

Surge in cyclones: 2.9 mn at risk in Andhra Pradesh

Series of El Niño and other oceanic-atmospheric phenomena a major reason for increasing number of cyclones in India, say experts

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A total of six cyclones have taken a heavy toll on the Indian coast this year, with losses worth \$2.5 billion and over 500 casualties, according to government data and media reports. Between 2015 and 2022, cyclones have led to damages worth \$44 billion and claimed 2,531 lives.

Most recently, Cyclone Michaung hit Tamil Nadu and Andhra Pradesh. A new report by research agency Climate Trends indicates that around 2.9 million people in Andhra Pradesh are vulnerable to cyclones, as 3.3 million people are living within 5 kilometres of the coastline. It says that coastal Tamil Nadu is also similarly prone to cyclones.

According to experts, a major reason for the rise in cyclonic storms in recent years is a series of oceanic-atmospheric phenomena such as El Nino, Indian Ocean Dipole and Madden-Julian Oscillation.

“El Niños usually peak around Christmas in December. As oceans absorb more than 93 per cent of the additional heat from global warming, El Niños are also getting stronger,” said Roxy Mathew Koll, climate scientist at the Indian Institute of Tropical Meteorology.

Koll pointed out that changes in ocean-cyclone interactions had emerged in recent decades in response to Indian Ocean’s warming. “They are to be closely monitored with improved observations since future climate projections demonstrate continued warming of the Indian Ocean at a rapid pace along with an increase in the intensity of cyclones in this basin.”

According to the Climate Trends assessment, the Indian Ocean Dipole and Madden-Julian Oscillation — both associated with positive rainfall over the Indian landmass, were in favourable zones. In addition to this, high sea surface temperatures acted as a catalyst.

Recent years have witnessed the rapid intensification of weak storms into severe cyclones across both the Arabian Sea and the Bay of Bengal, said Abinash Mohanty,



The landfall of Cyclone Michaung in Andhra Pradesh’s Prakasam district left a trail of uprooted trees last week

PHOTO: PTI

sector head Climate Change and Sustainability, IPE-Global, and an Intergovernmental Panel on Climate Change expert reviewer.

“While COP28 (Conference of the Parties) operationalises the loss and damage fund, the trail of destruction left behind by climatic extremes like cyclones is a grim reminder of India’s vulnerability to them. The government should invest in an improved emergency response framework that accounts for the compounded impacts of extreme events, a detailed climate risk assessment and climate-proofing of lives, livelihoods and critical infrastructures,” Mohanty added.

Climate Trends indicates that the geographical and atmospheric conditions make the Bay of Bengal more favourable for cyclones than the Arabian Sea.

Cyclone Fani in 2019 caused estimated economic losses amounting to ₹12,000 crore and damaged more than 500,000 houses in the coastal districts of Odisha.

In 2013, Cyclone Phailin resulted in approximate economic losses of ₹8,902 crore. Similarly, Cyclone Amphan in 2020 was yet another powerful cyclone that struck West Bengal, causing damages of ₹1 trillion (\$13 billion) to infrastructure and crops.

Experts added that cities should be

better prepared to manage disaster risks.

“Recent climate events have led to cascading disruptions of services, from power supply to telecom, transportation and supply chain services, and created havoc for citizens living in these cities. If city resilience strategy, new business model for critical service delivery, emergency waste management plan and innovative communication network are put in place, they could help avoid widespread information and service disruption across cities,” said Nidish Nair, executive director-climate resilience and cities, PwC India.

“It is imperative that our states and cities holistically assess their disaster risk thresholds for hazard scenarios and proactively work towards building resilience at a systemic scale to better manage such disasters in future,” he added.

According to the India Meteorological Department (IMD), 184 cyclones of all categories including depressions from 1891 to 2019 hit Andhra Pradesh itself.

“Andhra Pradesh is at risk of at least one cyclone a year on an average, the maximum during October and November. Cyclones with moderate to severe intensity occur every two to three years, which result in huge damage to the state,” according to Climate Trends.