Hindustan Times- 26- June-2023

Is monsoon performance in June a cause for worry?

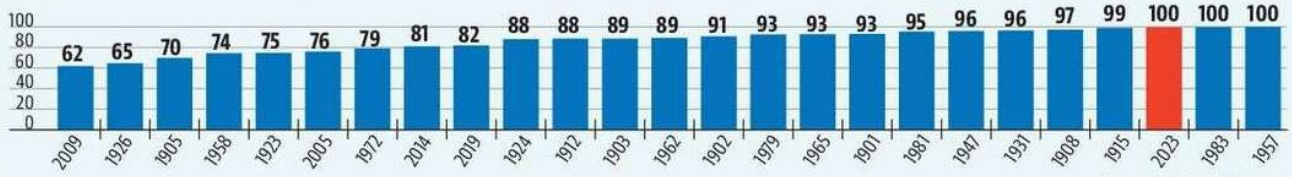
By Abhishek Jha

The first month of the June-September monsoon season is almost over. How has the monsoon performed till now? The answer is important since India receives 75% of its annual rainfall during the south-west monsoon, which irrigates the water-intensive paddy crop. However, it may not rain as much this year because of El Nino, a cyclical warming of the equatorial Pacific Ocean that adversely affects monsoon rains. An HT analysis shows that the first month of the 2023 monsoon season has followed this expectation. However, it may not necessarily be a cause for worry yet as far as rice output is concerned. Here are four charts that explain why.

1 There is a big deficit in the first month of the 2023 monsoon...

India has received 99.6 mm rain this month till 8:30 am on June 25, according to the gridded dataset of the India Meteorological Department. This is 21% lower than the average rain during the 1961-2010 period, the benchmark for rain, and the 23rd lowest rain for this part of June since 1901. Clearly, the monsoon's performance in its first month has been bad. It is not entirely unexpected. Four of the driest years of June 1-June 25 rain are from 2009 onward, and 2019 was 18% drier than this year.

TOP 25 DRIEST YEARS OF JUNE 1-JUNE 25 RAIN (RAIN IN MM)

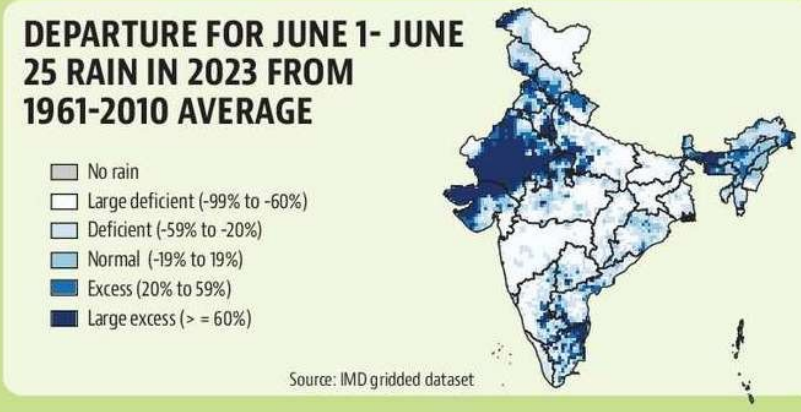


Source: IMD gridded dataset

2 ...which is worse in central and eastern regions

To be sure, like all averages, the overall deficit in June hides regional variations. Almost two-thirds of the country (62.4%) has a deficit bigger than the India average. Moreover, not all levels of deficit the same. The Met department considers a deficit to be below normal at 20% or higher deficit, with a 20%-60% called deficient and that of 60% or higher called large deficient. As much as 38% of the country's total area is large deficient and 25% deficient, with most of this area concentrated in central and eastern states and Maharashtra in the west. On the other hand, large parts of Gujarat, Rajasthan, Punjab, Haryana, and parts of northeastern states have received above normal rain, which is a surplus of 20% or more.

