



## Mains Practice Question

**Q.** Discuss the principles and potential benefits of Zero Budget Natural Farming for sustainable agriculture in India, considering both ecological and economic aspects. **(150 words)**

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### Approach:

- Introduce with Zero Budget Natural Farming
- Mention key principles of ZBNF
- Delve into its potential benefits in ecological as well as economical context.
- Conclude suitably.

### Introduction:

**Zero Budget Natural Farming** is an agricultural practice that promotes sustainable farming methods with minimal external inputs and costs.

- The toolkit of ZBNF was developed by **Subhash Palekar** in the 1990's.
- It has gained significant attention in recent years due to its potential benefits for both **ecological and economic sustainability**.

### Body:

#### Principles of Zero Budget Natural Farming:

- **No Chemicals:** Avoidance of chemical fertilizers, pesticides, and herbicides to maintain soil and environmental health.
- **Natural Inputs:**
  - **Jeevamrit:** Utilization of microbial culture to enrich the soil with beneficial microorganisms.
  - **Beejamrit:** Seed treatment with natural solutions to enhance seed germination and resistance to pests.
  - **Acchadana(Mulching):** Application of organic matter to cover soil, retain moisture, suppress weeds, and enhance fertility.
  - **Whapasa:** This condition refers to the presence of both air and water molecules in the soil, which in turn helps decrease the need for irrigation.
- **Promoting Biodiversity:**
  - **Intercropping:** Growing multiple crops together to create a diverse ecosystem, promoting **natural pest control**, and improving soil health.
- **Focus on Soil Health:**
  - **Composting:** Recycling **organic waste** into nutrient-rich compost to improve soil structure and fertility.
  - **Crop Residue Management:** Incorporating **crop residues** into the soil to enhance organic matter content and soil health.



## COMPONENTS OF NATURAL FARMING



### Beejamrit

The process includes treatment of seed using cow dung, urine and lime based formulations.

### Whapasa

The process involves activating earthworms in the soil in order to create water vapor condensation.



### Jivamrit

The process enhances the fertility of soil using cow urine, dung, flour of pulses and jaggery concoction.

### Mulching

The process involves creating micro climate using different mulches with trees, crop biomass to conserve soil moisture.

### Plant Protection

The process involves spraying of biological concoctions which prevents pest, disease and weed problems and protects the plant and improves their soil fertility.

## Potential Benefits of Zero Budget Natural Farming:

### Ecological Benefits:

- **Improved Soil Health:** ZBNF's focus on organic inputs and microbial activity can **improve soil structure, water-holding capacity, and nutrient availability**, leading to healthier and more productive soils.
- **Reduced Environmental Pollution:** By eliminating the use of synthetic chemicals, ZBNF can **reduce water, air, and soil pollution**, contributing to a cleaner and more sustainable environment.
- **Biodiversity Conservation:** The promotion of diverse crop varieties and the integration of livestock in ZBNF systems can help preserve biodiversity and support ecosystem services, such as **pollination and pest control**.
- **Climate Resilience:** ZBNF practices, such as mulching and water conservation, can enhance the resilience of agricultural systems to the impacts of climate change, such as **droughts and extreme weather events**.

### Economic Benefits:

- **Reduced Input Costs:** By relying on locally available materials and eliminating the need for expensive chemical inputs, ZBNF can significantly **reduce the production costs for farmers**, increasing their net income.
- **Reduced Dependency on External Inputs:** ZBNF's emphasis on self-reliance and the use of on-farm resources **reduces the dependence on external inputs**, which can be subject to **price fluctuations** and supply disruptions.
- **Market Opportunities:** The growing demand for organic and sustainable agricultural products can provide ZBNF farmers with **access to premium markets** and higher prices for their produce.
- **Long-term Sustainability:** ZBNF's focus on maintaining soil fertility and promoting biodiversity can contribute to the **long-term sustainability of agricultural systems**, ensuring **food security** and **economic stability** for farmers.

## Conclusion:

ZBNF has shown promising results in some regions like **Himachal Pradesh (Prakritik Kheti Khushhal Kisan Yojana)**. By embracing ZBNF as a sustainable agricultural approach, India can pave the way for a more **environmentally friendly, economically viable, and socially equitable food production system**, ensuring the well-being of both people and the planet.

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