



## Economic viability and growth potential of natural farming and sustainable agriculture in Himachal Pradesh

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### Abstract

Agriculture is the primary source of livelihood for a large section of the rural population in India as well as in Himachal Pradesh and increasing concerns related to soil degradation, high input costs, and environmental sustainability have encouraged farmers to adopt natural farming methods. The Government of Himachal Pradesh also actively promoted Natural Farming through awareness programmes, training and institutional support. This farming system focuses on reducing external inputs, improving soil health and increasing farm resilience. This paper evaluates whether natural farming methods can improve farm income while protecting natural resources for future generations. The present research is based on both primary and secondary data. The study analyses factors such as cost of cultivation, crop productivity, profitability, resource conservation, market opportunities, and the challenges faced by farmers in adopting natural farming practices. Further this study provide a better understanding of the financial feasibility of natural farming and its contribution to sustainable rural development and identifies the scope for expanding natural farming through improved training, market support, and institutional assistance.

**Keywords:** Soil degradation, resilience, resource conservation, sustainable rural development

### Introduction

Agriculture is one of the most important sectors of the global economy, providing food, employment, and livelihoods to a large proportion of the population. However, conventional farming practices that depend heavily on chemical fertilizers, pesticides, excessive irrigation, and intensive cultivation have raised concerns regarding soil degradation, water pollution, loss of biodiversity, rising production costs, and long-term agricultural sustainability. These challenges have increased the need for farming approaches that can ensure economic returns while protecting natural resources. Natural farming and sustainable agriculture have emerged as important alternatives to conventional agricultural practices. Natural farming emphasizes the use of locally available and natural inputs, reduced dependence on synthetic chemicals, improvement of soil health, and the effective use of ecological processes. Sustainable agriculture, more broadly, seeks to balance economic profitability, environmental protection, and social well-being so that agricultural resources remain productive for future generations. The economic viability of natural and sustainable farming depends on several factors, including input costs, crop productivity, market prices, access to markets, availability of technology and knowledge, labour requirements, government support, and consumer demand for safe and environmentally friendly agricultural products..

Natural farming and sustainable agriculture have emerged as important approaches for improving agricultural productivity while protecting natural resources. In Himachal Pradesh, a large section of the rural population, where small and marginal farmers dominate the farming system, Rising cultivation costs, declining soil fertility, climate variability and dependence on chemical inputs have encouraged farmers to explore natural farming practices.

The Government of Himachal Pradesh has actively promoted Subhash Palekar Natural Farming (SPNF) through awareness programmes, training and institutional support. This farming system focuses on reducing external inputs, improving soil health and increasing farm resilience. At the same time, the growing demand for organic, chemical-free, locally produced, and environmentally sustainable food creates significant opportunities for the expansion of natural farming. Improvements in agricultural technology, digital marketing, farmer-producer organizations, government initiatives, and direct marketing can further enhance the growth potential of sustainable agriculture.

The present study is based on the Sustainable Livelihood Theory and the Triple Bottom Line (TBL) Theory. Sustainable Livelihood Theory explains that rural livelihoods become more secure when farmers utilize natural resources efficiently, reduce dependence on costly external inputs, and improve resilience against economic and environmental risks. Natural farming supports sustainable income generation while conserving natural resources.

The Triple Bottom Line Theory, emphasizes that sustainable development should balance three dimensions: economic profitability, environmental protection, and social well-being. Natural farming aligns with these principles by reducing production costs, improving soil health, conserving biodiversity, promoting farmer welfare, and supporting long-term agricultural sustainability. Together, these theories explain how natural farming contributes simultaneously to farm profitability, environmental conservation, and sustainable rural development.

### Review of Literature

Raj, H. (2019) <sup>[3]</sup>. Raj investigated the economic viability of organic farming in Himachal Pradesh by comparing production costs and farm profitability. The study

