



Topic: Socio- economic Development through Horticulture in Karnataka-A Study

Chandrashekara.C

Assistant Professor, Department of Sociology.

Government First College Jayanagar, Bangalore -560070.

Abstract:

The importance of horticulture in improving the productivity of land, increasing job opportunities, enhancing export earnings of the country and leading to higher income and better livelihood of farmers/agripreneurs besides providing nutritional security to the people is well acknowledged in India as elsewhere. Not only is the country's acreage under horticulture crops increasing, it has now become a vital component in India's new agriculture, viz., agribusiness. In fact, India is today the second largest producer of fruits and vegetables in the world, China comes first. With the launching of the National Horticulture Mission (NHM) in May 2005, diversification of agriculture through horticulture has received an added impetus. Action plans have already been drawn to boost horticultural output and double it by 2011. To take up the activities of National Horticulture Mission in the State as per Government of India guidelines, Karnataka State Horticulture Mission Agency (KSHMA) has already been registered and a number of relevant activities have been initiated.

Keywords: Horticulture. Agro- based. Socio-Economic. Development. Employment generation.

Introduction:

Karnataka, which ranks 2nd in installation of drip irrigation, has vast potential for growth and export of horticulture crops of different variety. Horticulture in Karnataka contributes 40 per cent of the combined income from agricultural sector and its share in state GDP is about 17 per cent, both of which are significant for the growth of Karnataka economy in general and its agricultural sector in particular. This paper therefore, tries to revisit the domain of Karnataka horticulture in order to examine its growth and development in terms of area, productivity, output, export potential and income derived. The primary objective of the authors herein is to highlight the horticultural development experience of the state in terms of the above mentioned variables so as to draw lessons for further progress of horticulture both in Karnataka and the rest of India. Such a study when viewed in a macro perspective is of immense value in today's need for a globally integrated and locally sustainable agriculture. The study has used data both primary and secondary, from various sources. In part II of the paper we position Karnataka in India's horticulture map by analyzing appropriate data. Part III of our paper is a review of the measures taken so far. Constraints and challenges faced by Karnataka's horticulture are discussed in part IV. We attempt a policy prescription in part V, and provide the summary and conclusions in part VI of the paper.

I. Karnataka in India's Horticulture Map:

Place and Performance A recent study states that there will be a demand of 151-193 million tonnes of vegetables and 84-100 million tons of fruit by 2030. Vision 2015 has it that India be the Food Factory of the world, treble the size of processed food industry, increase the level of processing from 6 per cent to 20 per cent, increase value addition from

20 per cent to 35 per cent, and increase share in global agri-trade from domestic and international demand for vegetables and fruits is increasing as a result of increasing purchasing power as well as changing food habits⁵ and intakes.⁶ Policy preferences and priorities of investment and production with regards to fruits and vegetables naturally have had to change. Every state in India was required to utilise its potential to contribute to the national basket of horticultural produce. Karnataka is one of them. The state's 80 per cent of population is in agricultural sector.

Karnataka's horticulture encompasses a wide range of tree crops, field crops, fruit crops, vegetables, flowers, ornamental, aromatic and medicinal plants, spices and commercial plantation crops, grown in wet or dry lands. People of Karnataka historically known to be fruit-lovers, and vegetable growers/vendors pursued gardening initially as a hobby and later as a lucrative business. Horticulture and floriculture have even received the royal patronage in the past.

Karnataka is endowed with natural resources, favourable agro-climatic conditions and a hard working and skilled farmer community. With this comparative advantage and with the active support of the government and other agencies, the state is poised for an all round development in horticulture sector. There are 6 regions and 10 agro-climatic zones in the state which offer wide scope for cultivation of wide variety of fruits, vegetables, flowers, and plantation and spices crops, including medicinal and aromatic plants. More than 50 per cent of the area in Karnataka is under crop cultivation and about 15 per cent of the cropped area is under horticultural crops.

Dakshina Kannada and Udupi districts with 65 per cent and 59 per cent of the cultivable area under these crops respectively, are the major producers of horticultural crops in the state. Gulbarga and Koppal have the lowest proportion of 2 per cent each. The share of horticultural products in total agricultural production of Karnataka has increased significantly over the years. The share was 15.5 per cent in 1970-71. It increased to 16.5 per cent in 1984-85. In the next ten years' period it more than doubled to reach 34.5 per cent in 1994-95. Within the horticulture sector coconut dominates among the crops, followed by vegetables.⁸ Fruits and spices share a common third place. Despite encouragement given to all the horticultural crops, the increase in them has not been uniform. As per statistics of 2002-03, 41 per cent of total area and 87 per cent of total production of horticulture accounts for fruits and vegetables.

