

Organic Farming: Growth and market opportunities in India

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Conventional farming has played a vital role in ensuring food security in India through the use of high-yielding seeds, irrigation, fertilizers, and agrochemicals. While these practices have boosted productivity, their excessive reliance has led to serious concerns such as declining biodiversity, deteriorating soil and environmental health, unsafe food, and reduced farm income. Pesticide residues in many crops have often exceeded safe limits, posing risks to human health and the environment. Overuse of chemicals has also contributed to soil, water, and air pollution. To address these challenges, alternative approaches have emerged, including integrated crop management, conservation agriculture, integrated farming systems, agroforestry, and organic farming. These sustainable methods focus on improving productivity while conserving natural resources and ensuring safer food, thus reducing the negative impacts of conventional.

Keywords: Marketing, Organic farming, Organic production, PGS

ORGANIC farming is founded on the strict prohibition of synthetic pesticides, fertilizers and other chemicals, and genetically modified organisms (GMOs). It thus ensures that crop production remains safe, natural, and environmentally friendly. A big thrust is given on biodiversity, both above and below ground. This involves protecting and enhancing crop diversity, supporting beneficial insects and pollinators, as well as maintaining rich soil biodiversity through microorganisms and earthworms, all of which contribute to a balanced and resilient agroecosystem. Organic farming relies chiefly on natural cycles to sustain productivity, drawing upon ecological processes such as nutrient cycling, biological nitrogen fixation, and the natural balance between pests and their predators. Rather than relying on external synthetic inputs, these ecological processes ensure greater stability and resilience within the farming system. Equally significant is the practice of nutrient recycling, in which crop residues, compost, animal manure, and other organic materials are incorporated back into the soil. This approach not only restores soil fertility, but also improves soil structure, strengthens its moisture-holding capacity, and sustains long-term agricultural productivity.

Key components

Organic farming is built on four fundamental pillars, viz. organic standards, certification, technology package, and marketing which together define its philosophy and practice. These pillars act as the foundation of the system and hold universal relevance for all stakeholders, including farmers, students, teachers, trainees, academicians, policymakers, planners, and the wider public interested in sustainable agriculture.



Pillars of organic farming (Source: Generative AI 30-08-2025)

Familiarity with these guiding components is crucial for appreciating the holistic nature of organic farming and for ensuring its effective adoption, promotion, and policy support.

In a broader perspective, these four pillars can also be regarded as the curriculum or syllabus of organic farming, offering a structured framework to understand its ecological, economic, and social dimensions. Much like an academic syllabus outlines essential areas of learning, these pillars highlight the knowledge and practices required for successful implementation. By aligning teaching, learning, and practice around them, organic farming can be systematically advanced and effectively mainstreamed into sustainable food systems.

Organic standards: Organic standards refer to the clearly defined rules and regulations that guide the production, processing, and labelling of organic products. These standards specify how organic produce should be cultivated, what practices and materials are permitted in crop production and other agricultural enterprises, and the procedures for converting conventional farms into organic systems. They also establish the framework for labelling and certification to ensure authenticity and consumer trust. In essence, organic standards serve as the foundation of organic farming, providing uniform guidelines that safeguard both producers and consumers. For detailed information, one may visit the official Agricultural and Processed Food Products Export Development Authority (APEDA) website: <https://npop.apeda.gov.in/>

Certification or regulatory mechanism: Organic certification is a formal process designed to verify and ensure that producers of organic food and agricultural products adhere to the prescribed organic standards. Broadly, any business directly involved in the food chain including seed suppliers, farmers, food processors, retailers, and even restaurants can obtain organic certification. While specific requirements vary across countries, certification generally involves compliance with a defined set of production standards covering cultivation practices, storage, processing, packaging, and transportation.

In India, two types of certification systems are operative. The first is Third-Party Certification, implemented by APEDA under the National Programme for Organic Production (NPOP) (<https://npop.apeda.gov.in/>). In this system, the producer acts as the first party, the consumer as the second party, and the certification body as the third party, hence the name. The second system of certification is the Participatory Guarantee System (PGS), which is a community-based approach to certification. This method is implemented by the National Centre of Organic and Natural Farming (NCOF), Ghaziabad (<https://pgsindia-ncof.gov.in/>). Together, these mechanisms provide credibility to organic produce and build consumer confidence in the integrity of organic products.

