

# PROSPECTS OF PRODUCTION AND MARKETING OF HORTICULTURAL PRODUCTS IN KARNATAKA STATE

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## Abstract

Government of India has laid the main emphasis in achieving the self-sufficiency in food production especially cereals immediately after attaining independence in 1947. The efforts have successfully brought in Green Revolution in the late Sixties and early Seventies. It also showed that horticulture crops for which the Indian topography and agro-climate is well suited could be an ideal choice in achieving sustainability by small farmers. However, only in mid-eighties, the Government of India identified horticulture crops as a means of diversification for making agriculture more profitable through efficient land use, optimum utilization of natural resources (soil, water and environment) and creating skilled employment for rural masses especially women folk. The past efforts have been rewarding in terms of increased production and productivity and availability of horticultural produce. India has thus emerged as the largest producer of coconut, cashew, ginger, turmeric, black pepper and tea, and the second largest producer of fruits and vegetables. Among the new crops, kiwi, olive crops and oil palm have been successfully introduced for commercial cultivation in the nation. The varying circumstances encourages private investment, to go for hi-tech horticulture with micro-propagation, protected cultivation, drip irrigation, fustigation, and integrated nutrient and pest management, besides making use of latest post-harvest measures particularly in the case of perishable commodities. As a result, horticulture crop production has attracted youth since it has employment potential and highly remunerative and profitability.

**Key Words:** crop, cultivation, Green Revolution, horticulture, management, production

## Horticulture Scenario in Karnataka

Karnataka state is situated between 11031' and 18048' North Latitudes and 74012' and 78040' and 78040 East longitudes, and lies in the West-Central part of the Peninsular India. It's from North to south is 700 Kms. And from East to West is 400Kms. Karnataka State covers an area of 191791 sq Kms., occupying 7.75 per cent of the total geographical area of the Country. As per the 2001 Census, the population of the state is 53 Million. Karnataka has been the First State in the Country, to set-up a separate department for the horticulture, in the year 1965. Karnataka is the Fourth largest producer of Horticulture Crops in India, the geographical area of Karnataka is 190.50 lakh ha, of which an area of 126.021 lakh ha, comes under the cultivatable area, constituting 66.15 per cent of the geographical area for the year 2017-18. Out of the total cultivable area, 18.99 lakh ha, are covered under horticulture, as per the 'Horticulture Crops Statistics

Karnataka State at a Glance 2007-18’.

Horticulture in the state, accounts about 15.07 per cent of the total cultivable area. Out of the 18.99 lakh ha., of the total horticultural cropped area 8.05 lakh ha., (42.39%) come under Plantation crops; 4.37 lakh ha., (23.01%) under Vegetables; 3.60 lakh ha., (18.96%) under Fruits; 2.66 Lakh ha., (14.01%) under Spices and 0.31 lakh ha., (1.64%) under (Commercial flowers, including the area under Medicinal and Aromatic Plants. Accordingly, the total horticultural production in the State during the year (2017-2018) reference figures at 147.80 lakh tones. Going in detail the production figures stand at 59.63 lakh tones (40.34 per cent) with respect to Fruits Crops. 70.63 lakh tones (47.79 per cent) Vegetables Crops; The Area under horticulture crops is 206.62 lakh hectares and production of 2146.14 lakh tones under Horticulture crops in India. Karnataka has occupied 4th place in respect to the total area with 17.13 lakh hectares contributing 8.29 per cent of area to the total area and 7th place in respect of total production with 149.68 lakh tones contributing 6.97 per cent production at all India. Karnataka has occupied 7th place regarding in Fruits Crops with an area of 3.15 lakh ha hectares, and production of 52.70 lakh tones, 6th place regarding in Vegetables Crops with 4.48 lakh hectares, of area and 77.25 lakh tones of production.

Karnataka is the eighth largest State in the country and it is located in southern peninsular India, with a geographical area of 190.50 lakh hec., accounting for 5.84% of the total geographical area of the country. The State consists of 27 districts with 175 taluks. Karnataka is a maritime State with a coastline of 287 kms. covering the districts of Uttara Kannada, Dakshina Kannada and Udupi with nine ports excluding new Mangalore port. Except Karwar, the remaining ports are riverine ports which need to be developed for cost efficient movement of goods. The State has a road length of 1.49 lakh kms., and a railway route length of 3041 kms.

