradation has social reasons, and that combating poverty is a prerequisite for sustainable development. It should be also recognised that the sustainable development approach is the key to a continuous growth of the economy. It is our firm belief that only people's participation can achieve highest level of successful implementation of existing programmes of conservation and environmental protection. So, to serving as effective strategy for sustainable development of forest, JFM can also be an avenue for rural development. JFM for sustainable development is one of the partnerships of communities, forestry agencies and other stakeholders working together for sustainable forest management and rural development.

As people lost the feeling of belonging to forests they lost interest in protecting them. This is turn led to indiscriminate exploitation of forests surrounding village communities and forests on common lands, finally adding to degradation and deforestation. Having realized the social cost of excluding people from local management of forest resources (**Tewari, 1996**) for almost a century and clue from some central and east Indian Experiments (**Murthy, 1998**), the GOI came out with a new Forest policy in 1988 and backed it up with further directions in 1990 to promote what is now popularly known as **JFM** (Joint Forest Management). In 1988 Gov. of India stated that forests should not be looked upon as a source of income or revenue generation but as a national asset to be protected and enhanced for the welfare of people of the land through people's participation. Subsequently, the Indian Govt. passed a resolution in the year 1990 which provides more specific guidelines for involving people in forest management. Thus, JFM in India has emerged as an important intervention in the management of forest resources. JFM is an attempt to forge a partnership between the forestry department and local communities based on common management objectives. Under JFM, communities share both responsibilities related to forest management and benefits in terms of the proceeds. The primary objective of JFM is to ensure sustainable use of forests to meet local needs equitably while ensuring environmental sustainability and conservation. Not only this, under Joint Forest management (JFM) the effective involvement of village communities in evolving sustainable forest management systems has been looked upon as an important approach to address the long-standing problems of deforestation and land degradation in India. Continuous deforestation and degradation of forests leading to a decline in forest cover have long been sources of concern for policy makers in India. The need of the hour and policy failure backlash induced the emergence of a new institution and the rationale for the JFM model within the Indian forestry sector. (**Kulbhushan Balooni & Makoto Inou; University of Tokyo, 2009**). Some states initiated the JFM approach in 1990; others took much longer. JFM programs currently span 27 states, represent 85,000 village committees, and cover more than 17.3 million hectares of forest land. The program encompasses an estimated 8.3 million families, half of which are scheduled castes and tribes (**Bahuguna 2004**). Information was given by the Minister of State for Environment and Forests (independent charge) **Shri Jairam Ramesh** in a written reply to a question by **Shri Yashbant N.S. Laguri and Dr. Mahendrasinh P. Chauhan** in **Lok Sabha in 2010** about the State-wise JFM Committees & their Members and the same is depicted in **Table (2)**. A large number of local people have been included in the Joint Forest Management for the conservation and management of forests on care and share basis. The records available in the Ministry of Environment and Forests reveal that more than 237 lakh local people are members of 1,06,482 Joint Forest Management Committees (JFMCs) in the country. The state-wise detail of members of the JFMCs is given in **Table (2)**. The entire adult populations of the village are members of the JFM committees and hence all of them are local people only. Thus, it has been always realized that the forests can't be protected and developed without the involvement of local peoples. National Forest Policy of 1988 has also envisaged the involvement of local people in the protection and sustainable development of the forests. The success of JFM programme is intrinsically linked with the

effective forest management practices targeted at production of needed forest goods and services and employment generation for improving the growth of economy and ecological balances of India.

