CHAPTER – VI

SUMMARY OF MAJOR FINDINGS OF THE STUDY AND SUGGESTIONS
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The concluding chapter has two parts. Part – I deals with the major findings of the study and part – II represents the suggestions. At present there is no other alternative crop which is able to support the rural community on a sustainable basis. It is seen from the information available, that none of the crops are near to tobacco in either economic, employment or guaranteed market in the area where the farming system is rainfed and mostly small and marginal farm holdings. In view of India being signatory of the “WHO-Framework Convention for Tobacco Control”, there is a need look into the possible pockets for alternative crops. It is seen that some micro-zones which can be perfected with newer crops replacing tobacco with augmented farm income through technology intervention combined with management perspectives. The domains identified along with indicators, can be best studied to fit best management strategy. There is an every need to address issues like micro-zone imbalances in productivity, soil degradation, soil erosion, depleted water table, untapped rain water resources, raising cost of inputs and high cost of cultivation.

A comprehensive management strategy is required to boost farm income by introducing demand driven production of crops, adding new enterprises at the farm i.e., animal components, apiculture and fisheries. A scientific intervention is need of the hour to enhance the efficiency of resource use, land, water, fertilizer by adopting improved technology post harvest value addition. A management strategy results in securing food security, avoiding risk by changing mono cropping to multi cropping for
more economic returns and rural employment. This is possible by adopting farming system concept involving shift in cropping pattern towards crops which are more in demand like oilseeds, pulses, horticulture, floriculture, medicinal and aromatic plants etc., along with animal components. This helps in augmenting the per unit income generation. Also, there is a need for ways to capture the new markets by giving value addition to the farm produce. The determining factors to be assessed from farmers’ angle are high farm income from new crops with newer markets and storage facilities. A management intervention is required to establish scientific information, data on various crops suitable to the zone, inputs with credit system for switching over to alternate crops and market support for new farm produce.

The ways and means for introducing alternate crops are development of area specific programmes, linkages, introduction of incentives for alternate crops through policy initiatives. Thus technology intervention is to develop economically viable crops/cropping system data base in on-farm trials under pilot project in different tobacco growing area through tapping potential oil seed crops like Castor, Groundnut, Sunflower etc., energy plantation and bio fuel crops in poor lands, developing and demonstrating integrated farming system for sustainable farm income and food security, allied enterprises like Diary, Sericulture, sheep/goat farming, horticulture.

The present study entitled “Economic Viability of Alternative Crops to Tobacco – A Study of Mysore District” is presented in six chapters.

The first chapter represents the introduction. The analysis starts with brief introduction to tobacco cultivation in India in general and Karnataka in particular. It also includes statement of the problem, objectives of the study,
hypotheses used, research methodology, sources of data and chapter scheme of the study.

The second chapter analyses the brief theoretical framework and empirical studies on the subject. The previous studies on tobacco and alternative crops to tobacco in India and globe are reviewed and finally research gap is identified.

The third chapter deals with the economics of tobacco and alternative crops to tobacco in India. It includes the origin and importance of tobacco in Indian economy and the alternative crops in India. A detailed state wise and year wise analysis of economics of tobacco and its alternative crops are presented in this chapter.

The fourth chapter concentrates on the production of tobacco and alternative crops in the state of Karnataka. The district wise and year wise analysis of the production trends in tobacco and alternative crops are presented in this chapter.

Chapter fifth is the core chapter of the presented study. This chapter is devoted to present the field survey analysis. A detailed field survey analysis is presented in this chapter.

The last chapter is devoted to present the summary of major findings of the study and on the basis of the major findings of the study an appropriate suggestions are made. Finally the directions for further study are also presented.
6.1 Major Findings of the Study

The major findings of the study entitled “Economic Viability of Alternative Crops to Tobacco – A Study of Mysore District” are presented here below;

1. It is observed from the field survey that out of 300 sample respondents both in tobacco and non-tobacco growing farmers that majority of the farmers were under middle age (49.33 %) followed by young age (27.33 %) and old age (23.34 %) categories, in case of tobacco growers. It was observed in case of non-tobacco growers that majority of the farmers were under middle age (56.67 %), followed by young age (32.00 %) and old age (11.33 %) categories.

2. It is evident from the field survey that out of 300 respondents the majority of tobacco growers were under joint family (72.67 %) and 27.33 per cent were under nuclear family system. In case of non-tobacco growers group three per cent were under joint family and majority were under nuclear family system (76.67 %).

