

Deccan Chronicle- 17- June-2023

CLIMATE | CRISIS

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# Groundwater pumping adds to Earth's tilt

New Delhi, June 16: Groundwater pumping has shifted such a large mass of water that the Earth tilted nearly 80 centimetres east between 1993 and 2010 alone, which could impact our planet's climate, according to a study.

The research, published in the journal *Geophysical Research Letters*, found that during the study period, the most water was redistributed in western North America and northwestern India.

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groundwater, equivalent to more than 6 millimetres of sea level rise, from 1993 to 2010. However, validating that estimate is difficult.

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who led the study.

"Our study shows that among climate-related causes, the redistribution of groundwater actually has the largest impact on the drift of the rotational pole," Seo said.

The researchers noted that water's ability to change the Earth's rota-

tion was discovered in 2016, and until now, the specific contribution of groundwater to these rotational changes was unexplored.

The latest study modelled the observed changes in the drift of Earth's rotational pole and the movement of water first, with only ice sheets and glaciers considered, and then adding in different scenarios of groundwater redistribution.

The model only matched the observed polar drift once the researchers included 2150 gigatons of groundwater redistribu-

tion. Without it, the model was off by 78.5 centimeters, or 4.3 centimeters of drift per year.

The researchers said attempts by countries to slow groundwater depletion rates, especially in those sensitive regions, could theoretically alter the change in drift, but only if such conservation approaches are sustained for decades.

The rotational pole normally changes by several metres within about a year, so changes due to groundwater pumping do not run the risk of shifting seasons. However, on geo-

logic time scales, polar drift can have an impact on climate, they said.

"This is a nice contribution and an important documentation for sure," said Surendra Adhikari, a research scientist at NASA's Jet Propulsion Laboratory, US, who was not involved in this study.

Adhikari published the 2016 paper on water redistribution impacting rotational drift.

"They have quantified the role of groundwater pumping on polar motion, and it's pretty significant," Adhikari said in a statement. — PTI

# Assam floods: Over 34,000 hit in 11 dists, IMD predicts more rain

**SUKRITA BARUAH**

GUWAHATI, JUNE 16

PARTS OF Assam are reeling under the state's first phase of flooding this year, with around 34,189 people affected so far, officials said.

The monsoon hit Assam on June 10; the weather department recorded an average rainfall of 41 mm in 24 hours as of Friday morning. The IMD has predicted moderate rainfall over the next five days, with heavy to very heavy rainfall likely at isolated places.

The worst-affected district so far is Lakhimpur in Upper Assam where water gushed into villages Wednesday after the Singra river breached an embankment at Chamua Gaon and a riverside bund at Philbari Basti. In Lakhimpur, 22 villages, 23,516 people and 21.87 hectares of crops have been affected.

However, with this year's floods just at an incipient stage, the government has so far set up only one relief camp — in Udalguri district, while 10 relief distribution centres have come up, mostly in Lakhimpur.

"Relief measures have been taken by providing food items



**A woman walks through a flooded area after heavy rains, in Lakhimpur district of Assam on Friday. PTI**

like rice, dal, oil, baby food etc as well as other important items like sanitary napkins, cattle feed etc... In addition to this, halogen tablets and water pouches have also been distributed by the Public Health Engineering department. Medical teams have also been deployed in flood affected areas by the health department," said Lakhimpur Deputy Commission Sumit Sattawan.

Although none of the rivers in the state is flowing above the dan-

ger level, the Central Water Commission has warned Puthimari and Brahmaputra are facing a severe flood situation in Kamrup and Jorhat and are flowing above warning levels. With heavy rainfall predicted over the next two days in Kokrajhar, Chirang, Baska, Dalguri, Bongaigaon, Barpeta, Nalbari, Darrang, Dhemaji and Lakhimpur, Brahmaputra and its tributaries, and Barak river, are expected to swell, the Commission warned.

Business Line- 17- June-2023

# Farmers sow more millets on scanty rains

**KHARIF SCORECARD.** Overall coverage rises 1.5 per cent; paddy, pulses, oilseeds acreage trails

**Prabhudatta Mishra**  
New Delhi

Farmers seem to be planting more millets or "Shri Anna", responding to the possibility of deficient rainfall this year. The sowing of paddy, key cereal of kharif season, pulses and some oilseeds are lower from the year-ago level. The area under cotton and groundnut, which are higher, may be disrupted as normal life in key producer Gujarat has been affected due to cyclone Biparjoy.

