



Zero Budget Natural Farming

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Introduction:

Zero Budget Natural Farming (ZBNF) is an agricultural practice that emphasizes minimal external inputs and promotes the use of natural resources within the farm ecosystem. It was developed by Subhash Palekar, an Indian agriculturist, as a method to address the issues of debt and dependency on costly external inputs among farmers.

Zero Budget Natural Farming (ZBNF) is a set of farming methods and also a grassroots peasant movement, which has spread to various states in India. It has attained wide success in southern India, especially the southern Indian state of Karnataka where it first evolved. It has also spread to various other states in India and is being practiced by many farmers in Punjab, Haryana, Rajasthan, Bihar, Maharashtra, Kerala, as well as in the southern Indian state of Andhra Pradesh. It has been a major influence on Permaculture. The movement in Karnataka state was born out of collaboration between the spiritual leader N. Naganagouda and state deputy inspector of schools Subhash Palekar. It has now been adopted by the state government in its natural

farming policy 2019. Leader, Sri Ravishankar is a supporter who has pledged to make the land of Art of Living Foundation natural farming by 2025.

Zero budget natural farming is the method of farming where the cost of growing and cultivating plants is zero. This method enables the plants to get complex nutrients and minerals from the soil, and in turn convey the energy of the sun, water, and minerals of the soil to humans. Natural farming, left on its own after about ten years, produces some 10-20 tonnes of output per acre at present-day value. The soil becomes deeper, the water table rises, and there is more moisture in the atmosphere. The extra produce, which is 3-6 tonnes per acre, is due entirely to the increase in fertility and moisture, and the farmer need not work hard to get this additional produce.

Key principles of ZBNF include:

Zero Chemicals: ZBNF prohibits the use of synthetic chemicals such as fertilizers, pesticides, and herbicides. Instead, it relies on natural substances like cow dung, cow urine, jaggery, and various plant extracts to enrich the soil and control pests and diseases.

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Zero External Inputs: Farmers practicing ZBNF aim to minimize their reliance on external inputs by utilizing resources available on their farms or locally. This reduces the financial burden on farmers and promotes self-sufficiency.

Mulching and Crop Residue Management: ZBNF encourages the use of mulching and crop residue as a means of retaining soil moisture, suppressing weed growth, and improving soil fertility. This practice also enhances soil health by promoting the activity of beneficial microorganisms.

Crop Diversity: ZBNF promotes the cultivation of a diverse range of crops, including both food crops and cash crops. Crop diversity helps in maintaining ecological balance, reducing the risk of crop failure, and enhancing overall farm productivity.

Livestock Integration: Livestock, particularly indigenous cattle, play a significant role in ZBNF. Cow dung and urine are utilized as fertilizers and pest repellents, while the integration of livestock with crop farming helps in recycling nutrients and enhancing soil fertility.

Natural Pest and Disease Management: ZBNF advocates for the use of natural methods to manage pests and diseases, such as the application of bio-pesticides, crop rotation, intercropping, and maintaining

ecological balance to promote natural predators of pests.

Pillars of ZBNF

Bejamitra- The seeds are treated with formulations derived from the dung and urine of native cow species, which are easier for small and marginal farmers to manage and better suited to the climate of our region. Bijamrita is used to treat seeds, while tobacco, neem leaves and pulp, and extracts of green chillies are utilized to control insects and pests.

Jivamitra- Cow dung is a natural resource that is used to replenish the soil's fertility and nutritional content. There could be

300–500 billion beneficial bacteria in one gramme of cow dung. These microorganisms aid in the breakdown of soil biomass and convert it into easily assimilated nutrients for plants. Jivamrita is made from cow dung and cow urine. It is a part of the food that the

plants eat. It is a microbial culture that has fermented using uncontaminated soil, jaggery, urine, cow dung, and pulse flour. This fermented microbial culture adds nutrients to the soil and works as a catalyst to promote the activity of microorganisms and earthworms.

Acchadana/Mulching Mulching is of three types followed, they are straw mulch, soil mulch, and live mulch. The growth of cover crops like legumes helps to reduce the weed population and increases water infiltration capacity. By their root nodules

fixes atmospheric N into the soil which helps N supply to crops. From these residues retention on the surface of soil increases the microbial degradation process and liberation of N from nitrification. It also supplies organic matter to the soil which contains many micro and macronutrients.

Waaphasa/Moisture (Soil Aeration):

The main concern here is conserving water and the precise application of water-based on crop water requirement. Application of water in alternative furrows because of all roots of plants not absorb efficiently, younger horizontal and vertical roots absorb more amount of water than older one and nutrients by older roots. In soil, out of soil mineral and organic matter, there is an equal proportion of water and air present. If a higher amount of water application leads to hold air space in the soil and plant suffers oxygen deficiency it may lead to cause death of plants except water-loving plants like rice.

agricultural households spend more than they earn and more than half of all farmers are in debt.