PAST HISTORY, GENESIS AND EXPERIENCES OF JFM

Around 3000 B.C, nearly 80% of India was forested (**Warner, 1982**). Subsequent invasions changed entire landscape. First era in deforestation was shortly after absorption into British Empire (**Tucker, 1988**). The 1894 British Forest Policy gave priority to commercial exploitation, state custodianship and permanent cultivation. The forest- and subsistence-oriented lifestyle of tribal communities changed with the emergence of British colonial rule in Bengal in the late 18th century because the British administration tried to impose their authority and to extract land revenues through zamindars. Under Zamindari system, lands were granted to revenue farmers or rent collectors called zamindars, who had to pay a fixed amount annually as land revenue to the state. The British administration also encouraged zamindars to convert open forests into agricultural land for enhancing revenue earning. This led to the worsening of ecological conditions, which affect the poor tribal communities. Even after independence, the living conditions of tribal communities and other low caste people further deteriorated in the forest area. They were reduced to agricultural labourers or sharecroppers and suffered the loss of income from forest-based activities as the forests were cleared. Consequently, Naxalite uprising arose in Arabari area of Midnapore, West Bengal in 1970s, which further hastened the depletion of forest cover due to the indifference of the Forest Department to protect the forest resource. After independence there are three major factors like defective forest policy, faulty policy implementation and poverty responsible for deforestation and degradation of forests in India (**Singh, 1994**). In addition, the predominant causes for dwindling forest wealth have also been identified as over-exploitation, overgrazing, illegal encroachments, unsustainable practices, forest fires, and an indiscriminate sitting of development projects in the forest areas (**Forest Survey of India, 1999**). The forest fire causes forest loss in India (**Bahuguna and Upadhyay, 2002**). Area affected by forest fire range from 33% in West Bengal to 99% in Manipur. Over exploitation of fuel woods, fodder and non-timber forest products leads to deforestation (**Bhat, Mulari and Ravindranath, 2001**). However, the overall process of degradation generally occurs through a series of human interventions, with multiple actors involved in disturbing the same area of forest at different points in time (**Poffenberger, McGean and Khare, 1996**). Another major deforestation was in 1940s with demands of World War II and transition to independence for India and Pakistan in 1947 (**Tucker, 1988**). The National Forest Policy 1952 envisaged increasing forest areas to one third of the total land area. Forestland was used for development purposes. In late 1950s and early 1960s diversions occurred for agriculture under the 'Grow More Food' program. The year from 1970 to 1980 witnessed acute shortage of fuel wood and fodder in rural areas leading to further exploitation. Possibly, corruption, weak institutions, and wasteful consumption patterns also combine with the population pressure facilitating depletion and degradation of forest stock having enormous environmental degradation ramifications (**Gulati and Sharma, 2000**). The current forest and tree cover of the country is estimated to have 78.34 million hectares accounting for 23.84% of the geographic area of the country (FSI 2009). Out of this, the forest cover is about 69.09 million hectare, which constitutes 21.02% of the geographic area of the country (**Aggarwal, Das and Paul, 2009**).

The problem of forest conservation and protection can't be separated from the local people living in and around the villages of forests and forest dwellers itself. Local communities have symbiotic relationship with forest and should be accepted as a partner in the forestry development efforts. For the existing forests the best protective device is to create an interest of people in the forest wealth. Increased forest produce flows can lead to improvements in nutrition, by expanding the availability of fruits, seeds, nuts, mushrooms and edible leaves. Regeneration of forests also creates expanded employment opportunities as the productivity of seeds, leaves and grasses allow for small cottage and village industries to develop. In order to make forestry as a sustainable source of goods and employment, it is desirable to link forest produce with local enterprises for both NTFPs and timber products. In this way, people will feel the

