Cosmos Multidisciplinary Research E-Journal
Online Available at www.cmrj.in
Recognized International Peer Reviewed Journal
Impact Factor 5.3
ISSN No. 2456-1665

ORGANIC AGRICULTURE IN INDIA: A GEOGRAPHICAL ANALYSIS

Dr.Madhav Rajpange
Departmen of Geography
Anandrao Dhonde Alias Babaji Mahavidyalaya,
Kada, Beed -414202

Abstract:

Organic agriculture is gaining significance in India due to its environmental sustainability, economic benefits, and consumer demand for chemical-free food. This research examines the geographical distribution of organic farming in India, focusing on regional variations, policy impacts, and challenges faced by farmers. The study employs spatial analysis, case studies, and statistical data to assess the growth trends and constraints of organic agriculture. The findings indicate that while organic farming is expanding, several infrastructural and policy-related hurdles remain.

Keywords: *Organic farming, sustainable agriculture, geographical analysis, policy impact, regional distribution*

Introduction:

Agriculture remains the backbone of the Indian economy, providing employment to a significant portion of the population. However, the increasing use of chemical fertilizers and pesticides has led to soil degradation, biodiversity loss, and health issues. Organic agriculture, which relies on natural inputs and sustainable farming practices, has emerged as a viable alternative. This study explores the spatial distribution of organic farming in India, examining regional patterns, challenges, and policy interventions.

The demand for organic produce is increasing, both in India and globally, as more people seek healthier, safer food options. This surge in demand presents a timely opportunity for farmers, consumers, and the environment. India leads the world in the number of organic farmers and ranks ninth in terms of the area under organic cultivation. Sikkim became the first state globally to go fully organic, and other states like Tripura and Uttarakhand are setting similar goals. The Northeast, traditionally organic, uses far fewer chemicals compared to the rest of the country.

However, despite these advancements, the agricultural sector in Maharashtra faces significant challenges. In 2021 alone, 2,498 farmers in the state tragically took their own lives, a reflection of the severe distress faced by the farming community. In 2020, 2,574 farmers in debt also died by suicide. Despite government loan waiver schemes and other support measures, many farmers continue to struggle with mounting debt and economic instability. Regions like Aurangabad and Nagpur have seen alarming suicide rates among farmers. This ongoing crisis highlights the need for sustainable farming practices like organic agriculture, which could offer farmers a more resilient, eco-friendly alternative to conventional methods.

Objectives :

- To analyze the geographical distribution of organic farming in India.
- To assess the role of government policies in promoting organic agriculture.
- To identify key challenges faced by organic farmers
- .To evaluate the socio-economic impact of organic farming on rural livelihoods

Hypothesis:

- Organic farming is concentrated in specific regions due to favorable climatic and socio-economic factors.
- Government policies and incentives significantly influence the expansion of organic agriculture.
- The adoption of organic farming improves rural livelihoods and environmental sustainability.

Methodology:

Descriptive research is considered the most appropriate for the present study. Hence the study has been descriptive type. The research problem hypothesis and interview schedule all have been formulated and framed accordingly. The Secondary data were collected from leading agricultural journals, articles, and press news from leading local regional language journals. Magazines and newspapers about organic farming practice further the data were collected from the Maharashtra state agricultural university library and agro exhibitions conducted by a government

Discussion:

Organic farming in India has seen substantial growth, with states like Sikkim achieving 100% organic status. Other states, such as Madhya Pradesh, Rajasthan, and Maharashtra, have large areas under organic cultivation. However, challenges such as certification costs, market accessibility, and lower initial yields hinder widespread adoption. Government initiatives play a crucial role, but more infrastructure support and awareness campaigns are needed to sustain growth.

