

CHAPTER I

INTRODUCTION

1.0 INTRODUCTION:

Natural resources are essential to keep the Earth's natural processes in balance in order to provide a life-sustaining environment. Forests, the renewable natural resource on the earth occupy a unique position among the various natural resources as they support life on earth in many ways and their services cannot be substituted by any other means. Also, among all the world's natural resources, forests are perhaps the most neglected and are being depleted at an unprecedented and alarming rate. On the global scale, the deteriorating condition of the forests is based on the fact that, in the present scenario the world is losing about 15 Mha of tropical moist forests annually. This massive deforestation seems to have come to symbolize the situation of over exploitation of natural resources (Walter *et al.*, 1998). Overwhelming human and livestock pressures on a shrinking resource base would lead to an inexorable decline of forests and ultimately total exhaustion and extinction.

Forest has always played a pivotal role in the economy of tribal people even before historical times. In developing country like India, dependence of people on forests is inevitable. Nowhere are demands of forest ecosystems greater than in India, where human dependencies are staggeringly high and grow rapidly, fuelled by vast human population, livestock and industrial demands. This has led to decrease in human-to-forest ratio (Poffenberger *et al.*, 1996). Throughout this country, the destruction of natural forest for timber, cropland, fuel wood, pasture, urbanization and commercial industry has had a profound impact on the lives of rural communities, which constitute about 92.16% of the total population of the country (Mahapatra & Mahapatro, 1997). In such circumstances the privileges enjoyed by these rural and tribal people are regulated by forest policies of the state. But unfortunately, these policies are not operated in a manner, which can convince the tribals that protection and reservation of forests was in their interests. Moreover, the tribals who considered themselves to be the owners of the forest, have developed a feeling of being deprived of their own habitat. The crux of the problem therefore, lies in creating a nexus between the forest development and tribal economy by taking full advantage of the tremendous attachment of the tribals to the forest growth and tribal advancement.

1.1 FORESTS AND FORESTRY:

The word “forest” is derived from a latin word “*foris*”, meaning outdoor area, or outside the village boundary (Ghosh, 2003). Etymologically, it is a large, uncultivated tract of land covered with trees and under wood (Anon, 1943). Legally, forest is an area of land proclaimed to be a forest under a forest law while, generally a forest refers to a living community of trees and associated plants and animals. However, the technical definition of a forest, given in the Indian Forest Records, 1936, reads as “an area set aside for the production of timber and other forest produce or maintained under woody vegetation for certain indirect benefits which it provides eg. climatic or protective”.

Regardless of the various definitions, forests have always been associated with people of diverse economic and social backgrounds. The wild-lifer saw forests as a sanctuary for animals and plants, biologist as a gene pool, the urban elite as a recreation area, the villager as provider of fuel wood, fodder and small timber, the tribal as his home and the industry as a source of raw material for pulp, tea chest or plywood, and so on (Khare *et al.*, 1988). Thus, one can say forests are the focal point of the economic and cultural life of a country (Saini & Kalwar, 1991).

Forestry in the broadest sense involves the science, art and business of managing forest for human benefits. Sustainable utilization of forest resources requires effective management and planning. The deforestation and degradation of forest in India over the years lead to such a decline in forest cover that it became a cause of concern, resulting in the emergence of forest policies to conserve existing forests and to regenerate and manage degraded forests. Slowly and gradually the human-forest relationship evolved over a span of time.

1.2 EVOLUTION OF HUMAN-FOREST RELATIONSHIPS IN INDIA:

India is the seventh largest country of the world but, it is also the second-most populous country of the world with a population of more than a billion (Sudha & Ravindranath, 2004). In India, forestry or forest management

initiated way back during the times of monarchy, since the dependence factor on the forest has always been high in this country.

1.2.1 Human-Forest Interactions During the Era of Monarchs:

Two thousand years ago, as much as 85% of the Indian subcontinent was covered with forests. While there is a little written record describing early human-forest interactions, Vedic literature indicates that forests were held in high esteem and the ethanobotanical knowledge of the people of those times was extensive (Rawat, 1991).

Recent discoveries by environmental historians indicate that much of the earth's tropical and temperate forests were extensively manipulated by human populations. Fire, cultivation and planting of useful species all shaped the forest to respond to human needs. Rights and rules to access evolved over time to reduce conflicts among users. Even the most powerful rulers recognized and respected the importance of forest to respond to human needs. Kautilya, the famous authority on statecraft in the Mauryan period wrote a treatise on forest regulations. Shivaji, the dynamic Maratha leader, in his edict of 1670, instructed his officials that mango and jackfruit trees must never be touched since the people have nurtured them like their own children over long periods (Rane, 1991).

