



Research Paper

## A study of Banana production and marketing in Wardha district of Maharashtra

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**ABSTRACT :** The present study was undertaken to work out the banana production in India and also Maharashtra. Wardha district in Maharashtra is grown banana and also to know the marketing practices, marketing channels, marketing cost, marketing margin and marketing efficiency. Which will help to suggest remedial measures for improving present marketing system. Wardha district of Vidarbha in Maharashtra is leading in banana production and therefore, this district was selected purposively based on area under banana. The study was restricted to Seloo and Wardha Tahsils of Wardha district. A sample of 60 banana growers 30 from each two Tahsils in 20 villages and 10 marketing intermediaries were selected. The data on marketing practices were obtained for the year 2004-2005 with specially designed questionnaire by survey method. The trend in the area under production and production of banana has been increasing. It was predicted that the trend value would be 5535.00 thousand metric tonnes during the year 2014-2015 and CAGR with 4.21 per cent increase in 11 years for the country. An attempt was made to identify the channels and to estimate the marketing cost, marketing margins and price spread and marketing efficiency in marketing of banana. The per quintal total marketing cost was higher (Rs.165.65) in channel – II compared to channel-I (Rs.138.23) and marketing efficiency under channel – I was 2.22 and for channel – II was 1.93 and from the efficiency index, it could be observed that channel – II was more efficient than channel– I.

**KEY WORDS :** Marketing channel, Production, Marketing cost, Banana

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## INTRODUCTION

Banana and plantain (*Musa sp.*) are widely grown in India and are associated with the historical, economic and social fabric of Indian sub-continent. Banana is one of the oldest and the world's most important fruit crops. It is a very popular fruit due to its low price and high nutritive value with rich source of carbohydrate and vitamins. It helps in reducing risk of heart diseases so, banana has an honourable place on the dining table of any common household. It is a very good natural preservative and indispensable ingredient of Indian medicine system, like Ayurveda. All the parts of the plant are used hence, banana is named as plant of virtues (Kalpataru). Modern edible banana varieties have been evolved from the two species *Musa acuminata* and *balbisiana*.

Banana is the 4<sup>th</sup> important food crop in terms of gross

value. It is produced in 130 countries in tropical and sub-tropical regions of the world of mostly developing economies. India leads the world in banana production.

Leading banana producer countries other than India, are Brazil, Ecuador, China, Philippines, Columbia, Indonesia, Sri Lanka, Costa Rica, Cameroon, Mexico, which are accounting for 57 per cent of world share. India is one of the leading banana producers in the world. Maximum production of banana is in Tamil Nadu followed by Maharashtra and Andhra Pradesh. The production is also higher in Tamil Nadu followed by Maharashtra.

In India, banana and plantain are widely grown in both tropical and sub-tropical regions comprising Kerala, Karnataka, Gujarat, Orissa, Bihar, Eastern U.P., West Bengal, Assam and North Eastern states with considerable socio-economic and cultural importance.

**Objectives of the study :**

- To trace out the banana production in India and Maharastra.
- To trace out the marketing costs, marketing channels of banana in the study area.

**MATERIALS AND METHODS**

The survey was conducted in one major banana producing district in Maharashtra viz., Wardha. Out of 8 Talukas in the districts, two were selected covering 324 villages, out of 20 villages selected comprised 60 respondents individuals farmers and 10 banana supplier-cum-commission agents, wholesalers for the vigorous and intensive analysis of marketing.

The present study was based on primary and secondary data. The primary data were collected from banana growers and various market intermediaries. The secondary data had been collected from year books of National Horticultural Board, APEDA, NRCB, National Horticultural Mission, journals, magazines, news papers and from related published materials. The data from different websites were also collected to analyze the banana production and productivity in India.