The Government of India has implemented the National Programme for Organic Production (NPOP) in the year 2001. The national programme involves the accreditation programme for certification agencies, norms for organic production, promotion of organic farming etc. States like; Uttaranchal, Karnataka, Madhya Pradesh, Maharashtra, Gujarat, Rajasthan, Tamil Nadu, Kerala, Nagaland, Mizoram, Sikkim have been promoting organic farming. Organic produces are increasingly preferred by developed countries and major urban centers in India. Huge demand for Indian organic products especially tea, coffee, cotton etc. exists in the international market. A special class of consumers is also emerging in the domestic market who requires quality food. The global trade during 2014-15 was USD 60 billion (Rs. 3,60,000 crores) and may touch USD 100 billion (Rs. 6,00,000 crores) within the next five years. Trade in India may reach Rs. 5000-6000 crore, which is about 1% of the global trade. The International Competence Centre for Organic Agriculture

(ICCOA) estimated that the domestic market for organic products in the year 2011-12 was Rs. 300 crore and grew to Rs. 600 crore in 2012-13 i.e. a growth rate of 100%. Organic agricultural export market is one of the major drivers of organic agriculture in India. India exports 31 organic products. It is estimated that more than 85% of total organic production, excluding wild herbs from Uttar Pradesh and Madhya Pradesh, is exported. India is best known as an exporter of organic tea and also has great export potential for many other products. Other organic products for which India has a niche market are spices and fruits. There is also good response for organic rice, vegetable, coffee, cashew, oil seed, wheat and pulses. Among the fruit crops bananas, mangos and oranges are the most preferred organic products. Following table focus that the state wise area under organic farming area is continuously increasing.

State wise Farm area (excluding Forest Area) under Organic Certification during 2014-15 to 2019-20

State Name	Organic Area (in Ha)	
	2014-15	2019-20
Andaman & Nicobar Islands	321.28	451.20
Andhra Pradesh	12325.03	13540.05
Arunachal Pradesh	71.49 4	80.60
Assam	2828.26	3240.50
Bihar	180.60	245.44
Chhattisgarh	4113.25	4634.88
Delhi	0.83 8	0.97
Goa	12853.94	14755.50
Gujarat	46863.89	49765.55
Haryana	3835.78	4650.85
Himachal Pradesh	4686.05	5340.12
Jammu & Kashmir	10035.38	13483.41
Jharkhand	762.30	1285.61
Karnataka	30716.21	40336.88
Kerala	15020.23	16035.45
Lak shadweep	895.91 17	1183.72
Madhya Pradesh	232887.36	244889.66
Maharashtra	85536.66	87433.45
Manipur	0 20	0 47

Meghalaya	373.13	476.45
Mizoram	0 22	0 45
Nagaland	5168.16	6441.34
Odisha	49813.51	50681.33
Pondicherry	2.84	2.84
Punjab	1534.39	1644.50
Rajasthan	66020.35	76044.80
Sikkim	60843.51	65747.50
Tamil Nadu	3640.07 29	3880.77
Tripura	203.56 30	244.67
Uttar Pradesh	44670.10	46740.10
Uttaranchal	24739.46 32	26775.87
West Bengal	2095.51	3897.65
T0TAL	723039.00	723039.00

Source: APEDA (2013-14 & 2022-23

Minimum requirements for Organic Farming

In organic farming system, certain minimum requirements are to be met to fulfill its objectives. Then only the farm is certified as organic

Conversion:

The time between the start of organic management and certification is called conversion period. The farmers should have a conversion plan prepared if the entire field is not converted into organic at a time. In that case, it is necessary to maintain organic and nonorganic fields separately. In the long run the entire farm including livestock should be converted into organic. The conversion period is decided based on the past use of the land and ecological situation. Generally, the conversion period is two years for annual crops and three years for perennial crops. However, the conversion period can be relaxed based on the verification by certification agency if the requirements are fully met. During conversion, steps should be taken to maintain bio-diversity etc.

