

EXPLORING BANANA FARMING IN NANDURBAR DISTRICT: A COMPREHENSIVE OVERVIEW

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ABSTRACT:

This study offers a thorough analysis of banana cultivation in the Nandurbar district, which is renowned for making major agricultural contributions to Maharashtra. The study investigates the soil properties, farming methods, and climate of the area that facilitate banana production. It draws attention to the socioeconomic significance of banana cultivation for nearby farmers as well as the difficulties they encounter, including pest infestations, volatile markets, and water scarcity.

The results are intended to support the growth of banana growing in Nandurbar by offering insightful information to farmers, agricultural specialists, and politicians.

KEYWORDS: Banana Farming, Agricultural practices, Sustainable farming. Market linkages,

INTRODUCTION:

In India, banana (*Musa* sp.) ranks second in importance among fruit crops, surpassed only by mango. Its widespread availability, affordability, diverse varieties, appealing taste, and high nutritional and medicinal value make it a favorite among people of all backgrounds.

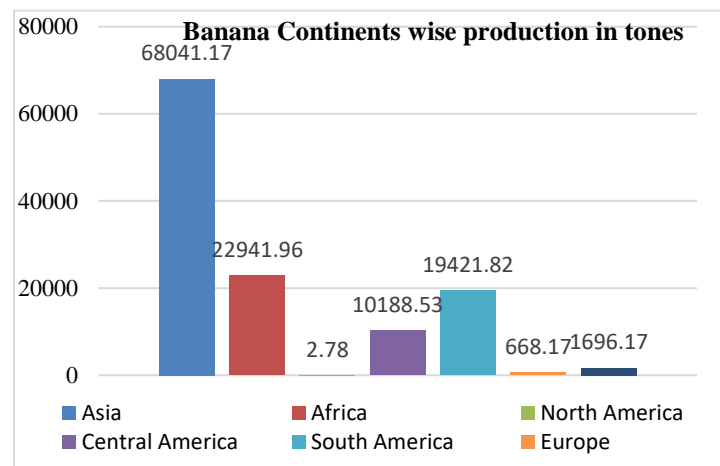
Additionally, banana has significant export potential. Originating in South - East Asia, specifically in the humid tropical regions with India as a primary center, banana has evolved from the species *Musa acuminata* and *Musa balbisiana*, as well as their natural hybrids, found in South-east Asian rainforests. By the 7th century AD, banana cultivation had spread to Egypt and Africa, and today it's grown in warm tropical regions worldwide, between 30°N and 30°S of the equator. (https://nhb.gov.in/report_files/banana/BANANA.htm).

Asia was the top producer of bananas among the continents, followed by Africa, South America, Central America, and so forth. 68041.17 tonnes of bananas came from Asia, 22941.96 tonnes from Africa, 19421.82 tonnes from South America, 10188.53 tonnes from Central America, 2017 tonnes from the Caribbean, 1696.17 tonnes from Oceania, 668.17 tonnes from Europe, and 2.78 tonnes from North America. (Table & Fig.No.1) FAOSTAT (2021).

Table & Fig.No.1 Major Banana Producers Continents in the World (Prod.in Tones)

Continents in world	Production in Tones
Asia	68041.17
Africa	22941.96
North America	2.78
Central America	10188.53
South America	19421.82
Europe	668.17
Oceania	1696.17

Source: -FAOSTAT (2021)

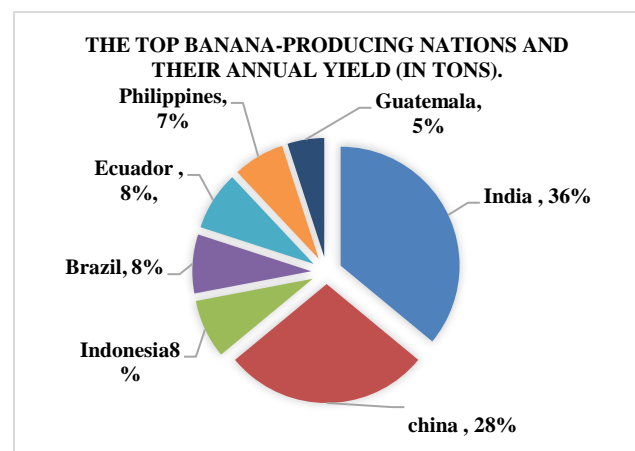


India, China, the Philippines, Brazil, and Ecuador produce more than 60% of the world's bananas (Nayak & Nahar, 2018). The most produced and consumed fruit in India, bananas make up about 33.4% of the nation's total fruit production. India is one of the world's largest banana producers, accounting for about 29% of global banana production and 15% of banana acreage. India produces 37.90 Mt/ha of bananas, compared to the global average of 21.20 Mt/ha (Table & Fig.No.2) (National Horticultural Board [NHB], 2015). 45% of the world's mangos, 37% of papayas, and 29% of bananas are produced there.

