

## Natural Farming: Anchoring a Sustainable Way of Farming

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There is no doubt that, green revolution technologies have revolutionized the food production scenario and transformed the Indian agriculture from subsistence to surplus generating enterprise. But indiscriminate use of chemical inputs (fertilizers, pesticides and hormones) and over-exploitation of natural resources have led to decline in soil health and fertility, depletion of natural resources and contamination of environment, water and food. All these concerns have underscored the need for exploring alternative agricultural systems, that are sustainable, environment friendly, non-degrading, non-contaminating and offer better income opportunities to the farmers along with safe and healthy food to the citizens. Approach of natural farming, besides being sustainable, non-degrading, non-depleting and resource conserving is also cost effective. It give freedom to the farmers from purchased inputs, ensure comparable productivity, increased income and are safe to soil, environment and all the life forms including human and animals. Adoption of Natural farming practices on farmer fields have been found to be enriching the soils with organic carbon, increased microbial activity, increased activity of earthworms leading to restoration of natural nutrient cycles, improved water holding capacity and increased biological activity. Natural farming fields with adequate diversity have been found to be less prone to insect pest attacks.

Zero-Budget Natural Farming is one of the many methods of natural farming, popularized by agriculturist Subash Palekar . According to the approach, a concoction of natural inputs like cow urine and dung, jaggery, lime, neem among others is used to improve soil health, nutrients and reduce input costs, among other benefits.

Natural farming offers a solution to various problems, such as food insecurity, farmers' distress and health problems arising due to pesticide and fertilizer residue in food and water, global warming, climate change and natural calamities. It also has the potential to generate employment, thereby stemming the migration of rural youth. Natural Farming, as the name

suggests, is the art, practice and, increasingly, the science of working with nature to achieve much more with less.

### **Importance of Natural Farming**

Natural farming is a chemical-free farming system rooted in Indian tradition enriched with modern understanding of ecology, resource recycling and on-farm resource optimization. It is considered as agro-ecology based diversified farming system which integrates crops, trees and livestock with functional biodiversity. It is largely based on on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations; maintaining soil aeration and exclusion of all synthetic chemical inputs. Natural farming is expected to reduce dependency on purchased inputs. It is considered as a cost-effective farming practice with scope for increasing employment and rural development.

Several studies have reported the effectiveness of natural farming in terms of increase in production, sustainability, saving of water use, improvement in soil health and farmland ecosystem. It is considered as a cost-effective farming practices having the scope of raising employment and rural development. Natural farming offers a solution to various problems, such as food insecurity, farmers' distress, and health problems arising due to pesticide and fertilizer residue in food and water, global warming, climate change and natural calamities. It also has the potential to generate employment, thereby stemming the migration of rural youth. Natural farming, as the name suggests, is the art, practice and, increasingly, the science of working with nature to achieve much more with less.

### **Current Scenario of Natural farming in India**

Many states are already following natural farming and have developed successful models. Many states have taken up initiatives for natural farming promotion Andhra Pradesh, Gujarat, Himachal Pradesh, Odisha, Madhya Pradesh, Rajasthan, Uttar Pradesh and Tamil Nadu are among the leading states. Currently, the acceptance and adoption of natural farming systems are at early stages and gradually gaining acceptance among the farming community. As of now, more than 10 lakh hectare area is covered under Natural farming in India.

Moreover, green revolution technology is now contemplated to be degrading the agro-ecosystem: and diminishing the economic returns for the farmers. Several studies have shown that chemical fertilizer and pesticides affect soil health by killing millions of microbes present in the soil which are important for sustaining plant life. Natural farming is considered to be



agro-ecology based diversified farming system, which integrates crops, trees and livestock, allowing functional diversity to cut down production costs by replacing the chemical fertilizers, pesticides home grown products like Jeevamrit, Beejamrit, Neemastra etc. and adopting intercropping and mulching.

### **Benefits of Natural Farming**

The generic principles that govern natural farming are mentioned below:

