

IMPROVING THE VIABILITY OF ORGANIC FARMING IN INDIA

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Acknowledgements

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Executive Summary

Increasing effects of climate change, overexploitation of natural resources like water, decreasing quality of soil and nutrient quality of food due to consistent employment of conventional farm activities have led to the emergence of a need to adopt more sustainable and healthier models of farm production. Organic farming has evolved as one of the most discussed solutions to the agrarian and resource crisis with increasing interest among all stakeholders.

The initiation of this adoption by civil society and farmer movements has been strongly coupled with government efforts to promote organic farming across India. Moreover, factors like increasing formalisation of organic production standards, lowering price differential between inorganic and organic produce, and increasing health awareness post-COVID present opportunities to adopt organic farming at scale across India. However, the scaling up is not easy. Organic production faces significant competition from conventional farming and its current adoption is very limited. Certification processes for organic produce is inadequate. This also leads to restrained consumption and demand for organic agricultural products. Small and marginal farmers of India, constituting the majority of our farmer population, struggle to find scalable models for organic farming.

This perspective discusses how organic farming can be mainstreamed across India based on interventions across three levers. These levers are centred on three major aspects. The first lever is the implementation of a judicious policy at all stages of the organic production cycle so that organic production becomes more remunerative and attractive for farmers in the medium to long term, while also accounting and risk managing for the short-term disruptions that the transition would create. The second lever is strengthening the scale through robust and accessible infrastructure for farmers at all stages of the value chain, especially because organic produce faces stiff competition from inorganic produce across market channels. Finally, the shift would necessitate building a system of trust across all stakeholders, especially farmers and consumers, which will be driven by boosting knowledge and awareness of organically manufactured products and their long-term benefits at all levels.

Philanthropy has a major role to play here, by creating an ecosystem fueled by evidence and data-driven narratives for the feasibility of organic practices at the farm level. This can be further strengthened by developing a strong infrastructure through multi-stakeholder collaborations that focus extensively on training smallholder farmers by utilising digital infrastructure, and bolstering overall market trust for organic produce.

Discussions on Organic Farming are Gaining Prominence in India

Organic farming - Status and benefits

The potential of organic farming as a promising medium to a truly sustainable agricultural future is no longer contested. India has the largest number of organic producers in the world, numbering around 835,000, or nearly a third of the world's 2.7 million organic producers. In terms of area under cultivation, India ranks first in Asia and fifth in the world, with 2.3 million hectares used for organic farming (Willer et al. 2021). Moreover, the Indian organic farming industry exports nearly 25% of its 3.5 million metric tonnes of organic produce, and was valued at USD 890 million in 2020-21 alone (The Agricultural and Processed Food Products Export Development Authority 2022).

Organic practices majorly include crop rotation, the use of green manure and composting techniques, soil, pest, and weed management, and the use of organic seeds. In some cases, these practices also integrate livestock and non-farm agricultural activities as well to achieve ecological requirements and fulfil economic demands (*See Figure 1*).

Variable for Comparison	Scientific evidence of the advantages of organic farming over inorganic farming
Productivity	Nearly equal farm productivity in the medium term, with exceeding benefits in the long term as compared to inorganic, chemical-based farming.
Profits	Low input costs if traditional, natural forms of inputs are used, leading to high margins.
Environmental Sustainability	Lesser chemical usage leads to less damage to the soil and environment, greater proportions of macro and micronutrients and, organic carbon in the soil, better soil moisture content and biodiversity.
Food Quality	Much better due to better resource quality and minimal or zero chemical use on farms.

Figure 1: Overview of Benefits of Organic Farming

(Khurana et al. 2022)

Evolution of the organic farming movement in India

There have been many initiatives (*See Figure 2*) that have kindled discussion and propagated the adoption of organic farming in the country.

- Civil society organisations and farmer-led movements initially led the crusade for organic farming in India.
- The Indian government later promoted this crusade by deploying an export-centric approach which promoted a third-party certification system. The Agricultural and Processed Food

Products Export Development Authority (APEDA) of the Ministry of Commerce and Industry, Government of India (Gol) initiated the National Programme for Organic Production (NPOP) in 2001, the main focus of which was the export of organic produce.