Table & Fig.No.2, The Lidding Banana-Producing Nations and Their Annual Yield (in tons).

Country	Percentage
India	36%
China	28%
Indonesia	8%
Brazil	8%
Ecuador	8%
Philippines	7%
Guatemala	5%
Total	100%

Source: National Horticultural Board



Source: Compiled by Researchers

With overall productivity of 66, 58.2, and 47.9 tons/ha, respectively, Gujrat, Maharashtra, and Tamil Nadu are the Indian states that produce the most bananas. Bihar, Odisha, Assam, Karnataka, Madhya Pradesh, Uttar Pradesh, West Bengal, and Andhra Pradesh are among the other states that

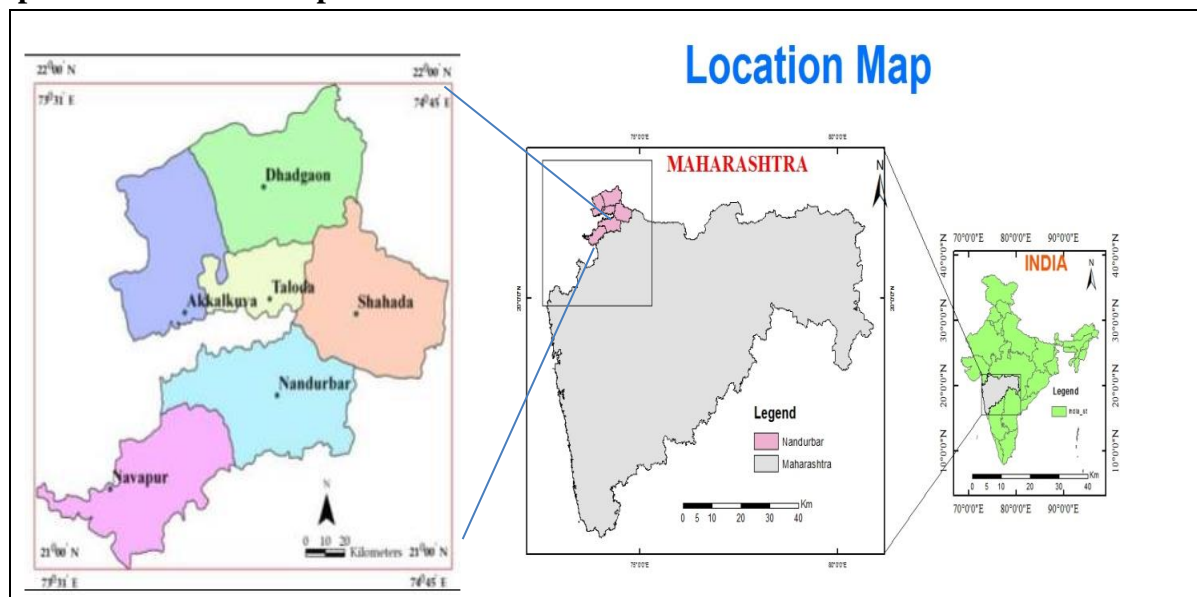
produce bananas. On average, 38.25 tons of bananas are generated per hectare throughout the nation (Uma & Kumar, 2020).

According to Jyothirmayi and Rao (2015), bananas are a great way to provide people of all ages with a well-balanced diet and delicious nutrients. Both the rich and the poor like this inexpensive, high-energy treat. It is a staple food for the tribal and rural populations in eastern and southern India (Shruthi, 2019). Vitamin A, vitamin B complex, vitamin C, manganese, potassium, and substantial levels of digestible dietary fiber are all considered to be abundant in bananas. (Elayabalan et al., 2017; Auore et al., 2009).

LOCATION OF STUDY AREA

Nandurbar district is located in the north western corner of Maharashtra, between Latitude $21^{\circ}00'$ North to $22^{\circ}03'$ North and longitudes $73^{\circ}31'$ East to $74^{\circ}32'$ East the district north western part bounded by Gujrat, North eastern part bounded by madya Pradesh and south east by Dhule district and its total geographical area is 5034 Sq.Km. The district comprising of six tehsils viz, Nandurbar, Shahada, Akkalkuwa Taloda, Navapur and Akrani (Dhadgaon).

Map No.01: Location Map of the Nandurbar District



The district has a tropical climate and temperatures generally range between 20°C to 35°C , suitable as well as Moderate to heavy rainfall (600-800 mm annually) supports irrigation requirements for the healthy growth of banana plants.

Nandurbar district, located in Western corner of Maharashtra, has recently emerged as one of the prominent regions for banana cultivation due to its favourable agro-climatic conditions, including well-drained black cotton soil and alluvial soils in the Tapi river basin as well as

moderate rainfall, and warm temperatures. The district has a lot of potential to boost banana production and fortify its value chain, making it an important player in both the national and regional markets.

