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CHANGING AREA UNDER BANANA CROP IN MADHA TAHSIL OF SOLAPUR DISTRICT: A GEOGRAPHICAL ANALYSIS

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ABSTRACT

The Madha tahsil of Solapur district is located in drought prone area of Maharashtra. Cropping pattern is the acreage distribution of different crops in any one year in a particular farm. The pattern of crops for given piece of land or cropping pattern means the proportion of an area under various crops at a point of time in a unit area or it indicates the yearly sequence and spatial arrangements of crops and follows in an area. The present paper analyzes the changing cropping pattern in Madha tahsil of Solapur district. It shows that the changing cropping pattern due to the availability of an irrigation sources like Ujani dam, Bhima-Sina river joint canal. The canal construction is an art and science of artificial application of water to agriculture and different types of uses to develop and increase in agriculture production. Irrigation is the single most important factor which changes the cropping pattern of area or region. In the cropping pattern area under Banana crop is increased in Madha tahsil of Solapur district.

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INTRODUCTION:

The cropping pattern is an area under various crops at a point of it changes over space and time. The cropping pattern of a region is closely influenced by the geo-climatic, socio-economic, historical and political factors. Patterns of crop land use of region are influenced of physical and human environment. The Cropping Patters in India underwent several changes with the advent of modern agricultural technology, especially during the period of the Green Revolution in the late sixties and early seventies. There is a continuous surge for diversified agriculture in terms of crops, primarily on economic considerations. (Husain Majid 2005)

Since the early days of Green Revolution' there are signs of imbalance in cropping pattern. Technological changes of mid-sixties caused significant shifts, in land utilization, in favor of crops like wheat and rice at the cost of area under coarse cereals, pulses and oil seeds. This shift was the combined effect of differential rates of technological change among crops, irrigation bias of new technology causing shift, of land away from dry crops in favor of irrigated crops and the associated policy of price support system as well as market intervention by the Government for certain crops. Changes in cropping pattern are determined by factors like agro-climatic conditions, irrigation resources, technological, infrastructural and institutional environment and profitability signals (Surindra Mishra 1988). Canal irrigation has been practiced in one form or other in the arid, semi arid and in drought prone area. Solapur district is located in drought prone area of Maharashtra. In India there are many dams and canals constructed to solve the irrigation problem in arid, semi arid and in drought prone area. (Pawar C. T.1989)

The banana crop is a tropical, herbaceous perennial plant grown for its fruit, requiring warm temperatures (15–35°C), high humidity, and well-drained, loamy soil. Key aspects of banana cultivation include using suckers or tissue culture for planting, providing regular irrigation, managing weeds, and applying necessary nutrients like magnesium to support growth. Bananas are harvested raw and ripened artificially for market, with production contributing significantly to global and Indian food security and livelihoods.

Climate and Soil Requirements

- **Temperature:**

Bananas thrive in tropical climates with temperatures ranging from 15°C to 35°C, but they are sensitive to chilling injury below 12°C.

- **Humidity and Rainfall:**

A high relative humidity of 75-85% is ideal, with significant rainfall (around 1700 mm per year, distributed throughout the year) being crucial for vigorous growth.

- **Soil:**

Well-drained, loamy soils with a slightly acidic pH (6.5–7.5) are best for banana cultivation. Avoid alkaline, saline, or waterlogged soils.

Planting and Growth

- **Planting Material:**

Bananas are typically propagated from "suckers" (new shoots from the base of the plant) or, more advancedly, through tissue culture.

- **Land Preparation:**

Prepare the land by ploughing and harrowing it to a fine tilth, and consider growing green manure crops beforehand.

- **Spacing:**

Appropriate planting distances are important to avoid competition for sunlight, with recommended spacings varying by cultivar and location.

- **Irrigation:**

Regular irrigation is essential, especially during dry periods, though waterlogging must be prevented by ensuring good soil drainage.

Harvest and Post-Harvest

- **Harvesting:** Bananas are harvested while still raw, before they are fully mature.
- **Artificial Ripening:** Harvested bananas are transported rapidly, cooled, and then artificially ripened with a low concentration of ethelyne gas before being sold.
- **Crop Management:** Throughout the growth cycle, management involves controlling weeds through techniques like spading, and providing essential nutrients like magnesium to ensure healthy development and maximum yields.

