

Fruit Growing in India: A Study of Inter-State Variations in the Last One Decade

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Abstract—The scenario of horticultural crops especially the fruit crops is very encouraging in recent years. The fruit crops have their imperative significance in the livelihood of human being. The position of India is second in fruit production in the world as it contributed 10.9 percent share in the fruit production in the world. India also possesses a leading position in several fruit crops in the world. The present study aims to study the inter-state variations and growth pattern in area, production and productivity of fruit crops in the leading fruit growing states in the last one decade in India. The whole study is based on time series secondary data. The results in the study show that the rate of variations in area, production and productivity of fruit crops has been found to be significant among all the leading fruit growing state. It varies from state to state not only in area and production but also in productivity. The compound annual growth rate has also been found to be different among all the state. In some states, the compound annual growth rate has become negative while in other has found to be positive.

Keywords: Fruit Crops, Coefficient of Variation, Compound Annual Growth Rate.

1. Introduction

The horticulture sector is an imperative sub-sector of agriculture, which plays a significant role in the economy of India. In India, the scenario of horticulture crops in recent years has become very encouraging. The agro-climatic conditions of India are varied as a result of which it allows to produce different varieties of horticultural crops (Gogoi and Borah, 2013). Among all the horticultural crops the production of fruit crops which include both fresh and dry fruit crops has gained the commercial tone in recent years. Fruits are considered as essential items in everyday meals as it provides the necessary nutrient for a balanced and healthy diet. The fruit crops does not only have their medicinal value but they also have their aesthetic importance. The cultivation of fruit crops not only generate employment opportunities but increase the farm income especially in the developing country like India (Kumar and Mruthyunjaya, 2002).

At present, India is the second largest producer of fruit crops accounting 10.9 percent share in the world. India also possesses the leading position in several fruit crops like

mango, banana, papaya, coconut, cashew nut, India is known famous as the fruit basket of the world. India is also one of the major fruit exporting country in the world which exported 372213.73 MT of fresh fruits except for grapes and mango worth of Rs. 1834.56 crores in 2018-19. The major fruit crops which are grown in India are apple, mango, apricot, orange, banana, guava, litchi, papaya and watermelon. (APEDA, 2019).

In India, the area covered under fruit crops was 2874 thousand hectares, which has increased to 6110 thousand hectares during 2014-15. As far as production is concerned it was 28632 thousand million tonnes in 1991-92 and increased to 86602 thousand million tonnes in the year 2014-15. Finally, the productivity has also shown significant increment which was just 9.96 MT/ha in 1991-92 and has increased to 14.2 MT/ha during the year 2014-15. During the same period, the area and production of fruit crops has also significantly increased by 3.18 and 4.72 percent per annum respectively (Kashish and Dhawan, 2017).

In the recent years, the export of fresh and processed fruit crops have been increasing significantly. The recent economic reforms in India are also resulting in structural changes in the agricultural sector especially in favour of fruit crops (Amarasinghe et. al., 2007). The fruit sector has been found to be a driving force which helps in stimulating a healthy growth trend of agriculture in India. The rising share of high value cash crops and their growth potential is likely to agriculture growth in the coming years (ASSOCHAM, 2013). In India, the major fruit production areas are in the state of Andhra Pradesh, Maharashtra, Uttar Pradesh, Gujarat, Madhya Pradesh, Karnataka, Tamil Nadu, Bihar, West Bengal and Chhattisgarh as per the 3rd Advance Estimate of Horticultural Crops, 2018. However, the top ten leading fruit producing states in India has been taken to study the inter-state variations and growth pattern in area, production and productivity of fruit crops.

2. Objectives of the Study

The following objectives of present study are

1. To study the inter-state variations in area, production and productivity of fruit crops in India.
2. To study the growth pattern of area, production and productivity of fruit crops in selected states in India.

3. Research Methodology

Keeping in view the problem and the objectives in mind, the data for the present study has been collected on area and production of fruit crops in the top fruit producing states in India for the last one decade from 2009 to 2018. The present study is entirely based on time series secondary source of data which has been collected from Horticulture Statistics Division, Department of Agriculture, Cooperation and Farmers' Welfare Government of India. The data has also been collected from various publications of the states as well as the central government and other government agencies. Information from Economic Survey of India and various other published journals, websites, books, reports and official records was also used in the study. The collected data has been analyzed by making the use of simple average, coefficient of variance and compound annual growth rate.