In States such as Andhra Pradesh and Telangana, levels of indebtedness are around 90%, where each household bears an average debt of ₹ 1 lakh.

To achieve the Central government's promise to double farmers' income by 2022, one aspect being considered is natural farming methods such as the ZBNF which reduce farmers' dependence on loans to purchase inputs they cannot afford. Meanwhile, intercropping allows for increased returns.

The Economic Survey has also highlighted the ecological advantages.

The FAO (Food and Agriculture Organisation of the United Nations) also supports and encourages the ZBNF methodologies.

In June 2018, Andhra Pradesh rolled out an ambitious plan to become India's first



Surveys supporting the ZBNF

The National Sample Survey Office (NSSO) data shows that almost 70% of

State to practice 100% natural farming by 2024.

Benefits of Zero Budget Natural Farming

Cost Reduction: By eliminating the need for expensive synthetic inputs such as chemical fertilizers and pesticides, ZBNF significantly reduces production costs for farmers. This can help alleviate financial burdens and debt cycles often associated with conventional farming practices.

Improved Soil Health: ZBNF focuses on enhancing soil fertility and structure through the use of natural inputs like cow dung, cow urine, and crop residues. By promoting practices such as mulching and crop rotation, ZBNF helps maintain soil moisture, prevent erosion, and increase the population of beneficial soil microorganisms, resulting in healthier and more productive soils over time.

Environmental Sustainability: ZBNF minimizes the negative environmental impact associated with conventional agriculture, such as soil degradation, water pollution, and greenhouse gas emissions. By avoiding the use of synthetic chemicals, ZBNF reduces contamination of soil and water resources, preserves biodiversity, and contributes to mitigating climate change.

Increased Crop Resilience: The diverse cropping systems promoted by ZBNF, including intercropping and crop rotation, help increase resilience to pests, diseases, and adverse weather conditions. By cultivating a variety of crops and promoting biodiversity on

the farm, ZBNF farmers are less vulnerable to crop failures and fluctuations in market prices.

Healthier Food: ZBNF promotes the production of chemical-free, nutritious food that is free from pesticide residues and synthetic additives. This not only benefits consumers' health but also contributes to building trust and demand for organic and naturally grown products in the market.

Empowerment of Farmers: ZBNF empowers farmers by providing them with knowledge and skills to become self-reliant and independent from external input suppliers.

By adopting sustainable farming practices, farmers can regain control over their livelihoods, reduce dependency on loans, and achieve food security for themselves and their communities.

Social Equity: ZBNF promotes inclusivity and social equity by providing opportunities for small-scale and marginalized farmers to improve their livelihoods through sustainable agriculture. By prioritizing the well-being of farmers and their communities, ZBNF contributes to building more resilient and equitable food systems.

Criticism of ZBNF-

The concept of Zero Budget Natural Farming is not well-accepted by the scientific community. National Academy of Agricultural Sciences scientists mentioned that India cannot rely on Zero Budget Natural Farming as there

is no scientific validation of the techniques used in Zero Budget Farming.

As against the name suggests, the farming method does bear a minimum input cost

The maintenance of the local cow breed is difficult as against those that are used currently

Organic certification of the crops planted by the Zero Budget Natural Farming will face another hurdle and it might lead to a difficulty in selling the products to the organic brands.

Public policies need towards zero budget natural farming-

Shift to intercropping, multiple cropping systems, appropriate crop rotations, and integration of crops and animals. Land use along with farming systems need to be planned consciously by paying attention to the challenges of ecological intensification. The shift in the support systems (prices, subsidies, research, institutions) should be reconfigured from current subsidies on external inputs to support ecosystem services. Maintaining ecosystem specific agronomic diversity is essential. For example, the wetlands, rainfed areas, hill regions, etc need support to practice appropriate farming systems. Centralized, monoculture based current unsustainable models of agriculture have to be stopped.

Instead of same cropping system, go with safe food like millets, pulses, oilseeds, and various locally grown fruits and vegetables cultivation.

Conclusion of Zero budget natural farming-

Zero budget Natural farming is environmentally friendly. Savings on the cost of seeds, fertilizers, and plant protection chemicals have been substantial. Because of continuous retention of crop residues replenishment the soil fertility, it helps to maintain the soil health. Other thing is that management of pest and diseases is a key component in zero budget natural farming crop production systems. Successfully control pests in ZBNF, it is essential to understand the interactions of different components in a specific ecosystem. Zero Budget Natural Farming represents a holistic approach to agriculture that prioritizes sustainability, self-reliance, and ecological harmony. By focusing on minimizing external inputs, promoting natural resources, and harnessing traditional wisdom, ZBNF offers a pathway towards resilient and regenerative farming systems.