Technology package: Technology package involves the techniques/methods of producing, processing and value addition of various organic products. For example, in case of organic crop production, it involves

right time of sowing, selection of appropriate varieties/ seeds, sowing distance, sowing depth, seed rate, seed treatment, sowing/planting methods, nutrient management, water management, weed management, crop protection from diseases and insects, harvesting, and post-harvest management, etc. Due care is required as the management of crops at organic farms is quite different from that at conventional farms. The inputs used to grow the crops are different at organic farms.

The technology packages for growing organic crops are still evolving in different parts of the country. For further details, websites of NCONF, Ghaziabad and All India Network Project on Organic Farming (AINPOF), ICAR-Indian Institute of Farming Systems Research, Meerut, UP (<https://iifsr.icar.gov.in/ai-npof.html>), concerned ICAR institutes and State Agricultural Universities (SAUs). Number of crops can be grown successfully by adopting organic methods of cultivation.

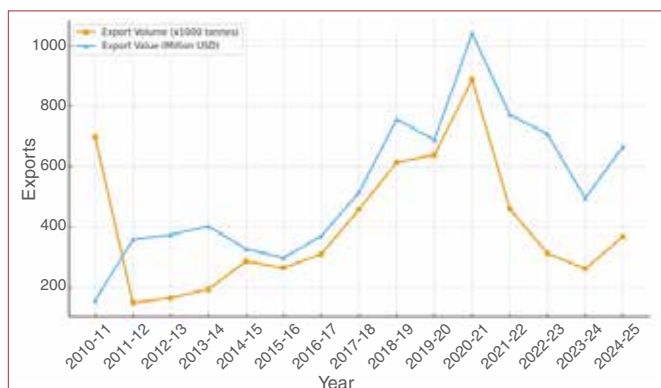
Market network: The organic farming market in India encompasses both inputs and outputs. Inputs such as farmyard manure, compost, vermicompost, oilcakes, biofertilizers, and biopesticides are widely marketed to support cultivation. Outputs, including raw and processed products, reach consumers through diverse channels. Small and medium farmers rely on direct sales via farmers' markets, farmgate sales, CSAs, and online platforms, ensuring transparency and reduced intermediaries. Larger producers use formal supply chains involving wholesalers, retailers, supermarkets, and specialty stores. India also engages in international trade, exporting certified organic products and importing selected items. Despite challenges like high prices, limited supply, and certification gaps, growing consumer demand and supportive policies signal strong expansion potential.

Growth of organic farming in India

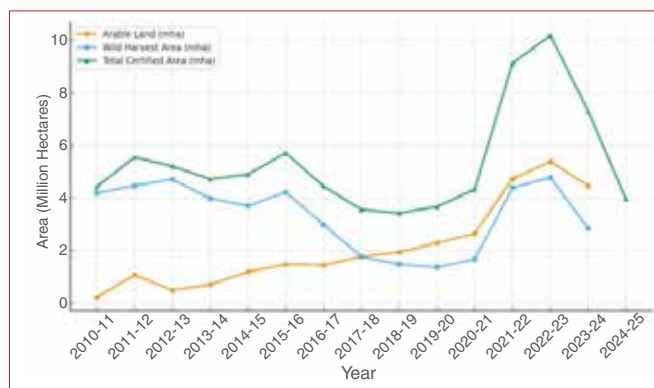
The production from organic farming in India has shown fluctuations over time, with an initial output of 3.88 million tonnes in 2010–11 that sharply declined next year. However, from 2012–13 onwards, production gradually increased and reached levels above 2.5 million tonnes by 2018–19 and 2019–20. The highest production was recorded at 3.47 million tonnes in 2020–21, and after a slight dip in 2022–23, it regained momentum to touch 4.39 million tonnes in 2024–25.



Trends of organic production (million tonnes) in India
(Source: APEDA)



Trends of organic products export volume (x 1000 tonnes) and value (US Dollars) from India (Source: APEDA)



Trends of certified land area (million hectares) under organic farming in India (Source: APEDA)

indicating a general upward growth trajectory despite periodic declines.

