International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol. 11 No. 3 Jan-Feb 2024

Agricultural Economic Growth, Productivity and Environment: A Case Study of Maharashtra

Dr. Sambhaji Shinde[1], DR. H. B. Tipe[2], Santosh P. Mane[3]
[1]Professor, Dept. of Geography, Shivaji University Kolhapur
[2]Professor, Head Dept. of Geography, Vasundhara Kala Mahavidyalaya, Solapur.ad Dept. of Geography, Vasundhara Kala Mahavidyalaya, Solapur.
[3]Assistant Professor, Head Dept. of Geography, Sameer Gandhi Kala Mahavidyalaya, Malshiras and, Research Student, Punyashlok Ahilyadevi Holkar Solapur University Solapur
Corresponding Author – Dr. Sambhaji Shinde
DOI- 10.5281/zenodo.12633580

Abstract

Agriculture sector is very important in Indian economy. Because the agriculture sector is considered as an important part of increasing domestic production and supplying food to the growing population. As the maximum population of the country depends on agriculture for their livelihood, the products produced in agriculture play an important role in their lives. In the said research, the researcher has taken a detailed review of the productivity of the products produced in agriculture and the economic benefit of the farmers from that product. (DR. H. B. Tipe S. P., Farm Pond and Its Progress in Maharashtra State, India, 2022)

The said research has been researched by the researcher using various types of secondary resources such as research paper articles, serial books, reference books. Researchers have used descriptive analysis method for research. For research, researchers have reviewed the books, research paper articles published by other researchers. The said research is related to the agricultural sector of Maharashtra and the researcher has reviewed the agricultural sector of the country in this research. While the researcher is reviewing the agricultural sector, while studying the changes in the agricultural sector in Maharashtra in detail, it has been seen that the farmers of Maharashtra are economically inefficient. (DR. H. B. Tipe S. S., 2394-5990)

Key words: Agricultural Development, analysis, productivity, resources, economic, environment, culture etc.

Introduction:

Agriculture has given a lot to society. But it has its own advantages and disadvantages that we cannot ignore. Moreover, the government is giving all possible support to the growth and development of agriculture; still, something needs to be done about the negative effects on agriculture. All agricultural practices have been found to have varying effects on the environment to some extent. Animal agriculture, especially meat production, can cause pollution, greenhouse gas emissions, loss of biodiversity, disease, and significant use of land, food, and water. (DR. H. B. Tipe S. P., A Study on Financial Analysis and Performance of Agricultural Production System of Selected Commodities in Maharashtra, 2022)

It has been seen that farmers in Maharashtra are in debt due to inflation and not getting proper price for agricultural produce from the government. Efforts are made to ensure that the farmers get a fair price for their agricultural produce and to improve their standard of living, but the current situation is that the government does not provide any kind of facility from the farmers' point of view. Modern agriculture is an ever-changing approach to agricultural innovation and farming practices that help farmers increase efficiency and reduce the amount of natural resources needed to meet the world's food, fuel, and fiber needs. Organic wastes, especially manure derived from animals, can significantly degrade soil, water and air quality if improperly managed or untreated. Unsanitary waste provides a medium for fish breeding and disease transmission. Agricultural technology or agricultural technology is also known as agritech. It is efficient in mapping, monitoring and accurate management of agricultural decisions. Agriculture solutions come in various forms like satellite imagery, sensors, agricultural machines and software solutions. 70 % of the country's population lives in rural areas. Such a large population is moving forward in terms of development of rural areas by doing agriculture and agribusiness.

Problems of the Study:

Climate change, unpredictable monsoons and soil degradation contribute to vulnerability. Economic conflicts include low income, credit access problems and market volatility. Inefficient institutions hinder progress through complex land tenure and tenure systems. Cultivable land in the country is also decreasing rapidly .Then the farmer cannot get satisfactory income. Uncertain rains disrupt the farmer's schedule. Frequent droughts and depleting ground water make it impossible to rely

on irrigation or well water. It provides employment opportunities to rural agricultural as well as non-agricultural labour. It is a source of food and fodder. It also plays an important role in international business in import and export activities.

Objectives of the Study:

1. To study the growth in economic development of agricultural sector in Maharashtra.
2. To study productivity and environment in agricultural sector in Maharashtra.
3. To study the factors affecting the sector and government policies.

