

Central Water Commission  
Technical Documentation Directorate  
Bhagirath(English)& Publicity Section

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R K Puram, New Delhi - 66.

Dated 30.5.2018.

Subject: Submission of News Clippings.

The News Clippings on Water Resources Development and allied subjects are enclosed for perusal of the Chairman, CWC, and Member (WP&P/D&R/RM), Central Water Commission. The soft copies of clippings have also been uploaded on the CWC website.

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30.5.18  
SPA (Publicity)

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Deputy Director (Publication)

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30/5/18

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News item/letter/article/editorial published on 30.05.2018 in the

Hindustan Times  
Statesman  
The Times of India (N.D.)  
Indian Express  
Tribune  
Hindustan (Hindi)

Nav Bharat Times (Hindi)  
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## THE DOWNPOUR

Slowly, surely, the monsoon unveils a world of sight and sound, an incessant magic

IT IS A sight-and-sound show the Subcontinent waits for with bated breath. After the scorching heat of April and May, punctuated with the occasional downpour, the clouds arrive over the seas off the Kerala coast close to June 1. Then, a streak of light traces a line over the skies and a rumble breaks out. On land, people take cover as sheets of water sweep past. The exhilaration of getting drenched in the rain soon makes way for worries about leaky roofs, flooding and the breakdown of normal life. On the seas and the ghats, the monsoon also evokes a sense of fear, and terror; the rain is merciless as it launches killer waves and triggers landslides. When peace descends after the downpour and the world turns into a canvas of shades of green, the monsoon assumes a spiritual self; it is a time when man and nature are in communion.

Traders from the West, Romans and Arabs, rode the monsoon wind, Hippalus, named after the Greek scientist who is believed to have discovered it, to dock on India's western coast. Thus began a transaction of material and spiritual goods — spices, languages, religions including Judaism, Christianity, Islam. In modern times, the monsoon has its use value primarily in agriculture. The southwest monsoon replenishes the Subcontinent's water resources; a weak monsoon spells disaster for the crops and launches a thousand queues at street corner taps. Kerala is now learning to encash the monsoon by packaging it for tourists. Lazing by the rain-drenched sea to Ayurvedic massages, tourists are offered a range of options that hold the promise to spice up the local economy.

The Malayalam word for monsoon is Kalavarsham — the downpour of time. Year after year, for centuries, nature has put up this show, the magic refusing to recede.



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## The water crisis in Shimla is a warning for India

The country has failed on all counts  
when it comes to water management

In India, every ecological crisis has a familiar lifecycle. No one, be it administrators, politicians or the public, takes note when things just begin to go wrong, but once it finally crosses a critical threshold level, all hell breaks loose. Take the case of Shimla. The capital and the largest city in Himachal Pradesh and a tourist haven has had no water for the past week. Things would not have come to such a pass if the administrators, politicians and the local residents took note of the impending crisis and did something about it. Over the past three summers, water availability had plunged to 29 or 30 million litres per day. This year, the supply was only about 20 MLD. The water demand in Shimla during peak tourist season is around 45 MLD. It is not difficult to ascertain why the water availability to the city has been decreasing. It could be that deforestation, a combination of population explosion, unplanned growth of the city and its expansion to some traditional catchment areas have led to a reduction in the natural flow of water.

Water stress is not new to India. Many Indian cities, including Delhi and Bangalore, face a water crisis, especially that of fresh-water. This is not surprising because the country has failed in so many fronts. There is no attempt at the central or state levels to manage water quantity and quality, a lack of implementation of existing laws and regulations, corruption, poor adoption rates of technologies such as desalination plants, no charges on water usage and huge distribution losses. Add to this, deforestation and pollution of water bodies, export of water-intensive crops, and over dependence on groundwater. There is also a lack of interest in maintaining the traditional water harvesting structures.

India needs to focus on recycling and harvesting water, having better testing and purification facilities and increase awareness on the need to conserve water. Otherwise, Shimla-like incidents will recur across the country.



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# Monsoon sets in over Kerala 3 days ahead of schedule

Winds favourable, over half of 14 monitoring stations record rainfall from May 25

**SPECIAL CORRESPONDENT**  
THIRUVANANTHAPURAM

The southwest monsoon set in over Kerala on Tuesday, three days ahead of its scheduled arrival with the State's coast.

In an announcement in the morning, the India Meteorological Department (IMD) said, "Today, the southwest monsoon has further advanced into remaining parts of the south-east Arabian Sea, Comorin – the Maldives area, entire Lakshadweep, most parts of Kerala, some parts of Tamil Nadu and some more parts of southwest, central, and northeast Bay of Bengal. Thus, the southwest monsoon has set in over Kerala on May 29, three days ahead of its normal date."

## Widespread rain

The IMD said conditions were favourable for the further advance of the monsoon into some parts of the central Arabian Sea, remaining parts of Kerala, some parts of coastal and south interior Karnataka, some more



**Violent waves:** Chellanam village in Kochi has been hit by sea erosion, as one-metre high waves pound houses at the onset of southwest monsoon. ■THULASI KAKKAT

parts of east-central and northeast Bay of Bengal, and some parts of the northeastern States in the next 48 hours.

The northern limit of the monsoon passed through Kannur, Coimbatore, Kodaikanal, and Tuticorin on Tuesday. Widespread rainfall has occurred across Ker-

ala in the past three to four days.

Among 14 rainfall monitoring stations in the State, 60% reported more than 2.5 mm from May 25. Westerly winds have strengthened and the cloud cover has been persistent, satisfying the parameters for the monsoon onset over Kerala.

The IMD said a well-marked low pressure area has developed over south-east and adjoining east-central Arabian Sea off north Kerala-Karnataka coasts and another one over east-central and adjoining northeast Bay of Bengal. It is likely to concentrate into a depression in the next 12 hours.



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## Mercury goes above 43°C for 8th day<sup>30</sup>

TIMES NEWS NETWORK

**New Delhi:** For the eight straight day, Delhi recorded temperatures above 43 degrees Celsius as Palam recorded a season high of 46.5 degrees Celsius. Safdarjung, which is considered the capital's weather base, had a maximum of 44.4 degrees Celsius — four notches above normal for the season. However, relief is expected on Wednesday with the local Met office forecasting thundershowers with gusty winds.

"The effect of the easterly winds has not been that much. We were expecting a maximum of around 43 to 44 degrees but it was even higher on Tuesday. This was Palam's highest maximum this season as well," said Kuldeep Srivastava, scientist at the regional Met office.

Officials say only light rain is expected, and cloudy skies and gusty winds should bring the maximum down by 3 to 4 degrees. "We expect some drizzle activity overnight and on Wednesday evening. The maximum may fall to around 41 degrees Celsius," said an official.

