CHAPTER VI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In the previous chapter the analysis and interpretation of data were presented. An attempt has been made in the present chapter to present summary of the present study along with the major findings and policy implications for the effective implementation of the social forestry programme.

6.1 Background of the Study

India's forest cover, according to the latest official estimates has been put at 19.82 percent of the land area, which is 329 million hectares. As per the recent report of the Forest Survey of India (FSI) the country has only 64.01 million hectare of actual forest cover with average productivity of Indian forest at 0.5 cubic meter per hectare, which is way behind the world average of 2.1 cubic meter. According to the Survey of India and the National Remote Sensing Agency of which 19.52 percent is green cover, over 10 percent is represented by closed forests, over 8 percent open forests, about 0.12 percent of man grove forests and 1.1 percent comprises of coffee plantations. It is estimated that at least 10 million hectares of degraded land need to be brought under forest to maintain the balance.

Karnataka is the ninth largest state in India both in area and population (Census, 2001). The state has a geographical area of 1.9 million hectares of which 3.8 million hectares (19.96 percent) are under the control of the state forest department. About fifty percent of the forests in the state are degraded and only about eleven
percent is well wooded. The remaining area is in different stages of degradation. The present area of forests of the state is lesser than the area (33 per cent of geographical area) suggested by the National Forest Policy, 1952. As per the Annual Report of 1996-97, Department of Forest, Karnataka different types of forests such as evergreen and semi-evergreen (15.15 per cent), moist deciduous (15.1 per cent), dry deciduous (19 per cent) scrub and thorny (21.8 per cent) and un-wooded (29 per cent) are combined.

Shimoga district in Karnataka state is situated roughly in the mid South Western part of the state. The Western area of the district consists of a mountainous terrain, while on the Eastern side there is a striking transition from Malnad and semi-Malnad to Maidan. The district has rich and varied flora, the major contributing factors to this variety being differences in rainfall and topography with in the district. In the region of Western Ghatts, the rain fall is heavy, Aagumbe getting an annual average rainfall of 8275.7 millimeters. As one proceeds to the East, the rainfall decreases very rapidly; it is even less than 620 millimeters in a year in the eastern borders of the district.

The forests of the district, which are rich and valuable products, cover an area of 3270.6 Sq.Kilometres million hectares, in which forests cover nearly 31 percent of the land area of the district. According to Annual Report, 1996 Department of Forest, Karnataka moist deciduous forest cover the area of 578 hectares, while the evergreen and dry deciduous forest cover 580 hectares and 727 hectares in the State respectively.
The data mentioned above suggests that there is a vast scope for forestation activities like social forestry in Karnataka. Moreover, the ever increasing demand for food, fodder, fuel wood and other forest products not only for the rural folk, but also urban community. The continuous and careless extraction and exploitation of the prevailing natural resources created a number of problems like deforestation, soil erosion depleting the underground water table damaging the ozone layer and creating other hazards. In order to solve this problem the Government of Karnataka started the social forestry programme in 1980 with financial aid from the World Bank and Overseas Development Association.

The present area of forests in the country, state and the sample district is far below the ideal area (33 per cent of Geographical area) suggested by the forest policy of 1952 and 1988. The policy states that forest should not be looked upon as sources of revenue. These renewable natural resources are to be protected and enhanced for the well being of the people and nation. Among the basic objectives priority is given to the maintenance of environmental stability through preservation and restoration of the ecological balance. The first National Forest Policy resolution issued in 1894 provided that the sole object for which state forests were to be managed was public benefit.

The term social forestry was used for the first time in IX Common Wealth Forestry Conference by Jack Westoby (1968) in his inaugural address. The National Commission on Agriculture (1972) in its interim report on Production Forestry discussed the idea of social forestry and observed that social forestry should also include the activities concerned with growing and meeting the firewood needs of the
community. Some amount of plantation of protected forests in areas liable to soil erosion must be accepted as a social investment (NCA, 1972).

Social forestry programme usually has three components namely farm forestry, community forestry and rehabilitation of degraded forest area. Farm forestry is a plantation and management of trees on private lands, purely by private efforts with or without government supports. Community forestry is a practice of forestry on community lands, Panchayat lands, governments wastelands, etc, to be managed by the community. Rehabilitation of degraded forest area is afforestation of degraded forest with a view to meet the requirements of fuel wood and fodder for the local peoples. Management usually remains with the forest department.

