AAKAR TODAY

1. India's First Sovereign Green Bonds Framework

Why in News?

Recently, the Union Minister for Finance & Corporate Affairs has approved the final Sovereign Green Bonds Framework of India.

Sovereign Green Bonds will be issued for mobilising resources for green projects.

Key Details

What is Sovereign Green Bonds Framework?

- The Framework comes close on the footsteps of India's commitments under "Panchamrit" as elucidated by the Prime Minister at Conference of Parties (COP) 26 at Glasgow in November 2021.
- It will further strengthen India's commitment towards its Nationally Determined Contribution (NDCs) targets, adopted under the Paris Agreement.
- Green Finance Working Committee (GFWC) was constituted to validate key decisions on issuance of Sovereign Green Bonds.
- The framework has been rated 'Medium Green', with a "Good" governance score by a Norway-based independent second opinion provider CICERO.
- The 'Medium Green' rating is assigned 'to projects and solutions that represent significant steps towards the long-term vision, but are not quite there yet.
- All fossil fuel-related projects have been kept out of the framework, along with biomassbased renewable energy projects that rely on feedstock from 'protected areas'.

What are Sovereign Green Bonds?

About:

- Green bonds are issued by companies, countries and multilateral organisations to exclusively fund projects that have positive environmental or climate benefits and provide investors with fixed income payments.
- The projects can include renewable energy, clean transportation and green buildings, among others.
- Proceeds from these bonds are earmarked for green projects. This is unlike standard bonds, the proceeds of which can be utilized for various purposes at the discretion of the issuer.
- By the end of 2020, 24 national governments had issued Sovereign Green, Social and Sustainability bonds totalling a cumulative USD 111 billion dollars, according to the London-based Climate Bonds Initiative.

• Benefits of Sovereign Green Bonds:

- Sovereign green issuance sends a powerful signal of intent around climate action and sustainable development to governments and regulators.
- With the International Energy Agency's (IEA) World Energy Outlook 2021, estimating that 70% of the additional USD 4 trillion spending to reach net-zero is required in emerging/developing economies, sovereign issuance can help kickstart these large inflows of capital.
- Development of a sovereign green benchmark could eventually lead to the creation of a vibrant ecosystem of raising green bonds from international investors.

Status:

Global Status:

- The Environmental, Social and Governance (ESG) funds are estimated at USD 40 trillion with Europe accounting for about half this.
- It is estimated that by 2025, ESG assets will account for about one-third of the total global assets under management.
- The ESG debt funds pie is around USD 2 trillion, of which over 80% is "environmental" or green bonds, and the rest social and sustainability bonds.

National Status:

 According to the Climate Bonds Initiative, an international organization working to mobilize global capital for climate action, Indian entities have issued green bonds for over USD 18 billion.

What are Other Measures on Climate Action announced in the Budget?

- The budget included several measures on climate action such as:
 - Battery swapping policy.
 - Additional allocation under the Performance Linked Incentive (PLI) scheme for manufacturing high efficiency solar modules.
 - The government is introducing a new bill that aims to provide a regulatory framework for Carbon Trading in India to encourage penetration of renewables in the energy mix.

2. Carbon Sequestration

Why in News?

According to a recent study conducted in Maharashtra and Odisha, soil carbon sequestration may help fight climate change.

Studying is aligned with Sustainable Development Goal 13 (SDG 13: Climate Action) which is on

taking urgent action to combat climate change and its impacts.

The study revealed how the right combination of fertiliser, biochar, and irrigation could potentially increase soil carbon by as much as 300% and help mitigate climate change.

Key Details

What is Carbon Sequestration?

About:

- Carbon sequestration is the long-term storage of carbon in plants, soils, geologic formations, and the ocean.
- Carbon sequestration occurs both naturally and as a result of anthropogenic activities and typically refers to the storage of carbon.

Types:

Terrestrial Carbon Sequestration:

Terrestrial carbon sequestration is the process through which CO₂ from the atmosphere is absorbed by trees and plants through photosynthesis and stored as carbon in soils and biomass (tree trunks, branches, foliage, and roots)

Geologic Carbon Sequestration:

CO₂ can be stored, including oil reservoirs, gas reservoirs, unmineable coal seams, saline formations and shale formations with high organic content.

Ocean Carbon Sequestration:

- Oceans absorb, release and store large amounts of CO₂ from the atmosphere. This can be done in two ways- enhancing productivity of ocean biological systems through Iron fertilization, and injecting CO₂ into the deep ocean.
- The dumping of iron stimulates phytoplankton production, which in turn leads to enhanced photosynthesis from these microorganisms, helping in CO₂ absorption.

What are the Different Methods of Carbon Sequestration?

Natural Carbon Sequestration:

- It is the process by which nature has achieved a balance of carbon dioxide in our atmosphere suitable for sustaining life. Animals expel carbon dioxide, as do plants during the night.
- Nature provided trees, the oceans, earth and the animals themselves as carbon sinks, or sponges. All organic life on this planet is carbon based and when plants and animals die, much of the carbon goes back into the ground where it has little impact on contributing to global warming.

Artificial Carbon Sequestration:

Artificial carbon sequestration refers to a number of processes whereby carbon emissions are captured at the point of production (e.g., Factory Chimneys) and then buried.

- One proposed method is ocean sequestration whereby carbon dioxide is injected deep into the ocean, forming lakes of CO2. In theory, the CO₂ will stay down deep due to the pressure and temperature of the surrounding water, gradually dissolving into that water over time.
- Another example is geological sequestration where the carbon dioxide is pumped into underground chambers such as old oil reservoirs, aguifers and coal seams that are unable to be mined.

Why is Carbon Sequestration a viable Option for Agriculture?

- Climate Friendly: Carbon Farming (Carbon Sequestration) involves practices that are known to improve the rate at which CO2 is removed from the atmosphere and converted to plant material and soil organic matter.
 - It promises a bold new agricultural business model — one that fights climate change, creates jobs, and saves farms that might otherwise be unprofitable.
 - In essence, a climate solution, and increased income generation opportunity and ensuring a food security net for the population.
- **Optimising Carbon Capture:** It is a whole farm approach to optimising carbon capture on working landscapes by implementing practices that are known to improve the rate at which CO₂ is removed from the atmosphere and stored in plant material and/or soil organic matter.
 - It can incentivise our farmers to introduce regenerative practices in their agricultural processes, helping them shift their focus from improving yields to functioning ecosystems and sequestering carbon that can be sold or traded in carbon markets.
- Farmer Friendly: It not only improves the health of soil but can also result in improved quality, organic and chemical-free food (farm-to-fork models) along with boosted/secondary income from carbon credits for the marginalised farmers.

PRACTICE QUESTION

Prelims

- **Q.** Indian Government Bond Yields are influenced by which of the following?
 - 1. Actions of the United States Federal Reserve
 - 2. Actions of the Reserve Bank of India
 - 3. Inflation and short-term interest rates

Select the correct answer using the code given below.

(a) Only 1 and 2 (c) Only 3

(b) Only 2

(d) 1, 2 and 3

Mains

Q. Discuss about the vulnerability of India to earthquake related hazards. Give examples including the salient features of major disasters caused by earthquakes in different parts of India during the last three decades. (200 words)