- In 2005, the Ministry of Agriculture developed the first Organic Farming Policy of India. It was not successful with undocumented results (Kumar & Khurana 2020).
- Although Indian farmers have been employing organic practices to some extent, active efforts to scale up and promote organic farming began only in 2014-15 under the National Mission for Sustainable Agriculture by the Ministry of Agriculture and Farmers' Welfare (MoAFW).
- In May 2021, India's Ministry of Agriculture further recommended a target of converting at least ten percent of the total cultivated area into organic farmlands across all states by the year 2025 (Singh n.d.).





(SKI Research)

Organic farming in India has been enabled by measures such as:

- Establishment of apex bodies and thematic government organisations to promote organic farming, such as the National Centre of Organic Farming (NCOF), and bodies providing research support such as the Indian Council of Agricultural Research (ICAR).
- Standard guidelines and certification processes ensuring better adoption of practices like NPOP certification, and Participatory Guarantee System (PGS) based certification.
- Increased consumer awareness of the health benefits of organically grown produce, especially due to visibly growing risks of food adulteration and health issues post-COVID.
- Stronger policy action around farm-level mitigation measures that support better incentives for sustainable methods like organic and natural farming. Apart from the above-mentioned organic farming policies, interventions like Zero Budget Natural Farming by Andhra Pradesh are also being witnessed.

• Increased consumer willingness to pay premium prices for organic products. Consumers are willing to pay approximately 25% more for environmental and health-oriented organic products, leading to a lower price differential between organic and conventional products in the market (Statista 2022).

Scaling Difficulties in Organic Farming Practices

The need for organic farming arose from a recognition of the unsustainability of traditional agricultural practices. Organic farming thus developed as a potential alternative for meeting food demands while maintaining the overall viability of resources like land, soil and water in the long run. However, recent trends – for instance the attribution of the 2019 Sri Lankan economic crisis to the country's organic farming practices – have given rise to fear and clouded the perceptions of organic farming (United Nations 2022). This indicates the need to probe and validate the strategic scale-up of organic farming, and to ascertain if it is the practical way to go ahead.

• Limited adoption by farmers: The organic and natural farming movement in India is yet to gain critical mass. Although it has amongst the highest number of organic farmers in the world, only 1.3% of all farming households currently engage in organic farming, and only 1.5% of the total arable land is used for organic cultivation (Khurana & Kumar 2020).

Many states do not utilise more than 50% of the budget allocated under organic farming schemes due to the lack of effective implementation and governance. These programmes were rolled out for faster adoption. However, as of 2020, only 2.5% of net sown land in India is used for organic farming. Some states like Karnataka and Kerala have had an organic policy since 2004 and 2010 respectively, but only 1.1% and 2.7% of their net sown area has been organically cultivated, as of 2021 (APEDA 2022).

Adoption is low primarily because of limited evidence from the field, which has resulted in mixed perceptions around organic farming, including concerns about short-term losses for smallholder farmers across geographies. Shifting to organic compost reduces the yield by approximately 30% of that which is achieved with the proper application of chemical fertilisers. It is not common information that the yield slowly increases later over a period of three years or so (Anaarkali 2021). Fears of these short-term disruptions disincentivise farmers from adoption even at a crop level.

The problem is aggravated by a limited supply of organic inputs, low awareness levels amongst cultivators due to less exposure, and fewer avenues to gain technical knowledge for organic production and distribution. Existing awareness and capacitybuilding programmes have not been able to meet the requirements of technical knowledge upgradation of farmers, for instance, regarding the effective use of inputs like bio-fertilisers and bio-pesticides. • Ambiguous policies on organic certification: Capacity-building must go beyond the dissemination of detailed technical knowledge on farming procedures. These programmes must equip farmers with produce certification procedures as well. The lack of a simple certification process and the limited availability of certification agencies only make the process more expensive for farmers.

The original NPOP certification is a long-drawn-out process for smallholder farmers due to a minimum three-year commitment to no-chemical farming, before the certificate can be obtained. The government's introduction of the PGS in 2015 helped farmers certify the quality of their produce based on peer-reviewed check mechanisms as well (Department of Agriculture and Farmers' Welfare 2015). However, although PGS is farmer-friendly, products certified under the PGS label are less trusted by consumers beyond the producers' local and known markets. Moreover, PGS certification is only valid for local markets, and not for exports (National Centre for Organic and Natural Farming 2022).

The number of limited certification agencies further adds to the challenge. Currently, only around twelve states — Madhya Pradesh, Gujarat, Telangana, Sikkim, Bihar, Karnataka, Odisha, Rajasthan, Uttarakhand, Chhattisgarh, Tamil Nadu and Uttar Pradesh — have their own state organic certification agencies accredited by APEDA (APEDA 2022).