1.2.2 Progressive Erosion of People's Rights on Forests During the British Rule:

During the time of the British rule in India, the rights of the indigenous communities were exploited to the maximum extent. All the forest governing policies present at that time were reformed in order to satisfy the needs of the British colonial administrators. The key element of British policy which destabilized, and slowly destroyed, most indigenous communal resource management systems was the introduction of a new regime of property rights, initially through land revenue and later, through forest settlements. The authority of local institutions and their autonomously evolved consensual rules to organize and control use-rights to Common Property Resources (CPRs), including forests, was undermined by the privatization of agricultural land ownership and the appropriation of most forest lands as state property.

Interdependence and reciprocity among resource users at the community level was replaced by accountability to, and dependence on, a distant state apparatus through the new legal and administrative measures it introduced. Simultaneously, people's access and control over forests were limited to the 'rights' and 'concessions' granted to local people for meeting only 'bona fide domestic needs' through forest settlements. There was little acknowledgement of the diversity of people's economic dependencies on forest and the role of forests in sustaining a wide range of farming and non-farming livelihood systems (Sarin, 1996). To be precise, throughout the second half of the 19th century, the forest of rural communities were continuously being reserved and nationalized while the rights of villagers were eroded through a series of legal actions (Poffenberger & Singh, 1996).

1.2.3 Rights of Forest Dwellers in the Independent India:

Since Independence in 1947, the Government of India and the state governments implemented several programs to protect, preserve and manage forest and wildlife wealth. Policies were laid down and programs were designed to relieve the pressure on the existing forests, as well as cater to the needs of the rural and tribal communities. These include:

- The Forest Policy, 1952
- The National Commission on Agriculture, 1976
- The Forest Conservation Act, 1980
- The Forest Policy, 1988

The 1952 Forest Policy was devised especially to meet the needs of the country's defense, communications and other vital industries. There was a clear cut attempt in this policy, as well as through abolition of Zamindari (landlords) Act, to bring private forest under the control of government. The policy clearly stated that "the accident of a village being situated close to a forest does not prejudice the right of the country as a whole to receive the benefits of a national asset". Also, it was oriented towards promotion of timber production, thereby generating revenues by conversion of low-value mixed forests into high-value plantations of commercial species, such as teak and eucalyptus (Sudha & Ravindranath, 2004).

Throughout the 1950s, 1960s and 1970s millions of hectares of forests were leased out to business people at heavily subsidized rates. Thus, it is very clear that the 1952 National Forest Policy did not encourage private ownership of forest by community. Only servitude (limited rights to use) was provided to community in certain class of forests only (Upadhyay, 2001). However, in mid-seventies social forestry programs were initiated, due to strong recommendation from NCA (National Commission on Agriculture), which proved to be relatively successful in releasing industrial forestry from social pressures. It is to be noted here that, social forestry was not tried on forest lands, except on very small measures. Also, social forestry plantations did not promote local species diversity on village commons and private farmlands, which deprived the local communities from a whole range of benefits such as food, fodder, oilseeds, leaf manure and raw materials for artisans. The program was quite successful in north-west India; but in terms of its conceptualization and implementation, it had many short comings. This led to a marked divergence between the stated objectives of social forestry and its actual outcomes (Saxena, 1991).

The Forest Conservation Act of 1980 was passed in order to reduce the indiscriminate diversion of forest land for non-forestry purposes (Ravindranath *et al.*, 2000). Under this Act, prior approval from central government became prerequisite for any non-forestry use of forest land. It also became mandatory for compensatory plantations to be raised on an equivalent area of non-forested land or double the area of the degraded forest land. Thus, the Act placed controls on logging while also recognizing the needs of communities. However, it did little to reverse the historic swing towards bureaucratic control. In fact, environmental concerns often imposed further limitation on community rights, especially in wildlife zones.

As government agencies exerted greater controls over forest, millions of rural inhabitants throughout India, who used these lands to meet their basic needs of food, fuel, building materials, fibers and medicines, increasingly lost right to access. As the rights of rural communities were eroded, conflicts grew between state agencies and the villagers. Disagreements over management priorities led to unsustainable patterns of forest exploitation and to a gradual

degradation of India's vast forests. In 1990, the country possessed less than 10 % of good forest cover (Poffenberger & Singh, 1996).

1.2.4 A Major Shift in Indian Forest Policy:

The deepening environment crisis due to prevailing trends of deforestation has raised serious doubts about forest management system which was followed by the forest department since a century. The inadequacy of this management system to cope with needs of changing times and realization of the crucial role of forest ecosystem in the survival of all life forms have lead to a search for alternative and innovative approach (Sajjid, 2002). This search created a major policy shift in the forestry sector towards decentralized people oriented forest management.

