Natural Farming Vs Organic Farming

Why in news?

National Mission on Natural Farming (NMNF) was launched recently with an outlay of Rs 2,481 crore by subsuming all previous schemes to promote natural faming.

What is National Mission on Natural Farming?

- **National Mission on Natural Farming (NMNF)** – The scheme aims to bring around one crore farmers under natural farming and is targeted to cover around 0.75 million hectares of land over the next few years.
- **Subsumed schemes are:**
  - Bhartiya Prakratik Krishi Paddhati - Bhartiya Prakritik Krishi Paddhati (BPKP) was launched in 2019-20 to promote natural farming.
  - Natural Farming Corridor - The Natural Farming Corridor is a program in India to promote natural farming practices along the Ganges River.
- **Natural farming** – It works on the broad principle that the soil itself contains all the nutrients essential for plant growth.
- **Zero budget** – It needs no external inputs, nutrient recycling and the entire process is treated as an *agroecology* based diversified farming system.
- Natural farming is a more *Indianised version of agriculture*, while organic is seen as a European concept.
- According to this technique, plants obtain *98-98.5% of nutrition from air, water, and sun, and the remaining 1.5% from the soil*.
- **Components of natural farming** – The components which create a suitable micro-climate for maximum beneficial microbial activity in soil are:
- **Beejamrutham** – Microbial coating of seeds using cow dung and urine based formulations.
- **Jeevamrutham** – The application of a mixture made with cow dung, cow urine, jaggery, pulse flour, water and soil to multiply soil microbes.
- **Mulching** – For soil humus formation and to prevent water evaporation.
- **Waaphasa** – For soil aeration through a favorable microclimate
- **Insect and pest management** – Use of decoctions made from cow dung, cow urine and green chilies called '*kashyams*'.
- **Best practice in India** – Community Managed Natural Farming is a initiative by Andhra Pradesh government's has won the 2024 Gulbenkian Prize for Humanity, for contributing to global food security, climate resilience and ecosystem protection.
- Andhra Pradesh Community-managed natural farming started in 2016, to promote natural farming by local communities, notably by women's microcredit groups
- Supported by FAO and the French Agricultural Research Centre for International Development (CIRAD).

	Natural Farming	Organic Farming
Concept	Advocates minimal human intervention, relying on natural processes to grow crops. Inspired by the concept of "*do-nothing farming*" by Masanobu Fukuoka.	Uses organic inputs like compost, manure and bio-fertilizers but still involves planned human intervention for pest control and soil management.
Use of Fertilizers	Avoids all fertilizers including organic ones. Uses natural resources like Jeevamrutha (fermented microbial culture) and mulch to enhance soil fertility.	Permits the use of organic fertilizers such as vermicomposting and green manure, but disallows chemical fertilizers.
Pesticides	Focuses on creating an ecosystem where natural predators manage pests and may use simple natural mixtures like neem oil.	*Organic fields have higher levels of pests than conventional fields* which needs the use of organic pesticides and bio-pesticides for pest control.
Soil Health	Relies on soil microbes and organic matter to naturally replenish the soil without disturbing the soil structure.	Enriches the soil through organic amendments like compost, often requiring tillage.
Cost	**Low-cost**, as it avoids external inputs like compost and relies on farm-derived materials.	**Relatively expensive** due to the need for purchased organic inputs, machinery, maintenance and certification.
Crop Yield	Yields may be **lower initially,** but proponents argue they stabilize and become sustainable over time.	Yields are generally **better than natural farming** but still lower than conventional farming.
Sustainability	Focused on preserving biodiversity and natural ecosystems for long-term benefits.	Sustainable, but may not fully eliminate environmental impact *due to tillage and resource use.*
Water Usage	Promotes practices like mulching and cover cropping to retain soil moisture, reducing the need for irrigation.	May require **more irrigation** as organic fertilizers and tillage can increase water demand.
Biodiversity	Focuses on enhancing biodiversity by encouraging the *growth of multiple crops*, weeds, and beneficial organisms in the same field.	Promotes biodiversity to limited extent as it involves *monocropping* with crop rotation.
Economic	Emphasizes self-reliance and reducing farmer dependency on markets and external agencies	Involves creating a premium market for organic produce, which can benefit farmers financially if properly marketed.

Sikkim is now the world's first 100% organic state and it won the prestigious Future Policy Gold Award from the UN Food and Agriculture (FAO), after beating 51 nominations from around the world.

Why India is promoting natural farming over organic farming?

- **Lower input costs** – Natural farming eliminates the need to purchase organic fertilizers, pesticides or external inputs, si*gnificantly reducing farming expenses.*
- **Improved soil health** – By avoiding tillage and external inputs, natural farming *preserves soil structure and enhances microbial activity*, leading to long-term soil fertility.
- **Water conservation** – Practices like mulching and using cover crops in natural farming *help retain soil moisture, reducing water usag*e compared to organic farming.
- **Low energy consumption** – Without the need for *compost preparation*, *machinery for tillage* or certification processes, natural farming uses less energy.
- **Reduced market dependency** – Farmers practicing natural farming can produce all necessary inputs on-site, avoiding reliance on purchased organic products or fertilizers.
- **Climate resilience** – It is better equipped to withstand climate variability and extremes.
- **Accessibility for small farmers** – It is more affordable and feasible for small and marginal farmers who *cannot afford the premium inputs required in organic farming.*
- **Boost farmer incomes** – It has beed found that it boost incomes, from other forms of farming and allied activities such as beekeeping in the same field, multi-crop farming and so on.
- **Soil productivity** – It promotes soil health by reducing chemical applications and is better able to *retain moisture* and *resist erosion*, essential qualities in the context of climate adaptation.
- **Reduce agricultural carbon footprints** – By reducing greenhouse gas emissions, thus contributing to India's climate goals under the Paris Agreement.

What lies ahead?

- Government need to support farmers in transition period until the yield becomes equal to yield from chemical-based farming.
- Large-scale and long-term assessment of the natural farming method prior to recommending it for wider adoption.
- Promoting awareness among farmers to make more farmers adapt to natural farming.

Reference

Business standard | National Mission on Natural Farming