

GEOGRAPHICAL ANALYSIS OF BANANA CULTIVATION GROWTH: A CASE STUDY OF WANGI NO.1 VILLAGE IN KARMALA TAHSIL (SOLAPUR DISTRICT)

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Article Info	ABSTRACT
Article History: Received: 23rd Sep 2025 Accepted: 08th Oct 2025 Published: 22nd Oct 2025 Keywords: Changing cropping pattern, Banana Cultivation, Sugarcane Cultivation, Land use pattern	Banana is a tropical crop and grows best between 15°C and 35°C. Banana is cultivated on a large scale in South India. After 2010, the banana cultivation area under the Ujani dam area has been increasing. The fertile climate under the Ujani dam area, excellent land, abundant water supply facilities, modern technology for banana cultivation, modern banana seedlings that give high yields, higher financial returns than sugarcane crop, and demand in the international market have led to an increase in the banana cultivation area under the Ujani dam area. With the large increase in banana cultivation area under the Ujani dam area, the area under banana cultivation in Karmala, Madha, Malshiras, Pandharpur etc. talukas has increased. In this research paper studies the changes in the sugarcane and banana cultivation areas of the village of Wangi No.1 (Tahsil Karmala, Dist. Solapur).

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Introduction

Banana is a crop of tropical humid climates. Bananas grow best in temperatures between 27°C and 32°C. This crop requires constant water. Medium to heavy, organic matter-rich, and well-drained soil is suitable for banana cultivation. There are two seasons of banana cultivation: the deer garden and the onion garden. Tissue culture plants yield high yields and are generally healthy. Bananas are planted at a distance of 5x5, 6x5, or 7x5 feet. After planting, this crop comes in only 11 months, but during this period, it is necessary to water 30-35 times. Banana cultivation is done by pre-cultivation, selection of suitable plants, proper internal cultivation, proper planning of water supply, proper fertilizer management, proper spraying at the right time, proper planning of banana plantation, protection of banana plants and plantations from pests, proper guidance, etc. A new banana-producing region is emerging in this area, and bananas from here are gaining importance in the international market.

Bananas from this area are being exported to the Gulf countries in large quantities. If banana cultivation is done, a large amount of financial return is obtained. Due to the demand for bananas in the international market, the price of bananas is constantly stable. Since bananas are a crop that gives more financial reward than sugarcane, farmers here are becoming banana farmers. Apart from this, migrants are also getting employment. Cold houses are being built to send bananas to the international market. If the banana cultivation area continues to increase like this, the situation will look even different in the coming period. This area will be recognized in the international market. Apart from this, if the relationship between farmers and middlemen remains good, the economic condition of the farmer will improve further. Sugarcane and bananas are also cash crops; however, the farmers of this village have shifted towards banana cultivation instead of sugarcane. After the construction of the Ujani dam, the area under sugarcane had increased here; however, after 2010, farmers here started cultivating bananas.

India ranks second in the world in banana production after China. There is a continuous increase in banana cultivation and production areas in Maharashtra. In the years 2024-25, Solapur district ranks second in banana cultivation and production after Jalgaon. In the years 2024-25, the area under banana cultivation in Solapur district was 27,500 hectares, of which 13,450 hectares were in Karmala taluka. Bananas from Karmala taluka are in demand in the Gulf countries as well as in Europe. The highest banana production in Solapur district is in Karmala taluka. The banana cultivation area has increased in 42 villages under the Ujani Dam area of Karmala taluka. While the area under banana cultivation is increasing, the area under sugarcane crop is decreasing. Due to this, not a single sugar factory season took place in the year 2024-25.

Objectives:

1. To Study changing cropping pattern in study area.
2. To Study growth of banana cultivation in study area.

Study area and Data Collection

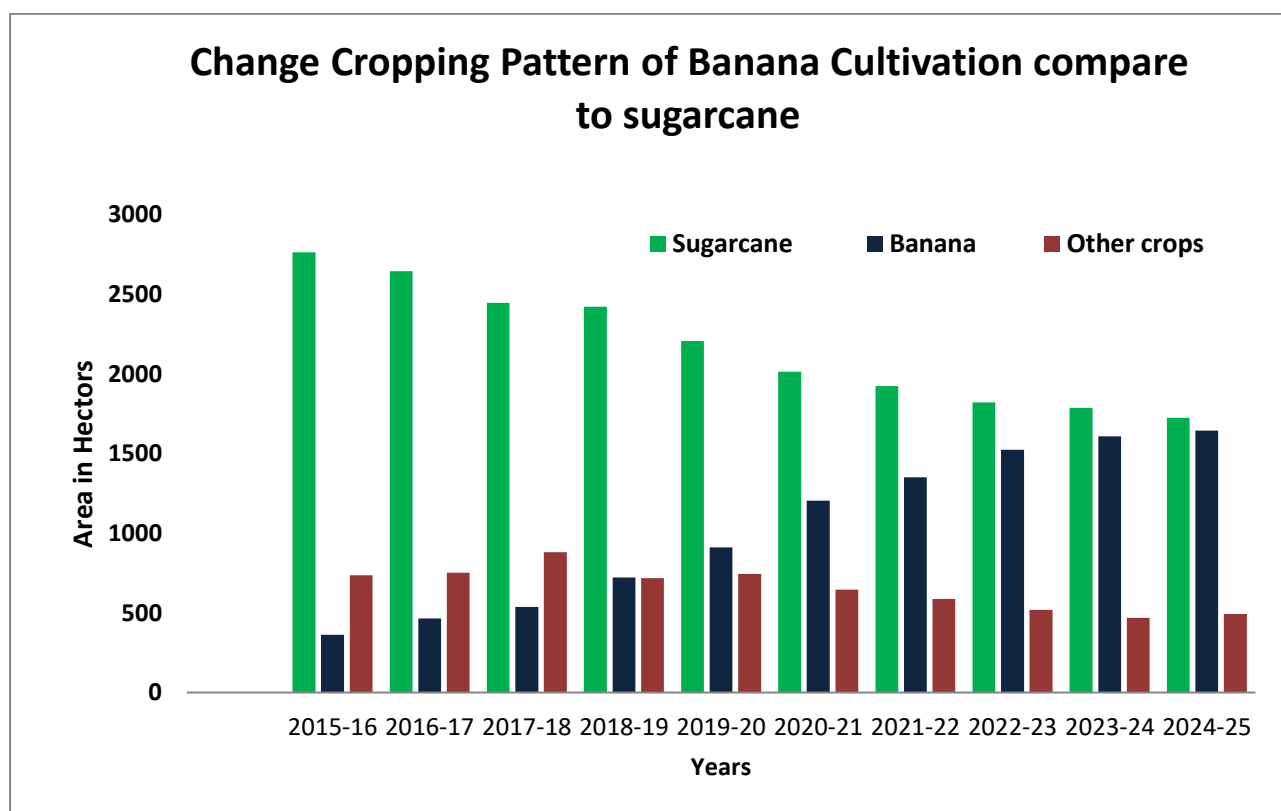
The area under banana cultivation has increased under the Ujani Dam area of Solapur district. This includes the talukas of Karmala, Madha, Malshiras, Pandharpur of Solapur district. The area under banana cultivation has increased in many villages under the Ujani Dam area of Karmala taluka. One of them, Wangi No.1 (Tal. Karmala Dist. Solapur), was selected for the study area. The area under agricultural cultivation of Wangi No.1 village from 2015-16 to 2024-25 was taken for the study. To study the change in crop structure in this village, primary information was obtained from the farmers and secondary information was obtained from the Talathi Office, Wangi No.1.

Database and Methodology

The total geographical area of the village of Wangi No.1 is 4999 hectares. Out of the total geographical area, 3864 hectares of cultivable land is available and 1135 hectares of uncultivable land for agriculture.

Change Cropping Pattern of Banana Cultivation compare to sugarcane						
Years	Sugarcane		Banana		Other crops	
	Area in Hect.	% of total Area	Area in Hect.	% of total Area	Area in Hect.	% of total Area
2015-16	2765	55.31	363	7.26	736	14.72
2016-17	2646	52.93	465	9.30	753	15.06
2017-18	2446	48.93	537	10.74	881	17.62
2018-19	2423	48.47	723	14.46	718	14.36
2019-20	2207	44.15	912	18.24	745	14.90
2020-21	2014	40.29	1204	24.08	646	12.92
2021-22	1924	38.49	1352	27.05	588	11.76
2022-23	1821	36.43	1524	30.49	519	10.38
2023-24	1787	35.75	1608	32.17	469	9.38
2024-25	1725	34.51	1645	32.91	494	9.88

