



Organic Boom: Why the World is Turning Back to Natural Farming

**Samudrapu Sanjay Raj^{1*},
Avinash Chauhan²,
Swapnil A. Dhumal³,
Shivam Dinkar⁴ and
Shikha Singh Tanwar⁵**

¹M.Sc. Scholar, Department of Entomology, CSKHPKV, Palampur, Himachal Pradesh

²Scientist, Department of Entomology, Nagaland University, Nagaland

³M.Sc. Scholar, Department of Horticulture, RSCM College of Agriculture, Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra

⁴Research Scholar, Department of Forestry, College of Agriculture, Indira Gandhi Krishi Vishwavidyalaya, Krishak Nagar, Raipur, Chhattisgarh

⁵Research Scholar, Department of Forestry, Wildlife & Environmental Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh



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*Corresponding Author
Samudrapu Sanjay Raj*

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INTRODUCTION

In the last two decades, organic agriculture has grown from a consumer niche into a major segment of the global food system. From bustling farmers' markets to large supermarket aisles, organic produce has become a regular choice for many households. The boom has been driven by multiple, reinforcing forces — health-conscious consumers willing to pay a premium, increasing evidence for environmental benefits in specific contexts, policy incentives in many countries, and investments in organic supply chains.

This article synthesizes recent evidence and practical experience to answer a central question: why is the world turning back to natural farming? We examine scientific findings, economic data, and on-the-ground realities to give readers—a mix of farmers, students, extension agents, and curious consumers—a balanced, actionable picture.

2. A short history of organic farming

Organic agriculture grew as a reaction to the green revolution and intensive chemical farming that accelerated in the mid-20th century. Early advocates emphasized soil health, biodiversity and food free from synthetic pesticides and fertilisers. Over time, organic practices became standardized through certification schemes that defined allowable inputs and management practices. Since the 1990s, retail markets and certification systems have professionalized, enabling global trade in organic commodities.

3. Why now? — Drivers of the organic boom

Several major drivers explain the rapid rise of organic farming:

- **Consumer demand and health perceptions.** Many consumers perceive organic foods as healthier and safer, particularly regarding pesticide residues and environmental stewardship. Demand for organic fresh produce, dairy and packaged goods has steadily expanded, encouraging retailers to increase supply lines.

- Environmental concerns and climate awareness. Growing public attention to biodiversity loss, soil degradation and climate change has boosted interest in farming systems that prioritize ecological processes, such as crop rotations, cover cropping and reduced synthetic inputs.
- Policy and incentives. Some governments offer conversion grants, subsidies and technical support to transition to organic farming. Public procurement and school-lunch programs sometimes prefer certified organic products, further stimulating demand.
- Market opportunities and price premiums. Organic products often carry higher retail prices and producer premiums, creating attractive income opportunities for farmers who can manage conversion and certification costs.
- Supply-chain investments and corporate commitments. Large food companies and retailers have set targets for organic and regenerative sourcing, building contracting arrangements and processing capacity that strengthen the organic market.
- Technological and knowledge diffusion. Improved knowledge about nutrient management, pest control without synthetic pesticides, and organic-compliant mechanization has lowered barriers for many producers.

4. Evidence: environmental and agronomic impacts

Scientific reviews and meta-analyses provide a nuanced picture. Key findings:

Soil health and biodiversity

Organic management — with its emphasis on compost, manures, cover crops and diverse rotations — often improves soil organic matter, microbial activity and on-farm biodiversity compared with conventional systems. Increased floral resources and reduced synthetic pesticides support pollinators and beneficial insects.

Nutrient content and food quality

While some studies report small differences in certain micronutrients, the overall evidence suggests that macronutrient levels (protein, carbohydrates) are similar between organic and conventional crops. Claims about substantially higher nutrient density in organic foods are mixed and depend on crop type and management.