The 1988 National Forest policy, the second forest policy after India's independence was radically different from the earlier National Forest Policy of 1952, as it envisages people's participation in the protection and restoration of forests. It marked a paradigm shift from production based forestry to the concept of 'protection forestry' (Joshi, 2002). This reversed the country's earlier forest management priorities of meeting industrial and commercial demand from the forest produce and maximizing revenue while ignoring local needs. For the first time the need to involve people in the development, protection and management of forest was recognized. This policy emphasized on maintenance of environmental stability through preservation of forests as a natural heritage. This policy created a massive people's movement for achieving its objectives and minimizing the pressure on existing forests.

It was in this context that Ministry of Environment and Forest (MoEF) issued guidelines dated June 1, 1990 for involvement of village communities and voluntary agencies in the regeneration of degraded forest under the title of "JFM-Joint Forest Management".

1.3 JOINT FOREST MANAGEMENT (JFM):

Joint Forest Management can be considered as a historic policy shift towards democratic decentralization of forest management in India. JFM, as commonly understood, seeks to develop partnerships between Local Community Institutions (CIs) and State Forest Department (FD) for the

sustainable management of degraded public forest lands, on the basis of sharing forest management responsibilities and benefits of forest produce. It attempts to change the centralized top down, bureaucratic forest management system, introduced by the British Rule a century ago, to a decentralized participatory local need based planning and management. The core of the JFM concept is the premise that local forest dependents should have the greatest stake in sustainable forest management owing to their cultural, economic and environmental dependence on forests. Thus, the sustainability of forest management lies in acknowledgement rather than denial of symbolic relationship of local people with the forest. Further, involvement of villagers as partners of the program on one hand aids for improvement of forest quality and on other hand assures them secured livelihood through forest produce.

1.3.1 The Informal Origin of JFM:

The apparently sudden spurt in JFM has not taken place in vacuum. The origins of JFM lie, on one hand, in the decades of struggle for rights by the forest dwellers and users and on the other hand on a number of sensitive and concerned individuals within the state bureaucracies. The Forest Policy of 1988 set the stage for participatory forest management in India, though the practice of participatory management was underway even before the adoption of the policy, in 1972 in Arabari in Midnapore district, West Bengal, India. Here, the practice of participatory forest management was initiated on an experimental basis over a small forest block of 1000 ha (Chatterjee, 1996). In this case, a total of 11 villages with 618 families were involved in the rejuvenation of degraded Sal forests. This experiment was observed to be highly successful as it improved the strained relationship between the communities and the Forest Department, which resulted not only in regeneration of the Sal forests but also increased economic returns in terms of revenue. The entire process took about 18 years, which mainly included formal acceptance from the government.

1.3.2 Highlights of JFM Program:

- The JFM approach optimizes the returns, minimizes conflicts and links the forestry development works with overall development of the land based resources.
- JFM is believed to foster a better relationship between the community and the Forest Department compared to pre-JFM times.
- It enhances leadership qualities among the local people and tribals.
- It aims to suffice the basic needs of the dependent community in terms of fuel wood, fodder and Non-Timber Forest Produce (NTFP) from the JFM areas.
- It empowers women by their involvement in the overall JFM-activities as well as the decision making process of the Joint Forest Management Committees (JFMCs). Besides the increased availability of fuel wood, the shift to alternative fuels such as biogas, crop residues and LPG also ensured that women's toil was reduced.
- JFMCs ensures reduction in the illegal extraction of timber and fuel wood by the protection measure adopted by the community.

1.3.3 Source of Funding for JFM:

The extent of the financial support offered to JFM program in India, is quite substantial. In many states, external funding has been the driving force promoting JFM. Currently, 21 externally-funded projects with total outlay of Rs. 48,818 million are being implemented in 13 states (Table 1). The states that undertook JFM on a large-scale were supported by bilateral or multilateral agencies. The Government of India and the respective state government have also supported JFM (Jagannatha, 2004).

