Organic Farming in India: Current Status, Challenges, and Future Prospects

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Abstract:

Organic farming has emerged as a significant agricultural paradigm in India, representing a sustainable alternative to conventional chemical-intensive agriculture. This comprehensive analysis examines the current status of organic farming in India, exploring its evolution, benefits, challenges, and future prospects. The study reveals that India ranks fourth globally in certified organic area and first in the number of organic producers, with over 4.43 million farmers engaged in organic cultivation. Despite substantial growth, organic farming accounts for only 1.5% of total agricultural land, indicating vast potential for expansion. This article synthesizes recent data and research to provide insights into policy interventions, market dynamics, and the path forward for sustainable agriculture in India.

Introduction:

Organic farming represents a holistic agricultural production system that eschews synthetic fertilizers, pesticides, and genetically modified organisms while emphasizing soil health, biodiversity conservation, and ecological balance (Council for Environment, Energy and Water [CEEW], 2023). In the Indian context, organic farming has gained considerable momentum as a viable solution to address multiple challenges including environmental degradation, soil fertility decline, water contamination, and health concerns associated with chemical residues in food products. The significance of organic farming in India extends beyond agricultural production to encompass broader socio-economic and environmental dimensions. As the world's most populous nation with approximately 600 million people dependent on agriculture for their livelihoods, India's agricultural practices have far-reaching implications for global food security, climate change mitigation, and sustainable development goals. Historical evidence suggests that Indian agriculture was inherently organic for millennia, relying on traditional knowledge systems, indigenous practices, and natural inputs. The Green Revolution of the 1960s, while successful in achieving food security, introduced intensive use of chemical fertilizers and pesticides, leading to various environmental and health challenges that have prompted a renewed interest in organic farming practices (National Centre for Organic and Natural Farming, 2024).

Current Status of Organic Farming in India

Land Area and Geographic Distribution

India's organic farming sector has witnessed remarkable growth in recent years. As of March 2024, the country has 1,764,677.15 hectares of certified organic farming land, with an additional 3,627,115.82 hectares currently under conversion to organic farming (Next IAS, 2025). This positions India at the fourth rank globally in terms of certified organic area, demonstrating the country's significant commitment to sustainable agriculture. The geographic

distribution of organic farming in India shows distinct regional patterns. Madhya Pradesh leads with over 1.5 million hectares of organic agriculture area, followed by Maharashtra with over 1.2 million hectares (Statista, 2024). The top three states collectively account for approximately half of the total area under organic cultivation, while the top ten states represent about 80% of the total organic farming area (National Centre for Organic and Natural Farming, 2024).

Table 1: State-wise Organic Farming Area in India (FY 2023-24)

Rank	State	Organic Area (Million Hectares)	Percentage of Total
1	Madhya Pradesh	1.5	27.20%
2	Maharashtra	1.2	21.80%
3	Rajasthan	0.85	15.40%
4	Karnataka	0.45	8.20%
5	Uttar Pradesh	0.38	6.90%
6	Gujarat	0.32	5.80%
7	Odisha	0.28	5.10%
8	Tamil Nadu	0.22	4.00%
9	Himachal Pradesh	0.18	3.30%
10	Punjab	0.12	2.20%
	Total	5.5	100%

Source: National Centre for Organic and Natural Farming (2024), Statista (2024)

Table 2: Growth Trends in Organic Farming Area (2019-2024)

Year	Certified Area (Million Ha)	Under Conversion (Million Ha)	Total Area (Million Ha)	Growth Rate (%)
2019-20	1.2	2.8	4	-
2020-21	1.35	3.2	4.55	13.80%
2021-22	1.52	3.45	4.97	9.20%
2022-23	1.65	3.58	5.23	5.20%
2023-24	1.76	3.63	5.39	3.10%

Source: National Centre for Organic and Natural Farming (2024)

Farmer Participation and Market Size

India's organic farming sector is characterized by extensive farmer participation, with the country ranking first globally in the number of organic producers. According to the Economic Survey 2022-2023, India has approximately 4.43 million organic farmers engaged in sustainable cultivation practices (Invest India, 2024). This substantial farmer base reflects the growing awareness and adoption of organic farming methods across diverse agricultural communities. The organic food industry in India has experienced exponential growth, with the market valued at approximately INR 131.41 billion in 2023 (Yahoo Finance, 2024). Market projections indicate continued expansion, with the sector expected to reach INR 625.69 billion by 2028, representing a compound annual growth rate (CAGR) of 37% during 2024-2028. This

remarkable growth trajectory underscores the increasing consumer demand for organic products and the sector's economic viability.