Exports of organic products also exhibit a mixed pattern. Export volumes rose consistently from 698,000 tonnes in 2010–11 to a peak of 888,000 tonnes in 2020–21, supported by a rise in export value from 157 million US dollars to over 1,041 million US dollars in the same period. After this high point, both volume and value declined significantly, with export volume falling to 261,000 tonnes in 2023–24 and value dropping to 495 million US dollars. A modest recovery occurred in 2024–25, with exports rising to 368,000 tonnes and values to 666 million US dollars, although these levels still remained below the earlier peak.

The certified arable land, which was just 0.24 million hectares in 2010–11, grew steadily to reach 5.39 million hectares in 2022–23 before reducing slightly to 4.47 million hectares in 2023–24. The wild harvest area, initially large at 4.19 million hectares, declined to about 1.37 million hectares in 2019–20, but later recovered to nearly 4.78 million hectares in 2022–23, again falling to 2.85 million hectares in 2023–24. As a result, the total certified area expanded from 4.43 million hectares in 2010–11 to a peak of 10.17 million hectares in 2022–23, before contracting to 7.30 million hectares in 2023–24. The most recent year (2024–25) shows incomplete area data but reflects a discontinuity compared to earlier trends.

The land area under organic farming at global scale increased steadily from about 37 million ha in 2010 to nearly 99 million ha in 2023, while the number of farmers rose from 1.6 million to about 4.3 million. India’s share, although smaller in land area (ranging between ~3.5 to 10.2 million ha), is significant in terms of farmer participation. Indian organic farmers grew from 0.40 million in 2010 to 2.36 million in 2023, meaning India accounts for a large share of global organic farmers, currently more than half, despite having a relatively modest share of the world’s organic farmland. This highlights that India’s organic farming is more farmer-intensive but land-fragmented, compared to the global average.

Organic farming in India has expanded significantly, though with recent fluctuations. Production now exceeds four million tonnes annually, while exports

peaked in 2020–21 before contracting and only partly recovering. Certified land area more than doubled by 2022–23, but later records show inconsistencies. Madhya Pradesh leads in certified area, followed by Maharashtra, Rajasthan, Gujarat, Odisha, Uttarakhand, Telangana, Sikkim, Uttar Pradesh, and Karnataka. Organic production spans cereals, millets, pulses, oilseeds, fruits, spices, tea, coffee, medicinal plants, and processed foods, with exports mainly to the USA, EU, UK, Canada, and Japan. Growth drivers include rising demand for safe food, export opportunities, government schemes, NGO efforts, and private sector initiatives, which together are strengthening value chains and market linkages.

Table 1. Trends in organic farming land area and number of farmers in the World and India (2010–11 to 2024–25)

Year	Total land area (million hectares) under organic farming		Number of farmers (million)	
	World	India	World	India
2010	37.0	4.43	1.6	0.40
2011	37.2	5.55	1.8	0.55
2012	37.5	5.21	1.9	0.60
2013	43.1	5.72	2.0	0.65
2014	43.7	4.90	2.3	0.65
2015	50.9	5.71	2.4	0.58
2016	57.8	4.45	2.7	0.83
2017	69.8	3.56	2.9	0.83
2018	71.5	3.43	2.8	1.15
2019	72.3	3.67	3.1	1.37
2020	74.9	4.34	3.4	1.60
2021	76.4	9.12	3.7	1.60
2022	96.4	10.2	4.5	2.48
2023	98.9	7.30	4.3	2.36

Sources: The World of Organic Agriculture (2011–2025) and <https://apeda.gov.in/apedawebsite/organic/data.html>

Market growth of organic inputs

The important inputs marketed in sizable quantities are organic fertilizers, biofertilizers and biopesticides in India. Regarding organic fertilizers, the base year values (2023–24) range between USD 550–586 million, with projections for 2032 spanning USD 942 million to 1.2 billion. Reported compound annual growth rates (CAGRs) vary from ~5.6% to over 10%, reflecting differences in modelling assumptions. Despite variations, all sources agree on a clear upward growth trend for organic fertilizers in India over the next decade.