## Monsoon hits Kerala

The IMD declared the onset of the southwest monsoon over Kerala on Tuesday, three days ahead of its normal date, and said conditions are favourable for its advance into other parts of India in the next two days. TNN

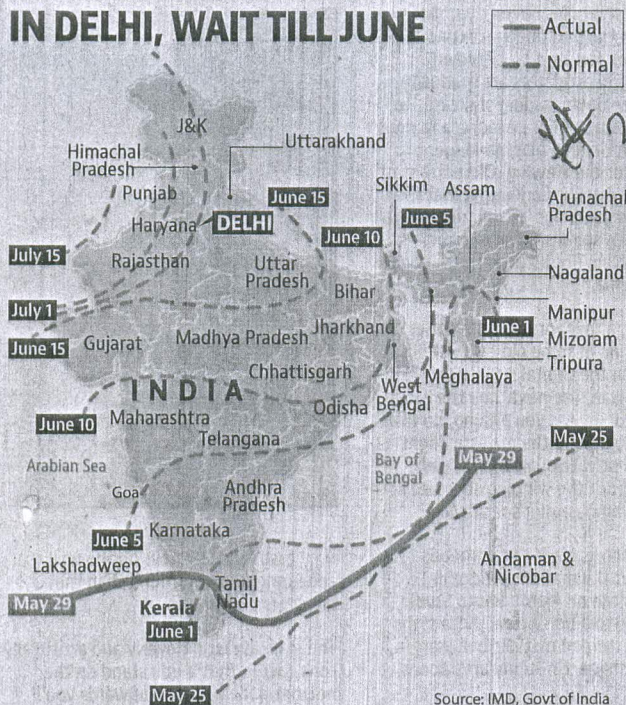


# MONSOON HITS INDIA

Monsoon rains lash Kerala a few days earlier than normal on Tuesday, the weather office said, brightening the outlook for agricultural output and economic growth in the run-up to crucial elections



## IN DELHI, WAIT TILL JUNE



97%

India Meteorological Department prediction for this year's monsoon\*

### DECLARING ARRIVAL

Three parameters determine if weather office can declare monsoon's onset:

**Rain:** There is at least 2.5mm rainfall for two consecutive days at 60% of the 14 stations in Kerala

**Wind:** Westerly winds from the Arabian Sea strengthen and deepen

**Clouds:** Energy radiating from Earth falls below 200 watt per square metre, indicating thick cloud cover

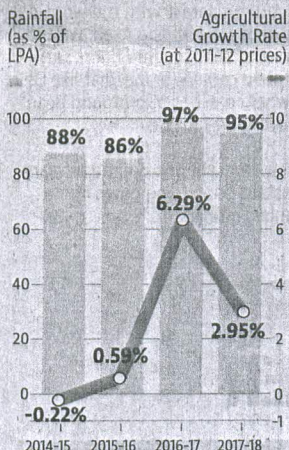
Source: IMD, Govt of India

\*In April, IMD predicted a normal monsoon, defined as 96-104% of the 50-year average, which is also called the Long Period Average

## THE IMPLICATIONS

### Economy

Good rains will yield better harvest and spur rural spending. Conversely, bad monsoon can drive up inflation

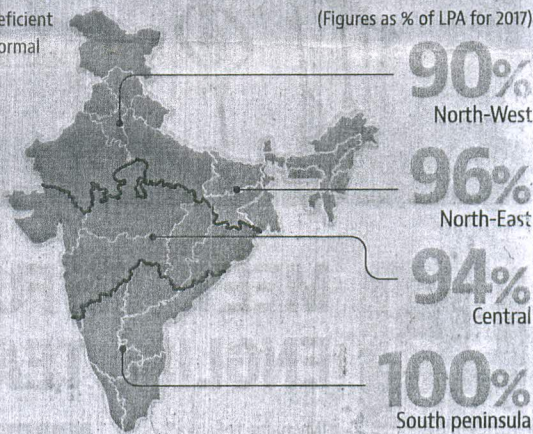


### Politics

Four states — Mizoram, Chhattisgarh, Madhya Pradesh and Rajasthan — will hold elections this year ahead of next year's general elections. Of these, three saw deficient rainfall last year (see below), precipitating a farm distress that led to mass protests

■ Deficient  
■ Normal

(Figures as % of LPA for 2017)





# Monsoon arrives three days early

**COMING IN** Onset is in line with IMD's prediction, with a model error of 4 days either side

**Malavika Vyawahare**

■ letters@hindustantimes.com

**NEW DELHI:** The southwest monsoon arrived three days ahead of schedule in Kerala on Tuesday, heralding the start of the rainy season in mainland India and the onset of the summer-sown or kharif agricultural season that accounts for half the country's annual food output.

It has been raining for the past two days in Kerala, the first to receive the annual rains that are the lifeline of India. The monsoon is critical for agriculture because nearly 60% of India's cropped area lacks access to assured irrigation; a good monsoon is one enabling factor of a healthy rural economy. Two-thirds of Indians depend on agriculture for a livelihood. With the pre-monsoon showers this week, days, there was no fanfare to the arrival of the monsoon this year. Indeed, many people got to know that the monsoon had arrived, and before schedule, after the India Meteorological Department (IMD) made the announcement in New Delhi.

The monsoon usually arrives around June 1 every year. After arrival in Kerala, the rains usually take 15 days to cover the entire southern peninsula and most parts of the country by July.

The onset is in line with IMD's prediction, which comes with a model error of  $\pm 4$  days.

Skymet Weather, a private forecasting agency, had announced that conditions for the onset of monsoon had been fulfilled by Monday and the onset of rains would happen on May 23.

Only the IMD can officially declare the arrival of the monsoon. It had predicted rains would arrive over the Andaman and Nicobar Islands, where they reach before the mainland, by May 23. "There was a delay in the onset of monsoon over the Andaman & Nicobar Islands because of the cyclonic system in the Ara-



■ This is the second consecutive year when the monsoon has made an early arrival.

VIVEK NAIR/HT

bian Sea that was blocking the advance of the monsoon. However, since that weakened into a depression, the monsoon has advanced quickly," DS Pai, senior scientist at the IMD, said.

"Heavy rain was reported from many parts of the state and Lakshadweep. Amini in Lakshadweep reported 24 mm rain and Konni (Pathanamthitta) in Kerala has 18 mm. Conditions are conducive for further advancement of clouds," said IMD regional director K Santosh.

The onset is announced when three conditions are fulfilled: after May 10, when there is at least 2.5 mm rainfall for two consecutive days at 60% of the 14 stations in Kerala; strong and deep westerly winds from the Arabian Sea; and outgoing long wave radiation below 200 watt per square metre, which indicates a thick cloud cover.

"If the IMD does not consider that all three conditions are met, then it does not declare the onset of monsoon," Mahesh Palawat, chief meteorologist at Skymet Weather, said. "We used IMD

data for rainfall but for the other two we used our own data."

The monsoon season in India lasts between June and September and the rains advance from the south, with northwestern India receiving rains between June 15 and July 15. The rains start withdrawing around August.

In its preliminary forecast in April, the IMD predicted a normal southwest monsoon this year, which occurs when rainfall is between 96-104% of the 50-year average of 887 mm, also called the Long Period Average (LPA).

This year it will be 97% of the LPA with an error margin of  $\pm 5\%$ , the weather agency said.

While Kerala is happy that the monsoon is early, some in the state are worried because the rains bring a myriad viral diseases to the state. The state recently witnessed the outbreak of the dreaded Nipah virus that claimed the lives of 14 in north Kerala. Timely showers help farmers to start sowing of major summer crops including rice, cotton, pulses, soyabean, oilseeds

and coarse cereals. For robust food output, the showers must now advance rapidly to rest of the country. "There is no correlation between early or timely arrival of the monsoon and its subsequent progress. We hope it covers most parts of the country in time. This is not always the case," said SK Ramesh, a former agronomist with the state-run Indian Council of Agricultural Research.