forests is theirs, they have a stake in it, and will gladly sacrifice immediate gains for future long term needs and benefits (**Trivedi & Sudharshan, 1996**). Moreover, when the forest gets under the wings of local communities, peoples they are expected to provide a protective human fence. Such an effort would automatically give relief to JFM adopted forest patches from human induced stresses, such as cutting, burning and illegal marketing. Analysis and experiences of various JFM areas and their studies indicate that active participation by marginal-small farmers and landless people reverse the deforestation and even a few dependent families for their livelihood stop selling the firewood. Active participation of these peoples helps not only in improving the overall health density of forests, stops the smuggling of the forests produces but also they helps the prevention of forest smuggling and stop illegal activities too. As **Murliharudu et.al (1997)** pointed out that when peoples are participating in developing, conserving and utilizing forests exemplary results in natural regeneration are achieved. Moreover, the scientific approach to forest management has been replaced with progressive participatory forest management in many countries (**Ostrom 1990, see also Saxena 1999, Khare et al. 2000**). The participatory approach received increasing recognition following the international post-Rio forest dialogue, where the term participation was integrated as an important component of sustainable development. Several developing countries, in their National Forest Program (NFP), accepted the role of people's participation in forest management within a pluralistic entity. **Gupta (1997b)** in his study added in this regards that people's participation helps in management and protection of workable forest lands and people get benefit with a share in the annual coupe thus mutual dependency helps both forests and people.

Generally, peoples living in and around the forest areas are by nature is poor in terms of wealth, health and literacy. Most of them resort to illicit felling of trees and to sell timber and fuelwood for monetary gains. The collection of NWFPs gets only a fraction of the market value from contractors, middlemen and consumers of local markets or village users. If Forests is develops, then there will be a good scope to increase earnings of theses collectors by properly organizing collection, processing and marketing of the forest produces. Not only this, peoples participation helps in the better performance of JFM and heavy returns are expected from the timber and non timber forest products. Thus, Peoples participation I the better performance of JFM and heavy returns are expected from the developed forests. In a planned manner the programmes for village resource development help in generation of additional income, which may be used for village development activities and subsidiary programmes to provide alternative income and employment sources to arrest the dependency of marginally poor on forests (**Gautam, 1997**). However, active peoples' participation in forest activities results not only in forest development thereby ecological balance but also in betterment of living standard of people and communities as well. In view of the above, it is necessary for the people to perform their duties with benevolent attitude. They have to treat their forests as a capital asset for the next generation. Whatever they have removed from the forests needs to be repaid in proper manner with absolute growth.

SUGGESTIONS, MEASURES & IMPROVEMENTS NEEDED FOR SUSTAINABLE DEVELOPMENT

So far as picture depicts in the overall analysis and discussion it can be said that for the absolute success of JFM programme, sustainable development of forests, betterment of livelihood of peoples and elimination of poverty from the country, the following suggestions, improvements and measures can prove a guide to those involved in forestry activities even people living in and around the forests:

1. The legal framework in which JFM operates must be crystal clear. FD/Forest officials must have some basis in law when they should promise the village community a share in the benefits because without respect, regard and reward in monetary terms, on one give his best and never perform his duty seriously. So, the JFM processes ideally allow enough flexibility in the types of local institutions, so that existing organizational capacity can be utilized up to the mark, to the maximum.

