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HORTICULTURAL PRODUCTION AND MARKETING EFFICIENCY IN INDIA: A VIEW

K. Kesavalu[1] , R. Asokan[2] and A. Abdul Raheem[3]
[1] Ph.D Research Scholar (Part-time-External), Department of Economics, Annamalai University, Annamalai Nagar.
[2] Assistant Professor and Research supervisor, Department of Economics, Annamalai University, Annamalai Nagar, deputed to Department of Economics, Government Arts College for Women, Salem.
[3] Associate Professor and Co-supervisor, Department of Economics, The New College (Autonomous), Chennai.

ABSTRACT:

In India, agriculture contributes around 21 per cent to the gross domestic product while providing employment to around 60 per cent of country's work force. Agricultural development in 21st century faces some unprecedented challenges in the face of steady growth in the world population, which is expected to reach 10 billion marks in 2020.and with nearly 800 million people not having enough food to eat. In India, vegetables occupy an important position among various food crops from the view point of healthy diet since a sizable population of the country consists of vegetarians. India is world's largest producer of vegetables after China, and grows a wide range of vegetable crops under varied production systems. Vegetable production is no exception to this rising trend in input use. The increasing awareness among the people regarding healthy diet and importance of vegetables has been responsible for augmentation of vegetable production in the country over the years. This increase in vegetable production has been possible due to the expansion of irrigation facilities and wide use of other inputs like seeds, fertilizers, pesticides etc. For example, vegetables alone consume 12.13 per cent of insecticides used in production systems in the country. Therefore, this paper examines the changing scenario of horticultural production and marketing in India.

KEYWORDS: *agriculture contributes , gross domestic product , vegetable crops.*

1.1 INTRODUCTION

India, with its wide variability of climate and soil, is highly favorable for growing a large range of horticultural crops such as fruits and vegetables. A major importance was laid by the Government of India in achieving self- sufficiency in food production particularly cereals immediately after attaining independence in 1947. The efforts effectively brought in Green Revolution in the late 60's and early 70's, it also showed that horticulture crops for which the Indian topography and agro-climate is well suitable may well be an ideal choice in achieving sustainability by small farmers. However, only in mid Eighties did the Government of India identify 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 create skilled employment for rural masses particularly women folk. The past efforts have been worthwhile in terms of increased production, 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. In the midst of the new crops, kiwi, olive crops and oil palm have been effectively introduced for commercial cultivation in the country.

In India, agriculture contributes around 21 per cent to the gross domestic product while providing employment to around 60 per cent of country's work force. Agricultural development in 21st century faces some unprecedented challenges in the face of steady growth in the world population, which is expected to reach 10 billion marks in 2020 and with nearly 800 million people not having enough food to eat. The population in India is expected to grow to 1,329 millions in 2020. In order to meet the food requirement for the swelling population, the intensive agriculture needs to be followed with judicious use of inputs like fertilizer, pesticide, seeds, irrigation etc for stepping up food production.

A large area in Asia is covered by high yielding varieties of cereal crops with monocropping leading to an imbalance in nutrient availability. Improved vegetable production could offer an alternative for correcting this imbalance between food intake and nutrient availability. In India, vegetables occupy an important position among various food crops from the view point of healthy diet since a sizable population of the country consists of vegetarians.

India is world's largest producer of vegetables after China, and grows a wide range of vegetable crops under varied production systems. The annual production is around 86.69 million tonnes from an area of 7.08 million hectares, which works out to roughly 2.8 per cent of the total cropped area.

The net cultivated area in the country is around 141 million hectares. Increasing population has been responsible for practicing intensive cultivation on this cultivated area in order to feed the rising population and maintain a comfortable level of buffer stock of food grains. As such, the present days are witnessing a considerable expansion in the use of critical inputs like fertilizers, pesticides, hybrid seeds etc and the adoption of improved package of practices to facilitate the use of right input mix.

Vegetable production is no exception to this rising trend in input use. The increasing awareness among the people regarding healthy diet and importance of vegetables has been responsible for augmentation of vegetable production in the country over the years. This increase in vegetable production has been possible due to the expansion of irrigation facilities and wide use of other inputs like seeds, fertilizers, pesticides etc. For example, vegetables alone consume 12.13 per cent of insecticides used in production systems in the country.

