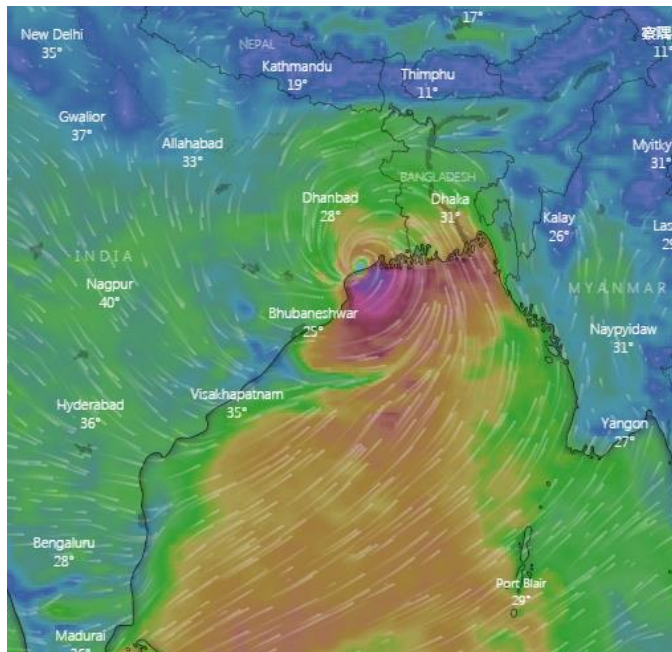


Cyclone Yaas: Link with Cyclone Tauktae and Cyclone Amphan

Very Severe Cyclone Yaas finally made landfall over the north Odisha coast, south of Balasore at 9:05 am on May 26. At time of crossing the coast, Yaas had sustained wind speed 130 -140 kmph gusting to 155 kmph (Track the live updates [here](#)).

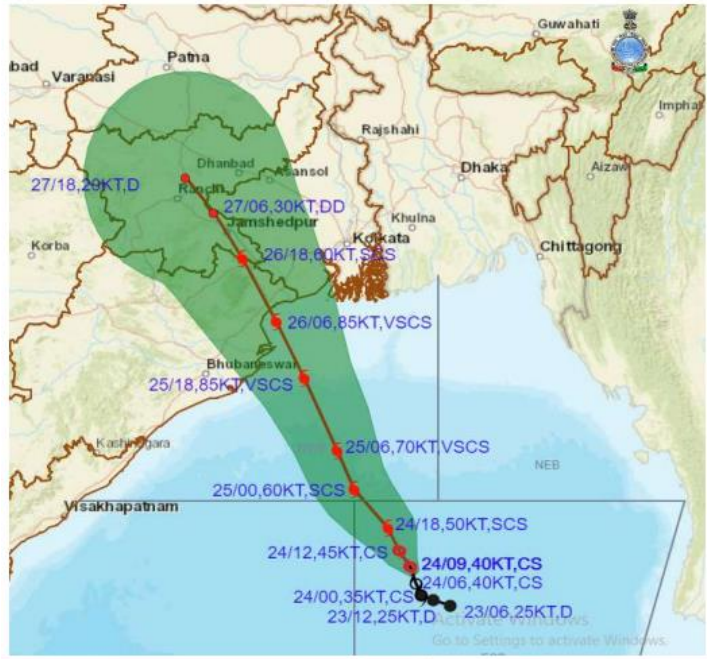
At present, Yaas is now travelling over North Coastal Odisha accompanied with squally winds which still continue to sustain speed of 120-130 kmph gusting up to 145 kmph now.



According to Mahesh Palawat, Meteorologist, Skymet Weather, Yaas is likely to weaken in the next few hours as it travels through the interior parts of Odisha. However, it is likely to sustain the strength of cyclonic storm till the early morning of May 27. Thus, heavy to very rainfall would continue along the track of the cyclone. The tropical system gave record widespread rainfall over all the places it touched.

As reiterated earlier, any storm moving with such strength over the land is a result of global warming as it triggered exceptionally warm sea surface temperatures to the tune of 30°C-31°C. Similar to Tauktae, Yaas too had possessed very severe intensity while hitting the Odisha coast and had already acquired its supply of heat and moisture from Bay of Bengal.

