भारत सरकार Government of India केन्द्रीय जल आयोग

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06/06/20

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मानसून/ बाढ़ सम्बन्धी सनाचारों की कतरन ( News Clippings ) अवलोकन हेतु प्रस्तुत हैं :

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( सहायक निदेशक)

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निवेशक (तकनीकी प्रशेखन )

30

#### face oface

HIROYUKI MURAKAMI, Climate scientist

# 'Cyclones over Arabian Sea on the rise due to global warming'

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Hindustan Times ( Delhi ) ਜ਼ਰभारत टाईम्स ( ਫ਼ਿल्ली ) ►The Tribune ( Chandigarh ) The Hindu ( Chennai ) The A The T The T हिन्दुर

## Hail, rain damage fruit, veggie crops

SHIMLA, JUNE 5

Shimla and its surrounding areas were hit by a squall, accompanied by hailstorm and heavy rain this afternoon, causing a sharp fall in day temperature and damaging fruit and vegetable crops.

The inclement weather forced people to rush indoors as the capital town recorded 78 mm rain (74 mm in just two hours).

The hailstorm caused a sharp fall in the mercury and the day temperatures stayed five to six degrees below normal. Fruit and vegetable growers were on tenterhook as stormy conditions are catastrophic for apple stone fruit and vegetable crops.

The tourist resort of Kufr recorded 54 mm rain during the past 24 hours, followed by Gohar (48 mm), Jubban Hatti (45 mm), Banjar (42 mm), Fagu (37 mm), Dalhousie (30 mm), Baldwara (28 mm), Solan (22.4 mm), Hamirpur and Dharampur (21 mm), Mandi (19 mm) and Nahan (15 mm).

The local MeT office has warned of thunderstorm, accompanied by lightning, hailstorm and gusty winds at a speed of 40 to 50 kmph in mid and lower hills tomorrow and predicted rains and thundershowers in mid and lower hills and rains or snow in higher reaches from June 6 to 8 and on June 11. — TNS

NEW DELHI: The unusually high number of cyclones in the Arabian Sea, some of them extremely severe with wind speeds higher than 167 kmph, are a result of warming seas and changes in sea surface temperature distribution, says Hiroyuki Murakami, a climate scientist at the US National Oceanic and Atmospheric Administration' Geophysical Fluid Dynamics Laboratory, told Jayashree Nandi in an interview. His paper in the journal Nature in 2017 was among the first to make these linkages. According to India Meteorological Department, the ratio of cyclones in the Arabian Sea and the Bay of Bengal is normally 1:4. But this is set to change. Edited excerpts:

We have been seeing a rise in cyclonic storms over the Arabian Sea in the past few years. What could be the reasons? Extremely severe cyclonic storms (ESCS) over the Arabian Sea are increasing, especially during the post-monsoon season (October-December). Our climate models suggest this is largely due to global warming.

What is the normal frequency of cyclonic storms expected in Arabian Sea?

The average number of observed cyclones (including



NOA

both weak and intense storms) is two per year between 1998-2019 in the Arabian Sea.

Why have the frequency of intense/severe cyclonic storms increased in the post-monsoon period over the Arabian Sea? Regarding the increase in ESCSs during the post-monsoon season, we found three factors may be related. One is the rising sea surface temperature, especially over the Arabian Sea. This warm ocean contributed to intensifying cyclones, leading to more severe storms in the Arabian Sea. The second factor is that onset of winter monsoon is delaying, leading to a longer storm season. The last factor is increases in anthropogenic aerosols, leading to changes in sea surface temperature distribution that in turn change monsoon circulation, resulting in more What is the impact of climate change on tropical cyclones? In general, when global

warming proceeds, the surface ocean gets warmer. The warm condition is favoural for intensification of tropic cyclones. But increasing greenhouse gasses also cauwarming in the upper atmosphere, that makes the atmosphere more stable.

This stable atmosphere i unfavourable for tropical cyclones. But once a storm generates, the storm can develop into an intense sto. due to the warmed surface ocean. Above discussion is generally applied to global tropical cyclones. But whe we discuss regional tropica cyclones, it is more comple Some regions get more act storms by changing circula tion whereas some regions get less active. Expecting changes in regional tropic cyclones contain a lot of uncertainty.

Are we to expect more such severe cyclonic storms to impact the west coast of Indi Yes, especially during the post-monsoon season. Our climate models suggest an increasing frequency of severe storms over the Arrbian Sea during the post-monsoon season, as we har reported in our paper.

### Rain brings mercury levels down in Delhi

**HT Correspondent** 

letters@hindustantimes.com

NEW DELHI: Thundershowers accompanied by lightning, gusty winds of up to 50 kmph were recorded in various parts of Delhi-NCR and north-west India on Friday. Light rain and cloudy skies are expected in Delhi-NCR and rest of the northern plains over the weekendalso, according to the India Meteorological Department (IMD) authorities.

