



5 – December 2022

Editorial: Poor soil management will erode food security

Significance for Prelims: World Soil Day and its theme

Significance for Mains: Importance of Soil Management; Reasons behind loss of soil nutrients and degradation; and solutions for healthy soil management.

News: The theme of World Soil Day (WSD) 2022, observed on December 5, is 'Soils: Where food begins.'

Importance of soil management:

It supports healthy plant growth.

- **To correctly manage groundwater levels:** Healthy soil enhances nutrition and water percolation to water tables.
- Help regulate the planet's climate as soils store carbon; after oceans, soils are the second largest carbon sink.
- Improve landscape: Landscape became more resilient to droughts and floods.
- Good soil health is critical for healthy food production since the soil is the basis of food systems.

Aim of World Soil Day (WSD) 2022, observed on December 5: Its theme is 'Soils: Where food begins.'

- Raise awareness of the importance of maintaining healthy soils, ecosystems and human well-being.
- Address the growing challenges in soil management.
- Inspire societies to improve soil health.
- Advocating sustainable soil management.

Reasons for soil degradation:

- Industrial activities.

- Mining.
- Waste treatment.
- Agriculture.
- Fossil fuel extraction
- Processing and transport emissions.

Reasons behind loss of soil nutrients: Soil erosion, runoff, leaching and the burning of crop residues, excessive fertilizers and pesticide use, and irrigation with contaminated wastewater. Approximately 3.7 million hectares of land suffer from soil nutrient loss(depletion of soil organic matter, or SOM). The Impacts of soil degradation are far-reaching and can have irreparable consequences on human and ecosystem health.

Impacts of soil degradation: It affects around 29% of India's total land area, having far-reaching and irreparable effects on the ecosystem.

- Threatens agricultural productivity,
- Endangers in-situ biodiversity conservation,
- Degrades water quality
- Negatively impacts the socio-economic well-being of land-dependent communities.

Conservation strategy of India:

- **Soil Health Card (SHC) scheme to assess the current status of soil health:** The scheme is used to determine changes in soil health. The SHC guides farmers in making necessary soil amendments by displaying soil health indicators in descriptive terms.
- **Pradhan Mantri Krishi Sinchayee Yojana(PMKSJ) for preventing soil erosion.** It also aims to regenerate natural vegetation. Another aim of PMKSJ is rainwater harvesting and recharging the groundwater table.
- **National Mission for Sustainable Agriculture (NMSA) schemes** promote traditional indigenous organic and natural farming practices. **Impact of NMSA:** Reduction of dependency on chemicals and other agri-inputs, hence decrease in the monetary burden of small farmers.
- **Collaboration with the Food and Agriculture Organization of the United Nations (FAO) to foster sustainable agrifood systems.** National Rainfed Area Authority and the Ministry of Agriculture and Farmers' Welfare (MoA&FW) partnered with FAO to develop forecasting data analysis tools for aiding farmers in making informed decisions on crop choices.

Way forward:

- Strengthen communication channels between various stakeholders such as academia, policymakers and society.
- Adoption of anticipatory measures to facilitate evidence-based information on time.
- All relevant stakeholders should be taken in confidence to identify, manage, and restore degraded soils.
- Need greater cooperation and partnerships for sharing of successful practices as well as mass availability of knowledge for universal access to clean and sustainable technologies.
- Consumers and citizens can manage soil health by planting trees to protect topsoil, developing and maintaining home/kitchen gardens, and consuming locally sourced and seasonal foods.

Case study: FAO work with targeted states to support farmers in sustainable transitions to agroecological approaches and organic farming.

- In association with the Ministry of Rural Development(MoRD), FAO supports the Deen Dayal Antyodaya Yojana-National Rural Livelihoods Mission's (DAY-NRLM) Community Resource Persons.
- Aim of the work of FAO is to increase the capacities of Community Resource Persons towards supporting on-farm livelihoods so that they can adopt sustainable and resilient practices, organic certification and Agri-Nutri-gardens.
- Eight(8) target States of FAO to boost crop diversification and landscape-level planning are Madhya Pradesh, Mizoram, Odisha, Rajasthan, Uttarakhand, Chhattisgarh, Haryana and Punjab.

Prelims:

Q. Consider the following statements:

1. World Soil Day (WSD) 2022 is observed on December 5.
2. Theme of World Soil Day (WSD) 2022 is 'Soils: Where food begins.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Mains (2016):

1. The effective management of land and water resources will drastically reduce the human miseries. Explain.

Source: The Hindu

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योजना है तो सफलता है