The Economy of Karnataka is well diversified and according to the Economic Survey 2003-04 Karnataka contributes 5.0% to National NDP. Agriculture in Karnataka contributes 26.7% of the State GDP and employs 71% of total workforce. The land topography is suited for agriculture and 83% of area (Soil types) is suitable for agriculture. The State has a high geographical diversity with ten agro climatic zones. The net sown area is 54% of the total Geographic area against the national average of 46%. The gross cropped area has exceeded 116 lakh hec with a cropping intensity of 112%. Small and marginal farmers accounts for 73% of total holdings and 34% of net cultivated land. Though Agro climatically suited, water is a main constraint in horticultural development. Irrigation covers 25% of the net cropped area and remaining 75% is rainfed. Horticulture crop covers 14.8% of the net cultivable area in the State with an annual production of 118.2 lakh tones. Horticulture contributes 40% of the agriculture income and 80% of the agricultural exports.

Karnataka is the second most important states next to Maharashtra for the production of horticultural crops. The agro climatic suitability provides a unique position for the state to be a natural home for a large number of horticultural crops that can be grown all-round the year. Out of a total of 121.86 lakh ha cultivable area, nearly 17.64 lakh ha is under horticultural crops accounting for 8 % of area contributing to over 136.66 lakh tones (2017-18) (6% of total production). Around 2.46 lakh ha is under fruit crops and 2.99 lakh ha is under vegetables. Fruits contribute to 73.62 lakh tones while vegetables 6.23 lakh tones. The state leads in country's area and production of brinjal, tomato, mango and cut flowers. Being the horticultural capital, Bangalore district is the hub of activity for various horticultural crop research and development. Estimates indicate that the state capital with a total population of over 80 lakhs consumes nearly one third of the states horticultural crop production. It is also a major hub for interstate transactions and movement of horticultural crop products to distant locations within and outside the country. The metropolis is also the home for the recent retail revolution in the country. Spencers, food world, reliance and more, SAFAL and Namdharis retail outlet chains have set up operations in the metros. Thus, besides production, horticultural crop marketing also is of significance both from their highly seasonal and perishable nature as well as employment generation perspective. While the agricultural marketing system in the country is due for an over haul, given the changing global trade order, that specific to horticultural crops are no exception. However, the sheer commercial nature of these set of crops besets their marketing systems with

contradictions. On one hand, perennial and seasonal produce like mango show persisting domination of Pre Harvest Contractors (PHC), others like grapes have advanced systems of marketing that are international in operations ensuring quality product supply chains. Individual or group effort in organizing and integrating production with marketing has been the critical factor responsible for their success, institutional support through favorable policy cannot be over looked.

### **HOPCOMS in Karnataka: An Overview**

Development of Horticulture is being varied out on scientific basis since early decades of the present century. The Mysore State Government gave enough impetus by establishing the Department of Government gardens in 1856, later in 1961 it was upgraded as the full-fledged Department of Horticulture. Mysore Horticulture Society located at Lalbagh in Bangalore was founded by G H Krumbiegal, the Director of Horticulture. But virtually it was a rebirth of a society called Mysore Agri-Horticulture Society, Bangalore, which was the founded in 1836 by William Munro. The Government of Mysore had taken over the responsibility of conducting the horticultural shows after the society become defunct probably from 1874. After retirement of John Cameron in 1907, G H Krumbiegal was appointed as superintendent of Government gardens in the year 1908. It was Krumbiegal who thought of forming an association of horticulturists. Hence Krumbiegal named the society as the 'Mysore Horticultural Society' and got it registered with the Registrar of Societies under Societies Registration Act of India -1904.

The word 'Horticulture' could be symbolized with the letter H which has four limbs. Here the concept people participation, through NGOs is made use of. The first limb of "H" is designated as the KSDH and the remaining three limbs of "H" are designated for the three NGOs. The Mysore Horticulture Society (MHS). The Bangalore Nurserymen co-operative Society (BNCS) and Horticultural producers co-operative marketing Society (HOPCOMS). The first two limbs the Department of Horticulture and the MHS already existed. Founded the remaining two limbs the BNCS and the HOPCOMS in 1958. 'The Horticulture Producers Co-operative Marketing and Processing Society Ltd'. Popularly called as HOPCOMS was established with the principal objective of establishing a proper system for the marketing of fruits and vegetables, to benefit both the Producers and the consumers. Prior to the establishment of HOPCOMS, no proper system of marketing of horticulture produce was in existence. Farmers were in the clutches of the middlemen and the whole system was benefited by the middlemen neither the farmers nor the consumers. Horticulture Development in the Mysore state was started by establishing.