In 2016, the monsoon made steady progress over south India, after a nine-day delayed onset on June 8. Yet, its progress in other parts was behind schedule for the first 15 days of the rainy season. In that year, by the first week of July, while south India recorded surplus rainfall of 12%, showers in central, northwest and eastern parts were deficient by 46%, 14% and 34%.

Sowing in central Indian states such as Andhra Pradesh, a major paddy-growing state, and Maharashtra starts by June third week.

(Ramesh Babu in Thiruvananthapuram and Zia Haq in New Delhi contributed to this story)

## Storms in north kill 54, weather-linked death toll 290 for May

**HT Correspondents**

■ letters@hindustantimes.com

**NEW DELHI:** Storms and lightning strikes across several states have killed at least 54 people since Monday, disaster management officials said on Tuesday, taking the toll from freak weather this month to around 290.

Lightning, which is associated with thunderstorms, accounted for 2,641 deaths in 2015, about one-fourth of total deaths in India due to natural disasters that year, according to the latest National Crime Records Bureau (NCRB) report on accidental deaths.

Mrutyunjay Mahapatra, a senior climate scientist with the India Meteorological Department (IMD), said the frequency of thunderstorms and lightning strikes appears to have increased this year because of a number of factors.

"The long dry spell and hot weather conditions increasing the surface temperature combined with unusually high western disturbances and cyclonic activity have contributed to this," he said, adding that thunderstorms in this season were not unusual.

In three major thunderstorms and lightning strikes reported on May 4, May 16 and May 23, mostly in north-western India, the combined death toll was 290. Of these, 54 deaths were reported in the past 24 hours—17 from Uttar Pradesh, 19 from Bihar, 12 from Jharkhand, two from West Bengal and four from Madhya Pradesh. According to the information released by the UP state government, six people died and three were injured in Unnao

when two houses collapsed in thunderstorms. Three people died in Rae Bareilly while two deaths each were reported from Kanpur City, Pilibhit, Gonda and Sitapur. In neighbouring Madhya Pradesh, most of the deaths were reported from the Bundelkhand region.

In Bihar, Gaya and Aurangabad districts reported five deaths each, while four died in Munger, three in Katihar and two in Nawada, said Bihar Disaster Management Department (DMD) officials. Jharkhand, which has seen 29 thunderstorm-related deaths this month, including 12 overnight, is expected to receive more storms in the coming days.

The weather department has predicted storms and lightning till mid-June. Patna-based IMD official Anand Shanker said easterly winds during the day had carried moisture from the Bay of Bengal after a trough developed over the region from Uttar Pradesh to Bihar.

Jharkhand's special secretary, disaster management, Ashok Kumar, said the only way to prevent lightning deaths was through an alert system. "We take weather information from India Meteorological Department and Skymet. As soon as we get any information, respective DCs (district commissioners) are immediately informed..." Kumar said.

Mahapatra said it was difficult to predict the specific location of a thunderstorm much in advance and advised states to create public awareness about dos and don'ts in case of lightning strikes.

(With inputs from HT Lucknow, Ranchi, Bhopal and Patna)



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## यमुना को बचाने के लिए डीजेबी ने दी 2 बड़े प्रोजेक्ट्स को मंजूरी

■ विस, नई दिल्ली : यमुना एक्शन प्लान पर नितिन गडकरी के साथ हुई डीजेबी की मीटिंग के बाद मंगलवार को अपनी बोर्ड मीटिंग में डीजेबी ने यमुना से जुड़े दो बड़े प्रोजेक्ट को मंजूरी दे दी है। इन दोनों प्रोजेक्ट पर 104.53 करोड़ रुपये खर्च होंगे।

यूनियन मिनिस्टर नितिन गडकरी ने मंगलवार को को रिव्यू मीटिंग की। इस मीटिंग के बाद मंत्रालय ने जानकारी दी कि

### यमुना एक्शन प्लान

डीजेबी की हुई बोर्ड मीटिंग में मंगलवार को डीजेबी ने यमुना से जुड़े दो प्रोजेक्ट को मंजूरी दी है। इसमें पहला प्रोजेक्ट कौडली क्षेत्र में 8137 मीटर रॉपिंग मेन्स डालने का है। इसकी अनुमानित लागत 59.13 करोड़ रुपये है। वहीं दूसरा प्रोजेक्ट रिठाला में राइजिंग लाइस को

डालने का है। इस प्रोजेक्ट पर भी 45.40 करोड़ रुपये की लागत आने का अनुमान है। इसके अलावा यमुना एक्शन प्लान-3 के तहत चार अन्य प्रोजेक्ट पर काम चल रहा है। इसमें कौडली क्षेत्र में 8498 मीटर ट्रंक सीवर लाइन डालना, कौडली क्षेत्र में 7715 मीटर ट्रंक सीवर, रिठाला में 5090 मीटर सीवर लाइन और रिठाला में 182 एमएलडी के प्लांट को अपग्रेड करना शामिल है।

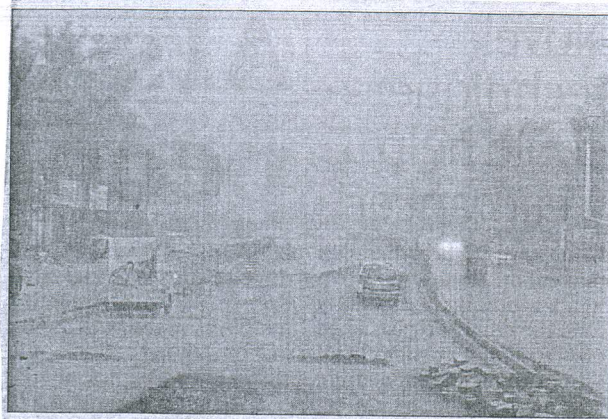


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Heavy rain batters Hubballi on Sunday evening. DH PHOTO

## Rain lashes several districts in state

**BENGALURU:** Heavy rain continued to batter several parts of the state on Sunday.

Rains accompanied by gusty winds and hailstorm battered Hubballi for more than an hour on Sunday evening. A few major roads were waterlogged due to the downpour.

Motorcyclists had a tough time in navigating the flooded roads. Heavy winds uprooted several trees affecting power supply in the city. Rainwater gushed into some shops on Station Road. However, there were no reports of loss of life.

Dharwad received heavy rain in the early hours of Sunday. It has been raining in the city for the past three days. Chittapur in Kalaburagi district received moderate showers while Chimmanachod in

Chincholi taluk recorded 47.20 mm of rain on Saturday. Nelogi and Hullur villages in Kalaburagi district recorded 84 mm of rain in the past 24 hours ending at 8 am on Sunday.

A large number of trees were uprooted in Vijayapura as heavy rain coupled with gusty winds lashed the town on Saturday night. Power supply was affected on Sunday as electricity poles were uprooted.

Rain continued to lash different parts of Kodagu district also. Napoklu, Bhagamandala, Talacauvery, Somwarpet, Gonikoppa, Shanivarsanthe, Virajpet, Kushalnagar experienced good showers.

Rains coupled with thunder and lightning lashed Mangaluru on Sunday night.

**DH News Service**



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## SW monsoon hits Kerala: IMD ११.३०

### Arrival of Monsoon in Kerala

The Southwest monsoon arrived in Kerala on May 29, 2018, three days before the normal date of June 1. Onset of monsoon over Kerala signals beginning of the four-month-long rainy season in the Indian subcontinent.

