

CHAPTER VII *RECOMMENDATIONS & SUGGESTIONS*

7.0 RECOMMENDATIONS & SUGGESTIONS:

The present study on the Joint Forest Management program of the Narmada district brought out the success and failure stories of these plantations and the impact of these plantation programs on forest restoration. The recommendations and suggestions given here below are based not only on experiences obtained from rigorous ground data collection and the use of latest technologies such as RS, GIS and GPS but also on the approach of studying components of JFM. This approach includes the understanding of JFM from different angles like socio-economic, institutional and ecological. These should therefore be considered for implementation for effective management of forests to increase the forest cover.

7.1 Remote Sensing & Geographic Information System:

- Forest Department should develop a JFMIS i.e. Joint Forest Management Information System as initiated by Chattisgarh Forest Department. This system helps in mainstreaming forestry and socio-economic activities in JFM committees. This is a application software developed as a tool for planning of Joint Forest Management in the state. This is used for storing, retrieving and analyzing village wise information required for micro-level planning.
- Forest Department should develop a database for JFM. Further this database should be updated regularly and at definite short time interval.
- In order to monitor the JFM program, high Resolution RS data such as LISS-PAN merged data, IKONOS, Quickbird etc. in conjunction with GIS can be used for status assessment at regular intervals.
- JFM being the major forest restoration program should be given a status of separate working circle in the working plan of the study area. Presently,

JFM has been included in miscellaneous regulations in the working plan of the study area.

- The forest working plans are usually made for 10-15 years and more over conventional techniques are used for working plan prescription. Thus the use of non-conventional technique such as RS and GIS should be made imperative for drafting working plan prescriptions. It will not only speed up the process of working plan revision but will be done at a shorter span of 3-4 years and that too in a cost effective a manner.
- In taluka such as Tilakwada wherein the natural forest cover is only 2.11% of the total geographic area, the JFM program should be extended outside the legal boundaries of forests whereas, in Dediypada taluka which possess one of the best forests of the state with 62.15 % of the area under the forest cover, JFM should be implemented in dense forests itself for their proper conservation.
- JFM plantations should be demarcated from other forest area by some physical or live boundary which aids in multitemporal studies of the JFM plantations. The major problem faced during the present study is the demarcation of the JFM plantations in the RS data due to absence of any physical boundary.
- All the variables linked with the JFM, which have a negative effect on the plantations viz. fire, unauthorized cultivation, encroachments, illegal felling can be monitored by RS-GIS technique in future.

7.2 Ecological:

- Management of JFM should be done in a holistic manner. It should be taken up as a separate ecosystem instead of giving species-specific approach.

- The work taken up by the government or any other sector regarding forest development should be within sustainable ecological limits.
- Trench cum live hedge of Agave should be developed around the plantations for marking the boundaries. Marking the boundaries act as a regeneration measure controlling grazing in the plantation area.
- Regenerated areas should be protected from fire and grazing for a minimum period of at least three years.
- For post-plantation maintenance, proper care in form of weeding and mulching should be carried out at least three times a year.
- There is a need to review and select suitable timber species for large scale plantation taking a holistic view on the end utilization characteristics and productivity aspects. Multipurpose species such as *Diospyros melanoxylon* capable of sufficing the day-to-day needs of local dependent population should be given more importance.
- Conservation of undercover should be given due importance as proper undergrowth in a forest is essential for maintenance of nutrient status and ecological balance of any forest ecosystem.
- Native species with timber and fuelwood values viz. *Madhuca indica*, *Garuga pinnata*, *Holarrhena antidysenterica*, etc. should be selected for the plantation in the JFM area, rather than exotic species such as *Eucalyptus tereticornis*, *Acacia auriculiformis* etc.
- Under the JFM program medicinal plants should be given special importance as they are having great potential to maintain supply to pharmaceutical industries. But at the same time the plants found in that

habitat should be given more weightage like *Cassia tora*, *Embelica officinalis* etc. as they are commonly found in this area.

- Effective management by implementing the JFM micro-plan prescriptions can further enhance the potential of carbon sequestration. JFM in India could be effectively financed over long term through carbon credit offset schemes currently under international discussions.
- Ranking and assigning values to JFM villages on the may be useful in incorporating management or implementing strategies of the program. However, this ranking need to be replicated in may villages of different agro-climatic zones, so that such indices could be developed to understand the other aspects of JFM, such as institutional and economic factors.

7.3 Socioeconomic:

- The program should develop measures that build up confidence in the village community before the formation of the forest committee which could develop social fencing attitude which will benefit local community.
- JFM program also need to be assessed on the basis of quantitative indicators viz. income, employment, basic needs and resources after the implementation of the JFM, as economic gain is an important factor for the success of the JFM program.
- A market network should be set up so that the sale of minor forest products can have direct linkages between producers and consumers so that they may have more benefits.
- Fuelwood supplies from the forests should be increased, but at the same time quantities required should also be reduced by tapping the potentials of biogas, solar energy, etc.

- The subsidies provided to different sectors using forestry products like railway, saw mills etc. must be stopped.
- At present kerosene is highly subsidized for cooking and illumination. In this context, kerosene subsidy should be considered as environment policy instrument to arrest forest degradation in addition to energy and social policy intervention.
- Other sectors should financially support the forestry sector to relieve it from constraints, as it is an ecologically important sector.

7.4 Institutional:

- Impact assessment of JFM should give more impetus to organizational, financial and resource sustainability to bring logical and sustainable measure.
- There is a need for management set up that takes up a systemic and systematic look at the whole process i.e. from regeneration, to harvesting, to marketing and to processing.
- The co-ordination of different sectors related to forests should be maintained for proper management eg. rural development, tribal development, pulp and wood industries etc.
- In view of the target-oriented program, the JFM are initiated primarily-through enthusiasm of the Forest Department. But at the same time JFM being a people-oriented program, people's confidence should be taken into account prior to initiation of the village forest committee.
- Different awareness programs should be carried out within different sectors, regarding the importance of conservation of forests.

- Training and demonstrations should be an essential part of JFM program, which would help in capacity building among the villagers for which participation of NGOs in creating awareness among the locals should be encouraged.
- There is a need to motivate and educate the people to adopt improved and scientific practices of crop production, agroforestry techniques etc. This could act as a measure for bridging the gap between requirement and availability of fuelwood, fodder and timber.
- There is a need to transform passive participation of the local communities' to active participation, especially among poor and marginalized communities in JFM related activities especially in decision making forum.
- Circle wise meeting should be organized within the department so that the experience gained can be shared by RFO's and the conflicting issues can be resolved and everyone can participate actively.
- There is a dearth of research and documentation on empowerment issues in the context of JFM. Thus, completed or on going research in this field should be documented at a central place so that a successful 'lab to land' program can be implemented. Even if a new project has to be undertaken by the forest department or other institute or individual, this can form the base to avoid repetition of work.