3. Out of 300 respondents at the overall 23 per cent and 24 per cent of the of the tobacco growing and non-tobacco growing families were illiterates respectively, but large number of farmers in both the cases are having studied up to High school level.

4. The results indicates that among the tobacco growing farmers 12.68 per cent had a land holding of 1-4 acres, 80.66 per cent had 4-9 acres and 6.66 per cent had a land holding of more than 9 acres only in case of tobacco growing farmers. Where as in case of non-tobacco growers 79.33 per cent had a land holding of 1-4 acres,
remaining 14 per cent had 4-9 acres and 6.67% of the respondents had a land holding more than 9 acres.

5. The study indicates that the tobacco growers obtained more income from agriculture farm i.e., Rs. 2,29,719, out of which 93 per cent i.e., Rs. 2,14,288 is from tobacco production. Whereas non-tobacco growers income from agriculture is Rs. 22,918 which is 10 times less than tobacco growers income and even non-farm income per farm is more for tobacco growers was Rs. 76,333 than non-tobacco growers Rs. 60,083, the per acre income for tobacco growers was Rs. 29,989.50 and non-tobacco farmers was Rs. 10,913.33.

6. It is observed that in the study area about 95 farmers out of 150 tobacco growing farmers were non-members in any organization which account for 63.34 per cent to the total sample and 30 farmers (20.00 %) were members in one organization, 25 farmers were (16.66 %) members in two organizations. In case of non-tobacco growing farmers, out of 150 sample farmers, 91 farmers (60.67%) are non-members in any organization. 32 farmers (21.33 %) were members in one organization and only 27 farmers (18.00 %) are members in two organizations.

7. It is observed that in the study area about 95 farmers out of 150 tobacco growing farmers were non-members in any organization which account for 63.34 per cent to the total sample and 30 farmers (20.00 %) were members in one organization, 25 farmers were (16.66 %) members in two organizations. In case of non-tobacco growing farmers, out of 150 sample farmers, 91 farmers (60.67%) are non-members in any organization. 32 farmers (21.33 %) were
members in one organization and only 27 farmers (18.00 %) are members in two organizations.

8. Out of 150 tobacco growing farmers, 91 farmers had bullock cart which accounts for 60.67 per cent, 24 farmers (16 %) owned sprayers. 6.67 per cent farmers i.e., 10 farmers had power tiller. And 09 farmers had tractors which account for 6.00 per cent. And 06 farmers (4.00 %) have farm building, 10 farmers (6.66 %) have storage room. And out of 150 non-tobacco sample farmers, 11 farmers had bullock cart which accounts for 7.33 per cent, 75 farmers (50.00 %) farmers own sprayers. About 4.00 per cent farmers i.e., 6 farmers had power tiller. And 7 farmers had tractors which account for 4.67 per cent. About 45 farmers (30.00 %) had farm building and 6 farmers (4.00%) had storage room.

9. Among tobacco growers out of 150 sample farmers 45 farmers (30 %) owned drought animal. Milch animals were owned by 84 farmers (56.00 %). Sheep and Goat were owned by 21 farmers (14.00 %). In case of non-tobacco growers, out of 150 sample farmers, 17 farmers (11.33 %) of bullock. 97 farmers (64.67%) had a Milch animals. Sheep and Goat were owned by 36 farmers (24%).

10. In case of tobacco farmers, out of 150 sample farmers about 51 farmers (34.00 %) have television, about 6 farmers (4.00 %) have computer, about 53 farmers (35.33 %) have telephone/mobile, about 28 farmers (18.67 %) have two wheelers, 12 farmers (8.00 %) have four wheelers.

11. In case of non-tobacco growers, out of 150 sample farmers. About 61 farmers (40.67 %) have television, about 5 farmers (3.33 %) have
computer, about 50 farmers (33.33 %) have telephone/mobile, about 24 farmers (16%) have two wheelers, and about 10 farmers (6.67 %) have four wheelers.

12. Net Returns from tobacco (Rs. 24,629/ac) is 8.36 times more than the net returns obtained by growing paddy (Rs. 2,944/ac), 7.27 times higher than maize (Rs. 3,386) and 17.47 times higher than ragi (Rs. 1,409/ac) per acre, 34.20 times more than cowpea (Rs. 720/ac) and 30.40 times higher than horsegram (Rs. 810/ac), the same when compared with field bean the net returns Rs. 4,962 per acre was 5 times less than tobacco which indicates field bean is the next best alternative which brings more net returns to farmers as compared to other crops.