DEPARTURE FOR JUNE 1- JUNE 25 RAIN IN 2023 FROM 1961-2010 AVERAGE

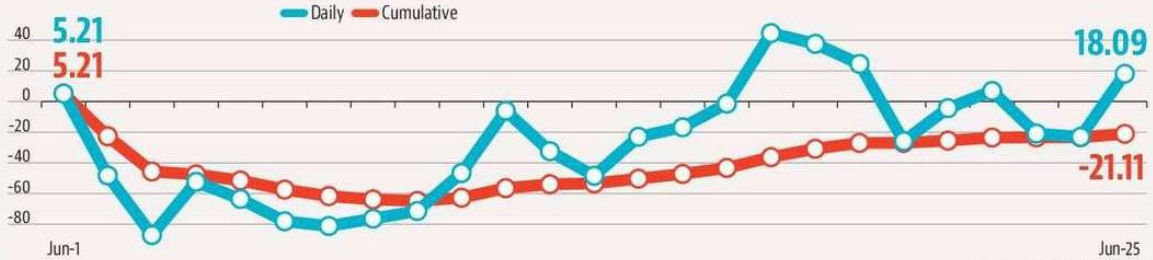


Source: IMD gridded dataset

3 However, rains have come closer to normal after Cyclone Biparjoy's landfall

Similar to the regional differences, there has been temporal variation in the monsoon's performance this month. A day after the onset of monsoon over Kerala on June 8 (late by seven days), the cumulative deficit from the 1961-2010 average reached a high of 65%. The deficit was 50% even on June 14. This cumulative deficit is less than half of the mid-June level now because daily rains have been closer to the historical average in the second half of June. Part of this is because the landfall of Cyclone Biparjoy and its remnant (a low-pressure area over Rajasthan) caused unusually intense rains in most of northwestern India. However, part of this is also because the monsoon system started making progress after Biparjoy's landfall.

DEPARTURE OF 2023 RAIN FROM 1961-2010 AVERAGE (%)



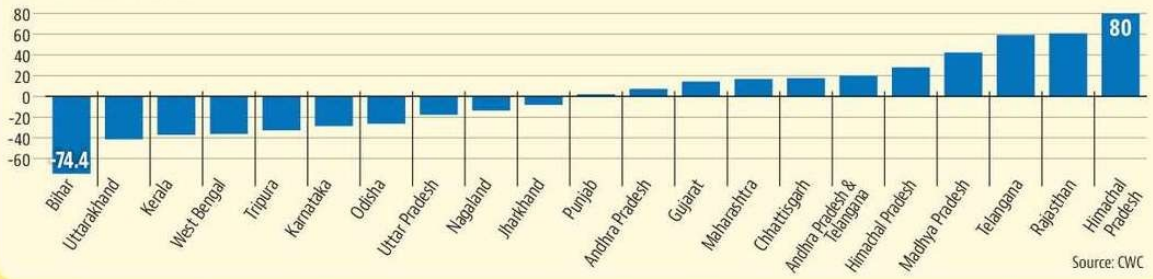
Source: IMD gridded dataset

4 Rice producing states have big deficits, but it is not beyond salvage yet

As the geographical pattern of rainfall shows, large parts of rice-producing states have big deficits. The top 10 rice producing states are Uttar Pradesh, West Bengal, Punjab, Andhra Pradesh, Odisha, Chhattisgarh, Bihar, Telangana, Tamil Nadu and Haryana. Together, they accounted for 78% of India's rice output on average in the 2012-21 period. Most of the area in all these states, except Punjab and Haryana, is under big deficits so far this monsoon. However, it should not be taken to mean the rice output is doomed this year. This is for two reasons. First, reservoirs are not running dry in most of these 10 states despite a deficit in June rainfall. The Central Water Commission tracks live storage status in 146 reservoirs across India compared to the average storage in the past 10 years. It shows that only four major rice-producing states have a deficit in reservoir storage: Bihar, West Bengal, Odisha and UP.

DEVIATION IN RESERVOIR STORAGE COMPARED TO 10 YRS' AVERAGE (%)

(As on 22 June, 2023)

