State of the Global Climate for 2020

April 21, 2021

In News: World Meteorological Organization (WMO) released its annual State of the Global Climate for 2020 on April 20, 2021.

The following is from the report

- In 2020, extreme weather will be compounded by COVID-19, resulting in a double blow for millions of people.
- The pandemic-related economic downturn, on the other hand, had little impact on climate change drivers and their escalating effects.

It confirms what many people already knew

- Despite a cooling La Nia event, 2020 was one of the three warmest years on record.
- The global average temperature was around 1.2 degrees Celsius higher than it was before the industrial revolution (1850-1900).
- Since 2015, the last six years have been the warmest on earth.
- The decade from 2011 to 2020 was the warmest on earth.

WMO identified five main indicators of irreversible climate change

1) Greenhouse Gases:

- Despite the economic downturn brought about by the COVID-19 pandemic, global greenhouse gas emissions increased in 2019 and 2020.
- Furthermore, in 2021, greenhouse gas emissions would be higher.
- In 2019 and 2020, the major greenhouse gas concentrations continued to rise.

- According to the report, “globally averaged mole fractions of carbon dioxide (CO2) have already surpassed 410 parts per million (ppm), and if the CO2 concentration follows the same trend as previous years, it could hit or exceed 414 ppm in 2021.”

2) Oceans

- In 2019, the oceans had the highest heat content on record.
- In 2020, it has broken this record further.
- According to the report. “Over 80 per cent of the ocean area experienced at least one marine heatwave in 2020. The percentage of the ocean that experienced “strong” marine heat waves (45 per cent) was greater than that which experienced “moderate” marine heat waves (28 per cent),”

3) Sea-level rise

- Since record-taking started in 1993 using the satellite altimeter, sea-level has been rising.
- However, there was a blip in summer of 2020 that recorded a drop in sea level. The WMO report says it is due to the La Niña induced cooling. “Sea level has recently been rising at a higher rate partly due to the increased melting of the ice sheets in Greenland and Antarctica.”

4) The Arctic

- The Arctic sea-ice extent fell to its second-lowest level on record in 2020.
- According to the report, “the 2020 Arctic sea-ice extent minimum after the summer melt was 3.74 million square kilometres, marking just the second time on record that it shrank to less than 4 million square kilometres.”
- Temperatures in the Siberian Arctic were more than 3°C above average in 2020 in a wide area, with a record high

of 38°C in the town of Verkhoyansk.

5) The Antarctica

- According to the report, “The Antarctic sea-ice extent remained close to the long-term average. However, the Antarctic ice sheet has exhibited a strong mass loss trend since the late 1990s. This trend accelerated around 2005, and currently, Antarctica loses approximately 175 to 225 Gt per year, due to the increasing flow rates of major glaciers in West Antarctica and the Antarctic Peninsula”.

The World Meteorological Organization (WMO)

- The World Meteorological Organization (WMO) is a multilateral organisation with 192 member countries and territories.
- The International Meteorological Organization (IMO) was established in 1873 following the Vienna International Meteorological Congress.
- WMO was founded on March 23, 1950, when the WMO Convention was ratified, and it became the United Nations’ specialised agency for meteorology (weather and climate), operational hydrology, and related geophysical sciences.’
- The World Meteorological Organization is headquartered in Geneva, Switzerland.