
ORIGINAL ARTICLE

Assessment of impact of Joint Forest Management in the selected Villages of Imphal West of Manipur state of NEH Region

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ABSTRACT

The impact of JFM in selected Villages-Khamaral, Lamdeng Awang Leikai, Lamdeng Mayai Leikai and Lamdeng Makha Leikao of Imphal West of Manipur was assessed for development of the forests with sharing the benefits of forest products by the villagers. The allotted forests under JFM were found to be regenerating, improving productivity, increased income of villagers through getting wages for various plantation works and other activities done under JFM. SHGs were formed with the help of Forest Department and found providing good source of income to the women folks. The villages were provided with community sheds, community hall, culverts through the EPAs under the National Afforestation Programmes.

Keywords: JFM, SHGs, EPAs, criteria, indicators, impact assessment.

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INTRODUCTION

With the advent of National Forest Policy of 1988, the principle of Joint Forest Management (JFM) was established which envisages state forest departments support, local forest dwelling and forest fringe communities to protect and manage forests. The concept of JFM initially implemented by the Dr. A.K. Banerjee the then DFO, Midnapore in West Bengal to protect 272 ha of degraded sal (*Shorea robusta*) coppice forest in 1972 [1]. The communities under JFM organize themselves into a JFM Committee and empowered to manage the forests, and share the cost and benefits of forests guided by locally prepared by-laws and micro plans. Communities have the power to manage and use of forests by members and also exclude non-members and is considered as their key element of this program. The role of women was considered important in implementing JFM due to their intimate association with forests. Various women groups were constituted to establish alternate income generating activities. The benefits to the committees are control over the uses, sale of most NTFPs and share in the income from forest produces as well as other intangible benefits from local ecosystem services – like water recharge, pollination, wildlife habitat, etc. JFM has the potential to meet local subsistence needs, of fuel wood, fodder, non-timber forest produce, small timber and timber, etc., while at the same time, preventing degradation of the forests that provide national and global environmental benefits. Thus, involvement of communities in conservation of forests and wildlife is of paramount interest [2].

Manipur is situated in the north-eastern part of India and lies between latitude of 23°50'N to 25°42'N and a longitude of 92°59'E to 94°46'E. The state has sixteen districts. The recorded forest area is 17,418 km² which accounts for 78.01 % of the state geographical area. The Reserved Forests constitute 8.42%, Protected Forests 23.95% and Unclassed Forests 67.63% of the RFA. The forest cover in the state, based

on interpretation of satellite data of October 2017 to February 2018, was 16,846.90 sq km which is 75.46 % of the state's geographical area [3]. A resolution was adopted on June 8, 2000 for implementation of Joint Forest Management in Manipur. However, it was implemented only in 2003 and so far 937 out of 2,391 villages in the State have been covered under JFM. There is a total of 354 JFMCs in Manipur [4]. The JFM approach had been successful in Manipur in spite of many apprehensions.

MATERIAL AND METHODS

Preliminary survey on impact assessment of JFM was done in the selected villages with a sample of 4 respondents from each village to finalize the schedule for data collection. After finalization of the schedule the data were collected from the selected villages with a number of sample size 15 family respondents as per the approved format. Accordingly, the data were collected from the selected villages in District Imphal West viz. Khamaral Village, Lamdeng Awang Leikai, Lamdeng Mayai Leikai and Lamdeng Makha Leikai which is controlled under Central Forest Division of Manipur and analyzed.

Details of the site

a) *Khamaral Village*

Khamaral village lies under Sadar West Range, Haorang Sabal Block, Imphal West under Central Forest Division, Imphal. The area of operation for the Khamaral, Joint Forest Management Committee, covers some part of North-Western aspect of Langol Reserved Forest and South-Eastern aspect of the Langol Extension Reserved Forest having moderate to steep slopes. The Khamaral village is a Meitei community located in the plain area and surrounded by the Langol and Langol Extension Reserved Forests in three directions. The Joint Forest Management Committee area has a geographical area of 260 ha. The forest area to be managed by the Joint Forest Management Committee, Khamaral may be classified as the "Sub-Tropical Dry Deciduous Forests" covering an area of 240 ha. There are 102 nos. of household in Khamaral village with a total population of 505 consisting of 239 males and 266 females⁵.