Table 1. Externally funded JFM Projects Implemented in India

Sr. no.	Name of the Project	Funding agency	Project cost (Rs. million)	Project period
1.	Maharashtra Forestry Project	World Bank	4315.1	1992-2000
2.	Andhra Pradesh Forestry Project	World Bank	3539.2	1994-2000
3.	Andhra Pradesh Community Forestry Project	World Bank	6539.71	2002-2008
4.	Tamil Nadu Afforestation Project	OECD (Japan)	4992.0	1996-2002
5.	Capacity-building Project for Participatory Management	SIDA (Sweden)	85.0	1997-1999
6.	Dungarpur Integrated Wasteland Development Project, Rajasthan	SIDA (Sweden)	282.1	1992-1999
7.	Rehabilitation of Common Lands in the Aravallis, Haryana	EC (Europe)	481.5	1990-2000
8.	Afforestation and Pasture Development along the Indira Gandhi Canal, Rajasthan	OECD (Japan)	1075.0	1990-2000
9.	Afforestation of the Aravalli Hills, Rajasthan	OECD (Japan)	1766.9	1992-1999
10.	Western Ghats Forestry Project, Karnataka	DFID (UK)	842.0	1992-1999
11.	Forestry and Eco-development Project in Changer, Himachal Pradesh	GTZ (Germany)	187.0	1994-1999
12.	Forestry Project in Kullu-Manali, Himachal Pradesh	DFID (UK)	139.2	1994-2000
13.	Uttar Pradesh Research Project	World Bank	2720.0	1997-2001
14.	Madhya Pradesh Forestry Project	World Bank	2459.4	1995-2000
15.	Rajasthan Forestry Project	OECD (Japan)	1391.8	1995-2000
16.	Forestry and Biodiversity Project, Rajasthan	JBIC (Japan)	NA	NA
17.	Integrated Gujarat Forestry Development Project	OECD (Japan)	6085.0	1995-2001
18.	Eastern Karnataka Afforestation Project	OECD (Japan)	5655.4	1996-2002
19.	Punjab Afforestation Project	OECD(Japan)	4420.0	1997-2005
20.	Kerala Forestry Project	World Bank	1830.0	1998-2002
21.	Capacity-building Project for Rehabilitation of Degraded Forests	AUSAID (Australia)	11.7	1998-2001
	Grand Total		48,818.01	

1.4 STATUS OF JFM:

1.4.1 Reports of Community-Based Forest Management in World:

Past few years have seen a significant acceleration in the implementation of community-based forest management programs and considerable improvement in the results as experiences, both good and bad, have accumulated.

Asia has been at the forefront of participatory forest management wherein first initiative of Joint Forest Management was taken by India (West Bengal) during early 1970s. In Nepal, community forestry program, user groups manage forests according to a management plan drawn up with and approved by the District Forest Officer. In Philippines, some forest management functions have recently been devolved to local government. A community-based forest management strategy has been adopted as the main approach to sustainable development of the country's public forest resources. Other regions are also seeing participatory approaches to forest management. For example, in Africa, several countries have adopted community-based forest management as their main strategy for managing forest resources. In Latin America also, participatory forest management is being extensively used, where efforts to involve indigenous people have been particularly noteworthy.

Collaborative management of protected areas has become the primary approach of international NGOs such as WWF and IUCN in projects in Asia, Africa and Latin America.

1.4.2 Status of JFM in India:

JFM in India is gradually emerging as a powerful tool of sustainable forestry. It recognizes the livelihood and sustenance needs of the people through the principle of 'care and share'. The JFM program has been growing at different pace in different parts of the country and till now twenty seven states have adopted the resolution (Sudha & Ravindranath, 2004). Nationally, 26% of the total forest area is covered under JFM. Madhya Pradesh has maximum area under JFM, followed by Chattisgarh, Andhra Pradesh, Maharashtra, Uttranchal and Jharkhand, which together account for more than

75% of the JFM area (Table 2). Though broadly having similar pattern, the JFM resolution in different States have their own peculiarity. Different types of mechanism has been adopted with regard to constitution of JFMCs, usufructs sharing of benefits, gender issues, protection mechanism, roles & responsibilities of the committees and other related mechanism for the execution of this program.

Involvement of women has always been one of the major objectives of the JFM activities. Rajasthan state's guidelines for JFM are far ahead of other states in addressing women's concerns. Each village of Rajasthan has a women's advisory sub-committee which will contact the womenfolk and address their problems in the meetings. Thus, the emphasis is not only on ensuring the physical presence of women in JFM meetings but also on consulting them and addressing some of the actual issues faced by them.

In relation to the contribution for regeneration of resources for long-term sustainability of JFM, seven states viz. Andhra Pradesh, Himachal Pradesh, Karnataka, Kerala, Punjab, Rajasthan and Uttar Pradesh, have specified that 30-50% of the benefit share of the community has to be ploughed back for developing the resources of the JFM area. One of the important features of the Karnataka order is the "Tree Patta Scheme". Under this scheme protection, development and management of trees on roadsides, canal banks and other similar areas, including urban areas, are part of the JFM program and the forest produce will be shared between the beneficiaries/ members/ institutions and the Forest Department.

Also, if earlier planted areas are brought under JFM, the beneficiaries are entitled to 50% of the benefit share. This has been a motivating factor in many VFCs (Village Forest Committees), where the community has obtained benefits from JFM during the initial years of formation. The Uttar Pradesh guidelines have a unique feature, including sharing of 10% of the proceeds of the sale of large-scale felling of trees affected by calamities such as fire, mass drying, uprooting, insect damage etc., subject to a maximum figure of Rs. 1 lakh.