Yields and land use

Meta-analyses show that organic yields are commonly lower than conventional yields, with the size of the yield gap varying by crop, climate and management intensity. In many temperate systems, the yield gap is modest; in some warm climates or for specific crops it can be larger. Lower yields imply that, all else equal, more land would be needed to produce the same quantity of food if all agriculture were organic — a critical consideration for large-scale transitions.

Greenhouse gas emissions and energy

Organic systems typically use less synthetic nitrogen fertilizer, reducing some associated emissions; however, lower yields can offset these benefits on a per-unit-of-food basis. Emissions outcomes are therefore context-dependent and hinge on management choices, feed sourcing for livestock, and soil carbon sequestration potential.

5. Economics: prices, premiums and market dynamics

Organic products generally command retail premiums that compensate producers for higher labour costs, certification and often lower yields.

Key economic realities:

- Premiums vary by product and market. Fresh produce and dairy often show strong premiums; commodities like grains are more price sensitive.
- Conversion costs and the transition period. Producers face a 2–3 year transition period during which they must follow organic practices but cannot market products as certified organic. This creates short-term financial strain unless buyers, cooperatives or policy programs support them.
- Supply chain complexity. To reach high-end retail markets, producers need reliable post-harvest handling, certification, traceability and often contractual arrangements.
- Market growth and volatility. Organic markets have grown rapidly, but demand can be sensitive to economic cycles when consumers trade down from premium products.

6. Challenges and trade-offs

Despite benefits, organic farming faces important constraints:

- Lower yields for some crops and systems. As noted above, yield gaps exist and are influenced by local conditions.
- Pest and disease management. Without synthetic pesticides, organic farmers rely on cultural controls, biologicals and mechanical

methods; these can be effective but often require more labour and skill.

- Certification and traceability costs. Smallholders may find certification paperwork burdensome; group certification models can help but require organization.
- Accessibility and equity. Organic premiums can make products less affordable for low-income consumers, raising questions about equity and food security.
- Market concentration. As demand grows, larger corporate players have entered the organic supply chain, raising concerns about consolidation and the future of smallholders.

7. Policy, certification and institutional support

Certification standards (national and international) define what counts as organic. Governments and multilateral agencies support organic transitions via:

- Financial incentives (conversion grants, subsidies).
- Technical assistance (training on soil fertility and integrated pest management).
- Public procurement preferences.
- Research investments targeting organic-compatible varieties and techniques.

Collective action (cooperatives, buyer–producer partnerships) is crucial to reduce certification costs and stabilize markets.

8. How farmers transition to organic: a practical guide

Step 1: Assess suitability — soil health, water availability, and market access.

Step 2: Plan rotation and fertility — design multi-year rotations, select cover crops, and plan organic nutrient sources (compost, green manures).

Step 3: Pest and weed strategy — adopt cultural, biological and mechanical controls; monitor and use thresholds.

Step 4: Record keeping and certification — maintain records required for certification and check national standards.

Step 5: Market connections — secure buyers, contracts or join cooperatives before or during conversion to reduce financial risks.

Step 6: Monitor and adapt — keep soil tests, yield records and financial statements to evaluate progress.

9. Case studies: Europe, United States, India

Europe. Several European countries have high organic shares (e.g., Austria) due to long-standing policies, consumer demand and landscape-scale incentives. The EU's Farm to Fork strategy also targets higher organic shares.

United States. The U.S. organic market has grown rapidly with retail sales continuing to rise. Adoption faces challenges including regional availability of organic seed, labor, and transition support.

India. India has large numbers of organic producers, often smallholders, and growing domestic markets and export opportunities. Government programs and cluster-based certification schemes support conversion.

10. Outlook: Can organic scale sustainably?

A full-scale shift to organic agriculture would require careful planning to avoid unintended consequences such as increased land use and associated biodiversity loss. Hybrid strategies—combining the best practices from organic, conservation agriculture, and precision farming—may offer pragmatic pathways that scale sustainability while maintaining productivity.

