

**A CRITICAL ANALYSIS OF JOINT FOREST MANAGEMENT
PROGRAMME ON KNOWLEDGE AND PERCEPTION AMONG
BENEFICIARIES IN NORTHERN KARNATAKA**

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APRIL, 2003

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*Thesis submitted to the
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By

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CERTIFICATE

This is certify that the thesis entitled "A CRITICAL ANALYSIS OF JOINT FOREST MANAGEMENT PROGRAMME ON KNOWLEDGE AND PERCEPTION AMONG BENEFICIARIES IN NORTHERN KARNATAKA" submitted by M. SUDHEENDRA for the degree of DOCTOR OF PHILOSOPHY in AGRICULTURAL EXTENSION EDUCATION, to the University of Agricultural Sciences, Dharwad, is a record of bonafide research work done by him during the period of his study in this University, under my guidance and supervision and the thesis has not previously formed the basis of the award of any degree, diploma, associateship, fellowship or other similar titles.

**DHARWAD
APRIL, 2003**


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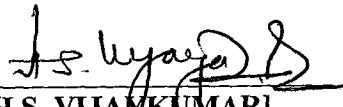
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AFFECTIONATELY
DEDICATED TO MY BELOVED
PARENTS
SRI. S. MAHALINGAPPA
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SMT. S.H. SULOCHANAMMA

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INTRODUCTION

1, INTRODUCTION

India is one of the 12-mega diversity countries having a vast variety of flora and fauna, commanding seven per cent of world's biodiversity and supporting 16-major forest types, varying from the alpine pastures in the Himalayas to temperate, subtropical forests and mangroves in the coastal areas. Forest areas are rich in biological resources with habitat variations. Diverse ecological regions, complex topography, heterogeneity of soils, climate, geographical history and locations have contributed to the variety of flora and fauna. Besides their aesthetic, ecological and scientific value, the rich biological resources of forests contribute to social, ethical, cultural and economic value to a large extent.

Biodiversity as a 'National Security', the words 'National Security' conjure up images of armed forces, tanks and in recent times, Kargil, rarely do we consider another critical aspect of Security: that of safeguarding the natural 'floor' on which all of us stand. Fresh air, clean water and productive land without which we would perish. The following facts still do not make us sit up in alarm.

The damage caused by Orissa's killer cyclone in 1999 was most severe where mangrove forests that once protected the coastline had been cut for coastal development. Destruction of forest, fisheries and other natural resources on which traditional livelihoods depended, is

pushing tens of millions of people to seek employment in cities causing already over burdened on civic amenities to collapse. Water scarcity is an increasingly endemic problem even in areas with high rainfall like Chirrapunji, because the forests that could have been cleared or degraded.

Millions of hectares of agricultural land in Punjab, Haryana, Eastern Uttar Pradesh and else where are becoming unproductive, as the soil loses the biological nutrients that were once replenished by a diversity of micro-organisms, plants and animals.

The health status of hundreds of rural communities is declining, as a diversity of free nutritional food and medicinal plants they once had access to, are no longer available, and food and medicines from the market are either too expensive or unable to provide the same health inputs.

The above and many other consequences are the results of the severe loss of biodiversity that India has witnessed. Over the last century or so half of our forests have gone, one third of our wetlands drained out, 70 per cent of fresh water is polluted and 40 per cent of mangroves destroyed. At least 10 per cent of our 1,35,000 species of plants and animals are threatened (Kothari, 2001).

Biodiversity is the base of country's food security. Of most important is the need to instill in the minds of India's planners and decision makers the critical value of biodiversity. It is first of all, a moral

imperative to protect nature not at least all of because we ourselves evolved from it, and because all species have a right to survive. But if this does not convince social scientists and politicians, the fact is we simply cannot do without biodiversity. It is the backbone of the livelihoods of the majority of India's population, even of those that appear to have moved away from it by adopting chemical based agriculture or fuelwood selling for a living. It is the source of essential ecological functions that we all depend on, including water security, and for diverse and effective health care system.

Biodiversity conservation cannot however happen unless it becomes a mass movement and unless the laws, policies, technologies development projects and demographic trends that currently threatening it are tackled head-on. Various thematic working groups under National Bio-diversity Strategy and Action Plan (NBSAP) are addressing this. Wildlife experts will list the action relating to critically threatened plants and animals. Experts on aquatic and terrestrial ecosystem are analysing whether the current network of protected areas is adequate. The important bird area project, involving several dozens of wild life groups across India, will provide with priority sites for conservation. A special focus is going to be on micro-organisms otherwise neglected in all conservation programmes.

The forest cover of the country has been estimated to be 637,293 sq. km which is 19.39 per cent of the total geographical area of the country. The dense forest, open forest and mangrove forest constitute

per cent, 7.76 per cent and 0.15 per cent of geographic area, respectively. Scrub and non forest are other classes in the scheme of classification. The state wise details of the forest cover in three categories of some of the states, Madhya Pradesh accounts for 20.68 per cent of the forest cover of the country, followed by Arunachal Pradesh (10.80 per cent) and Andhra Pradesh (6.94 per cent). The seven north eastern states together comprise 25.70 per cent of the forest cover. No discernible forest cover has been found in the Union Territories of Lakshadweep and Pondichery. About 85 per cent of the total mangroves, a unique ecosystem occurring in the inner tidal regions are in West Bengal, Gujarat and Andaman and Nicobar Islands (Anonymous, 2001a).

Forests, however, are also an important source of what is termed as 'minor forest produce' (Leaves, seeds, gums, waxes, dyes, resins, bamboo, canes, bhabbar grass, etc.,) which not only has immense commercial value, but also it is collected by the poor and marginalized farmers that play an important role in providing them support under difficult economic conditions. In addition to this, forests are an important source of meeting the needs of urban industrial interests and have thereby become the subject of contending claims of poor and rich.

Apart from the economic and social value of forests, the ecological worth of forests is beyond doubt. They are crucial to the production of oxygen, holding rainwater, enrichment of soil, and checking soil erosion, control of wind and atmospheric temperature.

The village communities of India have historically been using common property resources such as forests and pastures for fuelwood, food, fodder and timber. However, by exercising state property rights, the government gradually imposed restrictions on the use of forests, mainly to earn revenue and protect the commercial interests of rulers. Private rights were also created on agricultural lands to promote vested interests in cultivable land. A new category of land was created between public and private, land that was 'given' to communities for use, which included village forests.

Yet village forests and pastures, acting as a buffer between communities and the government, suffered heavily due to overuse and lack of management. It has been assumed perhaps that the communities, governed as they were by specific rules of social conduct and collective responsibility, would develop procedures for the sustainable management of these newly received common property resources. But the existing social institutions in villages are not able to adjust to the rapidly changing situation. Instead increasing commercialization, brought about by the onslaught of market forces and breaking down of social norms, created strong incentives for private economic control which led to overuse. With dwindling village forests, government owned Reserved and Protected Forests also came under heavy pressure.

To deal with this situation, the Forest Department has now redefined its role. Recognizing that forests cannot be managed in

isolation of the communities which are dependent on them and also recognizing that communities need support to develop sustainable management strategies, collaborative relationships are now being established, sometimes in the form of Village Forest Committees (VFC) and Village Forest Protection Committees (VFPC). Government and non-government organizations can now concentrate on supporting local community initiatives and helping them to overcome identified constraints.

In December 1988, the Government of India had presented in the parliament the National Forest Policy. The salient features of the new policy were:

1. Maintenance of environmental stability through preservation and restoration of ecological balance.
2. Conservation of the natural heritage of the country by preserving the remaining forest and protecting the vast genetic resources for the benefit of posterity.
3. Meeting the basic needs of the people particularly fuel wood, fodder and small timber requirements of rural and tribal people.
4. Maintenance of intrinsic relationship between forest and the people living in and around forests by protecting their customary rights and concessions.

The main approach outlined in the existing policy forests will be fully protected, emphasis will be given to enhance forest cover on hill

slopes and catchment areas of rivers. In order to conserve biological diversity, the network of sanctuaries, national parks and other protected areas will be extended and managed more efficiently. People will be actively involved in programmes of protection, conservation and management of forests.

The 1988 National Forest Policy and the Government of India circular of June, 1990 have laid down the basic frame work for the involvement of local people in the protection and development of forests and recognizing their right on forest produce. Already 22 state governments have issued orders laying down the modalities for involving local villages in the management of forests. This type of management is referred to as Joint Forest Management Programme (JFM). A programme of JFM with village communities was first started in West Bengal in the year 1972 at the initiative of young Forest Officer Dr. Ajit Kumar Bannerjee, which then spread to other parts of the country. Joint forest planning and management basically includes sharing of products, responsibility, control and decision making authority over forest lands between forest department and local user groups. It involves a contract specifying the distribution of authority, responsibility and benefits between villagers and state forest department with respect to lands allocated for joint management.

Under Joint Forest Management Programme, village community in the vicinity of the forest is to be organized into a committee for the protection and development of forests. In Karnataka, this committee is

called Village Forest Committee (VFC). All forestry activities are required to be planned and executed, keeping the interests of the people and their participations as major components. The felt need of the beneficiaries of committee has to be accommodated in the management plan. The knowledge of village elders and their opinion have to be given due weightage while considering various options. Currently there are about 36,130 village forest committees helping to regenerate and planting over 10.25 million hectare of degraded lands in 22 states, out of total degraded forest area of 30.98 million hectare (Anonymous 2001a).

The JFM approach has been adopted to protect and rehabilitate only the degraded forests and has not been extended to non-degraded forest areas. Degraded forests for the purpose are, however, somewhat loosely defined. Most of the forests in India suffer from some form of degradation. The Forest Survey of India (Anonymous, 1991) classifies forests as dense forests (crown density 40% and above), open forests (crown density 10 to <40%) and scrub (crown density <10%). Generally speaking, the open and scrub forest areas are regarded as degraded.

Joint Forest Management Programme is under implementation since April, 1993 in Karnataka. This has been operating under Western Ghats Forestry and Environmental Project funded by Overseas Development Administration of the United Kingdom. Joint Forest Management Programme has been in operation in northern Karnataka since 1996 funded by Overseas Economic Cooperation Fund of Japan (OECEP).

The objectives of the Joint Forest Management Programme are:**General objective:**

To involve people towards the planning, protection, regeneration, development and management of forest area and other government lands degraded due to biotic pressure.

Specific objectives:

- 1) To protect and rehabilitate degraded forest with the involvement of local people.
- 2) To meet the requirements of the local people consistent with the productive capacity of the forest i.e. fodder, fuelwood, timber, etc.
- 3) To generate employment opportunities for landless, marginal and small farmers.
- 4) To bring economic improvement of the rural people.
- 5) To generate employment among rural people in places where non farm activities do not exist.
- 6) To employ unemployed youth and women in afforestation and cottage industries and provide training.
- 7) To protect environment by introducing astra chula, gobar gas, solar heater, beekeeping and cultivation of medicinal plants etc.
- 8) To encourage school nurseries and sacred groves.
- 9) To coordinate and help in the execution of programmes of other development departments.

Karnataka State has a geographic area of 1,91,78,100 hectare, of which 38,28,430 hectare (19.96%) is under the control of the Forest Department. The forest area under different types are, evergreen and semievergreen (5,80,000 ha.), moist deciduous (5,78,000 ha.) dry deciduous (7,27,000 ha.), scrub and thorny (8,34,000 ha.), and unwooded (11,09,000 ha.). Further, 50 per cent forest area is highly degraded. Thus, 10 per cent of the geographical area of the state is under good tree cover. Forests are also classified as reserved (28,68,900.96 ha.), protected (3,93,000.72 ha.), unclassified 5,23,100 ha., village forests 12,400 ha. and private forests 30,800.42 ha. The unclassified areas include C and D class lands which are mostly barren transferred from the revenue department. Karnataka represents 5.51 per cent of country's population occupying 5.85 per cent of country's area. The per capita forest area in the state is just 0.10 hectare (Anonymous, 2000a).

It has been the experience over several decades that damage to the forest was due to biotic interference namely illicit felling, grazing, fire and encroachment which have increased over the years. In spite of several measures like intensive patrolling, increase in staff, communication network, the desired results have not been achieved. Keeping this in view the state government desires that the people living in the nearby village adjoining the forests are actively involved in the conservation, planning, protection, regeneration and development of degraded forests. Further, the plantations raised over C and D class

lands, Gomal, Foreshores of tanks, road-side, canal banks and other government lands have disappeared due to the apathy of people. There have been a conflict in the use of common property resources, therefore, government has come to the conclusion to involve people actively in the conservation, planning, protection, regeneration and development of these common property resources outside the degraded forests and the above objectives could be achieved through a system of joint forest management. Non-government organizations can help in catalyzing this movement.

Salient features of Joint Forest Management Programme in Karnataka:

1. Degraded forest areas having canopy cover less than 25 per cent are to be assigned for Joint Forest Management Programme.
2. The Member Secretary of the Village Forest Committee (VFC) will be from the Forest Department (FD).
3. The areas planted under the employment generation scheme may be brought under Joint Forest Management Programme.
4. Benefits to people are from plantation harvest and Non-Timber Forest Produce (NTFP) collection.
5. The Village Forest Committee (VFC) will be responsible for the protection of the forests coming under the jurisdiction of the Joint Forest Committee.
6. The forest dependent communities will have collection right over the Non-Timber Forest Produce (NTFP).

The first Village Forest Committee (VFC) in the state under Joint Forest Management Programme was constituted at Talagadde village on 12th October, 1993 in Ankola taluk of Uttar Kannada district. In Karnataka more than 1600 Village Forest Committees have been functional and about 77,500 hectares of degraded forest area has been brought under Joint Forest Management Programme (Sadashivaiah 2001).

Every family resident in a village can become a member of Village Forest Committee. One adult person above the age of 18 years from the family will act as it's representative in VFC. At least one third of VFC beneficiaries will be women.

The success of Joint Forest Management Programme largely depends on the extent of participation of the beneficiaries. In order to achieve the objectives set forth, it is important for the development administrators to have an idea on the knowledge and perception of beneficiaries about Joint Forest Management Programme. Knowledge of this would help in increasing the efficiency of the field personnel of the Department of Forest. This is particularly important from the viewpoint of making village forest committee self-supporting and self-sustaining. The scientific study has not been conducted on knowledge and perception of Joint Forest Management Programme of beneficiaries in Karnataka. Therefore, the present study was conducted with following specific objectives.

Objectives of the study

1. To study the socio-personal characteristics of beneficiaries of Joint Forest Management Programme.
2. To measure the knowledge level of beneficiaries of Joint Forest Management Programme.
3. To findout the extent of perception of Joint Forest Management Programme by the beneficiaries.
4. To analyse the benefits derived by the beneficiaries from Joint Forest Management Programme.
5. To obtain suggestions from beneficiaries for better implementation of Joint Forest Management Programme.

Scope and limitations of the study

The present study would provide empirical information about the level of knowledge and perception of Joint Forest Management Programme by the beneficiaries. Based on this information, the forest department could design and organize the programmes suitably to reach and influence a large number of beneficiaries in an effective way. The findings of the study would also help the policy makers, administrators and farmers in implementation of appropriate policies for promotion of Joint Forest Management Programme.

Due to limitations of time and resources at the disposal of the student researcher, the study was conducted in two districts in northern Karnataka. The findings of the study are limited to the situation prevailing in that area and cannot be generalized to the entire area.

Operational definitions used in the study

1. Knowledge

It is operationalised as the factual information possessed by the beneficiaries about Joint Forest Management Programme at the time of investigation.

2. Perception

Perception is operationalised as the opinion expressed by the beneficiaries of Joint Forest Management Programme towards various components of the programme as agree, partially agree, and disagree.

3. Joint Forest Management Programme

Joint Forest Management Programme is a comprehensive scheme of the Karnataka Forest Department (KFD) to partner with and involve local communities in the conservation and sustainable management of forest.

4. Village Forest Committee

It is the basic unit and center of activity of all JFM work. To enable this, VFC's are empowered to function as elected, self-governing and financially viable village bodies. Further they will plan and implement projects towards meeting the local communities' forest based needs on an ecologically sustainable basis.

5. Beneficiaries

Every family resident in the village can become a beneficiary of the VFC. The general category beneficiaries will have to pay Rs. 2 and

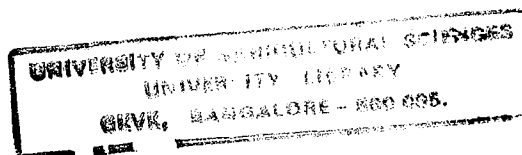
schedule caste and schedule tribe beneficiaries Rs. 1 towards the membership fees. All the beneficiaries of Village Forest Committee thus become beneficiaries of Joint Forest Management Programme.

Benefit

Benefit means a beneficiary will be entitled to get grasses, fodder, leaves, fuelwood and such other produce free of cost for his/her bonafide requirements. Individual beneficiary will get 25 per cent to the total income.

Employment generation

It was referred to man-days generated on their field and other ancillary activities after the advent of Joint Forest Management Programme.



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REVIEW OF LITERATURE

2. REVIEW OF LITERATURE

The purpose of this chapter is to review the earlier research work carried out in the area of the study. A few studies have been conducted in the country on knowledge and perception of beneficiaries in Joint Forest Management Programme. The literature available in this area is scanty. Hence, the related studies on JFM have been reviewed for the present study.

The review of literature is presented under the following headings.

- 2.1 Importance of forest development and conservation.
- 2.2 Concept of Joint Forest Management Programme.
- 2.3 Empirical studies on Joint Forest Management Programme.
- 2.4 Peoples participation in developmental programme.
- 2.5 Socio-personal characteristics of the beneficiaries.
- 2.6 Knowledge of the beneficiaries about developmental programmes.
- 2.7 Perception of developmental programmes by the beneficiaries.
- 2.8 Benefits derived from the programmes by the beneficiaries.
- 2.9 Relationship between socio-personal characteristics and knowledge.
- 2.10 Relationship between socio-personal characteristics and perception.
- 2.11 Problems encountered and suggestions offered in the operation of Joint Forest Management Programme.

2.1 IMPORTANCE OF FOREST DEVELOPMENT AND CONSERVATION

Chatterjee (1991) viewed that rapid deforestation resource user conflicts and poverty have led to a growing number of foresters and social scientists to conclude that there was a need to involve adjacent beneficiary communities in the protection of forests.

Desai (1991) reported that the planning commission during VI and VII five year plans laid greater stress on integrated approach to the conservation of land, water, flora and fauna in addition to the prevention of atmospheric and terrestrial pollution. To achieve the objectives laid down in the VII five-year plan regarding forest and environment, the Ministry of Environment and Forest was created in the year 1985, and it estimated that India is losing forest at the rate of 0.5 per cent per year. Accordingly, forest cover in 1989-90 was around 9 to 10 per cent of the total land area (30 million hectares). Further he reported that India has lost nearly 2.5 million hectare of mangrove forest over the last 80 years. These remarkable forest can grow on marginal lands and survive water logging, soil infertility, salinity and heavy winds, but they have not been able to face onslaught of human beings.

Indukar (1992) observed that the National Forest Policy of 1988 outlined the various developmental programme of environment, forest, wildlife, National Waste Land and development in VII five year plan. The principal thrust of all these programmes was to ensure environmental stability which is so vital for the ecological balance and conservation of forest.

Tewari (1993) reported that total area afforested from 1950 to 1980 was 3.5 million hectare giving an average of 0.11 million hectare per year. The cumulative expenditure on reforestation/afforestation during this period from all sources was Rs. 241 crores with an average of about Rs. 8 crores per year.

Dey (1997) reported that women can play dominate role in the implementation of Joint Forest Management strategies because of their intimate association with forest. They depend on forests for various livelihood security services. They must get equal representation in the village forest council and have a choice in the decision making *viz.* in degraded forest, vegetative cover and biodiversities. Various women groups can be constituted to establish alternate income generation activities.

Pandey (1997) reported that an attempt to analyse the perception of incumbents to the forest service is made regarding the process of approach implementation of JFM. The analysis discussed is based up on their exposure to JFM during their training session in the academy, tours to different parts of the country and experience the job training. The study revealed that most of them have optimistic thoughts about the process and accept JFM as one of the options of regulating forestry in India.

Murthy (1998) in his paper narrated historical prospect of forest conservation in India with the participation of local people, NGO's

environmentalists etc. He opined that JFM could work better provided the return from regenerating areas were convincing to the local people. He suggested that JFM should be based on primarily community needs.

Sreedharan *et al.* (1998) reported that more than 30 per cent of total forest area in Tamil Nadu has been badly degraded due to heavy biotic interference in the past years. Neither the enforcement of various legal acts nor the raising of plantation could produce any desired results. It was gradually realized that the only answer would be to take-up afforestation programme on watershed basis with complete participation of people in Joint Forest Management Programme.

Chaturvedi (2000) reported that Joint Forest Management Project have been initiated by government and are not a spontaneous response of people to safeguard forests. The NGO involvement is only to serve their own vested interests. Pressure of livestock grazing is atleast eight times greater than what forests can support lopping of tree leaves for fodder and sweeping of forest flowers has drastically reduced the growth of forests.

Sharma (2000) reported that importance of forest in maintaining the life support system in terms of ecological, economical and socio-cultural framework is better understood now, and accordingly the forest administration is undergoing a paradigm shift from regulatory to participatory management, while sporadic efforts were made by some self-initiated groups and individuals. However with an impressive 36,075

village level committees jointly managing around 10.24 million hectare forests in 22 states.

The above reviews relating to the importance of forest development and conservation revealed the benefits of the forests both direct benefits in terms of fodder, fuelwood, non-timber forest produce and indirect benefits like rainfall, soil and water conservation, good climate, ecological balance etc.

The national forest policy 1988 highlighted the importance of forest through involvement of local people in forest conservation development and management of forest.

2.2 CONCEPT OF JOINT FOREST MANAGEMENT PROGRAMME

Moencha (1991) defined the joint forest management as the sharing of products responsibilities, control and decision-making authority over the forestlands between forest departments and local user groups. It involves a contract specifying the distribution of authority, responsibility and the benefits between the villages and state forest departments with respect to lands allotted for joint management. He further opined that joint management may be an appropriate solution to forest problems where i) resources available can be shared with villagers for increased forest protection ii) a direct link can be established between the improvement of degraded forests and access to specific forest resources, iii) individual villagers are the primary users of a specific

forest area iv) the caste/economic makeup of villagers is relatively homogeneous and v) villages have high dependence on forest resources.

Singh and Ballabh (1991) observed that JFM is based on the principle of give and take, in which it is envisaged that the forest department officials would abandon their autocratic behavior in dealing with the people and ensure the people could participate in regeneration, protection and management of resources.

Somanathan (1991) indicated that joint forest management resolution highlights the unsatisfactory benefits that would be available to forest protection committee beneficiaries against the number of enormous task for them.

Raju (1992) opined that management of natural resources through peoples participation is generally being accepted as an effective strategy to arrest on reverse an alarming rate of resource degradation and it's economic and environmental consequences.

Arora (1993) stated that the JFM programme aims at directly linking the immediate needs and interest of local communities with the management and protection of forests. This may be in terms of providing seeds, leaves and poles to people as in West Bengal, provision of bamboo poles, irrigation water, fodder and fiber grasses as in Haryana or provision of minor forest produce and timber in other states.

Shah (1993) opined that unless there was trust, confidence and mutual respect between rural people and forest field functionaries Joint Forest Management Programme does not have even chance of success.

Arora (1994) said that JFM is an attempt to induce people's participation in forest protection by making protection an economically rewarding activity from the viewpoint of the people.

Chatterjee (1994), said that JFM is an ideal development programme. It will help in changing position of women by making them joint beneficiary in forest protection committees. The strengthening of the institution will improve ecology, inturn improve their economy. JFM thus addresses both practice needs and strategic interest of women and men.

Khanna (1994) defined JFM as a programme essential to induct villagers formally into the forest management system and to make the production system more responsive to community needs thereby ensuring sustenance of the resources.

Mukherjee (1994) emphasized that all forestry activities in 'Vana Samrakshna Samiti' (VSS Andhra Pradesh) required to be planned and executed keeping the interest of the people and their participation as a major thrust on the management of forest. The felt need of the beneficiaries of samiti is required to be accommodated in the management plan. The knowledge of the elders and their opinion and participation of women are to be given weightage for the success of Joint Forest Management Programme. Further he pointed out that JFM has four fold objectives of protection, regeneration productivity and people's participation.

Murthy (1995) in his paper had observed that the concept of JFM is getting good reception in south Canara. The launching of JFM has

created good awareness among the public. It has helped the people concerned to show their experience and gain from it. All village forest committees have taken up nursery work and also active in forest protection, also restricted the entry of outsiders inside their village boundaries for collecting various usufructs.

Ajaykumar *et al.*, (1996) concluded that conceptually JFM seems to be the right approach for regenerating of degraded forests and their sustainable management. He also stated that increasing population which can offset the gains of any development programme including that of JFM.

Ajaykumar (2000) reported that JFM is a strategy in the right direction for decentralized people-oriented Forestry Management in India and it is also a process of empowering the people and strengthening democracy. However the need of the hour is to analyse the ground realities and then take a decision to make the JFM programme a long term sustainable movement.

Jha (2000) reported about the reshaping of the forest policies in India and its implementation in Maharashtra. Fundamental shift in the forest policies is evident as the role of local community is gradually changing from more beneficiary to the equal partner in management. However one of the largest states like Maharashtra could not keep pace with the rest of the country in implementation of the new forest policy. Maharashtra forestry project aided by World Bank could give some boost

to the JFM movement in Maharashtra. Flexibility, legal backing and proper institutional framework can help in accelerating the JFM movement.

Malkania *et al.* (2000) reported that Arunachal Pradesh joined to JFM streaming resolution being passed by the state government. At present about 10 projects are being implemented under this scheme in different parts of the state.

Upadhyay (2001) is of the opinion that protecting forest under sole ownership of government in past along with policing approach has not given desired result. Hence protection and regeneration of forest may be tried under co-ownership (joint ownership) of government and village community on experimental basis where JFM is being implemented. On seeing the result of co-ownership, it can be expanded to other areas.

Kinhal (2002) suggested that the concept of shifting present participatory mode from group think method to a team think method. Such a shift should enhance the success of participation leading to better conservation of natural resources.

It could be concluded from the reviews that conceptually JFM seems to be the right approach for regenerating of degraded forest. Different persons defined the concept of JFM in a different ways, but it seeks to develop partnership between rural people and forest department for sustainable management of forest areas on the basis of trust and mutually defined rights and responsibilities of both the parties.

2.3 EMPIRICAL STUDIES ON JOINT FOREST MANAGEMENT PROGRAMME

Poffenberger (1990) indicated that the requirements for successful management of forest that emerged from the analysis of Vana Panchayat in Uttar Pradesh hills include small and homogenous groups having high stake in the forest resources, good leadership, assurance of equitable distribution of forest produce and existence of an organization to formulate, enforce the rules, etc. He also reported the evidences from Himachal Pradesh that female field motivators have actively catalysed existing women mahila mandal groups to take active role in forest protection and management and also older village women can effectively assist villagers to build resource management institutions.

Chatterjee (1991) concluded from the experiences of West Bengal and Gujarat that the cost of protecting and regenerating forest through joint forest management can be as low as five per cent of the outlay in traditional method of afforestation.