India Meteorological Department (IMD) issues operational forecast of the date of onset with a model error  $\pm 4$  days



Year	Forecast Onset Date	Actual Onset Date
2018	May 29	May 29
2017	May 30	May 30
2016	June 7	June 8
2015	May 30	June 5
2014	June 5	June 6
2013	June 3	June 1
2012	June 1	June 5
2011	May 31	May 29
2010	May 30	May 31
2009	May 26	May 23
2008	May 29	May 31
2007	May 24	May 28
2006	May 30	May 26

Northern limit of southwest monsoon as on May 29, 2018

KBK Infographics Source: IMD

### PRESS TRUST OF INDIA NEW DELHI, 23 MAY

The southwest monsoon today hit Kerala, three days before its scheduled arrival, the India Meteorological Department (IMD) said.

The conditions are favourable for further advance of the monsoon into some parts of central Arabian Sea, remaining parts of Kerala, parts of coastal and south interior Karnataka, parts of east-central and northeast Bay of Bengal, and some parts of northeastern states during the next 48 hours, it said.

The onset of monsoon over the southern state of Kerala marks the commencement of the four-month long rainy season in the country.

"Today, the southwest monsoon has further advanced into remaining parts of southeast Arabian Sea, Comorin Maldives area, entire Lakshadweep, most parts of Kerala, some parts of Tamil Nadu and some more parts of southwest, central and northeast Bay of Bengal.

Thus, the southwest monsoon has set in over Kerala, today, the 29th May 2018, three days ahead of its normal date," the IMD said.

June 1 is the official onset

gar in Rajasthan, its last post, is July 15. This is the second consecutive year when the monsoon has made an early arrival. Last year, the annual rainy season commenced on May 30.

Skymet, a private weather forecasting agency and a rival of the IMD, had, however, said that the monsoon made its arrival in Kerala yesterday.

Owing to the arrival of monsoon, isolated places over coastal and south interior Karnataka, Kerala, Lakshadweep, Andaman and Nicobar Islands, Nagaland, Manipur, Mizoram and Tripura are expected to receive "heavy to very heavy rain" tomorrow. But there will be no respite from hot weather conditions in parts of north and central India.

Heat wave conditions are "very likely" to severely affect parts of west Rajasthan, one or two pockets over east Rajasthan and Madhya Pradesh tomorrow.

The IMD has also issued an alert of thunderstorm accompanied with squall at isolated places in Uttar Pradesh tomorrow. "Thunderstorm accompanied with gusty winds very likely at isolated places over Himachal-



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## फिर तूफान का कहर, 44 मारे

चई दिल्ली, (एजेंसी): उत्तर प्रदेश, बिहार और झारखंड में पिछले 24 घंटों में आंधी-तूफान और बिजली गिरने से 44 लोगों की मौत हो गई। बिहार में सबसे ज्यादा 19 और झारखंड में 12 की जान गई। उत्तर प्रदेश में मरने वालों की तादाद 13 हो चुकी है।

बताया जा रहा है कि मौत का आंकड़ा बढ़ सकता है। मौसम विभाग ने उत्तर प्रदेश के हरदोई, सीतापुर और फर्रुखाबाद जिले में अगले तीन घंटों में बारिश, आंधी और कहीं-कहीं ओले गिरने की चेतावनी जारी की है। दूसरी तरफ, देश के कई हिस्सों में लू का प्रकोप जारी है। देश के 6 राज्यों के 18 शहरों में सोमवार को पारा 44 डिग्री सेल्सियस से ज्यादा दर्ज किया गया।

### ● उत्तर प्रदेश में 13, १९-३० बिहार में 19 और झारखंड में 12 लोगों की जान गई

उत्तर प्रदेश के कई इलाकों में देर रात तेज हवाओं के साथ आकाशीय बिजली गिरने से 13 लोगों की मौत हो गई और 6 लोग जख्मी हो गए। मुख्य सचिव सूचना अविनाश अवस्थी ने बताया कि आपदा प्रबंधन की टीम को अलर्ट रखा गया है। प्रभावित लोगों को मदद पहुंचाई जा रही है। बिहार के पांच जिले औरंगाबाद, कटिहार, नवादा, मुंगेर और रोहतास में सबसे ज्यादा नुकसान हुआ। इन जिलों में 19 लोगों की मौत हो गई।

### फॉर्म में आ रहा है दक्षिण-पश्चिम मानसून

मौसम विभाग ने दक्षिण पश्चिम मानसून के आज केरल की समुद्री सीमा में पहुंचने की पुष्टि करते हुये अगले 48 घंटों में इसके तटीय कर्नाटक तक अपनी पहुंच बनाने का अनुमान व्यक्त किया है। हालांकि विभाग ने दिल्ली को लेकर कहा कि अगर मौसम का रुख मौजूदा हालात के मुताबिक ही रहा तो देश के अधिकांश इलाकों में मानसून सामान्य रहने और पूर्व निर्धारित तिथि के मुताबिक ही पहुंचने की उम्मीद है।



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Statesman  
The Times of India (N.D.)  
Indian Express  
Tribune  
Hindustan (Hindi)

Nav Bharat Times (Hindi)  
Punjab Keshari (Hindi) ✓  
The Hindu  
Rajasthan Patrika (Hindi)  
Deccan Chronicle  
Deccan Herald

M.P. Chronicle  
Aaj (Hindi)  
Indian Nation  
Nai Duniya (Hindi)  
The Times of India (A)  
Blitz

and documented at Bhadrath(English) & Publicity Section, CWC



एलिकोट सिटी, स्पेन में भारी बारिश से आई बाढ़ ने बड़ी तबाही मचाई। बाढ़ में वाहन, घर और अन्य चीजें भी बह गईं।

PK 38



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मंगलूरु में मंगलवार को भारी वर्षा के बाद अंडर ब्रिज के नीचे जमा हुए पानी से निकलते वाहन। (दाएँ) केरल के कोझिकोड में मानसून की पहली वर्षा के बीच मौसम का आनंद उठाती युवतियाँ। (छाया : प्रेस)

PK-30

## तटीय कर्नाटक में भारी बारिश

मंगलूरु, (वाता): अरब सागर में उठे चक्रवात के कारण कर्नाटक के तटीय इलाकों में आज तेज हवाओं के साथ मूसलाधार बारिश होने से जनजीवन बुरी तरह प्रभावित हो गया है और कारखार में तट रक्षक दल ने मछली पकड़ने वाली एक नौका के समुद्र में डूबने के बाद उसमें सवार चार मछुआरों को सुरक्षित बचा लिया। सूत्रों ने बताया कि समुद्र में नहीं उतरने की चेतावनी के बावजूद छह मछुआरे मछली पकड़ने के लिए समुद्र में गये और जब वे वापस लौटने लगे तब तेज लहरों की चपेट में आकर उनकी नाव डूब गयी। सतर्क तट रक्षक दल तुरंत हरकत में आये और उनमें से चार को सुरक्षित निकाल लिया। शेष दो की तलाश जारी है। सभी मछुआरे तमिलनाडु के निवासी हैं। उडुपी जिले में भारी बारिश के कारण सभी स्कूल-