Gujarat is the pioneering state in setting up of a broad-level working group, called the State Level Working Group (SLWG). It comprises of senior

Table 2. Progress of Joint Forest Management in India (as on 10/09/2003)

Sr. No.	State	Number of JFMCs formed	Area under JFM (ha)	Total population covered under JFM
1.	Andhra Pradesh	7,245	1, 886,764.00	1,822,344
2.	Arunachal Pradesh	308	80,217.00	142,217
3.	Assam	503	79,251.00	321,103
4.	Bihar	493	267,240.94	1,370,714
5.	Chattisgarh	6,881	2,846,762.16	29,886,000
6.	Goa	26	13,000.00	1,680
7.	Gujarat	1,336	181,543.00	1,005,609
8.	Haryana	875	56,000.00	827,000
9.	Himachal Pradesh	835	290,922.80	1,088,589
10.	Jammu & Kashmir	935	49,544.00	339,220
11.	Jharkhand	3,358	847,967.93	2,863,487
12.	Karnataka	3,470	232,734.00	1,216,785
13.	Kerala	323	170,712.00	165,475
14.	Madhya Pradesh	13,698	5,500,000.00	3,319,000
15.	Maharashtra	5,322	1,411,215.00	4,849,875
16.	Manipur	205	93,941.00	134,575
17.	Mizoram	249	10,980.00	191,464
18.	Nagaland	306	22,930.00	416,831
19.	Orissa	15,985	821,504.00	NA
20.	Punjab	287	56,243.95	181,624
21.	Rajasthan	3,667	376,766.00	1,501,475
22.	Sikkim	158	600.00	16,340
23.	Tamil Nadu	1,816	445,965.00	532,479
24.	Tripura	234	34,154.00	111,391
25.	Uttar Pradesh	2,030	112,652.93	3,761,325
26.	Uttaranchal	10,107	859,028.00	3,999,900
27.	West Bengal	3,892	604,334.00	2,326,975
	Total	84,632	17,331,955.12	62,393,477

forest officers, NGO representatives and academicians interested in natural-resource management. The major emphasis is on institutional development and mobilization of resources for supportive activities. A strong NGO network in the state provides necessary support to intensify the program implementation by mobilization of resources and motivating communities to make the process more efficient or effective.

States like Madhya Pradesh and Karnataka moved a step ahead by extending the JFM order to include reserve forests that are predominantly inhabited by tribal people and the vicinities of areas where forest-dependent tribal people live, irrespective of the status of forest.

But the best proposal was seen in Himachal Pradesh where the Participatory Forest Management (PFM) Rules, 2001, specify the preparation of an annual plan for operations under various micro-plans and apportionment of the budget proportionate to the ratio fixed for various components as shown in figure 1

1.4.3 Status of JFM in Gujarat State:

JFM in Gujarat encompasses 1,336 villages managing 181,543 ha of land. Most of the forest areas allotted under JFM were earlier in two forest divisions - Rajpipla West (40.4 %) and Sabarkantha (41.2%). Four more forest divisions - Valsad (North), Valsad (South), Gandhinagar and Sabarkantha (South) -- were included under the program in the year 1998-99. The degraded forestland under JFM, allotted by the Forest Department, increased from 22,500 ha in 1998, to 63,600 ha by the end of March 31, 1999. The present forest cover under the JFM program in various forest divisions is shown in Figure 2 (Madrakartha *et al.*, 2004).

