



## Plough to Plate: Natural Farming Unleashed

This editorial is based on [“Natural farming needs better prices, markets”](#) which was published in The Hindu business line on 27/12/2023. The article discusses the challenges faced by Natural farming and the need of exploring alternative markets to promote natural farming.

**For Prelims:** [Natural Farming](#), [Organic farming](#), [Green Revolution](#), [Drip irrigation](#), [Bio-pesticides](#), [Public Distribution System \(PDS\)](#), [Farmer Producer Organizations \(FPOs\)](#), [Participatory Guarantee System \(PGS-India\)](#), [Bureau of Indian Standards](#), [Mid-day meal programme](#)

**For Mains:** Natural Farming: Benefits, Challenges and Way Forward; Organic vs Natural Farming

We are self-sufficient in agriculture produce, thanks to the [Green Revolution](#). But the negative environmental impacts in green revolution regions are all too visible — soil degradation, biodiversity loss, natural resources depletion, among others. One of the sustainable agriculture practice that is now gaining momentum is [natural farming \(NF\)](#) which is ‘agriculture as per local ecology and hence also called as **agroecology**’.

### What is Natural Farming?

- **The Concept:** Natural farming is a **chemical-free farming method** that uses locally available resources and traditional practices. It's based on **agroecology** and integrates crops, trees, and livestock.
  - Natural farming also **uses beneficial microorganisms** to improve soil quality and health.



## COMPONENTS OF NATURAL FARMING



### Beejamrit

The process includes treatment of seed using cow dung, urine and lime based formulations.

### Whapasa

The process involves activating earthworms in the soil in order to create water vapor condensation.



### Jivamrit

The process enhances the fertility of soil using cow urine, dung, flour of pulses and jaggery concoction.

### Mulching

The process involves creating micro climate using different mulches with trees, crop biomass to conserve soil moisture.

### Plant Protection

The process involves spraying of biological concoctions which prevents pest, disease and weed problems and protects the plant and improves their soil fertility.

## Natural Farming vs Organic Farming

**Organic Farming:** [Organic farming](#) is a farming system that uses traditional methods to grow crops and raise animals without synthetic inputs. This includes avoiding synthetic fertilisers, pesticides, antibiotics, genetically modified organisms, and growth hormones.

### How is it different from Natural Farming?

- Natural farming emphasises **minimal human intervention** and ecosystem mimicry, while organic farming focuses on using organic inputs and adheres to specific standards.
- Natural farming **prohibits the use of any imported fertilisers** or soil amendments, while organic farming **allows the use of compost, mineral rocks, and fertilisers** from plant or animal sources.
- Natural farming **relies on ecological principles to promote biodiversity**, preserve soil health, support plant and animal health, and improve crop yields, while organic farming uses **organic materials and techniques to optimise the productivity** and ecological vitality of agricultural ecosystems.
- Natural farming **discourages the use of any chemicals**, while organic farming has a list of **approved chemicals considered safe** for humans and the environment.
- Natural farming is based on a philosophical **approach that reflects the wisdom of nature** itself, while organic farming is a holistic agricultural system that is meticulously designed and regulated.

## What are the Benefits of Natural Farming?

- **Environmental Benefits:**
  - **Healthy Soil:** Natural farming techniques like **composting and mulching enhance soil fertility** by promoting beneficial microorganisms and organic matter. This leads to

improved water retention, increased nutrient availability, and better crop yields.

- **Water Conservation:** Natural methods like mulching and [drip irrigation](#) **help retain moisture in the soil**, reducing the need for excessive water usage. This is crucial for sustainable water management and combating drought conditions.
- **Reduced Pollution:** By substituting chemical fertilisers and pesticides with natural alternatives, natural farming significantly **reduces the pollution of soil, water bodies, and the atmosphere**. This protects ecosystems and human health from harmful chemicals.
- **Climate Change Mitigation:** Natural farming practices generally have a **lower carbon footprint** compared to conventional agriculture. Additionally, healthy soil acts as a [carbon sink](#), capturing [greenhouse gases](#) and contributing to [climate change](#) mitigation.
- **Farmer Benefits:**
  - **Reduced Costs:** Natural farming relies on locally available resources and on-farm inputs, like compost and [bio-pesticides](#), leading to **lower dependence on expensive external inputs like chemical fertilisers and pesticides**. This reduces the overall cost of production and improves farmer profitability.
  - **Improved Farm Resilience:** Natural farming techniques make farms more **resilient to extreme weather events like droughts** and floods by promoting soil health and biodiversity. This leads to greater stability and reduces risks for farmers.
  - **Enhanced Farmer Health:** By eliminating exposure to harmful chemicals, natural farming protects farmers' health and well-being.
- **Consumer Benefits:**
  - **Safer Food:** Natural farming produces **food free from harmful chemical residues**, leading to safer and healthier consumption for consumers.
  - **Improved Food Quality:** Studies suggest that **naturally grown food can have higher levels of antioxidants and other beneficial nutrients**, potentially leading to improved health outcomes for consumers.
  - **Support for Sustainable Agriculture:** Consumers who choose natural food products indirectly **support a more sustainable and ethical agricultural system** that benefits the environment and farmers.