The programme involved different models of afforestation and implemented them to cover almost all types of degraded lands under trees. They are 1) Plantations on school grounds, 2) Pavitravans, 3) Plantations on all types of waste lands, 4) Plantations on tank foreshore areas, 5) Stripe plantations on road sides and railway tracks, 6) Stripe plantations on canal banks and 7) farm forestry.

6.2 Need for and Scope of the Study

At present the economic studies on social forestry are few and far between. The available studies mostly attempt to analyze the general problems of social forestry. A systematic study of the economics of social forestry and its impact on rural income and employment as well as on ecological balance would help understand the significance of social forestry. The present study, it is hoped, would fill this void.
The present study is aimed at studying social forestry of Karnataka particularly in Shimoga district. It was conducted in Malnad region of Karnataka which has a good forest cover, although it stands at the fourth place with regard to the per cent of forest area to the geographical area. The study has been undertaken with a view to analyze the economics of social forestry in terms of cost, returns and profitability in Shimoga district, where nearly 9400 hectares of forest area submerged with the Chakra and Varahi Hydel project. The findings of the study would help to understand the problems of social forestry and provide useful guidelines for the effective use of social forestry especially at the grass root level.

6.3 Objectives of the Study

Following are the main objectives of the present study:

1. To analyze the economics of social forestry in terms of costs, returns and Profitability.
2. To assess the effects of social forestry on rural income and employment.
3. To determine whether the area of forestry has increased consequent upon the implementation of social forestry project.
4. To examine the ecological consequences of deforestation.
5. To document the problems faced by the forest authorities in promoting social forestry in Karnataka.
6. To suggest measures for speedy and effective implementation of the social forestry programme.
6.4 Operational Definitions

The key words used in the present study are Social Forestry, Costs and Benefits.

Social Forestry: It is understood in the present study as the forest, which is purely maintained by the people and their collective participation is essential for their benefits are meant for the social purpose and not the individual purpose.

Cost: It is the cost which is spent by the government for various plantation activities in the social forestry programme.

Benefit: It is what beneficiaries would get in various forms such as firewood, fodder, green leaves, dry leaves, etc.

6.5 Sampling Design

Shimoga district comprises 7 taluks. Among these seven taluks, Shikaripur taluk has the largest percentage of area of plantations, whereas Hosanagar has the lowest percentage of area of plantation under social forestry programme compared to the other taluks of the district. For the purpose of analyzing the costs and benefits of social forestry, these two taluks have been considered. Further, two areas of Gram Panchayats were selected from each of the two taluks on the basis of highest and lowest area of social forestry plantations for the purpose of primary data collection. Then, equal number of respondents was selected from the sample Gram Panchayats for the purpose of cost-benefit analysis.
6.6 Tools used for Data Collection

The present investigation was undertaken with a purpose of studying social forestry in Shimoga district of Karnataka. In order to carry out this study, after an extensive review of related literature and consultation with the experts in the field, the following tools were prepared and used for the purpose of collection of primary data from the sample blocks in the district. The tools in the present study consisted of interview schedules meant to elicit information on the views, attitudes, opinions, etc., of the farmers on the social forestry scheme and the problems encountered in the operationalization of the scheme and also suggestions for its effective functioning. Secondary data were collected from reports, guidelines, job charts, office records and other related publications of the government were utilised.

6.7 Techniques of Analysis

The data were analyzed by using statistical techniques such as percentages, averages, regression, etc. Besides these, cost-benefit analysis has also been attempted for the purpose of evaluating the social forestry in the sample areas. The total costs include establishment, watch and ward, harvesting and opportunity cost of grazing benefits foregone. It was observed during field survey and gathered from the discussions with forest officials. Hence that normally it takes more than 15 years to get returns from social forestry. The cost of inputs and the benefits must be compared in order to ascertain the viability of investment. The absolute values of benefits in terms of rupees cannot be compared with the input costs, because of inflationary cost and opportunity cost involved. For this reason, N.P.V. technique and B/C ratio is adopted. The benefits considered for the present study are fuel wood, green leaves, honey, bamboos, timber and other minor forest produce. For the investment analysis two viability measures are computed namely the Net Present Value (NPV) and
Benefit-Cost (BC) ratio. NPV refers the present value of benefits minus the present value of costs at current prices, where the cash flows are summed up for 21 years. The BC ratio is the present value of benefits expressed as a ratio of the present value of costs.