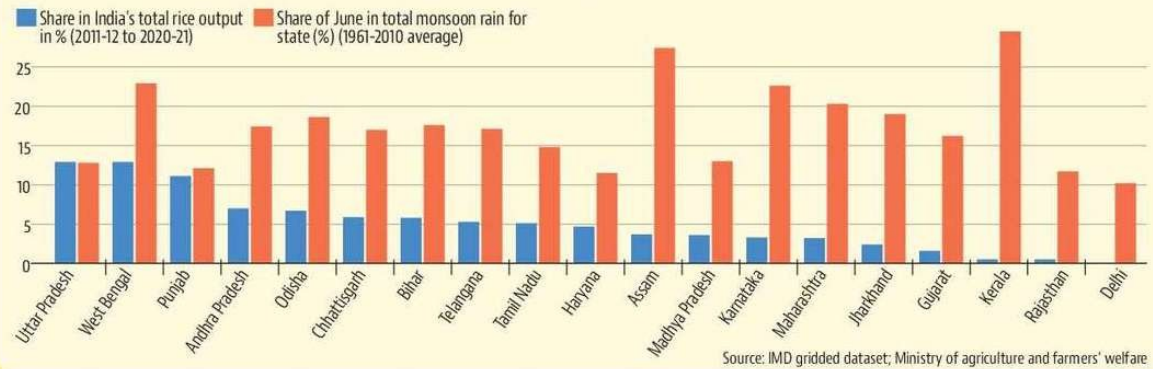


Source: CWC

To be sure, the four eastern states account for 38% of India's rice output. Does this mean a significant blow to rice output this year? It is not known yet because June is not the rainiest month in the rice-producing states. In north-western states of Punjab, Haryana and Uttar Pradesh, June accounts for just 11%-13% of monsoon rains. In all eastern states except West Bengal, it accounts for 17%-19% of monsoon rain, similar to the India average of 19%. Only in West Bengal, June rain accounts for almost a quarter (23%) of monsoon rains.

Therefore, experts also think one must wait for trends in July and August to understand the impact on agriculture. "Below-normal rains can also impact winter crops (like wheat) in Q4 2023 and Q1 2024, by lowering the level of water reservoirs. That said, the spatial and temporal distributions of rains are more important than the overall level, with the months of July and August particularly important for summer crops," Sonal Varma and Aurodeep Nandi said in a Nomura research note dated June 22.

JUNE RAIN'S IMPORTANCE BY RICE OUTPUT



Source: IMD gridded dataset; Ministry of agriculture and farmers' welfare

The Times of India- 26- June-2023

Yamuna cleaning: Committee identifies 3 more focus areas

TIMES NEWS NETWORK

New Delhi: The high-level committee appointed by the National Green Tribunal for the cleaning of the Yamuna has identified three new focus areas to expedite the clean-up.

The focus areas are delinking of sewerage lines and stormwater drains that had developed due to faulty interconnections, prevention of dumping of waste from the bridges and de-silting sewer lines below 1,000 mm diameter which run up to 442.63 km in the city, the LG's office said.

The committee, headed by LG VK Saxena, would oversee that the damage is repaired and it is covered through wire mesh or net to ensure that anything is not thrown into the river, said the LG's office.

These bridges are Wazirabad Barrage Road Bridge, Inter-State Bus Terminus (ISBT) near Kashmere Gate, Old Iron Railway Bridge, Geeta Colony Road Bridge, Signature Road Bridge, ITO Road Bridge, Railway Bridge Downstream of ITO, Nizamuddin Road Bridge, DND Flyway Road Bridge and Okhla Barrage Road Bridge.

File photo

SAVING THE RIVER

"These bridges are maintained by different agencies and they would look after it," he said.

The committee was formed in January after the tribunal observed that substantial work remains unexecuted in terms of identified steps for the rejuvenation of the Yamuna, and there was a huge gap between the generation of sewage and available treatment facilities.

The Delhi Pollution Control Committee's (DPCC) data had then stated that the water quality of the Yamuna showed "high levels of biological oxygen demand" and "innumerable numbers of faecal coliform".

About the delinking of the sewerage system and stormwater drainage, the LG's office said: "The objective of this action plan is to rectify faulty inter-connections between sewerage system and stormwater drainage. Second, under this plan, there will be full capacity utilisation of stormwater drainage."

The total number of natural stormwater drains in Delhi is 210 and the irrigation and flood control department has been asked to submit an agency-wise list of such drains which have got connected to sewer lines.

The committee said drain owning agencies will submit timelines for disconnection at the next meeting, it added.

"In addition to 200 km of trunk-peripheral sewer lines, 442.63 km of de-silting of sewer lines below 1 metre diameter will take place by December-end. Till May 2023, about 26.08 km of cumulative length of de-silting of drains has already taken place," the LG house said.

The committee had identified eight focus areas which included treatment of sewage, trapping of drains, construction of sewerage networks in unauthorised colonies and JJ clusters.

