

Monsoons and Indian agriculture

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- ▶ Indian agriculture depends upon the monsoon.
- ▶ Wrong timing of agricultural operations can lead to severe crop failure.

The great Times drought

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- ▶ It is because the next day there were severe **floods** across the country!
- ▶ We still cannot predict the monsoons correctly.

Repeated droughts?

2009

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- ▶ and again in 2009.



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SAT AT V QU

Govt scrambles to save kharif, prays for rabi

Deficient Rain In 31 Out Of 36 Met Zones This Month

Rajeev Deshpande & Nitin Sethi | TNN

New Delhi: An unexpectedly dry first fortnight of August has starkly set out the big task before a drought-battered government — to salvage whatever remains of the kharif crop. At the same time, it's praying for rain even now so that moisture in the soil would help successful sowing of the rabi (winter) crop.

As things stood on Friday, the country has had deficient rainfall in all parts, barring Orissa, Karnataka and southern Gujarat (see map). The latest farm and rain statistics in the week August 6-12 show as many as 31 out of 36 Met sub-divisions were in either "deficient" (8 sub-divisions) or "scanty" (23) rainfall category.

Cabinet secretary K M Chandrashekar, whose office is overseeing drought mitigation, told TOI, "The effort is to try and save the crop in the field at all costs with additional power and diesel subsidy while tackling urban problems like drinking water. The government is working on a war footing."

An emergency subsidy of Rs 1,000 crore is being given for diesel for farm pumpsets. Additional power will be provided to crucial farm states, and hundreds of new tubewells will be sunk. The government is seeking to focus on oilseed and pulses cultivation at this late stage to salvage whatever is possible. For this, there is an effort to boost fertilizer use.

● Monsoon weakens in August, raising doubts about IMD's recently revised forecast

● In week gone by, rain deficit is 85% in east Rajasthan, 81% in AP's Rayalaseema, 88% in Marathwada and 85% in west UP

● Except for Saurashtra and south Karnataka, all other Met sub-divisions got below normal rain in Aug 6-12. As many as 17 districts declared drought-hit

● Paddy sowing down by 25%, worst in UP (-28%) and Bihar (-14%). Total foodgrain sowing down by 11%, coarse cereals by 14%. Sugar-cane sowing near-normal, but hit by poor rain in UP, Maharashtra

Wages of DROUGHT

Rainfall from June 1 to Aug 12 (in deviation from long term average)



OPERATION SALVAGE

- Govt provides Rs 1,000cr to subsidize diesel for pumpsets. Plans extra power for rain-deficit states and hundreds of new tubewells
- Food stocks to be released in market. Sugar, pulses to be imported. Move to shift to coarse grains, oilseeds to keep farm earnings afloat
- Enhanced rollout of NREGS in areas where crops fail. More fertilizer use in irrigated areas to boost productivity
- Govt pins hope on early rabi sowing and normal winter rainfall to cover kharif deficit



India faces monsoon washout

North May Be Worst Hit, Kharif Crop In Danger

TIMES NEWS NETWORK

New Delhi: The monsoon is part of India's problems this year instead of being a solution to its economic woes. The weatherman on Wednesday lowered the

81
99
92
92



* Rainfall recorded for monsoon season till June 24
 * For June to Sept, 2009, as compared to long-term average

FOR THE ECONOMY

hit gov't revenue and
 rural pact industrial
 growth. That
 collections of

all major taxes — excise, customs, corporate, personal income
 • On expenditure side, drought would increase demand for job guarantee scheme and hence the money needed to fund it. Other sops may also become necessary

WHAT IT MEANS FOR AGRICULTURE

• Dry June is bad news for kharif sowing which needs good rains for 15 days in June, early July
 • The predicted 19% shortfall in rains in India's granary — Punjab, Haryana, west UP — could have major impact on this year's foodgrain production

NOW, A DOWNTURN IN RAINS

Actual* (in mm)	Deficit (in %)	Forecast* (in %)
National		
50	-53	93
Northwest India		
21	-46	81



Reservoirs Dry Up

Tehri
 Present level
741m
 Shutdown level
740m

Water, power output at 1/3rd of normal

Bhakra
 Present 459m
 Shutdown 446m

Rain Prediction
 July | 93% of Normal
 August | 101%

weatherman on Wednesday lowered the prediction for the 2009 monsoon, saying that India would get only 93% of normal rainfall of 89cm for the months. More worryingly, it predicted that the grain bank of the country — northwest India including Punjab and Haryana — would suffer the most getting only 81% of the long-term average for the region.

Considering that the regional prediction levels have an error level of 8%, rains in northwest India could be as low as 73% of normal, leading to a major drought in the region. This is a significant "correction" from IMD's mid-April statement predicting a "near normal" 96% rainfall in the country.

Why Met dept rarely declares a drought

Ask an expert whether India is facing a drought and he's likely to answer: what kind of drought? The types of drought include hydrological, agricultural and meteorological. Typically, it's the relevant ministry, rather than the IMD, that decides whether a region is drought-hit or not. **P 13**

At a press conference on Wednesday, earth sciences minister Prithviraj Chavan accepted that the situation was worrisome but claimed that the worst was over and July and August would see monsoon picking up in many parts of the country. Up to June 24, the country got only 53% of normal rains. Central India was the worst sufferer getting only 25% of normal rainfall till now.

