

## Perceptions of Farmers towards Natural Farming as a Sustainable Food System: A Way Forward

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### A brief about Natural Farming:

Agriculture is the backbone of India's economy, deeply rooted in its history and culture. With a diversified climate, terrain, and soil types, India supports a wide range of agricultural activities. The sector employs a large proportion of the people and contributes 15.9 per cent (Ministry of Statistics and Programme Implementation, 2023) to the country's GDP. India's agricultural environment is both dynamic and diverse due to the coexistence of traditional farming methods and modern agricultural technologies. Natural Farming, is a chemical-free alias for traditional farming methods. It is considered an agro ecology-based diversified farming system that integrates crops, trees, and livestock with functional diversification. Natural Farming is practiced in various states such as Andhra Pradesh, Chhattisgarh, Kerala, Gujarat, Himachal Pradesh, Jharkhand, Odisha, Madhya Pradesh, Rajasthan, Uttar Pradesh, and Tamil Nadu. Natural Farming is a chemical-free farming technique based on Indian tradition but with a modern understanding of ecology, resource recycling, and on-farm efficiency. It is classified as an agro ecology-based diversified agricultural system that combines crops, trees, and animals with functional biodiversity. Natural Farming is against the use of inorganic/artificial fertilizers or foreign inputs. In contrast, Natural Farming focuses on removing farmer's dependence on outside supplies and credit markets to provide them autonomy by forbidding them to make any purchases from other parties, particularly businesses.

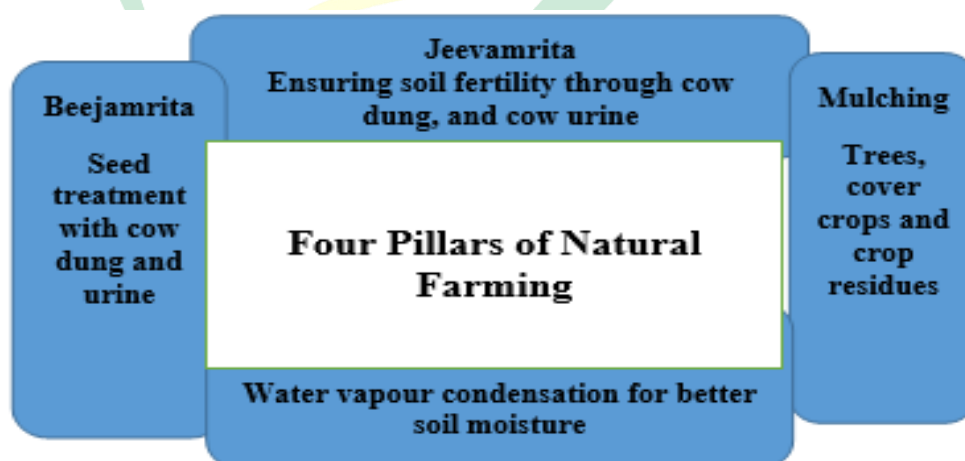
### About this Article

In this article the four Pillars of Natural Farming are discussed. Further, the status of Natural Farming in Himachal Pradesh, the intentions of the government about Natural Farming and how are they supporting the farmers of Himachal Pradesh are also presented. Whether the Government is providing a market where farmers can sell their Natural Farming produce and get a good profit is an unexplored area. Lastly, the findings of the exploratory survey in four

districts (Solan, Kangra, Bilaspur, Hamirpur) of Himachal Pradesh and perceptions of farmers towards Natural farming is also put forward.

#### Four Pillars of Natural Farming:

1. **Beejamrita:** Farmers have been treating their seeds with local cow urine, cow manure, and a small amount of soil from the farm's bund or field since time immemorial. This was the traditional method used by the farmers. In Natural Farming, seeds are treated with a mixture that is similarly effective at preventing seed-borne diseases and is produced from cow dung, urine, and other locally available materials.
2. **Jivamrita:** It is a fermented microbial culture. It supplies nutrients, but more significantly, it acts as a catalytic agent, stimulating the activity of earthworms and other microorganisms in the soil. Additionally, jivamrita aids in the prevention of bacterial and fungal plant diseases.
3. **Mulching:** Mulching is defined as covering of soil surface using both live crops and straw (dead plant biomass) to conserve moisture, lower soil temperature around plant roots, prevent soil erosion, reduce runoff and reduce weed growth.
4. **Whapasa:** Whapasa means the mixture of 50 per cent air and 50 per cent water vapour in the cavity between two soil organism and roots depend for most of their moisture and some of their nutrients. It increases water availability, enhances water-use efficiency and builds resilience against drought.