कॉलेजों में दो दिन का अवकाश घोषित कर दिया गया है।



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कंक्रीट का जंगल बना

# पांच साल में 50 से 100 फीट नीचे गिरा भू-जल स्तर



पत्रिका  
न्यूज  
पंच

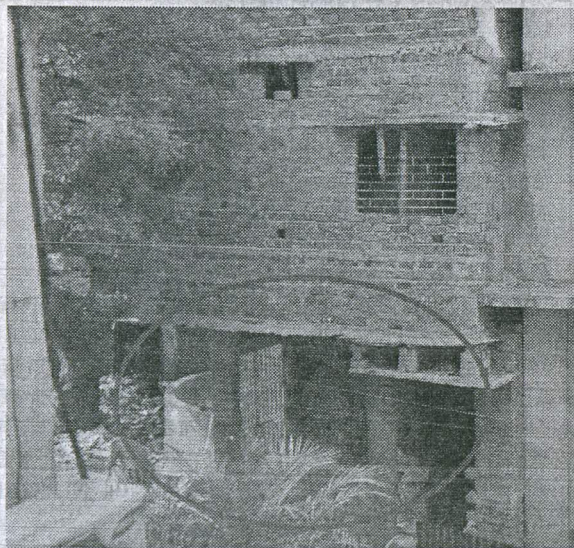
पत्रिका न्यूज नेटवर्क

patrika.com

रायपुर. राजधानी में पांच साल में भू-जल स्तर खतरनाक स्तर पर पहुंच चुका है। तालाबों और वर्षा जल का संरक्षण नहीं होने की वजह से शहर के कई इलाकों में भू-जल स्तर 50 से 100 फीट नीचे जा गया है। केंद्रीय भू-जल बोर्ड के मुताबिक राजधानी में भू-जल स्तर हर साल औसत 15 से 20 फीट नीचे जा रहा है।

शहर के देवपुरी, भाटागांव, चंगौराभाठा, टाटीबंध आदि

इलाकों में भू-जल स्तर पर एक साल के भीतर 30 से 45 फीट नीचे जा चुका है। शहर में ऐसे और भी क्षेत्र हैं, जहां भीषण गर्मी और सूखे की वजह से बोरेवेल और कुएं सूख गए। इसके साथ ही विभाग के सामने बड़ी समस्या भू-जल स्तर जांच के लिए खड़ी हो चुकी है, क्योंकि राजधानी में पुराने कुएं खत्म हो रहे हैं, वहीं केंद्रीय भू-जल बोर्ड के पीजोमीटर कई इलाकों में मॉनिटरिंग के अभाव में गायब हो रहे हैं। जल संरक्षण को लेकर केंद्रीय और राज्य सरकारों के अब तक के प्रयासों पर गौर करें तो ना तो घरों में रेन वाटर हार्वेस्टिंग का पालन हो रहा है और ना ही वर्षा जल के संरक्षण और सर्वधन के लिए कोई विशेष प्रयास किए गए हैं।



सरकारी कुओं को पाटकर इस तरह बनाया जा रहा है घर। (लाल घरे में)

## बोर्ड का कार्यालय बदला तो वाटर लेवल नहीं लिया

केंद्रीय भू-जल बोर्ड की टीम को मई महीने में प्रदेशभर में दौरा के लिए निकलना था, लेकिन यह टीम कार्यालय शिफ्टिंग में उलझकर रह गई। जानकारी के मुताबिक पचपेड़ी नाका स्थित निजी कॉम्पलेक्स में बोर्ड का कार्यालय संचालित हो रहा था, लेकिन यहां कॉम्पलेक्स मालिक ने विभाग को कार्यालय खाली करने का अल्टीमेटम दे दिया। विभाग को डेढ़ साल से यह सूचना दी जा रही थी, लेकिन लापरवाही के चलते जो भू-जल स्तर का नमूना मई में ना लेकर अब जून में लिया जाएगा।

## निगम और जिला प्रशासन भी जिम्मेदार

शहर में लगातार घटते भू-जल स्तर पर निगम और जिला प्रशासन भी जिम्मेदार है। रेन वाटर हार्वेस्टिंग के नियमों के बावजूद घरों में इसकी अनिवार्यता लागू नहीं की जा रही है। इस संदर्भ में दो साल पहली कड़ाई बरती गई थी, लेकिन यह एक बपार फिर ठंडे बस्ते में जा चुका है।

**267 पीजोमीटर, पर संरक्षण नहीं:** विभाग के मुताबिक प्रदेश में 267 पीजोमीटर हैं। कुओं के सूखने के बाद विभाग पीजोमीटर के जरिए वाटर लेवल की जांच करता है, लेकिन संरक्षण के अभाव में पीजोमीटर धीरे-धीरे गायब होते जा रहे हैं।

## जल स्तर घटने के प्रमुख कारक

1. कंक्रीट में तब्दील हो रहा शहर।
2. रेन वाटर हार्वेस्टिंग का पालन नहीं।
3. पेड़ों की कटाई।
4. वर्षा जल की बर्बादी।
5. नदियों, तालाबों और कुओं की घटती संख्या।

राजधानी में 15 से 20 फीट भू-जल स्तर नीचे जा रहा है। तालाबों के संरक्षण और रेन वाटर हार्वेस्टिंग के जरिए वर्षा जल संरक्षण पर विशेष ध्यान देना होगा। वाटर लेवल जांचने के लिए शहर में कुओं की भी कमी होती जा रही है।

**एके बिश्वाल,** क्षेत्रीय निदेशक, केंद्रीय भू-जल बोर्ड (छत्तीसगढ़)



मानसून के पश्चिमी धड़े के आगे बढ़ने में अरब सागर पर बना कम दबाव क्षेत्र अहम भूमिका निभा रहा है

H-30

# दो मौसम प्रणालियों ने बढ़ाई मानसून की रफ्तार



नई दिल्ली | विशेष संवाददाता

मौसम विभाग के अनुसार मानसून की रफ्तार अच्छी है। केरल स्थित 14 बारिश रिकॉर्डिंग केंद्रों में से 60 फीसदी में पिछले तीन-चार दिनों में बारिश हुई है, जो मानसून के अच्छे होने का पैमाना है। मौसम विज्ञानियों की मानें तो इसकी वजह अरब सागर और बंगाल की खाड़ी पर बनी दो मौसम प्रणालियाँ हैं।

मौसम विज्ञानियों ने कहा, 25 मई को अंडमान पहुंचने के बाद मानसून ने रफ्तार पकड़ी। इसकी वजह दक्षिण पूर्व अरब सागर में कम दबाव का क्षेत्र बनना है। कुछ इसी तरह की स्थिति बंगाल की खाड़ी में बनी हुई है। दक्षिण-पश्चिमी मानसून के पश्चिमी धड़े के आगे बढ़ने में अरब सागर पर बना कम दबाव क्षेत्र अहम भूमिका निभा रहा है। यही वजह है कि मानसून ने सामान्य से तीन दिन पहले ही केरल में दस्तक दे दी। आने वाले दिनों में बंगाल की खाड़ी में बना कम दबाव का क्षेत्र मानसून के पूर्वी हिस्से को गति देगा, जिससे पूर्वोत्तर भारत, पश्चिम बंगाल, बिहार-झारखंड के हिस्सों में बारिश होती है।

यह लगातार तीसरा साल है जब मानसून के सामान्य रहने की भविष्यवाणी की गई है। देश में करीब 60-65 फीसदी खेती अभी भी मानसूनी बारिश पर निर्भर है। इसलिए आम चुनावों से ठीक पहले साल में सामान्य मानसूनी बारिश की भविष्यवाणी सरकार को भी राहत पहुंचाने वाली है।