b) *Lamdeng Awang Leikai*

Lamdeng Awang Leikai lies under Sadar West Range, Haorang Sabal Block, Imphal West under Central Forest Division, Imphal. The village lies at an altitude of 780m to 1133m. The village is a Meitei community located in the plain area and western side of the Langol Reserved Forests. The area of operation for the Lamdeng Awang Leikai, Joint Forest Management Committee, covers some part of South-Western aspect of the Langol Reserved Forest having moderate to steep slopes. There are 95 nos. of household in Lamdeng Awang Leikai village with a total population of 458 consisting of 250 males and 208 females. The Joint Forest Management Committee area has a geographical area of 267 ha. The forest area to be managed by the Joint Forest Management Committee, Lamdeng Awang Leikai may be classified as the "Sub-Tropical Deciduous Moist Forests" covering an area of 140 Ha [6].

c) *Lamdeng Mayai Leikai*

Lamdeng Mayai Leikai lies under Sadar West Range, Haorang Sabal Block, Imphal West under Central Forest Division, Imphal. The Lamdeng Mayai Leikai village is a Meitei community located in the plain area and western side of the Langol Reserved Forests. The area of operation for the Lamdeng Mayai Leikai, Joint Forest Management Committee, covers some part of Western aspect of the Langol Reserved Forest having moderate to steep slopes. The Joint Forest Management Committee area has a geographical area of 385 ha. The forest area to be managed by the Joint Forest Management Committee, Lamdeng Mayai Leikai may be classified as the "Sub-Tropical Deciduous Moist Forests" covering an area of 180 ha. There are 154 nos. of household in Lamdeng Mayai Leikai village with a total population of 625 consisting of 312 males and 313 females [7].

d) *Lamdeng Makha Leikai*

Lamdeng Makha Leikai lies under Sadar West Range, Haorang Sabal Block, Imphal West under Central Forest Division, Imphal. The Lamdeng Makha Leikai village is a Meitei community located in the plain area and western side of the Langol Reserved Forests. The area of operation for the Lamdeng Makha Leikai, Joint Forest Management Committee, covers some part of North-Western aspect of the Langol Extension Reserved Forest having moderate to steep slopes. The Joint Forest Management Committee area has a geographical area of 210 ha. The forest area to be managed by the Joint Forest Management Committee, Lamdeng Makha Leikai may be classified as the "Sub-Tropical Deciduous Moist Forests" covering an area of 140 ha. There are 126 nos. of household in Lamdeng Makha Leikai village with a total population of 660 consisting of 336 males and 324 females [8].

RESULTS

The impact of JFM in these villages was assessed. Afforestation with different important species was carried out. Different activities providing income to the local villagers were performed. An important aspect of JFM in these villages were the formation of Self Help Groups with the help of Forest Department and the various Entry Point Activities carried out by the Forest Department helped in development and improving the scenario of these villages. The detailed criteria and indicators of JFM in these villages as obtained through questionnaire survey are described as follows:

Table1: Criteria and indicators for implementation of activities under the JFM in Imphal West district.

S.no	Criteria	Indicators
1	Area(ha) under plantation	i) 197 ha (mixed plantation) in Khamaral village ii) 65 ha (mixed plantation and artificial regeneration) in Lamdeng Awang Leikai. iii) 64 ha (mixed plantation and artificial regeneration) in Lamdeng MayaiLeikai. iv) 80 ha (mixed plantation and artificial regeneration) in Lamdeng Makha Leikai.
2	Plantation/ cultivations of NTFPs	i) 43 ha bamboo plantation in Khamaral village. ii) Fast growing fire wood species and fruit trees were planted in Lamdeng Awang Leikai, Lamdeng MayaiLeikai and Lamdeng MakhaLeikai.
3	Species planted	v) Mixed plantation in Khamaral Village: <i>Psidium guajava</i> , <i>Alnusne palensis</i> , <i>Terminalia liacitrina</i> , <i>Tectona grandis</i> , <i>Gmelina arborea</i> , <i>Chukrassia tabularis</i> . vi) Bamboo plantation in Khamaral village: <i>Dendrocala musstrictus</i> , <i>Bambusa tulda</i> , <i>D. calostachys</i> . vii) Mixed plantation in Lamdeng Awang Leikai: <i>Quercusserrata</i> , <i>Castanopsisspp</i> , <i>Schimawallichii</i> , <i>Terminaliachebula</i> , <i>Gmelinaarborea</i> . viii) Artificial regeneration creation in Lamdeng Awang Leikai: <i>Quercus serrata</i> , <i>Castanopsisspp</i> , <i>Gmelina arborea</i> , <i>Schima wallichii</i> . ix) Mixed plantation in Lamdeng MayaiLeikai: <i>Quercus serrata</i> , <i>Castanopsisspp</i> , <i>Gmelina arborea</i> , <i>Parkiar oxburghii</i> , <i>Schima wallichii</i> , <i>Emblica officinalis</i> . x) Artificial regeneration creation in Lamdeng MayaiLeikai: <i>Gmelinaarborea</i> , <i>Quercus serrata</i> , <i>Schima wallichii</i> . xi) Mixed plantation in Lamdeng Makha Leikai: <i>Castanopsisspp</i> , <i>Quercus serrata</i> , <i>Emblica officinalis</i> xii) Artificial regeneration creation in Lamdeng Makha Leikai: <i>Gmelina arborea</i> , <i>Quercusserrata</i> , <i>Castanopsisspp</i> , <i>Schima wallichii</i>
4	Species preferred by the Villagers	i) Khamaral Village: <i>Gmelina arborea</i> , <i>Artocarpus integrifolia</i> , <i>Pinus khasiyana</i> , <i>Emblica officinalis</i> , <i>Aegle marmelos</i> , <i>Parkiaroxburghii</i> , <i>Quercusserrata</i> , <i>Psidiumguajava</i> , etc. ii) Lamdeng Awang Leikai: <i>Castanopsisspp</i> , <i>Quercus serrata</i> , <i>Gmelinaarborea</i> . iii) Lamdeng Mayai Leikai: <i>Castanopsisspp</i> , <i>Quercus serrata</i> , <i>Gmelina arborea</i> , <i>Chukrassia tabularis</i> . iv) Lamdeng Makha Leikai: <i>Castanopsisspp</i> , <i>Quercus serrata</i> , <i>Schima wallichii</i> , <i>Gmelina arborea</i> , <i>Emblica officinalis</i> , <i>Parkia roxburghii</i> , <i>Artocarpus integrifolia</i> .