Table 1. Comparison of Conventional and Organic Farming Systems

Aspect	Conventional Farming	Organic Farming
Yield Levels	Higher average yields, especially for cereals and monocrops.	Lower yields (5–25% less), varies by crop and region; smaller gap with diversification.
Soil Health	Relies on synthetic fertilizers; can lead to soil degradation over time.	Uses compost, manures, cover crops; improves soil organic matter and microbial activity.
Pest & Disease Control	Heavy reliance on synthetic pesticides and herbicides.	Uses biological control, crop rotation, and mechanical weeding; requires higher labour and skill.
Environmental Impact	Higher chemical runoff, biodiversity loss risk, higher energy use.	Lower chemical use, supports biodiversity, lower energy use but variable GHG outcomes.
Economic Returns	Lower production costs per unit; market prices volatile.	Higher labour and certification costs; offset by consumer price premiums.
Consumer Perception	Affordable and accessible; health/environmental concerns exist.	Seen as healthier and eco-friendly; demand is steadily growing.
Market Dynamics	Global supply chains well-established; dominated by corporates.	Expanding markets with support from subsidies, certification, and consumer trust.

CONCLUSION

The rise of organic farming marks a turning point in global agriculture. What began as a movement rooted in traditional wisdom and ecological principles has now become a mainstream force shaping consumer choices, policies, and market dynamics. Evidence shows that organic systems can enhance soil health, biodiversity, and sustainability, though challenges remain with yields, certification, and affordability. To scale effectively, organic farming must be complemented by innovations in technology, supportive policies, and inclusive market structures that benefit both smallholders and large producers. While organic agriculture alone may not be the single solution to feeding a growing population, it represents a vital component of a diversified and resilient food future. By blending organic principles with other sustainable practices, the world can move toward a food system that nourishes people while safeguarding ecosystems for generations to come.

REFERENCES

- FiBL & IFOAM – Organics International. (2023). *The World of Organic Agriculture: Statistics and Emerging Trends 2023*. Research Institute of Organic Agriculture (FiBL), Frick, and IFOAM – Organics International, Bonn.
- Willer, H., Trávníček, J., Meier, C., & Schlatter, B. (eds.) (2023). *The World of Organic Agriculture: Statistics and Emerging Trends 2023*. Research Institute of Organic Agriculture (FiBL) and IFOAM – Organics International.
- USDA Economic Research Service. (2024). *Organic Market Overview*. U.S. Department of Agriculture. Retrieved from: <https://www.ers.usda.gov/topics/natural-resources-environment/organic-agriculture/>
- Reganold, J. P., & Wachter, J. M. (2016). Organic agriculture in the twenty-first century. *Nature Plants*, 2(2), 15221. <https://doi.org/10.1038/nplants.2015.221>
- Seufert, V., Ramankutty, N., & Foley, J. A. (2012). Comparing the yields of organic and conventional agriculture. *Nature*, 485(7397), 229–232. <https://doi.org/10.1038/nature11069>
- Ponisio, L. C., M’Gonigle, L. K., Mace, K. C., Palomino, J., de Valpine, P., & Kremen, C. (2015). Diversification practices reduce organic to conventional yield gap. *Proceedings of the Royal Society B: Biological Sciences*, 282(1799), 20141396. <https://doi.org/10.1098/rspb.2014.1396>
- Dimitri, C., & Oberholtzer, L. (2021). *Organic Agriculture in the United States*. USDA Economic Research Service.
- FiBL Statistics. (2024). *Global organic area, producers, and market data*. Research Institute of Organic Agriculture (FiBL). Retrieved from: <https://statistics.fibl.org>
- Rembialkowska, E. (2007). Quality of plant products from organic agriculture. *Journal of the Science of Food and Agriculture*, 87(15), 2757–2762. <https://doi.org/10.1002/jsfa.3000>
- Sahota, A. (2022). Global market overview. In H. Willer et al. (Eds.), *The World of Organic Agriculture: Statistics and Emerging Trends*. FiBL & IFOAM – Organics International.