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Need of Agroforestry

Why in news?

Agroforestry has gained popularity after decades of mono-cropping inspired by Green Revolution as it enhances farmer livelihoods and benefits the environment.

What are the features of agroforestry?

Agroforestry is the interaction of agriculture and trees, including the agricultural use of trees.

- **Integration of trees and shrubs-** It is a comprehensive land use system that goes beyond traditional agriculture by integrating trees and shrubs into farmlands and rural landscapes.
- **Enhanced productivity-** It *diversifies agricultural production* by incorporating trees and shrubs alongside traditional crops and livestock that can lead to increased yields and overall productivity of the land.
- **Improved profitability-** It can provide *additional source of income* for farmers through products such as fruits, nuts, timber, and medicinal plants hence contribute to greater economic stability and resilience for farming communities.



- **Increased diversity**- It can *promote biodiversity* by creating habitats for various plant and animal species that not only supports ecosystem health but also provides ecological services such as pollination and pest control.
- **Sustainability**- By mimicking natural ecosystems, agroforestry enhances the sustainability of agricultural practices. Trees help to conserve soil, improve water retention, and *mitigate the impacts of climate change* by sequestering carbon.
- **Resilience**- Agroforestry systems are adaptable and *responsive to ecological conditions*, allowing farmers to adjust their practices based on factors like soil type, climate, and landscape characteristics.
- **Built social institutions**- It encourages *community participation* and cooperation in natural resource management. It can foster social cohesion and empower local communities to collectively manage their landscapes for mutual benefit.

Why there is a need of agroforestry?

- **Weather induced changes**- Challenges like the *Gaja cyclone*-induced damage prompted farmers in Tamil Nadu to transit agroforestry by planting trees like jackfruit and mangoes, leading to increased profits.
- **Diverse agro climatic zones**- Agroforestry provides a *flexible and adaptable approach* that can be tailored to suit the specific needs and conditions of different regions, from the humid tropics to the arid deserts.
- **Climate resilience**- Indian agriculture faces increasing incidences of *extreme weather events* such as droughts, flood and cyclone, agroforestry can built resilience against such shocks by providing buffers and diversifying income sources for farmers.
- **Enhance small landholders**- The majority of farmers in India are small landholders who depend on agriculture for their livelihood, agroforestry offers them opportunities to improve their *income and food security* through diversified production systems that include crops, trees, and livestock.
- **Water management**- Agroforestry-based watershed management can help conserve

water, recharge aquifers, and improve water-use efficiency in agriculture as erratic rainfall patterns and overexploitation of groundwater resources is a cause of concern for India.

- **Biodiversity conservation**- India is one of the world's biodiversity hotspots, it promotes biodiversity conservation by providing habitats for native species preserving genetic diversity and restoring degraded ecosystems.
- **Rural development**- It can contribute to rural development by generating employment opportunities, fostering entrepreneurship, and revitalizing local economies.
- **Food security**- It can integrate food crops with fruit and nut trees can contribute to diversified diets and improved nutrition outcomes, thereby enhancing food security at the household and community levels.

Steps taken by India to promote agroforestry

- **Sub-Mission on Agroforestry**- It was launched in 2016-17 to encourage tree plantation on farm land alongside crops/cropping systems under the scheme "Har Medh Par Ped".
- **National Agroforestry Policy**- It was launched in 2014 that aims to support and expand agroforestry practices.
- **Trees Outside of Forests India**- It is a joint initiative by USAID and India's Ministry of Environment to increase tree covers in 7 states (Andhra Pradesh, Assam, Haryana, Odisha, Rajasthan, Tamil Nadu, and Uttar Pradesh) to expanding the area under trees outside forests for the benefit of livelihoods and the ecosystem.
- **AICRP**- All India Coordinated Research Project on Agroforestry (AICRP) was established to conduct systematic research on tree-crop interactions.
- **Greening and Restoration of Wasteland (GROW) with Agroforestry**- It is a NITI Aayog initiative that focuses on using agroforestry for greening wastelands and carbon sequestration to combat climate change.
- **Indian Forest and Wood Certification Scheme**- It was launched in 2023 by Ministry of Environment, Forest and Climate Change to promote sustainable management of forests and agroforestry.

What lies ahead?

- There is a need of tools like Jaltol which is an open source water accounting tool that helps assess water needs for different tree-crop combinations, enabling informed decision making in water stressed region.
- The need of the hour is to choose native species that is crucial for sustainability, tools like Diversity for Restoration aid in selecting climate-resilient species.
- Potential incentive mechanisms such as payment of ecosystem services would strengthen the ideology of nature-centred economics.
- There is a need to ensure economic viability through market linkages while meeting the criteria of sustainable agroforestry which is crucial to empower small land holders.
- Agroforestry presents a potential solution to foster healthy ecosystems and resilient livelihoods in India requiring collaboration among conservationists, agro-economists, and policymakers.

References

1. [The Hindu- Benefits of agro-forestry](#)
2. [Grow Ahead- Agroforestry](#)
3. [PIB- Indian Forest and Wood Certification Scheme](#)



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