2. Peoples living in and around the forests and villagers, communities and societies dependent on the JFM forest areas must be develop economically but in an environmental friendly manner.
3. It should be realized by the peoples that if they are not responsive to the destructive activities of the forests, it does not good to themselves and also to forests as well.
4. If peoples living in adjoined areas of forests raise their own wood trees, possibly on their own land to meet their Hugh requirement of fuel wood and wood itself to meet their multiple, forests would has not been disturb. They should that just protection of their forest is not enough? Protection methods by Vana Samrakshana Samithies (VSS) members are required to be systematized by paying adequate attention to this respect. This is going to be of critical importance as the natural regeneration grows and plantation species reach pole stage. Threats from outside will proportionately grow and the new assets may disappear, if protection arrangements are not properly institutionalized. Therefore, some useful recommendations in this respect are given as below:
 - i. VSS members should participate in protection duty on the rotation basis to display personal involvement in the joint management Endeavour. Executive or Governing body of VSS should be told about the necessity of the arrangement, like benefits to each member if the forest is well protected and the likely loss if this aspect is neglected. In addition to this, personal stake in forest protection is to be emphasized.
 - ii. Each partner has to discharge his responsibility in a partnership. The forest management department with all legal authority for enforcing protection must show to VSS members that the function is being discharged with favour or fear. Joint patrolling by the local staff of forest department and VSS members is an excellent arrangement for building confidence.
 - iii. Forest Officers like DFO/CF and other senior Staff of FD can set examples by visiting forest areas along with the members of local communities whenever they go to the JFM Forest and VSS village.
5. The adopted forest area should be classified and segregated with proper ecological Maps and Guides. As every forest personnel knows that Maps are meant to help in assessing the current status of green cover and Guides to assist with regard to future plantations. Allowing either natural regeneration and/or new plantations should be taken up as per guidelines specified in their Maps and Guides.
6. Natural regeneration should be considered as mainstay of successful implementation of JFM rather than manmade plantation of a few species. So many studies reveals that multiple species with multiple products in a natural ecosystem meet the economic and cultural needs of indigenous people in a manner which man made plantations can never satisfy. Further they added that to improve natural regeneration of forests in JFM areas, the following measures should be encouraged: (i) Advance closure of two years in JFM areas to identify gaps in natural regeneration before man made artificial regeneration is practiced, (ii) field techniques be improved for coppicing, contouring, gully plugging etc., (iii) Participatory monitoring of sample JFM areas involving VSS members to encourage them about such natural regeneration status.
7. Apart from maintaining and protecting sparsely spread old forestry species, new plantation would be taken up under the programme as an important area of people's participation. The forest must be raised with traditional varieties, which has the credible record of being forest species and survived in locally with good record.
8. For the establishment of young and healthy natural regeneration grazing has to be restricted properly. The following measures could be established for such betterment of their forest's natural regeneration: (i) Treated areas to be kept Free from grazing at least for 3 to 5 years through

collective efforts of FD and VSS, (ii) more efforts to be put for development of available grasses in treated areas and encouraging VSS members and others to cut and carry fodder from these areas, (iii) entry of migrant cattle in these areas should be banned through FD and VSS, (iv) local community and VSS should be permitted to collect grazing fees and establish pounds to levy fines for errant cattle. The Fee and fine can be utilized for the maintenance of watchers of local community or VSS.

9. Generally, in shortage of fuelwood, people burn cow-dung, crop stems and husks and weeds as well. It results in large biomass loss which otherwise can be turned in to manure. Energy saving devices can be used and alternative sources of fuelwood like Bio-Gas plants, Smokeless Chullas, Solar Cookers should be accepted, and they must be provided by the FD or other co-operative societies to the villages. Not only this, some quotas of LPG should also be allotted to the peoples by the State/Central government.
10. Fire is the biggest enemy of forests. Therefore to prevent forests from the fire, the following measures should be adopted: (i) fire lines are to be laid and maintained at FD cost, (ii) during the fire season, fire watchers should be engaged and fund to VSS account should be given for this purpose, (iii) Local body/VSS concerned should also be rewarded for good performance in controlling fire in their JFM areas.
11. Illegal felling in JFM areas could be controlled by adopting the following measures: (i) To keep up the morale of the VSS members and to protect JFM area, Offence cases be strictly dealt by the forest department (FD); (ii) Strict enforcement of the provision in order issued by the Government regarding information VSS members about fate of offence cases to establish transparency; (iii) Issue of the Government order treating VSS members at par with FD staff for medical treatment in the event of any injury and compensation to next of kin and kin in the event of death, while engaged in forest protection duty; and last (iv) Some share of compensation and value of the seized timber etc. should must be deposited in the VSS fund, as most of the time local communities like VSS help in the detection of offence.
12. The following measures will help in the recovery of encroachment and reduce further encroachment: (i) Recovered areas should be put under treatment practices with provision of short-term benefits as per choice of member of local community like VSS; (ii) VSS forest area would have been start from the village forest meeting point and must be include all encroachments; (iii) Consolidation of forest boundary by survey and demarcation should also be made.
13. The link between tree and birds should be realized by the people. They both co-exist for mutual benefit and survive. Not only this, birds are the biggest source of forests regeneration because birds house are the trees, they lives on trees and they nest and multiply on the trees. After eating fruits, the birds droppings their seeds to different location and help the multiplication of trees. So, if tree culture has survived for ages, the tree-bird cycle is mainly responsible for that.
14. Not only in JFM villages even all the villages located in and around the Forests must be protected from the political intervention. They should not be co-related with any political colour. They should be taken as a general village committee, and adult persons of villages should join it only for the betterment of the forest. In such villages Literacy rate was not found in that form where peoples could be treated as a literate. Most of them by nature are innocent. Therefore lack of knowledge and awareness, members of JFM villages can't take strong decisions. Perception/decisions of the community can't be changed overnight. Past history always has a bearing on future actions. Initial success can be a source of encouragement but not complacency.
15. A 'Communication Gap' between the Senior official and Forester, villagers and foresters, NGOs and villagers, researchers and all other already mentioned above, in terms of their knowledge, background and understanding though naturally exists, it should however be minimized. It also