The obtained data were analyzed with the help of Compound annual growth rate (CAGR) and Trend value of production, area and productivity were analyzed by the Time series formula. The banana production was analyzed with the help of CAGR for finding out the compound annual growth rate and the following formula was used :

$$\text{Equation 1 : } = \left( \frac{\text{Ending value}}{\text{Beginning value}} \right)^{\left( \frac{1}{\text{No. of year}} \right)} - 1$$

$$\text{OR } \text{CAGR} = \left( \frac{\text{EV}}{\text{BV}} \right)^{\left( \frac{1}{n} \right)} - 1$$

Equation 2 :

$$\Sigma y = na + b\Sigma x \dots\dots\dots (I)$$

$$\Sigma xy = a\Sigma x + b\Sigma x^2 \dots\dots\dots (II)$$

Putting value of a and b in following formula :

$$Y = a + bx$$

**RESULTS AND DATA ANALYSIS**

The results obtained from the present investigation as well as relevant discussion have been presented under following heads :

**Banana production in India :**

The banana and plantains are the most important staple food and fruit crops in the globe. Millions of resource poor people depend on banana for their livelihood and food security.

The banana production, area under cultivation, productivity along with area of cultivation and trend in production in India are shown in Table 1. It is clear that the cultivation under banana increase over the years that in 1999-2000 it was 491 thousand hectares which increased to 770.3 thousand hectares in 2009-2010. The production of banana increased from 16814 thousand metric tonnes to 26469.5 thousand metric tones. The productivity of banana showed a constant trend from 34.24 tonnes / per hectare in 1999-2000 to 33.10 tonnes / per hectare in 2009-2010. The table also shows that the trend in the area under production of banana has been increasing. But the productivity has fluctuating trend due to pest, spot disease, nematode and viruse the major threats in reducing the productivity. It was predicted that the trend value would be 31937.88 thousand metric tonnes during the year 2014-2015. Its also shows that the CAGR for banana production is 4.21 per cent increase for 11 years.

**Table 1 : Area, production and productivity of banana in India during 1999-2000 to 2009-2010**

Years	Area ('000) hectares	Production ('000) MT	Productivity tonnes/ha.	Trend value of production (P <sup>c</sup> )
1999-2000	491.0	16814	34.24	12048.56
2000-2001	470.0	14137	30.08	13374.53
2001-2002	466.2	14210	30.50	14700.48
2002-2003	475.3	13304.4	28.00	16026.43
2003-2004	498.6	13856.6	27.80	17352.39
2004-2005	589.6	16744.5	28.40	18678.34
2005-2006	565.1	18887.8	31.10	20004.30
2006-2007	604.0	20998.0	34.80	21330.25
2007-2008	658.0	23823.0	36.20	22656.21
2008-2009	709.0	26217.0	37.00	23982.16
2009-2010	770.3	26469.5	34.04	25308.11
CAGR%	4.18	4.21	-0.05	

Source : Indian Horticultural Database – 2010

P<sup>c</sup> – Trend value of production

### Major banana producing states in India :

The distribution of area under banana cultivation shows that the major portion of banana production in the country are the southern-central states and costal regions comprising the states of Tamil Nadu, Kerala, Karnataka, Andra Pradesh, and the western states like Maharashtra, Gujrat, and northern states U.P., Bihar and in north-eastern belts like Assam in which banana cultivation is done successfully.

The state-wise area, production and productivity of banana in India during the year 2005-2006 are presented in Table 2, which shows that Tamil Nadu contribution to total area under banana was 94.6 thousand hectares (16.74 per cent), followed by Maharashtra 73.2 thousand hectares (12.95 per cent), Andhra Pradesh 61.1 thousand hectares (10.81 per cent), Karnataka 56.4 thousand hectares (9.98 per cent) and Kerala 56.2 thousand hectares (9.95 per cent) which together accounted for 60.43 per cent of total area in the country. Tamil Nadu occupied the first position with banana production of 4647.6 thousand metric tonnes. Maharashtra ranked second followed by Andhra Pradesh, Karnataka and Kerala. Regarding banana productivity, Maharashtra, Gujarat, Tamil Nadu, Madhya Pradesh and Bihar. Productivity in Maharashtra 63 tonnes per hectare, Gujarat 50.8 tonnes per hectare, Tamil Nadu 49.1 tonnes per hectare, Madhya Pradesh 40 tonnes per hectare and in Bihar 34.3 tonnes per hectare.

