

WORLD SOIL DAY-2023

“Soil and Water: A Source of Life”

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Cover Story

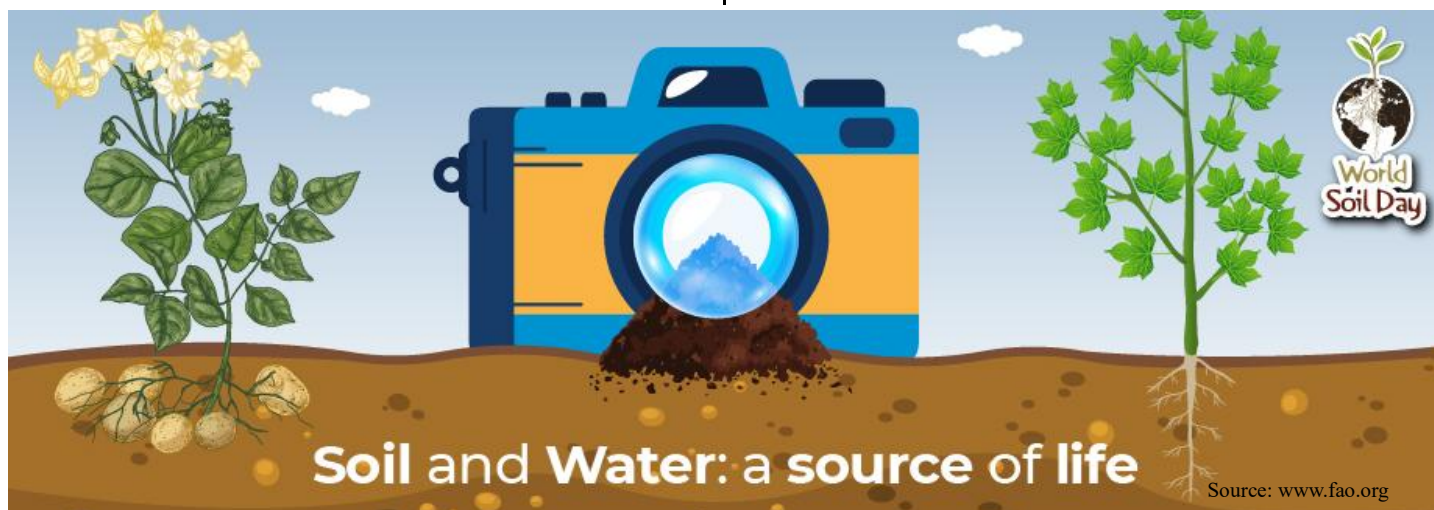
World Soil Day (WSD) is celebrated every year on 5th December worldwide as a means to focus attention on the importance of healthy soil and advocating for the sustainable management of soil resources.

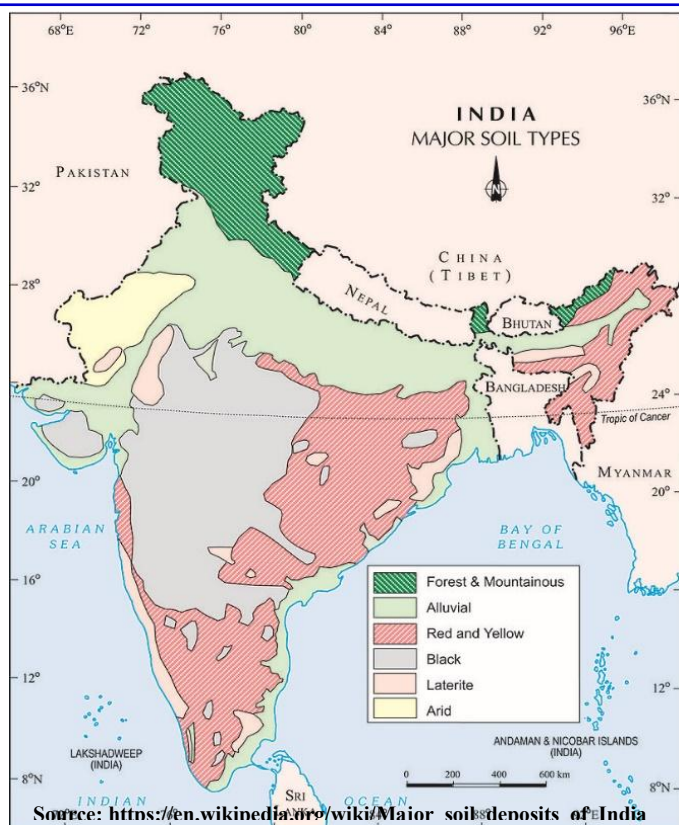
An international day to celebrate Soil was recommended by the International Union of Soil Sciences (IUSS) in 2002 under the leadership of the Kingdom of Thailand and within the framework of the Global Soil Partnership. Every year world soil day will be celebrated with a theme to create a awareness on importance of soil in human life. This 2023 year, the theme for celebrating world soil day is Soil & Water: A Source of Life. The basis for ecosystems, human well-being, and food production is provided by soil and water. Since we understand how important they are, we should take proactive steps to protect these resources for coming generations. The ability of soil to store, drain, and filter water is compromised by soil erosion and compaction, which also increases the risk of landslides, floods, and sand/dust storms. In order for plants to grow and receive the vital nutrients they need to produce food; they need both soil and water. Healthy soil acts as a natural filter, cleaning and storing water as it seeps into the ground. Rainfed agriculture systems account for 80 percent of croplands, contributing to 60 percent of the global