An analysis of multiple data reveals that the share of garden/spices crops in the total area under horticultural crops has been declining. From 67.23 per cent in 1978-79 it came down to 62.78 per cent in 1994-95, and further down to 57.5 per cent in 1999-2000. The share of fruits and vegetables crops in the total area under horticultural crops increased marginally from 17.04 per cent to 18.71 per cent and from 15.23 per cent to 17.34 per cent respectively during the period 1978-79 and 1994-95. The declining trend has continued in the present decade with slight variation in between.

Despite its ups and downs, horticulture in Karnataka occupies a pride of place in the agricultural map of the state as well of the country (see Box 1 for key features). As far as inter district performance is concerned, we see changes in position during different years. In 1994-95 Dharwad, Tumkur and Dakshina Kannada were the top 3 districts in the state as far as the area under horticultural crops is concerned. They accounted for 11.39 per cent, 11.05 per cent and 10.53 per cent of the total area respectively. But during the year 2000-01, Hassan, Tumkur and Dharwad districts emerged as the top three major horticultural producing districts in the state with an area of 7.63 per cent, 7.47 per cent and 6.85 per cent respectively. As per 2000-01 statistics, Kolar has the largest area under fruit crops in the state and also stands 1st in production.¹⁰ In case of vegetables Kolar with an area of 9.58 ha is first in production (12.40 T) whereas Dharwad with the largest area of 12.28 ha is third in production (9.03T). With respect to spices Dharwad is 1st in area (21.94 ha) but Haveri which is 2nd in area (17.15 ha) is 1st in production (18.61 T). Tumkur is the district with the largest area under plantation/garden crops (15.83ha) and its production is 3.12 T whereas, Uttara Kananda which has only 3.38 ha under this category of horticulture, stood 1st in production (23.08T). Similarly, Dakshina Kannada which has the third largest area (10.80 ha) is 2nd in production (23.08T). In case of commercial flowers, Bangalore Urban has 1st place both in area (9.17 ha) and production (17.72 T); Kolar is 2nd in area (8.74 ha) but 3rd in production (7.18 T); and Bangalore Rural is 3rd in area (8.22 ha) but 2nd in production (14.26 T). Barring these three districts only four other districts viz., Chamarajanagar, Mysore, Haveri and Mandya have more than 5 tons of flower production in the state.¹¹ Bangalore Urban district is striking in its large area under medicinal plants (74.07 ha) as also in its production (92.84 T) giving it the coveted 1st place in both. However, it is hasty to conclude that there is no correlation between size of area under horticultural crops and their production. Even districts with a low area under a crop in absolute terms do have higher 'percentage' of their land/agricultural area under that crop.

Key features and achievements of Karnataka Horticulture

- The President of India has identified horticulture as one among the 11 Missions for Suvarna Karnataka's prosperity.
 - Area is around 16 lakhs ha. with 5 per cent increase annually.
 - Annual production of 96 lakh tons and is increasing by 6 per cent annually.
 - Karnataka stands 3rd in area and production of fruits and 1st in flower production in the country.
 - The state is trying to promote holistic growth of the horticulture sector based on region specific strategies.
 - Government of India shall provide 100per cent assistance during Xth Five Year Plan.
 - 2005-06 Budget outlay was Rs.85.21 crores.
 - During the XIth Plan, the GOI assistance will be 85 per cent with 15 per cent contribution by the State Govt.
 - The new initiatives include: (a) Establishment of Winery unit at Bijapur to help Grape growers; and (b) Improvement of horticulture crops – Rs 10 Crore budget proposal.
 - Karnataka State Horticultural Co-operative Federation (KHF) has been established as State Level Apex body. This may strengthen the already existing Horticultural produces co-operative marketing society (HOPCOMS) structure and its activities.
 - Raithara Santhe – Karnataka State Agricultural Marketing Board, a State Government organizations initiative towards marketing of fruits and vegetables.
 - Safal fruit and vegetable auction market – Project implemented by the National Dairy Development Board, 300 metric tons of fruits and vegetables are handled per day.
 - Karnataka is one of the leading producer of bananas, mangoes, citrus fruits, guava and grapes
 - The state contributed 5456.1 MT of fruit production in 1999-2000 in an all India output of 45946 MT, thus coming third after Maharashtra and Tamil Nadu in that order.
 - Karnataka is one of the leading producers of tomato, brinjal and cabbage. • The state contributed 6.79 MT of vegetable production in 1999-00 in an all India output of 90.83 MT, thus coming fifth after West Bengal, UP, Bihar and Orissa in that order.
- III. Meaningful Measures The present government in Karnataka has expressed its commitment in fulfilling the Missions set by Hon'ble President of India for development of agriculture. It has constituted a Task Force. The Task Force has seven expert groups to work out the region specific strategies. They are:

1. Identification of low productive areas,
2. R&D and Extension support,
3. Input supply support,
4. Water management,
5. Watershed Development,
6. Post-harvest & Market linkage, and

7. Credit support. The work of these expert groups will have important bearing on development of new agriculture in the state which includes horticulture. The government has found horticulture to be the "promising sector" of the state. A number of measures are in the offing. Karnataka is the first state in the country to come out with an exclusive policy for organic agriculture as early as March 2004.¹² It is now in the middle of developing organic villages in every district. Companies such as Metro Cash & Carry would invest into the agriculture supply chain to reduce wastages and build direct linkages with farmers. This would include training of farmers¹³ as well as setting up supply chain infrastructure in rural areas. There is good international demand for Bangalore Rose Onion, gherkins, cashew nut, coffee, flowers and horticultural processed products by countries like America, Singapore, Russia, Malaysia, Indonesia, Australia, France, Italy and Japan. The total value of the export was about Rs. 1517 crores in 2003-04. To boost the exports of horticultural produces from the state, to improve the export performance of the state, to provide opportunities to the farmers to earn incremental income, to promote on farm and off-farm employment generating activities and to earn foreign exchange Agra Export Zones have been created. Karnataka has agricultural universities, research and training institutes and a good number eminent agricultural scientists and biologists. In addition to the popular public parks and hill station gardens, the State horticulture department manages more than 400 horticultural farms and nurseries across the state. For the development of horticulture in the state a total outlay of Rs 262.62 crore has been allocated by the Central Government as per the National Horticulture Mission, three-year-plan . Under this scheme the budgetary provisions have been extended to develop farm nurseries, arid zone fruit plots, organic horticulture, commercial floriculture pest management etc. Under another central government scheme, Macro Mode

horticulture development Plan, for 2005-2006 an outlay of Rs.2107.67 lakh has been allotted to Karnataka for area expansion and other crop development projects. These are Karnataka's strengths as well as opportunities.

Constraints and Challenges:

The general constraints for horticulture development in India are poor quality of seeds and planting material, old orchards and their poor management, high degree of perishability, lack of efficient infrastructure, underdeveloped markets, absence of adequate quality standards, inadequate research and extension support, complicated

credit and tax mechanisms, unstable prices, and lack of up-to-date data. Karnataka also has suffers from these problems. Specific constraints of the state are as follows.

Weak Extension Linkage in the Department: - Although the Department of Horticulture is one of the major departments in the state, the number of extension personnel available at the grass root level is negligible. At the taluk level in the Department it is 3-4 as compared to 20-25 personnel with the other line Departments viz., Agriculture, Animal Husbandry, Forest etc. No extension personnel are available either at Mandal or village level. This hampers adequate technology transfer.

Inadequate supply of quality planting material: - With the existing infrastructure available in the farms and nurseries, the Department can meet only about 40 per cent of the total requirement of planting material with respect to fruit crops. For plantation and spices and flower crops the figure is much lower. Under vegetable crops, the department's role is negligible as far as the planting material is concerned.

Upgradation of Technical knowledge: - The technical advances in the field of horticulture are tremendous both nationally and internationally. Sadly, the state's departmental personnel are not properly exposed to these advances, resulting in inadequate transfer of advanced technology. **Area Expansion on unscientific basis:** - This has led to declined productivity and fluctuation in market prices.

Inadequate infrastructure: - At a time when infrastructure holds the key for market integration, the required basic facilities in the state for marketing, handling, and processing of horticultural produce are woefully lacking.

Inadequate cargo – air and rail – facilities: - This is a serious handicap in overcoming large losses from late disposal and high degree of perishability. in the state is another problem Inadequate post-harvest facilities for handling of horticultural produce especially during glut seasons makes for poor returns.

Continually inadequate power supply: - Poor supply of power in the state and exorbitant power tariff for the floriculture and processing sectors (as these enterprises are considered as an industry) dampens the spirit of entrepreneurs.

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Threat from MNCs: - Entry of multinational companies has not always been an unmixed blessing for Karnataka. They are posing a threat to small and marginal farmers in terms of market competition and prices.

Need for more water: - The irrigation resources in the state are smaller when compared with the neighboring states.

Regional imbalance: - This is another problem in the development of horticulture within the state.

