



Zero Budget Natural Farming: Paving the Way for a Sustainable Future

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Abstract

Environmentally oriented solutions have brought attention to the concepts of sustainable intensification and agro-ecology. The ZBNF system, which consists of four components - Bijamrit, Jeevamrutha, Acchadana, and Whaapasa, was launched in India during the 1990s. This system focuses on using low input technologies in agriculture that are derived from on-farm resources. This practice minimizes water and power use, enhances the well-being of farmers, preserves local ecosystems and biodiversity, and does not result in any harmful substances remaining in the environment. Therefore, it is possible to enhance the social standing of farmers while yet maintaining the integrity of the environment.

Introduction

Environmentally-oriented strategies have promoted the concepts of sustainable intensification and agro-ecology. The introduction of the Green Revolution, aimed at boosting crop output and profitability, has led to the adoption of intensive, high-input agricultural practices, which in turn have caused environmental degradation and poor health effects. Therefore, it is necessary to explore alternate methods of agricultural production that might better correspond with the objectives of the United Nations Sustainable Development Goals. The NITI Ayog, a government body in India, is actively seeking alternative agricultural systems to address the declining productivity and profitability of small and marginal farmers. The aim is to find methods that may reduce input and expenses while improving profitability.

ZBNF stands for Zero Budget Natural Farming

The term "zero budget" refers to a situation where there is no credit or costs, meaning that no money is spent on purchasing agricultural supplies. During the 1990s, Padma Shri Mr. Subhash Palekar was the first person to implement the Zero Budget Natural Farming (ZBNF) technique in India. He focused on implementing agricultural technologies that need little input and may be derived from on-farm resources. These technologies have shown to be advantageous for maintaining soil health.

Benefits

- Zero cost: Production costs are eliminated since farmers refrain from purchasing any inputs and do not use fertilizers or pesticides.
- Water efficient: It utilizes an only 10% of the water compared to traditional techniques.
- Increased yield: A greater and more substantial yield is achieved in several cash and food crops.

- Drought tolerant: ZBNF farms are able to resist a long-term drought and flood circumstances.
- Profitable: Planting multiple crops and border crops on the same area of land give more payout and nutrition supplies.

Challenges Faced in its Adoption

- Indigenous breed: The collection of manures is limited to native desi cows and cannot include imported Jersey or Holstein cows, which poses a challenge in terms of supply.
- Marketing deficiencies: The agricultural market infrastructure is weakened due to the lack of value placed on natural goods.
- Lack of scientific validation: The microbial compositions, effectiveness, and impact of jeevamrutha, bijamrita, bramhastra, and dashaparni kashaya have not undergone scientific testing, and there is no available scientific data on these substances.
- Intense feed requirements: Hybrid types are prohibited; because to the constantly growing world population, there is a shortage of food for all populations. Despite using chemical methods, our food production aim remains unattainable without the use of hybrid crops.
- Plant protection is a significant challenge due to the detrimental effects of many crop-specific weeds, diseases, and insects. Despite attempts to control them using natural solutions, the results at the farmer's level have been unsatisfactory.
- Insufficient regulation: The absence of a proper policy framework results in the lack of precise requirements for regulation.

Opportunities to Adopt ZBNF

The Green Revolution has increased the use of high-yielding cultivars, chemical fertilizers, and pesticides, which have had a negative impact on soil health and the population of beneficial bacteria. All of these factors have had a detrimental effect on both the environment and human health. In light of the growing trend of globalization, it is essential to priorities environmental sustainability in order to preserve the environment for future generations.

Natural farming gives better opportunities to solve these problems by:

- Nature conservation enhances the microbial composition and water holding capacity of soils, hence enabling drought-prone regions to achieve stable agricultural harvests.
- Health risk mitigation - Minimizes health hazards associated with chemicals and alleviates the burden on women by providing them with convenient access to clean water and animal feed. Additionally, it diminishes the incidence of chemical-induced diseases in food, particularly among youngsters.
- Carbon sequestration - When one tons of waste is burned, it generates 400 kg of carbon . However, if the residues are kept or mixed with the soil, they may provide carbon to the soil and contribute to increased crop output.
- Social effect - The cheap cultivation expenses and reliable yields of this crop allow farmers to consistently produce and sell products, ensuring their livelihoods are secure.
- The net economic impact refers to the overall effect on the economy resulting from reduced cultivation expenses, increased crop yields, more money from intercrops, and a little higher selling price.

Conclusion

In general, ZBNF is concerning since it results in a decrease in the use of water and power, an improvement in the health of farmers, the preservation of local ecosystems and biodiversity, and the absence of any hazardous waste. By doing so, it is possible to enhance the social position of farmers without hurting the environment.

References

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