Inadequate infrastructural support: There is a lack of dedicated infrastructure for organic commodity value chains. Organic production clusters which could focus exclusively on specific farm techniques to grow organic commodities are non-existent. There is limited availability of processing and value-addition infrastructure for farmers. Food parks and processing setups are not designed as per the specific needs of organic produce. Shortage of packaging houses and storage infrastructure like refrigeration add to the costs of sourcing organic produce. Organic farmers also require proper distribution and marketing channels, of which there is a lack, because retailers are not interested in dealing with organic products with low demand. Market yards or mandis do not directly and exclusively deal in organic produce. Limited direct access to markets leads to farmers' inability to obtain a premium price, which is a significant setback.

While the government supports organic producers by setting up trade fairs and exhibitions for their produce, this does not enable the creation of steady markets. Some states have either developed, or are still in the process of forming organic brands such as MP Organic, Organic Rajasthan, Nasik Organic, Bastar Naturals, Kerala Naturals, Jaivik Jharkhand, Naga Organic, Organic Arunachal, Organic Manipur, Tripura Organic and Punjab Agro's Five Rivers. However, mid-sized farmers in underdeveloped and remote areas like hilly and tribal regions still find it difficult to get quick and easy access to larger markets.

• Volatile and irregular consumer demand: Post-COVID-19, the demand for organic produce has shown a paradigm shift, becoming heavily skewed toward health-oriented, nutrient-rich products like beverages, fruits and vegetables. However, the consumer

demand is not consistent across all crop categories, and is highly inclined toward perishables which entail additional costs for storage and quick transportation.

Organically grown staple and non-perishable food crops also face high competition from normal and dominant market varieties of wheat and rice, due to the price sensitivity of consumer purchases. Moreover, there also exists a regional skew where states such as Madhya Pradesh, Maharashtra, Andhra Pradesh and Karnataka dominate the production capacity to fulfil this consumer demand. The distribution channels are also not effective at bridging gaps between consumer demand and supply.

How Can Organic Farming be Mainstreamed in India?

The approach toward promoting organic farming has placed undue focus on the impracticalities of organic farming to replace conventional farming so far. Mainstreaming organic farming calls for an approach that emphasises instead on solving problems by diving deep into the root issues, and strategising effective plans for the long run. It is important to understand that the problem is not necessarily with the practice of organic farming itself, but with the loopholes in its implementation in specific regional contexts.

Based on research and analysis of current limitations across the Indian landscape, Sattva has identified three key levers on which upcoming interventions should be based. These are detailed below.

Figure 3: Mainstreaming Organic Farming in India



(SKI Research)

Lever 1: Implementing a judicious policy

It is feared that interventions and policies, if designed without establishing proper support systems, would create artificial food scarcities and affect endlevel producers and consumers in the short-to-medium term. This fear can only be addressed by designing better evidence-based policies which account for short-term disruptions.

Solutions

- Integrating government-led organic farming programmes with complementary resourceconserving farm techniques like drip irrigation and conservation tillage. Implementation of these techniques would further need to focus on studying their impact through measurable indicators which can help assess outcomes and effectively document the success rate across geographies. These case studies and evidence-based interventions can then be replicated across other states and geographies, based on specific regional and local contexts.
- Provide need-based subsidies at the farm or household levels, rather than the crop level to compensate farmers for yield losses during the transition from conventional to organic farming. To support organic producers in newly-implementing states, the government can give subsidies, such as those given by the United Kingdom (Mukherjee et al. 2017). These subsidies should be linked to other schemes like Direct Benefit Transfer (DBT) schemes for better implementation.
- Agri-input markets are currently dominated by a few large players. The ecosystem should be made more competitive by lowering entry barriers for new input suppliers and providing them market access through policy incentives. Stronger policies should aim at driving private input companies to innovate and invest in rigorous research and development (R&D) of organic fertilisers, as alternatives to chemical fertilisers.
- Awareness campaigns driven by input suppliers on the usefulness of inputs like biofertilisers and bio-pesticides through on-farm pilot demonstrations would help build confidence amongst farmers to switch to organic inputs.
- Prominent states like Punjab and Haryana with extensive farmlands need to invest heavily in R&D to capture the variability in yield across harvesting cycles, and create validity of farming models for implementation. These resource-intensive states can help build effective evidence around the benefits of organic farming. States should also aim to evaluate transition cycles based on the type of soil, current yield capacity, and weather or water table levels. Leveraging technology solutions like traceability, social media and marketing platforms can further help strengthen access to procurement channels for organic produce and help producers enter bigger markets beyond the existing regional scope (Cropin 2022).

