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# Study: Sharp rise in extreme weather events in last 50 yrs

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**NEW DELHI:** A new paper by scientists from ministry of earth sciences has revealed a sharp rise in extreme weather events in India in the past 50 years (1970 to 2019), although the overall mortality due to extreme weather events has been declining, pointing to both the challenge posed by the climate crisis, and the fact that governments have become better at saving lives, although the events still cause significant economic damage.

The paper, published in ScienceDirect journal on February 26, compared extreme weather events across two 20-year periods—1980-1999 and 2000-2019. The comparison highlighted an increase of 138% in heatwaves, 193% in lightning strikes, 25% in cold waves, 28% in floods, and a decrease of 19% in tropical cyclones.

"The steep rise in extreme weather events in recent decades is mainly because of climate change," said M Rajeevan, secretary, ministry of earth sciences and co-author.

In general, the climate crisis is expected to increase the number and intensity of extreme (or adverse) weather events.

According to the paper, extreme weather events resulted



Floods were responsible for 46.1% of all deaths in the last five decades, the report said.

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in a mortality rate of 3.86 between 1980 and 1999 (mortalities per year per million population), which reduced to 2.14 between 2000 and 2019. This is due to better disaster management and more accurate weather forecasts, the paper added. But within this, mortality from heat waves and lightning strikes are on the rise.

The fatalities from tropical cyclones reduced by 94% over the past 20 years; that from heatwaves and lightning increased by 62.2% and 52.8% respectively according to the paper.

"The mortality rate (per year per million population) has a decreasing trend for cold waves, floods, and tropical cyclones but it is non-significant. However, there is a significant increasing trend for lightning. Overall, this analysis

indicates, even though the number of events is increasing significantly, mortality is either decreasing or not significantly increasing, except for lightning, where the increase in mortality rate is significant," the paper said.

"The reason mortality associated with lightning and heat waves is going up mainly because even though there is improved forecast the actions taken are not appropriate. People lack awareness of the impacts of these events," Rajeevan added. To be sure, the paper does not analyse the economic effects of extreme weather events, which are only increasing.

According to the paper, over the past 50 years, 7,063 extreme weather events occurred in India, causing 141,308 deaths, with an

average of 20 deaths per event. Floods were responsible for maximum mortality (46.1% of all deaths) followed by tropical cyclones with 28.6% mortality.

Mortality due to the extreme weather events was maximum in the decade 1970-1979 (87.5% of these mortalities were due to floods and tropical cyclones) followed by 1990-1999. These were the decades of the three most destructive tropical cyclones—the Odisha Cyclone in 1971, the Andhra Pradesh Cyclone in 1977, and the Odisha Super Cyclone in 1999.

According to EM-DAT (the international disasters database) the total estimated damages due to these extreme weather events are equivalent to \$99 billion over the past 50 years.

"While apposite disaster management and early warning systems have averted loss of lives significantly, the economic loss due to extreme weather events has increased two-fold in recent decades. Further, it is projected that India's productivity loss due to heatwaves will increase two-fold. Identification of compounded impacts of extreme weather events and climate-proofing of infrastructures should be national imperatives," said Abinash Mohanty, Programme Lead, Council on Energy, Environment and Water (CEEW).

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# 'Above normal summer temp likely across country except South, central India'

**New Delhi, March 1:** Day temperatures are likely to be above normal in north, northeast, parts of east and west India, the India meteorological department said Monday in its summer forecast for March to May.

However, it has forecast a likelihood of below normal temperatures in south and adjoining central India.

"During the upcoming hot weather season (March to May), above normal seasonal maximum (day) temperatures are likely over most of the subdivisions of north, northwest and northeast India, few subdivisions from eastern and western parts of central India and

few coastal subdivisions of north peninsular India," the forecast said.

There is a probability forecast for above maximum temperatures in Chhattisgarh, Odisha, Gujarat, coastal Maharashtra, Goa and coastal Andhra Pradesh.

"However, below normal seasonal maximum temperatures are likely over most of the subdivisions of south peninsula and adjoining central India," it added.

It said above normal seasonal minimum (night) temperatures are likely over most of the of north India along the foot hills of Himalayas, northeast India, western part of central India and southern

## Delhi's minimum temp drops by a few notches

**New Delhi, March 1:** Mercury dropped by a few notches in the national capital on Monday as the minimum temperature settled at 11.8 degrees Celsius, according to the IMD.

The city had registered a low of 15.6 degrees Celsius on Sunday while the maximum temperature was 32.3 degrees Celsius.

The minimum temperature recorded at Safdarjung Observatory here, considered the offi-

cial reading of the city, was 11.8 degrees Celsius early morning on Monday, one notch below the normal, an IMD official said.

Delhi witnessed a fall of 6 degree in minimum temperature during last 48 hours. From 17.8 to 11.8 degree. Similar trend across North West and central India.

#DelhiWinters,' tweeted Mahesh Palawat, the vice president of private weather forecaster agency Skymet.

— PTI

part of peninsular India.

"However, below normal

season minimum temperatures are likely over most of the subdivisions of eastern part of the central India and few subdivisions of extreme northern part of the country," the India meteorological department added.

The India meteorological department added that moderate La Niña conditions are prevailing over the equatorial Pacific and sea surface temperatures (SSTs) are below normal over the central and eastern equatorial Pacific Ocean.

The latest model forecast indicates that La Niña conditions are likely to sustain during the upcoming hot weather season (March to May), it added.

La Nina is associated with the cooling of the Pacific waters and El Nino is its antithesis. The phenomenon has a impact on the weather of the Indian sub-continent.

The India meteorological department said it will release the second summer forecast for April to June in April.

The India meteorological department last month had said the minimum temperature recorded in the country in January was the warmest for the month in 62 years. South India was particularly warm.

The month was the warmest in 121 years, with 22.33 degrees Celsius in south India, followed by

22.14 degrees Celsius in 1919 and 21.93 degrees Celsius in 2020 as the second and third warmest months.

Central India was also the warmest (14.82 degrees Celsius) in the last 38 years after 1982 (14.92 degrees Celsius), while 1958 with 15.06 degrees Celsius was the warmest in the 1901-2021 period.

According to the IMD, sky will be clear on Tuesday with mist in the morning.

'Mainly clear sky. Mist in the morning. Strong surface winds with speed between 20-30 kmph during the day. The maximum and minimum temperatures would be around 29 and 12 degrees Celsius respectively,' the IMD said. — PTI



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## NEW DELHI

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south peninsula and adjoining central India," it added. It said above normal seasonal minimum (night) temperatures are likely over most of the north India along the foot hills of Himalayas, northeast India, western part of central India and southern part of peninsular India. "However, below



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