## मुंबई पहुंचने पर उत्तर भारत को तपिश से राहत

केरल में दस्तक देने के करीब दस दिन बाद मानसून मुंबई में दस्तक देता है। लेकिन इसका इंतजार उत्तर भारतीयों को अधिक होता है, क्योंकि मुंबई में मानसून की फुहारों के साथ उत्तर भारत के इलाकों के अधिकतम तापमान में गिरावट शुरू हो जाती है।



केरल के तिरुवनंतपुरम में मंगलवार को मानसून की दस्तक के साथ झमाझम बारिश हुई। • प्रेर

### करीबी रिश्ता

- मुंबई में मानसून पहुंचने के साथ ही उत्तर भारत में अधिकतम तापमान में गिरावट आने लगती है
- 10 जून को मुंबई में मानसून की बारिश शुरू होने के साथ दिल्ली का पारा 38 के आसपास पहुंच जाता है

### पूर्वानुमान

- 6 जून को मुंबई में मानसून पूर्व बरसात की शुरुआत होने की उम्मीद
- 8 या 9 जून को मानसून की पहली बारिश मुंबई में हो सकती है

### पहले भी राहत संभव

- उत्तर भारत खासतौर पर पश्चिमोत्तर भारत में पश्चिमी विक्षोभ से मानसून पूर्व बारिश होती
- तिब्बत के पठार पर कम दबाव का क्षेत्र बनने से भी उत्तर भारत का मौसम प्रभावित होता है

## इस साल मेघ होंगे मेहरबान

97%

बारिश इस साल होने की भविष्यवाणी की गई

890

मिलीमीटर पूरे देश में सामान्यतः मानसून की बारिश होती

863

मिलीमीटर इस साल बारिश होने का अनुमान लगाया गया

05%

अनुमान में गणना त्रुटि होती, इसलिए बारिश 92 से 105 फीसदी संभव

## मानसून केरल पहुंचने का असर

- आंतरिक कर्नाटक, तमिलनाडु और पुदुचेरी के कई इलाकों में मानसून पूर्व बारिश हो रही है।
- पूर्वोत्तर भारत के कई इलाकों और बांग्लादेश में भी मानसून से पहले होने वाली बारिश ने रफ्तार पकड़ी।

## केरल में कब कब दस्तक

वर्ष	माह
2005	7 जून
2006	26 मई
2007	28 मई
2008	31 मई
2009	23 मई
2010	31 मई
2011	29 मई
2012	5 जून
2013	1 जून
2014	6 जून
2015	5 जून
2016	8 जून
2017	30 मई
2018	29 मई



## कब कहां पहुंचेगा मानसून

शहर	संभावित तारीख
रांची	10 जून
पटना	11 जून
गोरखपुर	13 जून
वाराणसी	15 जून
लखनऊ	18 जून
देहरादून	20 जून
दिल्ली	29 जून

## आज का अनुमान

- 12 से 20 सेंटीमीटर तक केरल के कई स्थानों पर बारिश हो सकती है
- कर्नाटक और तमिलनाडु के अधिकतर हिस्सों में मानसून पहुंच जाएगा
- 60 किमी प्रति घंटे की रफ्तार से केरल के तटीय इलाकों चल सकती है हवाएं

## देश में 2017 सबसे गर्म वर्ष

नई दिल्ली। उत्तर और मध्य भारत इस समय गर्म लू की चपेट में हैं, भारत मौसम विज्ञान विभाग (आईएमडी) के आंकड़ों के एक विश्लेषण से पता चलता है कि वर्ष 2017 असामान्य रूप से गर्म वर्ष रहा। मौसम का पूर्वानुमान करने वाली अमेरिकी संस्था फोरस्टर,

एक्यूटैडर ने पाया कि 2017 में अरुणाचल प्रदेश के पासीघाट में सामान्य से लगभग तीन डिग्री सेल्सियस अधिक तापमान रहा। इस दौरान आंध्र प्रदेश के मछलीपतनम और शिमला में सामान्य से 2.5 डिग्री सेल्सियस अधिक तापमान का अनुभव किया गया।



FFM Directorate.

भारत सरकार  
Government of India  
केन्द्रीय जल आयोग  
Central Water Commission  
बाढ़ पूर्वानुमान प्रबोधन निदेशालय  
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विषय : दिनांक 30/5/2018 की समाचार की कतरन ( News Clippings ) प्रस्तुत करने के सम्बन्ध में ।

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

संलग्न : उपरोक्तानुसार

*[Signature]*  
30/5/18  
( सहायक निदेशक )

उप निदेशक (बा.प.प्र.) *[Signature]* 30/5/2018

निदेशक (बा.प.प्र.) 210 चमक  
30/5/2018

कृपया केन्द्रीय जल आयोग की वेब साईट पर अपलोड करने की व्यवस्था करें ।

34 निदेशक (तकनीकी प्रलेखन)

*[Signature]*  
30/5/18



दिनांक 30.05.2018 को निम्नलिखित समाचार पत्र में प्रकाशित मानसून/ बाढ़ सम्बन्धी समाचार।

Hindustan Times ( Delhi ) ✓  
नवभारत टाइम्स ( दिल्ली )  
The Tribune ( Chandigarh )  
The Hindu ( Chennai )

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

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





Hindustan Times ( Delhi )  
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The Deccan Herald ( Bengluru )  
The Deccan Chronical ( Hyderabad )  
Central Chronical ( Bhopal )

# NATION

The Tribune 30/5/18



Rescuers at work in a flooded locality in Mangaluru on Tuesday. PTI

## Monsoon hits Kerala ahead of schedule

NEW DELHI, MAY 29

The southwest monsoon on Tuesday hit Kerala, three days before its scheduled arrival, the India Meteorological Department (IMD) said.

The conditions are favourable for further advance of the monsoon into some parts of central Arabian Sea, remaining parts of Kerala, parts of coastal and south interior Karnataka, parts of east-central and northeast Bay of Bengal, and some parts of northeastern states during the next 48 hours, it said.

The onset of monsoon over Kerala marks the commencement of the four-month rainy season in the country.

"Today, the southwest monsoon has further advanced into remaining parts of southeast Arabian Sea, Comorin-Maldives area, entire Lakshadweep, most parts of Kerala, some parts of Tamil Nadu and some more parts of southwest, central and northeast Bay of Bengal. Thus, the southwest monsoon has set in over Kerala, today, the 29th May 2018, three days ahead of its normal date," the IMD said.

Thunderstorm in HP, Uttarakhand, Punjab, Haryana, Chandigarh today, predicts IMD

June 1 is the official onset date for arrival of monsoon in the country and it takes more than a month-and-half to cover the entire country. The usual date for the monsoon over Sri Ganaganagar in Rajasthan, its last post, is July 15. This is the second consecutive year when the monsoon has made an early arrival. Last year, the annual rainy season commenced on May 30.