Table 2. Market size and growth projections of organic fertilizers in India (2023–2032)

Sr. No.	Source	Base value in million USD (Base Year)	Projection in million USD (End year)	Compound annual growth rate (CAGR) in %
1.	Zion Market	578 (2023)	951 (2032)	~5.7%
2.	Custom Market Insights	577.1 (2023)	942.4 (2032)	5.6%
3.	Markets and Data	550 (2024)	1200 (2032)	10.23%
4.	Report on Markets	586.4 (2024)	1145 (2032)	8.73%

Sources as per Sr. No.: 1. <https://www.zionmarketresearch.com>; 2. <https://www.custommarketinsights.com>; 3. <https://www.marketsanddata.com>; 4. <https://www.reportsnmarkets.com> (Accessed on 24-08-2025)

For biofertilizers, the market size estimates vary across sources, with base values ranging from USD ~100 million to 243 million and end-year projections stretching between USD 165 million and nearly 400 million. Reported CAGRs lie between 8.7% and 12%, indicating strong and steady growth in biofertilizer market.

Table 3. Market size and growth projections of biofertilizers in India (2022–2033)

Sr. No.	Source	Value in million USD (Base Year)	Projection in million USD (End year)	Compound annual growth rate (CAGR) in %
1.	TechSci Research	100.29 (2024)	165.09 (2030)	8.74 %
2.	Markets and Data	183.20 (2024)	395.86 (2032)	10.11 %
3.	IMARC Group	142.97 (2024)	399.67 (2033)	11.50 %
4.	Mordor Intelligence	242.2 (2025)	381.8 (2030)	8.90 %
5.	Fortune Business Insights	110.07 (2022)	243.61 (2029)	12.02 %

Sources as per Sr. No.: 1. <https://www.techsciresearch.com>; 2. <https://www.marketsanddata.com>; 3. <https://www.imarcgroup.com>; 4. <https://www.mordorintelligence.com>; 5. <https://www.fortunebusinessinsights.com> (Accessed on 24-08-2025)

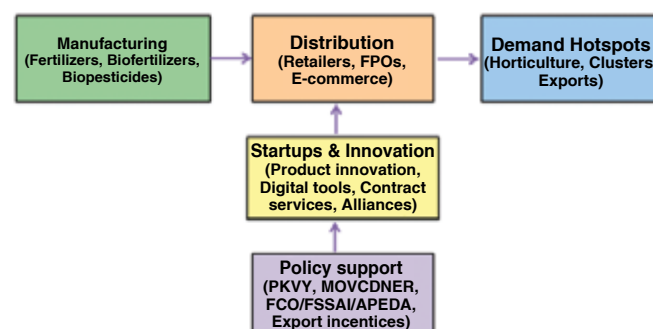
For the biopesticides market, the base year values range from USD ~70 million in 2022 to USD 260 million in 2024–25. By the end of the forecast period (2029–33), the market is expected to grow between USD 130 million and over 700 million. Reported CAGRs lie between 9.3% and 10.3%, indicating consistent double-digit growth potential. Overall, all sources highlight a strong and sustained expansion of biopesticides in India.

Table 4. Market size and growth projections of biopesticides in India (2022–2033)

Sr. No.	Source / Publisher	Value in million USD (Base Year)	Projection in million USD (End Year)	Compound annual growth rate (CAGR) in %
1.	Fortune Business Insights	69.62 (2022)	130.37 (2029)	9.38%
2.	Mordor Intelligence	242.2 (2025)	381.8 (2030)	9.53%
3.	IMARC Group	260.0 (2024)	702.3 (2033)	10.30%

Sources as per Sr. No.: 1. <https://www.fortunebusinessinsights.com>; 2. <https://www.mordorintelligence.com>; 3. <https://www.imarcgroup.com> (Accessed on 24-08-2025)

In addition, it is evident from the data that demand for organic inputs is rising consistently and continuously. The reasons are rising area under organic farming in India, robust organic export growth, and direct support to organic clusters and input use via national schemes PKVY (Paramparagat Krishi Vikas Yojana), MOVCDNER (Mission Organic Value Chain Development for North Eastern Region) and formal quality control under FCO.



Domestic market trends and consumer preferences

Multiple analysts point to a rapidly expanding domestic market in India. The data highlights that India's organic food market is currently valued between USD 1.5–1.9 billion (2023–24), depending on the source. Despite slight differences in methodologies, all analysts project robust double-digit growth over the next decade. The market is expected to expand at a CAGR of ~20–22%, reaching between USD 9–11 billion by 2032–33. This strong growth reflects rising consumer demand for healthier, safer, and pesticide-free foods, along with supportive regulations and certification systems. Overall, the outlook is highly optimistic and favourable, pointing to a fast-evolving and promising sector in India's agri-food economy.

