News: The year 2019 is likely to end as the second or third warmest ever, the World Meteorological Organisation (WMO) said in the latest of a series of warnings in recent months about a rapidly worsening climate scenario.

Prelims and Mains focus: About WMO and the observations made it

Context: The WMO statement came on the second day of the climate conference in Madrid where negotiators from nearly 200 countries are meeting amid mounting pressure for action to safeguard the planet from the catastrophic impacts of climate change.

Observations made in the WMO’s State of the Climate report

- Global mean temperature for January to October 2019 was 1.1 degree Celsius (error margin of 0.1 degree) above pre-industrial levels. 2019 is likely to be the second or third warmest year on record.

- The past five years are now almost certain to be the five warmest years on record, and the past decade 2010-2019, to be the warmest decade.

- Since the 1980s, each successive decade has been warmer than any preceding decade since 1850,” the WMO said in a provisional statement on the State of Global Climate in 2019.

- The warmest year on record so far has been 2016.

- The global atmospheric concentrations of carbon dioxide in 2018 had touched 407.8 parts per million, which was 147 per cent of pre-industrial levels, which is taken to be 1750. Other greenhouse gases, like methane and nitrous oxide, had also touched record levels in 2018. This year, the daily average carbon dioxide concentration crossed 415 ppm for the first time ever, though it has receded after that. The annual average is likely to be below that level.

- The state of the climate report also noted the unusually strong Indian Ocean Dipole (IOD) that developed this year.
A positive IOD is characterised by warmer than usual waters in the western Indian Ocean, towards the Arabian Sea, and cooler than average temperatures in eastern Indian Ocean, near the Indonesian coast. The reverse situation is called negative IOD. This difference in sea surface temperatures drives a number of regional weather events. This year the dipole was strongly positive, and was believed to have been partly responsible for unusually high rainfall in August and September as well as delayed monsoon withdrawal from India.

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**About World Meteorological Organisation**

- The World Meteorological Organization (WMO) is a specialized agency of the United Nations dedicated to meteorology (weather), climatology (climate), operational hydrology (water) and other related geophysical sciences such as oceanography and atmospheric chemistry.

- **Predecessor organization** — International Meteorological Organization (IMO) — founded in 1873.

**Reports:**

2. Status of the World Climate.

**Functions**

- WMO coordinates the activities of National Meteorological and Hydrological Services in 191 States and Territories so that basic weather, climate and water services are made available to anyone who needs them, when they need them.

- WMO guarantees the publication of observations and statistics and furthers the application of meteorology and hydrology (including the monitoring and predictions of climate change and ozone) to all aspects of human activities such as aviation, shipping, water management and agriculture.

- WMO also encourages research and training in meteorology and hydrology and their related applications and contributes towards reducing the impact of weather- and climate-related hazards. This is accomplished through regular, reliable forecasts and early warnings on flooding, drought, tropical cyclones, tornadoes and other extreme events.
Predictions concerning locust swarms and the transport of pollutants (nuclear and toxic substances, volcanic ash) are also provided by WMO Members.