#### Natural Farming as Sustainable Agriculture Practice:

Natural Farming is an eco-friendly approach and some of its features make it useful to the farmers and environment. Features of Natural Farming are that there is no use of Pesticides,



Chemical Fertilizers, or Herbicides, and there is no Pollution. Moreover, Subhash Palekar Natural Farming involves the use of low-cost and locally sourced available inputs as compared to Organic and Conventional farming. Natural Farming offers a solution to various problems, such as food insecurity, farmers' distress, and health problems. Natural Farming has emerged to ensure food security by reviving Indian Agriculture in an environmentally safe manner. Natural Farming has evolved as a collection of farming methods that strive to reduce input costs by depending on 'natural products' (Jeevamrita, Beejamrita, Waaphasa), adopting intercropping and mulching. Keeping in view the health hazards due to conventional farming there is a need to promote and strengthen Natural Farming.

### **Natural Farming in Himachal Pradesh:**

As per the report of Subhash Palekar Natural Farming (SPNF), Shimla (2022), Natural Farming practices have become common farming practices in Himachal Pradesh. There has been a total of 5571 pieces of training organized by Subhash Palekar Natural Farming, Shimla between the years 2018 and 2022. They have trained about 1,74,394 farmers in Himachal Pradesh. In Himachal Pradesh, there is a total of 3590 panchayats that have adopted Natural Farming practices. SPNF has also established dedicated outlets for selling Natural Farming produce. They are going to establish these outlets in every district of Himachal Pradesh. But for now, there are three outlets in Himachal Pradesh (Solan, Bilaspur, and Shimla).

Many farmers in Himachal Pradesh are successfully practicing Natural Farming on a large scale and are selling their produce at prime prices in the market. Farmers of different areas are practicing Natural Farming on a smaller scale for their consumption. But, there are also some challenges faced by the farmers of Himachal Pradesh. There is a lack of awareness of the package of practices of Natural Farming. There are some of the farmers who are not aware how to make Beejamrita, Jeevamrita, etc. Government institutes need to start various campaigns where they should make farmers aware of what Natural Farming is and what its advantages are.

### **Natural Farming Combination of Crops across 12 districts of Himachal Pradesh:**

As per the exploratory survey conducted, it is found that one of the major practices done in Natural Farming is intercropping. Intercropping helps the crop to grow disease-free. It is also very beneficial to maintain the fertility of the soil. Farmers are growing vegetables, fruits, cereals, and pulses through intercropping practice. In Natural Farming, crops are grown in different combinations. That is in districts like Kullu, Shimla, and Kinnaur, farmers grow

vegetables and fruits together (Apple + Peas + Pear + Cauliflower). Farmers are following the package of practices recommended by the government of Himachal Pradesh. This helps them to get more yield and improves soil. In districts like Kangra, Mandi, Solan, and Hamirpur farmers are growing cereals and vegetables together (Wheat+ Pea+ Broccoli+ Maize). There are several combinations in each district that are being followed by the farmers.

**Table 1: Examples of Various Combination under Natural Farming**

Particulars	Crop Combination
<b>Vegetables</b>	Peas+ Coriander+ Palak
	Pea + Spinach+ Coriander
	Radish+ Spinach+ Coriander
	Garlic +Coriander +Fenugreek
<b>Vegetable + Fruits + Cereals</b>	Apple + Pea + Wheat + Garlic
	Wheat + Pea + Apple
<b>Vegetable + Fruits</b>	Apple + Peas + Pear + Cauliflower
	Apple + Pea + Tomato
<b>Vegetables + Cereals</b>	Peas+ Wheat+ Coriander
	Wheat + Pea + Garlic + Coriander
<b>Vegetable + Pulses + Fruits</b>	Apple + Pea + Pulses + Tomato
	Apple + Pea + Rajmash + Beans + Garlic + Coriander

**Government Role towards Marketing of Natural Farming Produce:**

The government is taking the initiative to open specific outlets for Natural farming produce. In Himachal Pradesh, the Government has set up their target to establish four more Natural Farming outlets by this year. But, still marketing of Natural Farming produce is a substantial difficulty in many areas, due to several factors that impede successful promotion and distribution. The absence of infrastructure and established marketing channels designed especially for Natural Farming produce is one of the main problems. Due to restricted distribution networks and insufficient market access, Natural Farming products may find it difficult to reach customers in contrast to conventional agriculture, which frequently benefits from well-established supply chains and market linkages. Marketing of Natural Farming produce is still a big challenge in India's market.

Consumers are also not aware of the Natural Farming produce being sold in the market. Here, the Government has to play its key role and an awareness campaign should be organized



by the government so that consumers get to know about Natural Farming produce and also they will get to know how healthy it is. There are various types of consumers in terms of spending money in the market but when it comes to health, every consumer wants to consume a healthy diet. Farmers would switch to Natural Farming produce. The government needs to take immediate action by starting more outlets of Natural Farming produce in the market. Also, they need to solve the price issue that farmers face. Unfair price in the market is one of the major challenges that farmers are facing. Farmers should get higher prices or fair prices for their produce, then only more and more farmers will adopt Natural Farming in India. The government should support farmers so that they can trust them and adopt Natural Farming.