The first horticulture farm was started at Maddur in 1942, to demonstrate the cultivation of horticulture crops and production of vegetable seeds and planting material for the farmers. Marketing of highly perishable commodities like fruits and vegetables has always caught with problems. Farmers often have little bargaining power, middlemen collect commissions from producers, and there was a frequent delay in payments, and produce sold on the basis of volume, with prices being determined to the advantage of retailers and not the farmers. In order to tackle these issues 'The Horticulture Producers Co-operative Marketing and Processing Society Ltd'. (HOPCOMS) was founded in 1959 under a name of Grape Growers Marketing and Processing Society, under the guidance of Dr. M.H. Mari Gowda, the then Director of the Department of Horticulture under the Indian Co-Operative Society Act. The members comprise farmers, state financial organizations and the Karnataka State Government. It is managed by official's appointment by the state, drawn from the Department of Horticulture and the department of Co-operation.

### **Composition of HOPCOMS Board**

The Board of HOPCOMS consists of 20 members. In which 11 members are elected from among the producers, and the rest are the Govt. nominees. The President and Vice President are elected among producers only. The Managing Director of HOPCOMS is from of the Horticulture Department on a lent service (Deputation). The HOPCOMS has 16,221 growers as members, with a share capital of Rs. 265.01 lakhs (As on 31.03.2017) and at present HOPCOMS have 916 staff members under different work.

### **Aims and Objectives of HOPCOMS**

The main objective of HOPCOMS is to promote and encourage the development of horticultural

produces with following support.

- a) By training & providing technical advice literature on horticultural crop.
- b) By providing inputs implements plants and grafts etc.,
- c) Providing marketing facilities and organize the proper studies to members of HOPCOMS.
- d) Supply of Horticultural products to all major Hospitals, Clubs, and Social functions etc.,
- e) Providing internal commodities exchange facilities to co-operative societies & Branches.

### Turn-Over of HOPCOMS

At present, HOPCOMS is handling about 90-100 M T of fruits and vegetables every day, Nearly 200 farmers are bringing their produces directly to HOPCOMS every day. Soon after produces arrived at HOPCOMS, it is graded, weighed and cash payment up to 5,000/- is made immediately to the procures. Above 5,000/- to 10,000/- payment will be made by Cheques. Out of total procured quantity, about 80 per cent is distributed and disposed of through outlets, 15 per cent to institutions and the rest 5 per cent to Government Hostels. The retail outlets are being managed by the salesman who is the employees of HOPCOMS. As incentives, they are allowed to absorb drainage and damage to the extent of 3.7 per cent of the value of the produce besides wages. Every day the salesman will remit the sales proceeds of the previous day and collect the materials required for the day's sales from the Central procurement center. The supplies to retail outlets are being made through the 30 own and through hired vehicles.

### Area of Operation

At present Bangalore HOPCOMS operating in Bangalore urban, Bangalore Rural, Kolar, Chikkabalapura, Channapatana and Ramanagara Districts. The APMC markets play a major role in setting market trends and prices. The prices at which HOPCOMS buys the produce from the farmers is based on the rates and prices released APMC. The HOPCOMS employee's collects the maximum, minimum and model prices for the various commodities sold at previous day in the APMC markets published in the newspaper. Based on the rates released by APMC, HOPCOMS fixes the procurement and sale price for different Fruits and Vegetables brought for sale by its member. The prices produce are vary from day to day and from hour to hour in private markets such as

- 1) Singshandra market for Fruits
- 2) K R Market for Vegetables
- 3) Yashavanthpura market for Food grains. Clarity is person the whole mechanism of price fixation for various Fruits and Vegetables at HOPCOMS.

The area of Karnataka is 190.50 lakh ha., of which an area of 125.63 lakh ha. Come under the cultivable area constituting 65.95% of the geographical area for the year 2017-2018. Out of the total cultivable area, 19.01 lakh ha. Area covered under horticulture, as per the "Horticulture Crop Statistics of Karnataka State at a Glance 2017-2018". Horticulture area in the state accounts about 15.14% of the total cultivable area. Out of 19.01 lakh ha., of the total horticulture cropped area 8.21 lakh ha. (43.17%) come under Plantation crops: 4.38 lakh ha. (23.03%) under Vegetable; 3.54 lakh ha. (18.61%) under Fruits; 2.57 lakh ha. (13.51%) under Spices and 0.32 lakh ha. (1.69%) under Commercial Flowers, including the area under the Medicinal plants.