Significance of the Study:

Farmers of our country are getting rich production of crops due to favorable seasonal climate and good soil in river valleys. Agricultural businesses and various industries based on agricultural production have been set up. This gave employment to lakhs of people. The importance of agriculture sector in rural development is unique. Agro-based industry includes three important industries namely textile and ready-made garment industry, sugar industry and jute industry are important agro-based industries. Agriculture is the most important source of income for central and state governments. The government of the country gets substantial revenue from increasing land revenue. Also, the movement of agricultural goods helps in generating revenue for the Indian Railways, which in turn helps the government in revenue generation.

Scope of the Study:

In our agrarian country, many crops are grown depending on the resources such as climate, land and water available in that area. Farmers in India grow many crops like sugarcane, rice, cotton, sorghum, millet, wheat, maize, soybeans, vegetables, various fruits. The country exports food grains, fruits and dairy products to meet the food needs of the country's population. This earns the country foreign exchange. This is why agriculture is very important in the country's economic income and national income. India's economy is heavily dependent on agriculture.

Limitation of the Study:

In increasing agricultural production, the basic constraints are fixed land, modern technology, irrigation, money and machinery. Erratic rainfall, climate change, soil erosion and degradation, high input costs, market uncertainty etc. These are the major challenges facing the agriculture sector in the state. (Santosh P. Mane, 2022) The government is implementing various schemes not only to overcome these challenges but also to raise the standard of living of farmers. Diverse types of soil, diverse agro-climatic conditions, adequate technical manpower, well-developed communication facilities, growing trend of drip irrigation and use of greenhouses, cold chain facilities and vibrant farmer's organizations provide major advances in growing various horticultural crops.

Period of the Study:

While studying in detail the agricultural productivity and economic growth in the agricultural sector in Maharashtra, the researcher has reviewed that the environment has a major impact on the agricultural sector. In this, the researcher has done the research with reference to the information of 2023-24 in terms of productivity and economic growth in the agricultural sector.

Research Methodology:

Considering the agricultural sector from the point of view of economic development, the productivity of goods is important and agriculture is an important business to bring about changes in the lives of farmers. The said research is done on the basis of secondary resources and in this the researcher has used research papers articles journals newspapers reference books serial books annual reports books etc. The researcher has presented the progress of the agricultural sector in Maharashtra in an adjectival manner by reviewing the changes that have taken place in other states along with Maharashtra.

Research Method:

While studying the growth in agricultural sector and economically improved standard of living of farmers in Maharashtra, the researcher has conducted descriptive analysis method using descriptive analysis method. While presenting the economic aspect of the farmers, the productivity of the goods produced by the farmer and the actual price received by the farmer have been studied.

Results and Discussion:

Major strengths include the large population in urban areas which are dominant in economic and industrial activities as the industrial sector helps the agricultural sector by providing backward and forward linkages as it provides a ready market for inputs such as agricultural commodities, produce and machinery, seeds etc.

Floriculture in Maharashtra:

Maharashtra is the largest producer of floriculture products and more than 4000 hectares area is under various flowers. The most traditional flowers grown on the soil of Maharashtra are rose, marigold, tuber, holly and jasmine. Although, lilies, stassies, gerberas and carnations are harvested among non-traditional flowers. Maharashtra has emerged as the leading state in the country in production, consumption and export of flowers.

Important features of floriculture development in Maharashtra have been the establishment of large-scale export-related units with foreign collaboration and investment. The state is providing state-of-the-art infrastructure for the development of floriculture industry. Similarly, a peaceful and non-threatening environment is the key

to the successful operation of these units. Floriculture farming is very popular in Maharashtra.

Food Processing Industry in Maharashtra:

Common processes in food processing industries in Maharashtra. Major food processing industries in the state are in the areas of sugar, poultry, milk, flour mills, rice mills, edible oil, botanicals, fruit and vegetable units, milk processing units etc. There are great opportunities to upgrade.

Table No. 1
Average Monthly Income of Agricultural Households

Year	Average Monthly Income of Agriculture
2002-03	2,115
2012-13	6,426
2015-16	8,059
2018-19	10,218
2022-23	13,460
2023-24	15,130

Source: Annual Budgets, Parliament Demand for Grants 2023-24 Analysis

Table No. 1 shows the average monthly agricultural income per household in Maharashtra. It has the highest production in 2023-24 and the lowest production in 2002-3. The average income has started to increase significantly after 2018-19. Only if the income ratio increases in proportion to the population will India truly have a significant achievement in terms of sustainable development and developing India.