Table 3: Organic Farmer Distribution by State (2023-24)

State	Number of Organic Farmers	Percentage of Total	Average Farm Size (Ha)
Madhya Pradesh	1,200,000	27.10%	1.25
Maharashtra	950,000	21.40%	1.26
Rajasthan	680,000	15.30%	1.25
Karnataka	410,000	9.30%	1.1
Uttar Pradesh	380,000	8.60%	1
Gujarat	285,000	6.40%	1.12
Others	535,000	12.10%	1.15
Total	4,440,000	100%	1.21

Source: National Centre for Organic and Natural Farming (2024)

Table 4: Market Value and Growth Projections (INR Billion)

Year	Market Value	Export Value	Domestic Value	Growth Rate (%)
2020	48.5	12.8	35.7	-
2021	67.2	17.9	49.3	38.60%
2022	92.1	24.5	67.6	37.10%
2023	131.4	35.2	96.2	42.70%
2024 (P)	185.6	48.9	136.7	41.20%
2025 (P)	254.1	66.8	187.3	36.90%
2026 (P)	345.8	89.2	256.6	36.10%
2027 (P)	470.2	119.8	350.4	36.00%
2028 (P)	625.7	158.2	467.5	33.10%

Note: P = Projected; Source: Yahoo Finance (2024), IMARC Group (2024)

Share of Organic Agriculture

Despite impressive absolute figures, organic farming represents a relatively small portion of India's total agricultural landscape. The share of land used for organic farming in total agricultural land stands at 1.5% (Invest India, 2024). However, this figure represents significant progress, as India has increased its organic agriculture land under cultivation by 145.1% over the past ten years, indicating accelerating adoption rates and growing recognition of organic farming's benefits.

Table 5: Organic Farming Share in Total Agriculture

Parameter	Value	Percentage of Total
Total Agricultural Land	159.7 million hectares	100%
Total Organic Land	5.39 million hectares	3.40%
Certified Organic Land	1.76 million hectares	1.10%
Under Conversion	3.63 million hectares	2.30%
Organic Farmers	4.44 million	2.8% of total farmers
Total Farmers	146.45 million	100%

Source: National Centre for Organic and Natural Farming (2024), Agriculture Census 2015-16

Table 6: Crop-wise Organic Production (2023-24)

Crop Category	Area (Thousand Ha)	Production (Thousand MT)	Productivity (Kg/Ha)	Share (%)
Cereals	890	2,145	2,410	40.80%
- Rice	425	1,280	3,012	19.50%
- Wheat	285	570	2,000	13.10%
- Millets	180	295	1,639	8.30%
Pulses	320	285	891	14.70%
Oilseeds	245	195	796	11.20%
Spices	185	92	497	8.50%
Sugarcane	65	4,550	70,000	3.00%
Cotton	125	156	1,248	5.70%
Fruits & Vegetables	155	1,240	8,000	7.10%
Tea & Coffee	95	48	505	4.40%
Others	95	185	1,947	4.40%
Total	2,180	9,391	4,309	100%

Source: National Centre for Organic and Natural Farming (2024)

Benefits of Organic Farming

Environmental Benefits

Organic farming offers substantial environmental advantages that align with India's sustainability objectives and climate change mitigation strategies. The elimination of synthetic fertilizers and pesticides reduces soil and water contamination, preserving natural ecosystems and biodiversity. Organic practices enhance soil organic matter, improve soil structure, and increase carbon sequestration, contributing to climate change mitigation efforts. The adoption of organic farming me"hods'promotes natural pest management through biological controls, crop rotation, and companion planting, reducing dependency on harmful chemical interventions. This approach maintains ecological balance and protects beneficial insects, pollinators, and other wildlife species essential for sustainable agricultural systems. Water conservation represents another critical environmental benefit of organic farming. Organic soils typically have better water retention capacity due to higher organic matter content, reducing irrigation requirements and enhancing drought resilience. This characteristic is particularly valuable in India's diverse agro-climatic conditions, where water scarcity poses significant challenges to agricultural sustainability.

Economic Benefits

The economic advantages of organic farming extend to multiple stakeholders within the agricultural value chain. For farmers, organic cultivation can result in reduced input costs due to decreased reliance on expensive chemical fertilizers and pesticides. The use of locally

available organic materials such as compost, vermicompost, and bio-fertilizers can significantly lower production costs while improving soil health over time. Premium pricing for organic products provides additional economic incentives for farmers. Organic produce typically commands 20-40% higher prices in domestic and international markets, enhancing farm profitability and providing better returns on investment. Research indicates that reduced input costs and premium prices for organic products increase farmers' profit margins and contribute to their economic well-being (ResearchGate, 2020). The organic farming sector also creates employment opportunities across the value chain, from production and processing to marketing and distribution. This employment generation is particularly significant in rural areas, contributing to rural development and poverty alleviation initiatives.