Mixed farming:

Animal husbandry, poultry, fisheries, etc. should be practiced in addition to agricultural farming. Shifting cultivation is not allowed. Integrated organic farming system model is being developed at Meghalaya and Coimbatore centre's under Network Project on Organic Farming

Cropping Pattern:

Crop rotation should be followed if annual crops are grown. Intercropping should be practiced when perennial crops are grown. Crop rotation should cover green manure as well as fodder crops. In case of perennial crops, cover crops like Kolinji (Tephrosia purpurea) should be grown to protect the soil. Monocropping should be avoided.

Planting:

Species and varieties cultivated should be adapted to soil and climatic condition and resistant to pests and diseases. Seeds/Planting materials should be procured from organic source. If not available, chemically untreated seeds/planting materials can be used one time. Use of genetically engineered seeds or planting materials such as tissue culture, pollen culture, transgenic plants is not allowed. v) Manurial Policy:

Soil fertility should be maintained/enhanced through raising green manure crops, leguminous crops etc. The residues of plants after harvest should be incorporated into the soil as far as possible. Bio-degradable materials of microbial, plant or animal origin shall be applied as manures. (eq. compost, vermicompost, farm yard manure, sheep penning etc.) Use of synthetic/chemical fertilisers is not permitted. The mineral based materials like rock phosphate, gypsum, lime, etc. can be applied in limited quantities when there is absolute necessity

Prospects of Organic Farming in India:

Environmental Sustainability:

India is increasingly facing environmental degradation, including soil depletion, water pollution, and biodiversity loss. Organic farming is an environmentally friendly alternative that promotes soil health, conserves water, and reduces dependency on chemical inputs. With proper management, organic farming can restore soil fertility and improve water retention, especially in drought-prone regions.

Health Benefits:

With rising awareness of the adverse health effects of chemical pesticides and fertilizers, there is a growing demand for organic products. Organic farming reduces exposure to harmful chemicals, offering consumers healthier food options. This demand is especially significant in urban areas where consumers are more health-conscious.

Economic Viability and Export Potential:

The global organic food market is expanding, and India, with its vast agricultural base, has significant export potential. By promoting organic farming, India can tap into the growing international demand for organic products. Additionally, organic farming may help improve farmers' incomes through higher market prices for organic produce.

Climate Resilience:

Organic farming has been shown to increase the resilience of crops to climatic extremes such as droughts, floods, and temperature variations. In India, regions such as the western Himalayas, northeastern states, and parts of Kerala and Karnataka, where weather patterns

are increasingly erratic, can benefit from the resilience offered by organic farming techniques.

Regional Variations in Organic Farming in India:

India's diverse geography and climate play a significant role in determining the success and challenges of organic farming in different regions.

Northern and Western India (Himalayan Region, Rajasthan, Punjab):

The Himalayan region, particularly in states like Himachal Pradesh, Uttarakhand, and Jammu & Kashmir, offers favorable conditions for organic farming due to the relatively untouched landscapes and traditional farming practices. However, the challenge remains in scaling up organic farming and finding market access for these remote areas.

In Rajasthan, organic farming is gaining popularity in arid regions, where traditional methods like rainwater harvesting and minimal irrigation align with organic principles. However, issues like water scarcity and a lack of technical support remain critical barriers.

Southern India (Kerala, Karnataka, Tamil Nadu):

Southern India, especially Kerala, has a strong tradition of organic farming due to the state's emphasis on sustainable agriculture. The favorable tropical climate and an educated, progressive farming community have allowed organic farming to flourish here. Nevertheless, issues related to soil health degradation and commercial scale adoption still need to be addressed.

Eastern India (West Bengal, Odisha, Bihar):

Eastern India is still in the nascent stages of organic farming. The rich soils of this region are well-suited for organic agriculture, but farmers face challenges related to market infrastructure, input availability, and limited technical knowledge. The demand for organic products is growing in urban centers like Kolkata, but the supply chain is underdeveloped.

