

Current changes in crop composition in Brahmapuri taluka: A study

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Abstract

India is an agricultural country, and agriculture is the backbone of the Indian economy. Human intervention is responsible for the changes taking place in the environment, which has a devastating impact on farmers and the agricultural sector. However, problems such as farmer apathy towards agriculture, increasing farmer indebtedness, low productivity, and farmer suicide are not just the problems of one farmer, but are problems of the entire state, the country, and the world.

Brahmapuri taluka is known as a paddy-producing taluka. Although the largest area of land in the taluka is under paddy cultivation, the percentage of paddy production is very low. Considering the overall changes in the climate, it is seen that there has been a change in the current situation from sowing to harvesting of various crops. The reason for this is the erratic nature of rainfall, technological backwardness, defects in the system due to drought, wrong cultivation methods, inadequate distribution of land, fragmentation and inter-division of land, wrong policy of the government, fluctuations in the price of agricultural products, indebtedness, all these reasons have led the farmers to abandon the main crop and opt for low-cost cash and cash crops. And therefore, the main crop technology in the taluka is considered outdated. By accurately studying the changing climate, introducing new technologies to the farmers, in terms of country development and improving the economic condition of the farmers, the government has prepared a plan of various development schemes to increase the productivity of the land. Long-term financial assistance to farmers helps the farmers here become self-reliant and the country develop at a rapid pace.

Keywords:- Brahmapuri Taluka, Crop Composition, Food Grains, Cash Crops, Agricultural Economy, Production, Sustainable Agriculture.

Introduction

India is an agricultural country, and the main occupation of the people here is agriculture, so the livelihood of the people here depends on agriculture. The agricultural sector is not only a food grain supplier but also the backbone of the rural economy and a major source of rural employment. However, in the last few decades, the cropping pattern in agriculture has been changing significantly. Changes in cropping patterns are due to natural, economic, social, and technological factors. Irregular rainfall patterns, climate change, expansion of irrigation facilities, use of improved seeds, fluctuations in market prices, government policies, export-import policies, risk appetite of farmers, as well as profit trends, etc. Factors such as

Brahmapuri taluka (Chandrapur district, Maharashtra) is an important agricultural taluka in the Vidarbha region, located in the eastern part of Chandrapur district in the

Wainganga river valley. The climate is tropical , with an average rainfall of 1100-1200 mm . The soil is salty and black. The irrigation system is mainly rain-fed agriculture, with limited irrigation management through bore wells , wells, and small streams. Agriculture-type Most of the small and marginal farmers here are completely dependent on rainwater, and the farmers here traditionally grew crops like rice , sorghum, millet, and pulses. However, after 2010 , there has been a major change in the crop composition of the taluka. Instead of traditional crops, there is a growing trend towards glycine max, cotton , vegetables, and horticultural crops. This is largely due to the expansion of irrigation area , market demand , government subsidies, and the changing mind-set of farmers.

These changes in cropping patterns have a direct impact on farmers' income , employment opportunities , soil health , and the rural economy. For example, the increase in the demand for cash crops like cotton and glycine max has provided farmers with more income opportunities. But at the same time, there is pressure on soil fertility and water resources. The government has prepared various development plans. Providing long-term financial assistance to farmers helps the farmers become self-reliant, and the country develops at a faster pace.

The above research shows that cotton and glycine max have become the major crops in Vidarbha, while the area under rice, Sorghum and pearl has decreased. The reason for this is the change in climate, irrigation facilities, market prices, and government policies . The farmer survey showed that the crop selection of farmers mainly depends on the factors of water , labour , market prices, and risk. From the local variation, it is seen that the crop composition in the taluka is not uniform but varies according to geography and resources. Paddy is the main crop on the river banks , soybean-cotton in drought-prone areas , while vegetables and horticultural crops are the main crops in irrigated areas. If the above recommendations are implemented, the farmers of Brahmapuri taluka will be able to cope with the scarcity of water and diversify their crops , get stable market prices, achieve greater productivity and economic stability, and become self-reliant and help the country develop at a faster pace and become self-reliant.

Review of Literature

- 1 } In previous studies, researchers have observed that the soybean area has increased rapidly in Vidarbha.
- 2 } Many researchers have considered drought and rainfall uncertainty as the main reasons for crop changes.
- 3 } According to previous reports in Chandrapur district, the area under rice and jowar has been continuously decreasing.