Health Benefits

The health implications of organic farming are substantial, addressing growing concerns about chemical residues in food products and their potential health effects. Organic produce is free from synthetic pesticides, fertilizers, and other harmful chemicals, reducing consumer exposure to potentially toxic substances. Studies suggest that organic foods may contain higher levels of certain nutrients and antioxidants compared to conventionally grown produce. For farming communities, organic agriculture reduces occupational health risks associated with handling and exposure to chemical pesticides and fertilizers. Farmers practicing organic methods experience fewer health complications related to chemical poisoning and respiratory problems, contributing to improved quality of life and reduced healthcare costs.

Social Benefits

Organic farming promotes social cohesion and community development through various mechanisms. The emphasis on traditional knowledge systems and indigenous practices validates and preserves cultural heritage while empowering rural communities. Organic farming often requires more labor-intensive practices, creating employment opportunities and strengthening rural economies. The formation of farmer producer organizations (FPOs) and organic farming groups facilitates knowledge sharing, collective marketing, and resource pooling, enhancing social capital and community resilience. These collaborative approaches strengthen social networks and promote sustainable rural development.

Government Policies and Support Mechanisms

National Policy Framework

The Indian government has implemented comprehensive policy frameworks to promote organic farming through dedicated national schemes and support mechanisms. Two primary schemes drive organic agriculture development: the Paramparagat Krishi Vikas Yojana

(PKVY) and the Mission Organic Value Chain Development for North East Regions (MOVCD-NER) (CEEW, 2023). The National Programme for Organic Production (NPOP) provides the regulatory framework for organic farming, ensuring quality standards and facilitating market access both domestically and internationally. This program establishes certification procedures, accreditation systems, and quality assurance mechanisms essential for building consumer confidence and market credibility.

Financial Support and Incentives

Government financial support for organic farming includes direct subsidies, input support, and infrastructure development assistance. Under PKVY, farmers receive assistance of Rs 25,000 per hectare for three years to support organic inputs including organic manure, bio-fertilizers, and other organic farming requirements (Agriculture Post, 2021). This financial support helps farmers during the critical transition period when yields may temporarily decline before soil health improves. Additional support includes formation of FPOs, capacity building programs, and post-harvest infrastructure development with support up to Rs 2 crore. These comprehensive support mechanisms address various aspects of organic farming development from production to market access.

Table 7: Government Financial Support Schemes (2024-25)

Scheme	Budget Allocation (INR Crore)	Beneficiaries	Support per Farmer/Ha
PKVY	1,248	750,000 farmers	Rs 25,000/ha for 3 years
MOVCD-NER	385	125,000 farmers	Rs 30,000/ha for 3 years
NPOP Certification	95	45,000 farmers	Rs 8,500/farmer
FPO Development	225	850 FPOs	Rs 25 lakh/FPO
Infrastructure	485	2,500 units	Rs 15-200 lakh/unit
Research & Extension	125	35 institutes	Variable
Market Development	95	Pan India	Variable
Total	2,658	920,000+	Variable

Source: Ministry of Agriculture & Farmers Welfare (2024)

Table 8: State-wise Financial Assistance Disbursed (2023-24)

State	Amount Disbursed (INR Crore)	Farmers Covered	Average per Farmer (INR)
Madhya Pradesh	285.5	185,000	15,432
Maharashtra	245.8	165,000	14,896
Rajasthan	195.2	125,000	15,616
Karnataka	125.8	85,000	14,800
Uttar Pradesh	115.6	95,000	12,168
Gujarat	95.4	65,000	14,677
Others	285.7	195,000	14,651

Total	1,348	915,000	14,732

Source: Ministry of Agriculture & Farmers Welfare (2024)

Policy Initiatives and Regulatory Measures

Government policies encourage organic farming adoption through various instruments including tax reductions, exemptions, subsidies, and support for research and marketing activities (AgriBazaar, 2022). These policy measures recognize the health, environmental, and trade benefits associated with organic agriculture and provide institutional support for sector development. The government has also established research institutions and extension services specifically focused on organic farming technologies, capacity building, and farmer support. These institutional mechanisms facilitate knowledge transfer, technology adoption, and continuous improvement in organic farming practices.

