

# An Economic Analysis of Banana cultivation in India

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## Abstract

Banana is one of the oldest and the world's most important fruit crops cultivated by man from pre-historic times. A reference to the banana in India frequently occurs in the Vedic literature, where mention is made of its use in religious rituals. It is 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 honorable 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 are used hence, banana is named as plant of virtues (kalpataru). Modern edible banana varieties have been evolved from the two species *Musa edulis* banana varieties have been evolved from the two species *Musa accuminata* and *Musa balbisiana*. Today it becomes leading tropical fruit in the world market with a highly organized and developed industry. India is also producing in a rapid manner. With this background the present study tries to make analysis of trend in Area, Production and Productivity.

**Key words: world market, Area, Production and Productivity.**

## 1. Introduction

Banana is one of the oldest and the world's most important fruit crops cultivated by man from pre-historic times. A reference to the banana in India frequently occurs in the Vedic literature, where mention is made of its use in religious rituals. It is 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 honorable 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 are used hence, banana is named as plant of virtues (kalpataru). Modern edible banana varieties have been evolved from the two species *Musa edulis* banana varieties have been evolved from the two species *Musa accuminata* and *Musa balbisiana*. Today it becomes leading tropical fruit in the world market with a highly organized and developed industry.

Present days' need for meeting the minimum level of the diet of a common man is assuming greater importance. The cultivation of fruits and vegetables is increasing because they provide much needed nourishment supporting vitamins, minerals and also help in improving the protein value in food; besides their value in human consumption these crops play an important role in the economy in the country. Among fruits and vegetables banana is a prominent and special crop with its

peculiarities such as non-seasonal character, one year gestation period, single bunch output and perishable in a short period of seven to ten days.

Banana fruit is a wonder berry, which forms the staple food of millions of people across the globe, providing more balanced food than any other fruit or vegetable. It contains eleven vitamins and the important ones are A,B,C. Although fat and protein contents are very low, the fruit is rich in minerals. The season of planting banana varies states. In most parts the cold seasons of the year are unsuitable for planting. In west coast, planting is done from September to November, when irrigation facilities are available. Planting is done all the year round in order to secure better prices during the off season. In other areas planting is done during the off season. In other areas planting in cold season is a problem and great care is to be given for irrigating the crop in summer and also it exposes the plants to high winds or cyclone damage during the four months of the monsoon is particularly helpful to plants in building up their growth and establishing themselves in advance of the setting of cold weather in November, when growth is retarded. In India agriculture occupies the central place in rural life. The contribution of agriculture towards national income was about 15 percent in 2011-12 although 52 percent of population depends on it. India has been predominantly agrarian economy since Therefore, it is rightly said that agricultural is the backbone of Indian Economy.

## 2. Review of literature

There are good number of studies on the growth rates in area, production and productivity of banana, but the studies regarding problems of production and marketing of banana are not many.

**Amutha and Rathi (2015)** Studied to find the cost and returns of Banana cultivation and also to find the efficiency of marketing banana in Srivaikuntam and Tiruchendurtaluka of Tuticorin district. It is understood that the banana farmers reduced 181.61 kg of banana .

**Naveen et al., (2015)** The study assessed the production and marketing of Banana in Chikkaballapur district of Karnataka during the period of 2012-13 The results revealed that, three important marketing channels were identified in the study area. The main players in channel-I were producer, village level trader, wholesaler, retailer and consumer, in channel-II: producer, village level trader, retailer, consumer whereas in Channel-III: producer, village level trader, vendor, consumer. The share of producer in the consumer rupee was higher (50.90%) in channel-III, as compared to channel-II (46.80%) and channel-I (41.59 %). Farmers preferred the channel-I, because farmers relished (received) the cash immediately after the sale of the produce to village

level trader at the farm level itself. Further, in channel-I, the risk of violent price fluctuation in open market could be avoided.

**Geetha and Meena (2010)** have adopted factor analysis to find out the problems faced by the farmers in the production of Banana. They found that financial, environmental, farming, natural and personal risk and spoilage factors were the important problem factors in the production of Banana.

### 3.Objectives

The overall objectives of the study to analysis the banana cultivation in Chikmaglar District the specific objectives of the study are as follows

- To estimate the growth in area production and productivity of banana in India
- To analyze the factors like fertilizers, human labor irrigation and planting materials and their relative contribution in the production of banana in India
- To study the resource use efficiency in planted and ratoon crops of banana in India.