The total area under kharif-sown crops is up 1.5 per cent at 99.28 lakh hectares (lh) as of June 16 against 97.83 lh in the corresponding period a year ago, official data on the Agriculture Ministry portal show. Sugarcane, cotton and bajra continue to report higher area, but maize acreage has dropped marginally.

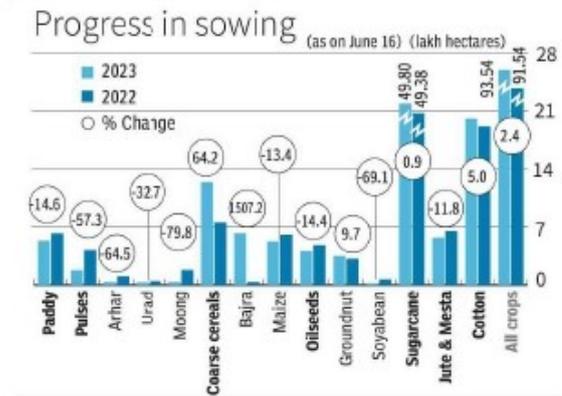
On the other hand, data from the Central Water Commission

showed the storage level in the 146 major reservoirs in the country was 27 per cent of the total live storage capacity of 178.185 billion cubic metres (BCM). This was two percentage points lower than the same period a year ago but higher than the normal level.

## MONSOON'S PROGRESS

Sowing activities are set to pick up next week, particularly in those States where the monsoon is expected to lash, Agriculture Ministry officials said.

Releasing the outlook for next fortnight, India Meteorological Department said conditions are becoming favourable for further advancement of South-West monsoon over some more parts of south peninsular and east India during June 18-21. Monsoon progress has not been noticed since June 11 and currently Northern Limit of Monsoon (NLM) continues to pass through Ratnagiri, Koppal, Puttaparthi, Shriharikota, Malda,



Source: Agriculture Ministry

and Forbesganj Acreage of paddy, the main kharif cereal, is down 14.6 per cent at 5.32 lh, while all pulses combined were 57.3 per cent lower at 1.80 lh and oilseeds acreage was 14.4 per cent lower at 4.11 lh. The sowing area under nutri- and coarse cer-

eals, however, was reported 64.2 per cent higher at 12.43 lh due to higher planting of bajra. Sugarcane acreage is up 1 per cent at 49.80 lh.

## TUR, URAD LOWER

Among the pulses, tur has been

sown in 0.38 lh until June 16 (against 1.07 lh year-ago), moong 0.37 lh (1.83 lh) and urad in 0.33 lh (0.49 lh). In the oilseeds category, groundnut sowing is reported in 3.51 lh (3.20 lh) and soyabean in 0.21 lh (0.68 lh). In coarse cereals, maize area reached 5.25 lh (6.06 lh), bajra 6.27 lh (0.39 lh) and jowar 0.21 lh (0.34 lh).

Cotton farmers have taken a lead this year, too, as its acreage reached 20.08 lh — up five per cent, while jute and mesta reported a fall of 11.8 per cent at 5.74 lh. Gujarat's farmers have sown groundnut on 0.65 lh and cotton on 1.74 lh, so far.

Meanwhile, the rainfall deficit in the current monsoon season (June-September) has narrowed down to 47 per cent of long period average until June 16 from 62 per cent of LPA until June 9.

The onset of monsoon has been delayed by a week this year as it reached Kerala on June 8.

Millennium Post- 17- June-2023

# Groundwater pumping tilting Earth's spin, may impact climate, finds study

*Researchers noted that water's ability to change the Earth's rotation was discovered in 2016, and until now, the specific contribution of groundwater to these rotational changes was unexplored*

## OUR CORRESPONDENT

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groundwater depletion rates, especially in those sensitive regions, could theoretically alter the change in drift, but only if such conservation approaches are sustained for decades.

