Chapter VIII

Summary, Findings and Conclusions
CHAPTER-VIII

SUMMARY, FINDINGS AND CONCLUSIONS

In this chapter a summary of the preceding chapters and the broad conclusion obtained from the analysis have been presented. Appropriate policy suggestions have also been made wherever necessary.

To raise human welfare, economic activities are undertaken. Among economic activities agriculture plays a major role in the Indian economy. In India, even today the agriculture sector offers livelihood to 63 percent of the population. It provides raw materials to many industrial sectors and it earns more than 20 percent of India’s foreign exchange. It generates 23 percent of the national product. This is the direct contribution of agriculture, but it also makes an indirect contribution in generating demand for the goods of industrial and service sectors as well.

Agriculture sector includes crop production like cereals, pulses, commercial crops and horticultural crops. In agriculture, the horticulture sector includes growing of vegetables, fruits, plantations and flower crops. In recent times, the horticulture sector including flower crops are rapidly growing in terms of area, production and regional spread because the horticulture products like vegetables, fruits and flowers bring more income to farmers, when compared to the traditional agricultural crops. Hence an important trend is that more number of farmers are shifting to horticultural crops in general and flower crops in particular. This transforms traditional agriculture into viable agriculture venture and horticulture sector generates more output, income and
employment in the agricultural sector. Therefore, in the agriculture sector one can say that this is the beginning of radical changes in the socio-economic life of farmers. Besides, it contributes to national economy in terms of larger output, income, employment and fetches more foreign exchange through the export of products from this sector.

Flower cultivation is a branch of agriculture and a segment of horticulture plays a dominant role in diversifying the agricultural sector. When the general agriculture sector is performing much below its potential, the flower cultivation raises the productivity of the agricultural sector.

In recent times the demand for flower products has been expanding rapidly because of economic advancement and increasing incomes of the people all over the world. This has led to the development of the floriculture sector. The products of this sector have been used for different purposes. For eg. Different flowers are used in the colour industry, scent industry, business establishments besides daily use for adornment, social and religious functions and for aesthetic purposes. Hence the floriculture sector is growing very fast.

As flower production generates more employment opportunities and income to flower growers, a large number of farmers are coming forward to undertake commercial flower cultivation. This brings changes in the socio-economic life of farmers, who are growing flowers. Hence area, production and regional spread is increasing in this sector. However, the farmers in this sector are facing many problems in production and marketing processes. The present study addresses a few issues relating to the same.
In India the area under commercial flower crops was 4000 hectares in 1962, which increased to 98447 hectares during 2000-01. This means the importance of commercial flower crops is rising in the Indian agriculture sector. In India, the annual domestic trade in flowers was estimated at around Rs.500 crores during 2000-01. India, after meeting its domestic demands, exports a negligible part of the flower produce. The flower exports, which was Rs.5.57 crores in 1989-90 increased to 115 crores in 2001-2002. The states, which are leading in flower cultivation, are Karnataka, followed by Tamilnadu, WestBengal, AndhraPradesh and Maharashtra. These five states account for 78.04 percent of area under flower cultivation, and account for 82.41 percent of flower production in the country. This also reveals that the productivity of flower cultivation in these states is convincing.

Karnataka is the main state in the production of flower crops. It had 21143 hectares of land under flower cultivation during 1999-2000. This is 28 percent of India’s area and it produces around 131661 tonnes of flowers accounting for 30 percent of total flower production demonstrating that the productivity is high in this state.

In Karnataka, the area under flower cultivation is increasing continuously. The area under flower cultivation was 3765 hectares during 1978-79, and it increased to 21143 during 1999-2000. Bangalore is the largest flower-trading center in the country. The state, after meeting its domestic demand, exports the flower products to other parts of world. The value of flower products exported from Karnataka was Rs.42.5 crores in 1996-97. The important flower growing districts are Mysore, followed by Dharwad, Bangalore(U), Kolar, Bangalore ® and Chitradurga at present. These six districts share 55.86 percent of the area in Karnataka’s total area under commercial flower crops.
The HPC on Redreshal of Regional Imbalances in Karnataka has noticed disparities in the development of different districts in the state. For the balanced development of the state the HPC has recommended the horticulture in general and floriculture in particular as potential areas for development to remove regional imbalances in Karnataka. It is observed that the state is best suited for commercial flower cultivation and has good potential for further progress as flower cultivation brings more income than food and other crops. Hence large number of farmers are diversifying towards commercial flower cultivation. Against this the present study has been taken up.