OBJECTIVE OF THE PAPER:

The following is the aim of the current paper study:

- 1) To study the current status of banana cultivation in the district of Nandurbar.

METHODOLOGY:

A mixed-method approach is used in this study to provide a thorough understanding of banana growing in the Nandurbar district by combining primary and secondary data collection approaches.

A) Primary Data Collection: Field surveys, structured interviews, focus group discussions (FGDs), and interviews with important stakeholders are methods used to collect primary data. Questionnaires and field surveys aid in evaluating the farming methods, difficulties, and financial circumstances that farmers encounter. To investigate common experiences, difficulties, and possible solutions, farmer groups participate in focus group discussions (FGDs). Furthermore, semi-structured interviews with market agents, agricultural authorities, and other stakeholders offer knowledgeable perspectives on the dynamics of the industry.

B) Secondary Data Collection: Government and institutional reports, market statistics, research publications, and media coverage are the sources of secondary data. Official documentation on policies, programs, and statistical trends are available from agencies such as the Department of Agriculture, Socio-Economic Review, and NABARD. Academic publications and research articles also offer comparative studies and contextual understanding. Finally, media reporting about market trends, legislative changes, and new issues in the banana farming industry can be found in newspapers, magazines, and internet articles.

DISCUSSION AND RESULTS:

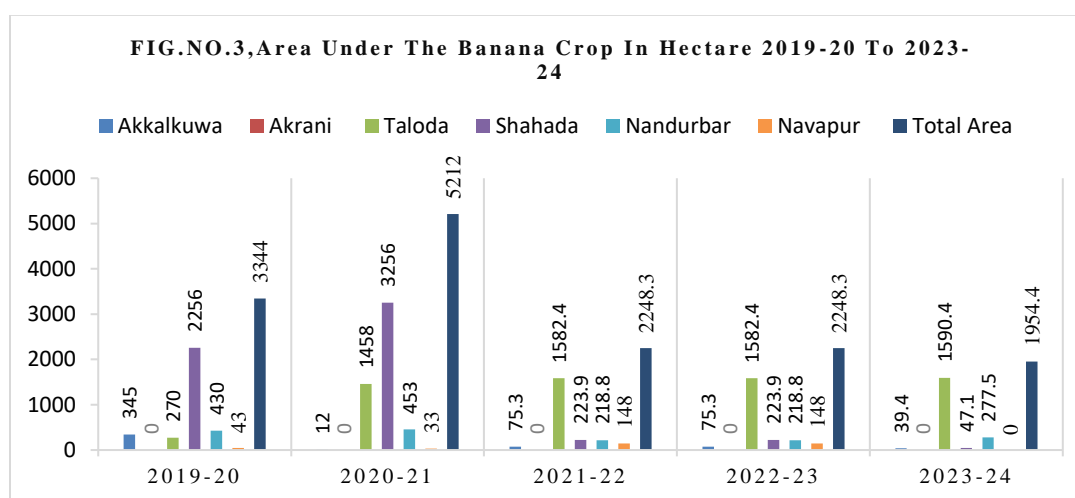
DISCUSSION: -

Notable agricultural activity has been observed in the tehsils of Taloda, Shahada, and Nandurbar, which are situated in the fertile Tapi River basin. Banana agriculture in Taloda increased steadily, from 270 hectares in 2019–20 to 1,590.4 hectares in 2023–24 (Table & Fig.No.3). This implies that its steady expansion may have been facilitated by favourable weather, reliable irrigation from the Tapi River, and lucrative market returns. Shahada, Nandurbar, Akkalkuwa, and Navapur have also profited from their closeness to Mumbai, Surat, a significant port and market for banana exports to other nations, as well as from their advanced road and rail transportation systems, which facilitate effective trade and distribution.

Table No.3 Area Under the Banana crop In Hectare 2019-20 to 2023-24

Taluka	2019-20	2020-21	2021-22	2022-23	2023-24
Akkalkuwa	345	12	75.3	75.3	39.4
Akrani	0	0	0	0	0
Taloda	270	1458	1582.4	1582.4	1590.4
Shahada	2256	3256	223.9	223.9	47.1
Nandurbar	430	453	218.8	218.8	277.5
Navapur	43	33	148	148	0
Total Area	3344	5212	2248.3	2248.3	1954.4

Source: Socio-Economic Review Report Nandurbar



Source: Compiled by Researchers

Banana growing in the Akkalkuwa and Navapur showed inconsistent patterns, with some years seeing partial recoveries before eventually falling by 2023–2024. These discrepancies imply that the cultivation patterns may have been influenced by outside factors such as the availability of water, farming supplies, and local regulations. However, if sufficient farming assistance is given, their proximity to the markets and transportation hubs of Mumbai and Surat presents tremendous potential. Akrani, which is located in the Satpuda Mountain region, on the other hand, did not engage in any banana agricultural activities at all. Banana farming in this region is probably severely hampered by the hilly terrain, poor soil, and inadequate irrigation infrastructure.