becomes necessary to identify gaps and cope up with it in order to harmonize the efforts. For instance:

- i. One has to be open and objective to existing conflicts if any. To avoid conflicts, constraints identification is a necessary task facilitating decision;
- ii. Identify compatibilities among different resource uses as watershed development is accompanied by Dairy development, animal husbandry, fodder development etc.;
- iii. Carrying capabilities of grasslands, forestry croplands and fisheries etc., i.e. life support system under varying demands, pressures, and management are to be conveyed to the people. Sustainable yield thresholds are to be communicated;
- iv. Knowledge about assimilative capacity of village economic systems is necessary and knowledge of markets and price structure are to be conveyed time to time;
- v. Knowledge and skill gaps at conceptual and technical levels do impede the process; and
- vi. Farm Forestry, Agro-forestry, Community Forestry and Social forestry models giving maximum returns are to be popularized and implemented.

16. Role of NGOs can't be overlooked in the areas of JFM Forests. Their role in forest protection and regeneration is multi-faced and covers wide range of social, economic and cultural aspects of JFM adopted villages, as the role of voluntary sector in forest protection and regeneration has been recognized since long time. The role of NGOs is very important in the areas given as under:

- i. They are working as an agent between FD and village communities;
- ii. Educating the community in various facets of rural life, and
- iii. Promotion of NGOs regular constructive activities too.

Thus, the role of NGOs will be initiating the dialogue between FD and villagers. It is not desirable that NGOs themselves take on implementation of the plans; this should be left to the Fd and the village communities. Research and feedback on how the JFM exercise is shaping up can be done by the NGOs and research establishment especially for socio-economic issues.

17. Leadership drawn from the elderly section of the community seems to understand the needs of the community better. Such persons, while performing their job as President/Chairperson and management committee (MC) members should train younger persons in the MC. General body should assess the community needs and leadership functions and aid in democratization of the VSS. Some important issues related to social aspects are as under:

18. Rural women are closely dependent on forestry; therefore more of women should be involved in implementing the various forestry programmes. To achieve this goal, women could be involved more intensively right from the planning stage onwards to assess the needs of the community. In this connection, some women groups should be formed in villages to enlighten them about the needs of environmental conservation including managing natural resources on a sustainable manner. These groups can also impart vocational training, in consultation with the government departments and non-governmental organizations to destitute women so that they can take up alternate income generation activities which need not be land or forest-based. Various benefit sharing models may be chalked out in consultation with the women organizations like women leaf-stitching, broom-stick making, women tree growers' co-operative society, women polythene bag manufacturing society, women bidi making society etc. can be established to encourage women to participate in forestry activities.