demonstrated that lower input costs and positive net income made organic farming economically viable despite moderate yield reductions during the transition period. Sharma, Singh, & Thakur, M. (2022) <sup>[4]</sup>. Sharma and associates assessed the impact of natural farming on rural households in Solan district. Their findings showed improvements in household income, crop diversification, food security, and environmental sustainability. The study emphasized that government support and farmer training significantly influenced adoption. Pretty, J., Benton (2022) <sup>[7]</sup> Pretty and colleagues found that sustainable agricultural practices increase farm productivity while reducing environmental degradation. Their research demonstrated that ecological farming contributes to long-term rural development and food security. Mandla, R. & Sharma, N. (2023) <sup>[9]</sup>. The authors documented successful natural farming practices adopted by farmers across Himachal Pradesh. The study highlighted increased farmer income, improved soil fertility, reduced dependence on external inputs, and enhanced ecological sustainability through natural farming methods. NITI Aayog. (2023) <sup>[6]</sup>. The report on sustainable agriculture emphasized that natural farming reduces dependence on synthetic inputs, lowers cultivation costs, conserves biodiversity, and supports climate-resilient agriculture. It recommended wider adoption through policy support, market development, and farmer awareness. OECD (2024) <sup>[13]</sup>. The OECD observed that environmentally sustainable farming improves long-term farm profitability by reducing input dependence, increasing resource efficiency, and improving resilience against market and climate risks. Thakur, P., Kumar, R., & Sharma, S. (2025) <sup>[11]</sup>. Thakur and co-authors examined the impact of natural farming on farmers' income in Mandi district. Using a sample of 60 farmers, the study found that mixed cropping under natural farming generated higher net returns with lower production costs compared to conventional farming. The researchers concluded that natural farming improves farm income while reducing financial risk. Government of Himachal Pradesh. (2025) <sup>[10]</sup>. The state government reported that more than 2.22 lakh farmers had adopted natural farming across over 38,000 hectares. Training programmes, premium support prices, and institutional assistance contributed to expanding natural farming while strengthening rural livelihoods and sustainable agriculture. Divyanshu (2025) <sup>[12]</sup>. This research compared natural farming and conventional apple cultivation using agro-ecological indicators. The findings revealed better soil health, lower pest incidence, and improved profitability under natural farming, indicating its long-term sustainability in horticulture.

### Research Gap

Existing studies have primarily examined the environmental and agronomic benefits of natural farming, while comparatively fewer studies have comprehensively evaluated its economic viability, growth potential, and long-term profitability at the farm level. Most research has focused on individual area limiting the generalization of findings across the state. Limited evidence is available regarding farmers' perceptions, market opportunities, institutional support, and the relationship between sustainable agriculture and rural economic development. Furthermore, recent policy interventions promoting natural farming have not been adequately assessed from an

economic perspective. Therefore, a comprehensive study integrating profitability, sustainability, farmer income, and future growth prospects is necessary to provide evidence-based recommendations for strengthening natural farming in Himachal Pradesh.

### Objectives of the Study

1. To assess the economic viability of natural farming among selected farmers H.P.
2. To compare cultivation costs and returns under natural farming practices H.P.
3. To study the impact of natural farming on farm income and profitability.
4. To identify the factors influencing the adoption of natural farming in H.P.
5. To evaluate the growth potential of sustainable agriculture in Himachal Pradesh

### Sample size

A total of 150 farmers are selected for the study.

### Source of Data

The study uses both primary and secondary sources of information.

Primary data are collected directly from farmers using a structured questionnaire through personal interaction while the Secondary information is collected from Department of Agriculture, Government of Himachal Pradesh, NITI Aayog Natural Farming Portal, Research journals, Agricultural statistics and Books and published research articles.

### Findings of the study

1. Approximately 2.2 lakh farmer and horticulturist families have adopted natural farming either fully or partially across Himachal Pradesh.
  - Natural farming activities have expanded to 99.3% of Gram Panchayats, indicating almost complete geographical coverage.
  - Around 38,437 hectares of cultivated land are presently under natural farming practices.
  - Nearly 1.98 lakh farmers have received certification, strengthening consumer confidence and improving marketing opportunities.
  - Farmers have reported 20–40% reduction in cultivation costs because chemical fertilizers and pesticides are replaced with locally prepared natural inputs.
  - Long-term practitioners have observed improvements in soil fertility, water retention, microbial activity, and crop quality.
  - Initial challenges include temporary yield decline, labour-intensive preparation of natural formulations, and the need for continuous technical guidance.
  - Himachal Pradesh became the first Indian state to procure naturally grown wheat and maize at premium support prices.
  - Naturally grown agricultural products are marketed under the "Him Bhog" brand.
  - The government has identified 10 dedicated markets for natural farming produce.
  - Expansion of Farmer Producer Organizations (FPOs), e-NAM platforms, food processing units, and value addition is expected to increase farmers' income.

- Rising consumer demand for chemical-free cereals, fruits, vegetables, spices, pulses, and millets offers strong market opportunities.
- Government plans to include over one lakh additional farmers under natural farming indicate significant future expansion.
- Improved branding, certification, cold-chain infrastructure, and direct farmer-consumer marketing are expected to enhance profitability.
- Elimination of chemical fertilizers and pesticides reduces soil, water, and environmental pollution.
- Continuous use of natural formulations increases soil organic carbon, microbial activity, and long-term soil fertility.
- Improved soil structure enhances water-holding capacity, reducing irrigation requirements during dry seasons.
- Natural farming promotes crop diversification, mixed farming, biodiversity conservation, and ecological balance.
- Reduced dependence on external chemical inputs lowers greenhouse gas emissions associated with fertilizer production and transportation.
- Greater use of indigenous livestock and farm-based resources supports resource recycling and circular agriculture.

