



Daily Mains Answer Writing (Day - 72)

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Q.) Discuss the significance of Carbon Sinks and why 'Net Zero' Carbon targets may not be enough to tackle climate change.

Answer

- A carbon sink is any reservoir, natural or otherwise, that accumulates and stores some carbon-containing chemical compound for an indefinite period and thereby lowers the concentration of CO₂ from the atmosphere.
- Globally, the two most important carbon sinks are vegetation and the ocean.
- There are also different strategies used to enhance this process. Soil is an important carbon storage medium. Much of the organic carbon retained in agricultural areas has been depleted due to intensive farming. "Blue carbon" designates carbon that is fixed via the ocean ecosystems. Mangroves, salt marshes and seagrasses make up a majority of ocean plant life and store large quantities of carbon. Many efforts are being made to enhancing natural sequestration in soils and the oceans.

Significance of Carbon Sinks

- The role of carbon sinks in preventing carbon levels to rise is of paramount importance. Ocean and land carbon sinks absorb around half of the carbon emissions. Oceans are the largest carbon sink in the world, according to World Watch coral, algae and marine vegetation absorb around 93% of carbon dioxide, that's why if El Niño-like events occur it can have a major impact on the amount of carbon sequestration this year.
- Wetlands have the ability to store large amounts of carbon because it is harder for plants to decay in these conditions.
- Mangroves can store 3 times more carbon than tropical forests, however rising sea levels are compromising the life of these, meaning that the more emissions we produce, this contributes to the greenhouse effect which warms the Earth further, which causes sea levels to rise, which depletes coastal wetlands which leaves us with less natural resources to absorb more carbon emissions.
- Recent research from the University of Birmingham shows that areas where forests are re-growing, in the middle and height latitudes, are absorbing large amounts of CO₂ because of their young age. Whereas for rainforests deforestation in the Amazon reached its highest rate last year.

Net Zero Carbon Emissions

- In 2019, the *New Zealand* government passed the *Zero Carbon Act*, which committed the country to zero carbon emissions by 2050 or sooner, as part of the country's attempts to meet its Paris climate accord commitments.
- In the same year, the *UK's parliament* passed legislation requiring the government to reduce the UK's net emissions of greenhouse gases by 100 per cent relative to 1990 levels by the year 2050.
- More recently, *US* president Joe Biden announced that the country will cut its greenhouse gas emissions by at least 50 per cent below 2005 levels by 2030.
- *The European Union* too, has a similar plan, called "Fit for 55", the European Commission has asked all of its 27 member countries to cut emissions by 55 per cent below 1990 levels by 2030.
- *China* also announced that it would become net-zero by the year 2060 and that it would not allow its emissions to peak beyond what they are in 2030.

Net Zero Emissions Means

- Net-zero is a state in which a country's emissions are compensated by absorption and removal of greenhouse gases from the atmosphere.
- One way by which carbon can be absorbed is by creating carbon sinks. Until recently, the Amazon rainforests in South America, which are the largest tropical forests in the world, were carbon sinks.

Not Enough

- Independent charitable organisation *Oxfam* has said that 'net zero' carbon targets that many countries have announced may be a "*dangerous distraction*" from the priority of cutting carbon emissions.
- "Land-hungry 'net zero' schemes could force an 80 per cent rise in global food prices and more hunger while allowing rich nations and corporates to continue "dirty business-as-usual," *Oxfam* has said in a new report titled "Tightening the Net" that has been released.
- The report says that if the challenge of change is tackled only by way of planting more trees, then about *1.6 billion hectares of new forests would be required* to remove the world's excess carbon emissions by the year 2050.

- Further, it says that to limit global warming below 1.5°C and to prevent irreversible damage from climate change, the world needs to collectively be on track and should aim to cut emissions by **45 per cent by 2030 from 2010 levels**, “with the sharpest being made by the biggest emitters.”
- Currently, countries’ plans to cut emissions will only lead to a **one per cent reduction** by the year 2030. Significantly, if only land-based methods to deal with climate change are used, food rises are expected to rise even more. Oxfam estimates that they could rise by 80 per cent by the year 2050.
- The report emphasises that reducing emissions cannot be considered a substitute for cutting emissions, “and these should be counted separately”.