5	Silvicultural operations done in the allotted forest area under JFM	<ul style="list-style-type: none"> i) Replanting was done in the form of mixed plantation and bamboo plantation in all the selected villages. ii) Cultural operations such as lopping, weeding ,thinning was done. Lopping was done for firewood collection. Weeding was done one month after plantation for establishment. Weeding provides space for the trees planted and eliminates the competition by the weeds hampering the growth of the plantation species. In addition to this, thinning is done whenever required which also provides wood to the people for their use. iii) Added Natural Regeneration (ANR) was created and thus the regeneration process is continued. iv) Soil and moisture conservation activities such as contour trenching, creation of vegetative check dams and digging of ponds were done. Contour trenching protects the forest land from soil erosion, heavy run-off and loss of soil moisture. Vegetative check dams also retain the run-off water for longer period and facilitate increase of ground water level.
6	Silvicultural models prescribed in microplan	<ul style="list-style-type: none"> i) Mixed and bamboo plantation in Khamaral village. ii) Mixed plantation in Lamdeng Awang Leikai, Lamdeng Mayai Leikai and Lamdeng Makha Leikai.
7	Village Forest Protection Committee(nowJFMC)in all the 4 villages	<ul style="list-style-type: none"> i) A registered one. ii) The general body meets at least once in a year. iii) The executive body meets every three months (i.e. 4 times a year). iv) Number of meetings in a year is 5 times. v) The source of income of VFPC is through membership contribution and wages (NAP programmes). vi) Number of committee members (executive body) is 13.
8	Forest working circle	<ul style="list-style-type: none"> i) Plantation working circle in Khamaral Village, Lamdeng Mayai Leikai and Lamdeng Makha Leikai. ii) Fuelwood and fodder working circle in Lamdeng Awang Leikai.
9	Forest protection	<ul style="list-style-type: none"> i) Measures being adopted for forest protection include fencing ,fire line cutting/creation in all the 4 villages

Self Help Groups (SHGs)

Mora-Making, Weaving and Embroidery Self Help Groups (SHGs) were formed in the studied villages under the guidance of the Forest department. In Khamaral village, under the guidance of the Forest Department Self- Help Groups were formed with women members. There were 3 SHGs namely (i) Khamaral Women SHG (Mora-Making); (ii) Luwangleimarol Weaving SHG and (iii) Khamaral Women Embroidery SHG. In 2006 the Forest Department gave a sum of Rs. 20000 to the Khamaral Women SHG (mora-making) and in 2011-2012, a sum of Rs. 10000 each was given to Luwangleimarol Weaving SHG and Khamaral Women Embroidery SHG.

Similarly, SHGs were formed in Lamdeng Awang Leikai, Lamdeng Mayai Leikai and Lamdeng Makha Leikai. The SHGs in Lamdeng Awang Leikai were (i) Ningthibee SHG established in October 2013 having 17 members (ii) Sintha SHG established in October, 2013 having 25 members. Both the SHGs members deposit a sum of Rs.100 per month in their SHG bank account.