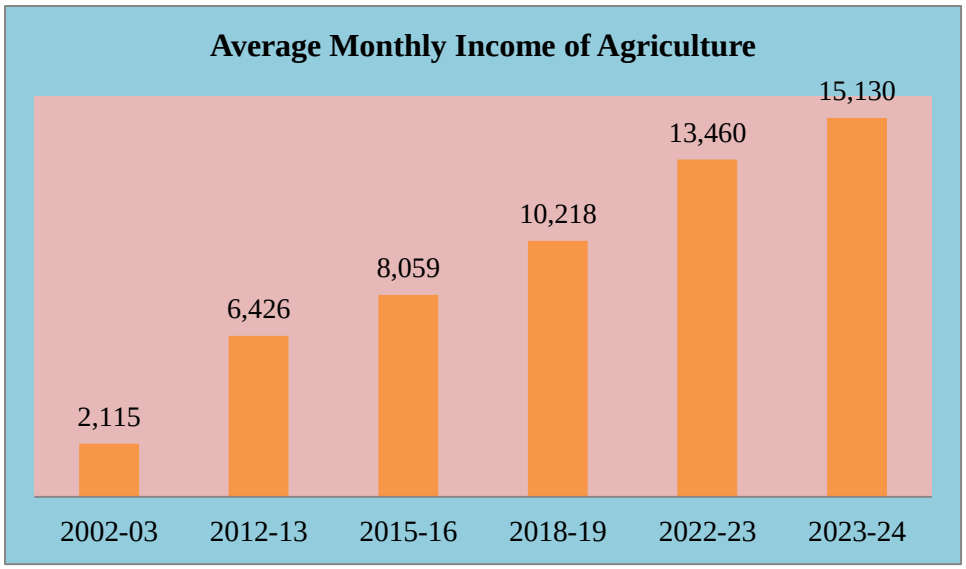


Table No. 2
Purpose of Agricultural Loans

Purpose of Agricultural Loans	Institutional Agricultural Loans (%)	Non-Institutional Agricultural Loans (%)
Revenue Expenses in Farm Business	25%	12%
Capex in Farm Business	20%	9%
Housing	22%	17%
Household Expenditure	12%	31%
Capex in non- farm business	7%	4%
Others	15%	27%

Source: Annual Report, Government of Maharashtra, 2023

In table No. 2 the agricultural sector is classified according to the amount of loan taken by the farmers and retained by them. Farmers keep some portion of the income from agriculture and future income for household and nothing for modern farming.

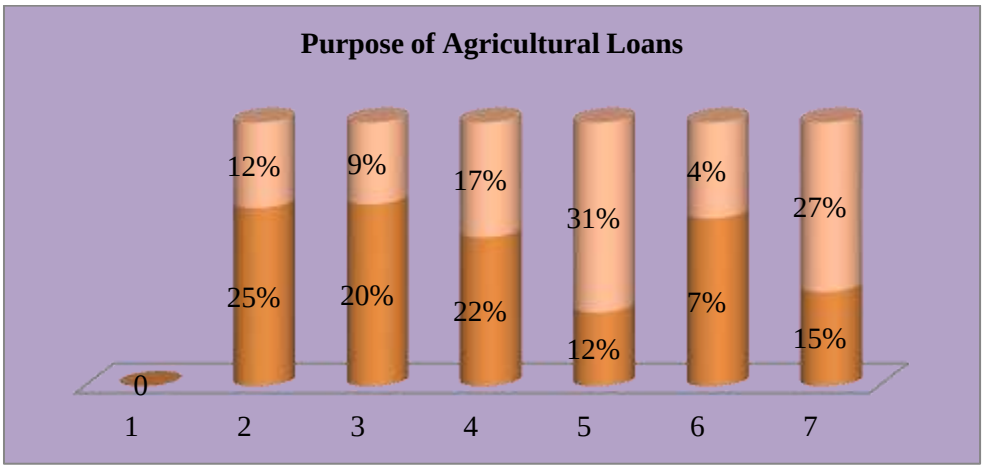


Table No. 3
Subsidy Rates for Rabi Season (2021-March, 2024)

