CHAPTER – VI

SUMMARY

The relationship between man and forest has always changed with socio-economic development and will certainly continue to change. The reason is that man/land ratio will continue to be high and more wood production will be demanded in the future. Therefore, in a contemporary world, involvement of farmers in investment of fast growing species like Teak will be a major way of achieving sustainable forest development, income generation and abundant supply of timber when demanded from time to time. Tree growing on farmer’s field helps in enhancing the productivity of land. Its aim is to achieve more sustainable and diversified output from the land than what is not possible in conventional cropping system. Tree growing appears to be the best remedy not only to maintain but to enhance the income of the farmers.

If a farmer is growing timber as an investment, he needs to analyze the profitability of his business. Economic decisions tree farmers face includes which tree species to grow, when to harvest and when to replant. Farmer may also wish to compare the financial benefits he would obtain from his forestry activity with those he would obtain from other land use alternatives. A key difference between the economic forestry and most agricultural land uses is that the financial returns to forestry are often delayed for years. Therefore, time value of money needs to be taken into account when planning investments in forestry.

In Vidarbha region of Maharashtra state, many farmers have planted teak on their farms. It is therefore, necessary to have information on economics of Teak with the constraint in growing on farmers land. In view of the above the present study is undertaken with the following objectives.

- To study the economic status of selected Teak growers
- To study the economics of Teak plantation
- To examine the financial viability of Teak plantation
- To study the resource use efficiency in Teak plantation

Data for the present study were collected from Yavatmal and Akola districts of Vidharbha region of Maharashtra State. The selection of districts was done purposively
because of the popularity of tree growing in these two districts and familiarity of the researcher with the area. The sampling technique adopted for this study was three stage random sampling. The selection of tehsil was considered as primary unit and the villages and the farmers were secondary and tertiary units respectively.

In the first stage six tehsil from Yavatmal namely Kalam, Darvwa, Pusad, Umerkhed, Relegaoon and Digras and four from Akola namely Akola, Barshitakli, Patur, Balapur were selected. In all, ten tehsils from both the districts under study were selected on the basis of the concentration of Teak growers.

In the second stage Teak growing villages from each tehsil were identified. In all, 49 villages spread over 10 tehsils were selected. From Yavatmal 17 villages and from Akola districts 32 villages were selected.

The list of farmers who has adopted Teak plantation in Yavatmal and Akola district was obtained from social forestry department of Yavatmal and Akola district. From each districts 60 farmers who has adopted Teak plantation were selected. In all, 120 farmers from both the districts were selected. All these selected farmers were the respondents for the present study.

A structured interview scheduled was prepared with a view to cover the various aspect indicated by working objectives. The data were collected by personal interview method by contacting Teak growers on their farms and homes. The constraints for adoption of recommended practices of Teak cultivation by Teak growers were studied.

- Simple tabular analysis was carried out to workout the socio economic characteristics of selected farmers. The economics of Teak cultivation was worked out using different cost concepts viz. Cost A, Cost B and Cost C.
- The economic viability of Teak plantation was studied using project evaluation technique. Comparative picture of different measures of capital productivity used in economic evaluation of investment in raising Teak are Net Present Value (NPV) , Benefit - Cost Ratio (B-C) ,Internal Rate of Return (IRR) .
- To examine the productivity and efficiency of inputs used in production of Teak, different types of production functions were tried. Among them, double log production function was finally selected on the basis of measures of goodness of fit (R2) and significance of least square estimators.
The marginal value products (MVP) of the inputs were derived by taking partial derivatives of yield (Y) with respect to input concerned (Xi) at the geometric mean level of the inputs.

**Findings**

1) The selected Teak growers are literate in the age group of 31-60 years with the average family size of four persons comprising of 2 males with land holding of 8.19 ha.

2) Teak growers in Yavatmal district are basically farmers with their livelihood based on farming. The Teak growers in Akola district are mostly the absentee land lords having their main source of lively hood other then framing.