Skymet, a private weather forecasting agency, said owing to the arrival of monsoon, isolated places over Karnataka, Kerala, Lakshadweep, Andaman and Nicobar Islands, Nagaland, Manipur, Mizoram and Tripura are expected to receive "heavy to very heavy rain" on Wednesday. But there will be no respite from hot weather conditions in parts of north and central India. — PTI



दिनांक 29.05.2018 को निम्नलिखित समाचार पत्र में प्रकाशित मानसून/ बाढ़ सम्बन्धी समाचार

Hindustan Times ( Delhi )  
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The Telegraph ( Kolkata )  
हिन्दुस्तान ( पटना )

The Deccan Herald ( Bengaluru ) ✓  
The Deccan Chronical ( Hyderabad )  
Central Chronical ( Bhopal )

# Rain pounds coastal districts, Dharwad

**BENGALURU:** The coastal districts of Dakshina Kannada and Udupi received heavy rain late on Sunday night.

Heavy rain coupled with gusty wind, which lashed Udupi district, has paralysed normal life. Trees and electrical poles were uprooted at several places affecting power supply. Rainwater entered into houses in Shiree-beedu area. Several houses were damaged in Karkala. The district has recorded an average rainfall of 34.33 mm in the last 24 hours.

Heavy rain coupled with lightning and thunder lashed different parts of Dakshina Kannada, on Sunday night. Electrical appliances in several houses were damaged due to lightning. Siddappaji, a constable attached to Central Armed Reserve was injured when lightning struck him at Nehru Maidan. A construction worker died after lightning struck him at Sarolikere in



Heavy rain lashes Nargund town in Gadag taluk on Monday. (Right) The KSRTC bus stand in Chamarajanagar was flooded due to downpour. DH PHOTOS

Nelyadi. The deceased has been identified as Peter D'Souza (38).

The road connecting Hosmata bridge built across Gundya stream partially collapsed following heavy rain on Monday morning. In the last 24 hours, the district recorded an average

of 49.8 mm rainfall.

Heavy rains accompanied by lightning and thunder lashed Nippani town in Belagavi district on Monday. A 18-year-old youth was killed after lightning struck him on Nichanaki-Dombarakoppa road. There were reports of showers in Bailhongal taluk.



Moderate to heavy rain lashed Dharwad city for the second consecutive day on Monday. Overcast condition prevailed since afternoon and heavy downpour accompanied by gusty winds was witnessed for around 30 minutes. Nargund in Gadag district received heavy rain

for more than 30 minutes on Monday evening. There were reports of rain in Chincholi taluk of Kalaburagi district and Chamarajanagar also.

Heavy rain lashed Shivamogga for about 20 minutes in the evening.  
**DH News Service**



दिनांक 29.05.2018 को प्रकाशित समाचार पत्र में प्रकाशित मानसून/ ब्राह्म सन्वत्दी समाचार

Hindustan Times ( Delhi )

The Assam Tribune ( Guwahati )

The Deccan Herald ( Bengluru )

The Times of India ( Mumbai )

The Deccan Chronicle ( Hyderabad )

GOOD NEWS

■ Monsoon likely to cover Kerala in a week, progress towards Rayalaseema, TS

# Monsoon reaches Kerala, in TS by June 6

DC CORRESPONDENT  
with agency inputs  
HYDERABAD, MAY 29

The monsoon hit Kerala on Monday, a day earlier than predicted, marking the arrival of the rainy season in the country. The normal date of monsoon onset is June 1.

The state can expect rain in a week, and relief from the sweltering heat.

Indian Meteorological Department-Hyderabad director Y.K. Reddy told this newspaper, "If the progress of the monsoon is steady, Telangana state may receive its first rain between June 6 and to 8. The monsoon is likely to



cover Kerala within a week and is likely to progress in the northern direction towards Rayalaseema and Telangana state in a week."

An official said the mon-

soon advances over the Andaman Sea normally around May 20, with a standard deviation of about one week. This year the conditions were favorable and it advanced into

some parts of Andaman Sea and southeast Bay of Bengal before the forecast date, an IMD official said. According to the IMD, if after May 10, 60 per cent of the 14 stations — Minicoy,

Amini, Thiruvananthapuram, Punalur, Kollam, Allapuzha, Kottayam, Kochi, Thrissur, Kozhikode, Thalassery, Kannur, Kudulu and Mangalore — report rain-

## WHEN THE RAINS CAME

Chart indicating difference between actual onset date and forecast date of the monsoon

Year	Actual	Forecast
2013	June 1	June 3
2014	June 6	June 5
2015	June 5	May 30
2016	June 8	June 7
2017	May 30	May 30
2018	May 29	May 28

■ One of the parameters for the arrival of Monsoon is that the westerly winds must be up to 15,000 feet above sea level.

■ Rain for consecutive two days have been recorded in all weather stations.

fall of 2.5 mm or more for two consecutive days, the onset of monsoon over Kerala can be declared on the second day. This is one of the main parameters for the declaring the arrival of monsoon.

Besides this, the other parameters for the arrival of Monsoon should be that the westerly winds must be up to 15,000 feet above main sea level and outgoing long-wave radiation should be less than 200  $\text{W m}^{-2}$  (watt per square metre).

"Rain for consecutive two days have been recorded in almost all weather stations," said Mahesh Palwat of private weather forecasting agency Skymet.

Deccan chronicle

29/5/18



दिनांक 29.5.2018 को विमोचकलेखित समाचार पत्र में प्रकाशित मानसून/ बाढ़ सम्बन्धी समाचार

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The Deccan Herald ( Bengluru )

The Deccan Chronical ( Hyderabad )

Central Chronical ( Bhopal )

13

# Storms strike Bihar, UP, Jharkhand; 48 killed

TRIBUNE NEWS SERVICE

PATNA, MAY 29

Thunderstorms struck at several places in Bihar, Uttar Pradesh and Jharkhand, killing at least 48 people as hutments collapsed and trees fell, officials said on Tuesday.

Twenty-one of them died in Bihar, but the state disaster department officially confirmed only 19 deaths. Chief Minister Nitish Kumar announced an ex gratia of ₹4 lakh to the next of kin of the deceased.

"As per reported information so far, five persons were killed in Gaya, four in Munger, three each in Aurangabad and Katihar, two each in Lakhisarai and Nawada districts of Bihar. The toll may rise as the information from other parts is yet to arrive," said Pratyay Amrit, principal secretary at state disaster department.



A fair venue damaged during a thunderstorm in Ranchi. PTI

aster department.

In Uttar Pradesh, 15 people were killed and 10 injured, a senior official said on Tuesday. "While six persons were killed in Unnao, three died in Rae Bareilly, and two each in Kanpur, Pilibhit and Gonda districts," UP Relief Commissioner Sanjay Kumar said.

Unnao DM Ravikumar said while two deaths were due to lightning, the others died in incidents of house collapse, uprooting of trees and electric poles.

In Jharkhand, 12 persons have been killed in Pakur and Chatra districts since Sunday. (With PTI inputs)



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हिन्दुस्तान ( पटना )

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

# Rain hits Kerala but monsoon call today

*The telegraph 30/5/18.*

**OUR BUREAU AND PTI**

**New Delhi:** Rains are drenching Kerala but the national weather agency says it is likely to declare the "onset" of the 2018 monsoon over the mainland on Tuesday.

A private weather forecasting agency, Skymet, announced that the southwest monsoon had hit Kerala on Monday but the India Meteorological Department (IMD) said it would wait a day.

"There are monsoon-like conditions over Kerala and we can say that the annual rainfall season has arrived," Skymet chief executive officer Jatin Singh said. Skymet had earlier predicted May 28 as

onset date, while the IMD had predicted onset to occur on May 29.

The IMD uses multiple criteria linked to rainfall and atmospheric as well as wind conditions that need to be met before the agency declares the onset, a senior official said.