The government has been and continues to be heavily involved in India's agricultural sector through policy interventions in the production, marketing, and trade of most major farm commodities. Most obvious and most studied have been India's border measures, including relatively high bound and applied tariffs and export controls for farm products, and its burgeoning subsidies on farm inputs and on producer and consumer prices of wheat and rice. Less obvious and less studied are India's extensive array of central and state regulations that affect the movement, storage, processing, and marketing of farm commodities and that have serve as disincentive for private investment in agricultural wholesale and retail marketing. As a result, India's agricultural marketing system consists primarily of small-scale, nonintegrated, and inefficient marketing enterprises that tax both producers and consumers of farm products.

1.2 FRUIT AND VEGETABLE ECONOMY OF INDIA

The production and productivity of major fruits and vegetables at the national level as well as in various states followed by a brief account of the present marketing practices that are followed in various parts of the country. India ranks first in the world in the combine production of fruits and vegetables, out of 370 million tons of fruit production in the world, India account for 30 million tons, of the 450 million tons of vegetables produced in the world, India produces as much as 59 million tons and so India's share in the world's vegetable market is 17 per cent. The horticultural crops in the country presently cover 13.6 million hectares of land, i.e. 7 per cent of the gross cropped area and contribute 18-20 per cent of the gross value of India's agricultural output. India is the largest producer of mango and banana in the world and has fifth position in the production of pineapple and

sixth in the production of orange, tenth in the production of apple **(Table 1.1).** India occupies the first position in cauliflower and brinjal production, second in onion, third in cabbage, and sixth in potato in the world. The different soil and climatic conditions in the country makes it potential to cultivate a wide variety of fruits and vegetables in various parts of the country. The total area, production and yield per hectare and the share of area under fruits in the gross cultivated area in different states are shown in **Table 1.2**. The importance varies substantially from state to state.

In Himachal Pradesh and in the North Eastern states fruits account for a significant share in their gross cultivated area, they are traditionally dominant in fruit cultivation due to favorable agro-climatic conditions. The yield per hectare of fruits varied from 0.4 MT in Himachal Pradesh to 25.6 MT in Tamil Nadu with a national average of 12 MT. Large variation observed in the yield levels in different states could be mainly attributed to the prevailing soil and climatic conditions besides the varieties of fruits grown.

Table 1.1 Productions of Major Fruits and Vegetables: India's Position in the World

Sr. No.	Fruits/ Vegetables	Production (000 MT)		India's Share	India's Rank
		India	World		
	Fruits				
1	Mango	10000	19215	52.0	1
2	Banana	15073	55787	27.0	1
3	Apple	1200	53672	2.2	10
4	Pineapple	820	11757	7.0	5
5	Papaya	490	5867	8.4	4
6	Orange	2000	59558	3.4	6
7	Grapes	1083	5004	21.6	8
8	Lime	1700	9104	18.7	1
	Vegetables				
1	Tomato	4800	84873	5.7	6
2	Onion	4058	36544	11.1	2
3	Brinjal	8026	11981	67.0	1
4	Potato	17942	294834	6.1	6
5	Green Peas	270	5214	5.2	5
6	Cabbage	3300	46656	7.1	3
7	Cauliflower	4800	12725	37.7	1
8	Garlic	350	10401	3.4	3

Source: computed, http://www. Postharvestindia.com/indhrvst/fruits.htm

The vegetable cultivation in the country today spread over 7 million hectares which accounts for about 3.14 percent of the gross cultivated area in the country. In West Bengal, Orissa, Bihar as well at the north eastern states vegetables accounted for over 5 percent of the gross cultivated area while in other states it varied from 0.4 percent in Rajasthan to 4.5 percent in Goa. The yield per hectare of vegetable varieties from around 4.5 MT in Mizoram to 27.1 MT in Tamil Nadu with a national average of 15.2 MT **(Table 1.3),** the total area, production and yield of fruits and vegetables in the three states, where the selected three cities belong, are shown in **Table 1.4**.

In both Gujarat and West Bengal area under vegetables were more than that of the area under fruits and in the West Bengal area under vegetables was almost 8 times that of areas under fruits. These three states together account for over 14 percent of the total area and 22 percent of total production of fruits in the country, the share of these states is over 25 percent in area and 28 percent in the production of vegetables in the country. The yields of fruits and vegetables in these states were above

the national average except for vegetables in Gujarat. While fruits accounted for 1.7 percent of the gross cultivated area in Gujarat and 1.4 percent in West Bengal, this was 3.54 percent in Tamil Nadu. While the vegetables accounted for 12.2 percent of the Gross cultivated area in West Bengal, this was 3.2 percent in Tamil Nadu and 1.9 percent in Gujarat.