Neera and Kundan (1991) attributed the success of forest protection efforts by forest communities in Orissa to the presence of strong informal organizations, the ambiguous status of protected forests and regeneration of forests being on all gain situations for the local people. He further reported that approximately 18,000 hectares (i.e., 3% of Orissa's forest area) are managed by communities as common property resource through informal bodies and nearly 6,000 forest protection committees have been formed till then.

Roy (1991) found that frequent brain storming sessions with foresters and resource persons in professional institutes of West Bengal, who have experience of working with forest dependents are helpful in making forester to understand the community problems and each others perception about the forest.

Shah (1992) reported that the Gram Vikas Mandal of Pingot in Gujarat sponsored by Aga Khan Rural Support Programme got the Indira Priyadarshini and Rikshamitra award for 1990 because it converted about 190 hectares of barren land, revenue land and forest land into thick forest through persistent protection and care.

Bahuguna (1992) attributed the success of participatory forest management in Jhabua and Harda district of Madhya Pradesh to promotion of use of alternative and cheap energy resources such as gobar gas, solar etc. and for providing alternative employment to fuel wood collectors.

Palit (1992) observed that in scattered blocks of protected forests in West Bengal the number of forest protection committee was high while for reserved forests the same was comparatively low.

Mishra (1993) stated that through consistent efforts of Vana Suraksh Sahayog in Kudardih Panchayat of Jharkhand, forest was created with increased production of fruits and nuts for supplementing the cereal food of the local community. Fuelwood and drinking water were no more scarce in the region.

Singh and Khare (1993) reported that availability of fuel wood in Harad range (Hoshangabad division in Madhya Pradesh) was increased by four times. The mean annual income of tribal households has increased to Rs. 2,523. Per household constituting 22 per cent of total.

Shah (1993) concluded that JFM cannot be implemented in isolation. It has to be integrated with other rural development activities.

Tewari (1993) in his study on Ekalingapur village forest in Udaipur district (Rajasthan) stated that after protecting 250 hectare by village forest protection committee, local species regenerated from existing root stocks grass was found to be the biggest immediate benefits approximately 300 tonnes of grass obtained by 198 families from the plantations.

Dey (1994) studied the implementation of interface forestry programme through joint forest planning and management in Tamil Nadu and reported the following results i) the degraded reserved forest have regenerated with better forest cover and improved bio-diversity ii) Natural tree species have come up well in the area, iii) overgrazing has been reduced considerably iv) pressure on forest to meet the peoples needs has been reduced considerably through systematic forest management, and migration from programme villages to other areas for livelihood has been reduced household's income in Southwest Bengal. They concluded based on the analysis of 42 forest protection committee in West Bengal that I) seventy-four per cent protection committee was

functioning reasonably well ii) there was a considerable heterogeneity in the ethnic composition iii) smaller the number of villages greater the participation and effectiveness and iv) the greater the proportion of households included in forest protection committee the better was overall performance.

Mukherjee (1994) opined that all forestry activities were required to be planned and executed keeping the interest of the people and their participation as a major thrust on the managing forest. The felt need of the member of samiti is required to be accommodated in the management plan. The knowledge of the elders and their opinion have to be given due weight age in deciding the various options. Participation of women has to be ensured throughout the planning process.

Banerjee (1995) reported that forest dwellers are thought to be the main agents of destroying the ecology. Numerous programmes with foreign aid were drawn probably to set right the damages. But it has been realized that such programmes will be failures if the local inhabitants are not associated in such programmes. Such associations have shown averaging results in some states of India and abroad.

Ritilal (1998) reported that joint forest management under world food programme in Rajasthan has already shown positive results. It has made some headway by increasing the agricultural output of the villages by providing lift irrigation scheme. JFM can be sustainable programme only if some income generating activities are undertaken.

Roshan Cooke (1998) in his field study in four villages in the Kundwara area of Kundam block in Jabalpur district of Madhya Pradesh revealed wide variation in the quality of Joint Forest Management Programme influenced by complex positive and negative factors. Among the positive factors influencing the success of JFM are constant care and advice and encouragement from the forest department, transparency in working of Forest Protection Committee (FPC), frequency of meeting and proper maintenance and implementation of the decisions of FPC, short term benefits through value addition and marketing of NTFP which works as an adhesive for rural communities. The study has shown that given the opportunity to manage their own resources local people will respond positively.

Rao *et al.* (2001) reported that the approach of the JFM programme in Karnataka is a welcome sign with respect to the forest department officials interacting with local communities. Significant achievements are the area brought under plantation through institutional set up and involving participation from forest dependent communities. The effort had been able to reclaim nearly 28 per cent of the open forest in the district. The economic incentive through benefit sharing has started trickling and other benefits are being expected. Overall performance of JFM shown enthusiasm among the community though there are snags identified that need to be corrected.

Ramalingegowda *et al.* (2001) reported that many constraints in JFM are 1) Many of the VFC's have not signed MOU with the forest

department which rendered them inactive in participatory endeavours.

2) The participation of mostly educated section of the VFC's is noticed leaving behind the poor women and land less. 3) Keeping sustained interest in the VFC, attitudinal changes and skill improvement of Karnataka forest department personel is not evenly upgraded

4) Participation of other department is not encouraging 5) Linkage with panchayet raj institutions. 6) Proper institutional mechanism for management of Non-Timber Forest Produce resources is yet to be evolved.

Dasgupta (2001) reported that the natural regeneration in areas under Joint Forest Management has shown a positive trend and the percentage increase in natural regeneration upto 15 per cent and above 50 per cent in some areas depending upon the degree of protection.

Samra (2002) reported that successful JFM depends on good relationship between the forest department and local communities so that they can work together to meet common objectives. This in turn requires new skills of analysis and understanding, with more emphasis on listening and learning than traditional top down roles. The area covered under JFM programme has increased manifold during the past 10 years. Sustainability of JFM initiatives can be assured only when there is genuine involvement of the community at each level.

The above reviews relating to empirical studies of JFM in different states revealed that, forest protection committees are emerging as viable

local institutions for conservation, development and management of degraded forest. Many studies have shown that given the opportunity to manage their own resources local people will respond positively.

2.4 PEOPLE'S PARTICIPATION IN DEVELOPMENTAL PROGRAMME

Chandekar and Thomas (1990) in a study on factors influencing peoples participation in rural development projects initiated by six voluntary agencies in six district of Madhya Pradesh reported that 'awareness' (49%), money (26%) and education (25%) were the factors that motivated people to participating in rural development activities. Social worker and voluntary agency staff were identified as the main motivating agents. The other factors found to be influencing people participation in rural development included faith and confidence in peoples ability, level of education and beneficiaries help in the village development association or groups.

Suresh (1990) reported that the most important method of participation was receiving the benefits. Beneficiaries were hardly taken into confidence for monitoring, supervision, evaluation and follow-up. They were least consulted even during pre planning period. The felt needs of the people were identified and the programmes chalked out by the NGO's. The beneficiaries in general felt that their participation was required at implementation stage in the form of consultation/advice and in the management of production units/programmes. Participation in monitoring, evaluation and planning received lower priority. The findings further revealed that people were reluctant to get fully involved due to a

feeling of incompetent client-patron relation or lack of participative attitude.

Pratima and Jattin (1999) opined that the income to be generated under JFM should be sizeable. The VFC member may rightly expect that the return they get is at best commensurate with their labour input in JFM. They are required to invest time in JFM activities such as attending meeting, to decide about the management, participation in micro planning and patrolling to protect the forest.

Singh (1991) identified the following determinants of people's participation from the analysis of the experience with watershed development project in Gujarath, Haryana and Maharashtra.

1. The most important pre-requisite for people's participation is that the expected private benefits from participation must substantially exceed the expected private cost of participation.
2. People would participate only if they are conscious, organized and empowered to do so.
3. Local leadership plays an important role in enlisting people's participation in watershed development programmes by mobilizing peoples resources, energy and by assuring the people that they would have access to the benefits from their participation in collective action for watershed development and distribution of benefit's would be fair and equitable.

4. Formal system of sharing the benefits from collective action among the local people involved should be evolved and enforced by the people themselves and backed up by legal provisions or administrative decrees.

Joshi (1994) reported that mobilisation of peoples participation in the form of user group is the best solution to maintain the productivity of the fragile land resources and ecosystem of a mountainous country like Nepal.

Kiara *et al.* (1994) in a study on impact of the catchments approach to soil and water conservation in Kenya (Africa) concluded that where participatory approaches are adopted by government and non-government organisation in catchment for soil and water conservations, that the significance economic environmental and social benefits could be achieved.

Malhotra and Kushalappa (1994) stressed the need for active participation of local people in sustainable use of forest resources. This could be possible provided division of work at national and state level is well defined.

Pathan (1994) reported that community participation has the potential for sustainable forestry. The forester supported by people who matter and voluntary organizations can take the programme ahead. A shift in forest management including manipulation of vegetation will demand sound resource and technology what is being done for the

community should be transparent and participatory. There are potentials for joint action in development of all common resources.

Swarnalatha and Samra (1994) in a study on the determinants of peoples participation in watershed development and management in Shiwalik Foothill village in Haryana revealed that the actual and direct benefits accruing to the farmers as a result of their participation must substantially be higher in comparison to the direct private cost of participation.

Dhillon and Hansra (1995) emphasized that peoples participation is essential for success of rural development programmes. The programmes should be based on the felt needs of the people. The people should be motivated well before planning and their involvement at all stages of the programme. Voluntary organizations and local institutions operating in the area should be encouraged to participate in planning and implementation of programmes.

Sharma (1997) opined that one of the main motivating factors for peoples participation is income generation which needs to be assured from an enterprise with an otherwise long gestation period. Author also said that enormous potential of land based renewable resources such as forestland, pastures can be harnessed to improve food, fodder and energy supply, employment opportunities, income and welfare of rural people.

Jain (1998) conducted a study in Andhra Pradesh about the activities of Joint Forest Management Programme indicated that all

villages are quite satisfied and happy with the above work carried out in their villages and they have developed lot of faith in forest officials. The villages are taking very good interest in protection and development of the degraded forest.

Sreedharan and Sarkar (1998) examined peoples participation in JFM in Tamil Nadu stated that the degree of participation of various stake holders in forest department programmes has been quite varying in resource inventory, bearing of costs, receipt of benefits etc. According to them there has been a gradual involvement of people in natural resource management in the state. They also advocated nurturing and developing the participation of people to the ultimate level of self mobilisation.

Dasgupta (2000) reported that peoples participation has improved a lot due to income generations activities and resource development works that has been taken up in the villages which has subsequently increased the socio-economic conditions of the people, coupled with this the attitudinal change that has taken place among the staff of the forest department has created a very cordial atmosphere between the staff and villagers. The likelihood of sustainability is very high provided that the incentives are maintained and local participation ensured sustainability could be assured only when there is a genuine involvement of the communities.

Anjali Awasthi *et al.* (2001) reported that chronological survey process and events in the forest and land management in Uttarkashi

district, were emphasized. The present state of forest in Uttarkashi are the result of past exploitation and management practices. The conflicts between forest management and villagers shaped the ecology of mountains, since past few decades the need of peoples participation and their traditional knowledge of managing forests has been felt to slow down the process of degradation in the Himalayas.

Balaji (2001) reported that (JFM) is eliciting peoples participation in the management of natural forests for sustainable management. The synergetic effect of biological, hydrological and sociological approaches adopted in JFM strives to ameliorate the conditions of rural people and facilitate their co-operation in the management of adjacent degraded natural forests in an integrated manner. Such an approach promises not only rejuvenation of the natural forests, but also improved quality of the people living adjacent to the forests.

D'silva and Nagnath (2002) conducted a case study in Behroonguda village in Andhra Pradesh and reported that Behroonguda residents began to derive benefits from forest protecting 500 hectare of degraded forest allotted to them as a part of Joint Forest Management. The Vana Samskarana Samithi is widely regarded as being successful because of people participation.

From the for going studies reviewed, it could be concluded that the people would participate in any development programme, when expected private benefits from the participation should exceed private cost of participation. People should be enlightened about the developmental

activities where their views suggestions should be recorded and local leadership should be encouraged. The best agencies for motivation are voluntary and non-government organizations in specific and in general people themselves.

2.5 SOCIO-PERSONAL CHARACTERISTICS OF THE BENEFICIARIES

Variable/authors and year	Beneficiaries of programme	Findings
1. Age		
Dixit (1992)	IRDP	Majority (68%) were middle aged
Hemalatha Prasad (1995)	DWCRA	Majority were in the age group to 26 to 40 years
Tejaswini (1996)	DWCRA	Majority (58%) belonged to young age group
Dwarakinath (2001)	DWCRA	Majority (87%) were found in middle age category
2. Education		
Balabhaskhar (1991)	National Oilseeds Development Project	Majority of the beneficiaries had primary education
Dixit (1992)	IRDP	Majority (55%) of the beneficiaries were illiterate
Umadevi (1992)	WYTEP	One third of the beneficiaries (36.67%) beneficiaries were illiterate.
Kaushik (1993)	IRDP	Majority (50%) were illiterate
Hemalatha Prasad (1995)	DWCRA	All women were illiterate
Prasannakumar (1995)	JFM participant farmers	Majority (27.78%) of the participant farmers studied upto primary school

Contd..

Tejaswini (1996)	DWCRA	Majority (55%) of the beneficiaries were illiterate
Hardikar (1998)	IRDP, DWCRA	Majority (63.89%) were illiterate in IRDP and (25.77%) had primary education in DWCRA
3. Family type		
Ratnakar (1990)	Beneficiaries of ITDA	Majority of the beneficiaries had nuclear family
Dixit (1992)	IRDP	Majority (65%) belonged to joint family
Hemalatha Prasad (1995)	DWCRA	All beneficiaries belonged to joint family
Prasannakumar (1995)	JFM participant farmers	Majority (57.78%) belonged to joint family
Gayatri Devi (2000)	TRYSEM, DWCRA	70 per cent of the beneficiaries belonged to nuclear family
4. Farm size		
Chandrashekhar (1991)	Beneficiaries of National Pulse Development Project	Majority (58%) had small to marginal farm size
Dixit (1992)	IRDP	Majority (44%) were landless
Kaushik (1993)	IRDP	Majority (56%) were land less.
Prasannakumar (1995)	JFM participant farmers	Majority (47.78%) were marginal farmers
Gupta and Sandhu (1995)	IRDP	Majority (82.90%) were marginal farmers
Sukhdev Singh (1997)	IRDP	Majority were landless and small farmers
Hardikar (1998)	IRDP, DWCRA	Majority (51.85%) were landless in IRDP and (45.36%) in DWCRA
Gayatri Devi (2000)	TRYSEM, DWCRA	Majority (58.33) were landless

Contd..

5. Annual income		
Padmanabhan (1990)	IRDP	Average annual income was Rs. 3,284
Soundara Pandian (1991)	TRYSEM	96 per cent of beneficiaries had income below rs. 4800/-
Dixit (1992)	IRDP	Majority (49%) had medium income below Rs. 5,000/-
Kaushik (1993)	IRDP	Majority (58%) had income below Rs. 6400/-
Prasannakumar (1995)	JFM participant farmers	Majority (87.78) belonged to below poverty line
Tejaswini (1996)	DWCRA	Majority (45%) were in the middle income group
Hardikar (1998)	IRDP	Majority (52.78%) belonged to income between Rs. 9,001 to Rs. 13,000
Usharani (1999)	DWCRA	Majority (46.25%) grouped under below poverty line
Dwarakinath (2001)	DWCRA	75 per cent of women belonged to the poor families.
6. Livestock possession		
Prasannakumar (1995)	JFM participant farmers	Majority (56.6%) had more than 2 animals
Krishnamurthy (1997)	Trained Farmers by RUDSETI	Majority (76%) of farmers had medium livestock possession.
7. Social participation		
Prasannakumar (1995)	JFM participant farmers	Majority (68.89%) had low social participation

Contd..

Tejaswini (1996)	DWCRA	Majority (38%) had low social participation
Hardikar (1998)	IRDP, DWCRA	More than four fifth of IRDP beneficiaries (81.48%) had no participation. Only (2.06%) of DWCRA beneficiaries had low social participation
Usharani (1999)	DWCRA	Majority (36%) were members of Mahila Mandal
8. Extension contact		
Dixit (1992)	IRDP	Majority (87.5%) had low extension contact
Rafi (1993)	Farm Forestry	Majority (64%) had high extension contact.
Prasannakumar (1995)	JFM participant farmers	Majority (43.33%) of the JFM participant farmers had medium extension contact with the officials of the Forest Department
Belligeri (1996)	Agro-Forestry	Majority (52%) had occasional, and 5 per cent regular contact and 43 per cent did not contact with extension agent
Tejaswini (1996)	DWCRA	Majority (38%) beneficiaries had low extension contact
Hardikar (1998)	Usefulness of IRDP	Majority (57.41%) of the beneficiaries had low extension contact.
9. Cosmopolitaness		
Ratnakar and Reddy (1991)	Tribal farmers	Majority of the beneficiaries had high cosmopolitaness

Contd..

Prasannakumar (1995)	JFM participant farmers	Majority (37.78%) farmers in JFM had low cosmopolitaness
Hardikar (1998)	IRDP, DWCRA	IRDP beneficiaries (49.08%) had high level cosmopolitaness and DWCRA beneficiaries had medium (64.95%) cosmopolitaness
10. Level of aspiration		
Abdul Kareem (1994)	IRDP	Majority of the beneficiaries had high level of aspiration
Prasannakumar (1995)	JFM participant farmers	Majority (52.23%) of the farmers had high aspiration level.
Bhimappa (2001)	Migrant and Non-Migrant Farmers of TBP command area in Karnataka	Majority of migrant (67.5%) had medium level and non-migrant (72.5%) of farmers had medium level of aspiration

The above reviews relating to the socio personal characteristics of beneficiaries of development programmes revealed that majority of the beneficiaries belonged to middle age group, majority were illiterate, belonged to nuclear family, landless, low social participation, medium extension contact, low and high cosmopolitaness and high aspiration level.

2.6 KNOWLEDGE OF THE BENEFICIARIES ABOUT DEVELOPMENTAL PROGRAMMES

Naidu and Vikramsingh (1990) conducted a study in Dharmapuri district of Tamil Nadu, revealed that 67 per cent of the respondents were

aware of DPAP where as 52 per cent of the respondents were aware of the role played by Government in DPAP.

Prasad (1990) in a study conducted in Andhra Pradesh reported that majority of project beneficiaries (84%) had medium level of knowledge about watershed management practices, followed by high and low knowledge.

Badiger *et al.* (1991) conducted a study on knowledge and participation of farm women in forestry, in Kalkeri village of Dharwad taluk, Karnataka State. The results of the study revealed that farm women had very good knowledge regarding usefulness of forestry. They had appropriate knowledge to large extent about the role of forestry in air purification, receiving rains, medicinal values of forestry plants, usefulness of wood and wildlife protection. A few women lacked the knowledge about importance of vanamahotsav, soil fertility and erosion.

Iqbal (1991) conducted a study in Nalagonda district in Andhra Pradesh reported that majority (81.34%) of the beneficiaries of watershed development project possessed high knowledge, while 70.68 per cent of the non-beneficiaries had low knowledge about watershed programme.

Singh (1991) found that 88.75 per cent of the farmers in Andhra Pradesh had an average knowledge about different aspects of social forestry programme.

Umale *et al.* (1991) conducted a study in 20 villages of Malegaon and Barshitakli blocks having maximum area under agro-forestry in

Akola district and reported that majority (56.25%) of the respondents had medium knowledge, followed by low (27.08%) and high (16.67) knowledge about agro-forestry programmes.

Venkataramaiah and Srinivasulu (1992) conducted a study in coastal Andhra Pradesh and reported that majority (56%) of beneficiaries were aware of different officers executing the schemes of ITDA. Mean knowledge level of beneficiaries was higher and significant than those of non-beneficiaries.

Rafi (1993) reported that 30.00 per cent of farmers had low knowledge and 30.00 per cent had high knowledge about farm forestry by the farmers.

Sadaqath *et al.* (1994) conducted a study in Gundmapur village of Sirsi taluk of Uattar Kannada district (Karnataka), which revealed that 66 per cent of farmers had high knowledge about farm forestry. It was also noticed that maximum number of participant farmers had high knowledge regarding forest tree species and their cultivation aspects.

Kalivardhan *et al.* (1995) conducted a study in Pondichery region and reported that 59 per cent possessed low level of awareness, 30 per cent medium level of awareness, 48 per cent of women were aware of credit facilities for purchase of milch animals, while 44 per cent were aware of distribution of bullock scheme, 42 per cent aware of credit for poultry unit, 11 per cent were aware of piggery unit, 28 per cent were aware of Bullock cart scheme. The awareness of women beneficiaries about IRDP was significantly less.

Prasannakumar (1995) conducted a study in Uttar Kannada district of Karnataka on Joint Forest Management observed that a considerable number of participant farmers had medium level of knowledge about different component of JFM and had better knowledge of the component namely disposal of forest produce and sharing of the benefits and least knowledge regarding management plan. The study also revealed that majority of participant farmers (54.44%) had medium knowledge, 22.22 per cent had low knowledge and 23.33 per cent had high knowledge about Joint Forest Management Programme. Further he reported that they had a better knowledge level in the components of i) Disposal of forest produce and sharing of benefits, followed by ii) Concept of JFM iii) Village forest committee iv) Role of different department and officials and v) Management plan.

Belligere (1996) conducted a study on knowledge, adoption and perception of usefulness of agro forestry practices by farmers of Hanagal taluk of Dharwad district. The study revealed that sixty-nine per cent of the respondents had medium level of knowledge of agro-forestry practices. The mean knowledge score of this category was 12.37, while 19.00 and 12.00 per cent of them had low and high level of knowledge with mean knowledge score were 4.95 and 17.98 respectively. The overall mean knowledge score of the respondents was 11.64.

Tejaswini (1996) reported that 36.00 per cent of beneficiaries had high, 28 per cent had medium and 36 per cent of respondents had low overall knowledge regarding different activities of DWCRRA programme.

Raghupathi *et al.* (2000) reported that majority of the VFC beneficiaries had fairly moderate level of knowledge about JFM programme in all the selected districts of Karnataka (except Mysore) but in varying perception. In majority of VFC's, the perception was natural and unfavourable towards JFM programme. There is a need to develop an appropriate forest management strategy to bring awareness and building favourable attitude among the forest users for sustainable participatory forest management.

Rishi (2002) conducted study on the level of knowledge and awareness of people towards JFM through JFM awareness Index (JAI). The results indicate a limited amount of cognitive level assimilation of JFM. This limited level of awareness and knowledge at cognitive acts as a constraint in the institutionalization of JFM. Thus, sustained awareness creation efforts are required at micro-level through village workshops, study tours, exposure visits, educational campaigns etc. raised the level of knowledge and awareness of people towards broader objective of institutionalization and sustenance of JFM programme.

It could be inferred from the review of above cited literature that there exists variation in the knowledge level of beneficiaries. Most of the studies cited, beneficiaries expressed medium level of knowledge, followed by low and high levels, respectively.

2.7 PERCEPTION OF DEVELOPMENTAL PROGRAMMES BY THE BENEFICIARIES

Badiger *et al.* (1991) observed that farm women in Kalakeri village of Dharwad taluk of Karnataka had sufficient knowledge about the

usefulness of the forest. More than 90 per cent of the farm women had more knowledge about the importance of the forest.

Sureshkumar and Venkatramaiah (1992) stated that 50 per cent of beneficiaries in Andhra Pradesh had more favourable opinion towards JRY followed by less favourable opinion by 46 per cent. The study also revealed that 66 per cent of non-beneficiaries possessed less favourable attitude followed by medium favourableness by 34 per cent.

Venkatramaiah and Srinivasulu (1992) in their study on impact of agricultural programme in ITDA in coastal Andhra Pradesh reported that 60 per cent of the beneficiaries expressed moderately favourable opinion towards the activities of ITDA, followed by favourable (24%) and highly favourable (15.50%).

Venkataprabhu (1993) studied perception pattern of the farmers of agro forestry and revealed that meeting fodder, fuel, fertilizers and fiber requirements, creating employment opportunities, enhancing ecological balance, controlling soil erosion, serving as wind break to control, wind erosion and providing stabilized long term income were found to be perceived to a large extent either fully or partially by all the categories of farmers to varied magnitudes.

Shripathi (1994) reported following opinion of the people closely involved in implementation of JRY programme in Dakshina Kannada district i) Release of resources to mandal panchayats was delayed. As a result implementation of the scheme got delayed ii) Food grain distribution to the workers as part of their wage was low quality iv) Lack

of coordination between different agencies involved in implementation of the scheme and v) Works given on contract basis though it was not permitted.

Prasannakumar (1995) conducted a study in Uttar Kannada district of Karnataka and reported that considerable number of participant farmers (43.33%) had medium level of perception while 30 per cent had high and 26.67 per cent low level of perception about Joint Forest Management Programme.

Hardikar (1998) in his study on usefulness of development programmes as perceived by women beneficiaries indicated that 59.26 per cent of IRDP beneficiaries and 80.41 per cent of DWCRA beneficiaries perceived the development programme as useful. 22.22 per cent of IRDP and only 5.15 per cent of DWCRA beneficiaries perceived the programme as less useful. The development programmes were perceived to be more useful by 18.52 per cent and 14.43 per cent of IRDP beneficiaries.

Raghupathi *et al.* (2000) reported that in Shimoga district VFC members had positive and favourable perception towards JFM programme because of good rapport and harmonious relations built by the forest department personnel and voluntary agencies in planning and implementing the forest and non-forest need based programmes.

Inference can be drawn from the above reviews of literature that farmers had not correctly utilized the programmes. Hence correct

usefulness of the programme by farmers about any development programme is important.

2.8 BENEFITS DERIVED FROM THE PROGRAMMES BY THE BENEFICIARIES

Essaky (1990) reported that the animal husbandry schemes had generated additional employment to the tune of 90.06 per cent among beneficiaries. So also, the family income of the beneficiaries was enhanced and as a result out of 205 eligible beneficiaries of the sample 169 families (82.44%) crossed poverty line.

Phadnawis *et al.* (1990) reported that after watershed treatment the percapita annual income of the rural families increased from Rs. 1,587.00 to Rs. 6,541.00. Further the annual income derived from one hectare increased from of Rs. 1,780.00 to Rs. 7,815.00.

Patnaik (1990) opined that apart from the free distribution and enjoyment of some forest produce there were several factors in social forestry programme which were not assessed in monetary terms in the benefit-cost analysis, by giving instances of environmental benefits. The author concluded that employment generating capacity of social forestry was an important variable of the project.

Prasannakumar (1995) in his study on JFM reported that the participant farmers in Joint Forest Management Programme belonged to small and marginal category living below poverty line and were more interested in realizing the economic benefit from the programme.

Tejaswini (1996) reported that the average number of days of employment before participation in DWCRRA programme was 13 days in a

month, and average number of days of employment after participation in the programme was 26 days in a month.

Cooke (1997) conducted a study in Jabalpur district of Madaya Pradesh on sustainable JFM. It revealed that given the opportunities to manage their own resources, local people would respond positively. Further, he said that short term benefits through value addition and marketing of NTFP worked as an adhesive for rural community to be together and supported conservation for long term gains.