Table 5. India's organic food market size and forecasts

Sr. No.	Source	Base Year	Market Size (million USD)	Forecast Year	Projected Market Size (million USD)	Compound annual growth rate (CAGR) in %
1.	IMARC Group	2024	1,917.4	2033	10,807.9	20.13 (2025–2033)
2.	FAS/USDA (citing IMARC)	2023	1,600	2032	8,900	21.19 (2024–2032)
3.	EMR (Expert Market Research)	2023	1,510.36	2032	9,043	~22 (2024–2032)
4.	Market Research Future (MRFR)	2023	1,700	2032	10,329	22.2 (2024–2032)

Sources as per Sr. No.: 1. <https://www.imarcgroup.com/>
 2. USDA. 2023. India's Organic Agriculture Sector Finds Markets at Home and Abroad. Report Number: IN2023-0095
 3. <https://www.expertmarketresearch.com/>
 4. <https://www.marketresearchfuture.com/> (Accessed on 24-08-2025)

To expand the domestic market, it is always necessary to win the trust of consumer. For this purpose, 3rd party and PGS certification procedures are operative in India. To make it more robust, the Food Safety and Standards Authority of India (FSSAI) enforced the Food Safety and Standards (Organic Foods) Regulations, 2017, which mandate that organic foods sold in India must carry the Jaivik Bharat logo along with the FSSAI license number. These regulations align with certification systems like NPOP (India Organic) and PGS-India, thereby building consumer trust, ensuring authenticity, and preventing mislabelling of organic products.

Distribution channels

Organic food distribution in India operates through a multi-channel system. Direct-to-consumer models like farmers’ markets, farmgate sales, CSAs, and FPO-led initiatives ensure freshness and traceability. E-commerce platforms such as BigBasket, Amazon India, and Jaivik Haat expand reach, while E-commerce players like Swiggy and Instamart deliver organic staples within minutes. Modern trade and specialty retail outlets, including Nature’s Basket, offer curated organic assortments with both physical and online presence. According to estimates, supermarkets (30%) and

e-commerce (25%) dominate, followed by restaurants/hotels (20%), direct sales (15%), and farmers’ markets (10%), collectively ensuring accessibility, sustainability, and stronger farmer-consumer linkages.

Branding and value addition

Branding and value addition are crucial for strengthening India’s organic sector by building trust, marketability, and price premiums. Certification logos such as Jaivik Bharat, India Organic (NPOP), and PGS enhance credibility and help consumers easily identify authentic products. Traceability systems like APEDA’s TRACENET ensure transparency across supply chains, vital for exports and B2B trade. Value addition strategies—linking products to Geographical Indications (e.g. Darjeeling tea, Basmati rice), clean-label processing, ready-to-cook or ready-to-eat formats, and sustainable packaging—further enhance appeal. By combining certification, traceability, and innovative value additions, Indian organic brands can differentiate themselves, attract consumers, and meet both domestic and global market standards.

SUMMARY

Organic farming in India has expanded steadily in production, certified land, and farmer participation, though fluctuations exist. India has one of the world’s largest numbers of organic farmers, reflecting its smallholder-dominated structure, while production exceeds four million tonnes. Exports peaked in 2020–21, with cereals, pulses, oilseeds, spices, tea, coffee, fruits, and processed foods catering to both domestic and global markets, mainly the US, EU, and Canada. Government initiatives like PKVY, MOVCDNER, and APEDA have promoted certification and exports, while the organic input industry is growing rapidly. Rising domestic demand, projected to push the market near USD 10 billion by the early 2030s, is driven by health-conscious consumers. Certification systems (NPOP, PGS) and the Jaivik Bharat logo strengthen credibility, while multi-channel distribution, branding, and GI-linked products add value. Challenges include certification costs, fragmented supply chains, mislabelling, and compliance barriers. With stronger policies, R&D, and infrastructure, India’s organic sector can become a mainstream pillar of sustainable agriculture.

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