Mono-cropping system: - This system of cultivation has the potential danger of increase in incidence of diseases and pests and production.

Increase in prices of plant protection chemicals and fertilizers: -

This is resulting in lower profitability to growers.

Challenges that may arise from WTO and Agreement on Agriculture (AoA): -

With US and EU giving more domestic support to farmers and having an edge over developing countries in horticultural produce, and the need to reduce import tariffs the latter countries will face more difficulties of market access. Karnataka also will have the repercussions in the long-run.

Policy Prescriptions;

Indian agriculture is changing, thereby keeping 'transformation' alive in the Indian economy. Changes and challenges are part and parcel of development process. Agriculture is no exception to this. Timely changes in agricultural operations – in the interests of the farm and the farmer – ensure dynamism in the rural sector which will have positive effects on the macro economy as well. Therefore, Horticulture has to contribute in a value-added manner to the economy. In this context we make the following prescriptions for necessary action at the policy level in Karnataka.

- 1) Establish a foolproof Regional Monitoring System (RMS) for the horticultural crops. This will cover collection and dissemination of information on
 - (a) crop weather situation on a time scale;
 - (b) estimated production at village/taluk/district/levels; and
 - (c) prices at regional/national and international levels.
- 2) Ensure value-addition of horticultural produce in a sustainable manner through
 - (i) improved processing, considering both microbiological stability and economic viability;
 - (ii) effective and practical methods of preservation of fruits and vegetables as well as their extracts and preparations for nutritional enrichment, health security;
 - (iii) better packaging of horticultural produce that strictly meet the stringent nutritional and microbiological standards worthy of space food¹⁸; and
 - (iv) propagating the economics of waste utilization – ala USA, Australia, Brazil and Israel – through exploitation of factory wastes into value-enhancing products.
- 3) Expand technological intervention including high density planting, micro irrigation, fustigation, greenhouse cultivation, etc.;
- 4) Engineer production enhancements by establishing new gardens in wasteland / utilization of bunds/ diversification from other crops/ inter cropping;
- 5) Enlist human support from farmers by HRD through institutional training/farm visits of farmers/ entrepreneurs that incorporates motivation and incentives; and
- 6) Encourage commercial ventures to improve export promotion through (i) strengthening on-going export promotion programme; and
 - (ii) developing new export-oriented strategies by
 - (a) streamlining market research and intelligence,
 - (b) identifying new and potential export avenues, and
 - (c) popularizing the concepts of health and quality consciousness amongst growers/manufacturers/consumers

Summary and Conclusions:

Thus, Karnataka's horticulture is having an important place in Indian agriculture. Karnataka is enjoying not only a comparative advantage but is also receiving institutional support of diverse kind. More than 15 per cent of the cropped area at present is under horticulture. Among the states it has noticeable achievements in the production of vegetable and fruits. Yet there is much more left to be done for augmenting production and productivity in the state. Hence the need to focus on the identified crops in cluster and crop-specific regions within the state. The state should go in for large scale awareness programmes on quality standards, and HRD and training to farmers, for ensuring sustainable value addition. Horticulture, floriculture and other activities in Karnataka today have been responsible for lending credibility to an otherwise shrinking agriculture. They have brought in new wind of change in farmers' thinking and also a new optimism in the rural horizon. Agriculture is getting a status of industry. Agribusiness has become a reality. Perhaps globalization was an excuse or putting it on a higher pedestal, a harbinger of change. Moreover, globalization is now not limited to IT or restricted to Bangalore. It has touched the door of hamlets like Devanahalli too. This trend is likely to continue. There is now a rich harvest to reap. The gains should spread the length and breadth of Karnataka, covering even the so-called karna. Karnataka, a coastal state of India with a large agrarian economy has immense opportunities in this respect which it should seize especially when we are talking about a second green revolution. Horticulture has to play an important part in Karnataka's progressive farming in the future too. Karnataka has to overcome its main problem in recent times that is, handling surpluses during periods of bounty. As Bishwa Nath Singh writes: Production and promotion of value-added products would help in earning more foreign exchange while at the same time, efforts should be made to tackle the problem of increasing production and productivity beyond certain levels. While the horticulture sector needs a focussed attention, the approach for the sector's development has to be a holistic one, with all key elements such as irrigation, planting materials, harvesting, storage and marketing. To conclude, there is vast potential for increase in the area and production in the horticulture sector in Karnataka. This will not only provide gainful income but also generate employment avenues, particularly for the rural people. If this sector overcomes some of the constraints faced at present, then definitely it will have every possibility to flourish not only in the domestic market but also at the international level. At the same time, it can also contribute significantly to the GDP.

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