### **Perception of Farmers about Natural Farming:**

In this section, the perceptions made by the farmers in Himachal Pradesh are discussed. Some major unexplored areas such as why farmers are adopting Natural Farming and why some of the farmers are still confused about adopting Natural farming practices over Conventional farming have also been discussed in the following subsections.

### **Perceptions of the Farmers who have adopted Natural Farming:**

In India, farmers have expressed a strong interest in natural agricultural practices, expressing a wide range of perspectives. Many farmers see Natural Farming as a more sustainable alternative to conventional methods, emphasizing its capacity to lessen dependency on chemical inputs while also promoting safeguarding the environment. Some perceive it as a way to promote long-term agricultural sustainability, boost crop resilience, and improve soil health. Furthermore, Natural Farming is frequently viewed as a means of preserving traditional farming expertise and reducing the adverse effects of climate change. Furthermore, opinions may differ depending on regional agricultural practices, resource availability, and levels of knowledge and education regarding natural farming approaches. Here we discuss the opinions of the farmers about the adoption of Natural Farming:

- One significant reason why farmers want to adopt Natural Farming is that farmers want to grow healthy food and want that their consumers to consume healthy food instead of consuming poisonous food.
- One key objective is a desire to reduce the negative environmental effects of traditional farming practices.





- Farmers that practice Natural Farming seek to meet wider sustainability objectives by restoring soil health, protecting biodiversity, and reducing water body pollution.
- Farmers who have adopted Natural Farming are satisfied with the schemes and subsidies provided by the government.
- Natural Farming helps farmers financially by lowering input costs related to artificial pesticides and fertilizers, which allows them to increase their profit margins.

#### **Perception of Farmers who have not adopted Natural Farming:**

Many farmers in India are in favor of adopting Natural farming practices. But still, many farmers have not adopted Natural farming practices. Either they have adopted organic or they have adopted conventional farming practices. Here we discuss the opinions of the farmers about not adopting Natural Farming:

- Farmers in India believe that Natural Farming will not give them high yield or high productivity as compared to conventional and organic farming
- Farmers do not get labor for Natural Farming practices also, they believe they need more man power and it is very difficult to get labor for Natural Farming.
- Main concern of farmers for not adopting Natural Farming is that, they'll not get fair price for their produce and also, there are very few specified outlets for selling Natural Farming produce in Market.
- The cost of the initial investment, and the time it takes to switch from conventional to Natural Farming methods might all raise concerns.
- Farmers are not aware of the detailed Natural Farming crop cultivation techniques, its package of practices.
- Farmers have lack of awareness for the preparation of inputs in Natural Farming.

#### **A Way Forward of Natural Farming as a Sustainable Food System:**

Natural Farming has a great scope ahead. Natural Farming is an emerging farming practice and can create a great impact. It is a healthy farming practice and the government should promote Natural Farming in India as well as in Himachal Pradesh too. The government should encourage farmers to adopt Natural Farming practices so to produce healthy produce. Also, some many subsidies and schemes are being provided by the government to adopt Natural Farming Practices. If we talk about Farmers in Himachal Pradesh, they are adopting Natural Farming practices and are satisfied with the yield and productivity. Through our exploratory



survey, it was found that farmers in Solan, Kangra, Hamirpur, and Bilaspur were satisfied and many were selling their produce at prime prices in the market. But, one of the major issues they are facing is that there are few dedicated retail outlets for selling their Natural Farming Produce in the market. For now, the government has started three dedicated outlets in Himachal Pradesh. The three dedicated outlets are located in Solan, Bilaspur, and Shimla. The government should fix this market issue. Overall, Natural farming has a great impact in Himachal Pradesh.

### **Conclusion:**

In conclusion, Natural Farming has emerged as a promising agricultural paradigm in India, including the state of Himachal Pradesh, offering a sustainable and environmentally friendly alternative to conventional farming practices. Natural farming is a great substitute for conventional farming and its produce is chemical free which is one of its best advantages. Consumers can have healthy and chemical-free produce. The government should promote Natural Farming in Himachal Pradesh. The government should also make consumers aware of Natural farming produce being sold in the market. There is a lack of awareness among the consumers too so government should spread awareness about Natural Farming. By harnessing the potential of Natural Farming and fostering collaborative partnerships, Himachal Pradesh can pave the way towards a more resilient, equitable, and environmentally sustainable agricultural future, ensuring the well-being of farmers, consumers, and ecosystems alike.

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