The inclement weather is because of a western disturbance that is affecting the western Himalayas and moisture incursion due to cyclone Nisarga, which hit the Maharashtra coast on Wednesday.

"Many places in NCR got thundershowers. Palam recorded wind speed of 50 kmph. Light rain and thunder is likely over the weekend. There is no forecast for a heatwave for some time now in Delhi. Maximum temperatures may rise by three to four degrees Celsius after Saturday, but we are not expecting a heat wave till June 15, and after that, a heat wave is unlikely. Delhi may get rains again after June 10 due to the likely formation of a low-pressure area over Bay of Bengal," said Kuldeep Shrivastava, head, regional weather forecasting centre. Thunderstorm accompanied by lightning, gusty wind over the north-western region during the next two days and some heavy

rainfall is also very likely over Uttarakhand, eastern Uttar Pradesh and southern Rajasthan during the next 24 hours, IMD said in its Friday bulletin.

Southwest monsoon has advanced into the central Arabian Sea, Kerala and Mahe and some parts of Karnataka. Conditions are becoming favourable for its advancement into parts of central Arabian Sea, Karnataka, Tamil Nadu, Puducherry and Karaikal, the bulletin added.

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Hindustan Times ( Delhi ) नवभारत टाईम्स ( बिल्ली ) The Tribune (Chandigarh) The Hindu (Chennai)

The Assam Tribune (Guwahati) The Times of India (Mumbai) The Telegraph (Kolkata) हिन्दुस्तान ( पटना )

The Deccan Hearld (Bengluru) The Deccan Chronical (Hyderabad) Central Chronical (Bhopal)



The debris of the five-storey building which collapsed in Shimla on Saturday. PHOTO: AMIT KANWAR

## pure - 07/06/20

TRIBUNE NEWS SERVICE

SHIMLA, JUNE 6

A five-storey building collapsed near Strawberry Hills in Chhota Shimla here today following heavy rain. There were no occupants in the building.

"Cracks were developing in the building following heavy rain for the past five days. Waterlogging due to inadequate drainage led to

seepage and the building collapsed," said Prakash Kanwar (89), who resides in an adjoining cottage.

Deputy Commissioner Amit Kashyap, who visited the spot, said an inquiry had been ordered after registering a case. The district administration had collected a sample of the material used in the construction of the building.

Meanwhile, stormy con-

ditions prevailed in the state and scattered rain occurred at some places. The maximum day temperature stayed below normal and Una and Kangra recorded a high of 24.6 degree and 25.6 degree.

The local MeT office has predicted rain and thundershowers in the midhills on June 7 and 8 and rain and snow in higher hills from June 7 to 9.

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Mindustan Times ( Delhi ) ਜਰभारत टाईम्स ( दिल्ली ) The Tribune ( Chandigarh ) The Hindu ( Chennai )

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 A damaged tree at Kashid beach after Cyclone Nisarga battered th Raigad district.

## Nisarga leaves trail of damage in Maha

Tanushree Venkatraman

... letters@hindustantimes.com

MUMBAI: In Shahabaj village, 17km from Alibaug, 28-year-old Ashwini Bhagat and her husband Tanmay are surveying the damage to the roof. Residents of Mumbai, they visited their village two months ago and were forced to stay back after the national lockdown on March 25.

Last week, a severe cyclonic storm made landfall around 100 km south of Alibaug, an elite resort town and fishing village in Maharashtra's coastal district of Raigad. At least 500,000 homes, including Bhagats' village home, have been damaged by Nisarga in Raigad alone though a red alert was sounded for seven Konkan districts as well as a few in northern Maharshtra. At least 5,000 hectares in Palghar, and 8,000 hectares of agricultural cropland in Ratnagiri, Sindhudurg, Raigad and Nashik among other districts have been affected, including farms growing onions and

"We have been living without power or water supply for four days now," Bhagat said. "Offifour days for power supply to l restored," Tanmay said.

On Friday, CM Uddhav Thaceray visited areas of Alibag ar announced ₹100 crore for imm diate relief work. The Maharas tra State Electricity Distribution Co Ltd said it is working on a wa footing to restore electricity.

The day before the cyclone we to make landfall, the state evacuated several thousand from the coastline, including 13, 245 in Regad and 15,080 in Palghar. Swhile destruction to life has been minimal—six died, and 16 injure—damage to mobile towers, tree and power has been tremendous

In Thal, 8km from Aliba Mukund Sapre has lost an acre his farm, completely destroyir coconut trees, banana and bet nut plantations. "My mother sa she has not seen something th bad in her life. We could see the trees moving in circles before they collapsed. It was scary," sa 29-year-old Jaydatta Nikalje, re ident of Vaibhav Nagar in Aliba

Till Friday, the Nikalje fami had lost power supply. "Parts the town started getting supp only by Saturday morning," sa Nikalje, a digital marketing pr fessional.