### Banana production in Maharashtra :

Maharashtra accounts for 13 per cent of area under banana cultivation and 25 per cent of total production of banana in the country. Banana is the fifth rank and important horticultural crop of the Maharashtra state, occupying 5.34 per cent of the total area under horticultural crops (2005-2006). The crop is

grown in leading districts jalgaon, Nanded, Hingoli, Nandurbar, Pune, Parbhani, Buldhana, Aurangabad, Thane, Wardha etc. The total area under banana in the state is around 73.3 thousand hectares and the annual production of banana is 4608.5 thousand metric tonnes. The productivity of banana is 63 tonnes / ha. in the state which is highest in the country.

Nearly 90 per cent of the banana produced in the state is utilized as consumption for domestic, social cultural and religious purposes. About 60 per cent of banana is utilized as fruit, 15 per cent of the banana are converted into fast food items purposes. Prominently 60-70 per cent of the arrival of banana is exported to other states *i.e.* Uttar Pradesh, Madhya Pradesh, Chhatisgad, West Bengal, Delhi, Rajasthan etc.

The banana production, area under cultivation and productivity and trend in production in Maharashtra are shown in Table 3. It is clear that the cultivation under banana increased over the years. In 1999-2000 it was 72.17 thousand hectares, which increased to 85.0 thousand hectares in 2009-2010. The production of banana increased from 4330.5 thousand metric tonnes in 1999-2000 to 5200 thousand metric tonnes in 2009-2010. The productivity of banana showed a constant trend from 60 tonnes per hectares in 1999-2000 to 61.18 tonnes per hectares in 2009-2010 Table 3 also shows that the trend in the area under production of banana has been increasing. But in the year 2002-2003 area and production of banana was 57.40 thousand hectares and 3607.06 thousand metric tonnes, respectively. It was comparatively lowest over the years due to water scarcity and some other problems prevailing in the farm sector. It also shows that CAGR for banana production was 1.18 per cent positive growth for 10 years. It was predicted that the trend value of production would be 5535.00 thousand metric tonnes during the year 2014-2015.

**Table 2 : State-wise banana cultivation area, production and productivity**

States	Area ('000) hectares	Production ('000) metric tonnes	Productivity tonnes/ha.	Percentage share in total production
Tamil Nadu	94.6	4647.6	49.1	24.85
Maharashtra	73.2	4608.5	63.0	24.65
Gujrat	49.2	2498.8	50.8	13.36
Andhra Pradesh	61.1	1528.7	25.0	8.17
Karnataka	56.4	1399.1	24.8	7.48
Bihar	28.0	959.3	34.3	5.13
Kerala	56.2	443.1	7.9	2.37
Assam	47.0	699.4	14.9	3.74
Madhya Pradesh	15.4	615.6	40.0	3.29
West Bengal	27.8	544.9	19.6	2.91
Other's	56.2	756.9	13.47	4.05
All India	565.1	18,701.9	33.09	100

Source : Indian Horticultural Database, 2006

**Table 3 : Area, production and productivity of banana in Maharashtra (Growth rate)**

Years	Area ('000) ha.	Production ('000) tonnes	Productivity (tonnes/ha)	Trend value of production (pc)
1999-2000	72.17	4330.5	60.00	4044.72
2000-2001	72.17	4330.5	60.00	4144.07
2001-2002	72.17	4331.3	60.00	4243.43
2002-2003	57.40	3607.6	62.85	4342.78
2003-2004	71.10	4468.6	62.85	4442.13
2004-2005	72.15	4534.6	62.85	4541.48
2005-2006	73.15	4608.4	63.00	4640.83
2006-2007	73.40	4621.9	62.97	4740.19
2007-2008	80.00	4962.9	62.04	4839.54
2008-2009	80.00	4960.0	62.00	4938.89
2009-2010	85.00	5200.0	61.18	5038.24
Growth over the period	12.83	869.5	1.18	-
Compound annual growth rate	1.50	1.68	0.18	-
Growth over 10 year period	12.83	869.5	1.18	-

Source : National Horticultural Board

**Production and marketing of banana in Wardha district :**

Wardha district is one of the banana producing districts in Maharashtra. Out of 8 Talukas in the districts, two were major production of banana thier Seloo and Wardha.

Banana is perishable fruit and marketing of banana depends upon demand and supply. The marketing practices followed are very quick due to natural conditions.