Among the criteria, at least 60 per cent of 14 existing weather stations in Kerala need to record 2.5mm or more rainfall over two consecutive days. "It has been raining in Kerala, but our criteria require observations for two days," Mrutyunjaya Mohapatra, additional director-general with the IMD in New Delhi told **The Telegraph**. "We expect that we can declare the

monsoon's onset tomorrow (Tuesday)."

Senior weather scientists have long asserted that the monsoon's onset date over Kerala, marking its entry over mainland India, has no correlation with the performance or patterns of rainfall during the monsoon season from June through September.

The IMD had predicted May 29 as the onset date through a statistical model that carries an inherent margin error of four days. Skymet had predicted May 28 as the onset date with an error margin of two days. Both agencies can thus claim accuracy of their onset forecasts for 2018.



# Monsoon arrives three days early

**COMING IN** Onset is in line with IMD's prediction, with a model error of 4 days either side

Malavika Vyawahare

letters@hindustantimes.com

**NEW DELHI:** The southwest monsoon arrived three days ahead of schedule in Kerala on Tuesday, heralding the start of the rainy season in mainland India and the onset of the summer-sown or kharif agricultural season that accounts for half the country's annual food output.

It has been raining for the past two days in Kerala, the first to receive the annual rains that are the lifeline of India. The monsoon is critical for agriculture because nearly 60% of India's cropped area lacks access to assured irrigation; a good monsoon is one enabling factor of a healthy rural economy. Two-thirds of Indians depend on agriculture for a livelihood. With the pre-monsoon showers this week, days, there was no fanfare to the arrival of the monsoon this year. Indeed, many people got to know that the monsoon had arrived, and before schedule, after the India Meteorological Department (IMD) made the announcement in New Delhi.

The monsoon usually arrives around June 1 every year. After arrival in Kerala, the rains usually take 15 days to cover the entire southern peninsula and most parts of the country by July.

The onset is in line with IMD's prediction, which comes with a model error of  $\pm 4$  days.

Skymet Weather, a private forecasting agency, had announced that conditions for the onset of monsoon had been fulfilled by Monday and the onset of rains would happen on May 28.

Only the IMD can officially declare the arrival of the monsoon. It had predicted rains would arrive over the Andaman and Nicobar Islands, where they reach before the mainland, by May 23. "There was a delay in the onset of monsoon over the Andaman & Nicobar Islands because of the cyclonic system in the Ara-



■ This is the second consecutive year when the monsoon has made an early arrival.

VIVEK NAIR/HT

bian Sea that was blocking the advance of the monsoon. However, since that weakened into a depression, the monsoon has advanced quickly," DS Pai, senior scientist at the IMD, said.

"Heavy rain was reported from many parts of the state and Lakshadweep. Amini in Lakshadweep reported 24 mm rain and Konni (Pathanamthitta) in Kerala has 18 mm. Conditions are conducive for further advancement of clouds," said IMD regional director K Santosh.

The onset is announced when three conditions are fulfilled: after May 10, when there is at least 2.5 mm rainfall for two consecutive days at 60% of the 14 stations in Kerala; strong and deep westerly winds from the Arabian Sea; and outgoing long wave radiation below 200 watt per square metre, which indicates a thick cloud cover.

"If the IMD does not consider that all three conditions are met, then it does not declare the onset of monsoon," Mahesh Palawat, chief meteorologist at Skymet Weather, said. "We used IMD

data for rainfall but for the other two we used our own data."

The monsoon season in India lasts between June and September and the rains advance from the south, with northwestern India receiving rains between June 15 and July 15. The rains start withdrawing around August.

In its preliminary forecast in April, the IMD predicted a normal southwest monsoon this year, which occurs when rainfall is between 96-104% of the 50-year average of 887 mm, also called the Long Period Average (LPA).

This year it will be 97% of the LPA with an error margin of  $\pm 5\%$ , the weather agency said.

While Kerala is happy that the monsoon is early, some in the state are worried because the rains bring a myriad viral diseases to the state. The state recently witnessed the outbreak of the dreaded Nipah virus that claimed the lives of 14 in north Kerala. Timely showers help farmers to start sowing of major summer crops including rice, cotton, pulses, soyabean, oilseeds

and coarse cereals. For robust food output, the showers must now advance rapidly to rest of the country. "There is no correlation between early or timely arrival of the monsoon and its subsequent progress. We hope it covers most parts of the country in time. This is not always the case," said SK Ramesh, a former agronomist with the state-run Indian Council of Agricultural Research.

In 2016, the monsoon made steady progress over south India, after a nine-day delayed onset on June 8. Yet, its progress in other parts was behind schedule for the first 15 days of the rainy season. In that year, by the first week of July, while south India recorded surplus rainfall of 12%, showers in central, northwest and eastern parts were been deficient by 46%, 14% and 34%.

Sowing in central Indian states such as Andhra Pradesh, a major paddy-growing state, and Maharashtra starts by June third week.

(Ramesh Babu in Thiruvananthapuram and Zia Haq in New Delhi contributed to this story)

## Storms in north kill 54, weather-linked death toll 290 for May

HT Correspondents

letters@hindustantimes.com

**NEW DELHI:** Storms and lightning strikes across several states have killed at least 54 people since Monday, disaster management officials said on Tuesday, taking the toll from freak weather this month to around 290.

Lightning, which is associated with thunderstorms, accounted for 2,641 deaths in 2015, about one-fourth of total deaths in India due to natural disasters that year, according to the latest National Crime Records Bureau (NCRB) report on accidental deaths.

Mrutyunjay Mahapatra, a senior climate scientist with the India Meteorological Department (IMD), said the frequency of thunderstorms and lightning strikes appears to have increased this year because of a number of factors.

"The long dry spell and hot weather conditions increasing the surface temperature combined with unusually high western disturbances and cyclonic activity have contributed to this," he said, adding that thunderstorms in this season were not unusual.

In three major thunderstorms and lightning strikes reported on May 4, May 16 and May 28, mostly in north-western India, the combined death toll was 290. Of these, 54 deaths were reported in the past 24 hours—17 from Uttar Pradesh, 19 from Bihar, 12 from Jharkhand, two from West Bengal and four from Madhya Pradesh. According to the information released by the UP state government, six people died and three were injured in Unnao

when two houses collapsed in thunderstorms. Three people died in Rae Bareilly while two deaths each were reported from Kanpur City, Pilibhit, Gonda and Sitapur. In neighbouring Madhya Pradesh, most of the deaths were reported from the Bundelkhand region.

In Bihar, Gaya and Aurangabad districts reported five deaths each, while four died in Munger, three in Katihar and two in Nawada, said Bihar Disaster Management Department (DMD) officials. Jharkhand, which has seen 29 thunderstorm-related deaths this month, including 12 overnight, is expected to receive more storms in the coming days.

The weather department has predicted storms and lightning till mid-June. Patna-based IMD official Anand Shanker said easterly winds during the day had carried moisture from the Bay of Bengal after a trough developed over the region from Uttar Pradesh to Bihar.

Jharkhand's special secretary, disaster management, Ashok Kumar, said the only way to prevent lightning deaths was through an alert system. "We take weather information from India Meteorological Department and Skymet. As soon as we get any information, respective DCs (district commissioners) are immediately informed..." Kumar said.

Mahapatra said it was difficult to predict the specific location of a thunderstorm much in advance and advised states to create public awareness about dos and don'ts in case of lightning strikes.

(With inputs from HTCLucknow, Ranchi, Bhopal and Patna)