Hardikar (1998) reported that the average additional income generated by IRDP was Rs. 2,046, while the DWCRA scheme generated additional income of Rs. 880 per-beneficiaries it was 77.7 person man days in IRDP while that of DWCRA beneficiaries was 60.30 persons days. This suggests that IRDP has generated more employment than DWCRA.

Singh and Prasad (2000) conducted a study on IRDP and reported that total 31.50 per cent of beneficiaries crossed the poverty line. Minor irrigation enterprises of this sector crossed the poverty line. Agriculture was the second most profitable sector in which 41.66 per cent beneficiaries crossed the poverty line. The least profitable sector was rural artisan. Only 20 per cent of the beneficiaries crossed the poverty line.

The research findings cited above give us the status of the studies conducted so far on the development programme. The implementation of development programme has resulted in better employment income

opportunities to the beneficiaries since majority of the studies were focusing on income and employment generation of the poor people.

2.9 RELATIONSHIP BETWEEN SOCIO-PERSONAL CHARACTERISTICS AND KNOWLEDGE

Name of the author and year	Dependent variable	Respondents	Relationship
1. Age			
Prasad (1990)	Watershed management practices	Farmers	Significant (+ve)
Iqbal (1991)	Water shed management practices	Beneficiaries and non beneficiaries	Non-significant
Patel and Patel (1993)	Lab to land programme (LLP)	Beneficiaries farmers	Non-significant
Abdul Kareem (1994)	IRDP	Beneficiaries	Significant (+ve)
Sadaqath <i>et al.</i> (1994)	Farm forestry	Farmers	Non-significant
Shivasharanappa (1995)	Watershed Development programme (DWDP)	Farmers and extension workers	Significant (+ve)
Tejaswini (1996)	DWCRA	Rural women	Significant (+ve)
Surekha <i>et al.</i> (1997)	DWCP	Farmers	Non-significant
2. Education			
Prasad (1990)	Watershed management practices	Farmers	Significant (+ve)
Badiger (1991)	Forestry programme	Farmers	Non-significant

Contd..

Iqbal (1991)	Watershed management practices	Beneficiaries and non beneficiaries	Significant (+ve)
Patel and Patel (1993)	Lab to land programme	Farmers	Significant (+ve)
Sadaqath (1994)	Farm forestry	Farmers	Significant (+ve)
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Significant (+ve)
Shivasharanappa (1995)	Watershed development programme	Farmers	Significant (+ve)
Hardikar (1998)	IRDP	Beneficiaries	Significant (+ve)
3. Family type			
Chayadevi and Gavimath (1991)	Forestry	Rural women	Non-significant
Abdul Kareem (1994)	IRDP	Beneficiaries	Non-significant
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Non-significant
Tejasiwini (1996)	DWCRA	Rural women beneficiaries	Non-significant
4. Farm size			
Prasad (1990)	Watershed management	Beneficiary farmer	Significant (+ve)
Iqbal (1991)	Watershed management practice	Beneficiary and non beneficiary	Significant (+ve)

Contd..

Praveen Kumar (1992)	IRDP	Beneficiaries	Significant (+ve)
Patel and Patel (1993)	Lab to land programme	Beneficiary farmers	Non-significant
Abdul Kareem (1994)	IRDP	Beneficiaries	Significant
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Non-significant
Hardikar (1998)	IRDP	Beneficiaries	Significant (+ve)
5. Family income			
Swarnakar and Chouhan (1993)	Rice production programme	Small farmers	Non-significant
Channamma (1994)	ICPS	Beneficiaries	Significant (+ve)
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Non-significant
Tejaswini (1996)	DWCRA	Women beneficiaries	Significant (+ve)
Hardikar (1998)	IRDP	Beneficiaries	Significant (+ve)
Meti (1998)	Improved agril technologies	Small and marginal farmers	Significant (+ve)
6. Live stock possession			
Nagpal and Yadav (1991)	Bio-gas plant	Farmers	Significant (+ve)
Digraskar and Wangikar (1993)	Bio-gas plant	Farmers	Non-significant
Prasannakumar (1995)	Joint forest management	Participant farmers in JFM	Non-significant

Contd..

Krishanmurthy (1997)	Trained Farmers	Trained Farmers by RUDSETI	Non-significant
7. Social participation			
Patel and Patel (1993)	Lab to land programme	Beneficiary farmers	Non-significant
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Significant (+ve)
Tejaswini (1996)	DWCRA	Women beneficiaries	Significant (+ve)
Jayaraj (1997)	Bio pesticides practices	Cotton growers	Significant (+ve)
Hardikar (1998)	IRDP	Women beneficiaries	Significant (+ve)
8. Extension contact			
Bevalatti and Sundaraswamy (1991)	Dryland farming practices	Farmers	Significant (+ve)
Abdul Kareem (1994)	IRDP	Beneficiaries	Significant (+ve)
Prasannakumar (1995)	Joint Forest Management Programme	Participant farmers in JFM	Significant (+ve)
Tejaswini (1996)	DWCRA	Beneficiaries	Significant (+ve)
Hardikar (1998)	IRDP	Beneficiaries	Non-significant
9. Cosmopolitaness			
Ratnakar and Reddy (1991)	ITDA	Farmers	Significant (+ve)

Contd..

Prasannakumar (1995)	Joint management programme	Participant farmers in JFM	Non-significant
10. Level of aspiration			
Phatke <i>et al.</i> (1993)	Cotton cultivation practice	Cotton growers	Non-significant
Abdul Kareem (1994)	IRDP	Beneficiaries	Significant (+ve)
Prasannakumar (1995)	JFM programme	Participating farmers in JFM	Significant (+ve)
Srinivas Reddy (1995)	Mango cultivation practice	Farmers	Non-significant
Bheemappa (2001)	Tungabhadra Command Area in Karnataka	Paddy growers (Migrant Farmers)	Non-significant
	Tungabhadra Command Area in Karnataka	Cotton growers (Migrant Farmers)	Significant (-ve)

2.10 RELATIONSHIP BETWEEN SOCIO-PERSONAL CHARACTERISTICS AND PERCEPTION

Name of the author and year	Dependent variable	Respondents	Relationship
1. Age			
Farooqui <i>et al.</i> (1993)	Adoption of crop management practices	Beneficiaries	Significant (+ve)
Patel and Patel (1993)	Lab to land programme	Beneficiaries and non beneficiaries	Significant (-ve)

Contd..

Abdul Kareem (1994)	IRDP programme	Farmers	Significant (+ve)
Natarajan and Muthaiah (1995)	Social forestry programme	Farmers	Significant (+ve)
2. Education			
Patel and Patel (1993)	Lab to land programme	Farmers	Significant (+ve)
Abdul Kareem (1994)	IRDP	Farmers	Significant (+ve)
Hardikar (1998)	IRDP	Farmers	Significant (+ve)
Natarajan and Muthaiah (1995)	Social forestry programme	Farmers	Significant (+ve)
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Significant (+ve)
3. Family type			
Nimbalkar and Pawar (1990)	Farm Programme	Farmers	Non significant
Ratnakar and Reddy (1991)	ITDA	Beneficiaries	Non significant
Patel and Patel (1993)	Lab to land programme	Beneficiaries farmers	Non significant
Sudhrashan Reddy and Mahamad Iqbal (1993)	Water shed development programme	Beneficiaries	Significant (+ve)
Abdul Kareem (1994)	IRDP	Farmers	Non significant

Contd..

Prasannakumar (1995)	Joint Forest Management Programme	Participant farmers in JFM	Non significant
Hardikar (1998)	DWCRA	Women beneficiaries	Significant (+ve)
4. Land holding			
Ratnakar and Reddy (1991)	ITDA	Beneficiaries	Non significant
Patel and Patel (1991)	Lab to land programme	Beneficiaries and non beneficiaries	Non significant
Praveenkumar (1992)	IRDP	Farmers	Non-significant
Patel and Patel (1993)	Lab to land programme	Tribal beneficiaries	Non-significant
Sudarshan Reddy and Mahmmmed Iqbal (1993)	Watershed Development programme	Beneficiaries	Significant (+ve)
Abdul Kareem (1994)	IRDP	Beneficiaries	Significant
Prasannakumar (1995)	Joint Forest Management Programme	Participating farmers in JFM	Non significant
Hardikar (1998)	IRDP	Beneficiaries	Significant (+ve)
5. Annual income			
Nimbalkar and Pawar (1990)	Farm programme	Farmers	Non significant
Badiger (1991)	NAEP as it's usefulness	Farmers	Non significant

Contd..

Patil (1994)	JFM programme	Farmers	Significant (+ve)
Prasannakumar (1995)	Usefulness of IRDP programme	Participant farmers in JFM	Significant (+ve)
Hardikar (1998)		Women farmers	Significant (+ve)
6. Live stock possession			
Nagpal and Yadav (1991)	Biogas plant	Farmers	Significant (+ve)
Digraskar and Wangikar (1993)	Attitude towards biogas	Farmers	Non significant
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Non significant
Krishnamurthy (1997)	Adoption of dairy management practice	Trained farmers by RUDSETI	Non significant
7. Social participation			
Nimbalkar and Pawar (1990)	About farm programme	Farmers	Significant (+ve)
Ratnakar and Reddy (1991)	ITDP programme	Tribal farmers	Non-significant
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Non significant
Hardikar (1998)	Usefulness of IRDP programme	Women beneficiaries	Significant (+ve)
8. Extension contact			
Dixit (1992)	IRDP	Farmers	Significant (+ve)
Abdul Kareem (1994)	IRDP	Farmers	Significant (+ve)
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Non significant

Contd..

Hardikar (1998)	IRDP	Farm women	Non significant
9. Cosmopolitaness			
Ratnakar and Reddy (1991)	Usefulness of ITDA programme	Tribal farmers	Significant (+ve)
Prasannakumar (1995)	Joint Forest Management Programme	Participant farmers in JFM	Non significant
Hardikar (1998)	Usefulness of IRDP programme	Women beneficiaries	Significant (+ve)
10. Level of aspiration			
Siddaramaiah and Reddy (1993)	Watershed participant farmers of Kabbalanala	Farmers	Non-significant
Abdul Kareem (1994)	IRDP programme	Farmers	Significant (+ve)
Prasannakumar (1995)	JFM programme	Participant farmers in JFM	Significant (+ve)
Bheemappa (2001)	Migrant and Non-Migrant farmers of TBP area in Karnataka	Migrant farmers	Non-significant
11. Employment generation			
Praveen Kumar (1992)	Income generation	IRDP beneficiaries	Significant (+ve)
	Employment generation	IRDP beneficiaries	Significant (+ve)
Await (1993)	Impact of MI loans	Beneficiaries	Significant (+ve)
Abdul Kareem (1994)	Employment generation	IRDP	Significant (+ve)

Contd..

Tejaswini (1996)	Employment generation	DWCRA	Significant (+ve)
Hardikar (1998)	Employment generation	IRDP, DWCRA women beneficiaries	Significant (+ve)
	Income generation	IRDP, DWCRA	Significant (+ve)

2.11 PROBLEMS ENCOUNTERED AND SUGGESTIONS OFFERED IN THE OPERATION OF JOINT FOREST MANAGEMENT PROGRAMME

2.11.1 Problems encountered in JFM

Neera and Kundan (1991) observed that lack of orientation and training in extension and communication skills as well as community management aspects severely restrict the ability of forest department personnel to work with village communities.

Gronow (1992) opined that joint forest management can be people movement in the true sense if the government can sensitise the implementing officials to the needs of the disadvantaged groups and ensure equity in their contribution towards the programme and distribution of benefits as well as act as facilitators in the process.

Palit (1992) opined that some families dwelling in or on the fringe suffer the most when forests are closed for acting and grazing. If department doesn't have the financial resources to compensate all such families out of frustration and desperation they will continue to exploit the forest in an uncontrolled manner.

Luthra (1993) found that one of the objectives of the JFM *viz.*, restriction of free grazing was in contradiction with the tradition of Gujjar community.

Mishra (1993) felt that lack of adequate resources in the committee to meet day today expenses prevents it from expanding its activities. It was observed that beneficiaries were deprived of adequate support from the government to face the challenges from the organized looters of forest products.

Sarin (1993) viewed that inter village conflicts were common in heterogeneous village with glaring class and cost differences.

Singh and Khare (1993) opined that the distribution of power between the forest department and forest protection committee was somewhat unequal and may prove to be an impediment in developing a truly participatory mode of management. Some forest departments continue to retain their right to cancel committees and punish the offenders.

Tewari (1993) felt that conflicts were likely to arise unless the forester adopt participatory rural appraisal technique at the time of planning forest operations and do not consider sentiments of local population.

Arora (1994) opined that providing membership for purposes of forest committees to only one person from each family in fact deprived the women of their rights to participate in the preceding of Forest Protection Committee.

Prasannakumar (1995) reported that lack of confidence and uncertainty in the programme and delay inflow of benefits, and lack of follow-up activities were important problem faced by the participant farmers in JFM programme.

From the foregoing reviews, it could be stated that large majority of farmers expressed about timely supply of inputs, credit facility, training to grass root level workers and farmers, subsidies to farmers, incentives to workers etc., would certainly contribute to the success of any programme meant for development.

2.11.2 Suggestions for effective implementation of development programme

Author/year	Research study	Respondents	Suggestions
Prasannakumar (1995)	JFM programme	Participate farmers in JFM	Suggested considering the local people views while carrying out various JFM activities, frequent visits and follow-up by senior forest officials and defaults committed by any member in VFC itself without interference of external agencies.
Venkataprabu and Perumal (1995)	Agro-forestry	Farmers	Providing adequate incentives training to farmers and extension personnel's motivating farmers to provide adequate land.
Belligeri (1996)	Agro-Forestry	Farmers	Suggested for provision of sale of tree (94%), followed by conduct demonstration (88%) and technical guidance for planting of tree (86%).
Usharani (1999)	DWCRA	Women beneficiaries	Suggested increase of loan amount, single outlet for marketing of produce and organize training programme etc.

MATERIAL AND METHODS

3. MATERIAL AND METHODS

The present study was conducted during the year 2002. The material and methods employed in the conduct of the study are presented under following sub-headings.

3.1 Locale of the study

3.2 Selection of taluks, villages and respondents

3.3 Dependent variables and their measurement

3.4 Measurement of independent variables

3.5 Development of interview schedule

3.6 Method of data collection

3.7 Statistical methods and tests used

3.1 LOCALE OF THE STUDY

The study was conducted during 2002 in Belgaum and Dharwad districts of Belgaum forest circle. These two districts were purposively selected because of the following reasons.

- a. Adequate efforts for promotion of Joint Forest Management Programme among villagers were being made in this forest circle since 1996 by the department of forest.
- b. Belgaum district and erstwhile Dharwad district had the largest forest area of 2,24,557 hectares and 1,43,673 hectares out of 13,41,500 hectares and 13,73,800 hectares geographical area respectively constituting 16.74 per cent and 10.42 per cent in the state (Anonymous 1999).

3.1.1 Description of the study area

The geographical area of Belgaum district is 13.42 lakh hectares with a population of 35.83 lakh. The geographical area of Dharwad district is 13.74 lakh hectares within population of 35.03 lakh. The south west monsoon is most crucial for the Dharwad and Belgaum districts. The normal rainfall is 808 mm and 717 mm in Belgaum and Dharwad districts respectively. Dharwad district has slightly higher rate of literacy (58.28%) as compared to Belgaum district (53.00%). The area under forest is 2.24 and 1.44 lakh hectares in Belgaum and Dharwad districts respectively. The proportion of forest area to the geographical area in Belgaum and Dharwad districts worked out to 16.74 per cent and 10.42 per cent respectively.

The information on cropping pattern reveals that jowar (2.14 lakh hectares), paddy (0.63 lakh hectares) wheat (0.48 lakh hectares) and bajra (0.36 lakh hectares) among the cereals, Bengal gram (0.24 lakh hectares), red gram (0.09 lakh hectares) among pulses, groundnut (0.74 lakh hectares), among oilseeds and sugar cane (1.18 lakh hectares) and cotton (0.75 lakh hectares) among commercial crops are the major crops grown in Belgaum district. The area under different major crops in Dharwad district is as follows: Jowar with an area of 2.99 lakh hectares, followed by paddy (0.95 lakh hectares) and wheat (0.72 lakh hectares). The major cereal crops grown in Dharwad district, are bengal gram (0.41 lakh hectares) groundnut (1.41 lakh hectares) and cotton (2.44 lakh

hectares). The total livestock population of Belgaum and Dharwad districts is 20.448 lakh and 16.28 lakh animals respectively.

3.2 SELECTION OF TALUKS, VILLAGES AND RESPONDENTS

A list consisting of 17 taluks in Dharwad and 10 taluks in Belgaum districts was prepared. Out of these, three taluks in each district were selected based on the criteria: i) Implementation of Joint Forest Management Programme in an intensive way ii) Larger area under forest, and iii) More number of beneficiaries enrolled under Village Forest Committee. Thus six taluks were selected for the study. The taluks were Dharwad, Khalaghatagi and Mundargi in Dharwad and Belgaum, Gokak and Khanapur in Belgaum districts.

A list of villages for each selected taluk where Joint Forest Management Programme has been implemented was prepared in association with the staff of the forest department of Belgaum circle. The villages were arranged in a descending order based on the number of beneficiaries in each village forest committee. Date of registration, date of memorandum of understanding and progress of work were considered while selecting the villages in each taluk. Three top villages in each taluk of Belgaum and Dharwad districts have been selected for the study. A list of beneficiaries for each VFC was obtained from the state department of forest. The names of the beneficiaries were arranged in alphabetical order for the purpose of selection of beneficiaries as respondents for the study. Simple random table was used to select 20 beneficiaries as respondents for the study from each village. The number of beneficiaries

KARNATAKA STATE

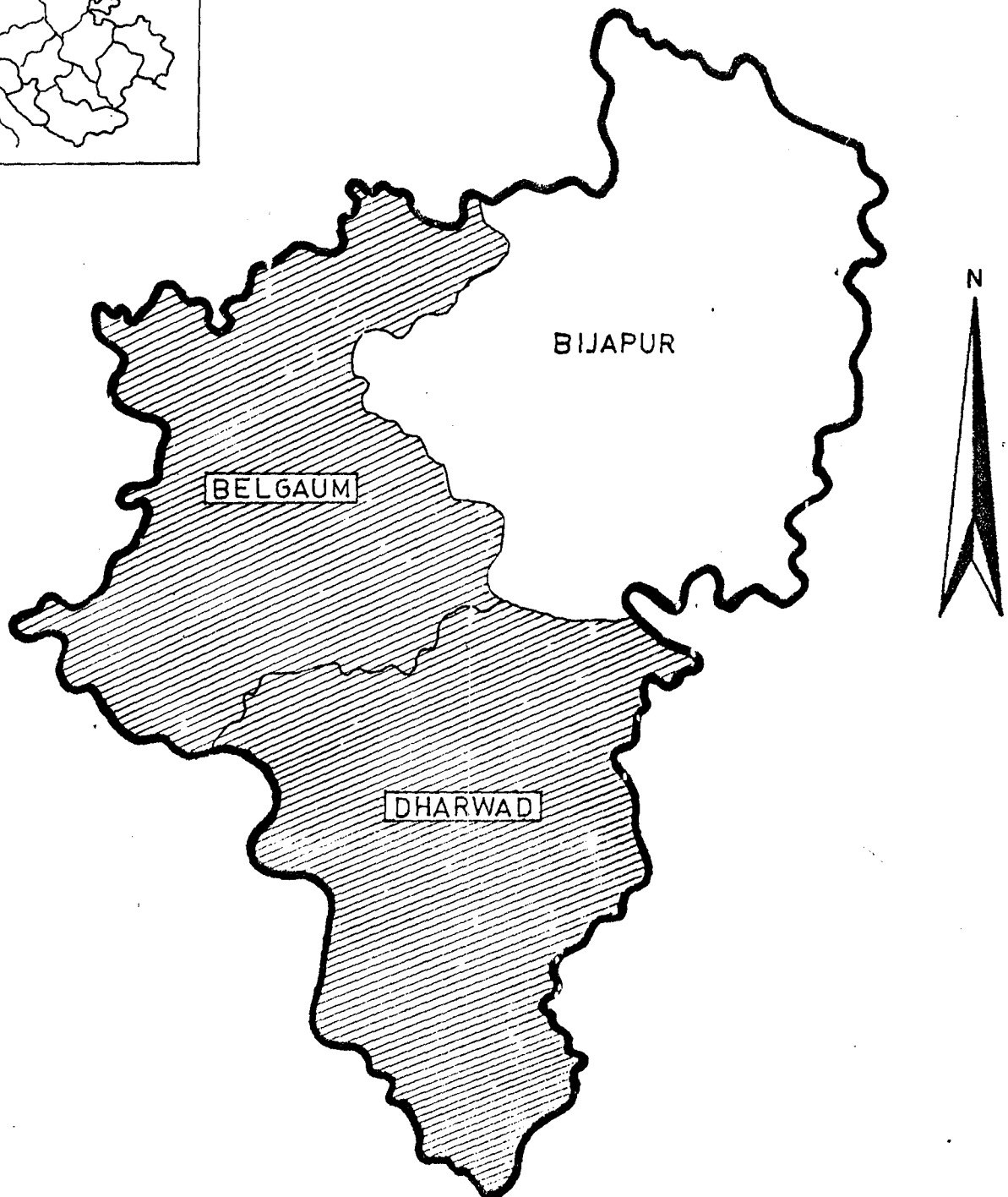
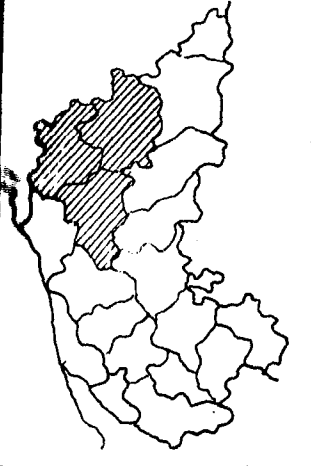


FIG:1-MAP OF BELGAUM CIRCLE SHOWING STUDY AREA.

DHARWAD DISTRICT

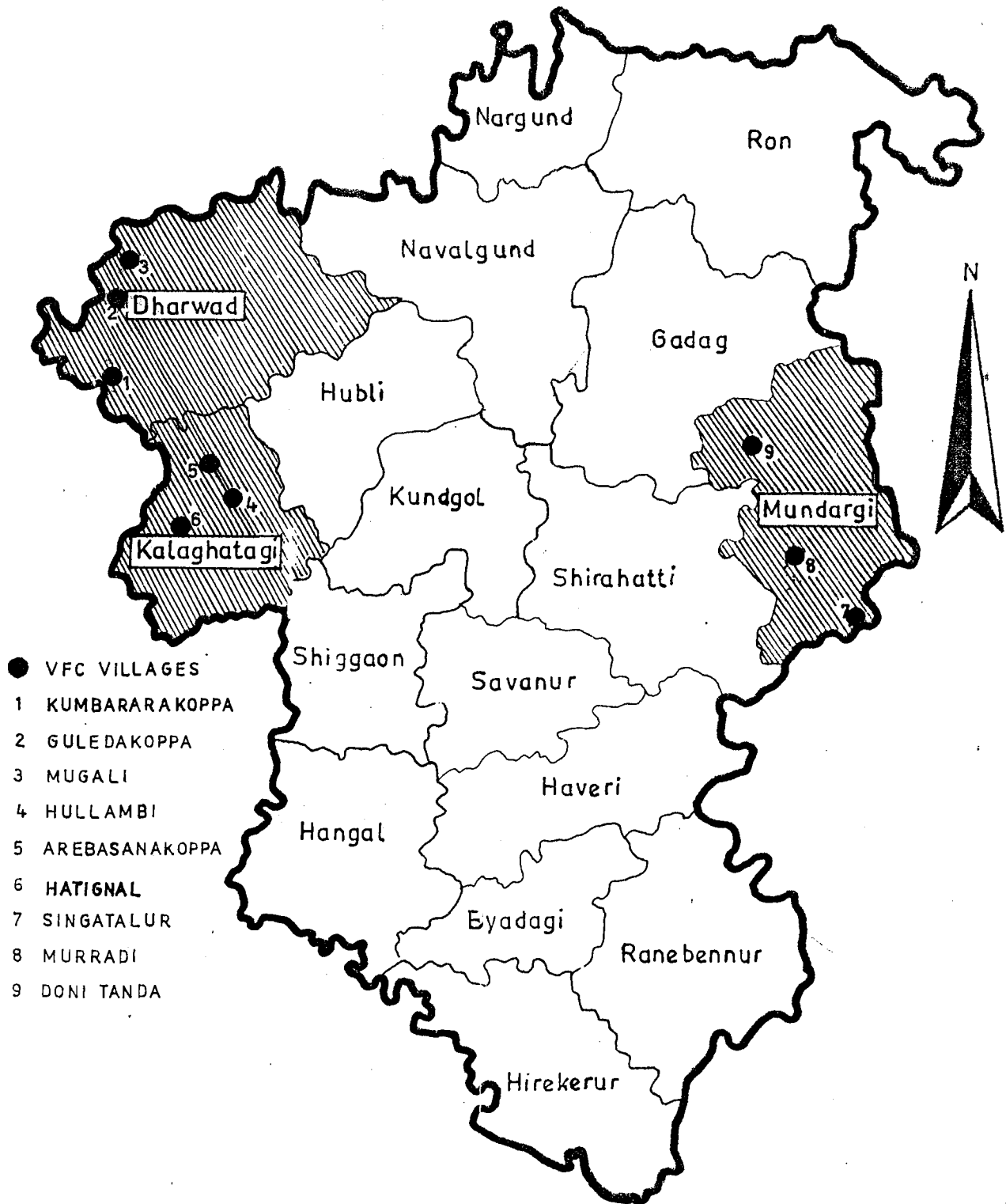
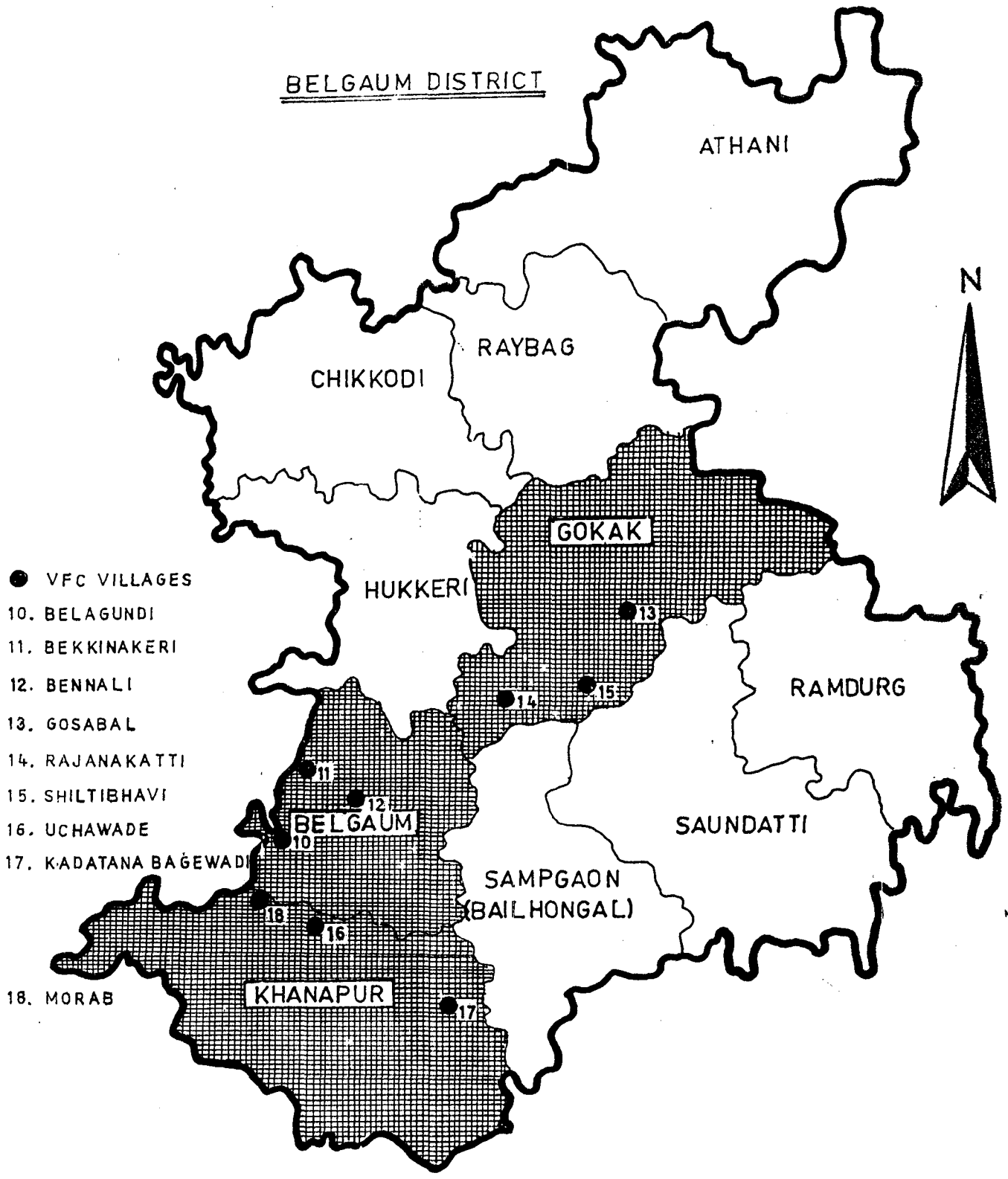


FIG:2 MAP OF ERSTWHILE DHARWAD DISTRICT SHOWING STUDY AREA AND SELECTED VFC VILLAGES.



