

## AREA, PRODUCTION, AND PRODUCTIVITY STUDY OF AGRICULTURAL IN MAHARASHTRA STATE (2001-2022)

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### **Abstract**

The advent and rapid unfold of excessive yielding varieties within the late 20s and early 21s ended in consistent output boom for meals vegetation in India. District wise fashion in vicinity, manufacturing and productivity have tested on this paper. To analyzed the traits linear regression has been used to check the charge of change. As well as for significance student t check statistics has been used. The correlation in between place and production also tested from 2001-2022. The analysis discovered that boom of the production at macro level is specifically yield led because of development and unfold of high yield varieties and generation intervention. This paper seeks to study the nature and volume of inter-district version inside the growth of area, manufacturing and productivity of major vegetation over the have a look at duration from 2001 – 2022.

**Keywords:** production and productivity, technology intervention.

### **Introduction: -**

Agriculture continues to be a critical economic hobby within the developing international locations and its function in addition to effect on their economies is especially massive. Sustained boom in agricultural manufacturing and productiveness is critical for typical balance of the Indian financial system. Maharashtra is located within the north middle of peninsular India and the dominant physical traits of the state are plateau individual.

The critical crops grown inside the kingdom are Jowar, Wheat, Rice, Bajara, Groundnut, Tur, Gram, and cotton, Sugarcane, Soyabean, Sunflower and Safflower. Analysis of agricultural increase in the submit-inexperienced revolution period unfolds thrilling dimensions of the brand-new tendencies and styles emerged in 2001. In the increase of combination manufacturing and productivity be attributed merely to a positive weather. The reality that the function played by way of yield improvement in higher output increase has been some distance greater vital than that of enlargement in location suggests that the manner of growth has been technologically greater dynamic too. Even as acceleration in yield increase in current years has been extensive for vegetation like rice, maize, other pulses, soya bean, rubber and cotton. That is an illustration of a much wider diffusion of period.

### **Review of Literature: -**

1. Deosthali and Nikam Chandrashekhar (2004), Rice, location clever growth traits in Maharashtra.

It's miles clean that production and vicinity of rice in Maharashtra have increased via 47. 5 % and 12% respectively. Indicating increased in production in particular yield led because of the improvement and spread of HYV led technology.

2. Pradumna Kumar and Mark Rosegrant (1994), productivity and sources of increase for rice in India. They advised that the increase in location and manufacturing of the crop in relatively related to their relative profitability. The writer studies the modifications in input use, productiveness, cost of manufacturing and perceive the capability location for further productiveness gains and endorse ways of increasing rice.

3. Auffhammer, V. Ramnathan el,(2011), climate trade, the monsoon and yield in India. In keeping with their statistical analysis of kingdom stage Indian information confirms that drought and excessive rainfall negatively affected rice yield in rain fed regions in the course of 1966- 2002 With drought having lots greater impact than severe rainfall. Weather changes already negatively affected India hundreds of hundreds of thousands of rice producers and customers.

4. Amarrender Readdy (2013), Agricultural productiveness increase in Orrisa, India: crop diversification to pulses, oilseeds and other high price crops. Consistent with his studies paper over the past 4 decade there has been stagnation in agriculture in Orissa. For this reason, there is a need for boom in area beneath certified seed, irrigation and different productivity improving input to increase farmers income in all vegetation.

5. Sawant and Achuthan (2015), Agricultural boom across plants and areas emerging developments and styles. In this paper they attempted assessment of agricultural growth performance within the post inexperienced revolution period.

#### **Study Area:**

Maharashtra is placed inside the western part of India along the Arabian Sea. It lies among 15°44' to 22°6' N latitude and 72° 36' to 80° 54 E Longitude. The whole vicinity of Maharashtra state is 307,000 sq. Km, that's 9.36% of the. Considering the place and population, Maharashtra kingdom is the 0.33 largest kingdom in India. The population of the kingdom is 80 million which is nine.47% of the overall population.

#### **Location Map**



**Methodology: -**

The research work could look at the traits in location, production and productiveness of Agriculture of all districts in Maharashtra. Foremost 12 vegetation of Maharashtra have been used for in addition evaluation. The rural information has been collected from Agricultural branch Pune. The records cover duration from 2001-2022. The tendencies for Agricultural records had been evaluated via linear regression approach. Linear regression version changed into applied for temporal fashion evaluation. The test has been broadly used for several climatological research for evaluation of lengthy-time period tendency in climatic parameters (Rao 2004,) significance of fashion turned into obtained from the slope of the regression line. Importance of tendencies became checked with the software of scholar's take a look at 95% self-belief stage.

**Result: -**

**A. Rice** – Rice is a staple meal in Maharashtra specifically within the Konkan vicinity. Over the look at length as (desk 1) shows production of rice has multiplied with the fee of 14777, tones per decade. The manufacturing has been progressively increased as much as 2001 to 2012, but after this it confirmed the gradual increase up to current duration. This growth in production is commonly because of the consistent growth within the place below rice, that is highly correlated (0.75) with production. Productivity of rice is particularly correlated with the production than area below crop. The productivity has unexpectedly increased by using (1277 kg/ha.) after inexperienced revolution with effecting use of fertilizers, HYV Seeds and irrigation facilities. Right here common the trend of vicinity, production and productivity is increasing for the rice crop.