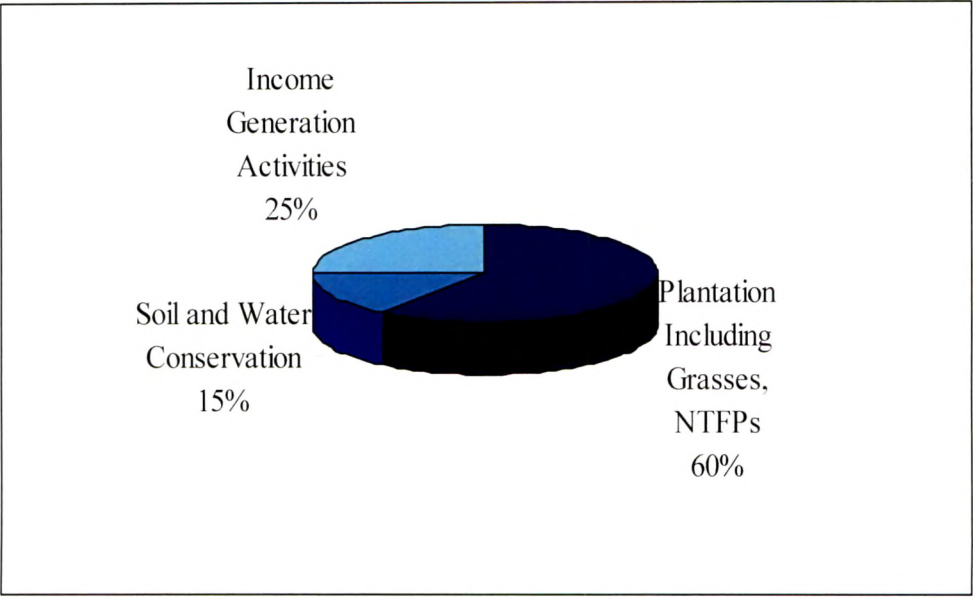


Figure 1. Budget allocation for Micro planning in Himachal Pradesh

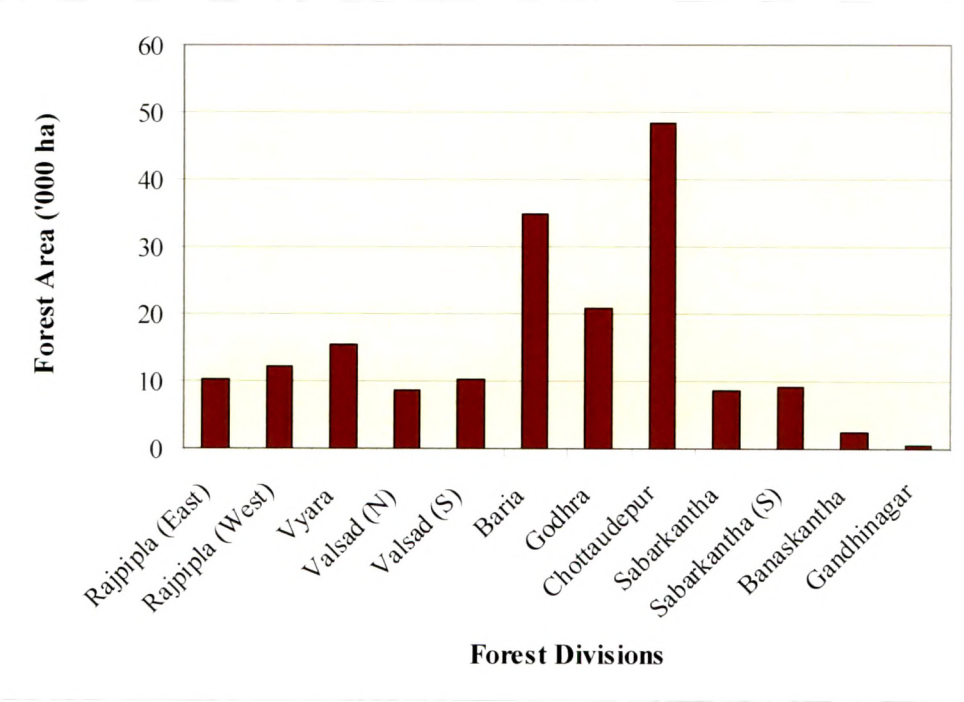


Figure 2. Total Forest Area Under the JFM Program in Different Forest Divisions in Gujarat State

1.5 GUJARAT GOVERNMENT RESOLUTION OF JFM:

Gujarat is one of the pioneering states in the country to have implemented the Government of India resolution on JFM. On the basis of provisions of the National Forest Policy, 1988 and Government of India guidelines, June 1990, the JFM program was formally initiated in Gujarat, with the state government passing resolution on March 13, 1991. It has devised its own policy that includes involvement of village communities living close to forest lands and enlisting the cooperation of the Forest Department and NGOs for the better protection, management and development of the forests. The resolution provided a strong platform for the operations of the existing self-initiated, community-based forest management projects as well as the NGO and Forest Department-initiated JFM institutions. JFM was for the first time initiated on experimental basis in three different districts of the state viz. Surat, Vadodara and Panchmahals (GR, 1991).

The extent of forest cover in the state is very less and to improve the status, concrete steps are being undertaken to ensure an increased forest wealth in the region. For the proper functioning and management of the JFM program there is need to form village level organizations called as Joint Forest Management Committee (JFMC).

1.5.1 The Formation, Structure and Status of JFM Committees:

Village people interested in JFM activities forms a Committee/Mandal. This organisation could be the village panchayat or a co-operative society or development organisation or a forest development and conservation committee. In case the committee is not formed of village panchayat, then it gets registered as separate body in the form of a "co-operative society".

These institutions contact the Divisional Forest Officer concerned, to propose protection or reforestation of the degraded forest to be undertaken by the institution. Such a scheme of protection or reforestation has to be implemented by the village organisation and not supposed to be allotted to any individual member or used for any other non-forest activities.

The institution will constitute a working committee with the following members:

- At least 33% of JFM executive committee should be filled by women.
- A representative of the concerned village panchayat.
- Other members who are interested in forest development.
- A representative of the voluntary organization/financial institution (where these are associated).

