The Global Climate 2011-2020: WMO

For Prelims: World Meteorological Organization, The Global Climate 2011-2020: A Decade of Acceleration, El Niño event, Greenhouse gases (GHG), Marine Heatwaves, Glaciers.

For Mains: The Global Climate 2011-2020: WMO, Environmental pollution and degradation.

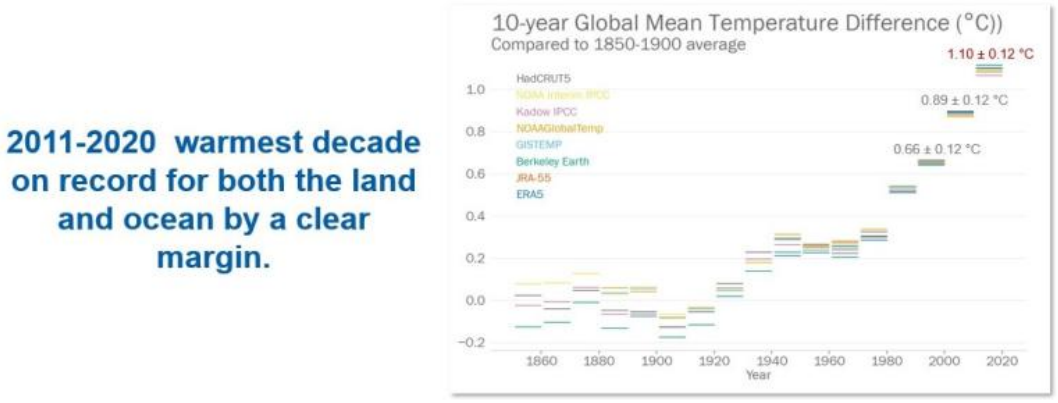
Source: TH

Why in News?

Recently, the **World Meteorological Organisation (WMO)** has published a report titled- ***The Global Climate 2011-2020: A Decade of Acceleration***, concerning the alarming acceleration of climate change and its multifaceted impacts across the planet.

What are the Key Highlights of the Report?

- **Temperature Trends:**
  - The decade 2011-2020 emerged as the warmest on record for both land and ocean.
  - Global mean temperature soared to **1.10 ± 0.12 °C above the 1850-1900 average**, with each decade since the 1990s surpassing previous ones in warmth.
  - Record high temperatures were reported in numerous countries, with 2016 (due to an El Niño **event**) and 2020 standing out as the warmest years.



- **Greenhouse Gas Emissions:**
  - Atmospheric concentrations of major **greenhouse gases (GHG)** continued to rise, **especially CO2, reaching 413.2 ppm in 2020**, primarily due to fossil fuel combustion and land-use changes.
  - The decade witnessed an **increase in average growth rates of CO_2,** highlighting the pressing need for sustainable emissions reduction to stabilize the climate.
- **Oceanic Changes:**

    - Ocean warming rates accelerated **significantly, with 90% of accumulated heat stored in the ocean**. Warming rates doubled in the **upper 2000m depth from 2006-2020,** impacting marine ecosystems.
    - Ocean acidification due to CO_2 absorption posed challenges for marine organisms, affecting their shell and skeleton formation.
- **Marine Heatwaves and Sea Level Rise:**
    - **Marine Heatwaves** increased in frequency and intensity, **affecting about 60% of the ocean's surface** between 2011 and 2020.
    - Global mean sea level rise **accelerated to 4.5mm/yr from 2011-2020**, mainly due to ocean warming and ice mass loss.
- **Glacier and Ice Sheet Loss:**
    - **Glaciers** globally thinned by **about 1 meter/year between 2011 and 2020**, with unprecedented mass loss, affecting water supplies.
    - Greenland and Antarctic ice sheets **lost 38% more ice compared to 2001-2010,** contributing significantly to rising sea levels.
- **Arctic Sea Ice Decline:**
    - Arctic sea ice continued its decline during the summer melt season, with a mean seasonal minimum extent 30% below the 1981-2010 average.
- **Ozone Hole and Successes:**
    - The Antarctic ozone hole diminished in the **2011-2020 period, credited to successful international action** under the **Montreal Protocol**.
    - Efforts led to reduced chlorine entering the stratosphere from ozone-depleting substances.
- **Impact on Sustainable Development Goals (SDGs)**:
    - Extreme weather events hindered progress toward SDGs, impacting food security, human mobility, and socioeconomic development.
    - Improved early warning systems reduced casualties but **economic losses from extreme events escalated.**
    - The 2011-2020 decade was the first since 1950 when there was not a single **short-term event with 10,000 deaths or more.**

What are the WMO's Recommendations for Mainstreaming Action on Climate and Development Goals?

- Enhancing collective resilience against **current and future global crises through collaboration and cooperation** with international organizations and their partners
- Strengthening **science-policy-society** interaction to advance synergistic action
- **Promoting institutional capacity-building** and cross-sectoral and international collaboration at national, institutional, and individual levels, especially for the global South.
- **Ensuring policy coherence** and coordination among policymakers across sectors and departments for **enhancing climate and development synergies** at the national, sub-national, and multi-national levels.

What is WMO?

- **About:**
    - It is an **intergovernmental organization** with a membership of 192 Member States and Territories. India is a member.
    - It originated from the International Meteorological Organization (IMO), which was established after the 1873 Vienna International Meteorological Congress.
- **Establishment:**
    - Established by the ratification of the **WMO Convention on 23rd March 1950**, WMO became the **specialized agency of the** United Nations for meteorology (weather and climate), operational hydrology and related geophysical sciences.
- **Headquarters:**
    - Geneva, Switzerland.