



General Studies-3; Topic: Conservation, environmental pollution and degradation, environmental impact assessment

Regenerative Agriculture

Introduction

- The Green Revolution of the 1960s pulled India out of starvation, transformed the country's ability to feed itself and turned it into a big food exporter.
- But the revolution also made India the world's biggest extractor of groundwater.

Present Status

- According to the UN's World Water Development Report, 2022, **India extracts more than a quarter of the world's groundwater withdrawal each year**; 90 per cent of this water is used for agriculture.

Need for regenerative agriculture

- If agriculture want to feed India's undernourished population and drive the economy, it needs to work in harmony with nature, not against it.
- Farmers, activists and agricultural research organisations across the world are thus developing methods of chemical-less farming under the wider umbrella of regenerative agriculture.
- The key to improving water use and efficiency is enhancing the health and nutrient-holding capacity of the soil.
- Study shows severe and widespread deficiency of organic carbon and micronutrients in Indian soils.
- **The importance of regenerative agriculture was emphasised in the Intergovernmental Panel on Climate Change (IPCC) report on "Climate Change and Land."**

Regenerative agriculture

- Regenerative agriculture uses natural inputs and cultivation practices such as crop rotation and diversification.
- It includes minimum-till, mulching, multi-cropping and sowing of diverse and native varieties.

- It aspires not only to maintain the resources like soil and water but also to improve them.
- The natural inputs help improve soil structure and its organic carbon content.

Benefits of Regenerative agriculture

- Healthy soil helps in better water storage, transmission, filtering and reduces agricultural run-off.
- One per cent increase in soil organic matter per 0.4 ha increases water storage potential by more than 75,000 litres.
- Planting water-guzzling and water-efficient crops together or in alternating cycles reduces the frequency and intensity of irrigation.
- They conserve energy used by irrigation aids such as pumps.

Government Initiatives

- In India, the Union government is promoting regenerative agriculture with an aim to reduce application of chemical fertilisers and pesticides and to lower input costs.
- States like Uttarakhand, Himachal Pradesh, Andhra Pradesh, Sikkim and Gujarat too have introduced schemes to promote it.

Way Forward

- Concerted research is required to understand the role of regenerative agriculture in saving water.
- The scientific findings will further help inform policy measures and future initiatives.
- There is an immediate and urgent need to provide all the necessary training and support to farmers so that they can prepare the required organic inputs in their own locality.