The brief review of literature relating to commercial flower crops has highlighted a few issues, which encouraged taking up the present work on commercial flower cultivation. For clarity, the studies under the subject have been grouped into four and appropriate research gaps have been identified for further research.

Firstly, a large number of studies relating to floriculture are confined, to the macro level, that is either at the state or at the national level. Some studies are connected with the export potential of India’s floriculture products and argue that India has great potential to exploit foreign flower markets. Some of the studies explain the factors influencing production and marketing of flower crops grown in high-tech cultivation. However, there are few studies on the economics of commercial flower crops under open field conditions.

Secondly, most of the studies have concentrated in terms of area and production of flower crops at all India level, however, at micro level the studies available are meager. Further the studies on the cost and revenue structure of different flower crops under open field condition have been scanty.
Thirdly, most of the studies are focussed from the point of production and marketing of flower products, and neglects the socio-economic condition of farmers, which is necessary because an economic activity ultimately aims at brining change in the socio-economic life of farmers. Hence, the present study intended to investigate some of the issues relating to commercial flower crops.

The study has been undertaken with the broad objective of analyzing the economics of commercial flower cultivation in the Mysore district. The specific objectives are documenting and analysing the growth performance of commercial floriculture in Karnataka and to do profitability analysis or cost-return analysis. Further it is also to analyse the experience of farmers with different market channels, it is also to investigate the problems faced by the farmers in production and the marketing of flower crops, to study the socio-economic conditions of farmers who are growing commercial flowers in the study area, The intention is also to suggest suitable measures to solve the problems of commercial flower cultivation based on this study.

The important hypotheses of the present study are, that the area and production of commercial flower crops in Karnataka have increased over a period of time and that the cost structure of seasonal flower crops is different from that of perennial flower crops.

To study these objectives the Mysore district has been selected from the Karnataka State. For an in-depth analysis, a random sampling technique was employed for the selection of the respondents. The sampling process consisted of two stages viz, in the first stage three taluks have been selected and in the second stage the respondent farmers have been chosen. From each taluk 50 samples have been selected, which includes 25 small farmers and 25 large farmers totalling 150 households from three taluks.
Both secondary and primary data sources have been used to realize the objectives of the study. Secondary data relating to area, production and regional spread of the commercial flower crops in India, Karnataka and for sample region have been gathered. The primary data on demographic features, cropping pattern, inputs use, output obtained, marketing channels and other variables have been collected. This information was extracted through pre-tested, structured schedules. The raw data was fed into the computer for generating cross tables and analysis. The statistical techniques of tabular analysis, frequencies, weighted averages, cross tabs, ratio analysis and growth rates were used to analyse the data to accomplish the objectives of the study.

In this study the regional spread of commercial flower crops is an analysis in terms of area and production at a macro level study, based on the secondary data. Here growth rate of area, production and regional dispersal of horticultural crops in general and commercial flower crops in particular are analyzed. This highlights the fact that the area and production of commercial flower crops over the period of time have increased at the national level, state level and in the sample region, when compared to other horticultural crops, which clearly shows the regional spread of commercial flower crops is taking place at all levels.

The input-output analysis of commercial flower crops examines the economics of flower cultivation. The various input costs like planting materiel, FYM, pesticides, fertilizer, sprayer rent, land tax, bullock wages and human labour cost which come under variable cost and fixed costs like rental value of land, irrigation charges and depreciation were calculated separately for cultivation of selected flower crops like jasmine, tuberose
and marigold. The computation of cost and revenue for these selected flower crops indicates the profitability. The profitability is higher for jasmine followed by tuberose and marigold. In general flower crop cultivation has been profitable for all the farmers in the study area.