This working committee will approve the action plan and will monitor the progress of work from time to time.

The total number of JFMCs formed in various forest divisions of the state over a period of time is given in Figure 3. Chotaudepur forest division has maximum number of JFMCs followed by Baria and closely followed by Rajpipla (East) and Rajpipla (West) divisions. Out of the total 1,336 JFMCs formed in the state only 248 have been registered and only 924 have been issued an Approval letter/*Adhikar Patrak* (FD, 2002).

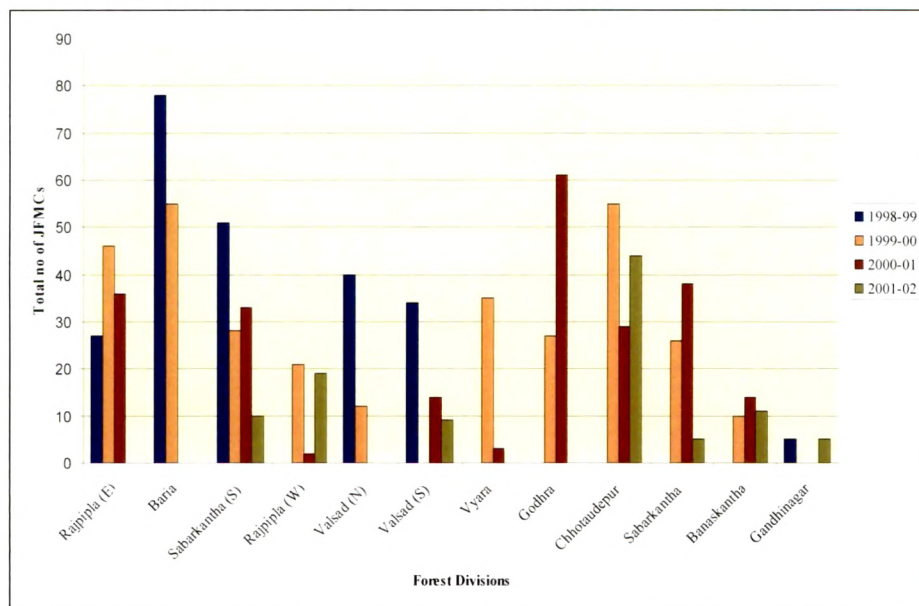


Figure 3. Year Wise Formation of JFMCs in Last Four Years in the State

1.5.2 Purpose:

The main objectives of the JFM program are-

- To elicit participation of village communities/voluntary organisations in the regeneration, conservation, development and management of degraded forests.
- To meet the fuel wood, fodder and small timber requirements of the village communities living around forest areas by growing suitable trees and other vegetation.
- To try to achieve ecological balance necessary for sustainable productive forestry practices.
- To create possibilities for involvement of village communities in tree-based activities.

1.5.3 Responsibilities of Village Community:

- To protect forest land from encroachment, cultivation, fire, illicit felling and grazing.
- To carry out afforestation on wastelands included in the degraded forest land proposed under the JFM program.
- The community through its members will have to prevent any damage to the forest area allotted by any unauthorized persons and will inform the forest officers concerned for taking necessary action.
- All the members of the committee are supposed to plant trees in their farm lands and also in their homesteads wherever possible.
- The committee will ensure that its members do not misuse their right to the use of forest resources.

1.5.4 Voluntary Organisations and Their Responsibilities:

Well known voluntary agencies/ NGOs like VIKSAT, WWF, Aga Khan Trust, *Sad Vichar Privar*, *Sad Guru Seva Trust*, National Dairy Development Board etc. are working in Gujarat and have traditionally played an important role in relief and development works in the state. It is believed

that they can also contribute substantially to the reconstruction and protection of degraded forests with the help of people's participation.

Those voluntary organisations which are interested in afforestation and have the requisite technical knowledge will be associated with this program. A special responsibility of these organisations will be to help people to form *mandals* and to help the village communities in the forest conservation and enrichment activities and also to provide financial assistance. Such organisations, as clarified in the Government of India's guidelines, will not be entitled to any financial and physical benefits arising out of this scheme.

1.5.5 Responsibility of the Forest Department:

- To train the organization/ committee associated in the JFM program.
- To provide administrative and technical guidance for successful implementation of the program.
- To assist the organization/ committee by recommending or providing the requisite documentation in case they try to obtain financial assistance from any other government department or from elsewhere.
- To ensure that the forest protection and enrichment works are executed properly.
- To ensure that the provisions of the Indian Forest Act 1927 and the Forest Conservation Act and the rules made therein from time to time are followed.
- It will be ensured that the area taken up under the program is free from claims of any person who is not a member of the village organization.
- To take necessary action if JFMC members encroaches upon the program area, does not exercise due care to prevent grazing or does not appear to satisfactorily implement the directives given. Under such circumstances the department has all the rights to take away all the benefits given to the organisation without paying any compensation.