## What are the Challenges Related to Natural Farming?

- **Limited market:** Farmers who have been practising NF **do not get premium prices for their products**, as differentiated markets, standards and protocols don't exist sufficiently. Many farmers confess that NF products are largely for home consumption.
  - Moreover, there is a **lack of certification and standardisation for natural farming**, which makes it hard to distinguish from organic or conventional farming.
- **Lower Initial Yields:** Natural farming relies on building healthy soil ecosystems, which takes time. This often translates to **lower yields in the initial years compared to conventional methods** that rely on chemical inputs for quick boosts.
  - In Andhra Pradesh, a study by the Centre for Sustainable Agriculture found that paddy yields in natural farms were 20% lower than conventional farms in the first year, gradually improving to match conventional yields within three years.
- **Lack of Awareness and Training:** Many farmers **lack knowledge and practical skills** in natural farming techniques, **making them hesitant to switch**. Limited access to training programs and extension services further exacerbates the problem.
  - In Himachal Pradesh, despite government initiatives to promote natural farming, many farmers remain unaware of the specific practices and benefits, hindering wider adoption.
- **Availability and Affordability of Organic Inputs:** The high cost of organic cotton seeds discourages farmers from adopting natural cotton cultivation, despite the long-term benefits for soil health and market demand.
- **Pest and Disease Management:** Natural farming relies on ecological methods for pest and disease control, which can be **less effective than chemical pesticides** in the short term. This requires farmers to be more vigilant and adopt preventative measures.
  - For Example, Apple growers in Jammu and Kashmir face challenges in managing codling moth infestations using natural methods, leading to some reverting to chemical pesticides.

## What Measures Should be Taken to Promote Natural Farming?

- **Developing Alternative and Differentiated Markets:** The government should explore alternate markets, if we have to transit to NF. Here are some ideas on expanding alternative markets for the NF:
  - **Public Distribution System (PDS):**
    - Integrating NF produce into the [PDS](#) can not only provide a stable market for farmers but also ensure the availability of healthy and chemical-free food to a wider population.
  - **Utilise the Existing Mechanisms:**
    - The existing networks of [Primary Agricultural Cooperative Societies](#) and Marketing Federations may also be included.
    - Collaborating with [Farmer Producer Organizations \(FPOs\)](#) can enhance the efficiency of production, procurement, and distribution.
  - **Mid-day Meal Programme:**
    - The [mid-day meal program](#) can become a new market by shifting from importing food to using local decentralised systems. This involves local production, procurement, storage, and distribution using produce from nearby areas, with the participation of FPOs.
      - Local crops for local requirements must be the mantra.
  - **Dedicated Haats:**
    - There are about 43,000 village haats (markets), a chain of farmers' markets in Andhra Pradesh, Telangana and Tamil Nadu.
    - A few of them, can be dedicated to certified NF produce and backward integration developed.
  - **Establish Consumer Cooperatives:**
    - Consumer Cooperatives can also be established in urban/peri-urban areas of major cities where farmland is within 100 km radius.
    - Tirumala Tirupati Devasthanams (TTD) in 2022, made arrangements with 5,000 Self-Help Groups to source the pesticide-free produce for making offerings to the deities (laddu prasadam and anna prasadam).
- **Effective implementation of Certification:** To establish a common understanding among stakeholders the government introduced the [Participatory Guarantee System \(PGS-India\)](#) and Himachal Pradesh developed a self-certification tool (CETARA-NF) for natural farming to ensure quality without third-party certification. The [Bureau of Indian Standards](#) drafted requirements for natural farming (NF) and labelling NF produce, distinguishing it from organic farming.
  - Incentives and recognition for adhering to standards, stakeholder collaboration, and policy support are essential for effective implementation at the field and market levels.
- **Develop Awareness:** Developing awareness amongst farmers and consumers is required. Both these are not easy tasks, as food/agriculture is a powerful habit, if not a culture.
  - Some estimates indicate that this niche market is growing at about 20-25%, despite consumers not being sure how genuine the label/product is!
    - If we could bring in reliability, our food systems can gradually change for the better.

### **Drishti Mains Question:**

Discuss the concept and benefits of natural farming in the context of India's agricultural sector. How can natural farming be promoted and scaled up?

## **UPSC Civil Services Examination, Previous Year Questions (PYQs)**

### **Prelims**

#### **Q. How is permaculture farming different from conventional chemical farming? (2021)**

1. Permaculture farming discourages monocultural practices but in conventional chemical farming, monoculture practices are predominant.
2. Conventional chemical farming can cause an increase in soil salinity but the occurrence of such phenomenon is not observed in permaculture farming.

3. Conventional chemical farming is easily possible in semi-arid regions but permaculture farming is not so easily possible in such regions.
4. Practice of mulching is very important in permaculture farming but not necessarily so in conventional chemical farming.

**Select the correct answer using the code given below:**

- (a) 1 and 3
- (b) 1, 2 and 4
- (c) 4 only
- (d) 2 and 3

**Ans: (b)**

**Q. With references to organic farming in India, consider the following statements: (2018)**

1. 'The National Programme for Organic Production' (NPOP) is operated under the guidelines and directions of the Union Ministry of Rural Development.
2. 'The Agricultural and Processed Food Products Export Development Authority' (APEDA) functions as the Secretariat for the implementation of NPOP.
3. Sikkim has become India's first fully organic State.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans: B**

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**Mains:**

**Q.** What are the present challenges before crop diversification? How do emerging technologies provide an opportunity for crop diversification? **(2021)**

**Q.** How has India benefited from the contributions of Sir M. Visvesvaraya and Dr. M. S. Swaminathan in the fields of water engineering and agricultural science respectively? **(2019)**