WMO’s report on future of climate change

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Why in News:

The World Meteorological Organization (WMO) released two reports titled “Global Annual to Decadal Climate Update 2023-2027” and “State of Global Climate 2022.” The decadal predictions of the WMO said that the annual mean global surface temperature between 2023 and 2027 will be 1.1-1.8 degree Celsius higher than the baseline temperature of 1850-1900 or pre-industrial levels. In 2022, it was 1.15 degrees above the baseline, and by 2027, the average will exceed 1.5 degrees, a critical point beyond which there may be no return.

About 1.5 degree Celsius target

The 1.5 degree Celsius target is the global climate target that aims to limit warming to said level by 2100, in order to prevent the planet from slipping into further climate crises.

For decades, 2 degree was an acceptable level of warming. The idea of 1.5 degree was perceived as unrealistic and unachievable.

However, the 2 degree target was unacceptable to small island countries as it implied that their survival was compromised.

In 2010, at the Cancun COP16 , countries agreed to limit the global average warming to below 2 degree Celsius. In 2015, the parties to the Paris Agreement pledged to limit the average temperature rise to below 2 degree, while actively aiming for 1.5 degree above pre-industrial levels.

This was endorsed as a global target by the Intergovernmental Panel on Climate Change (IPCC) in 2018 and since then has been pursued in all climate dialogues.

Significance of the 1.5 degree target

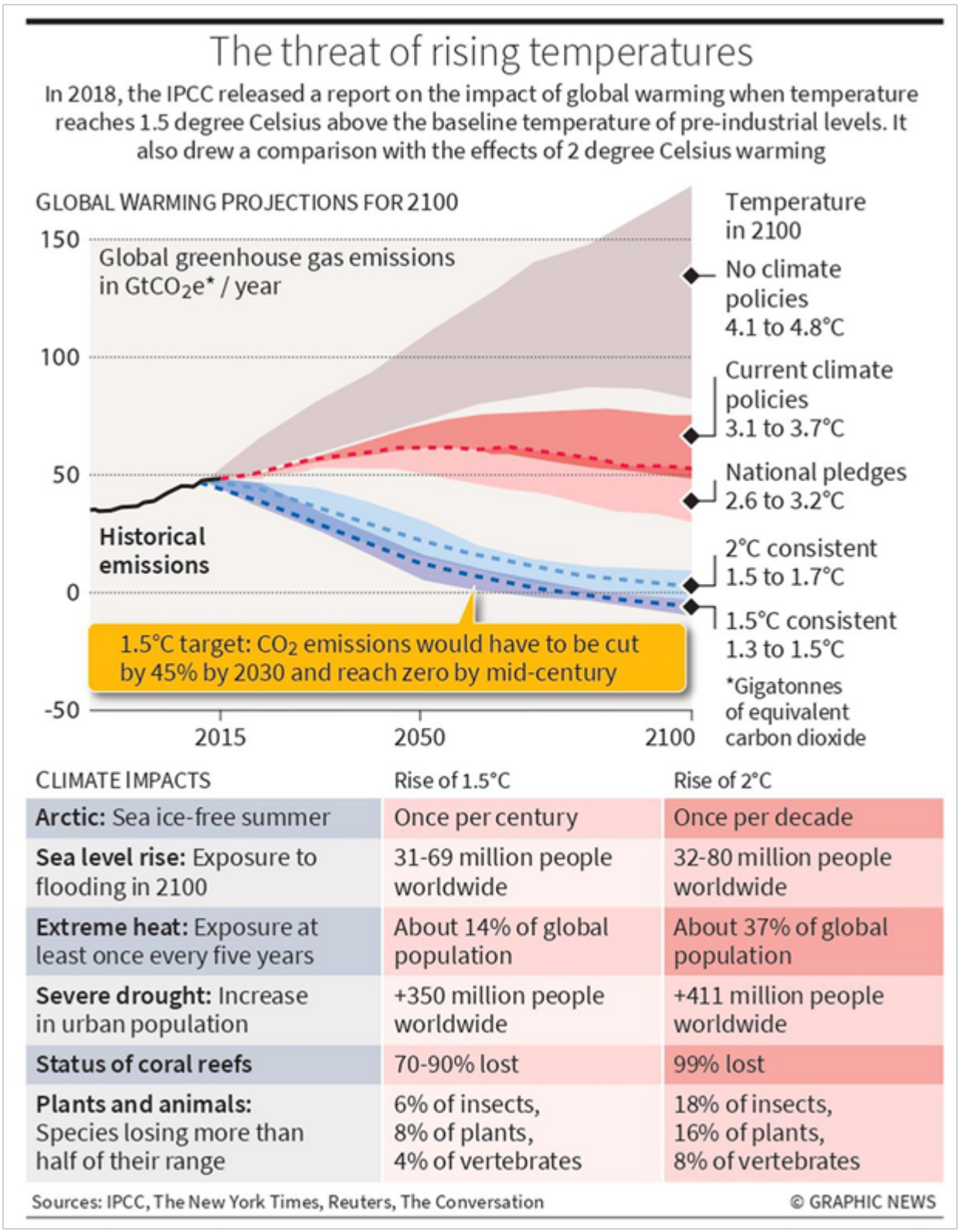
In 2018, the IPCC released a special report on the impact of global warming when temperature reaches 1.5 degree Celsius above baseline. It also drew a comparison with the effects of 2 degree Celsius warming.