1.5.6 Distribution of Benefits:

The benefits accruing to the organisation will be suitably distributed taking into account the details about the repayment of any loan taken by the organization, the contribution to be made to the reserve fund, the contribution made by the members in implementing the scheme etc.

1.6 REPORTS OF STUDIES ON JFM:

The donor agencies, the Ministry of Environment and Forest (MoEF) and the Forest Department have initiated several studies to understand the spread, performance and impact of JFM in the country (Table 3).

These studies were conducted at macro as well as micro level; where in macro level indicates state level while micro level indicated division or individual JFMC-level studies. In case of multi-state studies, there was a study involving five states, another involving four states and two states each and the rest were not based on field studies. The studies were conducted by various agencies such as: consultancy firms, academic institutions and NGOs, apart from the Forest department's own internal monitoring system. Though, over 200 JFM study reports are available, assessing JFM at national, state, district and village levels, only 99 reported the methods used, and issues addressed which come under various heads like: socio-economic, institutional, ecological, gender issues and training. However, no reports of the Forest Departments internal monitoring system are accessible (Jagannatha, 2004).

One of the important thing to note here is that most of the JFM studies were conducted by consultants or NGOs, based on the terms of reference developed by the Forest Department and the donor agencies (Table 4) (MoEF, 2003). The facts have clearly revealed that there is no clearly-defined monitoring system to understand the periodic changes, performance and impact of JFM. Monitoring is imperative to understand the changes over time with respect to the vegetation. In addition to this, awareness amongst the community members, participation in various JFM activities, the representation of women, the benefits accrued etc. also need to be assessed. Also there is need to document how these changes have taken place over time and the factors that determine the change and its impact.

Table 3. List of Joint Forest Management Studies Conducted in India

Level of assessment (number of studies)	Issues addressed				
	Overall	Socio-economic	Institutional	Ecological	Gender
Multi state (17)	5	4	4	1	3
Andhra Pradesh (5) • Macrolevel – 2 • Microlevel – 3	2	-	2	1	-
Haryana (15)	-	6	3	4	2
Karnataka (22) • Macrolevel – 3 • Microlevel – 19	3	6	3	3	7
Madhya Pradesh (9) • Macrolevel – 1 • Microlevel – 8	2	3	1	2	1
West Bengal (11) • Macrolevel – 9 • Microlevel – 2	1	6	1	2	1
Orissa (7) • Macrolevel – 6 • Microlevel – 1	-	3	3	-	1
Gujarat (4) • Macrolevel – 3 • Microlevel – 1	1	1	2	-	-
Rajasthan (2)	-	-	-	1	1
Tamilnadu (2) • Macrolevel – 1 • Microlevel – 1	-	-	1	1	-
Maharashtra(1) • Macrolevel – 1	-	1	-	-	-
Bihar (3) • Macrolevel – 3	-	2	1	-	-
Himachal Pradesh(1) • Macrolevel – 1	1	-	-	-	-
Uttar Pradesh (1) • Micro level - 1	-	1	-	-	-
Total (100)	15	33	21	15	16

Table 4. Studies Assessing Joint Forest Management Program in India

Study	Year of study	Institutions involved	Scale of study	Stakeholder perspective
APFD, 2001	2000	Forest Department, NGOs, academic institutions	10 districts in AP	Forest Department
Anonymous, 1998	1998	NGO Network	State (AP)	NGO, Village Community
Outreach, undated	1998	Consultants	2 districts in Karnataka	Forest Department, Donor Agency
KFD, undated	1998	Consultants	2 districts in Karnataka	Forest Department, Donor Agency
Hill and Shields, 1998	1998	Consultants	2 states (WB and Gujarat)	Donor Agency
Blunt <i>et al.</i> , 1999	1999	Consultants	State (HP)	Donor and Forest Department
PRIA and Samarthan, undated	1998	PRIA, Samarthan	State (MP)	Forest Department and NGO
Sharma and Ramanathan undated	2000	Consultants	1 district in MP	NGO and Community
TERI, 1999	1999	TERI	National (WB, Orissa, AP, MP)	MoEF
World Bank, 1999	1999	Consultants	National (MH, UP, WB, MP, AP)	Donor Agency
Gupta, 2003	2003	Aga Khan Foundation	VFC (Gujarat)	NGO and Community

APFD: Andhra Pradesh Forest Department, KFD: Karnataka Forest Department, PRIA: a NGO, TERI: Tata Energy Research Institute, MoEF: Ministry of Environment and Forests, AP: Andhra Pradesh HP: Himachal Pradesh, MH: Maharashtra, MP: Madhya Pradesh, WB: West Bengal, UP: Uttar Pradesh.