



## Mains Marathon

**Day 45:** Do you agree that the ill effects of climate change can be mitigated by targets like Net Zero emission and Afforestation? (150 Words)

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### Approach / Explanation / Answer

- Briefly explain the ill effects of climate change and explain the net zero and its target.
- Discuss the advantages and disadvantages of Net Zero emission and afforestation in mitigation of climate change.
- Conclude suitably.

### Answer:

Since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas. Sea levels are rising, and oceans are becoming warmer. Longer, more intense droughts threaten crops, wildlife and freshwater supplies. From polar bears in the Arctic to marine turtles off the coast of Africa, our planet's diversity of life is at risk from the changing climate. To adequately address this crisis, we must urgently reduce **carbon pollution and prepare for the consequences of global warming**. This can be addressed by **Net zero targets**. Net-zero is a state in which a country's emissions are compensated by absorption and removal of greenhouse gases from the atmosphere. India target to achieve **Net zero by 2070**.

### Need for mitigating climate change

- Global temperature increase needs to be limited to 1.5°C above pre-industrial levels to avert the worst impacts of climate change and preserve a livable planet.
- Currently, the Earth is already about 1.1°C warmer than it was in the late 1800s, and emissions continue to rise. Emissions need to be reduced by 45% by 2030 and **reach net zero by 2050**.
- The **energy sector is the source of around three-quarters of greenhouse gas emissions** today.

### Advantages of Net Zero emission and Afforestation

- Replacing polluting coal, gas and oil-fired power with **energy from renewable sources, such as wind or solar, would dramatically reduce carbon emissions**.
- In 2019, the New Zealand government passed the Zero Carbon Act, which committed the country **to zero carbon emissions by 2050**, China also announced that it would become net-zero by the year 2060.

- 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.
- It is even possible for a country to have negative emissions, if the absorption and removal exceed the actual emissions. **Bhutan has negative emissions**, because it absorbs more than it emits.
- **Deforestation** is a direct cause of the increased presence of CO<sub>2</sub> in the air over the past decade. Forests are carbon sinks; they cycle damaging carbon out of the atmosphere and transform it into biomass through photosynthesis.
- **Afforestation** is establishing a forest, especially on land not previously forested. It remains one of the most effective means of tackling climate change, particularly when it is designed to rely on green energy. This natural climate solution reduces the impact of desertification, supports ecosystems, and removes CO<sub>2</sub> from the atmosphere.

## Disadvantages of Net Zero emission and Afforestation

- If the challenge of change is tackled only by way of **afforestation**, then **about 1.6 billion hectares of new forests** would be required to **remove the world's excess carbon emissions by the year 2050**.
- 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% 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.
- **Issues with Net zero Carbon Target and Afforestation**
  - Multiple accounting standards and varied implementations of net-zero accounting create room for **manipulation, misrepresenting the pace of progress**.
  - **Delayed impact: Afforestation schemes** take time to realize their impact. The short-term imbalances between when the offset is credited and when it yields its full benefit can lead to further climate deterioration.
  - **Postponement of decarbonization:** Carbon offsets create an “easy solution” that may distract or delay companies from the hard but more meaningful and permanent work of reducing their own carbon emissions.
  - **Leakage:** Attempts to reduce emissions in one location may shift emissions to another where they are uncontrolled or uncounted. For example, a carbon offset programme that safeguards an area of rainforest in the Amazon from clear-cutting may result in the clear-cutting of an area of rainforest in the Congo Basin.
  - **Over-simplification of sustainability as carbon neutrality:** Many pledges today are **solely focused on the reduction of carbon dioxide, despite methane and nitrous oxide having 30 and 300 times the heat-trapping effect of carbon dioxide**, respectively.
  - **Over-simplification of sustainability as decarbonization:** The growing focus on **greenhouse gas (GHG) reduction** goals could be self-defeating **if other mechanisms of environmental degradation continue unchecked**. For example, **the depletion of species and destruction of natural habitats can reduce the natural buffering capacity** of the planet, undermining climate sustainability.
  - **A goal without a path:** Net-zero provides a goal, but not a path to achieve it.

## Way Forward

- Net-zero emission targets must account for all GHGs, covering the full scope of activities.
- **Distinguish carbon offsets from emission reduction in reporting:** Carbon offsets cannot be allowed to substitute for or postpone addressing emissions. Companies should report separately their emissions reductions and their offsets.
- **Create robust mechanisms of verification:** Audited inventories of carbon offset resources can support a marketplace for carbon offsets that can be verified and monitored over time.

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