- VFC VILLAGES
- 10. BELAGUNDI
- 11. BEKKINAKERI
- 12. BENNALI
- 13. GOSABAL
- 14. RAJANAKATTI
- 15. SHILTIBHAVI
- 16. UCHAWADE
- 17. KADATANA BAGEWADI
- 18. MORAB

FIG:3- MAP OF BELGAUM DISTRICT SHOWING STUDY AREA AND SELECTED VFC VILLAGES.

in the selected VFC was varied from minimum of 25 to a maximum of 514 beneficiaries. However in majority of the selected VFC's the number of beneficiaries was more than 125. Therefore, it was decided to follow simple random sampling method instead of proportionate sampling procedure for selection of beneficiaries. Thus, 360 respondents were selected from 18 villages.

The details of villages and respondents selected are shown in the table 1.

Table 1. District, taluk and village wise selection of respondents.

Sl. No	Taluk	Geographical area (ha.)	Forest area (ha.)	Number of VFC villages formed	Name of the selected village	Total beneficiaries in the village forest committee	Number of beneficiaries selected for the study
1	Dharwad	111788	136776	17	Kumbarakoppa	209	20
					Guledakoppa	190	20
					Mugali	162	20
2	Khalaghatigi	68757	19526	18	Hullambi	125	20
					Arebasanakoppa	71	20
					Hatignal	58	20
3	Mundargi	88398	17646	10	Singatalur	164	20
					Murradi	103	20
					Doni Tanda	86	20
4	Belgaum	103721	26701	11	Belagundi	514	20
					Bekkinakeri	315	20
					Bennali	50	20
5	Gokak	154309	26278	16	Gosbal	250	20
					Rajanakatti	153	20
					Shiltibhavi	125	20
6	Khanapur	172956	107675	40	Uchawade	60	20
					Kadatana		
					Bagewadi	40	20
					Morab	25	20

The general information about the selected villages is presented in table 2.

The average population for the sample village in the study area was 1515. The average population in sample villages of Belgaum was slightly more than that of the sample villages in Dharwad. The number of selected villages with metal road was 5 and 8 villages respectively in Dharwad and Belgaum districts. The sample villages in both the districts were having primary school facilities. The table revealed that the sample villages had poor facilities with respect to the number of post office, only one village in Dharwad district and 3 villages in Belgaum district had post office. The average distance of the sample villages to the nearest forest office was around 16 k.m. in both the districts. The sampled villages were about 18 k.m. and 22 kilometer away from the respective taluk head quarters in Dharwad and Belgaum districts. The average area under forest in the sampled villages was 383.40 hectares in Dharwad district and 268.42 hectares in Belgaum district.

There were 131 and 162 beneficiaries in the VFC's of Dharwad and Belgaum respectively. The number of beneficiaries per VFC in the study area was 148. The breakup of the nature of membership showed around 75 per cent of the beneficiaries belonging to general category leaving the remaining around 25 per cent for scheduled castes and tribes. On an average four management committee meetings were held annually in each of the sampled VFC's. Similarly two training programmes were arranged by the forest department for the benefit of VFC beneficiaries. Around 67 beneficiaries in Dharwad district and 75 beneficiaries in Belgaum district were organized by the forest department for the benefit of VFC beneficiaries.

Table 2: General information about the villages and village forest committees where JFM programme is implemented.

n=360				
Sl. No.	Particulars	Dharwad (n ₁ =180)	Belgaum (n ₂ =180)	Over all
1	Number of villages studied	9	9	18
2	Average population of the village	1259	1772	1515
3	Villages having metal road	5	8	13
4	Villages having kacha road	4	1	5
5	Villages having government primary school	9	9	18
6	Villages having gram panchayat	2	3	5
7	Villages having post office	1	3	4
8	Average distance from nearest forest office (km)	16.11	17.44	16.77
9	Average distance from taluk head quarters (km)	18.33	22.23	20.28
10	Average area under forest (in hectares)	383.40	268.42	325.91
11	Average beneficiaries in VFC	131	162	148
12	Average nature of membership			
	a. General	95 (74.80)	131 (76.60)	113 (75.80)
	b. SC/ST	32 (25.20)	40 (23.40)	36 (24.20)
13	Length of membership	-	-	-
	Less than one year	-	-	-
	1 – 2 years	2	4	6
	2 – 3 years	4	1	5
	3 – 4 years	3	4	7
	4 – 5 years	-	-	-
14	Average number of management committee meetings held per year	4	4	4
15	Average number of management committee meetings held per year	2	2	2
16	Average number of beneficiaries involved activities	67	75	71

It could be further seen from the table that out of 9 VFC's in each of the districts, 3 VFC's in Dharwad and 4 VFC's in Belgaum have been operating since, about 3 to 4 years. None of the VFC's in either of the districts has completed more than 4 years.

Activities under Joint Forest Management Programme

- 1) Beneficiaries of village forest committees shall assist in identification of land, choice of species for plantations, and raising of nurseries.
- 2) The beneficiaries of the village forest committees shall be responsible for full protection of forest and plantations raised on such lands after three years, preferably through its volunteers or through watchman employed by the village forest committee out of its resources.
- 3) Enriching forest by preventing encroachment, regulating grazing, preventing forest fire, illicit felling, preventing smuggling of forest produce and poaching of wild animals etc. which are needed to develop forest resources.
- 4) Regeneration of forest by protecting shrubs and bushes.

3.3 DEPENDENT VARIABLES AND THEIR MEASUREMENT

In light of the objectives, the following two variables were considered as dependent variables.

3.3.1 Knowledge of the beneficiaries about Joint Forest Management Programme

3.3.2 Level of perception of Joint Forest Management Programme by beneficiaries

The operationalisation and measurement of these dependent variables are presented below.

3.3.1 Knowledge of the beneficiaries about JFM

Knowledge is defined as “a body of understood information by an individual or by culture” (English and English, 1958).

For the purpose of this study, knowledge is defined as the understanding of concept and various components of JFM programme by the beneficiaries. The knowledge of each beneficiaries about JFM programme was measured with the help of a knowledge test. The procedure followed by Prasannakumar, (1995) was used.

Construction of teacher made knowledge test

A teacher made knowledge test was developed to measure the knowledge level of the beneficiaries about Joint Forest Management Programme. In this process exhaustive information/literature, the document on JFM prepared by the department of forest and government of Karnataka was studied in detail. In the literature studied, the information relating to JFM was given under seven headings such as 1) Concepts of JFM 2) Objectives of JFM 3) Functions of JFM 4) Village forest committee 5) Management plan 6) The role of different department and officials 7) Disposal of the forest produce and sharing of benefits. All the seven components of JFM were considered for knowledge. Accordingly under each component multiple-choice questions to

represent the components adequately were framed. The opinion of the forest department officials about the relevancy of these items for measuring the knowledge of the beneficiaries was obtained. Based on the previous studies and opinion of the forest officials, 50 statements of knowledge were framed. These statements were administered to a group of 40 farmers in the non-sample area and their responses were collected. The statements answered by 90 per cent of farmers were retained and those statements not answered by the 90 per cent of the farmers were deleted from the list. The purpose of doing this was to identify the most important statements to measure the knowledge of beneficiaries about Joint Forest Management. Finally 32 knowledge statements were retained from seven components to constitute the knowledge test. The list of these statements is given in schedule (Appendix A).

Seven components of knowledge test along with number of statements and the maximum possible score are given below.

Seven components of knowledge test along with the number of statements and the maximum possible score are given below.

Sl. No.	Components	Total number of items framed
1	Concept of JFM	3
2	Objectives of JFM	7
3	Functions of JFM	6
4	Village forest committee	3
5	Management plan	7
6	Role of different department and officials	3
7	Disposal of forest produce and sharing of benefits	3
Total		32

Scoring procedure

These questions were administered to the respondents and their responses were obtained. A score of one was assigned for correct answer and zero score to wrong answer. While alternate answers were given 0.75, 0.50 and 0.25 scores depending upon their relative closeness to the correct answer to that particular question. Thus maximum number of score one could get was 32. The mean score for each component was worked out and used in the analysis of data.

3.3.2 Level of perception of JFM by beneficiaries

Perception is defined as the process by which people organize and interpret the sensory information they receive into a meaning mental picture (Chung and Megginson, 1981).

In the present study perception referred to the opinion of the beneficiaries of Joint Forest Management Programme in terms of expression as agree, partially agree, and disagree to the various components of the programme.

The level of perception about JFM in the available literature was reviewed thoroughly. Information on several activities implemented by the JFM programme was gathered in consultation with staff of the department of forestry. The information so gathered was categorized under different concerned components like i) Concept ii) Objectives iii) Feasibility iv) Management plan v) Village Forest Committee

vi) Perception about the usefulness of the programme vii) Disposal of the forest produce viii) People's involvement in JFM. Making use of the information so classified, 50 statements were framed under these components. The opinion of the forest department officials as to the relevancy of these statements for measuring the level of perception of JFM by the beneficiaries was sought. A pretest was conducted in non-sample area to know whether the contents and forms of the questions/items were meaningful and relevant (i.e. valid, reliable and easily understood by the respondents). In the process, thirty-seven statements describing the various aspects under different components of JFM were quantified for inclusion in the measuring instrument.

The responses were collected on a three point continuum namely "Agree" "partially" and "Disagree", by assigning scores of 2, 1 and 0 respectively for each positive statement. The scoring pattern was reversed in case of negative statements (i.e.) 0, 1 and 2 to obtain score for each respondent respectively.

The scores of each item under each JFM components were added to obtain the total score of the respondents. Thus the minimum and maximum possible scores were zero and seventy-four respectively.

The various components considered to determine the level of perception along with the number of statements under each component are shown below.

Sl. No.	Perception components	Total number of items
1	Concept	3
2	Objectives	5
3	Feasibility	4
4	Management plan	3
5	Village forest committee	3
6	Perception towards usefulness of the programme	11
7	Disposal of forest produce	4
8	Peoples involvement in JFM	4
	Total	37

3.4 MEASUREMENT OF INDEPENDENT VARIABLES

The following 11 independent variables were considered for the study.

<u>Variables</u>	<u>Measurement procedure</u>
3.4.1 Age	Saravankumar (1996)
3.4.2 Education	Trivedi (1963)
3.4.3 Family type	Prasannakumar (1995)
3.4.5 Family income	Patel (1994)
3.4.6 Livestock possession	Prasannakumar (1995)
3.4.7 Social participation	Trivedi (1963)
3.4.8 Extension contact	Dixit Sreenath (1988)
3.4.9 Cosmopolitaness	Prasannakumar (1995)
3.4.10 Level of aspiration	Muthaya (1971)
3.4.11 Employment generation	Ravindra & Veerabhadraiah (1987)

The method of measurement of each of these 11 independent variables is presented in the following paragraphs.

3.4.1 Age

Age refers to chronological age of the respondents in completed years at the time of investigation.

Age	Category
Upto 35 year's age	- young
36 to 50 years	- middle
51 and above	- old

3.4.2 Education

Education refers to the level of formal schooling of an individual. It was measured in terms of number of years of schooling completed by a respondent.

This variable was quantified using the procedure suggested by Trivedi (1963) with some modification. The scoring pattern followed was as follows:

Category	Score
Illiterate	0
Primary School Education	1
Middle School Education	2
High School Education	3
PUC/Diploma Education	4
Graduate	5

3.4.3 Family type

Family was taken as a group of closely related persons living together under a single roof with a common kitchen. It was measured in terms of joint family and nuclear family by assigning a score of 1 for joint family and 2 for nuclear family. The same procedure was followed by Prasannakumar (1995).

Category	Score
Joint family	1
Nuclear family	2

3.4.4 Farm size

This refers to the total cultivated area possessed by the respondents. The respondents were asked to specify the area under dryland, wetland and gardenland and they were asked to get the total area. A conversion procedure of equating two and half acres of dry land to one acre of irrigated land was followed to arrive at the standard acres of operational holdings. The total holding was then classified into three categories as delineated by the Government of Karnataka classification. The same procedure was followed by Prasannakumar (1995) was adopted.

Category	Score
Marginal farmers (upto 2.5 acres)	1
Small farmers (2.51 to 5 acres)	2
Big farmers (more than 5 acres)	3

3.4.5 Family income

Family income was the total annual income obtained by family beneficiaries of the farmer during 2000-2001 from various possible enterprises *viz.*, agriculture, forestry and subsidiary occupation like Dairy, Beekeeping, minor forest produce collection etc. The procedure followed by Patel (1994) was followed. Further to classify the beneficiaries belonging to below poverty line, a maximum income of Rs. 20,000 per annum was considered as a yardstick (Anonymous, 2000b).

3.4.6 Livestock possession

Livestock possession refers to domestic animals like cow, bullock, buffalo, sheep and goat owned by the beneficiaries. Beneficiaries were requested to indicate the number of domestic animals they possess. The scoring pattern as recommended by National Commission on Agriculture (Anonymous, 1976) and followed by Prasannakumar (1995) was used.

No. of Livestock	Score
One buffalo	1
One cow	0.5
One bullock	0.5
One sheep	0.25
One goat	0.25

3.4.7 Social participation

It was measured in terms of organizational membership and office bearer status enjoyed by the respondents in different organizations like

mandal panchayat, village cooperative society, youth club, charcha mandal and others. The procedure followed by Trivedi (1963), Byrareddy (1971) and Dixit Sreenath (1988) was followed.

Participation in each organization	Score
No participation	0
Member	1
Office bearer	2

The method of categorization was based on the criterion mean \pm $\frac{1}{2}$ Standard Deviation.

Category	
Low	mean - $\frac{1}{2}$ SD
Medium	mean \pm SD
High	mean + $\frac{1}{2}$ SD

3.4.8 Extension contact

Extension contact is the frequency of the respondents meeting with Range Forest Officer, Forest Extension Officer, Forester, motivators and other officers of the Department of Forest. The scoring pattern as recommended by Dixit Sreenath (1988) was adopted in the study.

Frequency	Score
Never	0
Rarely	1
Occasionally	2
Regularly	3

The method of categorization was based on mean \pm $\frac{1}{2}$ standard deviation.

Low mean - ½ SD

Medium mean ± ½ SD

High mean + ½ SD

3.4.9 Cosmopolitaness

Cosmopolitaness is the extent of contact made by the beneficiaries outside the village community.

In the present study cosmopolitaness referred to the degree to which extent of contact made by beneficiaries to the nearest town in the previous three months period on an average.

Cosmopolitaness of the respondents was assessed by the following procedure suggested by Bhaskaran (1976) and adopted by Desai (1977), Ravikumar (1979) and Dixit Sreenath (1988) with slight modifications.

Items	Score
Never	0
Once in a month	1
Twice in a month	2
Once in a weak	3
Twice or more in a week	4

Considering the purpose of visit, four purposes were delineated and beneficiaries were asked to indicate one of the four purposes. The procedure followed by Prasannakumar (1995) was used.

Items	Score
General purpose	1
Entertainment	2
Personal	3
Relating to forestry and agriculture	4

The method of categorization was based on mean \pm $\frac{1}{2}$ standard deviation.

Category

Low	mean - $\frac{1}{2}$ SD
Medium	mean \pm $\frac{1}{2}$ SD
High	mean + $\frac{1}{2}$ SD

3.4.10 Level of aspiration

Level of aspiration refers to the level of future performance on familiar task which an individual undertook knowing of level of past experience (Frank, 1935).

Level of operation is operationally defined as the degree to which a beneficiary sets his goal in relation to his personal and mental attributes related to forestry. The level of aspiration was measured with the help of scale developed by Muthaya (1971) with some modifications. The items included in the scale were related to education to son(s) occupation, to son(s) and forest production. The responses of the respondent were scored to obtain a measure of level of aspiration as per the procedure suggested by Muthaya (1971).

Aspiration level for education to son(s)

Education level preferred	Score
No Education	0
Primary school	1
Middle school	2
High school	3
PUC/Diploma	4
Non professional degree	5
Professional degree and technical course	6

Aspiration level regarding type of occupation to son(s)

Occupation preferred	Score
Agriculture	2
Any other occupation	4
Government job	6

Aspiration level regarding involved in forest production for the next 10 years.

Forest production	Score
No increase	0
1 to 2 times more	2
3 to 4 times more	4
5 to 6 times more	6

The scores were totalled to obtain an overall aspiration level of respondents. The method of categorization was based on mean \pm $\frac{1}{2}$ standard deviation.

Category

Low mean - ½ SD

Medium mean ± ½ SD

High mean + ½ SD

3.4.11 Employment generation

It was referred to man days generated per beneficiary's family before and after implementation of Joint Forest Management Programme.

The opportunities that exist for a beneficiary of the VFC includes easy access to the required firewood, fodder, green manure, pasture, non-timber forest produce, timber, etc. These opportunities help beneficiaries in employing themselves in collection of grass, firewood, leaves etc. in the forest area. Thus the concept of Joint Forest Management Programme is expected to create additional employment opportunities for measuring the extent of employment opportunities created by JFM.

The procedure followed by Ravindra and Veerabhadraiah (1987) was employed. Employment generated for the beneficiaries of JFM was measured taking into consideration the number of man days employed in the above activities before and after the establishment of village forest committees.

The information on the actual number of man days a beneficiary is involved in collection of grass, firewood, leaves and gum before and after

the formation of VFC was obtained from the respondent. The mean and per cent change in employment before and after formation of VFC was worked out.

Mechanism of distribution of benefits

The beneficiaries of the village forest committee shall be entitled to get grasses, leaves and fuelwood free of cost from the forest area. The beneficiaries shall also be entitled for lops and tops and pruning free of cost. The distribution of such produce will be supervised by the managing committee of the village forest committee. The managing committee shall ensure a fair and equitable distribution of the above forest produce to all the right holders. The committee may workout its own principles and mechanism for distribution of produce with a view of meeting the needs of the local population.

Regarding the disposal of the minor forest produce/fruits, timber and final harvest, the requirements of the local villagers should be treated as a first choice on such final produce. After meeting the demands of the concerned villages the surplus produce shall be disposed off by the village forest committee through open public auction.

The proceeds arising from local sale by the village forest committee as well as those arising from the disposal through auction after deducting all the expenditure incurred on the final harvest and auction, shall be shared between government, beneficiaries and village forest development fund with a ratio of 50:25:25.

3.5 DEVELOPMENT OF INTERVIEW SCHEDULE

Keeping in view the objectives and variables of the study, a schedule was prepared. The schedule was discussed with experts in the field of JFM programme. The instrument was pre-tested with a sample of 40 farmers in non-sample area for testing the adequacy of the schedule. The final interview schedule used for the study is given in the appendix (A).

3.6 METHOD OF DATA COLLECTION

The data were collected by personal interview method. All the 360 beneficiaries spread over 18 villages of six taluks in two districts of Belgaum circle in northern Karnataka State were interviewed to obtain information.

3.7 STATISTICAL METHODS AND TESTS USED

Frequency and percentages were used in explaining the different socio-personal characteristics of the beneficiaries.

The correlation coefficients were computed in respect of knowledge and perception to find out the relationship with socio-personal characteristics.

Multiple regression analysis was also utilized to identify the extent of contribution of independent variables on the variation in the dependent variables under consideration.

RESULTS

4. RESULTS

The results are presented under the following headings.

- 4.1 Socio-personal characteristics of beneficiaries of Joint Forest Management Programme.
- 4.2 Knowledge of the beneficiaries about Joint Forest Management Programme.
- 4.3 Extent of perception of Joint Forest Management Programme by the beneficiaries.
- 4.4 Relationship between socio-personal characteristics of the beneficiaries and their knowledge about Joint Forest Management Programme.
- 4.5 Relationship between socio-personal characteristics of the beneficiaries and their perception of Joint Forest Management Programme.
- 4.6 Benefits derived by the beneficiaries from Joint Forest Management Programme.
- 4.7 Problems faced and suggestions made by the beneficiaries of Joint Forest Management Programme.

4.1 SOCIO-PERSONAL CHARACTERISTICS OF THE BENEFICIARIES OF JOINT FOREST MANAGEMENT PROGRAMME

A number of socio-personal characteristics of the respondents are likely to influence the knowledge and perception level of the beneficiaries of Joint Forest Management. The characteristics considered in the study

were Age, Education, Family Type, Farm Size, Family Income, Extension Contact, Social Participation, Cosmopolitaness and Level of Aspiration. The frequency distribution of these characteristics were worked out and are presented here under.

4.1.1 Age

It is seen from the Table 3 that 25.00 per cent of beneficiaries belonged to young age group (less than 35 years), whereas 51.94 per cent of the beneficiaries belonged to middle age group. The proportion of beneficiaries under old age category was 23.06 per cent.

4.1.2 Education

The distribution of beneficiaries according to the education level is depicted in Table 4. The data revealed that 38.30 per cent of beneficiaries had primary education followed by middle school (13.60%), high school (11.90%), PUC/diploma (1.70%) and degree (0.80%). About 33.60 per cent of the sample respondents were found to be illiterates.

4.1.3 Family type

Table 5 depicted the pattern of distribution of beneficiaries according to family type, wherein it was observed that the majority of beneficiaries (61.67%) belonged to nuclear family and 38.33 per cent to joint family.

4.1.4 Farm size

The data presented in Table 6 revealed that 32.50 per cent of the beneficiaries were big farmers, followed by marginal farmers (29.70%)

Table 3. Distribution of the beneficiaries according to age.

n=360			
Sl. No.	Category	Frequency	Per cent
1	Young (<35 yrs.)	90	25.00
2	Middle (36-50 yrs.)	187	51.94
3	Old (51 and above)	83	23.06
	Total	360	100.00

Table 4. Distribution of the beneficiaries according to education.

n=360			
Sl. No.	Category	Frequency	Per cent
1	Illiterate	121	33.60
2	Primary School	138	38.30
3	Middle School	49	13.60
4	High School	43	11.90
5	PUC/Diploma	6	1.70
6	Degree	3	0.90
	Total	360	100.00

Table 5. Distribution of the beneficiaries according to family type.

n=360			
Sl. No.	Category	Frequency	Per cent
1	Nuclear family	222	61.67
2	Joint family	138	38.33
	Total	360	100.00

Table 6. Distribution of the beneficiaries according to farm size.

n=360

Sl. No.	Category	Frequency	Per cent
1	Land less labours	63	17.50
2	Marginal farmers	107	29.70
3	Small farmers	73	20.30
4	Big farmers	117	32.50
	Total	360	100.00

and small farmers (20.30%). The proportion of land less beneficiaries was 17.50 per cent.

4.1.5 Family income

Table 7 revealed distribution of the beneficiaries according to the family income. An overwhelming per cent (96.67%) of the beneficiaries were below poverty line (income less than Rs. 20,000 per annum) and only 3.33 per cent of them were above poverty line. The planning commission, Government of India (2000) suggested that if the annual income is less than Rs. 20,000 for the family it could be considered as family below poverty line.

4.1.6 Live stock possession

The information on distribution of the beneficiaries according to livestock possession is furnished in Table 8. As many as 150 (41.67%) beneficiaries out of 360 were found to possess 1 to 2 bullocks, and 35.83 per cent of the beneficiaries did not possess the bullocks. The proportion of the beneficiaries possessing 3 to 4 bullocks was 21.94 per cent. None of the sample beneficiaries possessed more than six bullocks. The proportion of the beneficiaries with 1 to 2 cows was 40.28 per cent. The percentage of the beneficiaries without any cows was 54.72 per cent. As for as possession of buffaloes is concerned, about 56.97 per cent of sample beneficiaries did not possess even a single animal. However, 37.50 per cent of the beneficiary possessed 1 to 2 buffaloes. The proportion of beneficiaries possessing 1 to 2 sheep and 3 to 4 sheep was

Table 7. Distribution of the beneficiaries according to family income.

n=360			
Sl. No.	Category	Frequency	Per cent
1	Less than Rs. 20,000 per year	348	96.67
2	More than Rs. 20,000 per year	12	3.33
	Total	360	100.00

Table 8. Distribution of the beneficiaries according to livestock possession.

Sl. No.	Livestock range	Bullock		Cow		Buffaloes		Sheep		Goat	
		Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
1	Without animals	129	35.83	197	54.72	205	56.95	332	92.22	339	94.17
2	1-2 animals	150	41.67	145	40.28	135	37.50	14	3.89	10	2.78
3	3-4 animals	79	21.94	14	3.89	14	3.89	6	1.67	3	0.83
4	5-6 animals	2	0.56	3	0.83	3	0.83	1	0.28	1	0.28
5	More than 6 animals	-	-	1	0.28	3	0.83	7	1.94	7	1.94
	Total	360	100.00	360	100.00	360	100.00	360	100.00	360	100.00

respectively 3.89 per cent and 1.67 per cent. Most of the beneficiaries (92.22%) did not possess sheep. Similarly 94.17 per cent of the beneficiaries did not possess goats.

4.1.7 Extension contact

The information on extension contact by the beneficiaries about JFM is presented in Table 9. It could be seen from the table that 37.78 per cent of the beneficiaries had contacted foresters for getting information regarding JFM. The next important officials consulted by the beneficiaries for getting more information on JFM were Forest Guards (30.00%) followed by Range Forest Officers (22.78%). The proportion of beneficiaries contacting Deputy Conservator of Forest and Assistant Conservator of Forest for information about JFM was 1.94 per cent and 3.06 per cent respectively. The beneficiaries also contacted local leaders for getting information on JFM. However, the proportion of the beneficiaries contacting local leaders was very less (4.44%).