Nutrient	Subsidy Rates (in Rs. /Kg.)		
	2021-22	2022-23	2023-24
Nitrogen	18.79	98.02	98.07
Phosphorous	45.32	66.93	73.16
Potash	10.11	23.65	27.29
Sulphur	2.37	6.12	11.04

Sources: Press Information Bureau, India

In table No. 3 the farmers are classified according to the concession in the use of chemical fertilizers during Rabi season. In this, the rate of use of chemical fertilizers during the period 2021-22 to 2023-24 is given.

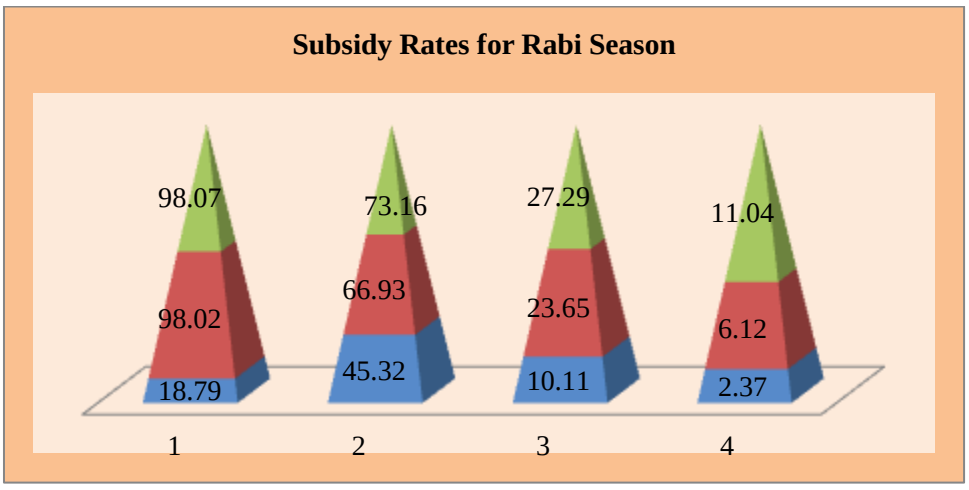


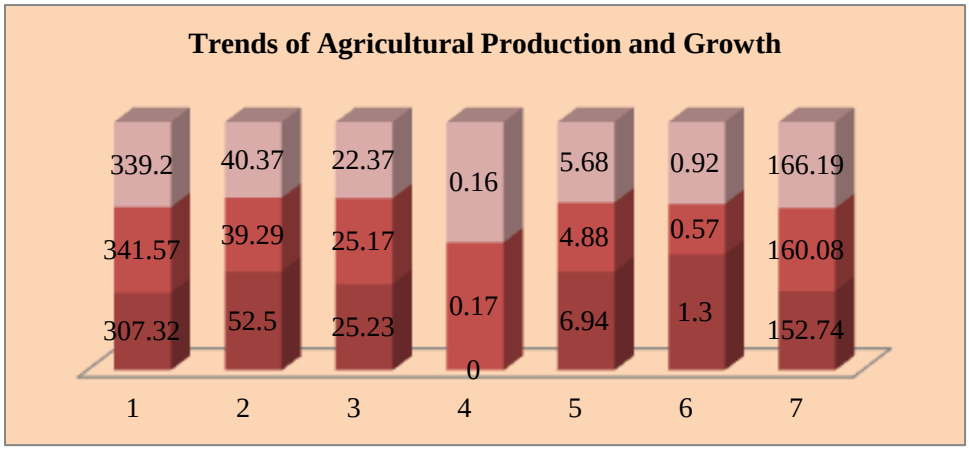
Table No. 4
Trends of Agricultural Production and Growth

Crops	Rate (2021-22)	Rate (2022-23)	Rate (2023-24)
Wheat	307.32	341.57	339.20
Paddy	52.50	39.29	40.37
Jowar	25.23	25.17	22.37
Bajra	0.00	0.17	0.16
Groundnut	6.94	4.88	5.68
Sunflower	1.30	0.57	0.92
Pulses	152.74	160.08	166.19

Source: Ministry of Agriculture and Farmers Welfare, Govt. of India, 2024

Table No. 4 shows the graph of production and growth in agriculture sector. Various crops such as wheat, sorghum, millet, pulses, and sunflower have been recorded in descending and ascending order. It has reviewed the crop production potential

and growth in agriculture sector during the period 2021-22 to 2023-24.



