

An Analysis on the Revival of Organic Farming in India

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Abstract

This paper studies the recent revival of organic farming in India, it analyses its historical roots, environmental and economic benefits, and the challenges farmers face during the change from conventional, inorganic to organic agriculture. It takes insights from ICAR, APEDA, MANAGE data and peer-reviewed papers, as well as primary field insights from agriculture-intensive Indian states, the study also explores yield trends, soil health, market demand, certification barriers, and government interventions. It aims to break down whether organic farming is an expandable and sustainable solution by looking at consumer trends and export potential in India, a country where agriculture supports nearly 60% of the population.

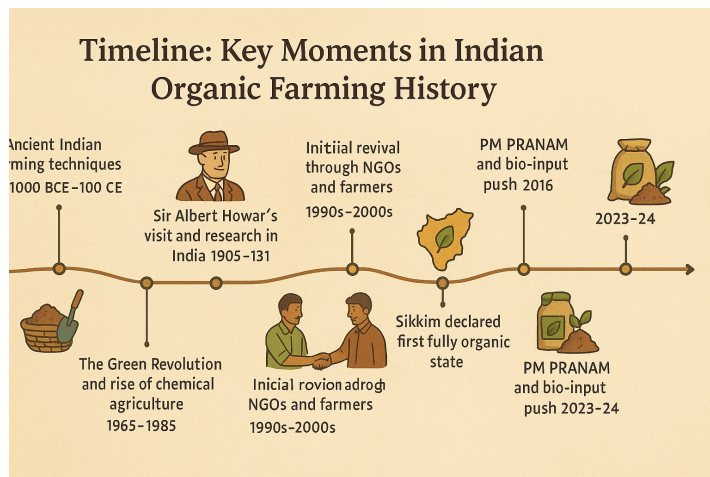
1. Introduction

Organic farming is coming back as a possible alternative to the traditional methods of agriculture in India. It is mainly due to by growing concerns around soil degradation, health risks of consumers from pesticide-heavy crops, and the long-term damage to the lands due to chemical-intensive agriculture. Organic farming was once very widely followed in Indian agriculture, before the Green Revolution shifted the focus to yield-heavy methods. But this revival comes with tough questions: Can organic farming feed a growing population? Can smallholders actually earn enough from it? Does it genuinely improve soil health, biodiversity, and rural livelihoods? This paper explores these questions by taking a close look at India's organic farming landscape by studying its potential, its limitations, and what it could mean for the future of sustainable agriculture.

2. Historical Context and Concept

Ancient texts like the Rigveda, Mahabharata, and Arthashastra talk about ecological agriculture and natural manuring. They describe the use of dung, compost, oil cakes which are widely used in organic farming. All dead matter returns to the soil to nourish life is an idea which shows a deep cultural grasp of closed-loop ecological systems. British botanist Sir Albert Howard, popularly known as the father of organic farming, studied these traditional Indian methods during his time in Pusa, Bihar which he said were far more effective than their European counterparts. His book, *An Agricultural Testament* (1940), helped shape the modern global organic movement.

The Green Revolution of the 1960s made agriculture all about chemical fertilizers, high-yielding varieties (HYVs), and monoculture. While these methods came with its short-term gains in food production and made agriculture a more modern, it was a start for serious issues like soil degradation, groundwater depletion, biodiversity loss, and widespread farmer debt as these methods have expensive one-time payments. By the early 2000s, consumers and farmers, along with researchers, NGOs, and policymakers started looking at more sustainable, traditional practices.



Timeline showing key moments in Indian organic farming history

3. Environmental and Agronomic Benefits

3.1 Soil Health and Microbial Activity

Studies by the Indian Council of Agricultural Research (ICAR) under the Network Project on Organic Farming (NPOF) show that organic farming improves soil organic carbon by 22% over six years. This is very important in India given its rapid loss of topsoil and organic matter. Enhanced soil microbial biomass, like fungi, bacteria, and actinomycetes, was noted at all test sites, especially under legume-based rotations.

3.2 Yield Trends and Crop-Specific Performance

It is feared that organic farming cannot feed India's 1.4 billion people. But evidence suggests the picture is nuanced. While initial yield dips were observed during small periods (e.g., wheat -15% in year one), recovery and eventual improvements was seen in crops like turmeric (+14%), greengram (+13%), soybean (+6%), and basmati rice (achieving consistency by year four). Data from ICAR centres like Modipuram, Jabalpur, and Karjat show that crop-specific responses depend on soil type, prior land use, and management practices.