**B. Jawar-** to begin with JAWAR had been a primary crop in Maharashtra due to its nutritional value as well as its functionality to maintain within the less rainfall place. Maharashtra comes underneath semi-arid place consequently farmers gave extra preference to domesticate Jawar. The latest scenario is unique than previous. As desk 1 mentioned location underneath jawar is reducing due to the increase within the irrigation centers and creation of coins crops consequently production of Jawar reducing. The purpose of lower in location underneath jawar is farmer offers more importance to the coins crop due to the value advantage ratio. Even productiveness is increasing drastically over the have a look at period although the manufacturing has reduced after 2005.

**Table 1. Rate of Change in Area, Production and Productivity of selected Crops  
 (Rate of change per decade with their significance)**

Major Crops	Area in "000" Ha.	Production in "000" M tonnes	Productivity (Av. Yield in Kg/Ha)
Rice(Total)	1512	1,930	1277
Jowar	5094	3988	783
Bajara	1800	1087	904
Tur	1096	660	602
Groundnut.	490	470	958
Sunflower.	296	122	412
Soyabean.	1142	1266	1109
Cotton (Lint)	3077	1803	100
Sugarcane.	595	49569	83.27

Wheat	754	948	1256
Gram	676	351	519
Total pulses	497	177	356

(Sources: -Agriculture Report 2001 to 2022)

As per table 1 almost all values show significant changes in the area, production and their productivity. Those are insignificant clearly mentioned in the above table.

**Table 2. Correlation between Area and Production**

**(Correlation between Area and Production)**

Crop	Correlation values	crop	Correlation values
Rice(Total)	0.75	Cotton	0.766848
Jowar	0.552155	Sugarcane	0.787114
Bajara	0.188887	Wheat	0.676889
Tur	0.875555	Gram	0.921334
Groundnut.	0.7786625	Tot pulses	0.921334
Sunflower	0.97458888	Soyabean	0.955050506

(Sources: -Compiled by researcher)

**C. Bajara:** - Bajara is one of the crucial plants with high nutrient fee in Maharashtra. Due to the fact 2001 until 2022 the vicinity beneath the crop manufacturing and the productiveness is steadily increasing but after 2007 location and manufacturing sharply decline. But, the productivity of the Banjara suggests non-stop progressively increasing fashion. Therefore, region and the manufacturing of Bajara indicates high quality correlation. We need to place effort to boom the manufacturing of Bajara because it turned into within the previous years.

**D. Tur:** - this is one of the critical pulses in Maharashtra with excessive source of proteins in it. Because 2001 there is gradually growth inside the region, production and productivity. Most effective throughout the 2008 decade the productivity become sluggish down however after 2007 it once more increases.

**E. Groundnut:** - After studying the fee of alternate of the boom of the groundnut the fashion indicates there is sharply lower in the location and the production of groundnut after 2001 and sharp boom in the productivity due to the fertilizers and other measures. There's wonderful correlation in among the location and the production of the groundnut.

**F. Sunflower:** - in previous years which are from 2001 to 2011 there has been no longer a increase of sunflower. After 1980 there is slowly increasing fashion in the region and production but sharply growing trend within the productiveness. Now in the recent years once more the area and manufacturing suggest decline however the productivity indicates growing fashion.

**G. Cotton:** Cotton is essentially grown over a Marathwada and the Vidarbha in Maharashtra considering the fact that long length. If we observed the productivity of Cotton there may be slight exchange over the examine duration and it's far increasing very barely. The region beneath the crop is regular for numerous years however in current decade it is barely increased. The cumulative impact of vicinity and production has pondered in overall production of Cotton.

**H. Wheat:** -wheat is one of the excessive dietary value crops. For the reason that 2001 the area,

production and the productiveness are barely growing. In 2018 there may be unexpected boom inside the manufacturing once more it got here down in 2002 and there may be again uplift in 2004 and in recent years production is reducing.

**I. Soyabean:** - Soybean is one of the highest dietary fibre vegetation in Maharashtra. Till 2001 there was a lack of understanding of this nutritional fibre vegetation but in recent times everybody recommended soybean crop to eat inside the form of soya sauce, soya milk, and soya flour and so on. Range of product to be had within the market because of its dietary cost and as in keeping with the doctor advice. Hence location and the production of soybean has extended in current years however the productivity indicates mild boom consequently need to position effort to boom the productivity. There is strong nice correlation in among location and the production of Soybean.

### Conclusion

Present have a look at offers an impression of change of alternate in step with decade for the most important vegetation in Maharashtra. As in step with the result of above research work a few plants like kharif Jawar, Bajara, Groundnut, and Jawar indicates negatively large trend in area due to Landuse sample has changed. People used cultivated land either for infrastructure or for a few some other motive because of increasing urbanization. Underneath these kinds of vegetation place has been reduced from 2001 to 2022 which isn't so appropriate for the Agriculture of the Maharashtra kingdom.

As the place has been reduced the production of a few vegetation like Groundnut, summer season Groundnut, Sunflower indicates significantly poor fashion. In case of Rice, Tur, Soyabean, cotton and Gram shows increasing fashion in both region and the production of the Maharashtra kingdom. That is pretty sudden that even though location and the manufacturing significantly decreased in case of a few primary plants however their productivity is constantly significantly elevated during the have a look at duration due to the high yield sorts and the era intervention.

In an agrarian united states of America like India with surprising boom in population and meals demands, even a mild decline in annual food production is an issue of high-quality difficulty. Consequently, attention has been targeted to visualize the meals scenario inside the mild of climate change.

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