

Tipping points of global warming

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In news—A new study has found that the current level of average global temperatures about 1.1 degree Celsius higher than pre industrial times is enough to trigger catastrophic changes in several climatic systems.

Key findings of the study-

- **The study has warned that the thresholds for many of these systems could be crossed at the current levels** of warming, setting off self-perpetuating changes that could put living beings at serious risk.
- **The research is an updated assessment of important climate tipping points**, or the thresholds beyond which changes in the earth's systems become uncontrollable and irreversible.
- **Its findings could lead to a reassessment of global efforts to fight climate change**, and are being widely discussed in scientific circles.
- The discussion on climate tipping points is not new, and several studies in the past 15 years have identified **different tipping points such as the disintegration of Greenland ice sheet, a spontaneous reduction in Amazon forest cover, melting of glaciers**, or softening of the permanently frozen grounds in the polar regions that have large amounts of carbon trapped in them.
- **Over the years, researchers have identified at least 15 tipping points**, each correlated with different levels of temperature rise.
- **The latest study has identified nine global and seven regional tipping points**, and has re-assessed their dynamics and correlation with global warming.
- When the discussion on tipping points had first emerged

about two decades ago, most of these were considered plausible only in warming scenarios exceeding 5 degree Celsius.

- But more recent information, including those presented by the Intergovernmental Panel on Climate Change (IPCC), suggest that **most of these tipping points would be crossed between 1 and 2 degree Celsius temperature rise.**
- **The latest study has presented evidence** to suggest that some of these tipping points could be met even at the current levels of warming.
- **It has shown that the present 1.1 degree Celsius warming was within the lower end of temperature ranges** for at least five tipping points.
- It means that these **self-perpetuating changes could possibly have already begun.**
- It has said that for warming between 1.5 degree and 2 degree Celsius, six tipping points become “likely” and four more become “possible”.
- The findings of this study are expected to further amplify the voices asking for increase in efforts to restrict global warming.
- The sixth assessment report of the IPCC released earlier this year had said that global emissions of greenhouse gases needed to peak by 2025, and reduce by 43 per cent from current levels by 2030, if the 1.5 degree Celsius target was to be achieved.
- With the current level of efforts, the world is on the path to become more than 2 degree warmer by the year 2100.

