



## Zero Budget Natural Farming

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Zero Budget Natural Farming (ZBNF) is an agro-ecological farming approach that promotes growing crops in harmony with nature. The toolkit of ZBNF was developed by Subhash Palekar in the 1990's. Subhash Palekar's Zero Budget Natural Farming is a unique method of farming which requires absolutely no monetary investment for purchase of key inputs like seeds, fertilizers and plant protection chemicals from the market. The farmer can grow hardy local varieties of crops without application of fertilizers and pesticides. Since it is a zero budget farming no institutional credit would be required and dependence on hired labour is also reduced to bare minimum. All that the system requires is native breed of cattle which is any case forms an integral part of farming families in rural areas. It is claimed that one cow is sufficient to take up this method of farming on thirty acres of land. Zero Budget Natural Farming (ZBNF), which is a set of farming methods, and also a grassroots peasant movement, 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. The neo-liberalization of the Indian economy led to a deep agrarian crisis that is making small scale farming an unviable vocation. Privatized seeds, inputs, and markets are inaccessible and expensive for peasants. Indian farmers increasingly find themselves in a vicious cycle of debt, because of the high production costs, high interest rates for credit, the volatile market prices of crops, the rising costs of fossil fuel based inputs, and private seeds. More than a quarter of a million farmers have committed suicide in India in the last two decades. Various studies have linked farmer's suicides to debt. Debt is a problem for farmers of all sizes in India. Under such conditions, 'zero budget' farming promises to end a reliance on loans and drastically cut production costs, ending the debt cycle for desperate farmers. The word 'budget' refers to credit and expenses, thus the phrase 'Zero Budget' means without using any credit, and without spending any money on purchased inputs. 'Natural farming' means farming with nature and without chemicals.

Across the world, agriculture is facing multiple setbacks, in the form of extreme weather events like floods and droughts or factors such as soil degradation, soil salinity and water shortage. To feed the global population of 9.6 billion by 2050, as projected by a United Nations report, scaling up food production is important. Ensuring food security, producing more with less resources and building the resilience of smallholder farmers are also important in creating a food-secure future.

### ZBNF in India

ZBNF is a set of farming methods, and also a grassroots peasant movement. It has attained wide success in southern India, especially the state of Karnataka where it first evolved.

Farmers in Andhra Pradesh have practiced ZBNF and have witnessed good results. Himachal Pradesh Government has launched ZBNF project which aims to increase agriculture produce and the income of farmers by the year 2022.

### Why ZBNF?

- Ensuring food security and producing more with fewer resources.
- For building the resilience of smallholder farmers for creating a food-secure future.
- ZBNF is the right solution to fight climate change and create resilient food systems.
- Fighting drought is one of the main objectives of ZBNF.
- The Food and Agriculture Organization (FAO) of the UN advocates environmentally-friendly farming methods that can take us to a more sustainable future.
- Importance for chemical free food consumption is growing rapidly.
- Chemical farming has made food a poison and also has reduced the yield by making lands barren.
- Farmers' welfare and sustainable practices are vital for a sustainable and productive economy. • ZBNF constitutes an effective strategy for achieving SDGs targets.



### Features of ZBNF

- It is a farming practice that believes in natural growth of crops without adding any chemical fertilizers and pesticides.
- The four wheels of ZBNF are Bijamrita, Jivamrita, Mulching and Waaphasa. • Bijamrita is a natural way of seed treatment using local cow urine and cow dung.
- In the Zero Budget Natural Farming nothing has to be purchased from the outside. All things required for the growth of the plant are available around the root zone of the plants.
- 98 to 98.5% nutrients are taken from air, water & solar energy.
- Remaining 1.5% nutrients taken from the soil are also available free of cost as it is taken from the prosperous soil which is enriched with these nutrients.
- Jivamrita is made using water, local cow dung, local cow urine, jaggery, dal flour and soil. • Waaphasa is the aeration in the soil.
- ZBNF is different from organic farming
- Intercropping is an important feature of ZBNF.
- Storing water in the farm ponds for use in adverse conditions.
- Insects and pests are managed using neem leaves, neem pulp and green chillies.