The Times of India- 26- June-2023

Weak monsoon hits K'taka reservoirs

Niranjan.Kaggere
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Bengaluru/Mysuru: Despite the Indian Meteorological Department's (IMD) claim that the southwest monsoon (SWM) has covered Karnataka, a 64% deficit in rainfall has led to critically low water levels in major reservoirs of the state. Meteorologists, politicians, policymakers, and citizens are concerned over the sluggish progress of the monsoon over its first month.

After a delay caused by the slow winds of Biparjoy cyclone, the SWM is said to have enveloped the whole of Karnataka on Friday. However, the distribution of rainfall in several zones of Karnataka has been uneven resulting in slow progress of the monsoon in the state. A Prasad, scientist at IMD, Bengaluru, explained, "Despite the statewide coverage of monsoon, Karnataka is still not getting its usual extent of rainfall. Barring coastal Karnataka, all other zones in the state have witnessed severe deficit in rainfall. Even in coastal areas, there is a deficit. The overall deficit for Karnataka is 64%. We are hopeful that it will pick up pace in the coming days."

64% RAIN DEFICIT IN STATE

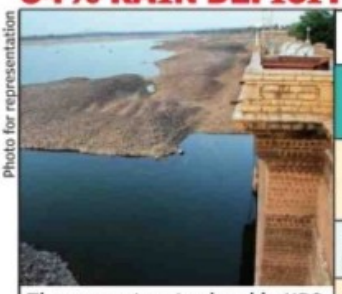


Photo for representation

The current water level in KRS dam is 77.68ft as against its maximum capacity of 124.8ft

Region	Cumulative rainfall (June 1 to June 24) Normal rain in MM	Actual rain in MM	% deficit as per the IMD
South interior K'taka	57	45	21
Interior N K'taka	82	29	65
Malnad	266	58	78
Coastal	619	188	70
State	152	55	64

Source: KSNDMC

According to data from the Karnataka State Natural Disaster Monitoring Centre (KSNDMC) all four meteorological zones have witnessed deficit rainfall with three zones recording 'large deficit' (yellow) rainfall and south interior Karnataka (SIK) which covers the Cauvery basin recording 'deficit' (red) rainfall. "Almost all zones are seeing cloudy conditions. But except for scattered rainfall, no zone has seen an average of more than 10cm rainfall. This has put reservoirs under tremendous stress as this would affect generation of power and supply of potable water to the state if the situation does not change," said a senior government official.

The current water level in the Krishnarajasagar (KRS) Dam is 77.68ft, significantly below its maximum capacity of 124.8ft. On June 25, 2022, the water level was 106.6ft, indicating a difference of nearly 30ft between the two periods. The water level in Kabini reservoir on Sunday was recorded at 2,250ft compared to 2,261.3 recorded in 2022.

▶Drinking water crisis, P 3

Delay in monsoon may hit city's drinking water supply

▶Continued from page 1

The water level in Harangi Dam was 2,819.5 ft, lower than the 2,852.8 ft recorded during the same period last year.

"The situation is similar in other major reservoirs such as Tungabhadra, Alamatti, Narayanapura, Ghataprabha, and Malaprabha in central and North Karnataka," said an official from the water resources department seeking anonymity.

The delay in monsoon rain has raised concerns about drinking water scarcity in both Bengaluru and Mysuru. Officials have stopped the release of water for irrigation purposes and are now reserving it solely for drinking purposes.

"The situation is grim. But we have enough water which is being supplied through our pumping stations. As of now, there is no scarcity of drinking water as there is sufficient water stored in Kabini reservoir which supplies water to Bengaluru," said a BWSSB official.

Chief minister Siddaramaiah said: "The rain has just begun in Karnataka but not on expected lines. It needs to gain momentum. Hopefully, we will receive enough rain."

With inputs from Venkatnag Sobers

THE WATER STATUS

Reservoirs	Storage capacity in TMC	Current storage capacity in TMC
Linganamakki	151	11.1
Harangi	8.5	2.6
Hemavathi	37.1	14.6
KRS	49.2	9.9
Kabini	19.5	4.2
Tungabhadra	105.7	4.1
Almatti	123.08	19.8

Source: Revenue department

TIMES VIEW

June might well be declared the 'holiest' month given the number of prayers being said across the state for rain. It's understandable since a dry monsoon season could spell disaster for just about everyone — the government since it could hinder the roll out of its guarantee schemes; farmers who will have no income, and people who may have to deal with drinking water scarcity and price rise. Experts suggest the state should foolproof itself against the vagaries of the weather. While that is a difficult task, steps must be taken in this direction and they can begin with water conservation in every home.