India exports predominantly the **Cavendish** banana variety, including the **Grandnaine** and **Robusta** types, which are favored internationally for their flavor, long shelf life, and commercial farming suitability.

Basrai is a leading commercial variety of the Cavendish group of Banans. It is majorly grown commercially in Maharashtra. The stature of this plant is dwarf making it less prone to wind damage. The bunch size of Basrai, the fruit length and size is pretty good of this variety of Bananas

The present research paper analyzed the cropping pattern in Madha tahsil of Solapur district special reference to area under Banana crop change of Solapur district.

STUDY AREA:

The Solapur district is one of the most important district of Maharashtra state. The Solapur district lies entirely in the Bhima-Sina-Man basins. The Madha tahsil is located between 18° 30′0′′ North latitudes and 18° 40′40′′ North latitudes and 74° 45′0′′ East longitudes and 76° 00′0′′ East longitudes. The average height of Madha tahsil from Mean Sea Level (MSL) varies from 500 meter to 600 meter.

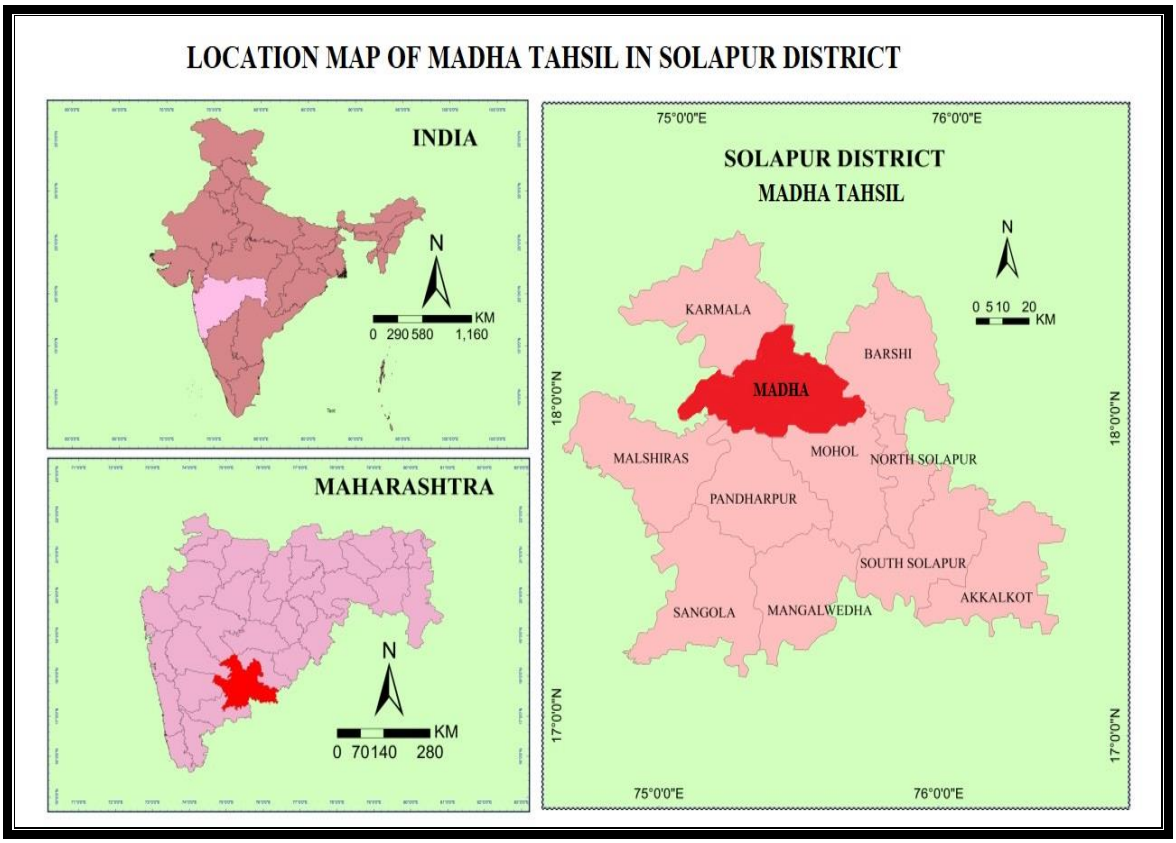

Fig. 1

The total Geographical area of the Solapur district as per 2011 census is 14895.40 sq.kms out of which Madha tahsil have 1524 sq.km area.

OBJECTIVE:

The present study has following specific objectives.

