

**Popular Article** 

# Natural Farming: A Way towards Sustainable and Regenerative Agriculture

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## Abstract

Natural farming is promoted worldwide to produce safe and quality produce and to live in harmony with nature. Chemical-free farming is a sustainable agricultural approach that focuses on harmonizing with nature rather than altering it. It focuses on improving soil biological fertility without relying on synthetic chemicals or external inputs.Using conventional techniques in agriculture is not only depletes the soil but also pushes farmers into debt. Therefore, Zero Budget Natural Farming (ZBNF) is the only viable solution to address this growing issue. Subhash Palekar, the pioneer of Zero Budget Natural Farming (ZBNF), introduced various theories, principles, and techniques for its implementation. Farmers practicing ZBNF utilize mulching, soil conservation methods, and natural pesticides and fertilizers. The key practices of ZBNF include crop rotation, green manuring, composting, biological pest control, and mechanical cultivation.

## Introduction

Natural farming is a holistic approach to agriculture that seeks to create a mutually beneficial relationship between farmers and the environment by observing and mimicking natural conditions. This traditional, chemical-free farming method is based on agroecology and involves integrating crops, trees, and livestock with functional biodiversity. Also known as the Fukuoka Method or "do-nothing farming," natural farming is an ecological approach that encompasses various indigenous practices, including Zero Budget Natural Farming (ZBNF). By adopting agroecological practices such as composting, mulching, green manuring, crop rotation, intercropping, and livestock integration, natural farming promotes environmental biodiversity, soil health, and a holistic understanding of farming systems.



The principles of natural farming prioritize environmental biodiversity and soil health, adhering to the laws of nature in agricultural production. This approach has a positive impact on soil quality and microbial community composition, minimizing external inputs that can degrade soil health while increasing microbial aeration and water retention capacity. As India strives for self-reliance in agriculture, natural farming emerges as a promising method to achieve ecologically sustainable and economically viable farming practices. The government's efforts to uplift, empower, and stabilize farmers in technical, economic, and social aspects have led to the exploration of various methods, including natural farming, which holds potential to realize these goals. Backed by traditional knowledge and relying on locally available resources, natural farming offers a sustainable and viable alternative for farmers.

The philosophy of natural farming is cantered on working in harmony with nature, minimizing interference, and avoiding harmful traditional farming practices. The five core principles of natural farming are: no tillage, no external inputs, no weeding, soil mulching, and no pruning. In India, Subhash Palekar, also known as "Krishika Rishi," has popularized Zero-Budget Natural Farming (ZBNF), a self-regenerating and eco-friendly approach that utilizes locally available resources, including seeds, cow breeds, and soil. After years of research and experimentation, Palekar developed a holistic agriculture practice that eliminates the need for external inputs, credit, and commercial expenditure, making it a self-sustaining and cost-free method. In ZBNF, all necessary resources for plant growth are available within the root zone, eliminating the need for purchased inputs. Notably, natural farming differs from organic farming in many ways. Following are the important comparisons between organic farming and natural farming.

S.No	Particulars	Organic farming	Natural farming
1.	Meaning	It is an alternative agricultural system that forgoes or restricts the use of artificial substances such fertilizers, herbicides, growth regulators, and supplements to livestock feed.	It is an alternate agricultural method in which soil is not altered while plants are cultivated as separate entities.
2.	What is used	In organic farming, materials like compost, vermicompost, cow dung manure, etc., are used as organic fertilizers and manures on farmlands.	In it such type of chemical fertilizer or organic fertilizers are avoided. Farming is done by naturally available substances.

Table 1. Comparisons between organic farming and natural farming



3.	Agro Practices	In it mechanical operation like ploughing, tillage operations, weeding, manures mixing etc is performed.	In it there is no such type of agro practices are performed. Because mechanical operations are completely avoided.
4.	Expensive	It is more expensive than natural farming because external inputs are used.	Less expensive than organic because external inputs are not used.
5.	Yield	Comparatively more yield	Comparatively low yield
6.	Economic Benefits	More benefited for farmers because yield is more than natural farming	Less benefited

ZBNF consist of four pillars i.e. Jivamrita, Bijamrita, Acchadana (Mulching) and Whapsa (Moisture) which is mentioned in (Table 2).

Table 2. Four pillars o	f Zero Budget Natural	Farming
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Sr. No	Methods	Input needed	Application
1.	Beejamrit	It is made from 5 kg cow dung, 5 litre cow urine, 50-gram lime, 1kg bund soil, 20 litre water (for 100 kg seed).	Apply Beejamrit to the seeds of any crop by coating them thoroughly with your hands. After coating, allow the seeds to dry properly before sowing. For leguminous seeds with thin seed coats, quickly dip them in Beejamrit, and then let them dry before planting.
2.	Jivamrita	It is made from 10 kg of fresh cow dung, 5-10 litre cow urine, 50 gram lime, 2 kg jaggery, 2 kg pulses' flour 1 kg uncontaminated soil and 200 litres water	This mixture should be applied every two weeks, either by spraying directly onto crops or by mixing it with irrigation water. For fruit plants, it should be applied individually. The mixture can be stored for up to 15 days
3.	Acchadana (Mulching)	This includes dried vegetation, farm stubble, and other biomass waste, which are used to cover the soil and protect it from extreme sunlight, cold, and rain.	It conserves soil moisture, by reducing evaporation.
4.	Whapsa (Mositure)	Whapasa means the mixture of 50% air and 50% water vapour in the cavity between two soil particles.	It improves water availability, enhances water-use efficiency, and strengthens resilience against drought.