Technology solutions at the farm level: The Punjab Agri Export Corporation (PAGREXCO), Government of Punjab partnered with Cropin (an organisation that works on enabling farm transparency and traceability) to empower their farmers through better national and international market access using Artificial Intelligence (AI) and Machine Learning (ML) technology.

- Awareness programmes specific to commodity groups and centred around the development of post-harvest processes like storage, processing and warehousing of organic produce need to be strengthened. Current post-harvest government interventions such as the Thirty Days Certificate Course on Organic Farming National Centre for Organic and Natural Farming need to ensure extensive coverage across geographies (DoAFW 2022). With time, these programmes should also be made inclusive of women farmers by enabling policy measures designed to include their participation, especially in post-harvest processes, where women can contribute much more effectively, irrespective of land ownership rights.
- The formation of marketing clusters can facilitate access to the right marketing channels through Farmer Producer Organisations (FPOs). Currently, most schemes are focused on providing input access to producers through DBT schemes channelled through FPOs (DoAFW 2022). This existing aggregation setup can be leveraged to incorporate schemes that generate employment for rural youth by giving them opportunities to facilitate the formation of clusters or mini-clusters to establish marketing centres closer to the farm. This can also enable agripreneurship at a village or block level.

Lever 2: Setting up a robust infrastructure

The availability of robust infrastructure at every level of the value chain leads to a multiplier effect on overall production and productivity, due to lowering of costs and increased access to backward and forward market linkages.

Solutions

• Rewards and incentives which incorporate the farm-level understanding of pest and disease-resistant crops or high-yield varieties can encourage more input seed varieties. As a result, more indigenous and open-pollinated varieties can be introduced into the market.

Example of recognition for seed innovation: Dr Mahalingam Govindaraj, an agricultural scientist, won the 2022 Norman E Borlaug Award for Field Research and Application for his efforts to develop a biofortified pearl millet (bajra) that is rich in iron and zinc (Mani 2022).

 Farmers' access to feasible transportation and equipment to store, procure and move organic produce needs to be improved, especially in the case of perishables. That way, organic products can easily reach distant markets where demand is high, while reducing costs for farmers. The active involvement of micro-enterprises and businesses can make organic inputs readily available to the farmers and decrease costs further. Moreover, farmgate-level procurement of organic produce can also help farmers realise higher premiums from supermarkets and retail stores, while reducing the number of intermediaries involved (Nuthalapati et al. 2020).

- Technology and digital platforms can aid farmers with making weather predictions, tracing supply chains, assessing consumer and market demand projections, and making well-informed decisions with the support of proper enabling infrastructure. Farmers should be encouraged and trained to use digital technologies at scale, and linkages between service providers and farmers should be strengthened.
- At a nationwide level, countries and regional groups need to create arrangements where a country or region may unilaterally or bilaterally recognise the standards, certification processes, and labels of its trading partner.

Lever 3: Boosting knowledge and awareness

Knowledge will not just improve present systems, but also help develop the intrinsic ability of stakeholders to build visionary and innovative systems that evolve through self-corrective measures and increased awareness.

Solutions

• Revive the wealth of existing knowledge around farming and harvesting, and support Indian farmers by promoting best practices such as nature-friendly irrigation and water harvesting practices, proven breeding techniques, native understanding of the effects of climate and weather on crops, and selection of region and season-specific crop varieties. This should be complemented with learnings from the best practices of states and countries that promote organic farming. Furthermore, the existing coverage of ground-level NGOs and other implementation agencies can be leveraged to disseminate information within these communities.

Learning from existing initiatives: Sikkim has been acclaimed for its transition to a fully organic setup through disincentivising usage and imports of chemical fertilisers from other states. It was coupled with providing seeds and organic manure through government interventions and training programmes. In another example, Bhutan has announced an Organic Policy to convert the majority of the country's tracts of cultivable land to organic farming (Food and Agriculture Organisation 2018; The Royal Government of Bhutan 2006). Delving deep into their best practices, while also being cognisant of their scope of replication in Indian states will be helpful.