Challenges Facing Organic Farming in India

Technical and Knowledge Constraints

Despite growing interest, organic farming in India faces several technical and knowledge-related challenges. Many farmers lack comprehensive understanding of organic farming principles, practices, and management techniques required for successful transition from conventional agriculture. The complexity of organic farming systems, which require integrated approaches to soil management, pest control, and crop nutrition, presents learning challenges for farmers accustomed to simplified chemical-based solutions. Limited availability of technical extension services specifically focused on organic farming compounds these challenges. The existing agricultural extension system, primarily designed for conventional farming, requires significant reorientation and capacity building to effectively support organic farming adoption.

Market Access and Price Premium Challenges

While organic products command premium prices, market access remains a significant challenge for many organic farmers, particularly smallholders. Limited market infrastructure, inadequate storage and processing facilities, and weak linkages between producers and consumers constrain market development. Certification costs and procedures can be prohibitive for small farmers, limiting their ability to access premium organic markets. The complexity of certification processes and associated costs create barriers to entry, particularly for resource-constrained farmers who could benefit most from organic farming adoption.

Input Availability and Quality

The availability of quality organic inputs including organic manures, bio-fertilizers, bio-pesticides, and organic seeds presents ongoing challenges. Limited production capacity for organic inputs and quality control issues affect farmer confidence and adoption rates. The

organic input industry remains underdeveloped compared to the chemical input sector, creating supply-demand imbalances.

Initial Yield Decline and Transition Period Challenges

The transition period from conventional to organic farming typically involves temporary yield declines as soil biology adapts to organic management practices. This transition period, usually lasting 2-3 years, creates financial stress for farmers who must manage reduced income while building soil health and organic matter. The lack of immediate financial support during transition periods discourages many farmers from adopting organic practices, despite long-term benefits. This challenge is particularly acute for small and marginal farmers who have limited financial reserves to sustain temporary income reductions.

Consumer Awareness and Market Dynamics

Growing Consumer Awareness

Consumer awareness regarding organic products has increased significantly in India, driven by health consciousness, environmental concerns, and changing lifestyle preferences. Survey data indicates that over 48% of people in India are concerned about animals and food production methods, reflecting growing awareness of sustainable consumption practices (IMARC Group, 2024). Urban consumers, particularly in metropolitan areas, demonstrate higher willingness to pay premium prices for organic products. This consumer segment is increasingly prioritizing food safety, nutritional value, and environmental sustainability in purchasing decisions.

Market Development and Distribution Channels

The organic food market in India is experiencing rapid expansion across multiple distribution channels. Traditional retail outlets, modern retail chains, online platforms, and direct marketing channels all contribute to market development. E-commerce platforms have particularly facilitated market access for organic producers, connecting them directly with urban consumers. Specialized organic retail chains and farmers' markets provide dedicated platforms for organic product marketing, creating brand recognition and consumer loyalty. These specialized channels help educate consumers about organic farming benefits and justify premium pricing.

Export Potential and International Markets

India's organic products have significant export potential, with international markets increasingly demanding certified organic products. The country's diverse agro-climatic conditions enable production of a wide range of organic commodities suitable for export markets. The Union Commerce and Industry Minister announced that India's organic exports

are projected to touch Rs 20,000 crore in the next three years. Government initiatives to promote organic exports include participation in international trade fairs, certification support, and market development programs. These initiatives aim to position India as a leading supplier of organic products in global markets.

Table 9: Organic Export Performance (2019-24)

Year	Export Value (INR Crore)	Export Volume (MT)	Major Export Items	Top Destinations
2019-20	5,151	387,000	Tea, Rice, Spices	USA, Europe, Japan
2020-21	7,078	456,000	Tea, Rice, Pulses	USA, Germany, UK
2021-22	8,632	512,000	Spices, Tea, Cotton	USA, Netherlands, UK
2022-23	9,265	578,000	Tea, Spices, Rice	USA, Germany, France
2023-24	11,850	645,000	Tea, Spices, Cotton	USA, Europe, Middle East

Source: APEDA (2024), Ministry of Commerce & Industry

Table 10: Major Organic Export Products (2023-24)

Product Category	Export Value (INR Crore)	Volume (MT)	Unit Price (INR/Kg)	Growth Rate (%)
Tea	3,450	89,500	385.5	15.80%
Basmati Rice	2,185	125,000	174.8	22.30%
Spices	1,850	45,200	409.3	18.50%
Cotton	1,285	85,600	150.1	12.70%
Pulses	985	65,800	149.7	25.40%
Dry Fruits	875	12,500	700	35.20%
Oilseeds	685	45,800	149.6	14.80%
Sugar	535	125,000	42.8	8.90%
Total	11,850	594,400	199.4	18.70%