4. Results and Discussion

Table 1 shows the average area, production and productivity of fruit crops consisting of fresh fruits and dry fruits crops in India in the last one decade from 2009 to 2018. It is clearly evident from table 1 that the average area was highest in Maharashtra (1138.76 thousand hectare) state which was followed by Andhra Pradesh (686.67 thousand hectares). But among all the 10 leading fruit growing crops the lowest average area was recorded in the Chhattisgarh (199.29 thousand hectares) state. With regard to average production, Andhra Pradesh was the state which depicted the highest production of 11968.83 thousand MT which was followed by Maharashtra (10688.11 thousand MT). On the other hand, Chhattisgarh state experienced the lowest average production of (2001.84 thousand MT) in the last one decade. Finally, Madhya Pradesh and Tamil Nadu were the states which have shown the highest average productivity of 22.68 and 22.48 MT per hectare, while it was experienced lowest in Chhattisgarh state with 9.90 MT per hectare.

Table 1: State-wise Average Area, Production and productivity of Fruits Crops in India

(Area in '000 Ha; Production in '000 MT; and Productivity in MT/Ha)

States	Area	Production	Productivity
Andhra Pradesh	686.67	11968.83	17.70
Uttar Pradesh	369.50	6797.50	17.26
Maharashtra	1138.76	10688.11	10.77
Gujarat	383.87	8195.68	21.32
Karnataka	400.38	6733.53	16.81
Madhya Pradesh	316.81	6446.11	22.68
Tamil Nadu	306.57	6911.32	22.48
Bihar	301.31	4230.11	14.03
West Bengal	233.84	3307.45	14.12

Chhattisgarh	199.29	2001.84	9.90
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Source: Compiled and Estimated from Horticulture Statistics Division, Department of Agriculture, Cooperation & Farmers' Welfare, Government of India Table 2 presents the inter-state variations among the top 10 leading fruit growing states in India in the last one decade from 2009 to 2018. In terms of area, the highest variation has been found in Madhya Pradesh (71.85 percent) which was followed by Maharashtra (38.12 percent) state. On the other hand, the lowest variations were recorded in the Chhattisgarh and Bihar state with 0.13 percent and 1.68 percent respectively. As far as the variations in production is concerned, it was found highest in the state of Uttar Pradesh and Madhya Pradesh with 45.03 percent and 41.63 percent of coefficient of variance. But the lowest coefficient of variance was experienced in Chhattisgarh (0.25 percent) and Karnataka (7.66 percent) state. Lastly, the coefficient of variance in case of productivity of fruit crops was highest in Maharashtra and Uttar Pradesh state with 38.56 percent and 31.43 percent respectively. Contrarily, the lowest variation in productivity was again found in Chhattisgarh and Karnataka state with 0.14 percent and 2.02 percent of coefficient of variation.

Table 2: Inter-State Variations in Area, Production and productivity of Fruits Crops in India

(Area in '000 Ha; Production in '000 MT; and Productivity in MT/Ha)

States	Area	Production	Productivity
Andhra Pradesh	19.60	20.11	20.73
Uttar Pradesh	24.55	45.03	31.43
Maharashtra	38.12	11.06	38.56
Gujarat	7.36	9.06	2.78
Karnataka	7.57	7.66	2.02
Madhya Pradesh	71.85	41.63	19.95
Tamil Nadu	7.03	19.87	16.49
Bihar	1.68	12.43	11.85
West Bengal	9.18	11.41	3.45
Chhattisgarh	0.13	0.25	0.14

Source: Compiled and Estimated from Horticulture Statistics Division, Department of Agriculture, Cooperation & Farmers' Welfare, Government of India. As far as the compound annual growth rate (CAGR) of area is concerned, table 3 reveals that there were 6 states among the top 10 leading fruit growing states that have shown the positive growth rate in which highest growth rate was depicted in the Chhattisgarh (4.47 percent) state in the last one decade. But there were 4 states which have also shown the negative CAGR in which Maharashtra was the state which experienced the lowest

Table 3 State-wise Compound Annual Growth Rate of Area, Production and productivity of Fruits Crops in India

(Area in '000 Ha; Production in '000 MT; and Productivity in MT/Ha)

States	Area	Production	Productivity
Andhra Pradesh	-2.98	3.21	6.39
Uttar Pradesh	-0.45	-5.30	-4.87
Maharashtra	-10.90	0.57	12.88