The market propensity of flower farmers establishes the linkage between producers and market intermediaries. The important market channels are PHCs, CA tie-up and CA non tie-up. The farmers are facing many problems for production and marketing in the study area. The production problems are high cost of some inputs, high incidence of pests and diseases, lack of water for irrigation and adverse impact on soil conditions. The important marketing problems encountered by sample farmers are lack of organised marketing facilities, high commissions and lack of market information.

The socio-economic conditions of farmers in the study area are represented through their asset possession, source of income and pattern of expenditure on socio-economic items. Expectedly the important resources possessed by the sample farmers are land, livestock, implements and machinery and wells. All sample farmers are earning more income from flower crops, followed by traditional crops and livestock.

The common items on which the farmers spend are religious functions, followed by education, entertainment and health. Among the different social groups the upper caste and middle caste farmers are economically forward, when compared to the lower caste farmers. This is in terms of resource position, sources of income and pattern of expenditure, as prevails in large parts of the country.
Main Findings of the Study

The crucial conclusions that emerge from the present study are as follows. The following findings pertain to chapter four where the first objective of the study has been dealt with.

The secondary data analysis indicates that flower crops have recorded the highest growth rate of area between 1993-94 and 1999-2000. During 1993-94 the growth rate was 6 percent. This increased to 20-27 percent during 1999-00, during the same period the growth rate for vegetables rose from -3.34 percent to 2.16 percent, followed by fruits from -0.68 percent to 1.87 percent, plantations registered a growth rate from 4.74 percent to -4.02 percent and spices from 8.22 percent to 0.00 percent in the same period. For the comparable crops, during the same period flower crops, alone achieved the highest growth rate. This is because of the increasing demand for flower products. If the growth rate for all the horticulture crops was 1.26 percent, the flower crops have recorded 6 percent during 1993-94. While during 1999-2000, the entire horticultural crops recorded the growth rate of 1.39 percent, the flower crops have registered the 20.27 percent. Besides in the entire study period, flower crops exceeded the growth rate of all the horticultural crops except during 1996-97 (which shows a negative growth rate of -13.41 percent). Thus it is obvious that only flower crops revealed an attractive growth rate over this study period in India.

The growth rates of area for different horticultural crops in Karnataka reveal that in all the study periods more than 10 percent growth rate has been noticed. Even though the growth rates for all the crops declined from 29.27 percent in 1979-80 to 11.98 percent in 1999-2000, the growth rates for all the crops have showed a positive trend in the entire study period.
In the entire study period, flower crops have registered the highest area growth rate at 100 percent between 1979-84 and the lowest growth rate of 23.52 percent between 1995-2000. This is followed by the vegetable crops, which have recorded the highest growth rate of 43.66 percent between 1995-2000 and the lowest that is 14.72 percent between 1979-1984. The fruit crops have shown the highest growth rate of 24.45 percent between 1989-1995 and the lowest growth rate of 16.10 percent between 1979-1984. The plantation crops recorded a maximum growth rate of 35.5 percent between 1979-1984 and minimum of 1.81 percent. During all the study periods the growth rate of flower crops has surpassed more than double the growth rate of total horticultural crops. This analysis indicates that flower crops have registered the largest growth rate when compared to other horticulture crops in terms of area.

The study found that in India the growth rate of production of flower crops has been greater than the all-horticultural crops except during 1997-98, where the growth rate has been zero for flower crops. However, in all the remaining periods the growth rate has been more than 9.88 percent indicating the highest growth rate for flower crop production. Further the study found that in Karnataka, the growth rate of production of flower crops have revealed the highest growth rate of 82.60 percent between 1979-1984, but the overall growth rate for all horticultural crops was only 24.22 percent.