According to various studies, the crop structure in the agricultural sector of Maharashtra has changed due to climate change and market demand. Also, according to a report by the National Bank for Agriculture and Rural Development (NABARD), there has been an increase in the trend towards soybean and vegetables in Vidarbha instead of pigeon and cotton. A part from this, farmers are gradually starting to plant orchards (mango, orange, Cluster bean), taking advantage of water conservation schemes.

Research Methodology

Study Area:- Brahmapuri Taluka, Chandrapur District.

Information collection:-

1. Structured Questionnaire Survey
2. Face-to-Face Interviews
3. Observation Method
4. Collection of Secondary Statistics
5. Data Analysis Methods Comparative Analysis:

1 } Primary Information – Original Source: Farmer Interviews (50 farmers – from various villages) Questionnaire , Farmer Interviews : Interviews were conducted with a total of 50 farmers from the villages through structured questionnaires. The questionnaire collected information about crop selection , dependence on rainfall , irrigation facilities , and market prices.

Visits :- Crop types , farming practices, and changes were tracked through direct field observations .

2 } Secondary Data : - District Statistical Annual Report – Chandrapur (2010 – 11 , 2023 – 24), Seasonal crop report of Agriculture Department , Government of Maharashtra , information on sale price from Cooperative Societies/ Agriculture Market Committee.

3 } Sampling Method

Farmers were selected using the Simple Random Sampling method.

The selected farmers had different farm sizes (small , medium , large), and information was obtained from them at various levels.

Period: A comparative study was conducted on the changes in crop area during the two periods, 2010-11 (reference year – traditional cropping pattern) to 2023-24 (current cropping pattern). **Data Analysis**

Crop composition before 2010: Percentage Method:

The percentage of each crop compared to the total area was calculated

Crop	Area (%)
Paddy	40
Cotton	25
Chickpeas/chickpeas	15
Others	20

Crop	Area (%)
Soybean	30
Paddy	25
Vegetables	15
Cotton	10
Orchard/Horticulture	10
Others	10

Current (2023 – 24) crop composition:**Observations:**

- 1 } In 2010, mainly rice , Sorghum , and pulses were seen in large quantities.
- 2 } Area increased in 2023-24 : Cotton area has decreased, and priority is being given to glycine max and orchards instead .
- 3 } Crop diversity among farmers appears to have increased.
- 4 } Crops based on irrigation are being grown, reducing cultivation based on natural rainfall.
- 5 } Rice is still the main crop in some villages , but its area has decreased considerably.

Year	Paddy - area. { This. }	Soybean- field. { This. }	Cotton- field. { This. }	Maize- area. { This. }	Vegetable- field. { This. }
2010.	52000	8500	6200	3100	2500
2015.	48000	11200	8400	3600	3200
2020.	44500	13500	9200	4000	3900
2024.	42000	15000	10100	4500	5200

(References) Chandrapur District Economic Review

Crops	Year { Crop area – this. }	Year { Crop area – this. }
Rice	25000	18000
Sorghum	12000	6000
Millet	8000	4000
Soybean	5000	22000
Cotton	7000	15000
Sugarcane	2000	5000
Vegetables	1500	7000
Orchard	1000	4000

(References) District statistic department Government of Maharashtra (Agriculture Crop Report 2010-23)**Discussion**

The changing climate has increased the risk to traditional crops. As a result, farmers are growing crops that fetch higher prices in the market and yield in a short period of time. Also, due to government schemes and drip irrigation technology, the trend towards orchards has increased.

Conclusion

There has been a significant change in crop structure in Brahmapuri taluka. Farmers are shifting towards diversification from traditional crops. There is a possibility of economic stability due to the increase in the proportion of glycine max, vegetables, and orchards. However, it is necessary to determine a sustainable crop structure by considering soil fertility , water availability, and market stability.

Recommendations

- Watershed Management and Expansion of Irrigation Facilities
- Crop Diversification
- Climate-Resilient Crops
- Market Access and Agro-Processing Industries
- Promotion of Organic Farming and Sustainable Practices
- Economic and Technical Empowerment of Farmers
- Effective Utilization of Government Schemes

Implementation of these recommendations can make the crop structure in Brahmapuri Taluka more sustainable, profitable, and climate-resilient.

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