Banana producers have two channels for disposal of their bananas, Channel-I is the most prominent channel adopted among banana farmers. The channel-II is very complex based on their mode of disposal of banana. In study area, farmers followed two distinct marketing channels to sell their bananas. These channels were :

- Channel-I : Farmer – Commission agents - Wholesaler – Retailer – Consumer
- Channel-II : Farmer – Wholesaler –Retailer – Consumer

Table 4 reveals that more number of farmers adapted

channel- I (95 per cent ) as farmers found it convenient and profitable compared to other channels. About 5 per cent of the farmers followed channel – II because they did not want to take marketing and selling price risk to wholesale market.

**Table 4 : Marketing channels followed by sample banana farmer**

Channels	Number	Percentage
Channel –I	57	95
Channel -II	03	05

Source: primary data of survey

**Price spread of banana :**

Price spread of banana in different marketing channels in presented in Table 5, It is observed from the table that the farmers who adopted channel – I received a net price of Rs. 344.27 per quintal (52.92 per cent of retailer price ) for marketing.

**Table 5 : Price spread of banana in different marketing channels. (per quintal)**

Sr . No.	Particulars	Channel-I	Channel-II
A 1.	Farmer net price	344.27 (52.92)	350.0 (52.23)
2.	Marketing cost	8.23 (1.27)	30.45 (4.24)
3.	Gross price	352.5 (54.19)	380.45 (56.77)
B 4.	Commission agent price paid	352.5 (54.19)	-
5.	Marketing cost	10.0 (1.54)	-
6.	Marketing margin	75.0 (11.53)	-
C 7.	Wholesalers price paid	437.5 (67.26)	380.45 (56.77)
8.	Marketing cost	120.0 (18.45)	135.20 (20.17)
9.	Marketing margin	93.0 (14.30)	154.50 ( 23.05)
10.	Retailer price	650.5 (100%)	670.15 (100%)

Note : Figures in parenthesis indicate percentage to the total.

**Table 6 : Marketing efficiency**

Sr. No.	Channel	Producer share	Marketing cost	Marketing margin	Efficiency index = Marketing margin 1 + ----- Marketing cost
		Percentage to the retailer price			
1.	Channel-I	52.92	21.25	25.83	2.22
2.	Channel-II	52.23	24.72	23.05	1.93

In channel –II farmers received a net price of Rs 350 (52.23 per cent of retailer price) per quintal and paid higher marketing cost (Rs 30.45) especially towards post harvesting, cutting of bunches, transporting from farm to road, compared to farmers adopting channel – I.

In channel –I commission agent earned incurred Rs. 10 at marketing cost. Whereas in channel –II commission agent was not found. The wholesaler marketing margin in channel –I and II were Rs. 93 and Rs.154.50, respectively and incurred a marketing cost of Rs. 120 and Rs. 135.20, respectively. As more intermediaries were involved in channel –I, retailer paid low price per quintal (Rs. 650.50) compared to channel–II. Eventhough the less intermediaries were involved in channel –II, but retailer prices per quintal was Rs. 670.15 which was high because the marketing margin and marketing cost were higher compared to channel –I. Guledgudda *et al.* (2002) made some investigation on cultivation of banana and its marketing from Haveri district of Karnataka and Mali *et al.* (2003) from Jalgaon and Kurkule *et al.* (2010) from Pune district of Maharashtra.

#### Marketing efficiency :

Marketing efficiency was worked out to know the efficiency of different channels and results are presented in Table 6. The marketing efficiency under for channel –I was 2.22 and for channel –II was 1.93. From this efficiency index, it could be observed that channel –II was efficient. This is because of the fact that channel –II involved less intermediaries and hence this channel was more efficient than channel –I.

#### Conclusion :

Currently, India stands first in the list of the maximum banana producing countries of the world. Banana area is

distributed in 20 states. The banana crop is grown in some districts of the Maharashtra. The productivity of banana in the state is highest in the country. The government should make all possible efforts to provide the farmers with high yielding varieties and hybrids tissue cultural suckers, fertilizers, pest management and adequate irrigation. It should also focus on product diversification and marketing practices, improvement in domestic market channels would increase efficiency in process of market transportations and will help to maintain quality of the produce.

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