It was estimated that anthropogenic activities would have already caused 1 degree of warming, likely to reach 1.5 degree between 2030 and 2052 at the current rate.

Frequent and intense heat waves, droughts, heavy precipitation, an additional 10-centimetre rise in sea level, destruction of ecosystems and mostly irreversible changes can be witnessed at the 2 degree level.

However, discussions on the average temperature rise do not imply that the current warming is uniform across the planet. For example, warming greater than the global average is being experienced in the Arctic, with the term ‘polar amplification’ gaining more traction.

The regional differences and the vulnerability factors spell more urgency for climate action which must limit the average planetary warming to 1.5 degree.



Challenges in achieving the target

Historically, developed countries are responsible for a major chunk of greenhouse gas (GHG) emissions. Therefore, they are expected to assume more responsibility and implement climate action.

However, the Climate Performance Index over the years has shown otherwise. Countries like Australia, the U.S., Japan, Russia and Canada have made little progress in meeting their pledges.

Additionally, polluters like China, Iran and Saudi Arabia rank low in climate performance.

The pandemic pushed the world into a socio-economic crisis. On the road to recovery, countries pledged measures to build-back. However, in most cases there is little to no consideration for building-back in a sustainable manner.

The Ukraine conflict has further added to woes and sparked an energy crisis threatening climate goals.

Link between extreme weather event and global rise in temperature

The predictions of the recently released reports point to precipitation anomalies and an increase in marine heat waves as compared to marine cold spells.

The El Niño, which is currently brewing, will further strengthen this year, resulting in a 98% possibility of witnessing temperatures higher than 2016 at least in one of the years in the 2023-27 period.

The cryosphere is shrinking, and there is a mass loss of glaciers in High-mountain Asia, Western North America, and South America. Due to the alarming rate of warming of the Arctic Ocean, the Greenlandic ice sheet is melting at a faster pace, contributing to the increase in sea level.

Climate risks and hazards impact human population and the ecosystem depending on exposure, vulnerability, and adaptive capacity. It has exacerbated food insecurity, displacement, and deaths.

Climate change has been affecting crop yield negatively and the risks posed by agricultural pests and diseases have also increased in the past few years. Countries like Ethiopia, Nigeria, South Sudan, Somalia, Yemen, and Afghanistan are facing acute food shortages resulting in malnutrition and hunger, demanding urgent humanitarian assistance.

However, food insecurity in these countries is due to the complex interaction of climate conditions with other factors such as droughts, cyclones, and political and economic instability.

The heatwaves in Pakistan and India in 2022 also resulted in a decline in crop yields. The floods in Pakistan affected croplands in southern and central parts of the country and displaced eight million people within the country.

The Horn of Africa (Ethiopia, Somalia, and Kenya) has been witnessing extreme drought conditions since 2020, while at the same time, western African countries are seeing floods and heavy rainfall which has pushed millions into acute food insecurity. Such shortage of food has also led to mass displacement within and across borders. In Syria and Yemen, thousands have been displaced owing to the floods, storms, and heavy snowfall.

Aquatic and terrestrial ecosystems have also not been immune to such changes in climate patterns. Phenological shifts and mismatches have been recorded due to climate change. The population of migratory species has declined in Sub-Saharan Africa.

Additionally, the warming above 1.5 degree Celsius can prove lethal for coral reefs which are already prone to bleaching. According to the WMO, extreme weather anomalies have caused the deaths of two million people and incurred $4.3 trillion in economic damages over the past fifty years. In 2020-2021, 22,608 disaster deaths were recorded globally.

Impact on India

India has been increasingly facing the brunt of climate change. February 2023 was recorded as the hottest month since record-keeping began in 1901.

In 2022, India witnessed extreme weather events for 80% of the days. Indian monsoons were wetter than usual last year after recording extreme heat during the pre-monsoon period, resulting in wildfires in Uttarakhand and acute food shortages.

According to the Climate Change Performance Index 2023, India ranked eighth with a high-performance after Denmark, Sweden, Chile, and Morocco.

Being an emerging economy with development needs, it is attempting to balance its development needs with ongoing climate action both at the domestic and international levels.

With domestic measures like the Green Hydrogen Mission and the introduction of green bonds, India is performing fairly well despite contributing only a miniscule to cumulative GHG emissions.

At the international level, through the International Solar Alliance and Coalition for Disaster Resilient Infrastructure, India can prove to be a responsible climate player keeping in mind that it has a long way to go in very little time.