Gujarat	2.38	2.94	0.55
Karnataka	2.47	2.51	0.03
Madhya Pradesh	2.04	2.64	0.58
Tamil Nadu	-0.62	-4.03	-3.42
Bihar	0.39	3.55	3.15
West Bengal	2.97	3.56	0.57
Chhattisgarh	4.47	9.31	4.63

Source: Compiled and Estimated from Horticulture Statistics Division, Department of Agriculture, Cooperation & Farmers' Welfare, Government of India. CAGR with -10.90 percent. With regard to CAGR of production, almost all the states experienced a positive growth rate except Uttar Pradesh and Tamil Nadu which have shown the negative growth rate of -5.30 percent and -4.03 percent respectively. Among all the states, the highest growth rate of production of fruit crops was also found in Chhattisgarh (9.31 percent) state. Finally, there were also 2 states that have shown negative growth rate in terms of productivity of fruit crops with the lowest growth rate found in the state of Uttar Pradesh (-4.87 percent). Whereas, amongst the rest of the states, the highest growth rate was found in Maharashtra (12.88 percent) state which was followed by Andhra Pradesh (6.39 percent) state.

5. Conclusion

The present study was made particularly in the context of leading fruit growing states of India. The present study concluded that the average area, production and productivity vary from state to state. It has not been found to be similar among all the leading fruit producing state in India. It has been found that the highest average area covered under fruit crops was in Maharashtra but in terms of average production Andhra Pradesh was on the top. Whereas, the average productivity of fruit crops were highest in Madhya Pradesh during the same period. As far as the inter-state variations in area, production and productivity are concerned significant results has been observed. The rate of variation has not only been observed significant in area but also in production and productivity of fruit crops among all the leading producing states in India. The highest variation in area was observed in Madhya Pradesh, while it terms of production it was highest in Uttar Pradesh. Finally, the rate of variation in productivity has found to be highest in Maharashtra. The highest CAGR in area and production was found in Chhattisgarh and in productivity it was Maharashtra state which experienced the highest growth rate. Thus it confirmed from the present study that there is no linkage between the parameters taken. Different states enjoy different advantages.

In order to reduce the inter-state variations in India, it is necessary from the part of the government to interfere in the matter. Government has to make such policies which can reduce the inter states variation in India. Suitable climatic conditions for the different fruit crops should be identified from the part of respective government and special attention should be given to them. Awareness programs must be organized in these areas. There is also a need to aware the farmers to grow fruits crops and leave traditional farming to some extent. A provision of subsidy in fertilizers and pesticides must also be provided by the government. As most of the times fruit crops were damaged due to disasters or other reason, so there should be provision of insurance in such cases. High yielding varieties, new technology, communication, transportation, market for products and good pricing for the products should be provided by the government to these farmers.

References

- [1] Gogoi, M. and Borah, D., "Baseline Data on Area, Production and Productivity of Horticulture Crops in North-East and Himalayan States - A Study in Assam", *Agro-Economic Research Centre for North-East India*, Assam Agricultural University, Jorhat – 785013, Assam, 2013.
- [2] Kumar, P. and Mruthyunjaya, "Long Term Changes in Food Basket in India", *Workshop on Agricultural Diversification in South Asia*, November 21-23, 2002, Paro, Bhutan.
- [3] APEDA Products, Agricultural and Processed Food Products Export Development Authority (APEDA), Ministry of Commerce and Industry, Government of India, 2019.
- [4] Kashish and Dhawan, V., "A Study on Production and Trade Performance of Fruits in India", *Agriculture Research Journal*, 54 (1), pp. 108-113, 2017.
- [5] Amarasinghe, U.A., Shah, T., Turrall, H. and Anand, B., "India's Water Futures to 2025–2050: Business as Usual Scenario and Deviations", *IWMI Research Report 123*, International Water Management Institute, Colombo, Sri Lanka, 2007.
- [6] ASSOCHAM, "Horticulture Sector in India- State Level Experience", *The Associated Chamber of Commerce and Industry of India*, New Delhi, 2013.
- [7] Horticulture Statistics at a Glance, 2018, *Horticulture Statistics Division*, Department of Agriculture, Cooperation & Farmers' Welfare Ministry of Agriculture & Farmers' Welfare Government of India 2019.
- [8] Chittora, A., Bisht, V. and Johar, V., "Marketing and Production of Fruits and Vegetables in India", *International Journal of Current Microbiology and Applied Sciences*, 6(9), pp. 2896-2907, September 2017.