1.3 Fruit and Vegetable Marketing

Horticultural crop marketing is quite difficult and risky due to the perishable nature of the product, seasonal production and bulkiness. The range of prices from producer to consumer, which is an outcome of demand and supply of transactions between various intermediaries at different levels in the marketing system, is also unique for fruits and vegetables. However, the marketing provision at different stages also play an important role in price levels at various stages..

Table 1.2 Area, Production and Yield of Fruits in various States in India

	State	Area (000 ha)	Production (000 MT)	Yield (MT/ha)	Area under Fruits as percent of Gross Cultivated Area
1	Himachal Pradesh	196.6	87.5	0.4	20.23
2	Arunachal Pradesh	44.1	93.1	2.1	17.64
3	Jammu and Kashmir	133.0	1021.0	7.7	12.28
4	Manipur	24.6	118.1	4.8	11.88
5	Mizoram	13.0	40.7	3.1	11.50
6	Meghalaya	26.9	223.3	8.3	10.72
7	Nagaland	19.4	232.3	12.0	7.46
8	Goa	12.3	99.0	8.0	7.28
9	Tripura	30.4	372.1	12.2	6.67
10	Kerala	187.8	1184.5	6.3	6.33
11	Sikkim	5.9	8.6	1.5	4.15
12	Andhra Pradesh	449.2	5175.4	11.5	3.70
13	Tamil Nadu	232.0	5939.6	25.6	3.54
14	Bihar	309.3	3870.7	12.5	3.09
15	Karnataka	315.0	5456.1	17.3	2.69
16	Assam	106.1	1247.1	11.8	2.66
17	Maharastra	539.8	8688.5	16.1	2.48
18	Orissa	204.9	1202.9	5.9	2.37
19	Gujarat	176.2	2376.0	13.5	1.66
20	West Bengal	130.2	1816.1	13.9	1.41
21	Uttar Pradesh	315.1	3210.5	10.2	1.19
22	Haryana	28.6	212.0	7.4	0.47
23	Punjab	30.1	418.6	13.9	0.37
24	Madhya Pradesh	67.4	1536.1	22.8	0.26
25	Rajasthan	20.0	339.3	17.0	0.09
	All India	**3796.8**	**45496.0**	**12.0**	**1.99**

Source: computed http://www. Postharvestindia.com/indhrvst/fruits.htm

Table 1.3 Area, Production and Yield of Vegetables in various States

	State	Area (000 ha)	Production (000 MT)	Yield (MT/ha)	Area under Vegetables as percent of Gross Cultivated Area
1	West Bengal	1122.3	17413.8	15.5	12.19
2	Meghalaya	29.2	252.9	8.7	11.63
3	Orissa	788.1	9096.0	11.5	9.12
4	Nagaland	20.9	235.7	11.3	8.04
5	Mizoram	8.3	56.3	6.8	7.35
6	Sikkim	9.6	43.0	4.5	6.76
7	Arunachal Pradesh	16.9	80.9	4.8	6.76
8	Assam	255.9	3089.4	12.1	6.41
9	Bihar	626.0	9548.8	15.3	6.25
10	Kerala	159.7	2857.1	17.9	5.38
11	Goa	7.6	70.0	9.2	4.50
12	Manipur	9.0	60.8	6.8	4.35
13	Himachal Pradesh	40.6	660.9	16.3	4.18
14	Tripura	18.4	232.8	12.7	4.04
15	Jammu and Kashmir	41.4	584.3	14.1	3.82
16	Tamil Nadu	209.1	5660.3	27.1	3.19
17	Karnataka	361.6	6796.9	18.8	3.09
18	Uttar Pradesh	688.9	13842.4	20.1	2.60
19	Haryana	135.0	2094.5	15.5	2.20
20	Andhra Pradesh	230.1	2839.1	12.3	1.90
21	Gujarat	201.0	2647.0	13.2	1.89
22	Maharastra	385.3	4828.6	12.5	1.77
23	Punjab	135.4	2285.0	16.9	1.68
24	Madhya Pradesh	258.7	3632.0	14.0	0.99
25	Rajasthan	98.7	472.6	4.8	0.44
	All India	5993.0	90830.7	15.2	3.14

Source: Computed http://www. Postharvestindia.com/indhrvst/fruits.htm

The features make the marketing system of fruits and vegetables to differ from other agricultural commodities, mostly in providing timely, form and space utilities. Even as the market infrastructure is better developed for food grains, while fruits and vegetable markets are not that well developed and markets are congested and unhygienic. The markets in many of the major cities in some states are not covered by market legislation and continue to function under civic body as well as private ownership.