The trends in banana cultivation in Nandurbar District's several tehsils from 2019–20 to 2023–24 show notable variances driven by a number of variables. The overall area used for banana cultivation peaked in 2020–21 at 5,212 hectares, but then fell precipitously in the years that followed, reaching 1,954.4 hectares in 2023–24. These variations reflect changes in environmental elements, economic conditions, and agricultural practices.

The district's overall drop in banana farming in recent years may be attributed to altering rainfall patterns, increased production costs, or farmers switching to other crops because they are more profitable. The district's banana industry might be stabilized and revitalized with the help of government regulations, subsidies, and technological developments in agricultural methods. Banana farming in Nandurbar District may be sustained in the future by addressing important issues like enhancing irrigation infrastructure, guaranteeing insect control techniques, and providing farmers with financial support.

RESULTS:

The study's findings show notable variations in the area used for banana production in Nandurbar District's several tehsils. The overall area used for banana growing increased between 2019–20 and 2020–21, reaching a peak of 5,212 hectares, before experiencing a significant decrease in the years that followed.

- 1) Near the Tapi River, Taloda, Shahada, and Nandurbar have long been important banana-producing areas because of their rich soil and water supply. Taloda continued to grow, reaching 1,590.4 hectares in 2023–2024, however Shahada experienced a sharp drop, indicating serious issues like environmental stress or unstable markets. Maintaining the viability of banana growing depends heavily on their close proximity to Mumbai and Surat's banana market, as well as their robust transportation system.
- 2) The uneven cropping patterns in Akkalkuwa and Navapur were a result of outside influences including climatic changes and the availability of agricultural resources. With the right backing, they may grow, though, given their proximity to important commercial routes, the market in Mumbai, and Surat.
- 3) As a component of the Satpuda Mountain range, Akrani did not have any documented banana agricultural activities during the research period. There are major obstacles to banana farming in this area due to the rough terrain and scarcity of good agricultural land.

All things considered, the findings highlight how dynamic banana growing is in Nandurbar District and the necessity of calculated interventions to guarantee sustained agricultural growth. Improved irrigation, financial incentives, and market and transportation connections with Mumbai and Surat could greatly increase banana farming in the area.

EXPECTED OUTCOMES:

The banana farming sector in Nandurbar District should see a number of benefits from the application of the mentioned management techniques. In order to reverse the recent fall in banana production, more acreage is expected to be used for cultivation as farmers are encouraged to resume or enhance their operations via better irrigation and financial assistance. Improved pricing, less

influence from price volatility, and improved market connections with major trade hubs like Mumbai and Surat will all contribute to higher profit margins.

Improved transportation and storage facilities, less banana waste, and higher farmer profits will all help reduce post-harvest losses. Long-term viability will be ensured by the implementation of climate-resilient practices and new farming methods, which will improve agricultural sustainability. Furthermore, a steady and lucrative banana industry will raise local employment prospects, improve farmer livelihoods, and stimulate regional economic growth. Farmers and other stakeholders in the banana supply chain will gain from the effective implementation of these initiatives, which will contribute to the transformation of banana farming in Nandurbar District into a more resilient, profitable, and stable agricultural industry.

CONCLUSION:

This study has offered a thorough examination of the patterns of banana cultivation in the Nandurbar District, stressing the difficulties and prospects for expansion that farmers encounter. According to the study, some areas, like Taloda, have grown, but other areas, like Shahada and Akkalkuwa, have undergone changes or decreases. These movements have been greatly influenced by important variables like the availability of irrigation, market accessibility, and production costs. In order to sustain and improve banana cultivation in the district, the study highlights the necessity of improved infrastructure, funding, and technology solutions.

In order to assure consistent production, future efforts should concentrate on sustainable farming methods, enhanced irrigation control, and better transportation infrastructure. The resilience, profitability, and sustainability of banana cultivation in Nandurbar District can be increased by putting specific legislative measures into place and encouraging innovation in agricultural methods.

RECOMMENDATIONS/ FUTURE SCOPE:

It is advised to build irrigation infrastructure, encourage climate-resilient farming, and offer financial assistance in the form of subsidies and loan availability in order to improve the sustainability of banana growing. For farmers, increasing market connections with Surat and other trading centres can help increase profitability.

In order to maintain long-term banana cultivation, future study should examine the effects of climate change, soil health improvement strategies, and cutting-edge farming technologies. The industry can experience steady growth and increased productivity in the years to come by combining farmer-centric policies with technology developments.

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