Business Standard- 26- June-2023

STATSGURU

The groundwater buffer

ASHLI VARGHESE

India's groundwater consumption prompted a recent World Bank report to call the country "the world's largest guzzler of groundwater". Increasing urbanisation and accelerated localised demand had pushed the per capita availability of water in India to a "water-stressed condition" for the first time in 2011. This implied annual per capita water availability of less than 1,700 cubic metres.

India had 398 billion cubic metres of extractable groundwater resources in 2022, recharged largely by the monsoons. The usage continued to go up even after 2011, but moderated after 2013, according to data from government reports (*charts 1, 2*).

However, experts have expressed doubts over the credibility of improved water statistics owing to the loss of wetlands and riverbeds. India uses water largely for irrigation. Industrial and domestic use has risen in recent times, but still accounts for only around a tenth of the overall numbers, with very little change over the last decade (*chart 3*).

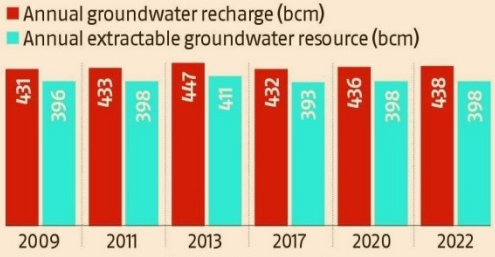
Overexploitation is concentrated in a few states. Overexploitation means extraction that is in excess of annual recharge. It is highest in Punjab (76.4 per cent), Rajasthan (74.9 per cent) and Haryana (62.7 per cent). Tamil Nadu and Karnataka also have higher than average numbers (*chart 4*).

India has a higher withdrawal of freshwater relative to available sources than many in South Asia. Only Pakistan and Sri Lanka are higher among key neighbours (*chart 5*).

The World Bank report suggested that adequate groundwater buffers can help reduce the economic pain of drought. Groundwater availability can halve the losses in agricultural productivity due to rainfall variations. It cited studies showing an increased probability of stunting among children due to rainfall shocks. It also pointed out that women are more likely to drop out of education or employment amid decreased water availability because they are often required to spend more time securing water requirements for the family.

The most recent data on wells showed a small improvement in water levels. Around 28 per cent of analysed wells had water within five metres below ground level in 2016. In 2020, this rose to 33 per cent.

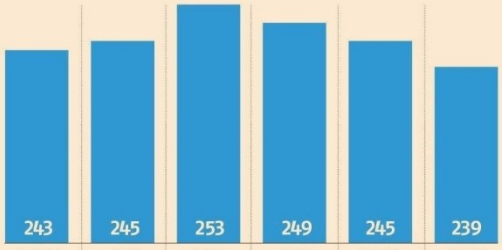
1: AROUND 400 BILLION CUBIC METRES OF WATER CAN BE EXTRACTED YEARLY



Note: Resources are measured in billion cubic metres (bcm).
Source: Dynamic Ground Water Resources Assessment Of India, 2022

2: ANNUAL DATA SUGGESTS MODERATION SINCE 2013

Total annual groundwater extraction (bcm)



Source: Dynamic Ground Water Resources of India, 2022

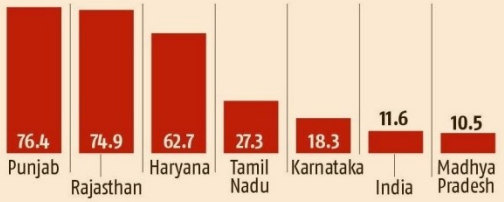
3: NEARLY 90% WATER USED FOR IRRIGATION

Share of current annual groundwater extraction (in %)

Note: Based on periodic reports as available
Source: Central Ground Water Board annual reports

4: MOST OVEREXPLOITATION IN PUNJAB, RAJASTHAN

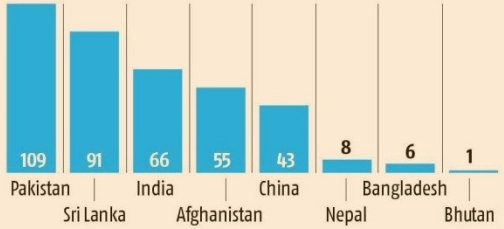
Overexploited share of total annual extractable resource of assessed units (2022, in %)