13. The data indicate that the largest share of total labour is used for weeding (39.6%), followed by planting (20.0%) and tending the crop in the nursery (7%). With respect to the source of labour, farmers indicated that family labour constituted about 74% of the total labour used in tobacco production in the 2006 crop season.

14. From the analysis, it is evident that tobacco has the least returns of all the studied crops per month of the crop season. This therefore confirms the assertion that the contribution of tobacco to the farm family’s income is not the best and could be a contributing factor to the widespread poverty observed in the tobacco growing regions. This call for the introduction of alternative crops to enhance farm incomes in these regions, however such a shift requires substantial support in terms of inputs, technical support and commodity marketing, among other provisions, to ensure sustainability.
6.2 Testing of Hypotheses

*Hypothesis – I “Tobacco is relatively profitable compared with other commercial crops”*

Net Returns from tobacco (Rs. 24,629/ac) is 8.36 times more than the net returns obtained by growing paddy (Rs. 2,944/ac), 7.27 times higher than maize (Rs. 3,386) and 17.47 times higher than ragi (Rs. 1,409/ac) per acre, 34.20 times more than cowpea (Rs. 720/ac) and 30.40 times higher than horsegram (Rs. 810/ac), the same when compared with sugarcane the net returns Rs. 4,962 per acre was 5 times less than tobacco which indicates sugarcane is the next best alternative which brings more net returns to farmers as compared to other crops. Hence, the statement is proved.

**Table – 6.1**

**Comparison of cost and returns of tobacco with other crops (Rs.)**

<table>
<thead>
<tr>
<th>Crop</th>
<th>Total Expenditure</th>
<th>Gross Returns</th>
<th>Net returns/ac</th>
<th>Net returns per rupee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td>49,368</td>
<td>73,998</td>
<td>24,630</td>
<td>1.50</td>
</tr>
<tr>
<td>Paddy</td>
<td>12,240</td>
<td>15,184</td>
<td>2,944</td>
<td>1.24</td>
</tr>
<tr>
<td>Ragi</td>
<td>5,885</td>
<td>7,295</td>
<td>1,409</td>
<td>1.24</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>7,448</td>
<td>12,410</td>
<td>4,962</td>
<td>1.67</td>
</tr>
<tr>
<td>Maize</td>
<td>10,023</td>
<td>13,409</td>
<td>3,386</td>
<td>1.34</td>
</tr>
<tr>
<td>Cowpea</td>
<td>4,817</td>
<td>5,394</td>
<td>810</td>
<td>1.12</td>
</tr>
<tr>
<td>Horse gram</td>
<td>3,950</td>
<td>4,761</td>
<td>720</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Source: Field Survey.

Net returns per rupee of investment for tobacco is Rs. 1.50 which is less than the sugarcane with Rs. 1.67 which indicates that input-output conversion ratio of sugarcane is more than tobacco but per acre net returns is more for tobacco which increases the income of farmers who grow
tobacco than the sugarcane. The net returns per rupee of investment in other crops as paddy (Rs. 1.24), ragi (Rs. 1.24), maize (Rs. 1.34), cowpea (Rs. 1.12) and horsegram (Rs. 1.21) were less than that of tobacco.

**Hypothesis – II** “As a commercial crop, tobacco is shaping livelihood security of farmers and income status”

The study indicate that tobacco growers get more income from agriculture farm (Rs. 2,29,719) out of which 93 per cent i.e., Rs. 2,14,288 is from tobacco production. Whereas non-tobacco growers income from agriculture is Rs. 22,918 which is 10 times less than tobacco growers income and even non-farm income per farm is more for tobacco growers was Rs. 76,333 than non-tobacco growers Rs. 60,083, the per acre income for tobacco growers was Rs. 29,989.50 and non-tobacco farmers was Rs. 10,913.33. Hence, the statement is proved.

**Table – 6.2**

**Composition of Income per year per farm**

<table>
<thead>
<tr>
<th>Samples</th>
<th>Agriculture (Rs.)</th>
<th>Non-farm (Rs.)</th>
<th>Per acre returns (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco farmers</td>
<td>2,29,719.62</td>
<td>76,333.33</td>
<td>29,989.50</td>
</tr>
<tr>
<td>Share of tobacco income in total agriculture income</td>
<td>93 per cent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-tobacco farmers</td>
<td>22,918.18</td>
<td>60,083.33</td>
<td>10,913.33</td>
</tr>
</tbody>
</table>

Source: Field Survey.
Hypothesis – III “The economic position of tobacco growers is high compared to non-tobacco growers in the study area”

In case of tobacco farmers, out of 150 sample farmers about 51 farmers (34.00 %) have television, about 6 farmers (4.00 %) have computer, about 53 farmers (35.33 %) have telephone/mobile, about 28 farmers (18.67 %) have two wheelers, 12 farmers (8.00 %) have four wheelers. In case of non-tobacco growers, out of 150 sample farmers about 61 farmers (40.67 %) have television, about 5 farmers (3.33 %) have computer, about 50 farmers (33.33 %) have telephone/mobile, about 24 farmers (16%) have two wheelers, and about 10 farmers (6.67 %) have four wheelers. Hence, the statement is proved.