3) Majority of the Teak growers (72.50%) are having their Teak age between 6 – 15 years, only five per cent Teak growers have their Teak plantation age more than 20 years.

4) Seedling as a planting material was preferred by 61 per cent as compared to stumps while 86 per cent Teak growers used pit for planting Teak seedlings.

5) The average area under Teak is 0.22 ha in Yavatmal district and 0.14 ha in Akola district while overall area of selected farmers is 0.18 ha contributing 2.88 per cent to the grossed cropped area.

6) The land use pattern indicated that, there is wide scope to increase irrigation in Yavatmal district (11.20%) as compare to Akola district (43.59%).

7) The cropping pattern of selected Teak growers of both the districts is kharif dominated and soyabean, cotton, pigeonpea are preferred in kharif while in rabi wheat and gram are the crops grown by the selected Teak growers.

8) The fixed capital investment indicated that land, implements and building are contributing more than 94 per cent to the total assets.

9) The per hectare cost of establishment of Teak in Yavatmal district is Rs. 40,218 and in Akola district is Rs. 44,820. Akola Teak growers spend a bit higher on almost all the inputs.
10) The average per hectare cost of cultivation of Teak over 20 years exhibited that Akola Teak growers are spending more than Yavatmal Teak growers. The Cost C per year in Yavatmal, Akola and overall are Rs. 13740 and Rs. 14562 and Rs. 14151 respectively, with input out ratio at Cost A 1:8.16, 1:7.09 and 1:7.58 and at Cost C is 1:5.56, 1:5.49 and 1:5.53 respectively.

11) The expected per hectare returns in Yavatmal district at the age 6, 9 and 12 years from Teak plantation is Rs. 55750, Rs. 65640, Rs. 362800 respectively with Rs. 10,46,400 at the final felling at 20 years. The gross returns per year come to Rs. 76350. The expected per hectare return in Akola district at the age of 6, 9, and 12 year is Rs. 56750, Rs. 67800 and Rs. 379600 respectively with Rs. 10,96,800 at the final felling at 20 years. The gross return per year comes to Rs. 80,047.50.

12) The Present Worth of Cost, Present Worth of Benefit, Net Present Value and Internal Rate of Return for per hectare Teak in Yavatmal district are 385662, 520103, 134241, 16.00 per cent respectively. In Akola Present Worth of Cost is 416848, Present Worth of Benefit 541017, Net Present Value 124169, Benefit Cost Ratio 1:1.30 and Internal Rate of Return 15.63 per cent per annum.

13) The overall BC ratio and IRR for the selected Teak growers are 1:1.35 and 15.80 per cent respectively. This indicates that cultivation of Teak is economical and viable as the Teak growers can run the farm with his own money, extract the benefits and money is returned with 15.80 per cent interest per annum which is not given by any of the bank.

14) The package of practice for cultivation of Teak along with standard management practices is developed covering all the primary operations of Teak cultivation.

15) The input use efficiency of Teak growers in Yavatmal and Akola district indicated that area under crop (ha), bullock labour (day), Expenditure on manures (Rs) in Yavatmal district and area under crop (ha), human labour (day), bullock labour (day), expenditure in fertilizer (Rs) and irrigation charges (Rs) in Akola are the variable which showed significant impact on Teak production.
16) Study of Marginal Value Product (MVP) indicated that there is a sufficient scope to increase area under Teak plantation in both the district under study and bullock labour (day) in Akola district for efficient productivity. Other inputs are used in excess by Teak cultivators in the study area. No input has been used efficiently by the selected growers indicating that the farmers are unaware about the management practices.

17) There is need to disseminate the standard management practices in local language to promote Teak cultivation.

18) In the study of constraints in growing Teak 100 per cent farmers reported that they have no knowledge about Forest law and 91.67 per cent reported that long gestation period as another constraint.