The distribution of beneficiaries according to extension contact is depicted in Table 10. The data revealed that the mean score of extension contact was 3.54 nearly fifty-five per cent of the beneficiaries had medium extension contact and 25.28 per cent of beneficiaries had low extension contact. The proportion of sample beneficiaries having high extension contact was 19.44 per cent. The mean scores of extension contact for low, medium and high categories were 1.68, 3.51 and 6.04 respectively.

Table 9. Extension contact by the beneficiaries about JFM.

n=360

Sl. No.	Extension contact about JFM	Frequency	Per cent
1	Deputy conservator of forest	7	1.94
2	Assistant conservator of forest	11	3.06
3	Range forest officer	82	22.78
4	Forester	136	37.78
5	Forest guard	108	30.00
6	Local leader	16	4.44
	Total	360	100.00

Table 10. Distribution of the beneficiaries according to level of extension contact.

n=360

Sl. No.	Category	Mean score	Frequency	Per cent
1	Low	1.68	91	25.28
2	Medium	3.51	199	55.28
3	High	6.04	70	19.44
	Over all	3.54	360	100.00

4.1.8 Social participation

The distribution of the beneficiaries according to social participation is depicted in Table 11. As many as 30 beneficiaries (8.33%) out of 360 have served as beneficiaries of village panchayats. The proportion of sample respondents as beneficiaries of cooperative society, youth club and characha mandals were 53.61 per cent, 44.17 per cent and 23.33. per cent respectively.

The information provided in Table 12 revealed that 36.95 per cent of the beneficiaries belonged to low level of social participation group, followed by 33.61 per cent to high level of social participation and 29.44 per cent to medium level of social participation group. The mean scores of social participation was 1.81.

4.1.9 Cosmopolitaness

Table 13 depicts the distribution of sample beneficiaries according to level of cosmopolitaness. A close observation of the table indicated that 47.50 per cent of beneficiaries belonged to high cosmopolite group, 33.06 per cent to low group and 19.44 per cent to medium cosmopolite group. The mean score was 8.39. The mean scores for low, medium and high categories of cosmopolitaness were 5.36, 8.61 and 10.41 respectively.

4.1.10 Level of aspiration

The distribution of the beneficiaries according to their level of aspiration is shown in Table 14. The data in the table revealed that

Table 11. Distribution of the beneficiaries according to social participation.

n=360

Sl. No.	Participation	Frequency	Per cent
1	Mandal Panchayat	30	8.33
2	Cooperative society	193	53.61
3	Youth club	159	44.17
4	Charchamandal	84	23.33

Table 12. Distribution of the beneficiaries according to level of social participation.

n=360

Sl. No.	Category	Mean score	Frequency	Per cent
1	Low	0.02	133	36.95
2	Medium	1.81	106	29.44
3	High	3.79	121	33.61
	Over all	1.81	360	100.00

Table 13. Distribution of the beneficiaries according to comopoliteness.

n=360

Sl. No.	Category	Mean score	Frequency	Per cent
1	Low	5.36	119	33.06
2	Medium	8.61	70	19.44
3	High	10.41	171	47.50
	Over all	8.39	360	100.00

Table 14. Distribution of the beneficiaries according to level of aspiration.

n=360

Sl. No.	Category	Mean score	Frequency	Per cent
1	Low	4.34	92	25.55
2	Medium	8.14	167	46.39
3	High	12.75	101	28.06
	Overall	8.46	360	100.00

46.39 per cent of the beneficiaries belonged to medium level of aspiration. The proportion of beneficiaries under to high and low levels of aspiration was 28.06 per cent and 25.55 per cent respectively. The mean score for entire sample was 8.46. The mean scores for low medium and high categories of aspiration level were 4.34, 8.14 and 12.75 respectively.

4.2 KNOWLEDGE OF THE BENEFICIARIES ABOUT JOINT FOREST MANAGEMENT PROGRAMME

4.2.1. Extent of knowledge level

The data in Table 15 revealed that the mean score for knowledge was 17.79 against a maximum possible score of 32. The proportion of the beneficiaries in medium knowledge level was 39.17 per cent. The proportion of beneficiaries falling under low and high knowledge level was 34.72 per cent and 26.11 per cent. The mean score for low, medium and high level of knowledge were 13.28, 17.51 and 24.19 respectively.

4.2.2 Knowledge of beneficiaries about different components of JFM

The information on knowledge of the beneficiaries regarding different components of JFM is shown in Table 16. It is evident from the data presented in table that the average score for objectives of JFM was 4.08 against a possible maximum score of 7 and this component ranked first. The average score for functions of JFM was 3.68 against possible maximum score of 6.00 and ranked second. The average score for management plan was 3.38 against the maximum possible score of 7. This component ranked third. The average score for concept of JFM was

Table 15. Distribution of the beneficiaries according to Extent of overall knowledge level of JFM.

n=360

Sl. No.	Category	Mean score	Frequency	Per cent
1	Low	13.28	125	34.72
2	Medium	17.51	141	39.17
3	High	24.19	94	26.11
	Overall	17.79	360	100.00

Table 16. Knowledge of the beneficiaries about different components of JFM.

n=360

Sl. No.	Knowledge components	Over all		
		Max. score	Avg. score	Rank
1	Objectives of JFM	7.00	4.08	I
2	Functions of JFM	6.00	3.68	II
3	Concept of JFM	3.00	1.77	IV
4	Village Forest Committee	3.00	1.63	V
5	Management plan	7.00	3.38	III
6	Role of different departments	3.00	1.61	VII
7	Disposal of forest produce and benefit sharing	3.00	1.63	V
8	Overall	32.00	17.79	-

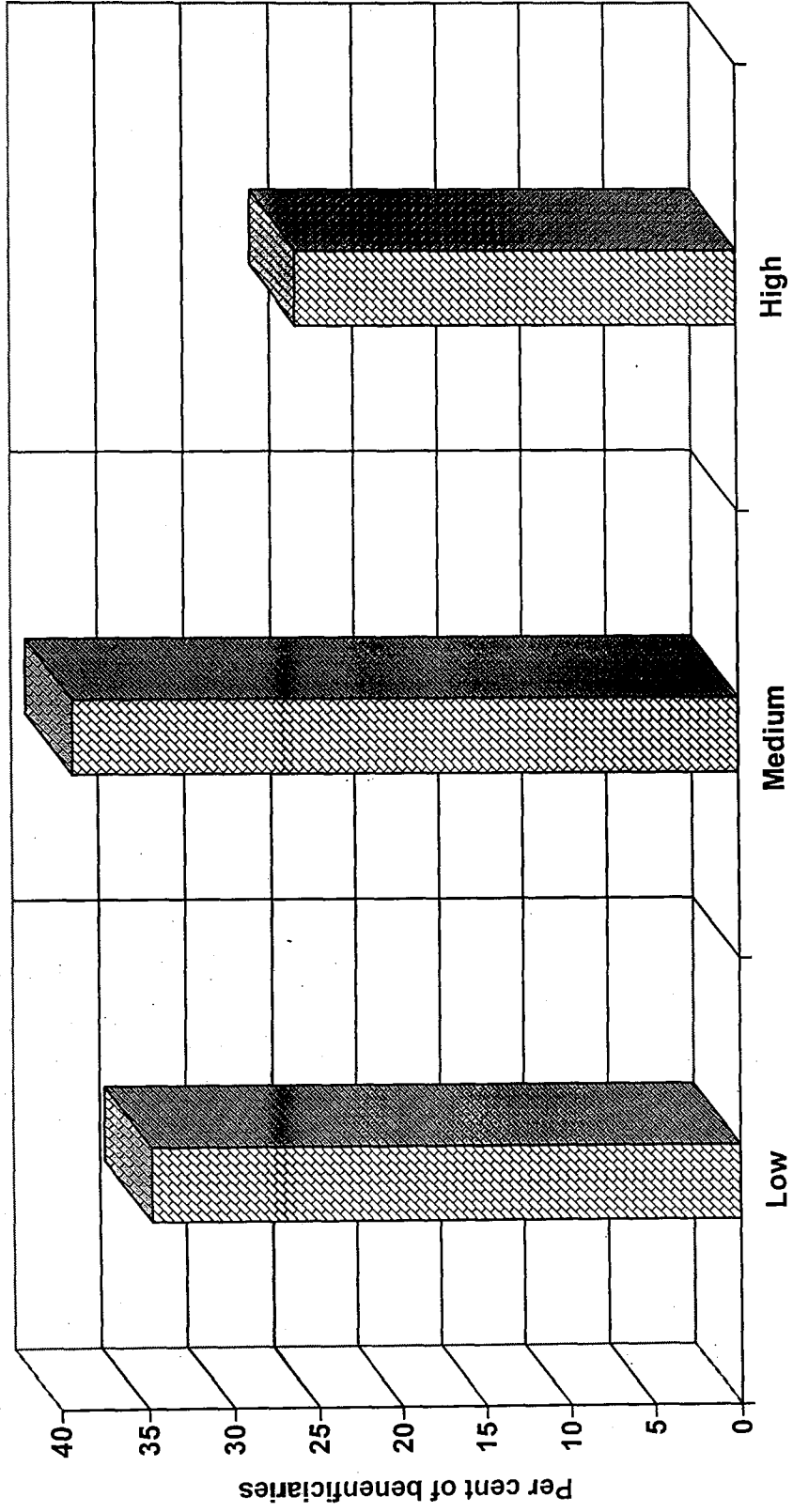


Fig. 4. Distribution of beneficiaries according to extent overall knowledge level of JFM.

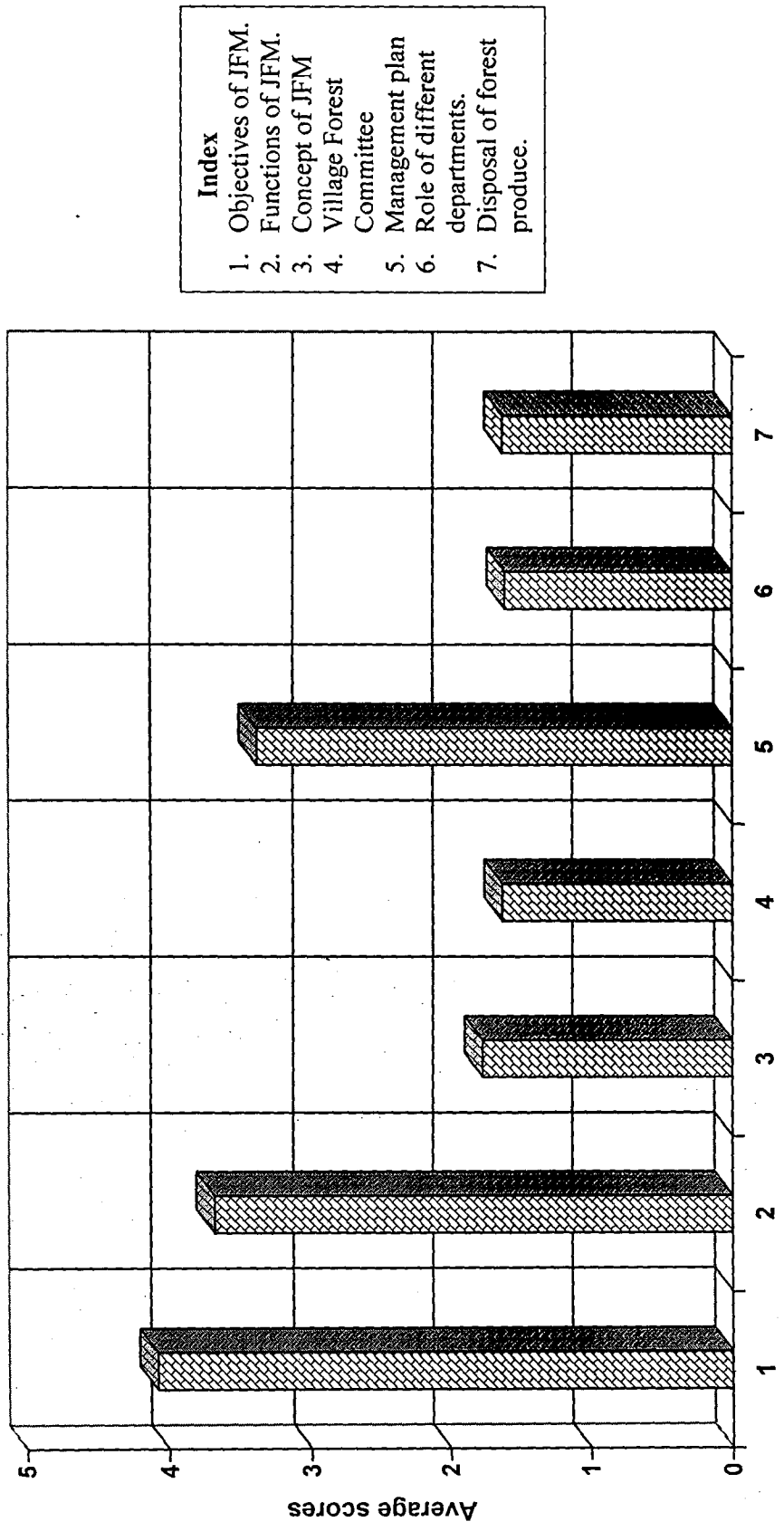


Fig. 5. Knowledge of the beneficiaries about different components of JFM.

1.77 against a possible maximum score of 3.00, ranking fourth. The average score for village forest committee was 1.63 against the maximum possible score of 3.00 and ranked fifth. The similar score was observed for disposal of forest produce and benefit sharing components and they jointly shared the fifth rank. The average score for role of different departments was 1.61 against a possible maximum score of 3.00 and ranked seventh.

4.3 EXTENT OF PERCEPTION OF JOINT FOREST MANAGEMENT PROGRAMME BY THE BENEFICIARIES

4.3.1 Extent of overall perception level

The mean score for perception level was 39.87 as evident from Table 17 against a maximum possible score of 74. The score for low level of perception of JFM was 33.27 while it was 39.48 for medium level of perception and 47.73 for high level of perception of JFM. Nearly 45.56 per cent of the beneficiaries belonged to medium level of perception. While The percentage of beneficiaries in low and high level of perception category was 28.33 per cent and 26.11 per cent respectively.

4.3.2 Perception about different components of JFM by the beneficiaries

The information pertaining to the perception about different components of JFM by the beneficiaries is provided in Table 18. The average overall score for perception about different components of JFM by the beneficiaries was 39.87 as against a possible maximum score of 74. Among the components, usefulness of the programme ranked first

Table 17. Distribution of the beneficiaries according to extent of perception about JFM.

n=360

Sl. No.	Category	Mean score	Frequency	Per cent
1	Low	33.27	102	28.33
2	Medium	39.48	164	45.56
3	High	47.73	94	26.11
	Overall	39.87	360	100.00

Table 18. Perception of the beneficiaries about different components of JFM.

Sl. No.	Perception components	n=360 Over all		
		Max.	Avg.	Rank
1	Concept of JFM	6	3.49	VII
2	Objectives JFM	10	5.14	II
3	Feasibility of JFM	8	3.99	V
4	Management plan	6	3.02	VIII
5	Village Forest Committee	6	3.75	VI
6	Perception towards usefulness of programme	18	11.24	I
7	Disposal of forest produce	8	4.76	III
8	Peoples involvement in JFM	8	4.48	IV
9	Overall	59	39.87	-

Table 19. Correlation between independent variables and knowledge level.

n=360

Sl. No.	Characteristics	Over all
1	Age	0.037
2	Education	0.070
3	Family type	-0.015
4	Farm size	0.014
5	Family income	0.078
6	Livestock possession	-0.059
7	Extension contact	0.364**
8	Social participation	-0.084
9	Consmopolitencess	-0.074
10	Level of aspiration	0.006
11	Employment generation	0.2224**
12	Perception	0.3778**

* Significant at 5% level

** Significant at 1% level

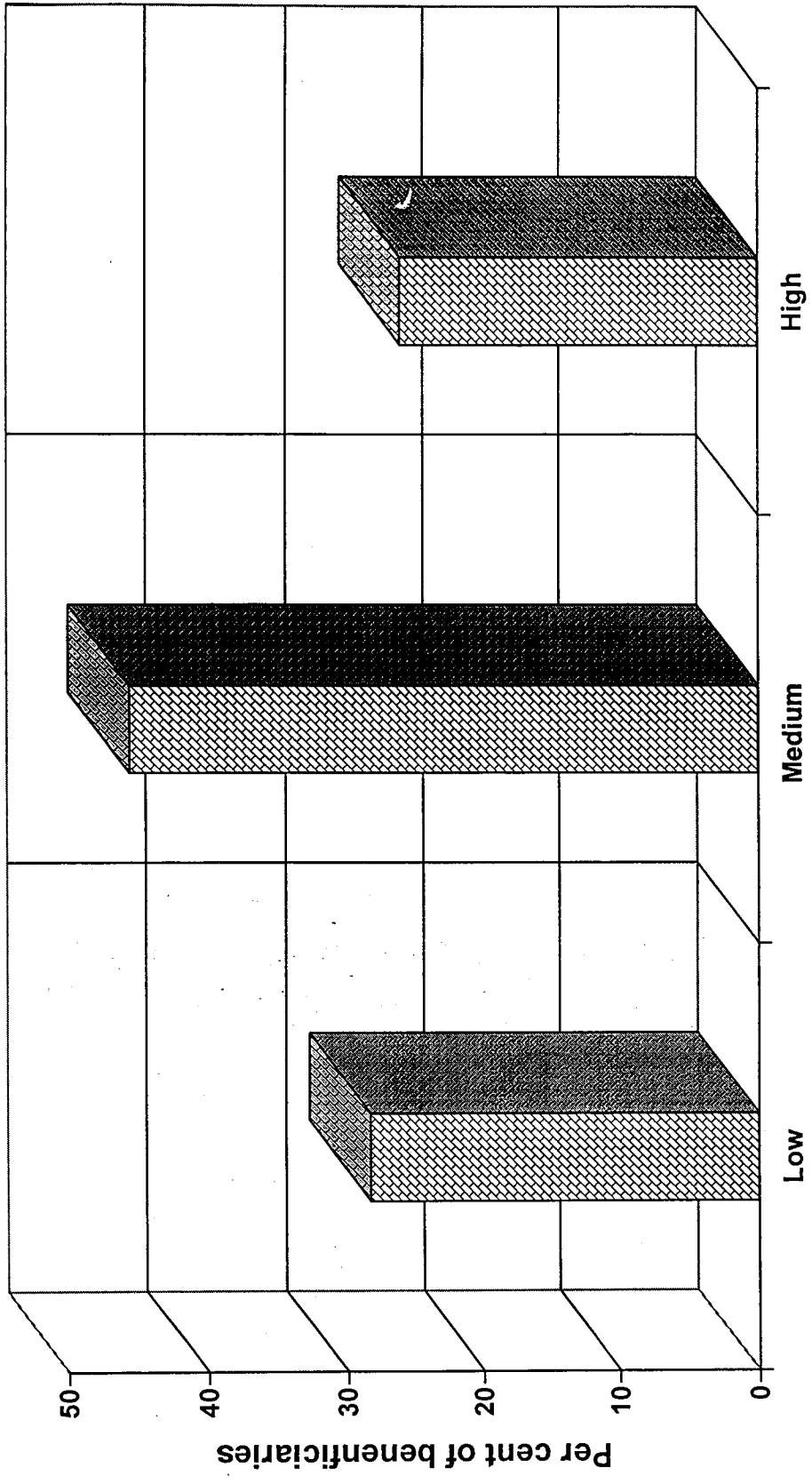


Fig. 6. Distribution of the beneficiaries according to extent of overall perception of JFM.

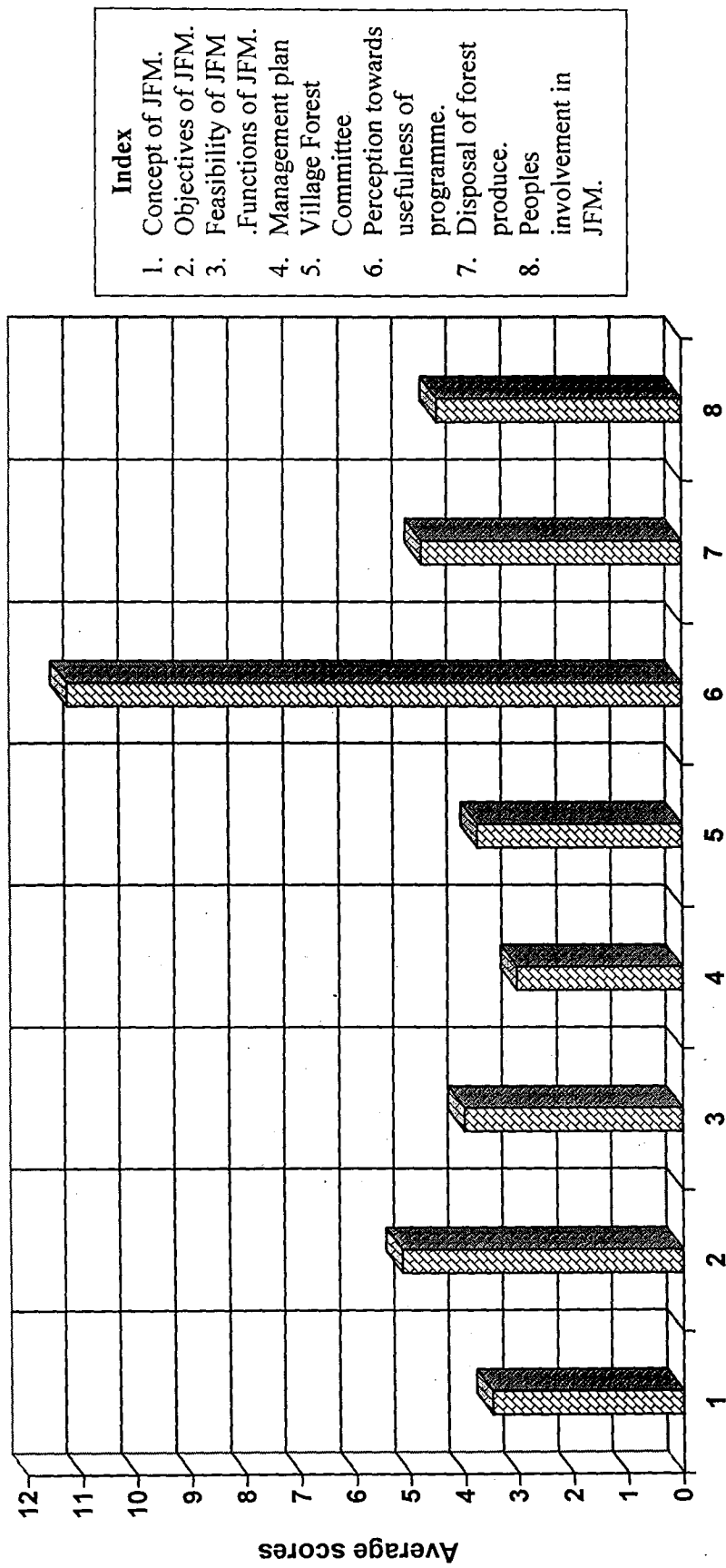


Fig. 7. Perception of the beneficiaries about different components of JFM.

with score of 11.24 followed by objectives of JFM (5.14), disposal of produce (4.76), peoples involvement (4.48), feasibility of JFM (3.99), village forest committee (3.75), concept of JFM (3.49) and management plan (3.02) in the order.

4.4 RELATIONSHIP BETWEEN SOCIO-PERSONAL CHARACTERISTICS OF BENEFICIARIES AND THEIR KNOWLEDGE ABOUT JOINT FOREST MANAGEMENT PROGRAMME

4.4.1 Association between socio-personal characteristics of beneficiaries with their knowledge level

An attempt has been made in this study to assess the degree of association between socio-personal characteristics of beneficiaries with their knowledge level. This has been done with correlation analysis. The correlation coefficients between the knowledge level and different independent variables are depicted in Table 19. A glance at the table indicated that extension contact, employment generation and perception had a significant positive association with the knowledge at 1 per cent level. Whereas the other independent variables such as age, education, farm size, family income and level of aspiration though had a positive association with the knowledge level, their statistical significance was not established. Surprisingly, family type, livestock possession, social-participation and cosmopolitaness appeared to be negatively associated with the knowledge level. However, this negative relation was not statistically significant.

4.4.2 Extent of relationship between knowledge and socio-personal characteristics

Multiple linear regression analysis was carried out to know the extent and magnitude of relationship between the knowledge level of the

beneficiaries and their socio-personal characteristics. The results are presented in Table 20.

The regression model explained 71 per cent variation ($R^2=0.7109$) in the knowledge level due to the variations in independent variables. The coefficient of determination (R^2) was significant at 1 per cent level as the 'F' value was 6.9567. This implied that the model was adequate in explaining the variation in dependent variable. An increase in the extension contact and employment generation was found to significantly increase the knowledge level of the beneficiaries. Surprisingly increased cosmopolitanness of the beneficiaries was found to significantly decrease the knowledge level of the beneficiaries. The characteristics like age, education, family type, family income and social participation contributed positively to the knowledge level. However their contribution was not statistically significant. Family size, live stock possession and level of aspiration were found to be the negative but non-significant contributors to the knowledge level.

4.5 RELATIONSHIP BETWEEN SOCIO-PERSONAL CHARACTERISTICS OF BENEFICIARIES AND THEIR PERCEPTION OF JOINT FOREST MANAGEMENT PROGRAMME

4.5.1 Relationship between independent variables and perception of JFM

The degree of association between selected independent variable and the perception was analysed with the help of correlation coefficient and reproduced in Table 21. The extension contact was positively and significantly associated with perception level. The association between perception level and all other characteristics like family type, farm size

Table 20. Multiple regression analysis of knowledge of JFM by the beneficiaries with independent variables.

n=360			
Sl. No.	Characteristic	Overall	
		'b' value	't' value
1	Age	0.0274	1.171
2	Education	0.2411	1.152
3	Family type	0.0783	0.164
4	Farm size	-0.0431	-0.192
5	Family income	0.0001	0.633
6	Livestock possession	-0.1459	-1.574
7	Extension contact	1.0869	7.622**
8	Social participation	0.1899	1.346
9	Cosmopolitaness	-0.1994	-2.179*
10	Level of aspiration	-0.0128	-0.184
11	Employment generation	0.0244	4.397**
	Intercept	15.6374	
	R ² value	0.7109	
	F value		6.9567**

* Significant at 5% level

** Significant at 1% level

Table 21. Correlation between independent variable and perception.

n=360		
Sl. No.	Characteristics	Over all
1	Age	0.036
2	Education	0.102
3	Family type	-0.005
4	Farm size	-0.054
5	Family income	0.063
6	Livestock possession	-0.093
7	Extension contact	0.319**
8	Social participation	0.030
9	Cosmopolitaness	0.054
10	Level of aspiration	0.014
11	Employment generation	0.0883

* Significant at 5% level

** Significant at 1% level

and livestock possession was negatively and non-significantly associated with perception. However age, education, family income, social participation, cosmopolitaness, level aspiration and employment generation had a positive association with perception level but not significantly establishment.