Source of Data: Talathi office, Wangi No.1



The above chart shows the decrease in sugarcane cultivation area and increase in banana cultivation area of village Wangi No.1 during the ten years from 2015-16 to 2024-25. Both sugarcane and banana are cash crops, and farmers here are cultivating banana instead of sugarcane. The total geographical area of village Wangi No. 1 is 4999 hectares. Out of this, 1135 hectares are unsuitable for cultivation. While 3864 hectares are under cultivation. All the areas here are irrigated, and there is the Ujani dam for water supply. Since the construction of the Ujani dam, the area of sugarcane has increased a lot here. However, after 2010, the area of banana cultivation started increasing under the Ujani dam area. The area of banana cultivation in the Karmala, Madha, Malshiras, and Pandharpur talukas of Solapur district has increased a lot. There was a significant increase in this area after 2015-16.

Banana was seen as a cash crop as an alternative to sugarcane. Bananas coming from under the Ujani Dam area saw a huge increase in demand in the international market. This benefited the farmers here, and they improved their finances. The suitable environment for banana cultivation, water supply facilities, supply of modern tissue culture banana, proper research and guidance to the farmers for banana cultivation, supply of chemical fertilizers and pesticides, continuous demand for bananas in the international market, constant fair prices throughout the year, intermediaries supplying bananas to the international market due to the increase in banana production, cold houses for banana storage being set up in many areas, low-

wage labourers from other states, and the increase in modern technology have made the farmers here excel in banana cultivation on a large scale.

In the years 2015-16, sugarcane was cultivated on 2765 hectares, i.e. 55.31% of the total geographical area in the village of Wangi No. 1; however, the banana cultivation area in the same year was only 363 hectares, i.e. 7.26%. While 736 hectares, i.e., 14.72%, were under other crops. 1135 hectares (22.70%) of the geographical area were under unsuitable land for cultivation. The sugarcane area in the village of Wangi No. 1 has been decreasing continuously since 2015-16. In 2020-21, this area was 2014 hectares, i.e. 40.29% of the total geographical area of the village. This decreased to 1725 hectares (34.51%) in 2024-25. Considering the total geographical area, there has been a 20.8% decrease in the total sugarcane production area during the period 2015-16 to 2024-25. The main reason for this decrease in this crop, which is a cash crop, is the increase in the area under banana cultivation.

In 2015-16, 363 hectares of area, i.e. only 7.26% of the total geographical area, were under banana cultivation, but in the next ten years, there was a sharp increase. In 2020-21, the area under banana cultivation reached 1204 hectares (24.08%). While in 2024-25, this area reached 1645 hectares (32.91%). Considering the period 2015-16 to 2024-25, the area increased by 1282 hectares. Considering the year 2015-16, this area increased by 3.5 times. However, during the same period, the area under sugarcane cultivation decreased by 1014 hectares.

In village Wangi No. 1, cash and food crops are grown, among other crops. These mainly include maize, wheat, jowar, papaya, onion, groundnut, and grass for animals. Considering the area under other crops, in 2015-16, 736 hectares of area, i.e., 14.72% of the total geographical area, were under other crops. In 2024-25, 494 hectares (9.88%) of area were under other crops. That is, there has been a decrease in the area under other crops. Considering the above table, it is seen that in the coming period, the area under sugarcane cultivation will decrease, and the area under banana cultivation will increase.

Conclusion:

The necessary climate for banana cultivation, proper guidance for banana cultivation, modern tissue culture seedlings required for bananas, water supply facilities, a large amount of capital, demand for bananas in the international market, middlemen to deliver bananas to the international market, labourers, continuous sugarcane production and crop rotation to improve the reduced agricultural productivity, etc. Due to this, the area and production of banana cultivation in this area have increased significantly. Due to continuous demand from the international market, the price of bananas in the international market remains constant

throughout the year. Due to proper planning, the quality of the banana is maintained. Due to proper quality and a proper guaranteed price, the banana has become famous in this area.

Although banana is a fast-growing crop, it is necessary to protect it from natural disasters. Sun, wind, rain, use of additional pesticides and chemical fertilizers, proper guaranteed price, electricity required for water supply, labour supply, etc. Proper planning is necessary. Continuous cultivation of bananas is reducing the fertility of the soil. Therefore, crop rotation is necessary. Excessive use of chemical fertilizers and pesticides is being done. It is necessary to reduce it, and the use of organic fertilizers is an alternative. Due to excess temperature in summer, strong wind, and excess water in the monsoon, these trees fall. Farmers should not focus on this crop as it provides more financial income but should cultivate other crops along with banana cultivation in their farms.

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