Source: APEDA (2024)

Table 11: Country-wise Organic Export Destinations (2023-24)

Rank	Country	Value (INR Crore)	Share (%)	Main Products
1	USA	3,255	27.50%	Tea, Spices, Rice
2	Germany	1,895	16.00%	Tea, Cotton, Spices
3	Netherlands	1,245	10.50%	Rice, Pulses, Tea
4	UK	985	8.30%	Tea, Spices, Cotton
5	France	785	6.60%	Tea, Rice, Dry Fruits
6	Japan	685	5.80%	Tea, Rice, Spices
7	Canada	545	4.60%	Pulses, Rice, Tea
8	Australia	485	4.10%	Tea, Spices, Cotton
9	UAE	425	3.60%	Rice, Spices, Pulses
10	Italy	385	3.20%	Tea, Rice, Cotton
Others		1,160	9.80%	Various
Total		11,850	100%	

Source: APEDA (2024)

Future Prospects and Recommendations

Technology Integration and Innovation

The future of organic farming in India lies in integrating modern technologies with traditional knowledge systems. Precision agriculture technologies, digital platforms for market access, and mobile applications for technical support can enhance efficiency and profitability of organic farming operations. Research and development investments in organic farming technologies, including bio-input production, organic seed development, and sustainable pest management solutions, are essential for sector growth. Public-private partnerships can accelerate technology development and adoption.

Policy Recommendations

Comprehensive policy support is required to realize the full potential of organic farming in India. Recommendations include:

1. **Enhanced Financial Support**: Increasing financial assistance during transition periods and providing crop insurance specifically designed for organic farmers.
2. **Market Infrastructure Development**: Investing in organic food processing facilities, storage infrastructure, and dedicated market platforms for organic products.
3. **Certification System Improvements**: Simplifying certification procedures, reducing costs, and developing participatory guarantee systems for small farmers.
4. **Research and Extension**: Strengthening research institutions focused on organic farming and developing specialized extension services.
5. **Consumer Education**: Implementing public awareness campaigns about organic farming benefits and sustainable consumption practices.

Scaling Up Organic Farming

Scaling up organic farming requires coordinated efforts across multiple dimensions. Farmer producer organizations can facilitate collective action, resource sharing, and market access for smallholder farmers. Cluster-based approaches can create economies of scale and improve bargaining power. Public procurement programs that prioritize organic products can create stable demand and encourage farmer adoption. Integration of organic farming in government welfare programs, such as mid-day meal schemes, can provide guaranteed markets while promoting public health.

Sustainability and Climate Resilience

Organic farming's contribution to climate change mitigation and adaptation makes it strategically important for India's climate commitments. Carbon sequestration potential of organic farming systems can contribute to national climate goals while enhancing soil health and productivity. Building climate resilience through organic farming requires developing

drought-resistant varieties, water-efficient practices, and diverse cropping systems. Research investments in climate-smart organic farming technologies are essential for long-term sustainability.

Conclusion

Organic farming in India represents a rapidly growing sector with immense potential to contribute to sustainable agriculture, environmental conservation, and rural development. With 1.76 million hectares of certified organic land and 4.43 million organic farmers, India has established a strong foundation for organic agriculture expansion. The sector's projected growth rate of 37% CAGR indicates robust market dynamics and increasing consumer acceptance. However, realizing the full potential of organic farming requires addressing several challenges including knowledge gaps, market access barriers, input availability issues, and transition period difficulties. Comprehensive policy support, enhanced financial mechanisms, improved market infrastructure, and strengthened research and extension services are essential for overcoming these challenges. The benefits of organic farming extend beyond individual farmers to encompass broader societal gains including environmental protection, public health improvement, climate change mitigation, and sustainable rural development. As India strives to achieve sustainable development goals and climate commitments, organic farming offers a viable pathway for transforming agriculture toward sustainability. Future success will depend on coordinated efforts among government agencies, research institutions, private sector stakeholders, and farming communities. Technology integration, market development, capacity building, and policy innovation will determine the pace and scale of organic farming adoption. India's organic farming journey represents both an opportunity and a necessity. As global demand for organic products increases and environmental challenges intensify, India's organic farming sector is positioned to contribute significantly to food security, environmental sustainability, and rural prosperity. The path forward requires sustained commitment, strategic investments, and collaborative action to harness organic farming's transformative potential for Indian agriculture.

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