4.5.2 Extent of relationship between perception and socio-personal characters of beneficiaries

The results of the multiple linear regression analysis to explain the extent and magnitude of relationship between perception and socio-personal factors are given in Table 22. A glance at the table indicated that the socio-personal characters included in the regression model explained 63.29 per cent of variation in perception. The 'F' value (4.78) was significant at 1 per cent level.

The perception level was found to be positively and significantly influenced by the extension contact. The characteristics like social participation, cosmopolitaness, level of aspiration, family income, education and age contributed positively to the perception, but the influence of these characteristics on dependent variable was not significant. The characters like family type, farm size, livestock possession and employment generation produced negative and non-significant influence on perception.

4.6 BENEFITS DERIVED BY BENEFICIARIES FROM JOINT FOREST MANAGEMENT PROGRAMME

4.6.1 Income derived by beneficiaries of JFM

Quantification of the benefits derived by the beneficiaries from JFM was one of the objectives of the study. The benefits derived by the

Table 22. Multiple regression analysis of Perception of JFM by the beneficiaries with independent variables.

Sl. No.	Characteristic	Overall	
		'b' value	't' value
1	Age	0.0278	0.867
2	Education	0.4621	1.611
3	Family type	-0.1118	-0.170
4	Farm size	-0.3493	-1.138
5	Family income	0.0001	1.079
6	Livestock possession	-0.2180	-1.717
7	Extension contact	1.1648	5.916**
8	Social participation	0.0765	0.396
9	Cosmopolitaness	0.0311	0.248
10	Level of aspiration	0.0133	0.140
11	Employment generation	-0.0149	-1.956
	Intercept	34.9906	
	R ² value	0.6329	
	F value		4.7803**

* Significant at 5% level

** Significant at 1% level

beneficiaries from the JFM was by way of fodder, fire wood, leaves and gum is presented in Table 23. As many as 200 beneficiaries out of 360 were found to be benefited from the JFM by way of fodder (48.50%) and 178 beneficiaries were found to be benefited by way of fire wood (46.45%). For the entire sample of 360 beneficiaries, only 18 beneficiaries (4.36%) and six beneficiaries (0.69%) were found to derive benefits by way of collection of leaves and gum respectively. The average quantity of fodder and firewood, leaves and gum collected by beneficiaries was 869.17 kgs, 1111.67 kgs, 58.67 kgs and 0.37 kgs respectively. The fodder, firewood leaves and gum were collected by the beneficiaries individually. The entire benefit has been taken by beneficiaries themselves.

4.6.2 Employment generation from JFM

The level of employment generated by the beneficiaries before and after implementation of JFM is indicated in Table 24. The beneficiaries were engaged in collection of firewood, fodder, leaves and gum from the forest area. The information on the number of days a beneficiary was engaged in the above activities before and after implementation of JFM was collected and averages were worked out. The employment of the beneficiaries before the implementation of JFM was 63.90 man-days. The beneficiaries largely involved in collection of fodder and firewood.

Table 23. Benefits derived by the beneficiaries of JFM.

n=360				
Sl. No.	Benefits	Quantity (kg)	No.	Per cent
1	Fodder (kg)	869.17	200	48.50
2	Fire wood (kg)	1111.67	178	46.45
3	Leaves (kg)	58.67	18	4.36
4	Gum (kg)	0.37	6	0.69
	Total Rs.	-	-	100.00

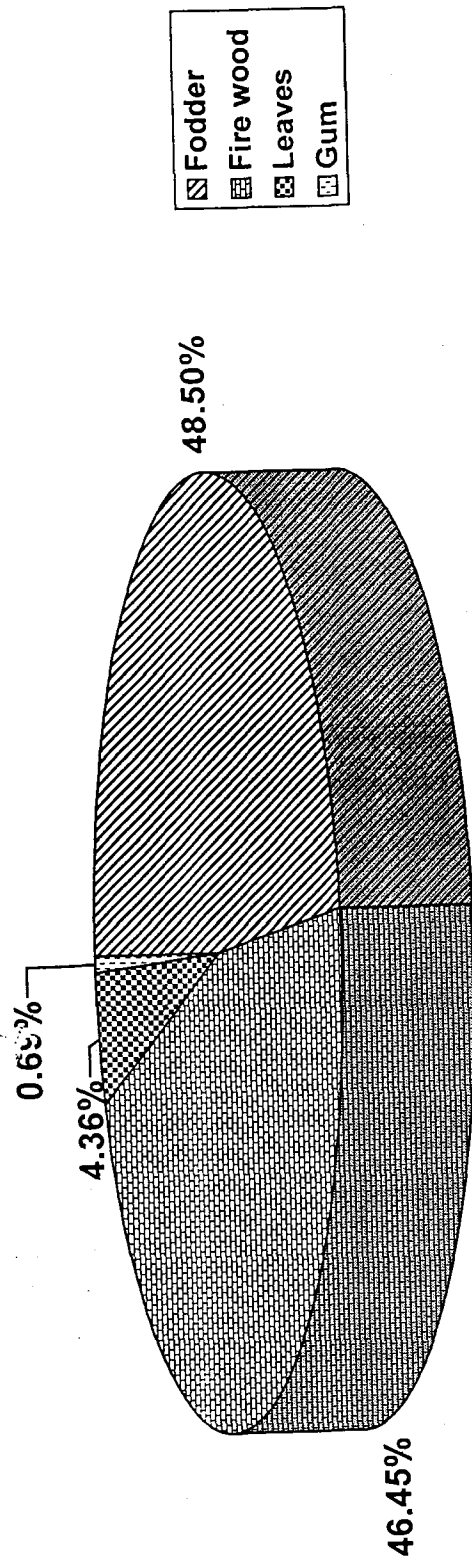


Fig. 8. Benefits derived by the beneficiaries of JFM.

Table 24. Employment generation due to JFM.

n=360		
Sl. No.	Particulars	Man days
1	Before implementation of JFM	63.90
2	After implementation JFM	99.31
3	Increase in man days	35.41
4	Per cent increase in employment	55.41

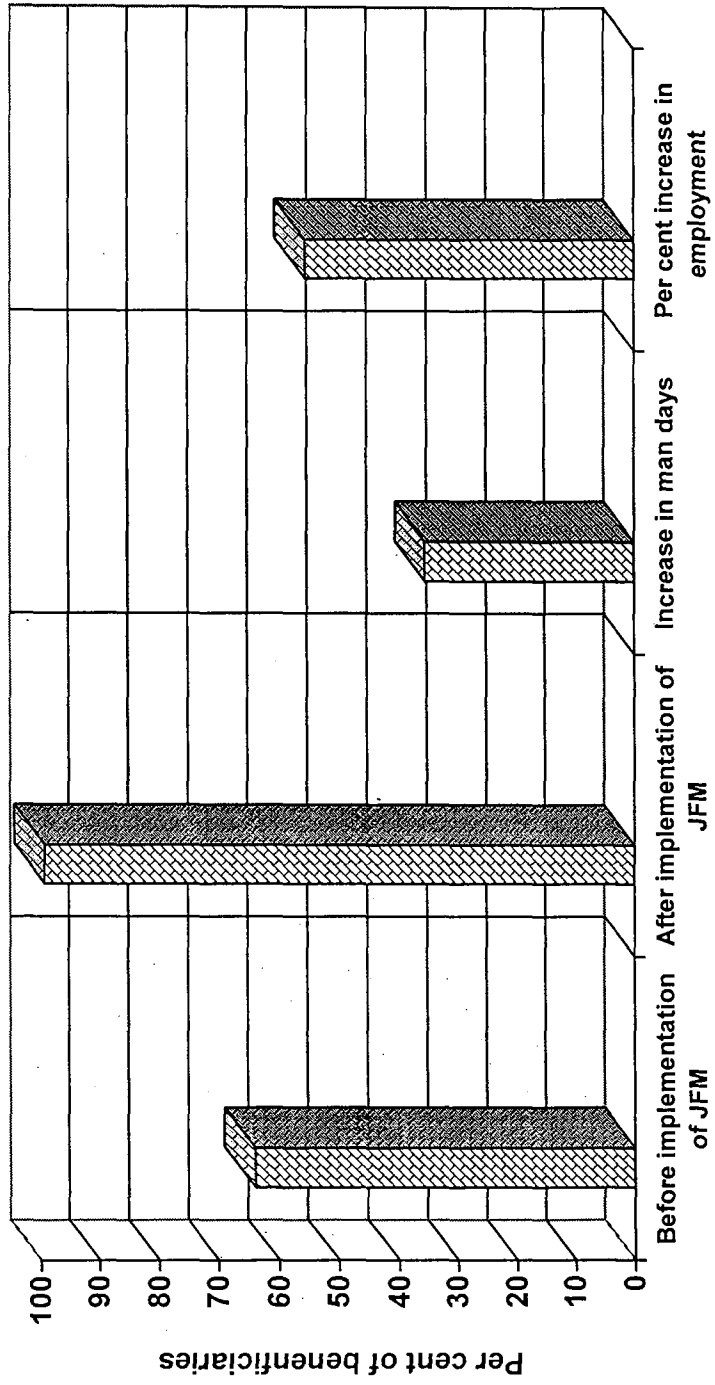


Fig. 9. Employment generation due to JFM.

Whatever benefit derived from these activities were enjoyed by the beneficiaries themselves. After the implementation of JFM the beneficiaries continued the same activities. However, the implementation JFM helped them to have access to protect the forest. Thus there was an improvement in the number of man days engaged in the above activities. The mean employment of beneficiaries after the implementation of JFM was 99.31 man days as against 63.90 before the JFM programme. Thus showing an increase of 55.41 man days.

4.7 PROBLEMS FACED AND SUGGESTIONS MADE BY THE BENEFICIARIES OF JOINT FOREST MANAGEMENT PROGRAMME

The opinion of the beneficiaries with respect to the problems faced and the suggestions were collected. These problems and suggestions were listed under different categories and percentages were computed for each of these categories.

4.7.1 Problems faced by the beneficiaries

A wide range of problems as expressed by the beneficiaries of JFM were presented in Table 25. Among the problems ten problems appeared to be more important as opined by good number of beneficiaries. The major problem was delay in flow of benefits as expressed by 37.50 per cent of the beneficiaries. Lack of confidence and uncertainty in the scheme was the second most important problem as it was reported by

Table 25. Problems faced by the beneficiaries of JFM.

Sl. No.	Problems	Over all	
		Frequency	Per cent
1	Delay in the flow of benefits	135	37.50
2	Lack of confidence and uncertainty in the scheme	108	30.00
3	Lack of power to VFC beneficiaries against theft and other offences	90	25.00
4	Lack of follow-up activities by forest department officials	84	23.33
5	Delay in implementation of activities	65	18.05
6	Lack of coordination from other department	42	11.66
7	Inadequacy of forestry extension	40	11.11
8	In adequacy of staff	34	9.44
9	Lack of homogeneity among VFC beneficiaries	33	9.16
10	Poor participation of women.	30	8.33

30.00 per cent of the beneficiaries. About one fourth of the total beneficiaries considered lack of adequate powers to VFC as a problem. Around 23 per cent of the beneficiaries viewed lack of follow up of the programme by the officials of the forest department as another important problem. Delay in implementation of activities, lack of coordination from other departments inadequacy of the forestry extension, inadequacy of staff and poor participation of women were some of the other minor problems faced by beneficiaries. These problems have been considered as minor because less than 65 beneficiaries out of 360 beneficiaries had viewed these issues as problems.

4.7.2 Suggestions made by the beneficiaries of JFM

The opinion of beneficiaries for better implementation of JFM was obtained and tabulated. The important suggestions were presented in the Table 26.

A glance at the table revealed that as many as 120 beneficiaries (33.33%) opined that involvement of beneficiaries in formulating forest management practices is essential. About 31.11 per cent of the beneficiaries felt that forest department should give preference to the people of that VFC for all type of work carried by it. About 28.00 per cent of the beneficiaries felt that frequent visit and follow up by senior officer of the forest department is must. All minor offences and defaults committed by a beneficiaries should be delt by the VFC only expressed by 24.00 per cent of the beneficiaries and more power are to be vested

Table 26. Suggestions from beneficiaries for better implementation of JFM.

n=360

Sl. No.	Suggestions	Over all	
		Frequency	Per cent
1	Views and knowledge of local villagers should be considered while formulation of forest management practices.	120	33.33
2	Forest department should give preference to the people of that VFC for all type of work carried by it.	112	31.11
3	Frequent visit and follow up by senior officer of the forest department is must.	102	28.33
4	All minor offences and defaults committed by beneficiaries should be delt by the VFC only.	87	24.16
5	More power are to be vested with VFC beneficiaries to take action against theft and other offences like encroachment illicit cutting, poaching of animals etc.	80	22.22
6	More watch and ward should be provided by appointing more guards to protect the existing forest in a better way.	72	20.00
7	Short term and valuable species are to be planted in JFM afforestation programme.	60	16.66

Contd..

8	If protective irrigation is given to the plantation better establishment of seedlings and better returns can be expected.	58	16.11
9	Joint meeting with VFC beneficiaries forest Department Officers and NGO's will have better effect on VFC functioning.	52	14.44
10	A separate building and phone to VFC will help effectively to control theft and other malpractices.	44	12.22
11	Skill training to village artisans will improve their earnings.	42	11.66
12	Training shall precede implementation of any new programme.	40	11.11
13	VFC beneficiaries be issued identity cards.	35	9.72
14	Women membership should be guaranteed by minimum number and not sealed by maximum.	34	9.44
15	Multiple VFC can be experimented for bigger villages.	30	8.33
16	Forest Department to organize more exposure trips to VFC beneficiaries.	25	6.94
17	Transparency in implementation and accounting is recommended.	22	6.11
18	Organizing homogenous group to will enhance people participation.	20	5.55

with VFC beneficiaries to take action against theft and other offenses opined by 22.22 per cent of the beneficiaries. The suggestion for regular and constant watch and ward came from 20.00 per cent of the beneficiaries. Providing protective irrigation, plantation of valuable spices, joint meeting with VFC and providing infrastructure to VFC, training, issue of identify cards and transparency were some of the other suggestions made by a small proportion of the beneficiaries.

Some of the problems expressed by forest department officials for effective implementation of JFM are 1) Lack of coordination from agriculture and horticulture departments. 2) Lack of good leadership in the villages. 3) Delay in flow of funds to JFM activities.

DISCUSSION

5. DISCUSSION

The results presented in the previous chapter are discussed in this chapter under the following subheadings.

- 5.1 Socio-personal characteristics of the beneficiaries of Joint Forest Management Programme.
- 5.2 Knowledge of the beneficiaries about Joint Forest Management Programme.
- 5.3 Extent of perception of Joint Forest Management Programme by the beneficiaries.
- 5.4 Relationship between socio-personal characteristic of the beneficiaries and knowledge about Joint Forest Management Programme.
- 5.5 Relationship between socio personal characteristics of the beneficiaries and their perception of Joint Forest Management Programme.
- 5.6 Benefits derived by the respondents from Joint Forest Management Programme.
- 5.7 Problems faced and suggestions made by beneficiaries of Joint Forest Management Programme.

5.1 SOCIO-PERSONAL CHARACTERISTICS OF THE BENEFICIARIES OF JOINT FOREST MANAGEMENT PROGRAMME

The knowledge and perception level are generally influenced by a wide range of socio-personal characteristics of the beneficiaries. To study the influence of such characteristics on knowledge and perception

level some of the important characteristics considered and discussed below.

The data in Table 3 revealed that around 52 per cent of the beneficiaries belonged to middle aged group. About twenty-three per cent of the beneficiaries belonged to old age group of above 51 years. The proportion of beneficiaries belonging to young age group of less than 35 years was 25.00 per cent. The results of the present study are in line with the results of Dixit Sreenath (1992) who reported that majority of the respondents in IRDP programme belonged to middle age group. The results of the study conducted by Hemalatha Prasad (1995), Dwarakinath (2001) were in line with present study.

The Table 4 revealed that 33.60 per cent of beneficiaries were illiterates and 38.30 per cent of respondents were having education up to primary school. Only 13.60 per cent and 11.90 per cent of the beneficiaries had education up to middle school and high school respectively. Less than one per cent of the beneficiaries had degree level education. Thus, majority of the beneficiaries were either illiterates or found to have education up to primary school. The reasons for low education status of the respondents were lack of educational facilities, respondents residing in forest area, lack of transport facilities and limited financial resources. Similar results were reported by Prasannakumar (1995) in JFM programme. The results of the studies conducted by Umadevi (1992), Kaushik (1993) were in line with the present study.

Nearly 62 per cent of the beneficiaries had nuclear type of family (Table 5). Similar results were reported by Ratnakar (1990), Prasannakumar (1995) and Gayatri Devi (2000). However Hemalatha Prasad (1995), reported that majority of the DWCRA beneficiaries belonged to joint families in this study. The proportions of marginal and small beneficiaries in the entire sample were 29.70 per cent and 20.30 per cent respectively.

Further 17.50 per cent of beneficiaries were found to be landless labours. Thus small and marginal beneficiaries and land less labours dominated in the compositions in VFC beneficiaries (Table 6). Chandrashekhar (1991), reported similar results. However the results of Kaushik (1993) and Sukhdev Singh (1997) revealed that majority of the respondents in IRDP programme were land less labourers.

The information provided in the Table 7 revealed that 96.67 per cent of the beneficiaries were having income below Rupees 20,000 per annum. Similar results were reported by Padmanabhan (1990), Kaushik (1993) and Dwarakinath (2001).

Forty-two per cent beneficiaries had 1 to 2 bullocks. Around 35.83 per cent of beneficiaries were not having animals as evident from Table 8. Major probable reasons for having less number of animals per respondent were lack of fodder, continuous drought conditions for the past 3 to 4 years and lack of drinking water facilities in summer were the major reasons. Prasannakumar (1995) in his study on joint forest management reported that majority of the VFC beneficiaries possessed more than 2 animals.

Forest guards, Foresters and Range Forest Officers in that order were found to be the main persons contacted by majority of the beneficiaries (Table 9). From this it could be inferred that the beneficiaries tried to contact the locally available forest department personnel for getting more information about JFM. A substantial proportion of beneficiaries contacted forest guards to get information on JFM. It may be noted that forest guards and foresters were the persons in charge of local forest area. Therefore majority of beneficiaries tried to contact either forest guards or forester for the purpose of gathering informations about JFM.

A close examination of the Table 10 revealed that large proportion of respondent (80.56%) had low to medium level of extension contact. However only 19.44 per cent of respondent were in higher category of extension contact. The mean scores of extension contact were 1.68, 3.51 and 6.04 for low, medium and high category. Overall mean score was 3.54. The probable reasons for low to medium extension contact by beneficiaries were because of very few extension programmes had been organized by the forest officials like forest guards, forester and range forest officers. Forest officials were not discussing with the beneficiaries about forest management programmes. Very little efforts had been made by forest officials to carry out important extension programmes to create awareness and knowledge on beneficiaries of JFM. There is a plenty of opportunities to organize intensive extension programmes for the beneficiaries of JFM. The study by Prasannakumar (1995) revealed

similar result. Hardikar (1998) in his study reported that majority of the IRDP beneficiaries had low extension contact.

The information in the Table 11 clearly revealed that as many as 30 beneficiaries out of 360 had served as beneficiaries of village panchayats (8.33%). The proportion of the members serving as member of cooperative society, youth club and characha mandal were 53.61 per cent 44.17 per cent and 23.33 per cent respectively.

The results of Table 12 revealed that 66.39 per cent of the beneficiaries were in low to medium categories of social participation. Only 36.61 per cent respondents had higher social participation. The major probable reasons for majority of respondents for low to medium social participation were lack of education, lack of transport facilities, not aware about benefits of social and political institutions. Similar observations was made by Prasannakumar (1995), Tejaswini (1996) and Hardikar (1998) in their study.

The proportion of the beneficiaries belonged to high and low cosmopolitaness group were 47.50 per cent and 33.06 per cent as evident from the data in Table 13. Only 47.50 per cent of beneficiaries belonged to high cosmopolite group. The mean scores of cosmopolitaness for low, medium and high groups were 5.36, 8.61 and 10.41 respectively. The major reasons for low cosmopolitaness were, poor economic conditions, lack of transport facilities, poor educational facilities and employment opportunities near by geographical area. The

observation made by Prasannakumar (1995) in JFM and Hardikar (1988) in IRDP were similar to the observations of the present study.

As revealed in Table 14 that majority of the beneficiaries (71.94%) had medium to low level of aspiration. Only 28.06 per cent of beneficiaries were in the high level of aspiration. The mean scores for low, medium and high aspiration were 4.34, 8.14 and 12.75, respectively. The probable reasons for medium to low level of aspiration could be low farm size, lower income and lower educational status. These personal characteristics of the respondents typically explain the features of small and marginal farmers and landless labourers who largely depend on forest and forest products for their livelihood. The similar finding were reported by Abdul Kareem (1994) in IRD programme and Prasannakumar in JFM programme.

From the above results it could be inferred that majority of the beneficiaries lived in far off villages and forest areas with nucleous type of families. These beneficiaries had less land holdings and less number of livestock with a meager opportunity for earning more income. Further their illiteracy and low land holdings prevented them in earning annual income more than 20,000 per annum and hence most of them were found to be below poverty line. Being deprived from proper education, lack of access to sound resource base and modern life their social participation was low. However their extension contact, and cosmopolitaness have been relatively better, probably due to the implementation of JFM.

5.2 KNOWLEDGE OF BENEFICIARIES ABOUT JOINT FOREST MANAGEMENT PROGRAMME

The data presented in Table 15 revealed that majority of the beneficiaries (73.89%) had low to medium knowledge level regarding JFM. The data also revealed that 34.72 per cent and 26.11 per cent respondents were having low and high level of knowledge, respectively. So it clearly indicates that only one-fourth of the beneficiaries were having high level of knowledge about JFM activities and programmes.

The plausible reasons for low to medium knowledge regarding JFM were that the officials of JFM had not organized regular meetings. The beneficiaries were not given clear understanding about the activities and programmes of JFM. The other reasons for not having good knowledge about JFM programme were lack of education, low level of aspiration and lack of interest in JFM activities. Similar observation was also made by Umale *et al.*, (1991) with respect to social forestry. However Sadaqat *et al.*, (1994) reported that majority of the respondents (66.00%) had high knowledge about farm forestry.

An analysis of the results presented in Table 16 revealed that beneficiaries had relatively better knowledge level in various components of JFM, such as, objective of JFM and functioning of JFM as compared to other components. This might be due to the fact that majority of the beneficiaries in the study area were small and marginal farmers living below poverty line and were interested in realizing the economic benefits from JFM programmes. Probably they resorted to know more about the

objectives and functions of JFM. The beneficiaries had a very low knowledge about the role of different departments in JFM. Hence, this component occupied last position in the ranking. Similarly the knowledge regarding components like the concept of JFM, village forest committee and management plan were attached with relatively low rankings. This may be probably due to the fact that the management plans might not have been prepared according to needs and interest of the beneficiaries. Further it was interesting to note that only four VFC meetings were held in a year against a proposed 12 meetings. Due to the repeated extension contacts with the foresters and range forest officials (Table 9) the beneficiaries have acquired relatively more knowledge with respect to objectives and functions of JFM. Similar results were reported by Prasannakumar (1995). Singh (1991) in his study also reported that 88.75 per cent of the respondents had average knowledge about different aspects of social forestry programme. It was interesting to note that the knowledge about the disposal of the forest produce and benefit sharing perceived fifth position. This was probably because of the fact that the JFM programme requires longer period to generate benefits and hence the officials of forest department might not have properly explained the beneficiaries about this aspect. The results of the present study with respect to benefit sharing slightly differed from that of the study by Prasannakumar (1995), where in he reported relatively better knowledge about profit sharing.

5.3 EXTENT OF PERCEPTION OF JOINT FOREST MANAGEMENT PROGRAMME BY THE BENEFICIARIES

The data presented in Table 17 revealed that 73.89 per cent of beneficiaries had low to medium level of perception regarding JFM. Only 26.11 per cent of the beneficiaries had high level of perception about JFM. Reasons for low level of perception regarding JFM were poor knowledge regarding JFM, low level of educational status, poor social participation. The other reason could be that forest officials and lower cadre officials working in forest department had not created much impact on the level of knowledge of beneficiaries through appropriate participatory extension approaches. It was observed that not much efforts had been made by the forest department to create appropriate awareness amongst the beneficiaries. Similar observations were reported by Prasannakumar (1995) and Raghupathi (2000) regarding JFM programme.

The component wise analysis of perception presented in Table 18 revealed that usefulness of the programme has ranked first followed by objectives of JFM and disposal of the forest produce. This might be due to the fact that the beneficiaries were interested in maximizing their income by obtaining more economic benefits from the JFM.

Here again the perception of the component on management plan occupy the last ranking, probably because of the fact that the plans were not prepared according to the immediate needs of the beneficiaries. Similar results were reported by Badiger (1991), Prasannakumar (1995) and Raghupathi (2000).

5.4 RELATIONSHIP BETWEEN SOCIO-PERSONAL CHARACTERISTIC OF BENEFICIARIES AND KNOWLEDGE ABOUT JOINT FOREST MANAGEMENT PROGRAMME

Correlation and regression analysis was carried out to examine the extent of association and the magnitude of influence of socio-personal characteristics of the beneficiaries on their level of knowledge about JFM and the data are presented in Table 19.

The socio-personal characteristic like extension contact, employment generation and perception were found to have a positively significant association with the knowledge level of the beneficiaries. This implied that an increase in these characteristics would lead to an increase in the level of knowledge of the beneficiaries. Therefore any attempt to enhance knowledge level should be accompanied by more exposure to extension contact and enhanced employment opportunities. Further the perception level was positive and significantly associated with the knowledge level. As stated earlier knowledge is supposed to be a prerequisite condition for perception. Hence the positive association between the two variables has been justified.

It is understandable that with an increase in extension contact and employment generation would lead to increase in the knowledge level. Contact with the change agents facilitates exchange of views and ideas which in turn would increase the knowledge level. These findings get the support from results of the study by Prasannakumar (1995). Age is another characteristics which is likely to influence knowledge level. The present study revealed that knowledge level is positively associated with

age. Though education widens the vision of individuals and orients them to outside world, no significant association of this variable with knowledge was observed in the present study. The findings of the present study is contradicting with the related study of Prasannakumar (1995). Family income and family size also failed to show significant association with knowledge.

Generally higher family income enable the beneficiaries to engage them selves in several information seeking behaviour through contact with government officials and their exposure to mass media. However in the present study knowledge dimension was not significantly associated with family income. This implied that economic status is not a pre-requisite for acquiring knowledge about JFM.

The socio-personal characters like family type, livestock possession social participation and cosmopolitaness, were found to be negatively but non significantly associated with knowledge level. The probable reasons for negative and non-significant association with social participation and cosmopolitaness, that beneficiaries had very limited opportunity for social participation and beneficiaries were visiting urban area only for petty marketing of minimum household requirements. The beneficiaries had very little opportunity to contact officials of forest and other development departments.

Sadaqath *et al.*, (1994) reported a non-significant relationship between age and knowledge about farm forestry. The non-significant

association between education and knowledge was reported by Badiger (1991). Chayadevi and Gavimath (1991) reported a non-significant association between knowledge and family type.

