

Determinants of Adoption for Natural Farming

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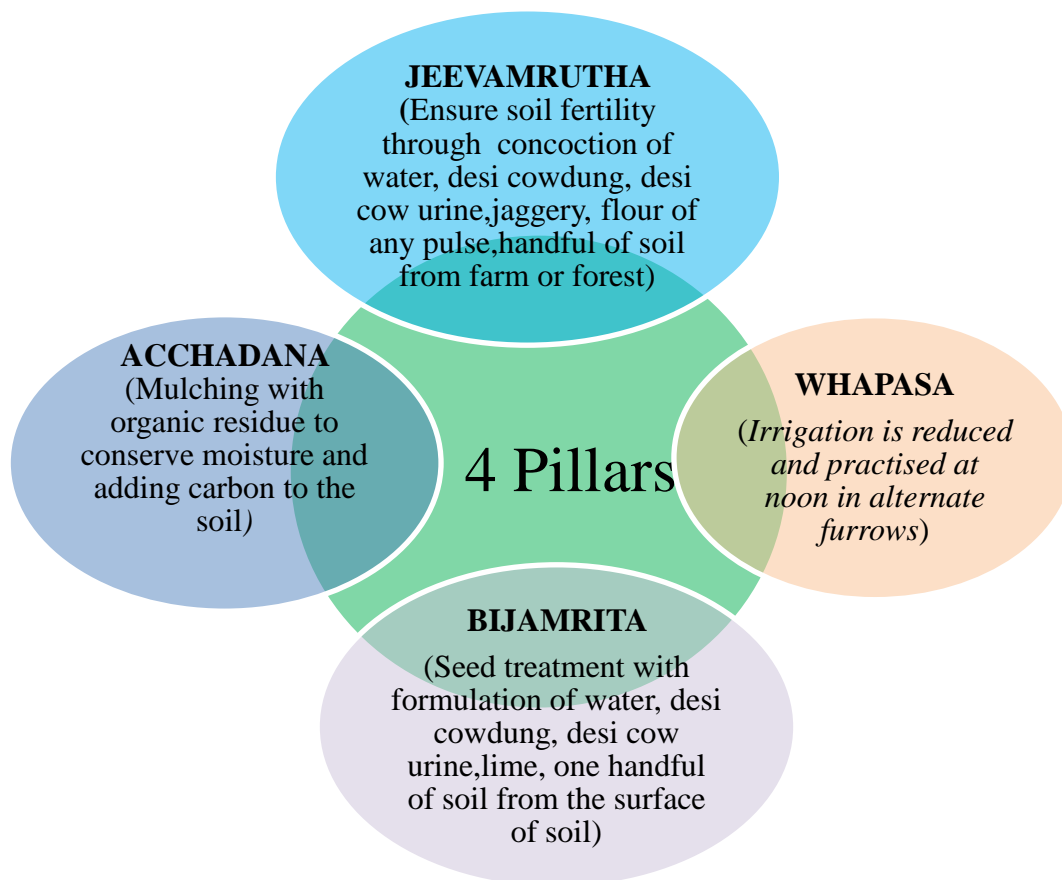
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Introduction

The introduction of green revolution in mid 1960s created a new era in the history of agriculture sector. It was a response to the food shortages caused by various famines and harvest failure. Traditional varieties of crops were replaced by hybrids with increase in use of fertilizers and plant protection chemicals. Huge investments were made to bring more cultivated area under irrigation resulting massive increase in the crop production. But with time, the green revolution has its downfall too. The lofty input cost compelled the farmers to take loans from money lenders and non-institutional sources at high interest rate and eventually forced them to debt trap in the event of crop failure. Many experts also voiced their concern that the long term use of chemicals can cause irreparable damage to soil health and environment (Babu 2008). In the mid-1990s, Padma Shri Awardee, Sh. Subhash Palekar introduced the Zero Budget Natural Farming (ZBNF) as a substitute to the green revolution. He stated that the rising costs of chemical fertilizers and pesticides are the principal cause of farmers' indebtedness and their suicides. With the adoption of ZBNF, farmers can still earn profits without spending expenses on external inputs thus breaking their debt cycle. The main philosophy of ZBNF is to make the farmers self reliant and freed from the clutches of debt. The farmer can grow local varieties of crops without application of fertilizers and pesticides. The inputs required are prepared in the farm itself.

Pillars of natural farming

There are four basic pillars of ZBNF:



Various formulations prepared for pest management are the *Agniastra*, the *Brahmastra* and the *Neemastra*.



Intercropping in Kullu district of Himachal Pradesh



Naturally produced bittergourd in Kullu district of Himachal Pradesh

Advantages of ZBNF

- Free of debt, improves yield, fertility of soil, production of quality (unnoticeable disease causing elements free) produce and ensures good health.
- Improves the soil aeration and water holding capacity by making micro and macro pores in the soil.
- Crop rotation and intercropping protect the soil from exhaustion of moisture and nutrients.
- Mulching slow down the evaporation and maintains adequate moisture in the soil (Bishnoi and Bhati 2017).
- Environment conservation *i.e.*, as natural farming forego the use of chemicals it lowers the risks associated with uncertainties of climate change.
- Lowers methane emissions through multiple aeration.

- ZBNF techniques use between 50-60 per cent less water and electricity than non-ZBNF methods.

Drawbacks of ZBNF

Intensive labor requirement, landholdings fragmentation which makes it difficult to apply jeevamrutha, lack of premium price for the produce and lack of certification like organic produce etc. are the major drawbacks associated with the practice of natural farming.

Determinants of adoption for natural farming

There are multiple determinants that affect the adoption of natural farming. With the advent of modernization, mass media *viz.*, internet, newspapers, words from friends, relatives turned out to be the major sources of information. The appealing term that the zero budget natural farming carry itself *i.e.*, “Zero Budget” mean “no credit or no expenses” which in reality is the “reduced cost in fertilizers and pesticides” was the primary reason for the adoption of ZBNF. Another driving force behind its acceptance was the production of food devoid of chemical additives. The farmers are health conscious. In the state of Andhra Pradesh, group leaders who were mostly graduates provide the information related to the farming to the group members. The group members were also active members as they also get information through various mass media which was preferred as second most important extension contact. Farmers’ income, farm size and organizational affiliation also have significant relationship with the adoption of natural farming technology. The minimalism practices of ZBNF, mobilizing discourse and favorable public policies are the other factors affecting the growth of ZBNF. A study in perulia district of West Bengal found that the agro-climatic conditions and various socio-economic factors were found to influence the long-term sustainability of the ZBNF. Extension variables namely visit by extension agents, accessibility of reading materials, continuous availability of information about the technology *viz.*, relative advantage, compatibility and simplicity with their present condition and resources should be considered to design the transfer the natural farming technology to farmers.

Conclusion

The drawbacks of ZBNF, if addressed by the government properly, it could help the nation to progress towards achieving the Sustainable Development Goals (SDGs).

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