Table 1.4 Area, Production and Yield of Fruits and Vegetables in Selected States

Item	Area 000ha, Production 000 MT And Yield MT/ha				Percentage to All India		
	Gujarat	Tamil Nadu	West Bengal	All India	Gujarat	Tamil Nadu	West Bengal
	Fruits						
Area	176.2	232.0	130.2	3797	4.64	6.11	3.43
Production	2376.0	5939.6	1816.1	45496	5.22	13.06	3.99
Yield	13.5	25.6	13.9	12.0	112.50	213.33	115.83
	Vegetables						
Area	201.0	209.1	1122.3	5993	3.35	3.49	18.73
Production	2647.0	5660.3	17413.8	90831	2.91	6.23	19.17
Yield	13.2	27.1	15.5	15.2	86.84	178.29	101.97

Source: Computed, http://www. Postharvestindia.com/indhrvst/fruits.htm

Some studies have shown that producers' share in consumers' rupee is comparatively lower for perishable crops. This could be due to a variety of factors such as number of intermediaries, cost of various market functions rendered by intermediaries, spread of location of the producers and consumers. Further the degree of portability, variety and quality, and various market imperfections, market infrastructure etc. also influence the marketing costs and price levels. The producers' share was found to be relatively high in areas where better infrastructure facilities for marketing were made available. Some studies have cited examples of an improvement in the producers' share over a period of time due to improvements in market infrastructure, such as cold storage facilities. On the other hand the low share of consumers' rupee for potato growers in different parts of the country may be due to high margins of intermediaries. The producers' share has been also often variably during peak and lean seasons. Substantial variation in producers' share in consumers' rupee for fruits and vegetables was also observed even in the same location itself.

In much location for fresh fruits and vegetables regulated markets is the first destination and growers send their produce daily to these markets for sale and traders and retailers buy them for the consumers. Fruits and vegetables arrive from far off places follow different marketing systems. It was also found that the regulated markets benefited farmers in proportion to the effectiveness with which market committees supervise the trading of fruits and vegetable marketing. These findings advocate effective implementation of regulatory measures, improved market infrastructure, and dissemination of market information that could not only improve the marketing of fruits and vegetables but also the share of producers' in consumers' rupee. Agricultural markets continued to be plagued by many market imperfections such as inadequate infrastructure, lack of a scientific grading system, defective weightage and so on. The basic objective of regulating the marketing of agricultural products was to bring both producer and buyer/trader closer and to the same level of advantage. This would help reduce middlemen and associated costs and margins. Moreover regulated markets are the platform for both producers and buyers to represent their grievances and discuss matters of mutual interest. Market legislation in India covers almost all agricultural commodities. Since regulation of markets is a state subject, the regulatory measures adopted by various states differ though marginally. There are as many as 4000 regulated markets in the country dealing with fruits and vegetable trade. While the market regulation has been successful in some areas to a certain extent, it has not often achieved the objectives to the desired level. A large number of wholesale markets are yet to be brought under the purview of market legislation.

Regulating markets are only the first step to improve the marketing efficiency. Past studies on regulated markets in various parts of the country brought out various inadequacies in the system in

terms of their functioning, infrastructure, price realized by farmers and so on. Grading, providing price information on different markets etc. have been neglected by few regulated markets. Few other problems identified are lack of standardized price quotations, disparities in rate of market fees. In some cases it was found that the traders and not the farmers obtained the benefit of the regulated markets. In few regulated markets there were very few traders and hence enough healthy competition was not there and eventually low prices were realised by the farmers. Even in more competitive regulated markets, the market has often not been stable. In a study on fruits and vegetable wholesale market in Ahmedabad, the most striking aspect observed was congestion and crowding during business hours. Though the produce remained only for a few hours in the market significant mechanical damage and contamination can occur in the course of loading, unloading and handling. All these evidences suggest that there is large scope for improving various aspects of fruits and vegetable marketing in the country.