 Connecting practitioners and experts within the ecosystem is essential. The government should revise curricula in agricultural universities to include organic farming practices. This could fuel research and innovation around building evidence and validating case studies that communicate the benefits of organic farming.

Supporting Role of Philanthropy

The shift from existing resource-intensive traditional farming to sustainable organic farming requires extensive efforts. Following the Green Revolution, chemical-intensive agriculture has sustained the expanding global food and fibre demand across the world. One of the most important challenges facing society today is the expectation to feed an expected population of approximately 9 billion by the mid-21st century without causing our natural ecosystems to collapse (United Nations 2022). This is not a feat that can be achieved without comprehensive and collaborative efforts at scale.

Philanthropy can support this goal by developing an ecosystem built on the creation and dissemination of strong evidence and research-backed claims, pushing toward regional models of implementation, filling gaps in the infrastructure and building trust amongst the stakeholders. Philanthropy can catalyse the progress of the organic farming sector and bring in collaborative investment to help address the core issues that inhibit the scaling up of organic farming.

1. Building strong evidence which addresses issues such as yield feasibility, farmer remuneration, and post-harvest management of different crop categories with different supply and demand sensitivities.

By supporting research that evaluates the viability of organic farming across agro-climatic zones, philanthropy can build and disseminate knowledge that triggers changes in policy, or design programmes for better implementation. This would include risk mapping and impact assessment studies across the running pilots. It is important to also sustain these efforts through outcome-based funding in the long term, by leveraging learnings from diverse models across states and countries that are actively working towards this shift. Investments can be supported through specific investment and capital focus on climate-resilient agriculture at the farm level. Additionally, campaigns to revive regional farming practices across the country could be useful in influencing and driving narratives towards the adoption of traditional and culturally contextual organic and natural farming. Thus, there should be a significant focus on strengthening dissemination and awareness of the intergenerational knowledge accumulated over centuries.

2. Driving effective collaborative models or multi-stakeholder partnerships for building infrastructure and institutional capacity.

Philanthropy has often played the role of a catalyst for collaborative action. Multi-stakeholder partnerships across geographies will enable cross-learning, and lead to better execution of interventions that build on the strengths and experiences of all stakeholders and help us learn from their best practices and suggestions. Multi-stakeholder investments will promote the establishment of a comprehensive and robust value chain infrastructure for organic produce. Training programmes at the farm level for pre-production and production processes and

multi-stakeholder hubs for understanding post-harvest processes (e.g. certification) would be a start. A responsive ecosystem shall ensure that organic farmers have a broader range of incentives apart from just temporary financial support in the form of subsidies. However, it will also create long-term value and trust in organic production through more systemic interventions. To build such an ecosystem, regular dialogues on the successes and failures of implementation models are necessary to help drive policy change, ensure recognition of farmers' efforts, and develop an understanding of consumers' perceptions.

3. Using digital infrastructure to build farm-level awareness and buyers' trust

Timely and efficient dissemination of information can help end-level stakeholders like organic input providers, farmers, processors and suppliers to work in tandem with ecosystem shifts (e.g. policy changes, varying regional contexts, and evolving consumer preferences). It can also provide these stakeholders key insights to inform their decision-making. Digital platforms and applications can play a major role in this process. For example, philanthropy can support initiatives like Digital Green which collaborates with government partners across various Indian states to provide government agencies with ground-level farmer information. It collects this information through digitally-enabled surveys using the phone and basic internet, and using audio and visual communication channels to provide training support to farmers (Digital Green 2022). There is also a need to build a system of trust amongst producers and buyers. This can be done through digital awareness campaigns, online consumer forums and open access knowledge assets for seamless transfer of information between buyers, certifiers and sellers. This should be validated through proper documentation and audits at regular intervals.

Conclusion

Mainstreaming organic farming in India requires a paradigm shift in existing production approaches. Although organic farming at scale is dependent on ground-level feasibility, the first step should be shifting the focus to long-term interventions, such as implementing a judicious policy at national and state levels that protects farmers from short-term disruptions. Setting up robust and accessible farm-level infrastructure to cut down costs for farmers is also necessary. Driving capital toward evidence-building, awareness generation dialogues, impact surveys and collaborative partnerships will instate faith in the proposition of organic farming. Philanthropy has a very important role to play in this regard, by building strong evidence and research, enabling multi-stakeholder strategic partnerships, and promoting digital infrastructure to address existing challenges at scale. The transition may be ambitious in the short term, but with the right set of measures, it could prove advantageous in the long run.

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