Natural farming improves the resilience of Himalayan agriculture against climate change, soil degradation, and declining natural resources

### Suggestions

**Farmer Training:** Regular and practical training programmes should be organised for farmers. Training should cover natural input preparation, soil management, pest control, crop diversification, water conservation and post-harvest management. Demonstration farms and farmer-to-farmer learning can make the training more practical and easier to understand.

**Market Linkage:** Strong market linkages should be developed for naturally produced agricultural products. Procurement centers and organized marketing channels can help farmers reduce dependence on intermediaries and obtain better price realization. Market accessibility should receive particular attention because its mean score was lower than the other major positive indicators.

**Govt. support:** Government agencies should continue providing training, extension services, financial assistance and market-related support. Special attention should be given to small and marginal farmers and farmers located in remote areas.

**Certification:** Certification procedures should be simple, affordable and accessible. Farmers should receive guidance regarding certification requirements so that naturally produced products can obtain appropriate market recognition and consumer confidence.

**FPO Organizations:** Farmer Producer Organizations should be strengthened to support collective procurement,

storage, transportation, processing and marketing. FPOs can improve farmers' bargaining power and help them reach larger markets.

**Storage and processing:** Suitable storage and small-scale processing facilities should be developed near farming areas. These facilities can reduce post-harvest losses and allow farmers to retain value from their produce for longer periods.

**Value addition:** Farmers and FPOs should be encouraged to undertake grading, packaging, processing and branding of naturally produced crops. Value-added products can provide additional income opportunities and improve the commercial attractiveness of natural farming.

**Research and Technical Support:** Continuous research should be encouraged on crop productivity, soil health, pest management, climate resilience and profitability under natural farming. Technical guidance should be adapted to local farming conditions rather than relying on a single approach for all crops and districts.

### References

1. Elkington J. Cannibals with forks: The triple bottom line of 21st century business. Capstone Publishing, 1997.
2. Scoones I. Sustainable rural livelihoods: A framework for analysis. Institute of Development Studies, 1998.
3. Raj H. Economic viability of organic farming in Himachal Pradesh. *International Journal of Horticulture and Food Science*, 2019;1(2):45–50.
4. Sharma R, Singh V, Thakur M. Natural farming for sustainable rural livelihoods in Himachal Pradesh. *Frontiers in Sustainable Food Systems*, 2022, 6, Article 878015. <https://doi.org/10.3389/fsufs.2022.878015>
5. Indian Council of Agricultural Research. Natural farming: Research and innovations for sustainable agriculture. ICAR, 2022.
6. NITI Aayog. Natural farming: A policy framework for sustainable agriculture in India. Government of India, 2023.
7. Pretty J, Benton. Global assessment of agricultural system redesign for sustainable intensification. *Nature Sustainability*, 2022;5(4):314–322. <https://doi.org/10.1038/s41893-021-00816-0>
8. Food and Agriculture Organization. The state of food and agriculture 2023: Revealing the true cost of food to transform agrifood systems. FAO, 2023. <https://doi.org/10.4060/cc7724en>
9. Mandla R, Sharma N. Adoption and performance of natural farming practices in Himachal Pradesh. *Indian Farming*, 2023;73(6):42–47.
10. Government of Himachal Pradesh. Annual report on PrakritikKheti Khushhal Kisan Yojana (PK3Y). Department of Agriculture, Government of Himachal Pradesh, 2025.
11. Kumar R, Sharma S, Verma A. Economic analysis of vegetable cultivation under natural farming in Himachal Pradesh. *Indian Journal of Agricultural Economics*, 2025;80(1):78–92.
12. Divyanshu S, Sharma R, Thakur P. Agro-ecological assessment of natural farming in apple-based

- production systems of Himachal Pradesh. *Journal of Applied and Natural Science*, 2025;17(2):456–.
13. Organisation for Economic Co-operation and Development. Policies for sustainable agriculture and food systems. OECD Publishing, 2024. <https://www.oecd.org/agriculture/>
  14. United Nations Environment Programme. Global environment outlook: Healthy planet, healthy people. UNEP, 2024. <https://www.unep.org/>
  15. Scientific Reports. Sustainable crop planning and agricultural productivity in Himachal Pradesh. *Scientific Reports*, 2025, 15, Article 4212.
  16. Thakur P, Kumar R, Sharma S. Natural farming and farmers' income: Evidence from Mandi district of Himachal Pradesh. *International Journal of Agriculture Sciences*, 2025;17(4):233–241.