Note: Shows share of groundwater resources considered overexploited among states.
Source: Dynamic Ground Water Resources of India, 2022

5: INDIA'S WATER STRESS HIGH RELATIVE TO KEY NEIGHBOURS

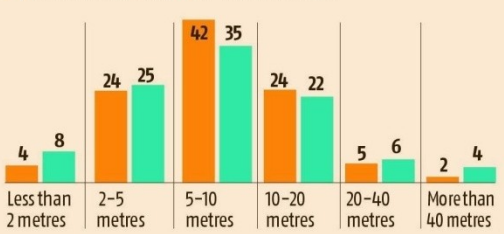
Share of freshwater withdrawal in available freshwater resources (in %)



Source: FAO (World Food and Agriculture – Statistical Yearbook 2022)

6: IMPROVEMENT IN WATER LEVELS

Water level at distance below ground level (among wells analysed, in %)



Source: Central Ground Water Board annual reports, *Business Standard* calculation

StatsGuru is a weekly feature. Every Monday, Business Standard guides you through the numbers you need to know to make sense of the headlines

Business Standard- 26- June-2023

Late pick-up, but monsoon on track to cover entire country by early July

Strikes Delhi, Mumbai on same day for the first time in six decades

SANJEEB MUKHERJEE
New Delhi, 25 June

The southwest monsoon strongly picked up pace over the past two days, covering almost all major parts of the country, including Delhi and Mumbai.

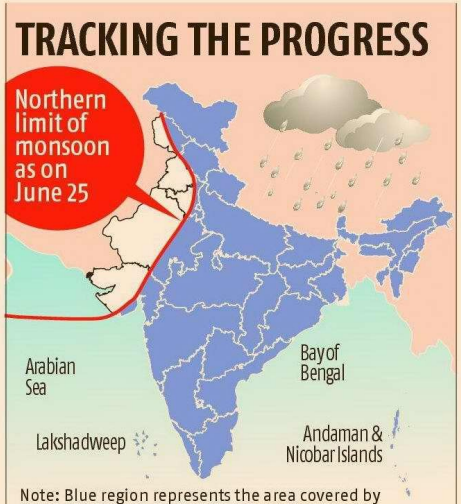
"As the monsoon has again become active, there is a possibility that it will cover the country by the first week of July, which is normal," D Sivananda Pai, scientist at the India Meteorological Department (IMD), and a well-known authority on Indian monsoons, told *Business Standard*.

The rains reached Delhi and Mumbai on June 25, something, according to meteorologists, that has not happened since June 21, 1961.

The normal date for the onset of the monsoon in Mumbai is June 11 and for Delhi it is June 27 (according to the data sourced from 1961-2000).

The historical data that meteorologists have shared shows 1961 was an El Niño-neutral year.

"Till 0830 hours today (Sunday), the highest rainfall recorded was 18 cm in Mumbai and 5 cm in Delhi," IMD Director General Mrutyunjay Mohapatra said at a press conference on Sunday.



Note: Blue region represents the area covered by southwest monsoon so far Source: IMD

The northern limit of the southwest monsoon is little short of covering the entire country.

The pick-up in the southwest monsoon, mainly over the rain-fed western, central and some parts of southern India, augurs well for the sowing of kharif crops, particularly paddy, oilseeds, and pulses. Sowing has seriously fallen behind.

The rains would bring relief to northern, eastern, and central parts of the country. The heat wave over the past few days has caused deaths.

Till last week (June 23), the sowing of crops was below par, with the acreage under key pulses such as *urad*, *arhar*, and soybean, and rice leading the drop.

Traders and market sources said as long as the ideal time frame for sowing was not breached, any delay in planting might not cause any big impact on yields.

"The southwest monsoon has further advanced into remaining parts of Central Arabian Sea, some of north Arabian Sea, remaining parts of Maharashtra including Mumbai, Madhya Pradesh and Uttar Pradesh, Delhi, some parts of Gujarat, Rajasthan and Haryana, remaining parts of Uttarakhand and most parts of Himachal Pradesh and some more parts of Jammu, Kashmir and Ladakh, today, the 25th June," the IMD said in its latest weather update.

It added the conditions were favourable for a further advance of the monsoon into more parts of Gujarat, Rajasthan, Haryana, and Punjab, and the remaining parts of Jammu and Kashmir, during the next two days.

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