### 4.Methodology of data base

The study is based on both primary and secondary data. The primary data are collected from sample farmers by conducting field survey. The secondary data are collected from the journals, periodicals and government reports. Some statistical techniques such as growth rate, regression are used to analyse the data.

### 5.Discussion

#### 5.1 Area and Production

Banana plants can be seen growing from the southern tip of India UP to a height of a few thousand feet in the Himalayas. However, banana is essentially a tropical plant requiring a warm humid climate. It grows successfully at elevation up to 2500 feet in Assam and varieties like Sivamalai and Virupaksh grow successfully at attitudes UP to 5000 feet in south India. In warm dry weather, the fruit stop. growth and In the cold weather the fruit stops growth and in the cold weather it is damaged by frost. It stops growth at temperature: below 50°C. some varieties can withstand the cold better. Monthan 1.often grown in North India in sheltered positions In kitchen gardens. Rajapuri or Walhaseemes to be able to resist cold weather better than most other varieties. Tall varieties like Harichhal can withstand cold weather better than Basrai, Dwarf but they make poor growth away from the coast. Basrai is affected by cold even if the minimum temperature remains 40°-45° for about a week. Sometimes frost even for short durations kills the plants even in

theregular banana growing areas. Such was the case in the central Deccanarea in 1925, 1929 and 1934 when the temperature went down to 32-35°F.

**Table-5.1 Area, Production and Productivity of Banana in India**

Year	Area ('000 HA)	Production ('000 MT)	Productivity (per hectare)
2001-02	466	14209	31
2002-03	475	13304	28
2003-04	498	13856	29
2004-05	589	16744	28
2005-06	569	18887	33
2006-07	604	20998	35
2007-08	658	23823	36
2008-09	709	26217	37
2009-10	770	26469	35
2010-11	830	29780	36
2011-12	796	28455	37
2012-13	776	26509	34
2013-14	802	29724	37
2014-15	821	29221	36
2015-16	841	29134	35
2016-17	858	29162	35
<b>CAGR</b>	<b>4.3</b>	<b>5.8</b>	<b>1.4</b>

Source : National Horticulture Board, 2017-18 report, GOI

Table-5.1 shows that the area under banana cultivation in India has been increased from 466.000 hectare with an annual production of 14209000 tones in the year 2001-02 to 858.000 hectare with an annual production of 29162000 tones. The Compound Annual Growth Rate (CAGR) of production area over the study period of 16 years is 4.3 per cent. And the CAGR of production in MT is 5.8 per cent. In case of productivity of Banana is floating between 31 to 37 tones per hectare with the Compound Annual Growth Rate (CAGR) of 1.4 per cent only.

India occupies the 1<sup>st</sup> place in world banana production. As the export from India is 110.87.000 MT, in 2016-17 export value is 38.852.58 Lakh rupees. The major banana producing areas in the country lies in the states of Kerala, Maharastra, Tamilnadu, Gujarat, Uttarpradesh, Assam, Andrapradesh, and Karnataka.

Banana is also grow in many other countries of the world namely Bangladesh, the Caribbean islands the Canary islands, Florida, Egypt, Israel, Ghana Congo, South Africa, Fiji, Hawaii, Taiwan, Indonesia, the Philippines, South China, Queensland Sri Lanka. The highest acreage of bananas is in Africa where bananas reach their maximum importance as starchy food. They are the staple tood of the Bungda in Uganda, the Wahaya in Bukoba, and the Wachagga in Tanzania.

## Commercially Grown Banana Varieties in India

**Grand Naine** – It is most accepted international variety. It is a tall statured plant and a heavy yielder with long cylindrical bunch. On an average it produces a bunch weighing 25 kg and may go up to 32-35 kg, with 8-10 hands with 200-220 fruits/bunch. The length of the fruit is 15-21 cm and girth is 12-13 cm.

**Robusta** – It is normal statured with black brown blotches on the stem, bunches weigh around 20 kg having 8-10 hands/bunch. The length of the fruit is 15-20 cm and girth is 12 cm with thick fruit skin.

**Dwarf Cavendish** – The plant stature is dwarf. Dark black brown blotches appear all along the stem. Bunches are large with compactly arranged 8-10 hands weighing about 20kg. Length of fruit is 13-14 cm and girth 8-10 cm. Skin is thick and the fruit tapers gradually towards the tip. It is not suitable for export.

**Red Banana** – The plant is tall and robust statured. The colour of the fruit, pseudostem, petiole and midrib is purplish red. The bunch weight is 20-25 kg with 6-7 hands and 80 fruits/bunch. The length of the fruit is 16-18 cm.