## Heavy rain likely over central India

Jayashree Nandi

= jayashree.nandi@htlive.com

NEWDELHI: A low-pressure area is likely to develop over east-central Bay of Bengal around June 8 that weather scientists are hoping will not intensify into a cyclone, but become a monsoon depression that will bring widespread and very heavy rains to the region.

Cyclone Amphan battered Odisha and West Bengal in the east on May 20, causing wide-spread damage, but the India Meteorological Department (IMD) doesn't expect a cyclone this time, said scientist Sunitha Devi, in charge of cyclones at IMD.

"It will most likely be a monsoon depression or a low which will bring a lot of rain to central and east India. In some years such troughs form but not every year," she said. Parts of Odisha, Chhattigarh and Vidarbha may receive extremely heavy rains



The monsoon is likely to cover most parts of Maharashtra, Odisha and peninsular India by June 10.

 HIMANSHU VYAS/HT PHOTO

(more than 20 cm a day), she said.
Cyclones normally don't develop during south-west mon-

"Odisha, Andhra will get very heavy rainfall first and then other parts of central India starting June 10 for the next three to four days. Monsoon depressions can cause a lot of rain so it is good for our monsoon," said M Mohapatra, director general, IMD.

To be sure, cyclone Nisarga hit Alibaug in Maharashtra's Raigad last week, bringing heavy rainfall to many parts of

the state.
"Monsoon doesn't allow these

systems to intensify though we had Nisarga in beginning of the monsoon season in the Arabian Sea, which is slightly unusual. All low-pressure systems in the Indian Ocean tend to move in west-northwest direction. They may or may not cross the coast," said K Sathi Devi, head, national weather forecasting centre.

The south-west monsoon has advanced into some more parts of south interior Karnataka and TN, Puducherry, Karaikal; most parts of south-west Bay of Bengal, the entire south-east Bay of Bengal; some more parts of east-central Bay of Bengal and some parts of west-central and northeast Bay of Bengal, according to IMD. Conditions are becoming favourable for further advancement of monsoon during next 2-3 days.

The monsoon is likely to cover most parts of Maharashtra; Odisha and peninsular India by June 10 and all of central India by June 20 Mohanatra said

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Central Chronical (Bhopal)

## In one village, rising tide waters bring back nightmare of cyclone

Dhrubo Jyoti

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NEW DELHI: When the gale died down and the squall ended in the early hours of May 21, Chandan Patra thought the worst was behind him.

Cyclone Amphan tore the roof off their modest two-room house in Harinhula village in the North 24 Parganas district of West Bengal and smashed most of their belongings, but everyone in the family was safe and the hutment was still standing.

Their biggest worry was the water swishing around on the floor—the cyclone had smashed at least 22 river embankments in the area, allowing waters from the Bidyadhaririver to gush through—but Patra estimated that in another week, the water level would plummet as relief reached the village. He was wrong.

Roughly three weeks after the fiercest cyclone to hit the region in a century, water levels are rising once again, courtesy the fullmoon tide that threatened to maroon the entire village this weekend.

"We are regularly getting relief material and food, but we are not sure how long our house



In Harinhula village, local residents line up for relief material as water levels rise due to the full-moon tide.

BY SPECIAL ARRANGEMENT

will stand the gush of water. It is our home after all; we built it after much hardship. How do we abandon it?" asked Patra.

The village of roughly 1,200 people is in an under-developed part of the state that is dependent on agriculture and manual labour. Patra's father is an agricultural labourer, his brother is unemployed and his sister is studying in a local college.

Their nemesis, the Bidyadhari river, is one of the scores of waterways that form a unique interconnected network of channels, marshes and salt lakes in the Sunderban delta.

A lifeline for the local population—dominated by marginalised castes, for who the local assembly constituency is also reserved—are the decades-old embankments that protect the area against storm surges. Local residents allege these structures were slowly weakening because of insufficient maintenance—hastening soil erosion in the area. "Over the years, we have lost chunks of land to the river," said Shyamal Mondal, a local school teacher

Amphan crushed 22 of them,

but within weeks, local residents and the administration were able to rebuild about 20.

"About 500 labourers worked day and night to repair the embankments. But in two big ones, the water pressure was so high that it was dangerous to work there. These have not been repaired," said Mondal. As a result, columns of water gushed on Saturday towards the low-lying Harinhula that falls right in the direction of the current.

Two additional factors are complicating relief. The area is without power because Amphan uprooted all electricity poles in the vicinity and the lingering threat of Covid-19, which has infected at least 1,000 people in the district. "The damage is extensive. We are trying our best and giving relief and food to the locals," said Usha Rani Mondal, the local legislator.

She said the water surge was too much for the workers to bring it under control. "It may take up to one month for the water to completely go down," she added.

But for Patra and his family, the threat is more immediate. "We don't know if our house will remain standing when the water surges again. Where will we go?"