Indian Ocean warming at alarming rate: Study

Will Warm By 1.7°C - 3.8°C Per Century By 2100

Neha.Madaan
@timesgroup.com

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CLIMATE CRISIS: The Indian Ocean is moving to a near-permanent marine heatwave state, with warming not just limited to surface waters, says the study

Pune: The Indian Ocean is warming at a staggering pace, with potentially catastrophic consequences, a study by top research institutes has warned.

The study by researchers drawn from institutes such as Indian Institute of Tropical Meteorology (IITM), Pune; CSIRO-Australia; Princeton University, USA; Sorbonne Universités, France; and University of Bern, Switzerland warned of accelerating ocean temperatures in future due to high CO_2 emissions, more extreme weather events and higher sea levels. The findings were recently published by Elsevier, a leading global scientific publisher, 'The Indian Ocean and its Role in the Global Climate System'.

"While the Indian Ocean warmed by 1.2°C per century from 1950-2020, our latest research predicts this rate will skyrocket to 1.7°C-3.8°C per century by 2100 under the current CO_2 emission trajectories. The future increase in heat content is comparable to adding the energy equivalent of one Hiroshima atomic bomb detonation every second, all day, every day, for a decade," said senior climate scientist Dr Roxy Mathew Koll, who led the study from IITM.

The seasonal cycle of surface temperatures was projected to shift, which might have implications in the form of extreme weather events over the Indo-Pacific region, he said. "While the maximum basin-average temperatures in the Indian Ocean during 1980-2020 remained below 28°C throughout the year under high CO_2 emission simulation scenario, the minimum temperatures by the end of the 21st century will be above 28°C year around under similar emissions," Dr Koll said.

"Sea surface temperatures above 28°C are generally conducive for deep convection. Heavy rainfall events and severe cyclones have already increased since 1950s and are projected to increase further with increasing ocean temperatures," he added. The study suggested that the Indian Ocean is moving to a near-permanent marine heatwave state, with warming not just limited to surface waters.

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