*Note: Cross bred Jersey and Holstein Friesian cows are not suitable for ZBNF, there are more pathogens in their dung and urine*

### Four main elements and pillars of ZBNF

**Bijamrita:** The seeds are treated with formulations prepared using cow dung and cow urine from native cow species.

**Benefits:** The seeds sown in the field may be affected by fungus and other seed born/soil borne



diseases. The seed treatment using “Bijamrita” protects the seeds from diseases.

**Jiwamrita/Jeevamrutha:** Jiwamrita is prepared using cow dung and cow urine. It is used as an input for the plants. It is a fermented microbial culture obtained from cow dung, urine, jaggery, pulse flour and uncontaminated soil. This fermented microbial culture when applied to soil, adds nutrients to the soil besides acting as a catalytic agent to promote the activity of microorganisms and earthworms in the soil.

**Benefits:** This culture stimulates microbial activity in the soil and enhances nutrient availability for the plants, protects the crops against soil pathogens and increases carbon content of the soil.

**Acchadana/Mulching:** Mulching is the process of covering the top soil with crop wastes/organic waste or with cover crops.

**Benefits:** Mulching materials decomposes and produces humus which conserves top soil, increases water retention capacity of the soil, decreases evaporation loss, encourages soil fauna besides enriching soil nutrient status and controlling weed growth.

**Waaphasa/Moisture (Soil Aeration):** Good aeration is required in the soil for plant growth and development.

**Benefits:** Due to the application of Jiwamrita and mulching, the aeration of the soil increases, thus improves humus content, water availability, water holding capacity and soil structure which is most suitable for crop growth especially during drought periods.

### **ZBNF- Cropping Model**

The model is based on raising poly crops i.e. growing short-duration and long-duration crops (main crop) together so that the cost of raising the main crops will be recovered from the income generated from the short-duration crops resulting in “zero” expenditure for the main crop. Hence the term – “Zero Budget Natural Farming” – is used for this farming model.

### **Features of Zero Budget Natural Farming**

According to zero budget natural farming principles, crops get 98% of their supply of nutrients from the water, sunlight, and air. And the remaining 2% can be fulfilled by good quality with lots of favourable microorganisms.

**Soil microclimate –** The soil always covers an organic mulch, which forms humus and encourages good microorganisms.

**Cow –** The farming system requires cow urine and cow dung obtained by only Indian breed cows.

### **Disadvantages of Zero Budget Natural Farming**

- This farming method used in some parts of India.
- The type of farming being debated, and there is not much scientific research under evaluation.
- It is highly sustainable farming.
- This farming technique used in negligible areas.

### **Implementing States of Zero Budget Natural Farming**

- 1)Haryana – 80 acres in Gurukul, Kurukshetra
- 2)Punjab – 1000 acres
- 3)Karnataka – 10 Agro climate zones
- 4)Andhra Pradesh – 5.01 lakh acres
- 5)Himachal Pradesh – Across the state.

### **Unique Points of Zero Budget Natural Farming**

- Sustainable growth.
- Cost-free Farming.

- Chemical-free food.
- It consumes the least electricity and the least water.
- No extra labor required.
- Saves farmer's life from suicide cases.

### Way Forward

- NITI Aayog is one of the foremost promoters of ZBNF method.
- The Andhra Pradesh Government experience is also being monitored closely to judge the need for further public funding support for ZBNF.
- The Indian Council of Agricultural Research is also studying the ZBNF method practiced by basmati and wheat farmers in some parts of India, evaluating the impact on productivity, economics and soil health including soil organic carbon and soil fertility.
- If found to be successful, an institutional mechanism needs to be created to promote the technology across the farming community.

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