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चक्रवाती तूफान से निपटने में कारगर रही सरकार की योजना, बिना जनहानि के टला महासंकट

# ‘चट्टानी तैयारियों’ से दे दी बिपरजाय को ‘मात’

लैंडफॉल के बाद घटी चक्रवात की ताकत, 5 हजार से ज्यादा खंभे गिरे, साढ़े 4 हजार गांवों में बिजली बाधित होने के बाद 3580 गांवों में हुई बहाल, पूरे राज्य से कहीं भी नहीं आई कोई जनहानि की खबर

एजेसी नई दिल्ली

गुजरात में लैंडफॉल के बाद चक्रवात बिपरजाय की शक्ति पहले से काफी कम हो गई है। शाम होते-होते ये चक्रवाती तूफान डीप डिप्रेशन में तब्दील गया। वहीं चक्रवात पूर्व केंद्र और राज्य सरकार द्वारा की गई तैयारियों ने बड़ी जनहानि और नुकसान को टाल दिया। तूफान के बाद की परिस्थिति की जानकारी लेने के लिए मुख्यमंत्री भूपेन्द्र पटेल शुक्रवार सुबह स्टेट इमरजेंसी ऑपरेशन सेंटर (एसईओसी) पहुंचे। यहां उन्होंने सचिव समेत विभिन्न विभागों के अधिकारियों के साथ एक उच्च स्तरीय बैठक की। अधिकारियों से मुख्यमंत्री ने प्रभावित इलाकों के हालात के बारे में विस्तार से जानकारी प्राप्त की। इस संबंध में राहत आयुक्त आलोक पांडेय ने बताया कि राज्य सरकार के चक्रवात पूर्व की तैयारियों ने बड़ी जनहानि

1

सीएम भूपेन्द्र पहुंचे एसईओसी अधिकारियों के साथ बैठक में लिया हालात का जायजा

2

पहले से की गई तैयारियों के कारण पूरे राज्य में एक भी जनहानि की खबर नहीं



कच्छ, द्वारका, पाटण, बनासकांठा में बारिश की संभावना

मौसम विभाग के अनुसार तूफान गुजरात को पार करेगा और धीरे-धीरे हवा की रफ्तार कम होती जाएगी। अभी प्रभावित जिलों में हवा की तेज रफ्तार होने की वजह से कच्छ, द्वारका, पाटण और बनासकांठा में तेज बारिश की संभावना है। इस संबंध में एनडीआरएफ के महाविदेशक अतुल करवाल ने जानकारी दी कि लैंडफॉल होने के बाद चक्रवात बिपरजाय की शक्ति पहले से काफी कम हो गई है। हवा की गति अब भी कई जगह काफी है। कच्छ में अभी भी हवा की गति तेज है। बाकी जिलों में भी 50-60 किलोमीटर की गति से हवा चल रही है।

प्रभावित जिलों में आर्थिक नुकसान हुआ है

राहत आयुक्त ने बताया कि मुख्यमंत्री ने बैठक में उपस्थित विभिन्न विभागों के उच्चाधिकारियों से विस्तार से जानकारी मंगी। इसमें प्रभावित क्षेत्रों में जलापूर्ति की स्थिति, संसार व्यवस्था, बिजली और सड़क आदि शामिल हैं। इसके अलावा चुपचप का अंशज लगाने, घर-गृहस्थी के सामान, झेपड़ा बनाने की सहायता और पशुधन नुकसान होने पर सहायता आदि के संबंध में जरूरी निर्देश दिए गए।

5,120 पोल गिरे, 4,600 गांवों में बिजली बाधित

राहत आयुक्त ने यह जानकारी भी दी कि प्रभावित जिलों में 5,120 बिजली के पोल गिर गए जिससे कि 4,600 गांवों में बिजली आपूर्ति बाधित हो गई। इसमें 3580 गांवों में फिर से बिजली व्यवस्था बहाल कर दी गई है। पीजीवीसीएल की टीन पावू बारिश में अन्य गांवों की बिजली व्यवस्था बहाल करने में जुटी है। उन्होंने बताया कि प्रभावित जिलों में 20 कच्चे मकान, 9 पक्के मकान और 65 झोपड़ी धराशायी हुई हैं। इसमें 474 कच्चे मकान और 2 पक्के मकान को नुकसान पहुंचा है।



गिरे 1137 पेड़, 263 सड़कों पर आवाजाही प्रभावित

राहत आयुक्त आलोक पांडे के अनुसार प्रभावित जिलों में आर्थिक नुकसान हुआ है, परंतु इससे तेजी से उबरा जा सकेगा। तूफान के कारण 1137 वृक्ष धराशायी हो गए थे, जिससे 263 सड़कों पर आवाजाही प्रभावित हुई। इन सभी वृक्षों को तत्काल प्रयास से हटाया गया जिसके बाद 260 सड़कों पर फिर से आवाजाही शुरू हो गई। इसके अलावा 3 सड़कों पर अधिक नुकसान होने के कारण उसे पूर्ववत करने का काम चल रहा है।