Problems and Challenges in Organic Farming in India:

High Initial Costs:

The transition from conventional to organic farming often requires substantial investments in training, certification, and infrastructure development. The initial cost of organic inputs (e.g., organic seeds, compost) is higher than conventional alternatives, making it financially burdensome for small-scale farmers.

Lack of Training and Knowledge:

Many farmers lack the necessary knowledge about organic farming practices, including pest management, crop rotation, and soil health. This knowledge gap hinders the effective adoption of organic farming techniques.

Market Access and Infrastructure:

The lack of an established infrastructure for organic product marketing is a significant barrier. Organic products often face challenges in finding a steady consumer base, especially in rural and semi-rural areas where awareness is low. Additionally,

transportation and storage facilities for organic produce are underdeveloped, which affects shelf life and sales.

Policy and Institutional Support:

Although the Indian government has made efforts to promote organic farming through various schemes and subsidies, the lack of a coherent, long-term policy on organic agriculture continues to undermine its growth. Inadequate extension services, certification procedures, and the slow pace of research on organic farming contribute to this problem.

Certification Issues:

The certification process for organic farming in India is often cumbersome and expensive, especially for small and marginal farmers. This has resulted in limited participation in organic certification programs, hindering the growth of organic agriculture at the grassroots level.

Recommendations for Promoting Organic Farming in India:

Improved Training and Education:

Training programs for farmers on organic farming practices should be expanded, with a focus on regional diversity in crop patterns, climate, and soil health. Agricultural universities and extension services should play a crucial role in disseminating knowledge.

Strengthening Market Linkages:

A robust supply chain that connects organic farmers with consumers is essential for the success of organic farming. Government and private sector initiatives should focus on establishing organic markets, certification systems, and distribution channels.

Incentives for Organic Certification:

Subsidies and incentives should be provided for organic certification, especially for small and medium-sized farmers. Streamlining the certification process will also help increase participation.

Research and Policy Support:

The Indian government should invest in research on organic farming practices, particularly in relation to pest management, soil health, and crop yield. Policies that encourage sustainable farming and provide financial support for transitioning to organic agriculture should be formulated.

Conclusion:

The study concludes that organic agriculture in India is geographically uneven, with significant progress in some states while others lag due to policy gaps and infrastructure deficiencies. Strengthening farmer education, certification processes, and market linkages can enhance organic farming's success. Future research should focus on technological innovations and localized solutions to improve organic farming practices across diverse agro-climatic zones in India. Organic farming in India holds immense potential, both in terms of environmental sustainability and economic development. However, the adoption

of organic farming faces several challenges that need to be addressed at the policy, institutional, and grassroots levels. A region-specific approach, tailored to the unique needs of farmers in different parts of the country, is essential for fostering the growth of organic farming. With the right support systems, organic farming can contribute to the long-term sustainability of Indian agriculture, ensuring the well-being of farmers and consumers alike.

References:

1. **Sharma, R. (2018).:** "Organic Farming in India: A Sustainable Approach to Agriculture." International Journal of Agricultural Science and Research, 8(3), 21-31.

2. Meena, P., & Yadav, P. (2020). : "Challenges and Prospects of Organic Farming in India." Indian Journal of Ecology, 47(1), 98-105.

3. Gupta, A. (2019). : "The Role of Organic Farming in Enhancing Agricultural Sustainability in India." Journal of Agricultural Studies, 7(2), 22-39.

4. Sikkim Organic Mission. (2020). "Sikkim: A Model State for Organic Farming."

5. Nair, P. (2021). : "Regional Variations in Organic Farming Practices: A Study of India." Environmental Sustainability Journal, 4(2), 50-68.

6. Singh, R., & Sharma, A. (2021).: "Organic Farming in India: Opportunities and Challenges," Indian Journal of Agricultural Economics

7. Government of India, Ministry of Agriculture & Farmers Welfare. (2023). Annual Report on Organic Farming.

8. International Federation of Organic Agriculture Movements (IFOAM). (2022). The World of Organic Agriculture.