

1.5°C to 2°C global warming. In the Indian Ocean, the sea temperature is heating at a higher rate than other areas, and therefore may influence other regions.

- **Net-Zero Emissions:** It means that all man-made greenhouse gas emissions must be removed from the atmosphere through reduction measures, thus reducing the Earth's net climate balance, after removal via natural and artificial sink, to zero. This way human kind would be carbon neutral and global temperature would stabilise.
- **Current Situation:**
  - **Several countries, more than 100, have already announced their intentions** to achieve net-zero emissions by 2050. These include major emitters like the United States, China and the European Union.
  - **India, the third largest emitter in the world**, has been holding out, arguing that it was already doing much more than it was required to do, performing better, in relative terms, than other countries.
  - Any **further burden would jeopardise its continuing efforts** to pull its millions out of poverty.
  - IPCC has informed that a **global net-zero by 2050 was the minimum required to keep the temperature rise to 1.5°C**. Without India, this would not be possible.
  - Even **China**, the world's biggest emitter, **has a net-zero goal for 2060**.

#### Impact of Global Warming:

- **Sea- Level Rise:**
  - Sea-level rise has tripled compared with 1901-1971. The Arctic Sea ice is the lowest it has been in 1,000 years.
  - Coastal areas will see continued sea-level rise throughout the 21st century, resulting in coastal erosion and more frequent and severe flooding in low-lying areas.
  - About 50% of the sea level rise is due to thermal expansion (when water heats up, it expands, thus warmer oceans simply occupy more space).
- **Precipitation & Drought:** Every additional 0.5 °C of warming will increase hot extremes, extreme precipitation and drought. Additional warming will also weaken the Earth's carbon sinks present in plants, soils, and the ocean.
- **Heat Extremes:** Heat extremes have increased while cold extremes have decreased, and these trends will continue over the coming decades over Asia.
- **Receding Snowline & Melting Glaciers:**
  - Global Warming will have a serious impact on mountain ranges across the world, including the Himalayas.
  - The freezing level of mountains are likely to change and snowlines will retreat over the coming decades.
  - Retreating snowlines and melting glaciers is a cause for alarm as this can cause a change in the water cycle, the precipitation patterns, increased floods as well as an increased scarcity of water in the future in the states across the Himalayas.
  - The level of temperature rise in the mountains and glacial melt is unprecedented in 2,000 years. The retreat of glaciers is now attributed to anthropogenic factors and human influence.

#### INDIA AND INDCS: PARIS CLIMATE CHANGE COMMITMENTS

**In News:** The Union Minister of Power and New and Renewable Energy emphasised India's achievements in the energy transition at the India-ISA (International Solar Alliance) Energy Transition Dialogue 2021.

##### INDCS of India

- To achieve 40% of cumulative electric power installed capacity from non-fossil fuel by 2030.
- To create an additional carbon sink of 2.5-3 billion tonnes of CO<sub>2</sub> equivalent through additional forest and tree cover.
- Reducing emissions intensity of its GDP by 33-35% from 2005 levels by 2030.

##### Achievements of India

- Achieved coveted milestone of 100 GW of installed Renewable Energy Capacity.
- 38.5% of India's installed power generation capacity is based on clean renewable energy source.
- India has achieved emission reduction of 28% over 2005 levels, against the target of 35% by 2030 committed in its NDC.