- ✚ **Improve Yield:** Farmers practicing natural farming reported similar yields to those following conventional farming. In several cases, higher yields per harvest were also reported. Natural farming aims to increase yields by maximizing production factors like labor, soil, equipment and by avoiding the use of non-natural inputs like fertilizers, herbicides and pesticides.
- ✚ **Increase farmers Income:** Natural farming aims to make farming viable and aspirational by increasing net incomes of farmers on account of cost reduction, reduced risks, similar yields, incomes from intercropping
- ✚ **Minimized Cost of production:** Natural farming aims to drastically cut down production costs by encouraging farmers to prepare essential biological inputs using on-farm, natural and home-grown resources.
- ✚ **Ensures Better Health:** As Natural farming does not use any synthetic chemicals, health risks and hazards are eliminated. The food has higher nutrition density and therefore offers better health benefits.
- ✚ **Employment Generation:** Natural farming generates employment on account of Natural farming input enterprises, value addition, marketing in local areas, etc. The surplus from Natural farming is invested in the village itself
- ✚ **Eliminates application of synthetic chemical inputs:** The overuse of synthetic fertilizers, especially urea, pesticides, herbicides, weedicides etc. alters soil biology and soil structure, with subsequent loss of soil organic carbon and fertility.
- ✚ **Environment Conservation:** Natural farming ensures better soil biology, improved agro biodiversity and a more judicious usage of water with much smaller carbon and nitrogen footprints.

- ✚ **Reduced water consumption:** By working with diverse crops that help each other and cover the soil to prevent unnecessary water loss through evaporation, Natural farming optimizes the amount of ‘crop per drop’.
- ✚ **Rejuvenate Soil Health:** The most immediate impact of natural farming is on the biology of soil—on microbes and other living organisms such as earthworms. Soil health depends entirely on the living organisms in it
- ✚ **Livestock Sustainability:** The integration of livestock in the farming system plays an important role in natural farming and helps in restoring the ecosystem. Eco friendly bio-inputs, such as Jivamrit and Beejamrit, are prepared from cow dung and urine, and other natural products.

### Scope of Natural Farming

There are many working models of Natural farming all over the world; the zero-budget natural farming (ZBNF) is the most popular model in India. Natural farming improves soil fertility, environmental health as well as helps in the reduction of greenhouse gas emissions and also promises the enhancement of farmer’s income. In broad terms, natural farming can be considered as a prominent strategy to save planet Earth for future generations. It has the potential to manage the various farmland practices and hence sequester the atmospheric carbon in the soils and plants, to make it available for plants.

### Aims and Objectives for Natural Farming:

1. Restore soil health and fertility and soil’s biological life.
2. Preserve natural flora and fauna.
3. Maintain diversity in crop production.
4. Efficient utilization of land and natural resources (light, air, water).
5. Promote natural beneficial insects, animals and microbes in soil for nutrient recycling and biological control of pests and diseases.
6. Promotion of local breeds for livestock integration.
7. Use of natural / local resource-based inputs.
8. Reduce input cost of agricultural production.
9. Improve economics of farmers.

### Natural Farming Practices

Natural farming aims at restoring soil health, maintenance of diversity, ensure animal welfare, stress on efficient use of natural/local resources and promote ecological fairness.

Natural farming is an ecological farming approach where farming system works with the natural biodiversity, encouraging the soil's biological activity and managing the complexity of living organisms both plant and animal to thrive along with food production system.



Important practices, essential for adoption of Natural farming includes:

- No external inputs
- Local seeds (use of local varieties)
- On-farm produced microbial formulation for seed treatment (such as bijamrita)
- On-farm made microbial inoculants (Jivamrita) for soil enrichment
- Cover crops and mulching with green and dry organic matter for nutrient recycling and for creating a suitable micro-climate for maximum beneficial microbial activity in soil.
- Mixed cropping
- Managing diversity on farm through integration of trees
- Management of pests through diversity and local on-farm made botanical concoctions (such as neemastra, agniastra, neem ark, dashparni ark etc)
- Integration of livestock, especially of native breed for cow dung and cow urine as essential inputs for several practices and
- Water and moisture conservation.

**Conclusion:**



Natural farming (Bhartiya Prakratik Krishi Paddhati (NF-BPKP) is a chemical free farming system, based on livestock and locally available resources and rooted in Indian tradition. As natural farming is aimed at reduction in cost of cultivation and providing freedom to farmers from purchased inputs, use of external purchased inputs including organic, biological or otherwise are also avoided. Natural farming mainly relies on adoption of diversified multi-cropping systems, desi cow based on-farm inputs for nutrient and soil enrichment and various botanical concoctions for plant protection. When we are talking about agricultural sustainability, it completely relies on soil health and soil productivity. Declining soil health can be improved by increasing soil organic carbon and also by improving soil biological health by increasing microbes and other living organisms such as earthworms in the soil. Only viable options for enhancing soil biological health is to go for options like organic farming, natural farming, use of waste decomposers, incorporation of crop and organic residues in the soil. Truly said by Franklin D. Roosevelt “The Nation that Destroys its Soil Destroys Itself” therefore we should never forget that “It takes half a millennia to build two centimeters of living soil and only seconds to destroy it”.