The SHG in Lamdeng Mayai Leikai was (i) Lanchenbi self-help group which was started in the September, 2013 having 16 members. The members deposit a sum of Rs. 200 per month in the SHG bank account. The SHGs in Lamdeng Makha Leikai were (i) Panthoibi Weaving SHG having 11 members (ii) Leima Embroidery SHG having 11 members (iii) Linthoinganbi Hand Embroidery SHG having 10 members. These SHGs were found to provide a good source of income to the women folks helping in upliftment of the economy.

Performed Entry point activity (EPA) in the villages

Forestry plantation will not be successful without the willing participation and support of the local villagers. Therefore, Entry Point Activities proposed by the villagers on priority basis were carried out by the forest department for the welfare and development of the community. In khamaral village, the EPAs carried out included construction of community shed cum JFMC office, extension of community hall, singling of inter village road, construction of wooden bridge, flooring of community shed, community hall construction. In Lamdeng Awang Leikai Village, fitting of culvert and irrigation channel dug out was done. In Lamdeng Mayai Leikai Village, fitting of RCC pipes as culverts were carried out. In

LamdengMakhaLeikai Village, fitting of RCC pipes as culvert and construction of community shed were carried out.

DISCUSSION

Therefore, the impact of JFM in the studied villages was clearly seen. The activities that were recorded on - field show how far the programme of JFM in these villages were functioning and successful. Sundaret al.⁹ in their study found that in Rajpipla, Gujarat, JFM had successfully provided employment to villagers and benefited them with grass and fuelwood. The JFM programme in this place could be deemed successful in terms of both regeneration and meeting most people’s legitimate needs. In Dewas, Madhya Pradesh, JFM had helped checked encroachment and, to a lesser extent, smuggling, though the situation varies from range to range and is volatile⁹. The success of the JFM in Haryana is manifest in the improved status of its forests, socio-economic development of the people and the evolution of an institutional process of cooperation between the HFD (Haryana forest department) and the HRMS (Hill Resource Management Societies). Singh,¹⁰ recommends that the flow of benefits from JFM are substantial for removal of poverty among forest fringe villagers/ forest dwellers. Dey [11] suggested that the JFM programme had ensured the economic and social upliftment of women to enhance the welfare of their families and to improve their status in the family and community as a whole. The Joint Forest Management Committee (JFMC) of Old Jalukie village under Peren district, Nagaland had been selected for the India Biodiversity Award 2014 under the co-management category. The award recognizes people, communities and agencies from across the country who have led effective models of biodiversity governance, including community-run institutions, local self-governance bodies, joint forest management committees and protected area management agencies engaged in preserving designated protected areas [12].



Photo 1 & 2: Forest Area allotted to the JFM before and after the implementation of JFM Programme.



**Photo 3: Cleaning cum weeding operations carried out in allotted Forest Area under JFM
Photo 4: Plantations done in the Allotted Forest areas under JFM**



5

5.1

Photo 5: EPAs carried out in the villages (Fitting of culvert.)

Photo 5_1: EPAs carried out in the villages (Construction of community shed.)



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Photo 6: Interaction with the JFMC members and villagers

Photo 7: Mora- making SHG

CONCLUSION

The allotted forests under JFM were regenerating, improving productivity, diversity of forest composition and increased income of villagers through getting wages for various plantations and other activities done under JFM. Self- Help Groups were found providing good source of income to the women folks. The villages were provided with community sheds, community hall, culverts through the EPA (Entry Point Activities) under the NAP (National Afforestation Programmes).

JFM is therefore needed in order (i) To involve people in the management of their own natural resources (ii) Need based planning (iii) De-centralization of powers (iv) To make the system more transparent and more accountable (v) To involve women in decision making for natural resource management (vi) To involve people in development process (vii) To make people responsible to earn their livelihood by usufruct sharing (viii) To make people aware of importance of forests and environmental conservation. However, for JFM to be successful, an essential condition is to convince people at the micro-planning stage itself about the benefits likely to accrue to them. The villagers around a particular forest block need to be consulted for their views and consents. It is essential that capacity building of villagers should be carried out at the earliest on different aspects of JFM including concept, duties and responsibilities, microplanning, process documentation, monitoring, plantation, forest operations, and nursery techniques. Biodiversity conservation should be given due importance in training programmes. NGOs could be involved in undertaking these training programmes. JFM Guidelines should be reviewed /revised from time to time; further research should therefore be carried out.

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