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#### **Schemes for Promotion of Natural Farming:**

The government initiated different schemes for promotion of Natural farming in India. The goal of the **Bharatiya Prakritik Krishi Paddhati (BPKP)** initiative, which has a six-year budget of Rs. 4645.69 crore, is to promote traditional, indigenous farming methods and lessen reliance on inputs that must be imported. It is in line with the PGS-India certification program and offers financial assistance of Rs. 12,200 per hectare for three years. **The National Mission on Natural Farming (NMNF)** was introduced in 2023–2024, seeks to increase the reach of natural farming and encourage chemical-free farming. These programs show the government's dedication to supporting organic and sustainable farming methods, which can enhance soil health, lower the use of chemicals, and boost farmers' profits. These programs can assist farmers in switching to more ecologically friendly and sustainable farming practices by offering certification, training, and financial support. All things considered, these programs have the power to revolutionize India's agriculture industry, increasing its sustainability, productivity, and farmer profits. India can lead the world in organic and natural farming with government investment and support, providing a model for other nations to follow.

#### Natural Farming: The way towards sustainable farming:

Here is a more details look at why natural farming is considered a sustainable way of farming approach.

**Improve yield:** Natural farming practitioners reported yields that were comparable to those of conventional farmers. Higher yields per harvest were also recorded in a number of cases. **Increased Farmers income:** Natural farming seeks to increase farmers' net incomes through lower costs, lower risks, comparable yields, and intercropping incomes in order to make farming feasible and aspirational.

**Minimized Cost of Production:** By enabling farmers to generate necessary biological inputs using natural, homegrown, and on-farm resources, Natural Farming seeks to significantly reduce production costs.

**Promotes Better Health:** Natural farming eliminates health risks and hazards because it does not utilize any synthetic chemicals. The dish delivers greater health benefits because it has a higher nutritional density.

**Creation of Employment:** Because of natural farming input businesses, value addition, local marketing, etc., natural farming creates jobs. The hamlet itself receives investments from the excess from natural farming.

**Removes the Use of Artificial Chemical Inputs:** Over and indiscriminate use of synthetic fertilizers, particularly urea, insecticides, herbicides, weed killers, and other chemicals changes the biology and structure of soil, which leads to a loss of fertility and soil organic carbon.



**Preservation of the Environment:** Better soil biology, more agrobiodiversity, and more prudent water use with significantly lower carbon and nitrogen footprints are all guaranteed by natural farming. **Decreased Use of Water**: Natural farming maximizes the amount of "crop per drop" by using a variety of crops that support one another and cover the soil to stop needless water loss through evaporation.

**Rejuvenates Health of the Soil: The** biology of soil—microbes and other living things like earthworms—is where Natural Farming has the most direct effects. The health of soil is solely dependent on the living things that inhabit it.

**Sustainability of Livestock:** Livestock integration into the farming system is crucial to natural farming and aids in ecosystem restoration. Cow dung, urine, and other natural materials are used to make eco-friendly bio-inputs like Jivamrit and Beejamrit.

**Community ownership and women's agency to expand natural farming:** The change of natural farming occurs democratically through grassroots leadership by women's and men's collectives. The development, execution, and monitoring of programs are mostly carried out by women collectives (SHGs and associated federations). As women and their collectives get a deeper understanding of natural farming and encourage their members to embrace it, they are at the forefront of this transformational movement. Furthermore, extension architecture driven by farmers and communities continuously provides handholding support and information dissemination.

**Resilience:** In addition to posing serious challenges to farmers, climate change jeopardizes the soil, water, and other resources that are essential to food production. Crop growth has already been hampered by the intensification of heat waves, cyclones, and droughts brought on by rising temperatures. In this regard, crops cultivated using natural farming practices have exceptional resistance to cyclones and droughts. Plant growth is supported even in harsh conditions, such as severe droughts, and can endure significant flood and wind damage during cyclones thanks to changes in soil structure brought about by organic carbon, no/low tillage, and plant diversity. By making the crops more resilient to weather extremes, NF has a positive effect on a large number of farmers.

### **Conclusion:**

It is concluded from the above discussion that Natural Farming is a holistic and sustainable approach to agriculture that prioritizes the health and well-being of the entire ecosystem. This approach is based on several key theoretical frameworks, including systems thinking, ecological principles, regenerative agriculture, and agroecology. Natural Farming has several benefits, including improved soil health, increased biodiversity, improved water quality, increased crop yields, and improved human health. However, Natural Farming also faces several challenges, including limited knowledge and skills, higher labour requirements, limited access to markets, and policy and regulatory frameworks



that may not support Natural Farming practices. Despite these challenges, Natural Farming has the potential to contribute to a more sustainable and regenerative food system, and it is an approach that is worth exploring and promoting.

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