Table – 6.2
Economic Position of Sample Respondents

<table>
<thead>
<tr>
<th>Assets</th>
<th>Tobacco growers</th>
<th>Non-tobacco growers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Number</td>
<td>Percentage</td>
</tr>
<tr>
<td></td>
<td>of Respondents</td>
<td></td>
</tr>
<tr>
<td>Television</td>
<td>51</td>
<td>34.00%</td>
</tr>
<tr>
<td>Computer</td>
<td>6</td>
<td>4.00%</td>
</tr>
<tr>
<td>Telephone/mobile</td>
<td>53</td>
<td>35.33%</td>
</tr>
<tr>
<td>Two wheeler</td>
<td>28</td>
<td>18.67%</td>
</tr>
<tr>
<td>Four wheeler</td>
<td>12</td>
<td>8.00%</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey.
6.3 Suggestions

On the basis of major findings of the study the following suggestions are made;

1. It is observed from the field survey that the tobacco growing farmers do not have grading of tobacco. Hence it is suggested that there is need to train tobacco farmers with respect to Grading of tobacco leaves to improve the quality and value addition.

2. It is find from the study that farmers have mainly depends single crop only. Since tobacco is leguminous crop, farmers should be encouraged to take up 2nd crop such as cereals or fodder which can utilize the residual nutrient content in the soil and brings more income to farmer.

3. Enhancing farmers’ technical know-how and improving the marketing infrastructure for alternative crops. This will entail improving access to extension services and to processing machines for the produced commodities (farm-level value addition). This will ultimately increase farm incomes.

4. Effective use of environmentally sound measures to control pests and diseases. This may entail the promotion of organic farming to produce the commodities, however, this will further increase farm incomes due to the premiums attached to organic products especially in the export markets.

5. Undertaking of a sensitization program for farmers in order to make them aware of the problems associated with tobacco
farming and to assist them in the shift to the production of alternative crops with higher returns.

6. The study suggests the establishment of commodity-specific cooperatives to aid farmers in agricultural production and marketing. It recommends the training of institutional personnel and financial assistance (grants or soft loans) to enable their smooth operations.

7. Extension was identified to be very minimal in the study area, especially for the alternative commercial crops. It is worth noting that the government is currently emphasizing demand-oriented extension. The study however recommends that the government should provide extension services to improve the efficiency of those growing the alternative crops. This could be done in partnership with the institutions promoting the production of the alternative crops in the region.

8. It is evident that tobacco has the least returns of all the studied crops per month of the crop season. This therefore confirms the assertion that the contribution of tobacco to the farm family’s income is not the best and could be a contributing factor to the widespread poverty observed in the tobacco growing regions. This call for the introduction of alternative crops to enhance farm incomes in these regions, however such a shift requires substantial support in terms of inputs, technical support and commodity marketing, among other provisions, to ensure sustainability.
6.4 Directions for Further Research

It has been noted that only few studies have been conducted in India and Karnataka on the economics of tobacco and the impacts of the crop to the environment.

- There is the need to carry out such studies in all areas where the crop is grown and must be carried out after every two to five years to monitor progress and impacts to the environment. In addition, use of aerial photographs to support the study through air photo interpretation or (GIS). This will enable the nation to see its position on the rate of deforestation and how best to eradicate the problem.

- Furthermore, in terms of the environmental costs computations, there is the need to carry out a research using the different approaches to non-marketed resource valuations (such as fruits, shade). This will enable the researchers to recommend the best approach that is close to reality.

- There is the need to carry out a study that develops an econometric model that can be used to determine the maximum sustainable yield of natural forest harvesting for the farmers either per district or provinces. This further gives the guideline on the charges of the fees for the farmers using natural forest for different household consumption (that is cooking, timber, curing tobacco).

- The study must also project the future management of the forests based on the previous years and the current trends. This adds to the country’s literature on the deforestation debate and fills in the literature gap.