# ZERO BUDGET NATURAL FARMING

**Prelims:** Economics- Agriculture

**Mains:** GS-III- Major crops cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.

## Why in News:

- Finance Minister in her budget speech referred to "back to basics "approach while speaking about Zero Budget Natural Farming.

## What is Zero Budget Natural Farming?

- Zero budget natural farming (ZBNF) is a method of chemical-free agriculture drawing from traditional Indian practices.
- It was originally promoted by Maharashtrian agriculturist and Padma Shri recipient Subhash Palekar, who developed it in the mid-1990s as an alternative to the Green Revolution's methods driven by chemical fertilizers and pesticides and intensive irrigation.
- It is argued that the rising cost of the external inputs was a leading cause of indebtedness and suicide among farmers, while the impact of chemicals on the environment and on long-term fertility was devastating.
- Without the need to spend money on these inputs — or take loans to buy them — the cost of production could be reduced and farming made into a "zero budget" exercise, breaking the debt cycle for many small farmers.
- Instead of commercially produced chemical inputs, the ZBNF promotes the application of jeevamrutha — a mixture of fresh desi cow dung and aged desi cow urine, jaggery, pulse flour, water and soil — on farmland. This is a fermented microbial culture that adds nutrients to the soil, and acts as a catalytic agent to promote the activity of microorganisms and earthworms in the soil.
- A similar mixture, called bijamrita, is used to treat seeds, while concoctions using neem leaves and pulp, tobacco and green chillis are prepared for insect and pest management.
- The ZBNF method also promotes soil aeration, minimal watering, intercropping, bunds and topsoil mulching and discourages intensive irrigation and deep ploughing.

## Why does it Matter?

- According to National Sample Survey Office (NSSO) data, almost 70% of 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.
- In order 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, inter-cropping allows for increased returns.
- The Economic Survey has also highlighted the ecological advantages.

## Is it Effective?

- A limited 2017 study in Andhra Pradesh claimed a sharp decline in input costs and improvement in yields.
- However, reports also suggest that many farmers, have reverted to conventional farming after seeing their ZBNF returns drop after a few years, in turn raising doubts about the method's efficacy in increasing farmers' incomes.
- ZBNF critics, including some experts within the Central policy and planning think tank NITI Aayog, note that India needed the Green Revolution in order to become self-sufficient and ensure food security.
- They warn against a wholesale move away from that model without sufficient proof that yields will not be affected.
- Sikkim, which has seen some decline in yields following a conversion to organic farming, is used as a cautionary tale regarding the pitfalls of abandoning chemical fertilizers.

## Which are the States with big plans?

- According to the Economic Survey, more than 1.6 lakh farmers are practising the ZBNF in almost 1,000 villages using some form of state support, although the method's advocates claim more than 30 lakh practitioners overall.
- The original pioneer was Karnataka, where the ZBNF was adopted as a movement by a State farmers' association. Large-scale training camps were organised to educate farmers in the method.
- In June 2018, Andhra Pradesh rolled out an ambitious plan to become India's first State to practise 100% natural farming by 2024.
- It aims to phase out chemical farming over 80 lakh hectares of land, converting the State's 60 lakh farmers to ZBNF methods.
- Himachal Pradesh, Chhattisgarh, Kerala, Karnataka and Uttarakhand have also invited Mr. Palekar to train their farmers.

## Is the Budgetary Support Enough?

- Despite the ZBNF buzz caused by the Budget speech, the Finance Minister did not actually announce any new funding to promote it.
- Last year, the Centre revised the norms for the Rashtriya Krishi Vikas Yojana-Remunerative Approaches for Agriculture and Allied sector Rejuvenation (RKVY-RAFTAAR), a flagship Green Revolution scheme with an allocation of ₹3,745 crore this year, and the Paramparagat Krishi Vikas Yojana, which has an allocation of ₹325 crore and is meant to promote organic farming and soil health.
- Under the revised guidelines, both Centrally-sponsored schemes now allow States to use their funds to promote the ZBNF, vedic farming, natural farming, cow farming and a host of other traditional methods.
- Andhra Pradesh says it has utilised ₹249 crore from these schemes to promote the ZBNF over a two-and-a-half-year period.
- The State estimates it will need ₹17,000 crore to convert all of its 60 lakh farmers to the ZBNF over the next 10 years.
- However, this is only a fraction of the spending on Central government subsidies for fertilizers, pesticides and mass irrigation that has driven the Green Revolution model.

## Way Ahead:

- NITI Aayog has been among the foremost promoters of ZBNF method. However, its experts have also warned that multi-location studies are needed to scientifically validate the long-term impact and viability of the model before it can be scaled up and promoted country-wide.
- The Indian Council of Agricultural Research is studying the ZBNF methods practised by basmati and wheat farmers in Modipuram (Uttar Pradesh), Ludhiana (Punjab), Pantnagar (Uttarakhand) and Kurukshetra (Haryana), evaluating the impact on productivity, economics and soil health including soil organic carbon and soil fertility.
- If found to be successful, an enabling institutional mechanism could be set up by NITI Aayog to promote the technology.
- The Andhra Pradesh experience is also being monitored closely to judge the need for further public funding support.