Similarly, between 1984 and 1989 the entire horticultural crops registered a 7.19 percent growth rate, and on the other hand, the flower crops have recorded 35.71 percent. Similarly between 1989 and 94, the all-horticultural crops show growth of 42.42 percent, but the flower crops show a growth of 78.94 percent. In the last study period between 1994 and 2000 the growth rates for all horticultural crops declined by 5.09 percent but
flower crops registered a growth of 29.41 percent. Thus in the entire study period only flower crops production showed the highest growth rate in Karnataka.

The growth rates in terms of both area and production under flower crops in Karnataka have shown a maximum growth rate when compared to other horticultural crops. This indicates that the farmers have shown greater interest in flower cultivation.

The next section was to examine the regional spread of commercial flower crops across the various districts of Karnataka. The study found that the districts such as Mysore, Dharwad, Bangalore(u), and Chitradurga had allocated the highest area for flower cultivation. Some districts like Kodagu, Bidar, Raichur and Uttarkannada allocated very limited area for flower cultivation. The allocation of area is influenced by agro-climatic conditions and other factors like marketing and soil conditions.

In the study area as per the secondary data analysis T.Narasipur taluk has allocated more area for flower cultivation followed by Hunsur and Mysore taluks. One finds that in the district of Mysore more than 50 percent of area under flower crops is found in T.Narasipur and Hunsur taluks. According to area distribution in the sample region more than 50 percent of flower production was concentrated in these two taluks in the study area.

The next objective was to deal with the data from field survey on profitability of flower crops, marketing of flower crops and problems of flower growers in production and marketing and socio-economic conditions of flower growers. The study noticed that the cropping pattern of the sample household in the study area is dominated by cereals with 44.41 percent of the total area under cultivation, followed by flower crops (32.28 percent), commercial crops (13.92 percent) and pulses (9.37 percent). Among different
taluks, in the taluk of Hunsur cereals occupied the dominant place with 57.81 percent of the total area under cultivation, followed by pulses with 19.15 percent, commercial crops with 12.43 percent and flower crops 10.58 percent. Whereas in T.Narasipur taluk cereals also dominated with 60.69 percent, followed by flower crops (31.5 percent), commercial crops (4.79 percent) and pulses (2.99 percent). However, in the Nanjangud taluk, flower crops dominate the cropping pattern with 53.94 percent, followed by cereals with 22.36 percent, commercial crops with 20.39 percent and pulses with 3.28 percent. Between the farm categories it is observed that small farmers allocated 51.28 percent of area for flower crops, followed by cereals (36.92 percent), pulses (8.90 percent) and commercial crops (2.88 percent). The large farmers have 47.19 percent of area under cereals followed by 25.23 percent under flower crops, 18.02 percent under commercial crops and 9.54 percent under pulses. On the whole both group of farmers have accorded less importance to pulses and commercial crops and have given more importance to cereals and flower crops in the allocation of area in the study area. This is mainly due to the fact that the cereal crops like paddy and ragi are staple food in this part. The flower cultivation provides sustained income all through the year. These two factors obviously contributed for allocating more area in these two sets of crops.

The cost of cultivating selected flower crops has also been examined. It has been found that the per acre average total cost of producing jasmine is worked out at Rs.20857, which includes 79.17 percent of variable cost and 20.82 percent of fixed cost. The per acre average cost is Rs.21224 for small farmers and Rs. 20596 for large farmers. In the average cost 85.60 percent is variable cost and 14.39 percent fixed cost for small farmers whereas 74.47 percent of variable cost and 25.52 percent fixed cost for large farmers.
The per acre average total cost of cultivating tuberose is computed at Rs.21225, wherein 65.64 percent is variable cost and 34.36 percent is fixed cost. The per acre average cost for small farmers is Rs.22220 and for large farmers is Rs.20587. The per acre average variable cost is 65.93 percent for small farmers and 65.44 percent for large farmers. The fixed cost is 34.55 percent for large farmers and 34.06 percent for small farmers in the average cost.