The system is likely to travel across East India, weakening gradually. Cyclone Yaas would turn into a depression by the time it reaches Jharkhand. Bihar would also see widespread rainfall during the next 48 hours. Following is the expected track of Cyclone Yaas. **Image Courtesy:** [India Meteorological Department \(IMD\)](#)



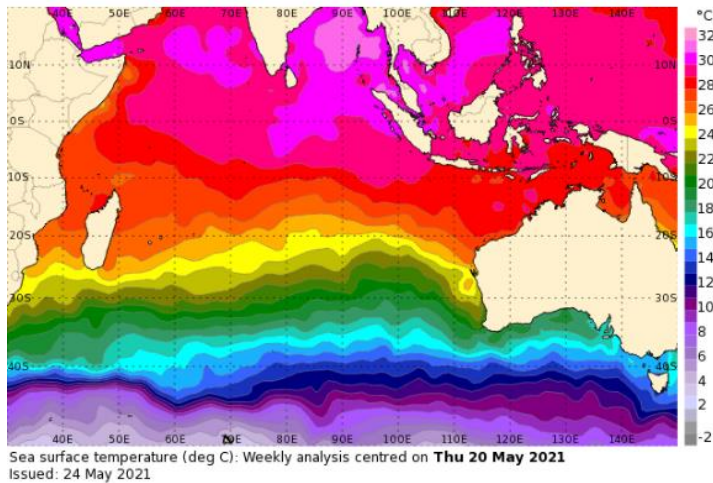
Rainfall and warning:

State	Rainfall Warning
Odisha	<p>Light to moderate rainfall at many places with heavy to very heavy rainfall and extremely heavy rainfall at isolated places in Jagatsinghpur, Kendrapara, Jajpur, Bhadrak, Balasore, Mayurbhanj, Cuttack, Dhenkanal, Keonjhar and heavy falls at isolated places in Puri, Khurda, Angul, Deogarh, Sundergarh on May 26.</p> <p>Heavy rain and thundershowers are expected over isolated parts of north interior Odisha on May 27 as well.</p>
West Bengal	<p>Light to moderate rainfall at most places with heavy to very heavy rainfall and extremely heavy rainfall over parts of Medinipur, Jhargram, Bankura, south 24 Parganas, Purulia, Nadia, Murshidabad, east Bardhaman, Howrah, Hooghly, Kolkata, north 24 Parganas, Haldia, Darjeeling, Kalimpong Districts on May 26.</p> <p>Heavy rain to continue at isolated places in Jhargram, west Medinipur, Bankura, Purulia, west Bardhaman, Bhirbhum, Malda, Darjeeling, Kalimpong, Jalpaiguri on May 27.</p>
Jharkhand	<p>Widespread light to moderate rainfall with heavy to very heavy rainfall and extremely heavy falls at isolated places on May 26-27.</p>
Bihar	<p>Widespread light to moderate rainfall with heavy to very heavy rainfall and extremely heavy falls at few places on May 27. Isolated heavy to very heavy falls will continue on May 28.</p>

Yet again, the credit for the cyclogenesis can be given to climate change. Indian seas have been exceptionally warmer than the usual this year, making atmospheric and ocean conditions favourable for

frequent formation of cyclones and their rapid intensification. Rapid intensification is the key point to focus on, as it will have direct impact on rainfall, destruction in terms of floods and gusty winds and evacuation process, added **Palawat**.

Threshold value for sea surface temperatures (SSTs) for the formation of cyclone is 28°C. At present, SST over Bay of Bengal as well as Arabian Sea is around 31°C - 32°C. Image Courtesy: [Bureau of Meteorology](#)



Similar trend was seen during Cyclone Tauktae and now in Cyclone Yaas. Although both the storms have been reacting in the same manner but there are slight difference pertaining to geography. **According to Dr Roxy Mathew Koll, Scientist, Indian Institute of Tropical Meteorology, Lead Author, IPCC Oceans and Cryosphere:**