3.3 Water Conservation and Ecosystem Balance

Organic practices promote water retention due to better soil structure and reduced runoff. Not using chemical pesticides protects beneficial soil fauna and insect pollinators. Organic fields often serve as biodiversity hotspots within monoculture-dominated landscapes, supporting a range of insects, birds, and small mammals.

3.4 Carbon Sequestration and Climate Resilience

Organic agriculture helps sequester atmospheric carbon through increasing humus content. Additionally, organic farms are more resilient to climate shocks: studies after extreme weather events have shown better survival and recovery of organic plots compared to conventional ones.



Organic Farming being carried out

4. Socio-Economic Dimensions

4.1 Farmer Perceptions and Livelihood Considerations

Field surveys by MANAGE in Karnataka, and verified by studies from Tamil Nadu and Madhya Pradesh, show that farmers perceive organic farming as a way to regain soil fertility, reduce health risks, and escape the debt cycle tied to chemical input purchases. However, common challenges include the need for labor (weed management, composting), and access to markets that have demand for organic produce.

4.2 Gender Dynamics

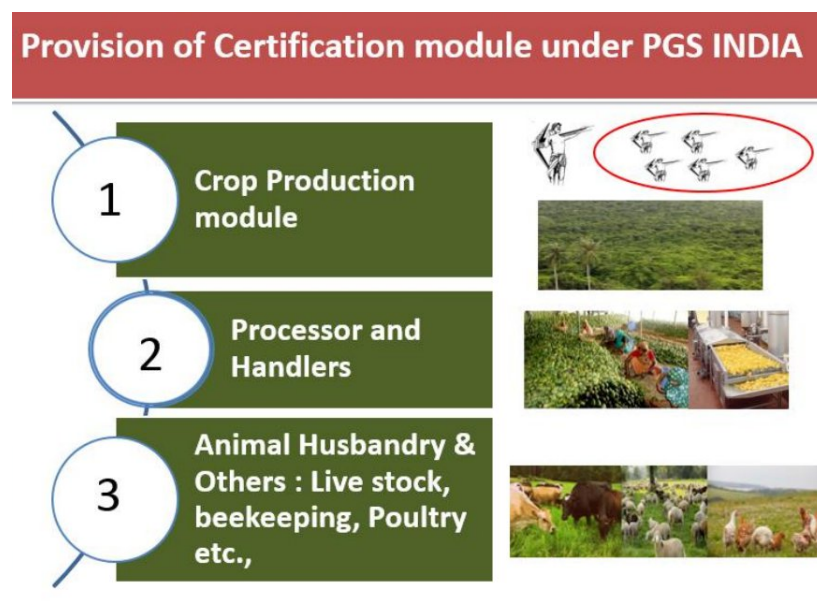
Organic farming often empowers women by involving them in composting, seed selection, and kitchen gardening. Several women-led farmer groups in Andhra Pradesh and Maharashtra have successfully transitioned to organic and formed cooperatives for better bargaining power.

4.3 Cost-Benefit Analysis

Input costs are often lower in organic farming due to zero chemical use, but labor costs are significantly higher. Market premiums (10–40%) for certified produce can balance this, but only if farmers have links in the market. A five-year study by the Indian Institute of Farming Systems Research (IIFSR) showed net profits in organic turmeric and soybean were 15–20% higher than those grown by conventional methods.

4.4 Certification and Marketing Bottlenecks

India ranks first in the number of organic producers, which is more than 2 million. Still, less than 10% are certified. The certification process (NPOP for exports; PGS-India for domestic markets) is very difficult to get for small farmers. Issues include inconsistent inspection, lack of trained certifiers, and high fees.



Steps to obtaining certifications under PGS-India

5. Government and Institutional Support

5.1 National Schemes and Their Effectiveness

- **Paramparagat Krishi Vikas Yojana (PKVY):** Supports cluster-based certification and promotes traditional practices. Over 8 lakh hectares covered as of 2022.
- **MOVCDNER:** Aims to make Northeast India a fully organic zone. Sikkim became the first organic state in 2016.
- **National Project on Organic Farming (NPOF):** Provides training and promotes input infrastructure.