1.4 The changing scenario

The changing scenario 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 moved from the rural confines to commercial ventures and has attracted youth since it has proved to be intellectually satisfying and economically rewarding.

The advantages of diversification: Diversification in Horticulture is the best option as there are several advantages of growing horticultural crops. These crops:-

- Produce higher biomass than field crops per unit area resulting in efficient utilization of natural resources.
- Are highly remunerative for replacing subsistence farming and thus alleviate poverty in varied agro-ecosystems like rain-fed, dryland, hilly, arid and coastal.
- Have potential for improvement of wastelands through planned strategies.
- Need comparatively less water than many other field crops.
- Provide higher employment opportunities.
- Are important for nutritional security.
- Is environment-friendly.
- Have a high potential for value addition.
  Have a high potential for foreign exchange earning.
- Make a higher contribution to GDP (24.5 per cent from an area of 8.5 per cent.)

1.5 Agricultural Marketing

The organized marketing of agricultural commodities has been promoted through a network of regulated markets in India. Most state governments and Union Territory have enacted legislations to provide for the regulation of agricultural produce markets. India has 21780 rural periodical markets (i.e 15 per cent) of which function under the realm of the regulation. In the regulated markets has helped in mitigating the market handicaps of producers and sellers but the rural periodic markets in general and the tribal markets in particular, remained out of its developmental ambit.

1.6 Present Constraints in the System

The purpose of state regulation of agricultural markets was to protect farmers from the exploitation of intermediaries and traders and also to ensure better prices and timely payment for their produce. Moreover the status of restrictive monopolistic markets providing no help in direct free marketing, organized retailing and raw material supplies to agro-industries over a period of time. And retail chain operators cannot procure directly from the farmers as the produce is required to be channeled through regulated markets and licensed traders. An enormous increase in the cost of marketing

and farmer's ends up getting a low price for their produce and Monopolistic practices have prevented private investment in the sector.

1.7 Efficiency of marketing for fruits and vegetables in India

The efficiency of marketing for fruits and vegetables has been of significant concern in the recent years in India. The poor efficiency in the marketing channels and inadequate marketing infrastructure are believed to be the cause of fluctuating consumer prices. Indian farmers naturally depend heavily on middlemen predominantly in fruits and vegetable marketing and the producers and consumers frequently get a poor deal and the middlemen control the market, but do not add much value. There is also massive wastage, deterioration in quality as well as the frequent mismatch between demand and supply over time. In the light of these concerns, studies were taken-up by CMA, IIM, Ahmedabad, Agro-Economic Research Centre, University of Madras, Chennai, Agro- Economic Research Centre, Visva-Bharati, Santiniketan, and Agro-Economic Research Centre, University of Delhi. Moreover, the wholesale markets, under the coordination of CMA, IIM, Ahmedabad.

However, fruits and vegetables naturally constitute an essential part of the daily diet and they are in great demand of the most sections of the population in India. In the recent year the direct consumption of commercial value of fruits and vegetables are processing as well as trade has risen substantially in India. The high labor intensity in the production of most fruits and vegetables production makes more important from the employment point of view.

1.8 CONCLUSION

It could be concluded from the above discussion that the fruits and vegetables constitute an important part of the daily diet and are now in great demand round the year. At present the horticultural crops in the country cover 13.6 million hectares of land, i.e. 7 per cent of the gross cropped area and contribute to about 18-20 per cent of the gross value of agricultural output. India's share in World fruit production is very significant, the largest producer of mango and banana in the world and fifth position in the production of pineapple and sixth in the production of orange and tenth in the production of apple. Similarly the India's presence in the production of vegetables is also very significant. The production of major vegetables, India occupies the first position in cauliflower, second in onion, third in cabbage, and sixth in potato in the world owing to the diverse soil and climatic conditions in the country gives great promise to cultivate a wide variety of fruits and vegetables. Traditionally Indian farmers depend heavily on middlemen particularly in the marketing of fruits and vegetables. There has been great concern in recent years about the efficiency of fruits and vegetable marketing. It is feared that low efficiency in the marketing channels accompanied with poor marketing infrastructure would not only lead to high and fluctuating consumer prices, but also only a small fraction of the consumer rupee reaching the producer farmer. It may also lead to deterioration in quality, frequent mismatch between demand and supply both spatially and over time resulting in highly fluctuating prices.

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