19. The institutional design of the JFM programme should be reconsidered to enable negotiation processes between different categories of stakeholders. There is also a need to remove the government monopoly on marketing of some non-timber forest products while at the same time guaranteeing benefits to the poorest forest-dependent people. This is one area where State

intervention and institutional investment is vital to build the organisational skills of the communities. Furthermore, research needs to be undertaken to investigate into conditions—the policy and institutional mechanism.

20. Lack of appropriate marketing infrastructure for forest produce has always been a serious constraint in the Indian forestry sector. The JFM programme in India emphasizes production of NTFPs because they provide a regular income for JFM Committees. For this system to function efficiently, it is necessary to make JFM Committees self-sufficient for their day-to-day operations, rather than depending on the government and NGOs.
21. International experience suggests that further evolution of the JFM community-based forestry model in India may improve livelihood opportunities and conservation. But four critical enabling conditions must be met in order for it to do so. First, communities must be provided with more secure forest resource tenure and management rights. Second, more effective and flexible institutional models must be applied with communities. Third, better systems for forest regulation, monitoring, and control must be developed. Fourth, communities must be provided with greater access to efficient markets for goods and services from the forest (**Molnar, Scherr, and Khare 2004**). Addressing these four factors must occur through integrated reforms and programs. The challenge facing Indian policymakers is to create an enabling environment that will improve opportunities for communities to use forests as a means of moving out of poverty while not compromising national forest conservation goals. Although international experience must be viewed with caution, there is growing evidence that movement toward a model with greater community rights and responsibilities over the forest can bring substantial economic and forest conservation benefits. In India a deliberate and well-intentioned process for continuous improvement is needed to support positive and progressive change.
22. Developing Institutional capacity of the JFM Committees (JFMC) through identification and capacity building of the Common Enterprise Groups (CEGs) for certain specific activities like Sal leaf plate making, vermin compost making etc. CEGs would be formed based on the existing CIGs in the village. While CIGs could be working at the individual level, the CEGs will be working on the group mode with clearly defined roles and responsibilities among the CEG members as well as the mechanism for benefit sharing. There could be more than one CEG under one JFMC based on the interest of the people, market demand, and feasibility.
23. The relationship between JFM Committees and Panchayats should be such that the JFM Committees take advantage of the administrative and financial position and organisational capacity of the Panchayats for the management of the forest resources. The unique and separate non-political identity of the JFM Committees as ‘guardian of forests’ should be maintained and ensured. The benefits accrued from NTFP sales should be shared with all the members of the community/committee of the JFM.
24. Apart from the lack of institutional capacity, to fulfill the varied objectives of management the technical skills to develop different silvicultural systems are also insufficient. For instance, research on the economic and ecological impact of protection shows that although people's main concern is with fodder, protection beyond six years tends to close the tree canopy and reduce grass production. Perhaps a much wider spacing is called for to maintain grass production (this being one of the major incentives for community protection and management). Similarly, number of silvicultural researches in India so far has been conducted on commercial species, and techniques for the large scale regeneration of multi-purpose species such as mahua and neem are still to be developed.
25. As it is well established that the combined impact of NTFP related activities is substantial in strengthening the socio-economic base of the rural poor which in turn create positive stakes for the people in terms of protecting the natural forests. Enhancement and enrichment of the NTFP

base, therefore, becomes one of the important planks of the sustainable forest management. Against this backdrop there is an urgent need to include NTFP related issues in the research priorities of the forestry sector. More specifically the research should focus on evolving methodologies to augment the NTFP base by all possible means including application of modern biology and genetic engineering, devising non-destructive harvesting technologies, improved method for collection, storage and processing which leads to value addition to the raw NTFP. In short, scientific and managerial management of NTFP related activities with human face can become one of the most important components of the natural forest conservation strategy which is one of the prime objectives of success of JFM programme.