**Nendran** – There is considerable diversity in plant stature. Bunch has 5-6 hands weighing about 6-12 kg. Fruits have a distinct neck with thick green skin turning buff yellow on ripening. Fruits remain starchy even on ripening.

### Benefits of Banana

Bananas are exceedingly good for students as the rich source of potassium can make a person very alert, the fruit is often called a brain tonic.

- For those suffering from depression, bananas are good as they contain a protein called serotonin which is also called the ‘happy hormone’
- Eating bananas helps people give up smoking as this fruit is rich in vitamin C, A, B6 and B12. Bananas contain potassium and magnesium as well, which help the body recover from nicotine withdrawal.

- When you suffer from a hangover – a banana milkshake with honey can give you immense relief. Cold milk soothes the stomach lining and bananas with honey build up depleted blood sugar levels.
- For pregnant women suffering from morning sickness, eating bananas in between meals helps immensely in settling the queasiness in the stomach.
- The peel of a banana fruit can be rubbed on a mosquito bite with good effect, the stinging sensation stops and the swelling also reduces.

“India produces 30 per cent of the world’s banana, but export is negligible, at less than 1 per cent,” points out Subrata Mondal, CEO, Pick N Serve Foods. “Other countries such as the Philippines and Ecuador, that were earlier ranked 8 and 10 respectively in production, have shot ahead and are currently the top exporters. Moreover, India’s post-harvest facilities are still in their infancy, especially as there is poor cold chain infrastructure,” he said. Stating that there was a huge opportunity in banana exports from India, Mondal pointed out that since the fruit was available 365 days of the year, it could be exported quickly to its export destinations, “because it takes 3-12 days to reach any export destination,” all of which made for a perfect recipe for Indian exporters. Affinity to the West Asian markets has offered a huge opportunity for Indian exporters to boost their banana consignments to the region. The potential is huge, contends Mondal. “Iran imports 2,500 containers of banana every month from across the world. From India, it takes just 40 containers a month, though five months ago it was less than 10 containers. Each container contains 20 tonnes (20,000 kg) valued at ₹8 lakh,” he said. Currently, some 150 containers stacked with bananas are shipped from India per month to markets in the West Asia. With 1,800 containers per year, Mondal says the market is around ₹150-200 crore.

### **Huge exports**

According to export numbers released by Apeda, India exported 65,844 tonnes of bananas in 2013-14 against 45,573.23 tonnes in the previous financial year. Though exports to West Asia were high, even UK and France consume Indian bananas. India exported 62,799 kg of bananas valued at ₹28.90 lakh to Qatar in 2012-13, and exports to Saudi Arabia were pegged at 32,740 kg valued at ₹17.55 lakh, the same year. Apeda data showed that India exported 15,307 kg to the UK valued at ₹9.01 lakh in 2012-13, and France took some 5,957 kg of bananas from India valued at ₹6 lakh. IG International, an exporter and importer of fresh fruits, has decided it wants a large share of the pie, and is to export bananas to Saudi Arabia, Iraq and Iran. The Delhi-based company is aiming at banana exports worth ₹60 crore over the next few years. The company’s first consignment of

bananas was shipped to West Asia early this month. Tarun Arora, Director, IG International, pointed out that exports of table bananas from India could not rise above a certain stage since many other nations, notably the Philippines, could easily supply the fruit in large quantities at cheaper rates.

### 1.1. Global scenario

Bananas are the fifth largest agricultural commodity in world. trade after cereals, sugar, coffee, and coco, India, Ecuador, brazil, and china alone produce half of total bananas of the world. the global production of banana is around 10208.17 thousand tons of which India contributes 29.9% besides India. Available data indicate that between 2000 and 2015, global production of banana grew at a compound annual rate of 3.7 percent, reaching a record of 117.9 million metric tones (MT) in 2015, up from around 68.2million MT in 2000.

## 6. Findings and Conclusion

The area under banana cultivation in India has been increased from 466.000 hectare with an annual production of 14209000 MT in the year 2001-02 to 858.000 hectare with an annual production of 29162000 MT. The Compound Annual Growth Rate (CAGR) of production area over the study period of 16 years is 4.3 per cent. And the CAGR of production in MT is 5.8 per cent. In case of productivity of Banana is floating between 31 to 37 tones per hectare with the Compound Annual Growth Rate (CAGR) of 1.4 per cent only.

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