Zero Budget Natural Farming (ZBNF) in India

- Context
  - Finance minister in her Budget Speech announced that government will promote Zero Budget Natural Farming (ZBNF).
  - Subhash Palekar, the proponent of "zero budget" farming from Vidarbha, was awarded the Padma Shri by the BJP government in 2016.
- What it is?
  - Zero budget farming is a set of farming methods that involve zero credit for agriculture and no use of chemical fertilisers.
  - This means that farmers need not purchase fertilizers and pesticides in order to ensure the healthy growth of crops.
  - It 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's four wheel
  - Jiwamrita
    - A fermented microbial culture derived primarily from cow dung and urine, jaggery, pulse flour, water and soil
    - Above culture is source of some crores of micro-organisms that can convert all the necessary "non-available" nutrients into "available" form.
  - Bijamrita
    - It is a mix of desi cow dung and urine, water, bund soil and lime that is used as a seed treatment solution prior to sowing.
    - Protect young roots from fungus and soil-borne or seed-borne disease
  - Acchadan (Mulching)
    - The process of covering top soil with crop and plant residue
    - Produces humus, conserves top soils, increase water retention, increase soil fauna, supply nutrient to soil and control weeds
  - Waaphasa
    - Soil aeration for favourable soil conditions and also increased humus content due to acchadan
    - Increase water availability, water use efficiency, increase resilience to drought
- benefits
  - Yields of various cash and food crops have been found to be significantly higher
  - Input costs are near zero as no fertilizers and pesticides are used.
  - Profits in most areas under ZBNF are from higher yield and lower inputs.
  - Climate resilience- ZBNF farms are able to withstand drought and flooding.
  - Reduced use of water and electricity
  - Improved health of farmers due to no use of chemicals
  - Flourishing of local ecosystems and biodiversity
  - No toxic chemical residues in the environment
- Difference with Organic farming
  - In organic farming, organic fertilizers and manures like compost, vermi-compost, manure etc. are used while in natural farming, neither chemical nor organic fertilizers are added to the soils.
  - So organic farming is costly while Zero Budget Natural Farming involve almost zero cost
  - Organic farming requires activities such as mixing of manures or compost, plowing, and tilting whereas there is no plowing or tilting or fertilizers in natural farming
  - Organic farming has an effect on the surrounding environment while natural farming does not & it conforms with local biodiversity.
- Success story
  - The drought-prone Rayalaseema region (Andhra Pradesh) is reportedly seeing promising changes already in farms with the ZBNF.
  - Himachal Pradesh and Haryana have also seen large scale success in ZBNF
- Concern
  - Keeping cows is costly. How many farmers can afford to keep desi cows that yield very little milk.
  - Collecting dung and urine and preparing the culture will require labor and time
  - If ZBNF is practiced by only few farmers, then insects and pests may move there from fields where chemical pesticides are being sprayed.
- Way forward
  - Farmer Producer Organisations need to be established and should be encouraged for ZBNF
  - The dominant paradigm of chemical-based agriculture has failed and regenerative agriculture is the emerging new science.
  - As ZBNF is applied in India's various agro-ecological zones, making farmers the innovators is essential.
  - Agricultural scientists in India have to rework their strategy so that farming is in consonance with nature.