In order to assess the dependence on social forestry products by the farmers, belonging to different sizes of land holdings, the multiple regression technique has been employed. Estimation has been done by fitting a linear equation by using the ordinary least squares method. The dependent variable used here is the land and the independent variables are firewood, green leaves, dry leaves, small timber / bamboo, honey and fodder expressed in rupees. The model, which was fitted for the present purpose is as follows.

\[ Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + E_i \]

Where Y is the dependent variable, \( X_1, X_2 \ldots \ldots X_6 \) are independent variables, a and b are the unknown regression parameters to be estimated and \( E_i \) is the unexplained variation.

6.8 Major Findings of the Study

Following are the major findings of the study.

1. Social forestry is a socially desirable and economically viable source of meeting the requirements of the rural people especially when the natural village forests are depleting. It provides small agricultural timbers and non-timber products in addition to green and dry leaves, which is a good source of green manure for agriculture.

2. It provides employment opportunities, but the achievements in this regard lag behind the expectations, due to lack of effective participation by people in the
programme although they have realized the critical importance of social forestry in the rural economy.

3. Maintenance of the social forestry plantations is poor for lack of trained staff.

4. Majority of the forest officials were non-cooperative, they did not take committed steps to implement the programme.

5. Land values have been found to increase as a result of farmers applying larger quantities of green manure and as a result of checking soil erosion, which in turn increased the productivity of land. Land values increased by about Rs. 10,000 per hectare due to social forestry programme.

6. In some parts of the study area people reported that they did not get sufficient benefits from social forestry, because tribal people poached timber and firewood from these forests.

7. There are a number of Non-Governmental Organizations presently involved in the social forestry programme along with forest department: These NGOs and self-help groups have been facing a number of problems such as lack of co-ordination between themselves, inadequate financial support from the government and apathy of the people.

8. People in the study area have reported they would like to continue tree cultivation in future, not only because of constraints faced in traditional agriculture, but also because of benefits from trees. Social forestry programmes generate more employment and income than agricultural activities.
6.9 Policy Implications

The investigator has observed a number of constraints in the study area which act as hindrances to promote the social forestry programme. As result, the programme has not yielded expected benefits. The success of the programme depends upon a number of factors, which are social, political and economic in nature. The programme requires prompt and honest efforts by the implementing authority on the one hand and effective participation by the beneficiaries on the other.

In the light of the above, following are the policy implications for the effective implementation of the programme.

1. Government should educate the people not only about the need for social forestry but also about how to effectively participate in the programme.

2. Government must widely encourage participation of non-governmental organizations and other self-help groups in social forestry programme.

3. The forest department officials and functionaries should be provided sufficient training to deal with poachers and other smugglers. Moreover, training is necessary for the planting, maintenance, etc.,

4. All saw mill owners, carpenters and other wood workers should enroll their names at panchayat office or R.F.O office since this would be helpful in checking the smuggling of timber.

5. At the time of raising plantation forest officials must consult the local people regarding the types and species of trees to be planted in social forestry plantations so that plantations are relevant to the local demands.

6. Government should encourage among rural people the use of non-conventional energy sources such as biogas to reduce pressure on forests. All
wastelands should be transferred to the forest department so that it can raise social forestry on these lands. After planting, weeding, trenching, completion of everything department may allot the planted area for interested persons in accordance with their capacity to maintain it and the cost incurred in this direction should be collected on an installment basis only when the plantation is fully grown up. Department should take necessary steps to protect the plants in the initial years to provide effective watch and ward to look after the plantations.

7. Government should encourage raising ‘Pavitra Van’ or ‘Devara kadu’, because people are generally afraid of cutting the trees, which are in the name of God.

8. The present village forest committee must be strengthened and members of the committee should be made to actively participate in joint forest committee programme.