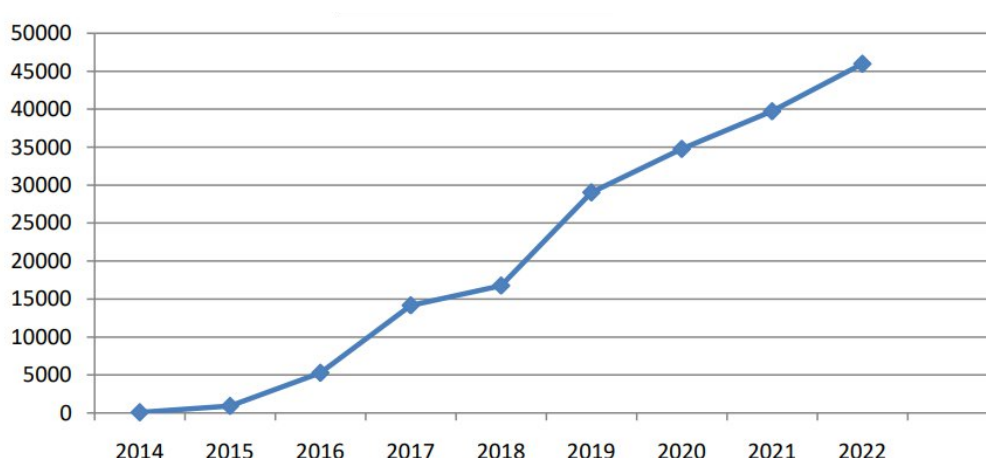
Despite these schemes, ground-level implementation often suffers from poor training quality and underfunding.

5.2 Role of NGOs and Farmer Producer Organizations (FPOs)

Organisations like Navdanya, Timbaktu Collective, and the Organic Farming Association of India (OFAI) have played crucial roles in training, seed saving, and advocacy. FPOs such as Sahaja Organics (Karnataka) have built market bridges that ensure fair prices and traceability.

5.3 Export Trends and Global Position

Indian exports of organically produced materials have seen a steady increase over the years. Key exports include tea, spices, oilseeds, and fruit. In reality, exports are dominated by large agribusinesses. Smallholders struggle to meet phytosanitary and documentation requirements.



Shows export trends of organic produce from India.

6. Challenges to Mainstreaming Organic Farming

- **Initial Yield Reductions:** Especially in cereals.
- **Labor-Intensive Practices:** Weed management is difficult to carry out.
- **Market Access:** Mistrust around 'organic' labels, lack of traceability.
- **Infrastructure Gaps:** Inadequate cold chains, rural logistics, and storage.
- **Policy Inconsistency:** While organic farming is promoted, fertilizer subsidies continue to favor chemical agriculture.
- **Research Gaps:** Limited region-specific data on optimal organic packages for different agro-climatic zones.

7. The Future: Policy Recommendations and Path Forward

- **Phased Conversion Plans:** Offer 3–5-year conversion incentives to reduce risk.
- **Agroecology Curriculum in Schools and Colleges:** To build a new generation of eco-literate farmers.
- **Digital Traceability Systems:** For certification transparency (e.g., blockchain-based tracking).
- **Community Certification Models:** Empower local bodies and FPOs to certify via participation.
- **Public Procurement:** State governments should procure organic produce for midday meals and hospitals.
- **Soil Health Cards + Organic Advisory:** Combine existing SHC schemes with organic crop recommendations.

8. Conclusion

Organic farming holds immense promise for India's ecological, economic, and social sustainability. With a long tradition and the world's highest number of organic producers, India is well-positioned to lead a global agroecological transition. It is, however, important to note that this revival must be made with major structural reforms: easier certification, better training, supportive buying, and strategically reducing subsidies for chemical-heavy fertilizers and other products.

References

- ICAR Network Project on Organic Farming (NPOF), 2022
- APEDA (2018-19). National Organic Export Statistics
- MANAGE Discussion Paper No. 17, 2020
- Soni et al., "Organic Farming: A Sustainable Agricultural Practice," Vantage Journal, 2022
- FAO/IFOAM definitions and reports
- Government of India, Ministry of Agriculture (PKVY, MOVCDNER)
- ASSOCHAM Report on Organic Market Trends, 2021
- IIFSR Annual Report, 2021
- Singh, Y., Bhardwaj, A.K., & Sharma, S. (2021). Performance of Organic Agriculture vis-a-vis Conventional Agriculture in India: A Meta-analysis. Asian Journal of Agriculture and Biology, 9(2).
- PGS-India (2022). Revised Participatory Guarantee System Operational Guidelines. National Centre of Organic Farming.