The total horticulture production in the state during the year under reference figures is 152.13lakh tons. The production figures at 61.33 lakh tons (40.31%) with respect to Fruits Crops; 73.80 lakh tons (48.51%) with respect to Vegetables Crops; 9.99 lakh tons (6.57%) with respect to Spice Crops; 8.21 lakh tons (3.17%) with respect to Plantation Crops; and 2.19 lakh tons (1.44% with respect to crops coming under commercial Flowers, including the area under the medicinal and aromatic plants. The total are is 218.24 lakh hectares and production is 2404.26 lakh tons under horticulture crops in India. Karnataka state has occupied 3<sup>rd</sup> place in respect of total area with 18.66 lakh hectares contributing to 8.60% area to total area and 6<sup>th</sup> place in respect of total production with 177.98 lakh tons contributing 7.4% production to total production at all India level. Karnataka state has occupied 3<sup>rd</sup> place regarding Fruits crops with as area of 3.78 lakh hectares & production of 62.74 lakh tons and 8<sup>th</sup> place regarding Vegetables crops with 4.66 lakh hectares of area & 90.56 lakh tons of production. With regard to commercial flowers our state has stood in

2<sup>nd</sup> place with 0.27 lakh hectares of area and 2.04 lakh tons of production and 2<sup>nd</sup> place regarding plantation crops with 7.32 lakh hectares of area and 17.81 lakh tons of production.

### Area and Production of Horticultural Crops in Karnataka (2017-2018)

Sl. No	Name of crops	Area and production of horticultural crops		Percentage share of to all horticultural crops	
		Area	Production	Area	Production
01	Fruit crops	3.54	61.33	18.61	40.31
02	Vegetable crops	4.38	73.80	23.03	48.51
03	Spice crops	2.57	9.99	13.51	6.57
04	Plantation crops	5.21	4.82	43.17	3.17
05	Commercial flowers	0.28	1.96	1.47	1.29
06	Medicinal plants	0.02	0.05	0.11	0.03
07	Aromatic plants	0.02	0.18	0.11	0.12
08	Total state	19.02	152.13	100.00	100.00

The Horticulture Producers Co-operative Marketing and Processing Society Ltd in Karnataka

The Horticulture Producers Co-operative Marketing and Processing Society Ltd. Popularly called as HOPCOMS was established with the principal objective of establishing a proper system for the marketing of fruits and vegetables, to benefit both the Producers the consumers. Prior to the establishment of HOPCOMS, no proper system marketing of horticulture produce was in existence. Farmers were in the clutches of the middlemen and the whole system was benefited the middlemen neither the farmers nor the consumers.

### Area & Production of Other Horticulture Crops in Karnataka (Area in ha / Production in MT)

Horticulture Crops	Area	Production as on 2017-18	Major Districts	Processing Opportunities
Aromatic & Medicinal Plants	3493	25633	Bellary, Tumkur, Kolar, Vijayapura, Gadag, Chikkaballapura, Uttara Kannada, Koppal, Shivamogga, Kalaburagi	Aromatic plants - Extraction of Essential oil. Medicinal plant: Crude extraction, phytochemicals, dehydration of herbs
Commercial flowers	30058	214396	Haveri, Bellary, Tumkur, Chikkaballapura, Kolar, Chitradurga, Mandya	Dried flower, extractions of dye, colours & essential oils, Cut flowers & Garlands

Plantation crops	855525	484630	Tumkur, Hassan, Dakshina Kannada, Chitradurga, Chikkamagalur, Shivamogga, Davanagere, Uttara Kannada	Packed coconut water, Coconut milk, desiccated coconut powder, virgin coconut oil, Dehydrated copra flake, coconut milk powder. Chocolate manufacturing, processing of arecanut, cashew processing
Spices	200191	655706	Dharwad, Kodagu, Hassan, Bellary, Mysuru, Chikmagalur, Haveri, Shivamogga, Bagalkot	Spice powders, Masalas, Pastes, Pickles, Dehydrated flakes
Coffee	230333	211100	Kodagu, Chikmagalur, Hassan	ffee roasting, Powders, Chocolates

Source: Dept. of Horticulture, Various Reports, Government of Karnataka.

### Potential of Horticulture in Karnataka

The diverse agro-ecological conditions prevailing in the State facilitates growth of large varieties of horticulture crops covering fruits, vegetables, flowers, spices, plantations, roots and tuberous crops, aromatic crops, medicinal crops, oil palm etc. There has been a significant development in horticulture sector since the last two to three decades. There is a clear shift from Agriculture to horticulture sector which is mainly attributed to the fact that Horticulture crops are perennial in nature and are less labour oriented and highly remunerative. Karnataka state at the national level stands first in floriculture, second in spice and plantation crops, third in Coconut and fifth in fruits and vegetables. Of the total cultivated area of 108 lakh ha., in Karnataka, horticulture crops are grown in an area of 15.30 lakh ha., with an annual production of 118 lakh tons annually.