1. To study area under Banana crop change in Madha tahsil of Solapur dist.

DATA COLLECTION AND METHODOLOGY:

The proposed research paper based secondary data. The secondary data is collected from District Gazetteers, Socio-Economic Review of Solapur district, and census etc. The data collection period is from 2011 to 2021. The data processed and analyzed by using different cartographic techniques, statistical and quantitative techniques, etc.

INTERPRETATION AND ANALYSIS:

The following table shows the area under change of Banana crop in Madha tahsil 2011 to 2021.

Table no. 1. Area under change in Banana crop of Madha tahsil from 2011 to 2021.

Sr. No.	Years	Area under Banana Crop (in Acre)
1	2011	350
2	2012	400
3	2013	560
4	2014	585
5	2015	780
6	2016	845
7	2017	930
8	2018	1230
9	2019	1540
10	2020	1920
11	2021	2470

Area in Acre

Source: Compiled by researcher on the basis of Socio-economic review and district statistical abstract of Solapur district 2011 to 2021.

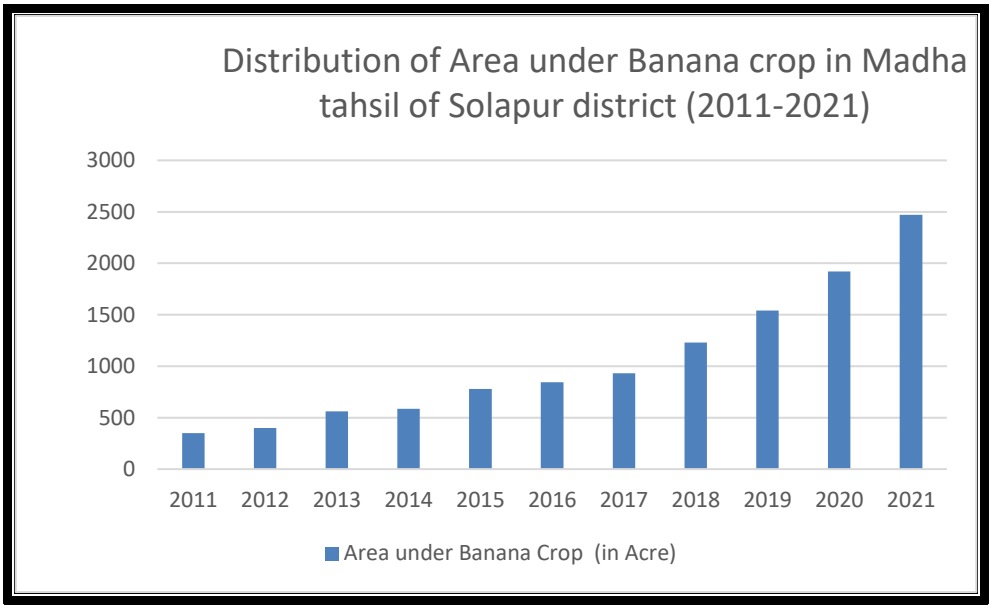

Fig. No. 2

The table no. 1 and fig. no. 2 shows the area under change in Banana crop of Madha tahsil in Solapur district from 2011 to 2021. In the year 2011 Banana crop under area was only 350 acre only but after ten years in the year 2021 Banana crop under area increase up to 2470 acre. From the year 2017 to 2021 Banana crop under area increases rapidly because of irrigation facilities increases and Banana export market structure changes. The Bhima-Sina River joint canal irrigation system, Madha Sina lift irrigation system and Sirapur lift irrigation system area under Banana crop and other cash crops area increases. The variety of Gradenaine and Basrai export type of Banana crops variety growing area increases in Madha tahsils of Solapur district.

CONCLUSION:

Present paper concludes that the cropping pattern of Madha tahsils in Solapur district is changed. Due to the increase in irrigation facilities the area under cash crop is increased in study region. The banana crop is a tropical, herbaceous perennial plant grown for its fruit, requiring warm temperatures (15–35°C), high humidity, and well-drained, loamy soil. The area under change in Banana crop of Madha tahsil in Solapur district from 2011 to 2021. In the year 2011 Banana crop under area was only 350 acre only but after ten years in the year 2021 Banana crop under area increase up to 2470 acre. Irrigation facilities increases and Banana export market structure changes influence over the area under Banana crop increase in Madha tahsils of Solapur district.

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