The per acre average cost of cultivating marigold is calculated at Rs.5133, which consists of 52 percent of variable cost and 47.95 percent of fixed cost. The small farmers have incurred a cost of Rs.5460 for cultivating marigold in an acre of land and it is Rs.4871 for large farmers. The average variable cost is 52.98 percent for small farmers and 51.20 percent for large farmers. Whereas the average fixed cost is 48.79 percent for large farmers and 47.02 percent for small farmers. Further this study found that the per acre cost of production of tuberose is higher than the jasmine and marigold cultivation.

It is observed in the study that the return over investment (ROI) per rupee in the case of jasmine is the highest with Rs.3.08, followed by tuberose with Rs.2.17 and marigold has the lowest ROI with Rs.1.66. The profitability is the highest in the case of jasmine, followed by tuberose and marigold.

Between the two farm categories, in the case of jasmine the ROI is the highest for large farmers with Rs.3.20 and it is 2.91 for small farmers, whereas in the case of tuberose the ROI is the highest for small farmers with Rs.2.18 and it is Rs.2.16 for large farmers. As for as marigold is concerned the ROI is Rs.1.74 for small farmers and which is less for large farmers with Rs.1.56. On the whole large farmers have an advantage of
Rs.2.26 of ROI over small farmers who have Rs.2.20, such that the overall ROI being Rs.2.23.

The study has observed that the most important marketing channels used by jasmine and tuberose farmers are PHCs, CA tie-up and CA non tie-up, while the marigold farmers use only PHCs to market their produce. These market channels are common for the selected farmers in the study area.

The market propensity of jasmine reveals that the price offered by the CA non tie-up was higher than that of the CA tie-up and PHCs. However, farmers marketed their flowers through PHCs and CA tie-up because the price offered by these two channels are almost stable for a season. In the case of tuberose the market propensity shows that the price fixed by CA non tie-up is higher when compared to PHCs and CA tie-up. Hence tuberose farmers have preferred this market channel, followed by PHCs and CA tie-up. The tuberose farmers have sold negligible quantity to the CA tie-up.

The market propensity for marigold indicates that all the marigold farmers marketed their produce to PHCs only because they have no other market channel in the study area. Therefore these farmers do not have bargaining power in marketing their flower produce.

The study has found a few production and marketing problems in flower cultivation. The majority of flower growers have expressed that they are facing high cost on some inputs, high incidence of pests and diseases, lack of water to irrigate their land and marigold farmers have complained that the cultivation of marigold has adverse impact on soil.
The marketing problems reported by the majority of sample farmers of all the crops are lack of organized marketing facilities, uncertain and high price fluctuations, lack of market information, lack of remunerative price for the produce and high commission charges by the commission agents. These are the major marketing problems encountered by the flower growers in the study area.

The farmer’s opinion on flower cultivation indicates that they are cultivating flower crops because these crops bring them comfortable profit when compared to traditional crops and provides regular income on daily and weekly basis.

The study observed that the average value of the assets (per household) possessed by sample farmers in the study area is Rs.132926. It is arrived by the contribution of different asset items like the land value with Rs.121643, followed by livestock with Rs.5942, wells with Rs.3066 and implements and machinery with Rs.2274. Among the different taluks the average asset in the Hunsur taluk is Rs.148635, followed by T.Narasipur Rs.147340 and Nanjangud with Rs.102804. Between small and large farmers, expectedly the large farmers have the higher asset value, which is worth Rs.201306, whereas the small farmers have assets worth Rs.64546, which is three times less than the large farmers’ assets value. Among different resources the highest value is contributed by land, followed by livestock, wells and implements and machinery. Among different taluks the highest asset value is possessed by Hunsur taluk farmers, followed by T.Narasipur and Nanjangud.

In the study area, the sample farmers get income from different sources. The per annum average income of all the farmers from all the sources is Rs.30114 per annum.
The highest income is contributed by flower crops with Rs.19508, followed by income from other crops and income from livestock.

Among the different taluks, the highest average income per annum is received by the farmers of T.Narasipur taluk with Rs.37117, followed by Hunsur with Rs.32219 and Nanjangud with Rs.21009. Between farm size class, the large farmers have the highest average income with Rs.40159 and small farmers have Rs.20070. The large farmers' income is more than double that of small farmers' income.