The State of Karnataka is artistic with pleasant agro-climatic environment widespread in six dissimilar agro-climatic zones such as the southern dry zone, hilly zone, coastal zone, central conversion region, northern dry zone and eastern dry zone and this has made it feasible to grow unusual varieties of horticulture crops. Karnataka is the first state to set up a separate Department of Horticulture in India for the overall development of horticulture in the state. The main horticultural crops that are grown-up in the State are presented in the below mentioned table.

### Present Area and Production under Horticulture Crops

Sl. No.	Crops	Area in lac hec	Production in lakh tonnes
1.	Fruits	2.61	41.65
2.	Vegetables	3.77	66.54
3.	Spices	2.45	4.97
4.	Plantation crops	6.26	3.34
5.	Flower crops	0.21	1.57

6.	/Aromatic crops	384/665 (in hec.)	4525/9144 (in tons)
	Total	15.30	118.20

Source: Dept. of Horticulture, Various Reports, Government of Karnataka.

The major production of area of the important fruits in the state of Karnataka is mango, sapota, banana, grapes and pomegranate respectively. The mango availability period is May- June and the major producing areas area, Bangalore, Tumkur, Kolar, Belgaum, Dharwad, Haveri, and Chikmagalur. The Sapota is available during May-June in the state of Karnataka. The major sapota producing areas are Hassan, Chikmagalur, Kolar, Chitradurga, Dharwad and Belgaum. The Kolar and Chitradurga Sapota is more tasty compare to other districts, because the dry land fruits are always tasty. The banana is available around the year in the state of Karnataka. The major banana producing areas are Hassan, Chikmagalur, Kolar, Chitradurga, Davanagere and Tumkur. The grapes are available between Feb-May months only. The major grapes growing areas are, Koppal, Belgaum, Bijapur, Bagalkot, Bellary and Davanagere. The pomegranate is available during June-Oct months and the major producing areas are: Gulbarga, Raichur, Koppal, Bijapur, Bagalkot, Bellary, Davanagere, Belgaum and Chitradurga respectively.

### Market Linkages of Horticultural Crops in Karnataka

The horticultural crops being unpreserved in nature, losses in quantity and quality which affects these products between harvest and consumption. Factors like respiration, ethylene production, evaporation, temperature and relative humidity affects the keeping quality of these products. Post-harvest facilities from production connecting to the market and consumption points helps in the reduction of losses due to depletion.

The agricultural export zones are promoted with the purpose of promoting exports of agricultural produce from chosen areas of productivity importance, food parks afford an opportunity of growing processing capabilities in the state, and these are two imperative linkage points which helps in absorption of Fruits and Vegetables for further value addition.

### Food Parks in Karnataka State

The Food Parks were established in the State under the Ministry of Food Processing Industries guidelines during 2000-2001. Although there are six Food Parks recognized for establishment in the State, the food Parks are not operational till date. The major commodity of production in the catchment region of the park is highlighted with a comparison of the percentage of production of the commodity to the state production.

### Markets and Rural Mandis

In Karnataka, Agricultural Produce Marketing Committee Yards and Act (APMC) includes the marketing of horticultural produces. But in practice only few horticultural products which are less perishable like Coconut, Onion and Potatoes are largely marketed through APMC's and horticultural produces other than these are also marketed through APMC's which is around 6% of the total production. Most of the vegetables and fruits in larger cities and towns are traded in the central market area, usually municipal market. The wholesale trade of fruits and vegetables is carried out by the commission agents and the trade is through small auction sales or negotiated sales in terms of baskets/bags etc.,

### Conclusion

The analysis of production and marketing of horticultural crops in the state of Karnataka clearly indicates that Karnataka is the second most important state next to Maharashtra for the production of horticultural crops. The agro climatic suitability provides a unique position for the state to be a natural home for a large number of horticultural crops that can be grown all-round the year. Out of a total of 121.86 lakh ha cultivable area, nearly 17.64 lakh ha is under horticultural crops accounting for 8 % of area contributing to over 136.66 lakh tones (2017-18). Around 2.46 lakh ha is under fruit crops and 2.99 lakh ha is under vegetables. Fruits contribute to 73.62 lakh tones while vegetables 6.23 lakh tones. The state leads in

country's area and production of brinjal, tomato, mango and cut flowers. Being the horticultural capital, Bangalore district is the hub of activity for various horticultural crop research and development. Estimates indicate that the state capital with a total population of over 80 lakhs consumes nearly one third of the states horticultural crop production. It is also a major hub for interstate transactions and movement of horticultural crop products to distant locations within and outside the country.

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