food production. These systems rely heavily on effective soil moisture management practices. However, irrigated agriculture systems withdraw 70% of the world's freshwater and account for 20 percent of croplands.



In food production always the healthy soils and their quality and availability of water are interconnected. Adopting sustainable soil management practices could enhances water availability for agriculture. Healthy soils particularly enriched with organic matter plays a crucial role in regulating water retention and availability. Efficient use of quality water, promoting the sustainable use of fertilizers and pesticides, employing appropriate irrigation methods, improving drainage systems, controlling pumping, and monitoring soil and groundwater salinity levels are essential to maintaining sustainable agricultural practices. Sustainable soil management is key to improve water productivity in irrigated systems. In recent days, the improper soil and water management practices affected soil erosion, soil biodiversity, soil fertility, and water quality and quantity across the country. Water scarcity leads to the loss of soil biodiversity, while leaching and eutrophication from agriculture practices





lead to the loss of biodiversity in water bodies. The mismanagement of pesticides and fertilizers not only threatened soil and water quality but also possessed significant risks to human health and ecosystems. In many major and minor irrigation project, poor irrigation and drainage practices are some of the main drivers of soil salinization. Rising sea levels contribute to land loss, increasing the risk of soil salinization and sodification, which can negatively impact agricultural productivity. Soil and water conservation contribute to climate change mitigation and adaptation.

In India, the major soils are Alluvial soil (43%), Red soil (18.5%) followed by Black/regur soil (15%) and other soils are Arid / desert soil, Laterite soil, Saline soil, Peaty / marshy soil, Forest soil, Sub-Mountain soil, Snowfields which are feeding for 1.4 billion Indian population. However, about 120.7 mha

land is degraded due to soil salination and acid soils because of excess use of fertilizers, unscientific cultivation and industrialization. This degraded land can be converted into cultivable land through adopting the soil quality and nutrient management practices such as:

- ❖ Development of soil and land quality indices for major crops.
- ❖ Integrated nutrient management and input use efficiency.
- ❖ Characterization and prospecting of large soil biodiversity.
- ❖ Conservation agriculture.
- ❖ Precision agriculture.
- ❖ Research on cropping sequence under different soil environmental conditions.
- ❖ Land evaluation and agricultural land use planning.
- ❖ Benchmark spots (hotspots) for monitoring soil and land quality.

Improved soil and water management technologies such as farm pond, contour bunds & trenches, check dams etc could improve the land's capacity to withstand extreme climate events such as droughts, floods and sand/dust storms. Integrated soil and water management practices provide essential ecosystem services, supporting life on earth and enhancing ecosystem resilience. Healthy soils act as a carbon sink, by sequestering carbon from the atmosphere, thus contributing to both climate change adaptation and mitigation efforts. Now, it is our duty to save this soil by creating awareness on healthy soil, adopting best soil and water conservation practices to cope up with adverse climate change and scientific application of fertilizers through precision agriculture.

“Let's join together for healthy soils”