The multiple regression analysis further strengthened the fact that the contact with change agents exerted positive and significant impact on knowledge level as evident from the data in Table 20. The positive and significant impact of employment generation on the knowledge level of beneficiaries was also evident from the analysis. Similar results were reported by Prasannakumar (1995). Surprisingly cosmopolitaness produced significant negative influence on the knowledge about JFM. This implied that exposure to outside the village community would reduce the knowledge level. Probably this might be due to the fact that as the beneficiaries comes in contact with the person outside the village they may reveal discouraging facts about JFM.

5.5 RELATIONSHIP BETWEEN SOCIO PERSONAL CHARACTERISTICS OF BENEFICIARIES AND THEIR PERCEPTION OF JOINT FOREST MANAGEMENT PROGRAMME

The data in the Table 21 revealed that perception level like that of knowledge level was positively and significantly associated with extension contact. Age, education, family income, social-participation, cosmopolitaness and level of aspiration were found to be positively associated with the knowledge level. However, their association with knowledge level was not significant. As discussed earlier knowledge is the prerequisite condition for perception. Age and education generally

widens the vision of individuals and provide new opportunities for knowledge and finally helps in perception. Similarly more extension contacts facilitates exchange of ideas and views which in turn improves the knowledge level and there by enhances the perception level. Most of the other personal characteristics were found to have a non-significant association with the perception level. In a study by Prasannakumar (1995) on the perception of JFM noticed that there was a significant positive association between the perception and the personal characteristics like education, annual income and level of aspiration. He noticed a non significant association between perception and characters like land holding, livestock possession, social participation, extension contact and cosmopolitaness. Badiger (1991) observed a non-significant association between family income and perception of forestry programmes. Prasannakumar (1995) reported positive association between education and extension contact.

The present study revealed a negative association between the perception level, family type, farm size and livestock possession. This implied that the perception level would decrease if the beneficiaries lives in a nucleous type of family. Similarly higher farm size less would be the perception level. This is quite understandable in the sense that as the beneficiaries possessing more land holdings would be least interested in JFM activities and benefits as they would be concentrating more on his agricultural activities. Similarly person possessing more livestock would also be least interested in the benefits of JFM and thereby the perception level would be less.

The data on regression analysis (Table 22) further strengthened the view that higher extension contact was the most important characteristic influencing the perception level of beneficiaries. From this it could be concluded that higher the extension contact with the officials of forest department would influence the perception level of the beneficiaries significantly. This results was in conformity with the results reported by Prasannakumar (1995), where he noticed a positive influence of extension contact with perception of JFM.

5.6 BENEFITS DERIVED BY BENEFICIARIES FROM JOINT FOREST MANAGEMENT PROGRAMME

The data in Table 23 revealed that beneficiaries derived benefits from JFM by way of fodder and firewood. Fodder was the major benefit derived by the beneficiaries. Further the study showed that income derived from firewood and fodder were more or less similar after the implementation of the JFM. The mechanism of benefit sharing is that the beneficiaries of the VFC would be entitled to firewood grasses and leaves free of cost from the forest area. The beneficiaries would also be entitled for lops and tops and pruning free of cost. The distribution of the such produce would be supervised by the managing committee of the VFC. The VFC would ensure fare and equitable distribution to all the beneficiaries with respect to the disposal of timber the needs of the local villagers would be treated as the first charge. The surplus if any would be disposed by VFC through a open auction. The present study did not come across with open public auction of timber as the VFC's were established only few years ago. On benefit sharing basis the

beneficiaries were allowed to collect fodder and fire wood in the protected forest area with an understanding that the beneficiaries in turn help the forest department officials in forest preservation and conservation. Another benefit that was derived by the beneficiaries from JFM was gainful employment.

There was a substantial increase in the employment (Table 24) after the implementation of JFM as evident from the table the mean employment after the implementation of JFM increased from 63.90 man days to 99.31 man days. Thus the implementation of JFM had helped the beneficiaries to get additional employment opportunities. Implementation of the JFM programme in villages means providing additional employment opportunities to the beneficiaries of JFM to collect firewood, fodder and leaves from the protected forest area with an understanding that the beneficiaries would help the forest department in the conservation of forest. The opportunities that exist for the beneficiaries of the VFC includes easy access to firewood, fodder leaves etc. This enabled the beneficiaries to engage themselves for more number of days in collection of firewood and fodder. Thus there was an increase in the employment opportunities. Further the beneficiaries were also employed on wages for digging of pits, raising of nurseries, plantations, providing protection and fencing. These results were in line with the results of Satish Dhawan *et al.*, (1990) who also opined that the social forestry programme helped to generate employment. Similar results with respect to forest programme were reported by Patnaik (1990) and Roshan Cook (1997).

5.7 PROBLEMS FACED AND SUGGESTIONS MADE BY THE BENEFICIARIES OF JOINT FOREST MANAGEMENT PROGRAMME

The information in the Table 25 indicated that 38 per cent of the beneficiaries felt that there was a delay in the flow of benefits from JFM. Lack of confidence and uncertainty in the programme was next important problem. The beneficiaries also felt the inadequacy of powers given to VFC for tackling problems and proper monitoring of the programme by the forest officials was considered as yet another important problem. It was true that forest plants require long duration before they start yielding benefits. During this period protection for many years is essential as majority of the beneficiaries were small and marginal beneficiaries they could not wait for a longer period to derive benefit from JFM. In view of the lack of proper monitoring by the officials of forest department majority of the beneficiaries lost their faith in the JFM programme, thereby they expressed uncertainty about the programme. They also pointed out the limited powers provided to VFC for proper implementation of JFM. The findings of the present study are in line with those reported by Prasannakumar (1995).

The suggestion expressed by the beneficiaries for better implementation of JFM programme are presented in Table 26. Some of the most important suggestions made were involvement of local people in management practices, giving more thrust on need based activities, proper monitoring by the forest officials, providing more powers to VFC and providing more guards for watch and ward. Similar results were

reported by Prasannakumar (1995). Where as Venkataprabu and Perumal (1995) suggested providing adequate incentives, training to beneficiaries and extension workers to provide adequate land with respect to agroforestry.

The beneficiaries felt that by implementing these suggestions the objectives of JFM could better be achieved. The incorporations of these suggestions would create a favourable attitude in the minds of beneficiaries towards the forest department which is most essential for development, conservation and protection of forest wealth in the study area.

SUMMARY

6. SUMMARY

Forests constitute one of the most important natural resources of the country. Degradation of forests in India is a continuing process and degraded forests form about one third of the total forest area. The impact of loss and degradation of forests are in the form of soil erosion, loss of biological diversity, damage to wild life habitats and degradation of quality of life and reduction of the option for development. Degraded forests are unable to meet human needs for economic and ecological services, wood based energy, forest based industries, and supporting agriculture and other enterprises besides employment generation.

The National Forest Policy, 1988 emphasised on creating massive people's movement through involvement of village communities living close to the forest in protection and development of forests. According to this policy, the government of India issued a notification in June 1990 requesting the state governments to involve local communities in the management of forests. It is envisaged that the communities, in their participation in protection and development of forest areas, will be entitled to share of usufructs in a manner specified by the concerned state forest departments. This has led to the development of Joint Forest Management Programme (JFM).

Joint Forest Management Programme has been implemented in northern Karnataka since 1996 with the active involvement of local people. As there was very little empirical information on the knowledge

and perception of JFM in Karnataka. It is necessary to know about these two indicators and their association with socio-personal characteristics of beneficiaries. Therefore a study was conducted to investigate these aspects in detail with the following objectives.

1. To study the socio-personal characteristics of beneficiaries of Joint Forest Management Programme.
2. To measure the knowledge level of beneficiaries of Joint Forest Management Programme.
3. To find out the extent of perception of Joint Forest Management Programme by the beneficiaries.
4. To analyse the benefits derived by respondents from Joint Forest Management Programme.
5. To obtain suggestions from beneficiaries for better implementation of Joint Forest Management Programme.

The study was conducted during the year 2002 in two selected districts namely Dharwad and Belgaum in Belgaum circle, based on the area under forest. A list of all the taluks in erstwhile Dharwad district and Belgaum district had been prepared. Three taluks in each district were selected where Joint Forest Management Programme has been intensively implemented in consultation with Deputy Conservator of Forest, and also based on the area under forest. The taluks thus selected were Dharwad, Khalaghatagi and Mundargi in Dharwad district and Belgaum, Gokak and Khanapur in Belgaum district. Further a list of

villages where Joint Forest Management Programme has been implemented was prepared for each taluk in association with the staff of the forest department of Belgaum circle. The villages were arranged in descending order based on the number of beneficiaries in each village forest committee, date of registration, memorandum of understanding and progress of the work. The three top villages in each selected taluk of Dharwad and Belgaum districts have been selected for the study. A list of beneficiaries for each VFC was obtained from the state department of forest. The names of the beneficiaries was arranged in alphabetical order for the purpose of selection of beneficiaries as respondents for the study. Simple random sampling procedure was followed to select 20 beneficiaries to represent different categories of beneficiaries in VFC's as respondents for the study. Thus 360 beneficiaries from eighteen selected villages constituted the sample for this study.

Socio-personal characteristics of the beneficiaries *viz.*, age, education, family type, farm size, family income, livestock possession, social participation, extension contact, cosmopolitaness, level of aspiration and employment generation were selected for studying the relationship with their knowledge and perception level. The variables were measured using appropriate scales and scoring procedures. A structured interview schedule was developed and used for collection of data through personal interview method. The statistical tools used in the study includes frequencies, percentage, mean, standard deviation, simple correlation and regression analysis.

1. About 52.00 per cent of the beneficiaries belonged to middle age group.
2. The large proportion (71.90%) of beneficiaries were in the category of illiterates to primary level of school education.
3. Majority (62.00%) of the beneficiaries belonged to nuclear family.
4. About 51.00 per cent of the respondents belonged to small and marginal farmers with an annual income below Rs. 20,000 per annum. For these respondents agriculture was the main source of income.
5. Around 42.00 per cent of the beneficiaries were having 1 to 2 bullocks. Nearly 78.00 per cent of the respondent had cows and buffaloes. Only 7.00 per cent of the beneficiaries had sheep and goats.
6. Majority of the beneficiaries had medium extension contact (55.00%) and low social participation (37.00%), high cosmopolitaness (48.00%) and medium level of aspiration 46.00 per cent, respectively.
7. The mean score of overall knowledge was 17.79 out of a possible maximum score of 32. Thus about 39.00 per cent of the beneficiaries had medium level of knowledge about JFM.
8. Beneficiaries were found to have better knowledge in the components like objectives and functioning of JFM. The

respondents had a very low knowledge about role of different departments in JFM.

9. About 46.00 per cent of the beneficiaries had a medium level of perception. The mean score of perception was 39.87 against a possible maximum score of 74. The delay in the flow of benefits from JFM might have led to medium level of perception. The usefulness of the programme was ranked first followed by objectives and disposal of forest produce among the various components of perception.
10. The personal characteristics like extension contact and employment generation were found to have a positive and significant association with the knowledge level of the beneficiaries.
11. There was a positive and significant association between the level of knowledge and perception.
12. Extension contact and employment exerted a significant impact on knowledge.
13. Perception level was positively and significantly associated with extension contact.
14. Regression analysis revealed that extension contact was the most important characteristic influencing the perception level.
15. Income from fodder and firewood (95.00%) were the major source of income for the beneficiaries.

16. There was a substantial increase (55.00%) in the employment opportunities for the beneficiaries after the implementation of JFM.
17. Delay in the flow of benefit (38.00%), lack of confidence and uncertainty about the programme (30.00%), inadequate powers given to VFC beneficiaries (25.00%), lack of follow-up activities by forest department officials (23.00%), delay in implementation of activities (18.00%) were some of the major problems faced by the beneficiaries.
18. Some of the most important suggestions given by the respondents were views and knowledge of local villagers should be considered while formulating forest management practices (33.33%), forest department should give preference to the people of that VFC for all type of work carried by it (31.11%), frequent visit and follow up by senior officer of the forest department is must (28.33%), involvement of local people in forest planning and management practices (33.33%), giving more emphasis to need based activities (31.11%), and providing more powers to VFC's, all minor offences and defaults committed by a beneficiaries should be dealt by the VFC only (24.16%), More power are to be vested with VFC beneficiaries to take action against theft and other offenses (22.22%).

Implications

1. Based on the findings of the present study, following broad implications are drawn for field extension work in JFM. The fact

that most of the beneficiaries had moderate knowledge about various components of JFM is alarming. Therefore, it is better to organize intensive extension programmes using different mass media and interpersonal communication methods to create substantial increase in awareness and knowledge of beneficiaries regarding forest development programme. The extension workers of the forest department may concentrate their efforts in organizing farmers into functional groups like self help groups (SHG's), commodity associations, farmer's organizations or farmer's groups. These organizations will provide an effective feed back channel to research and extension system. These organization will provide effective channel for dissemination of technology.

2. Since there was a substantial delay in the flow of benefits from JFM beneficiaries cannot wait for a longer period for benefits. This is specially true in case of small and marginal and landless labours. Joint Forest Management Programme should simultaneously provide alternative employment generation programmes for resource poor farmers and other disadvantaged groups of farmers. These farmers should be provided with an opportunity to have access to technology, resources and markets. To improve the economic conditions of farmers it is better to suggest to take-up integrated farming system approach. There is a need to establish farmer advisory service staff with financial sustainability, technical capacity and operational effectiveness.

3. The study clearly demonstrated that extension contact is one of the important characteristics in bringing about desirable changes in knowledge and perception of JFM. Therefore there is a need for intensifying educational efforts especially in the areas of management plan, monitoring and bringing coordination between different development departments.
4. Providing more powers to VFC's and conducting regular and systematic meetings involving need based activities in the JFM programmes is expected to bring desired changes in the knowledge and perception of JFM by beneficiaries.
5. There is need to provide proper employment opportunities for the beneficiaries through livestock development programmes by growing fodder species in the common community area in the village based on the principals of common property resource management.
6. It is better to involve social institutions, and other NGO's working in the area of operations for effective and efficient planning and execution of Joint Forest Management Programme to create clear understanding and better perception about the programmes and activities of JFM.
7. There is a need to establish proper linkage between the forest officials and member of JFM programme for proper execution of JFM programmes.

8. There is a need to develop and organize appropriate extension education programmes to identify and develop better leadership qualities for members of JFM.

Need for future research

The present study was conducted on a limited area confined to 18 VFC's in Dharwad and Belgaum districts. Most of these VFC's had completed 3 to 4 years of their operation. Therefore before generalizing the findings of the present study for the larger area it is necessary to plan and conduct studies in wider areas after allowing sufficient time for the VFC's to operate.

The present study has not considered the involvement and role of NGO's in JFM programmes. In recent years many NGO's have been involved in the implementation of JFM. Therefore there is a need for further research involving the role of NGO's in JFM programmes.

Since there was a substantial delay in the flow of benefits from JFM it is necessary to allow sufficient time gap before evaluating the performance of such programmes.

REFERENCES

7. REFERENCES

- ABDULKAREEM, 1994, Integrated Rural Development Programme in Kerala, Impact Analysis. *Ph.D. Thesis* (unpubl.), University of Agricultural Sciences, Bangalore.
- AJAIKUMAR, 2000, A decade of Joint Forest Management in India: Looking back for better foresight. *Indian Forester*, **126**(5): 579-582.
- AJAIKUMAR AND KAUL, R.N., 1996, Joint Forest Management in India: Points to ponder, Common Wealth Forestry Review. *Westland News*, **75**(3): 15-18.
- ANJALI AWASTHI, SANJAY, K. UNIYAL AND GOPAL, S., RAWAT, 2001, Forest management down the ages, A case study from district Uttarkashi, Uttaranchal. *Indian J. Forestry*, **24**(3): 388-394.
- ANONYMOUS, 1976, Report of the National Commission on Agriculture, 9, Indian Council of Agricultural Research, New Delhi.
- ANONYMOUS, 1991, The state of forest report. Forest Survey of India (FSI), Ministry of Environment and Forest, Dehra Dun, pp. 70.
- ANONYMOUS, 1999, Annual Report of Karnataka Forest Department, pp. 12.
- ANONYMOUS, 2000a, Annual Report of Karnataka Forest Department, pp. 1.

- ANONYMOUS, 2000b, The Hindu Daily, dated 13 Oct. 2000.
- ANONYMOUS, 2001a, Forest resources in India. *The Hindu Survey of the Environment*, pp. 199-204.
- ARORA, D., 1994, From state regulation to people's participation. *Economic and Political Weekly*, **29**(12): 691-698.
- ARORA, S.S., 1993, Need for economic perspective. *Wasteland News*, **8**(4): 46-49.
- AWAIT, S.S., 1993, Impact of minor irrigation loans on farmers economy a case of Malaprabha Gramin Bank finances in Belgaum district (Karnataka). *M.Sc. (Agri.) Thesis (unpubl.)*, University of Agricultural Sciences, Dharwad.
- BADIGER, C., GAVIMATH, U. AND NADAGOUDAR, B.S., 1991, knowledge and participation of farm women in forestry. *Maharashtra J. Exten. Educ.*, **10**(1): 81.
- BAHUGUNA, V.K., 1992, Collective Resource Management: An experience in Harda Forest Division, Forest Department, Bhopal.
- BALAJI, S., 2001, Joint Forest Management in Tamil Nadu problems and prospects. *Indian Forester*, **127**: 201-206.
- BANERJEE, U.K., 1995, People's participation in eco-system development. *My Forester*, **31**(1): 31-34.
- BAVALATTI, V.B. AND SUNDARASWAMI, B., 1991, Knowledge and adoption pattern of dry land farming practices by farmers of Bijapur. *Maharashtra J. Exten. Educ.*, **10**: 137-140.

- BELLIGERI, S., 1996, A study on knowledge adoption and perception of usefulness of agro-forestry practices by farmers of Hanagal taluk, Dharwad district. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- BHASKARAN, C., 1976, A study of socio-metric identification of opinion leaders and their characteristics in a progressive and non-progressive village in Kanyakumari district of Tamil Nadu. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Bangalore.
- BHEEMAPPA, A. 2001, A comparative analysis of knowledge and technological gap in adoption of paddy and cotton cultivation practices between migrant and non-migrant farmers of TBP command area in Karnataka. *Ph.D. Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- BYRAREDDY, H.N., 1971, A study on differential characteristics of adopters and non adopters of fertilizers of rainfed ragi in Bangalore North taluk, *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Bangalore.
- CHANDEKAR, R. AND THOMAS, G., 1990, Factors influencing peoples participation. *Social Sciences*, **20**(1): 73-77.
- CHANDRASHEKAR, R.M., 1991, Impact of national pulse development project on pulse crop growers in Nalgonda district of Andhra Pradesh. *M.Sc. (Agri.) Thesis* (unpubl.), (unpublished) Andhra Pradesh Agricultural University, Hyderabad.

- CHANNAMMA, C.N., 1994, A comparative study on knowledge level of beneficiaries of Integrated Child Development Service in Dharwad district of Karnataka. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- CHATTERJEE, A., 1991, Joint forest management. *Wasteland News*, **7**(1): 35-36.
- CHATTERJEE, M., 1994, Gender roles in Joint Forest Management. *Wasteland News*, **9**(3): 23-25.
- CHATURVEDI, A.N., 2000, Viability of Joint Forest Management Projects. *Indian Forester*, **126**(5): 499-504.
- CHAYADEVI, D. AND UMA, G., 1991, Knowledge and participation of farm women in forestry. *Maharashtra J. Exten. Educ.*, **10**(1): 87-91.
- CHUNG, K.H. AND MEGGINSON, L.C., 1981, Organizational behaviour; Developing managerial skills, Harper and Row, Publishers, New York, pp. 109-133.
- DASGUPTA, S., 2000, Peoples involvement in resource management in Madya Pradesh. *Indian Forester*, **126**(5): 525-535.
- DASGUPTA, S., 2001, A note on improvement in regeneration status in Forests of Madya Pradesh under Joint Forest Management. *Indian Forester*, **127**: 823-826.
- DESAI, V., 1991, Forest management in India issues and problems (1st Edu.), Himalaya Publishing House, Bombay, pp. 89-114.
- DEY, G., 1994, Implementation of interface forestry programme through joint forest planning and management. *Wasteland News*, **10**(2): 45-46.

- DHILLON, D.S. AND HANSRA, B.S., 1995, Peoples participation in rural development programmes, *Kurukshetra*, pp. 7-9.
- DIGRRASKAR, R.K. AND WANGIKAR, S.D., 1993, An investigation the attitude of the farmers towards the use of bio-gas plant. *Maharashtra J. Exten. Educ.*, **12**: 335-340.
- DIXIT, S., 1988, A study on the impact of social forestry and farm forestry programmes on rural beneficiaries. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- DIXIT, S., 1992, Block level planning and extension of integrated rural development programme and it's impact on beneficiaries a study in selected blocks of Karnataka. *Ph.D. Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- D'SILVA, E. AND NAGNATH, 2002, Behroonguda: A rare success story in Joint Forest Management. *Economic and Political Weekly*, February, 2002 pp. 21-22.
- DWARAKIANATH, H.D., 2001, Self-employment generation under Development of Women and Children in Rural Area, *Kurukshetra*, **49**(5): 33-41.
- ENGLISH, H.B. AND ENGLISH, A.C., 1958, A comparative dictionary of psycho analytical terms. Longermans, Green and Co., New York.
- ESAKKY, S., 1990, The impact of IRDP on eradication of poverty among weaker sections in Tirunulvelli district of Tamil Nadu. *Ph.D. Thesis* (unpubl.), Ayyaanadjanaki Ammal College, Sivakasi, Tamil Nadu.

- ESWARAPPA, G., 1991, An analysis of co-ordination of some management aspects of watershed development programme in Karnataka. *Ph.D. Thesis* (unpubl.), Andhra Pradesh Agricultural University, Hyderabad.
- FAROOQUI, H.F., KHAN, S.M. AND MAHAJAN, B.S., 1993, A study of the extent of adoption of water management practice of wheat and summer groundnut cross. *Maharashtra J. Exten. Educ.*, **12**: 157-160.
- FRANK, J.D., 1935, Individual difference in certain aspects of level of aspiration. *American J. Psychology*, **47**: 119-128.
- GAUTAM DEY, 1997, Participation in Joint Forest Management from Women's perspective. *Indian Forester*, **123**: 494-498.
- GAYATRIDEVI, S.P., 2000, Impact of selected rural development programmes on self-employment of rural women. *M.Sc. (M.H.Sc.) Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- GRONOW, C.J.V., 1992, Sharing power and sanctions: Issues from user group forestry in Nepal. *Paper presented at the GAPP Conference on Participatory Development*, London.
- GUPTA, S.K. AND SANDHU, A.N., 1995, Integrated Rural Development Programme - A case study in Rajupuri district (Jammu and Kashmir). *J. Rural Development*, **13**(1): 75-87.
- HARDIKAR, D.P., 1998, Perception of development programme and benefit derived by women beneficiaries of Ratnagiri district, Maharashtra State. *Ph.D. Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.

- HEMALATHA PRASAD, C., 1995, Development of women and children in rural areas. Successful case studies. *J. Rural Development*, **14**(1): 65-87.
- INDUKAR, P., 1992, Forestry, environment and economic development, Asian Publishing House, New Delhi.
- IQBAL, M., 1991, A study on the impact of watershed development programme in Nalgonda district of Andhra Pradesh. *M.Sc. (Agri.) Thesis* (unpubl.), Andhra Pradesh Agricultural University, Hyderabad.
- JAIN, 1998, Joint forest management in cuddapah forest division – A successful example. *Indian Forester*, pp. 529.
- JAYARAJ, N., 1997, Adoption of biopesticides among cotton growers. *M.Sc. (Agri.) Thesis* (unpubl.), Agriculture College and Research Institute, Tamil Nadu Agricultural University Madurai.
- JHA, M., 2000, Policies on Joint Forest Management and it's implementation in Maharashtra. *Indian Forester*, **26**: 912-917.
- JOSHI, A.L., 1994, Peoples participation in soil conservation and watershed management in Nepal. *Paper presented at 8th International Soil Conservation Conference on Soil and Water Conservation: Challenges and opportunities 4-8 Dec., New Delhi (India).*
- KALIVARDHAN, J. AND NANJAIYAN, K., 1995, Motivational factors favouring women to participate in IRDP. *J. Exten. Educ.*, **6**(7): 1-4.

- KAUSHIK, A.C., 1993, Income generating effects of rural credit: A case study of Integrated Rural Development Programme in Haryana. *J. Rural Development*, **12**(1): 89-102.
- KHANNA, P., 1994, Research agenda for Joint Forest Management. *Indian Forester*, **120**(7): 564-568.
- KIARA, J.K., PRETTY, J.N. AND THOMPSON, J., 1994, The impact of catonment approach to soil and water conservation in Kenya. *Paper presented at 8th International Soil Conservation Conference on Soil and Water Conservation: Challenges and opportunities*, 4-8 December, New Delhi (India).
- KINHAL, G.A., 2002, Groupthink to team think creation of constructive thought patterns in participatory Forest Management. *Indian Forester*, pp. 601-606.
- KOTHARI, A. 2001, Biodiversity where life matters, *Hindu Survey of India*, pp. 158.
- KRISHNAMURTHY, 1997, A study on knowledge and adoption of improved dairy management practices by farmers trained by RUDSETI, Chitradurga. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Bangalore.
- LUTHRA, V., 1993, Lack of peoples involvement in forest management: Are foresters the villains. *Wasteland News*, **9**(3): 45-49.
- MALHOTRA, A. AND KUSHALAPPA, K.A., 1994, An approach for sustaining bio-diversity in India. *Indian Forester*, **121**(9): 759-765.

- MALKANIA, U. AND BISHT, N.S., 2000, Identifying indicators for successful implementation of Joint Forest Management in Arunachal Pradesh. *Indian Forester*, **126**(5): 537-543.
- METI, S.K., 1998, Technology reach perception, knowledge adoption and attitude towards improved agricultural technologies by small and marginal farmers in TBP area. *Ph.D. Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- MISHRA, R., 1993, Peoples Zeal inspires state participation. *Wasteland News*, **7**(4): 31-32.
- MOENCHA, M.C., 1991, Training and planning of Joint Forest Management series, working paper No. 8. Ford Foundation, New Delhi.
- MUKHERJEE, A.K., 1994, Peoples participation in Forestry: Himachal Pradesh Experience, *Wasteland News*, **9**(4): 15-18.
- MURTHY, K.N., 1995, JFPM in Dakshina Kannada. *Waste Land News*, May-July, pp. 41-46.
- MUTHAYA, B.C., 1971, Farmers and their aspiration. National Institute of Community Development, Hyderabad.
- NAGAPAL, A. AND YADAV, L., 1991, Impact of bio-gas on rural women. *Maharashtra J. Exten. Educ.*, **10**(2): 346.
- NAIDU, K.K. AND VIKRAMSINGH, 1990, Impact of DPAP on psychosocial dimensions. *J. Rural Development*, **9**(3): 531-547.