Cultivation of Sugarcane Crop:

Sugarcane is a widely grown crop in India. It is a tall perennial grass of the genus and can grow in warm temperate or tropical climates. India is the largest consumer of sugar in the world. And sugarcane, being one of the main sources of sugar, is one of India's important commercial crops. Suitable climate and suitable soil are basic requirements for cultivation of any crop. So, let's get to it from the very beginning. Productivity of sugarcane is highest in tropical climates. Considering the soil, sugarcane can grow well on a wide variety of soils. But the ideal soil would be well-drained, deep and loamy with adequate water holding capacity. Insufficient rainfall can lead to drought, making crop failure more common. Climate change has increased the frequency and extent of droughts in India. (Tipe, Morphometric Analysis of Watershed by Using Geospatial Technology: A Case Study of Padi Village (South Goa), 2018)

Environment and Agricultural Productivity:

A different environment of agriculture has been created. It includes land, air, water, plants, insects, etc. These various factors are related to the agricultural business, so the environment is required to sustain the products and productivity for a long time. Farmers get the maximum benefit from the environment while doing agriculture because agriculture depends on the environment. (Tipe, A Geographical Study of growth of populatio of solapur district, 2011) Therefore, farmers have to consider the environment while making decisions related to the future. Because the environment changes every year in that season. Natural resources should be used very carefully and properly to maintain the balance of the environment.

Natural Resources and Development:

Various resources like land, water and minerals should be used in a proper way during the life of human being; only then the agricultural environment will be in balance in the future. In the traditional way, when the farmer used to farm, he reduced the use of chemical fertilizers and used organic fertilizers to a large extent. Farmers require maximum capital to use chemical fertilizers but farmers require minimum capital to use organic fertilizers. The number of products produced from organic farming may be less but maximum products can be obtained by using chemical fertilizers. Physical health deteriorates due to chemical fertilizers while the use of products produced by organic fertilizers sustains health. (Tipe, Temporal Changes of Landuse-Landcover Pattern In Pune City and Area Around – A Geoinformatics Techniques, 2018)

Organic Farming and Fertilizers:

Products produced using organic fertilizers do not cause any kind of disease. Due to the large amount of chemical fertilizers used, more than 30 % of the chemical fertilizers are wasted and the nation is suffering huge losses. As chemical fertilizer companies are subsidized by the central government, they get compensation but incur huge costs to the farmers. To meet the growing population's need for food grains; farmers have started using modern methods of using chemical fertilizers instead of traditional methods to increase the productivity of agriculture. Due to this modern system farmers require maximum capital and a farmer with less capital cannot produce more.

Conclusion:

India's progress from a food security point of view and the current scenario requires constant change in the agriculture sector to meet the changing needs of consumers as well as climate challenges. Farmers need to get proper guidance for innovative and sustainable farming to market organic farming while boosting the Indian economy. The environmental impact of agriculture is the impact that different agricultural practices have on the ecosystems around them, and how those impacts can be traced back to those practices. (Tipe, A Spatial Organization Of Settlements In Solapur District (Maharashtra), 2011) The environmental impact of agriculture varies widely depending on the practices adopted by farmers and the scale of study.

Environment is a collective entity of all the physical, chemical and biological factors that affect an organism or ecosystem population and determine their form, life and survival. The environment is that which is connected with every living being.

References:

1. DR. H. B. Tipe, Santosh P. Mane, (2022) "Farm Pond and Its Progress in Maharashtra State, India", Sanshodhak ISSN No. 2394-5990, Vol-11, Issue -4, Pp-114-119
2. DR. H. B. Tipe, Sandeep S. Chendkapure, (2022) "Status and Trends of Air Quality of Solapur City", Sanshodhak, ISSN- 2394-5990, Vol-11, Issue-4, Pp-90-95
3. DR. H. B. Tipe, Santosh P. Mane, (2022) "A Study on Financial Analysis and Performance of Agricultural Production System of Selected Commodities in Maharashtra" ISSN No. 2394-5990, Sanshodhak ,Vol-11, Issue -13, Pp-331-334
4. DR. H. B. Tipe, Sandeep S. Chendkapure, (2022), "Study of Noise Level during Ganesh Festival in Solapur City" , International Journal of Food and Nutritional Sciences (IJFANS), ISSN 2320-7876, Volume.11, Issue13, Volume-11, Issue-13, Pages -395-398,
5. DR. H. B. Tipe, (2019)"Dr. B. R. Ambedkar's Thoughts on Agricultural Geography", Golden Research Thoughts, ISSN: 2231-5063, Pp-1-3
6. DR. H. B. Tipe, (2018), "Study of Tourist Facilities at Osmanabad in Osmanabad District" RESEARCH JOURNEY, ISSN :2348-7143 Volum- 80 Issue-B, Pp-199-200
7. DR. H. B. Tipe, (2018), "Morphometric Analysis of Watershed by Using Geospatial Technology: A Case Study of Padi Village (South Goa)", Reviews of Literature, ISSN: 2347-2723, Pp-1-5, ISSN: 2347-2723
8. DR. H. B. Tipe, (2018), "Temporal Changes of Landuse-Landcover Pattern In Pune City and Area Around – A Geoinformatics Techniques", Aarhat Multidisciplinary International Education Research Journal (AMIERJ), ISSN- 2278-5655 Pp-177-183
9. DR. H. B. Tipe, (2011), "Optimal Path for Tourist Places: A Case Study of Aurangabad Municipal Corporation By Using GIS and Remote Sensing Technology", Contemporary Research In India, ISSN- 319-5118, Volume-1, Issue-4, Pp-1-8
10. DR. H. B. Tipe, (2011), "A Spatial Organization Of Settlements In Solapur District (Maharashtra)", Research Link ISSN-0973-1628, Volume-IX, Issue-3, Pp-77-79
11. DR. H. B. Tipe, (2011), "A Geographical Study of Growth of Populatio of Solapur District", Research Link ISSN- 0973-1628, Volume-75, Issue-9(4), Pp-97-99
12. *DR. H. B. Tipe, (2017),* "Spatio-Temporal Analysis Of Landholdings In Solapur District (Maharashtra)", Neo Geographia ISSN- 319-5118, Pp-107 - 113
13. Manuja Bhaskar Sonar, DR. H. B. Tipe (2019), "Spatio-Temporal Analysis of Land Holdings in Osmanabad District (Maharashtra)" RESEARCH JOURNEY, ISSN :2348-714, Volume-133, Issue-2, Pp-196-202
14. DR. H. B. Tipe, (2018) "Study of Tourist Facilities At Naldurg Fort in osmanabad District" RESEARCH JOURNEY, ISSN :2348-714, Vol-80, Issue -B, Pp-199-202
15. Santosh P. Mane, DR. H. B. Tipe, Dr. F. M. Nadaf (2022), "A Case Study of Irrigation Effect on Agricultural Productivity in Pandharpur Tehsil" International Journal of Food and Nutritional Sciences (IJFANS), E-ISSN: 2319-1775, Volume-11, Issue-11, Pages-184-189
16. DR. H. B. Tipe, (2018), "Study of Tourist Facilities at Osmanabad in Osmanabad District" RESEARCH JOURNEY, ISSN :2348-714,Volum- 80 Issue-B, Pp-199-200
17. Food and Agriculture Organization of the United Nations (2023), Environmental Sustainability in Agriculture, pp. 32-37.
18. Patil et. al. (2023), Agro-ecological approach to combat climate change impact, pp. 13-16.
19. Phatak et. al. (2023), Reducing carbon emissions from agriculture for environmental 48 securities, pp. 48-52.
20. Dubay et. al. (2023), Alternate crops for sustainable food systems: A potential 61 role in SDGs, pp. 61-65.

21. ADB Institute (2023), Climate-Smart Agriculture: Adoption, Impacts, and Implications for Sustainable Development, pp. 1-6.
22. Patil (2020), Economic Analysis of Agricultural Sustainability in Satara District of Maharashtra, pp. 12-23.(2020), Agricultural Development and Land Use Change in India: A Scenario Analysis of Trade-Offs Between UN Sustainable Development Goals, pp. 63-67.