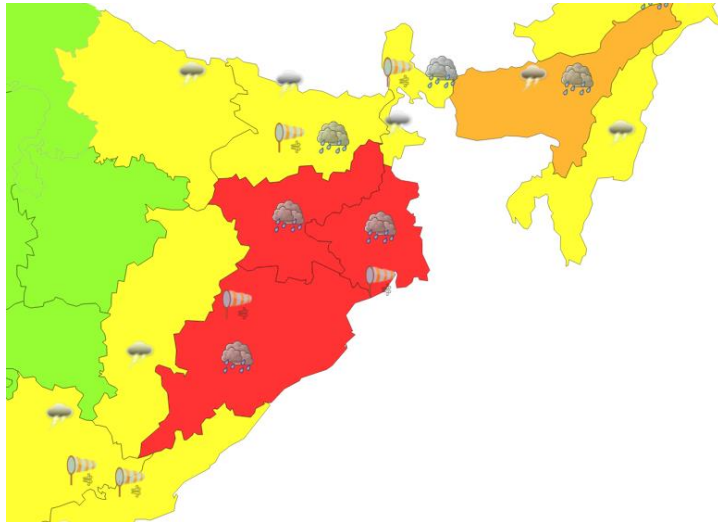
“Similarity between Cyclone Yaas and Tauktae is that both are preceded by very high sea surface temperatures reaching 31-32°C. These high temperatures were conducive for cyclone Tauktae to intensify into an extremely severe cyclone in a short time. Similarly, high temperatures are predicted to assist Yaas also for intensifying rapidly. However, there is one difference. Tauktae spent several days in the Arabian Sea where it could draw the heat and moisture continuously, reaching peak intensity of more than 220 km/hr. In the case of Yaas, it has formed in the north Bay of Bengal, and the travel distance to landfall is shorter. As a result, it won't get a long period over the ocean to blow up to the intensity of Tauktae. Here the common thread is that rising ocean temperatures in both the basins are assisting these cyclones in their "rapid intensification" process. Otherwise, we don't see a significant increase in the number of cyclones over the Bay of Bengal as we see in the Arabian Sea.”

Similarity/ Difference	Cyclone Tauktae	Cyclone Yaas
Intensity	Extremely Severe Cyclonic Storm	To be Very Severe Cyclonic Storm
Travel	> 1000 km	> 600 km
Sea Surface Temperatures	31°C - 32°C	31°C - 32°C

Rapid intensification is expected to continue to become much more frequent this century with continued climate change. One [study](#) found that intensification rates that happen once a century now could happen every 5-10 years by 2100.

Mahesh Palawat added, “Although the intensity of Cyclone Yaas was lesser than that of Tauktae but it was quite strong in terms in terms of damage. At the time of landfall, Yaas gave flooding rains along with sustained wind speed of 135-145 kmph gusting upto 155 kmph. Coastal Odisha, Gangetic West Bengal and Jharkhand continue to be on red alert for widespread torrential rains and damaging winds.” **Image**

Courtesy: [India Meteorological Department](#)



Increased storm surges

The potential storm surge from Cyclone Yaas could be the most dangerous threats from the storm. [Global climate change has been a contributing factor in the rising sea level](#), which in-turn is likely to increase storm surge risk.

Global sea levels have already increased about [23cm](#) as a result of human carbon emissions - dramatically increasing the distance that storm surges can reach. Sea levels in the North Indian Ocean have risen more quickly than other places in recent years.

India and Bangladesh could experience dramatic annual coastal flooding by 2050 affecting 36 million people in India and 42 million in Bangladesh, according to a major [2019 study](#) in the journal Nature.

As per the warning issued by state-run IMD: Tidal waves of height 2-3 meters above astronomical tide are likely to inundate low lying coastal areas of Balasore, Bhadrak and about 2 meters above astronomical tide are likely to inundate low lying areas of Medinipur, South 24 Parganas, Kendrapara & Jagatsinghpur Districts around the time of landfall.

Socio-economic impact of Cyclone

Extreme weather events are also accompanied loss of lives and mass destruction that also have socio-economic impact as well. According to a report [Counting the cost 2020: A year of climate breakdown](#) by Christian aid in December 2020, floods and Cyclone Amphan in India accounted for maximum loss of lives globally due to climate change-triggered events in 2020. In fact, Cyclone Amphan was the costliest cyclone of the year and had an economic impact of over \$13 billion (about Rs 96,000 crore). The report stated that Cyclone Amphan had caused maximum damage to coastal parts of West Bengal, displacing

around 4.9 million people, which accounted for the biggest displacement anywhere in the world in 2020 due to an extreme weather event.

Cyclone Yaas is posing similar threat to the Indian coast, this time Odisha coast. **According to Meteorologist Mahesh Palawat**, we can not evade the destruction across the coastal districts of Odisha as Yaas had hit the land as very severe cyclonic storm. At the time landfall, we saw winds speed gusting up to 165 kmph along with torrential rains, which can cause mass destruction like flooding in low lying areas, uprooting of trees, electricity poles, roofs and Kutcha and pucca houses.

Difference	Cyclone Yaas	Cylcone Amphan
Strength	Likely to be Very severe cyclone	Super Cyclone
Landfall area	Odisha	West Bengal
Wind speed at time of landfall	Likely to be around 185 kmph	250 kmph