- NATARAJAN, K. AND MUTHAIAH, M., 1995, Attitude of farmers towards social forestry programme. *J. Exten. Educ.*, **6**(1): 1089-1090.
- NEERA, M.S. AND KUNDAN, K.S., 1991, Bright outlook in Orissa. *Wasteland News*, **7**(2): 25-26.
- NIMBALKAR, S.D. AND PAWAR, R.S., 1990, Perception of viewers towards farm programme. *Maharashtra J. Exten. Educ.*, **9**: 157-160.
- PADMANABHAN, M., 1990, Income generation process under Integrated Rural Development Programme, *J. Rural Development*, **9**(1): 173-196.
- PALIT, S., 1992, Implementation of Joint Forest Management. *Wasteland News*, **8**(2): 58-66.
- PANDEY, G., 1997, Joint Forest Management: Perception of new incumbents in Indian Forest Service. *Indian Forester*, **123**: 527-534.
- PARUL RISHI, 2002, Joint Forest Management at village level, A cognitive analysis. *Indian Forester*, **128**: 539-544.
- PATEL, 1994, Integrated Rural Development Programme the major poverty alleviations programme. *Yojana*, **38**(22): 15-16.
- PATEL, B.S. AND PATEL, R.B., 1993, Image regarding lab to land programme in south Gujarat. *Maharashtra J. Exten. Educ.*, **12**: 229-230.

- PATHAN, R.S., 1994, Potentials of community participation in sustainable forestry India. *Indian Forester*, July, pp. 577.
- PATNAIK, B.K., 1990, Benefit cost analysis of social forestry project: A case study. *Yojana*, **34**: 21-23.
- PHADNAWIS, A.N., BIRAJDAR, J.M., NANGRE, M.L. AND ASHMATODDIN, M.D., 1990, Integrated management of resources on watershed basis for optimizing production - Padalsing Watershed. *Intanl. Symp. on Water Erosion, Sedimentation and Resource Conversation* (Oct., 09-13, 1990) CSWCRTI, Dehradun (India), pp. 348-354.
- PHATEK, V.S., WANGIKAR, S.D. AND KAMBLE, V.B., 1993, A study on the correlates of the adoption of selected weedicides. *Maharashtra J of Exten. Educ.*, **12**: 15-18.
- POFFENBERGER, M., 1990, Joint Forest Management for Lands: Experience from South Asia. Ford Foundation, New Delhi.
- PRASAD, K.S., 1990, A study on knowledge attitude and adoption behavior of farmers towards recommended practices in yerracheruvu model watershed development programme in Anantapur of Andhra Pradesh. *M.Sc. (Agri.) Thesis* (unpubl.), Andhra Pradesh Agricultural University, Hyderabad.
- PRASANNAKUMAR, G.T., 1995, Knowledge and perception of Joint Forest Planning and Management by participant farmers in Uttar Kannada district *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Bangalore.

- PRATIMA AND JATTIN, S.S., 1999, Participatory forest management to meet basic needs of Forest Department Communities. *Indian Forester*, **45**: 895-901.
- PRAVEEN KUMAR, R.S., 1992, Effectiveness of Integrated Rural Development Programme dairy complexes on beneficiaries - A study in Ranga Reddy district of Andhra Pradesh. *Journal of Research, Andhra Pradesh Agricultural University*, **20**(4): 279-280.
- RAFI, M., 1993, Knowledge attitude and adoption of farm forestry among the participation and non-participant farmers in Shimoga district. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Bangalore.
- RAGHUPATHI AND BISWAS, P.K., 2000, Knowledge and perception of Village Forest members towards Joint Forest Management Programme in Karnataka. *My Forest*, **36**(1): 15-26.
- RAJU, G., 1992, Joint Forest Management orders: A critique from the field. *Wasteland News*, **8**(2): 65-67.
- RAM SHARMA, 1997, Learning from experiences of joint forest management in India. *Forest's Trees and Paper, Newsletter*, pp. 24.
- RAMALINGEGOWDA AND SHIVANAGOWDA, B., 2001, The status of Joint Forest Management Programme in Karnataka and Role of Forest Department in Sustainable Forest Management by Communities and Stake Holders, *My Forest*, **37**(4): 603-610.

- RAO, J.R., BHAT, P.R., MURALI, K.S., INDUK MURTHY AND RAVINDRANATHA, N.H., 2001, Joint Forest Planning and Management in Uttara Kannada: *A Review My Forest*, **37**(2): 421-428.
- RATNAKAR AND REDDY, 1991, Tribal farmers perception about ITDA programmes, *Maharashtra J. Exten. Educ.*, **10**(2): 75-81.
- RATNAKAR, R., 1990, Impact of integrated tribal development agency on the tribal farmers of Khammam district of Andhra Pradesh. *Ph.D. Thesis* (unpubl.), Andhra Pradesh Agricultural University, Hyderabad.
- RATNAKAR, R., 1991, Tribal farmers perception about ITDA programmes. *Maharashtra J. Exten. Educ.*, **10**(2): 75-81.
- RAVINDRA, R. AND VEERABHADRAIAH, 1987, A critical analysis of antyodaya programme in Karnataka. *Mysore J. Agricultural Sciences*, **12**: 44-48.
- RITILAL, 1998, JFM under world food programme in Rajastan. *Wasteland News*, pp. 56-58.
- ROSHAN COOKE, 1997, On sustainable Joint Forest Management. *Wasteland News*, **14**(2): 669.
- ROSHAN COOKE, 1998, On sustainable Joint Forest Management. *Wasteland News*, pp. 69.

- ROY, S.B., 1991, Bengal's approach to participatory management. *Wasteland News*, **7**(2): 26-27.
- SADAQATH, S., CHANDARGI, D.M. AND SUNDARASWAMY, B., 1994, Knowledge level of farmers about farm forestry, *Maharashtra J. Exten. Educ.*, **13**: 47-50.
- SADASHIVAIAH, A.S., 2001, Sustainable forest management by communities management and regulations. Paper presented at the Workshop held at Aranya Bhavan, Bangalore on 28th August 2001.
- SAMRA, 2002, Joint Forest Management for sustenance. *Yojana*, **46**: 49-53.
- SARAVANA KUMAR, 1996, A study on management of mango gardens by farmers in Krishnayiri taluk of Dharmapuri district Tamil Nadu. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- SHAH, A.C., 1992, Afforestation participatory rural appraisal. *Wasteland News*, **8**(3): 52-57.
- SHAH, S.A., 1993, Important imperative of Joint Forest Management, *Wasteland News*, **8**(4): 38-39.
- SHARMA, 2000, Beyond Joint Forest Management. *Indian Forester*, **126**(5): 463-475.
- SHIVASHARANAPPA, 1995, Impact of watershed development programme on farmers of north Karnataka. *Ph.D. Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.

- SHRIPATHI, K.P., 1994, Let industrialization be focus of JRY. A case study of Dakshina Kannada district, *Kurukhestra*, **42**(5): 11-14.
- SIDDARAMAIAH, B.S. AND REDDY, H.C.V., 1993, Attitude and adoption behaviour of farmers towards watershed management. *Mysore J. Agricultural Sciences*, **27**(3): 291-296.
- SINGH, 1991, Determinants of peoples participation in watershed development and management: An exploratory case study. *Indian J. Agricultural Economics*, **46**(3): 279-286.
- SINGH, A.K., 1991, Effectiveness of social forestry development programme in Andhra Pradesh. *Maharashtra J. Exten. Educ.*, **10**(2): 285.
- SINGH, B.B. AND PRASAD, R.B., 2000, Effect of Integrated Rural Development Programme on socio-economic status of beneficiaries. *Maharashtra J. Exten. Educ.*, **19**: 164-167.
- SINGH, K. AND BALLABH, V., 1991, People participation in forest management: Experience at Vana Panachayat in U.P. hills. *Wasteland News*, **7**(1): 5-13.
- SINGH, S. AND KHARE, A., 1993, People's participation in forest management, *Wasteland News*, **8**(4): 34-37.
- SINHA, H.S.P., SINHA, A.K. AND SINHA, K., 1984, A study on attitude of farmers of Chotanagpur towards soil conservation programme. *Indian J. of Exten. Educ.*, **20**: 9-18.

- SINHA, P.R.R., LANJEWAR, D.M. AND RAHUT, G.W., 1983, Knowledge and attitude of contact farmers towards training and visit system. *Maharashtra J. Exten. Educ.*, **2**: 89-92.
- SOMANATHAN, E., 1991, Deforestation, property rights and incentives in Central Himalayas. *Wasteland News*, **7**(1): 14-27.
- SOUNDARAPANDIAN, 1991, The impact of nation rural employment programme on eradication of rural poverty in Kamarajan district of Tamil Nadu. *J. Rural Development*, **10**(5): 689-691.
- SREEDHARAN AND SARKAR, M., 1998, Peoples participation and Joint Forest Management in Tamil Nadu. *Indian Forester*, **124**(1): 7-12.
- SUDHARSHAN REDDY, M. AND MAHMD IQBAL, 1993, Knowledge of beneficiaries and non-beneficiaries on watershed development programme. *Maharashtra J. Exten. Educ.*, **12**: 181-184.
- SUKHDEV SINGH, 1997, Role of integrated rural development programme in Punjab – A case study. *Journal of Research*, Punjab Agricultural University, **34**(4): 453-461.
- SUREKHA, S., HEMALATHA, B. AND NAGARAJAN, 1997, Attitude of farmers towards watershed development. *Maharashtra J. Exten. Educ.*, **16**: 82-85.
- SURESH KUMAR, B. AND VENKAT RAMAIAH, P., 1992, Attitude of beneficiaries towards JRY. *Indian J. Exten. Educ.*, **28**(3&4): 111-113.

- SURESH, K.A., 1990, Participation of beneficiaries in the development programmes of non governmental organizations in Kerala. *J. Rural Development*, **9**(54): 911-915.
- SWARNALATHA AND SAMRA, J.S., 1994, Determinants of peoples participation in watershed development and management - An exploratory case study in shivalik Foothill villages in Haryana. *J. Rural Development*, **13**(3): 411-422.
- SWARNKAR, V.K. AND CHOUHAN, ANUP SINGH, 1993, Impact of special rice production programme on farmers. *Maharashtra J. Exten. Educ.*, **12**: 241-244.
- TEJASWINI, 1996, Impact of Development of Women and Children in Rural Area on Rural Women. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- TEWARI, D.N., 1993, Joint (participatory) Forest Management. *Indian Forester*, **199**(9): 687-698.
- TRIVEDI, G., 1963, Management and analysis of socio-economic status of rural families. *Ph.D. Thesis* (unpubl.), Indian Agricultural Research Institute, New Delhi.
- UMADEVI, B.K., 1992, An analysis of impact of training and extension an farm women in WYTEP in Karnataka. *M.Sc. (Agri.) Thesis* (unpubl.), Andhra Pradesh Agricultural University, Hyderabad.
- UMALE, P.B., BHOPLE, R.S. AND SAGANE, M.A., 1991, Adoption of agro-forestry by farmers. *Maharashtra J. Exten. Educ.*, **10**: 145-148.

- UPADHYAY, 2001, Policy and legal issues involved in successful implementation of Joint Forest Management, A critical Analysis. *Indian Forester*, **127**: 497-504.
- USHARANI, R., 1999, A study on opinion of women beneficiaries towards Development of Women and Children Rural Area and benefits derived in Vizianagaram district, Andhra Pradesh. *M.Sc. (Agri.) Thesis* (unpubl.), University of Agricultural Sciences, Dharwad.
- VENKATAPRABHU, J., 1993, Diagnostic study on agro-forestry in research, extension and clientele perspective. *Ph.D. Thesis* (unpubl.), Tamil Nadu Agricultural University, Coimbatore.
- VENKATAPRABU, J. AND PERUMAL, G., 1995, Scientists view on the constraints of agro-forestry technology implementation. *J. Exten. Educ.*, **6**(1): 82-85.
- VENKATARAMAIAH, P. AND SRINIVASULU, R., 1992, Impact of agricultural programme in ITDA in coastal Andhra. *Maharashtra J. Exten. Educ.*, **11**: 148-150.
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APPENDICES

APPENDIX - A

INTERVIEW SCHEDULE

A CRITICAL ANALYSIS OF JOINT FOREST MANAGEMENT PROGRAMME ON KNOWLEDGE AND PERCEPTION AMONG BENEFICIARIES IN NORTHERN KARNATAKA

PART - I

A. General Information about the village

- 1) Name of the village :
- 2) Name of the taluk :
- 3) Population of the village :

Adult		Children	
Male	Female	Male	Female

- 4) Type of road to the village : Metal / Kacha
- 5) Educational and other basic Institutions : Primary School
High School
Co-op society
Youth Club
Gram Panchayat
Health Centre
Bank
Veterinary Hospital
Post Office
Any other specify
- 6) How far is the nearest forest office : KM
- 7) How far is the taluka head quarter : KM
- 8) Total area of the village : Acre/ha

- 9) Area under cultivation : Ha
 Area under uncultivable land : Ha
 Area under forest : Ha
 Area under forest : Ha
 Area under wasteland : Ha
 Area under barren land : Ha

B. General information about JFM

- 1) Date of Establishment of VFC
 2) Number of beneficiaries in VFC

Male	Female

Nature of membership

G.M.	S.C.	S.T.

- 3) Length of membership

Less than one year	
One year	
1 - 2 year	
2 - 3 year	
3 - 4 year	
4 - 5 year	

- 4) No. of management committee meeting held

- 5) No. of training programmes arranged by Forest Department to VFC beneficiaries

No.	Date	Subject matter

6) Co-ordination with other
Departments

Departments	Fully co-op	Partial co-op	Not co-op
a) Agriculture			
b) Horticulture			
c) Animal Husbandry			
d) Sericulture			
e) Revenue Department			
f) Zilla Parishad			
g) Indian Institute of Science			
h) Western Ghat Development Board			
i) Others			

7) Activities carried by VFC

No. of beneficiaries involved

1. _____	Date _____	_____
2. _____	Date _____	_____
3. _____	Date _____	_____
4. _____	Date _____	_____

8) Overall opinion of the forest department about VFC

- a)
- b)
- c)
- d)

9) Major problem faced for effective implementation

- a)
- b)
- c)
- d)

PART - II

V

Personal characteristics of beneficiaries

- 1) Name of the Beneficiaries Farmer : _____
- 2) Name of the village : _____
- 3) Age in completed years : _____
- 3a) Caste : GM/SC/ST/BC
- 4) Educational qualification:
- a. Illiterate
 - b. Primary
 - c. Middle School
 - d. High School
 - e. PUC / Diploma
 - f. Degree
- 5) Family type
- a. Nuclear
 - b. Joint family
- 6) Farm size (in acres)
- a. Dry _____
 - b. Wet _____
 - c. Garden _____
- Total _____
- 7) Family income
- What was your family income for last year through following sources
- a) From Agriculture _____

b) Collection of _____
 Fire woods _____
 Leaves _____
 Fodder _____
 Honey _____
 Fruits _____
 Gum _____
 Others: If any _____
 Total _____

8) Live stock possession

Bullock _____
 Cow _____
 Buffalow _____
 Sheep _____
 Goat _____
 Others _____
 Total _____

9) Extension contact:

How often you contact the following extension personnel last year?

Sl. No.	Personnel	Level of participation		
		Regular	Occasional	Never
1	Conservator of Forest			
2	Dy. Conservator Forest			
3	Asst. Conservator of Forest			
4	Range Forest Officer			
5	Forester			
6	Forest Guard			
7	Motivator			
8	Other (Specify)			

10) Social participation

Sl. No.	Name of the organisation	Beneficiaries Yes/No	Office bearer	Participation		
				Regular	Occasional	Never
1	Mandal Panchayat	Yes/No	Yes/No			
2	Village co-op Society	Yes/No	Yes/No			
3	Youth Club	Yes/No	Yes/No			
4	Charcha Mandal	Yes/No	Yes/No			

11) Cosmopoliteness

- a) How many times you visit the nearest village/town/taluk/District during the last three

Sl. No.	No. of visits	Village	Town	Taluk	District

- b) Are you a member of any organization, outside the village
Yes/No

1. If yes name them

Extent of participation

	Regular	Occasional	Never
1			
2			
3			

12) Level of aspiration

- a. What would be the level of education you expect from your Son's to have?
- b. What would be the type of work you expect your Son's to have
- c. How many times you would like to increase forest production in the next 10 years?

13) Employment Generation

Employment range Manday	Percentage of beneficiaries		Nature of employment
	Before	After	
100 - 260			
261 - 421			
422 - 582			
583 - 743			
744 - 903			

Knowledge statements about joint forest management**1. Objectives of Joint Forest Management**

- 1) The objectives of Joint Forest Management are
 - a) Protection of degraded forest
 - b) Protection and rehabilitation of degraded forest Development of waste land
 - c) All above
- 2) What category of rural people will be benefited through Joint Forest Management
 - a) Small, marginal and landless labours
 - b) Rich/big beneficiaries
 - c) Both
 - d) Don'
- 3) Sustainable management of forest is possible through
 - a) Involving local people in forest management
 - b) Involving forest officials and local people jointly
 - c) Do not know
- 4) What type of forest areas is covered under Joint Forest Management?
 - a) Degraded forest
 - b) Waste land
 - c) Both

- 5) The JFM encourages the
 - a) School nurseries
 - b) Kissan nurseries
 - c) Sacred grooves
 - d) Above all
- 6) The Joint Forest Management encourages the village community to
 - a) Achieve self sufficiency in forest product requirement
 - b) Improve economy of village community
 - c) Both
 - d) Don't know
- 7) The JFM generates additional employment to the beneficiaries:
 - a) Throughout the year
 - b) Seasonal (plantation period June to October)
 - c) Occasional (Non seasonal)

2. Functions of Joint Forest Management

- 1) What is the role of Joint Forest Management beneficiaries in protecting the forest
 - a) Preventing encroachment, regenerating, grassing, preventing forest fire, illegal cutting, smuggling poaching of wild animals etc.
 - b) Attending meeting whenever they call
 - c) Don not know
- 2) What type of role the Joint Forest Management beneficiaries should perform in a forestation of any Govt. land?
 - a) Identification of land, choice of species and protection after planting

- b) Choice of species only
 - c) Do not know
- 3) What is the role of beneficiaries in Joint Forest Management?
- a) Help forest officials in planning and protection and conservation of forest
 - b) Discuss and involve in preparing management plant
 - c) Both
- 4) The role of beneficiaries is also
- a) To protect the environment
 - b) To create awareness among community about forest preservation
 - c) Both
- 5) Frequent visits envisaged by forest officials to VFC will be useful in performing
- a) Day to day work
 - b) Create conflicts
 - c) Don't know
- 6) The land allotted to VFC should be protected as per
- a) The Memorandum of understanding between forest officials and beneficiaries of VFC
 - b) The VFC beneficiaries willingness
 - c) Do not know

3. Concept of Joint Forest Management

- 1) What do you mean by Joint Forest Management?
- a) Efforts of the forest department to protect and development of the forest.

- b) Joint efforts of forest department and local people to protect of develop the forests.
 - c) Do not know
- 2) What is the role of village people in Joint Forest Management?
- a) Involve actively in the conservation, planning, protection, regeneration and development of forests.
 - b) To reduce the burden of forest department by taking the role in protecting the forest
 - c) Do not know
- 3) What type of areas are covered under Joint Forest Management?
- a) Degraded forest land
 - b) Waste land
 - c) Both above category

4. Village forest committee

- i) Who can become the member of VFC?
 - a) Any person belonging to village y paying fees, having the interest of forest development and conservation
 - b) Any outsider of the village just by paying fees
 - c) Do not know
- ii) What is the membership fee for general and SC & ST?
 - a) Rs. 4/- for General Rs. 3/- for SC & ST
 - b) Rs. 2/- for General & Rs. 1 for SC & ST
 - c) Do not know

- iii) What is the composition of management committee in VFC?
 - a) Chairman, 10 selected beneficiaries, and 4 ex-officio beneficiaries
 - b) 8 elected beneficiaries and ex-officio beneficiaries
 - c) Do not know

5. Management plan

- i) While preparing management plan, whose interest should be considered
 - a) All people
 - b) Few village elders
 - c) No one
- ii) The person responsible for discussion, development and finalization of management plan is,
 - a) DCF or his representative
 - b) Village leader
 - c) Both DCF and village leaders
- iii) The power vested with VFC's as prescribed under management plan is
 - a) Preventing illicit cutting, grazing and encroachment of forest lands
 - b) Physical punishment to the forest offender
 - c) Do not know
- iv) How many years a village forest committee functions
 - a) 5 years
 - b) 10 years
 - c) Do not know

- v) The minimum quorum required to conduct meeting of the management committee should be
 - a) 1/3 of the total number of beneficiaries
 - b) 1/4 of the total number of beneficiaries
 - c) Do not know
- vi) Who can check or prevent forest encroachment, illegal cuttings, smuggling, poaching etc.
 - a) Only joint forest management committee beneficiaries
 - b) All the beneficiaries of VFC
 - c) Do not know
- vii) Management Committee beneficiaries meets
 - a) Once in a month
 - b) Twice in a month
 - c) Do not know

6. The role of different departments and officials

- i) Are you aware of the training programmes arranged to VFC beneficiaries by the forest department? If so how many programmes were arranged?
 - a) 1-2 training programmes
 - b) 4 - 5 training programmes
 - c) No training programme
- ii) The dispute during the operation of Joint Forest Management are arbitrated by:
 - a) Deputy Commissioner
 - b) Police Sub Inspector
 - c) DCF, or his representatives

- iii) There is scope for involvement of following government departments and organization in Joint Forest Management.
 - a) Departments like agriculture, Horticulture, animal husbandry etc.
 - b) Local institution NGO's
 - c) Both

7. Disposal of forest produce and sharing of benefits

- i) Dispose off forest produce through.
 - a) Local timber market
 - b) Publication
 - c) Forest departments
- ii) The benefits will be shared between forest department and local people in the ration of
 - a) 50 : 50
 - b) 75 : 25
 - c) 25 : 75
- iii) The 50 per cent of shared benefits to VFC will be distributed among:
 - a) All general body beneficiaries
 - b) General body beneficiaries + elected beneficiaries
 - c) Concerned body beneficiaries + Elected beneficiaries + Office beneficiaries

PERCEPTION OF JOINT FOREST MANAGEMENT PROGRAMME

1. Concept	Agree	Partial agree	Disagree
<ol style="list-style-type: none"> 1. Whether JFM is an effective programme to save forest from degradation. 2. The concept of JFM 'Cate and Share' is a good idea to encourage people in development and maintenance of forest. 3. Ecological balance can be maintained through this programme. 			
<p>2. Objectives</p> <ol style="list-style-type: none"> 1. JFM is aimed at development of degraded lands as compare to earlier programmes. 2. JFM has created more employment opportunities among realities. 3. The conflict between forester and rural people can be casily settled. 4. Integrated development of the village is possible because of JFM. 5. The JFM programme controls illegal cuttings, encroachment, fire, smuggling etc. 			
<p>3. Feasibility</p> <ol style="list-style-type: none"> 1. Whether JFM is economically feasible and socially acceptable one. 			

Contd..

<p>2. JFM has resulted in close interaction and group action between officials and beneficiaries.</p> <p>3. Whether people can maintain forest even after termination of JFM programme.</p> <p>4. JFM is more feasible because it helps rural people to conserved their own resources to meet their day to day requirements.</p>			
<p>4. Management plan</p> <p>1. Whether forest department consult local people before preparing management plan.</p> <p>2. The procedure employed in preparation of management plan is affective in protecting and development of the forest.</p> <p>3. JFM does not forsee cooperation and coordination of different departments like agriculture/ horticulture/revenue dept. etc.</p>			
<p>5. Village Forest Committee</p> <p>1. Adequate representation should be given to all the section of the society while formulating VFC.</p>			

Contd..

<p>2. The membership fee is very reasonable.</p> <p>3. Whether management committee is given adequate powers to carryout its function.</p>			
<p>6. Perception towards usefulness of programme</p> <p>1. Joint forest management programme is a good idea to protect/ conserve existing forest</p> <p>2. Only big beneficiaries are getting benefit from joint forest management.</p> <p>3. Whether sharing of the produce among beneficiaries in JFM is unequal.</p> <p>4. Whether JFM creates conflicts among beneficiaries and officials.</p> <p>5. Whether JFM programme increases the employment opportunities to the rural people.</p> <p>6. Whether beneficiaries under JFM programme are more subsidy oriented than developmental oriented.</p> <p>7. There is no misutilization of funds under JFM.</p> <p>8. Species planted on wasteland increases the productivity of land.</p>			

Contd..

<p>9. Income of the beneficiaries will be raised due to more employment opportunity.</p> <p>10. More area under forest can be brought through this programme.</p> <p>11. Adequate powers should be given to beneficiaries to protect the forest</p>			
<p>7. Disposal of forest produce</p> <p>1. Whether the provision made for local sale of forest produce to meet day-to-day needs of villagers is a good idea.</p> <p>2. The surplus minor forest produce and firewood should be disposed only after meeting the local needs.</p> <p>3. Whether the present proportion of sharing of the benefits fails to satisfy the needs of the people.</p> <p>4. Whether the provision should have been made to spend village development fund for cultural and recreational activities.</p>			
<p>8. Peoples involvement in JFM</p> <p>1. Whether people participation in JFM has created awareness among beneficiaries about the importance of the forest.</p> <p>2. Whether the programme is beneficial to only beneficiaries of VFC?</p> <p>3. Peoples participation in JFM decreased illegal cutting, grassing and encroachment of forest land.</p> <p>4. Peoples participation in JFM helps in a forestation and increases productivity of land.</p>			

Benefits obtained from beneficiaries

1. What are the benefits you get as a beneficiaries of the village forest committee.

In terms of kind (approx.)
Qty/Day/Week/Month/Annual

- a)
- b)
- c)
- d)
- e)
- f)

Give your suggestion for effective implementation of the programme

- a)
- b)
- c)
- d)
- e)

A CRITICAL ANALYSIS OF JOINT FOREST MANAGEMENT ON KNOWLEDGE AND PERCEPTION AMONG BENEFICIARIES IN NORTHERN KARNATAKA

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2003

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ABSTRACT

The study was conducted in Dharwad and Belgaum districts to know the knowledge and perception about Joint Forest Management Programme among the beneficiaries during the year 2002. Totally 360 beneficiaries were selected from 18 villages. The important findings of the study were.

The socio-personal profile revealed that majority of the beneficiaries were in middle aged group(52 %), primary education (38%), nuclear family (62%), big farmers (33%), below poverty line (97%), live stock possession w.r.t. bullocks (42%), medium extension contact (55%), low social participation (37%), high cosmopolitaness (48%) and medium level of aspiration (46%).

Majority of the beneficiaries had medium level of knowledge (39.17%) about Joint Forest Management Programme. JFM component analysis revealed that objectives of JFM with average score (4.08) ranked first and least knowledge about role of different departments with average score (1.61) ranked the least.

Majority of the beneficiaries had medium level of perception (47.73%). Perception towards the usefulness ranked first with an average score (11.24), and management plan with an average score (3.02) ranked the least.

Extension contact and employment generation were found to have a positive and significant association with the knowledge level of the beneficiaries.

Regression analysis revealed that extension contact was most important variable in influencing the knowledge and perception level of beneficiaries. Fodder, firewood and increase in employment were major benefits derived by beneficiaries.

Lack of confidence and uncertainty about the programme and lack of power to village forest committee members were some of the problems expressed by the beneficiaries. Suggestions for better implementation of Joint Forest Management Programme were views and knowledge of local people while formulating management plan should be considered and follow up by senior forest officers about working of Village Forest Committee is appropriate.