26. JFM for sustainable development of forests and economy as well should be process-oriented, and does not lend itself to becoming a target and product-oriented programme. So, care will need to be taken to ensure that JFM does not just become the next development band-wagon. In India, there may be a need to consolidate experience with JFM to date. Along with the expansion of the programme, the capacity of institutions to support it should be critically evaluated and improved. Not only this, in order to make forestry as a sustainable source of goods and development, it is desirable to link produce with local enterprises for both timber and non-timber products. In this way, people will feel the forest is theirs; they have a stake in it, and will happily sacrifice immediate gains to future long-term benefits.

CONCLUSION

It is clear from the overall discussion that several benefits emanate from JFM which include a number of ecological, community related and economic benefits. On the basis of findings of various studies and reviewed articles, it can be said that above suggested measures and improvements have become key factors for successful implementation of JFM programmes in the any Forests area of the country. These suggested measures and improvements can't be overlooked and need to be taken as useful guidelines for FD, State and Central government too. The guidelines discussed in above section will help in Joint Management Programmes in number of ways provided the implementation of the guidelines is done in their true spirits and adopted in proper manner. The kind of advantages/ benefits occurred out of these activities will encompass fields of ecology, geography, economics, social stability, community relationships etc. Although functioning of Forest Protection Committees (FPCs) in India is very low and to make them effective, a lot of effort is still needed. Lack of community participation, ineffective leadership, co-ordination between FD and FPCs and lack of statutory institutional support are the major concerns that need to be addressed to make JFM effective. Awareness among the local community about their roles and responsibilities, and capacity building is another issue that needs strengthening. A lack of proper planning, management of village resources and community involvement in the process of planning are also one of the biggest gaps in of the JFM program. Some study pointed out that the inadequate participation of forest dependent communities in JFM, such as landless artisans and women, is a drawback in the JFM. Therefore adequate measures to improve their participation and the means to improve their livelihood would give them a reason to help in the cause. However, it can be said that the implementation of JFM has not achieved these goals to a sufficient degree. Moreover, due to the poor links between produce availability and market channels, the income generating activity in JFM has not improved to the expected level. Ultimately, JFM has a presence in the country and has spread throughout states at least in some pockets of India. To spread the concept effectively, the Government may want to adopt a strategy that is more efficient and involves less investment, as the external support is declining. Therefore, there is a need to undertake intensive analysis involving all stakeholders, NGOs and academics to develop an implementation strategy and create a proper environment for JFM to be implemented in a meaningful manner. Thus, Sustainable forest management or JFM is not just about maintaining a supply of timber and jobs. It is about maintaining the function of the global

ecosystem and global biodiversity. Forest management focused only on environmental issues such as wilderness, biodiversity, and old growth is certain to fail. Sustainable forestry will be a meaningless goal unless it begins with the recognition of local peoples' dependence on forests, their subsistence in future and economic needs.

Table (1): State-wise JFM Committees & their Members.

Sl. No.	State	JFM Committees (Number)	Total
1.	Andhra Pradesh	8498	1538784
2.	Arunachal Pradesh	362	24588
3.	Assam	700	217973
4.	Bihar	615	46893
5.	Chhattisgarh	7820	2763100
6.	Goa	26	207
7.	Gujarat	2124	1045714
8.	Haryana	1075	167300
9.	Himachal Pradesh	1749	254350
10.	Jammu & Kashmir	4861	268360
11.	Jharkhand	10903	218000
12.	Karnataka	2254	295646
13.	Kerala	561	66022
14.	Madhya Pradesh	14428	8984000
15.	Maharashtra	11799	2441245
16.	Manipur	283	23958
17.	Meghalaya	73	7083
18.	Mizoram	505	181681
19.	Nagaland	335	121064
20.	Orissa	9905	2365404
21.	Punjab	1378	183145
22.	Rajasthan	4691	509346
23.	Sikkim	204	338257
24.	Tamil Nadu	2642	793369
25.	Tripura	399	39644
26.	Uttar Pradesh	2096	155692
27.	Uttarakhand	12089	108801
28.	West Bengal	4107	558086
Total	ALL INDIA	106,482	23717712

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