



## Global Warming of 1.5°C -IPCC Report

Recently, a special report, which was commissioned to specifically explore the scientific feasibility of the 1.5°C goal set in the Paris Agreement, on global warming has been released by IPCC.

- It suggests that it has become extremely improbable to achieve the 1.5°C goal purely by reducing emission.
- As per the IPCC Report, at current rate of emissions, the world is set to breach the global warming limit of 1.5°C between 2030 and 2052. At present, the world is 1.2°C warmer compared to pre-industrial levels.
- The latest report was requested by various countries in 2015 to explore the possibilities of keeping the temperature rise within 1.5°C. This was the key demand made by a number of smaller and poorer countries, especially the small island states, which face the maximum risks from the impact of climate change.
- One of the key messages from this report is that we are already seeing the consequences of 1°C of global warming through more extreme weather, rising sea levels and diminishing Arctic sea ice, among other changes.

### Background

- As of now, the world is striving to prevent the temperature rise beyond 2°C, in accordance with the stated objective of the Paris Agreement of 2015. To meet that target, the aim is to reduce greenhouse gases by only 20 percent, from 2010 levels, by the year 2030 and achieve a net-zero emission level by the year 2075.
- Net-zero emission is achieved when the total emissions is balanced by the amount of absorption of carbon dioxide through natural sinks like forests, or removal of carbon dioxide from the atmosphere through technological interventions.
- In its earlier reports, which have formed the basis of global action, the IPCC has said that climate change could have “irreversible” and “catastrophic” impacts if the global average temperatures were allowed to rise beyond 2°C.

### Key Findings

- It projects that a 1.5°C world would witness greater sea level rise, increased precipitation and increased frequency of droughts and floods, more hotter days and heatwaves, more intense tropical cyclones, increased ocean acidification and salinity.
- While 1.5°C rise in global temperature will be precarious, a 2°C rise would be catastrophic. The report points out that the risk transition from 1.5°C to 2°C is very high and the impact of a 2°C rise will be more devastating than what IPCC’s earlier Report had indicated.
- Coastal nations and agricultural economies of Asia and Africa would be the worst affected. Decline in crop yields, unprecedented climate extremes and increased susceptibility could push poverty by up to several hundred million by 2050.
- When global warming is limited to 1.5°C instead of 2°C:
  - By 2100, global sea level rise would be 10 cm lower with global warming of 1.5°C compared with 2°C.
  - Climate related-risks in terms of food productivity, crop yields, water stress, health hazards and economic growth will be lower than at 2°C.
  - Limiting global warming to 1.5°C rather than 2°C is projected to prevent the thawing of a

- permafrost area in the range of 1.5 to 2.5 million sq km.
- The land area at risk is projected to be approximately 50 percent lower at 1.5°C compared to 2°C.
- Limiting global warming to 1.5°C reduces risk of rising ocean temperatures and salinity, thereby making marine ecosystems less vulnerable.
- The likelihood of an Arctic Ocean free of sea ice in summer would be once per century with global warming of 1.5°C, compared with at least once per decade with 2°C.
- Coral reefs would decline by 70-90 percent with global warming of 1.5°C, whereas virtually all (over 99 percent) would be lost with 2°C.
- Considering the scale and intensity of devastation that 1.5°C temperature rise can cause, the focus of the upcoming discussions must only be on this target instead of 2°C as only the rich would survive in a world that is warmer by 2°C and the poor would be drowned.
- Adaptation needs will also be lower for global warming of 1.5°C. It implies that limiting global warming to 1.5°C compared to 2°C is projected to lower the impacts on terrestrial, freshwater, and coastal ecosystems and retain more of their services to humans.
- To limit global warming to 1.5°C, net-zero emissions would have to be achieved by 2050 and emissions would need to be drastically cut by at least 45 percent by 2030. The corresponding rates of reduction to limit warming to 2°C would require a 20 percent reduction by 2030 and net-zero emissions by 2075.
- The science shows that current climate efforts would not limit global warming to 1.5°C, even if they are supplemented by an increase in the scale and ambition of emissions reduction after 2030.

## Way Forward

- Technologies for Carbon Dioxide Removal (CDR) are still undeveloped and untested. Varying amounts between 100 to 1000 gigatons (billion tonnes) of carbon dioxide would need to be removed from the atmosphere. The world currently emits about 47 billion tonnes of carbon dioxide every year.
- There is a requirement of rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems to curb carbon emissions.
- Global net anthropogenic CO<sub>2</sub> emissions must decline by about 45 percent from 2010 levels by 2030 and net-zero emission should be achieved by 2050. This is difficult, and would require rapid and unprecedented economy-wide transformation in each country.
- Countries need to undertake massive de-carbonisation while the developed countries must also address consumption in their countries.
- It would involve upscaling of low-carbon technologies in all carbon-intensive sectors of the economy, energy efficiency and enhancement of carbon sinks for sequestering carbon globally.
- There must be renewed emphasis on adaptation, which requires transformation and incremental shifts with more finance directed towards adaptation.
- The focus must now be on how developed world can lead and support this transformation. Therefore, even though urgent action is a necessity, it should be equitable and the onus of addressing climate change cannot fall on the developing world.
- Science has delivered its verdict. It has also provided hope for action and results. It is up to the policymakers to carry out necessary action for survival at 1.5°C. For that to happen, IPCC's findings must guide the discussions on the Talanoa Dialogue and COP 24 at Katowice (Poland) in December, 2018.

## About IPCC

- The Intergovernmental Panel on Climate Change (IPCC) is the international body for assessing the science related to climate change.
- It was set up in 1988 by the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.
- IPCC assessments provide a scientific basis for governments at all levels to develop climate related policies, and they underlie negotiations at the UN Climate Conference – the United Nations Framework Convention on Climate Change (UNFCCC).
- IPCC assessments are written by hundreds of leading scientists who volunteer their time and expertise as Coordinating Lead Authors and Lead Authors of the reports.

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