The pattern of expenditure on socio-economic items from the sample farmers in the study area indicates that they are spending more on festivals per annum, followed by education, entertainment and health. The average expenditure on religious functions is Rs.4693, followed by education with Rs.671, entertainment with Rs.262 and the least expenditure is made on health with Rs.178 by all the farmers in the study area.

The socio-economic conditions of farmers based on social classes indicate that the upper caste farmers have better socio-economic conditions, followed by middle and lower caste farmers. In the case of asset possession, the upper caste farmers have the highest average asset value worth of Rs.219012, followed by middle caste farmers worth of Rs.136457 and the least value of assets is possessed by the lower caste farmers with Rs.116713. In the case of income, the upper caste farmers have the highest income per annum (Rs.45708), followed by middle caste farmers (Rs.30486) and lower caste farmers (Rs.27390). As far as expenditure is concerned, the upper caste farmers spend Rs.5042 on religious functions, followed by middle caste farmers who spend Rs.4901 and the lower caste farmers who spend Rs.4474. Relating to the average outlay on education, the middle caste farmers spend Rs.1092, followed by the lower caste who spend Rs.420, and
upper caste who spend Rs.142. On entertainment almost all farmers belonging to
different social groups spend equal amount of money. In other words by and large these
three caste groups spend around Rs 265 on entertainment. On health, the average
expenditure of the middle caste farmers is Rs.266, followed by the upper caste farmers
with Rs.200 and the lower caste farmers make least expenditure with Rs.105.

Policy Suggestions

The policy implications that emerge from this study are as follows.

As flower crops cultivation is profitable, large number of farmers are practicing it.
Hence the area under flower crops is growing over a period of time when compared to
other horticultural and traditional crops. Therefore it is necessary to extend research and
development support for the open field cultivation of flower crops by Govt. in the State.

It is evident from the analysis in the fourth chapter that the database relating to
area, production and others at national, state and regional level is lacking, inadequate and
unorganized. For the development of this sector it is necessary to strengthen database at
different levels and for different aspects of floriculture sector.

The government policy programs relating to floriculture development under open
field condition is not encouraging. It is noticed in the field survey that no respondent
farmer has received any development support from the different government
departments. The present government policy towards floriculture is only encouraging
flower cultivation under high-tech conditions. The open field cultivation produces
flowers for the domestic market. The government policy programs should be such that it
should also support flower growers practising on open field cultivation.
The government has to look into the supply of quality planting materials, fertilizers, pesticides and others at affordable prices to the flower-cultivating farmers. To encourage the expansion of this sector the government may strengthen infrastructural facilities especially cold storage and transport to quickly and efficiently market the flower products. Perhaps setting up of processing units at potential areas may help the growers to get value addition and to minimize the risks of the perishable nature of this product.

As per the field survey, the flower growers indicate that the water supply for flower cultivation is very essential. Now some flower crops are grown on wet land and some are grown on dry land. The Govt. has to come out with water shed development programme for the dry land where flowers are growing and also measures to assure water supply to wet land, which is already under flower cultivation to raise productivity of flower crops.

As the market for flower products is unorganized, there is a wide price fluctuation and middlemen exploit farmers through high commission charges. The government has to interfere in the marketing system of flower products and establish organized market at least at the district level to prevent uncertain price fluctuations and exploitation of farmers by middlemen. There is also necessity of market information for flower growers, which has to be addressed.

The marginal and small farmers as per the field level study practise commercial flower crops. Hence the government should extend the development support to this sector, which would remove the unemployment and poverty of these people.
On the whole, at the government policy level the government has to take initiative to formulate policies for the overall development of the floriculture sector. This would not only facilitate the diversification of the agriculture sector, but also improve the socio-economic conditions of farmers. Since the floriculture is gaining momentum in the agrarian economy in general and Karnataka economy in particular the state may provide adequate support for undertaking scientific studies in the years to come.

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