► Govt keeping tabs on monsoon, P 13

Prices rise on water, power shortfall

Richi Verma | TNN

With a severe crisis, Delhi is on a wave five protests are being held in the city which took an 173 protesters van at Ambedkar Namorning. Minister has asked dis with a schedule of here to it. But grim

predictions of a deficient monsoon mean things are likely to get worse not just on the water front but also power. Low hydro-generation is already being cited as one of the key reasons for the shortage of power supply.

In the case of water, the usual problems of old and damaged pipelines have been compounded by lower supply from the Tehri barrage — the city normally gets about 170 MGD water from there — and the power problems which mean that DJB cannot run its pumps.

The power woes also have to do with the lack of rains as low hydro-generation has affected total power availability in the Northern Grid. Though Delhi's own share of hydro-power has not gone down much, the lower availability in the grid and higher consumption by neighbouring states — there was a 14,000 MW power shortfall in the country on Wednesday — has left the city powerless.

► Dry taps stare Delhi in the face, P 9

21	-46
Central India	
24	-75
Northeast India	
121	-5
Southern Peninsula	
83	-2

WHAT IT MEANS

• A drought would finance on both expenditure side
 • In revenue, reduced demand could impact demand, and hence would mean lower

Tempe

Neha Lalchandani &

New Delhi: Grapp power and water, a short fuse. There's over water or power last two days, one ugly turn when announced a DTC bus gar on Wednesday.

The chief minister comes to come out power cuts and add

Drought almost certain now, admits IMD

GoM To Ready Contingency Plan

Prasad Kulkarni | TNN

Pune/New Delhi: There is every possibility of 2008 being a "drought year" with weather officials saying that only rainfall 30% in excess of normal for the remainder of the monsoon from mid-August to September — a near impossibility — can now stave off the spectre of drought.

FM Manmohan Singh on Thursday set up a group of ministers to chalk out a contingency plan to deal with the situation while a committee of secretaries may be asked to look into import of sugar. Agriculture minister Sharad Pawar said the government would decide next week on whether to release food stocks into the open market to stabilise prices.

With the cumulative shortfall in rainfall touching 28%, the monsoon has defied predictions that it could revive to the extent that it significantly lowers the deficit in regions like north-west, central and north-east India.

A senior IMD official at Pune said the country was more than likely to end up with a drought unless the remaining 45 days of monsoon saw much more than average rainfall — something that would be contrary to the Met's own predictions.

Explaining the scenario, IMD's deputy director general for weather forecasting A B Mazumdar said, "The rainfall should be at least 30% in excess of normal rains for the remaining 45 days of the monsoon season."

The average rainfall of the June-to-September monsoon season in the country is 860mm and normal rain for the mid-August to end-of-September period is 324mm.

Mazumdar said, "The rainfall should be at least 30% more than the 324mm mark for the country to overcome potential drought. This can happen only in case of unusual rainfall activity."



Running Dry

- ▶ Monsoon cannot revive enough to lower the deficit in large parts of India
- ▶ Only 30% above average rain in remaining 45 days of season can prevent drought
- ▶ Drought year is declared when 20% to 40% of the country's total area is rainfall deficient and June-Sept shortfall is 10% or more

'N India's groundwater vanishing'

Mumbai: Using Nasa satellite data, scientists have found that groundwater levels in northern India have been declining by as much as 30cm (one foot) per year over the past decade.

Attributing the loss almost entirely to human activity, Nasa's Jet Propulsion Laboratory said more than 100 cubic km of groundwater disappeared from aquifers in Haryana, Punjab, Rajasthan and Delhi between 2002 and 2008 — far more water than can be replenished by natural processes.

The finding is based on data from Nasa's Gravity Recovery and Climate Experiment, a pair of satellites that gauge, among other parameters, water stored above or below the Earth's surface. P 15

APP



MONSOON MADNESS

Frog marriages in Nagpur (top) and Andhra, 'auspicious' rain during the Puri Rath Yatra (right), yagnas and black magic... it's all happening and it's all for rain



India's wettest zone in driest phase

Rahul Karmakar
Guruhati, June 23

AT AN average 11,430 mm, Cherrapunjee and adjoining Mawsynram in Meghalaya receives the world's highest rainfall. This monsoon, however, these 'rain magnets' are nowhere near half that mark.

Meghalaya is the reason why the North-East is India's wettest zone. But ever since the monsoon officially set in on May 25, the region (minus Sikkim) has received 66 per cent less rainfall. Meghalaya leads the table with a whopping 76 per cent deficit.

"This monsoon has started on a very disturbing note," regional director of Regional Meteorological Centre Debra Kanta Handique told *HT*. "Like Meghalaya, Nagaland has received 56 per cent less rainfall up to June 23. Manipur, Mizoram, Arunachal Pradesh, Assam and Tripura follow with 46, 44, 36, 33 and 27 per cent deficit respectively."

Farmers in the hill states, dependent on rain for their terrace or slope farms, have been hit hard. In the plains of Assam, drought-like condi-



Cherrapunjee receives an average rainfall of 11,400 mm. But this year, it has received 76 per cent less rainfall.

tions have affected paddy cultivation. "This is the kharif (sowing season) requiring ample rainfall, but fields in the prime rice belts are lying barren," said Bhabeni Kalita of a self-help farming group in western Assam's Rangiya subdivision.

The Assam government has taken a few measures to combat the crisis. "We have decided to provide diesel worth Rs 6 crore to farmers in drought-

hit areas so that they can run generators to draw water for their fields. This is being worked out with the Irrigation Department," said Assam Agriculture Minister Pramila Rani Brahma.

Bearing the brunt of this low-rain situation are the state electricity boards. The normally power-surplus Meghalaya has resorted to abnormal power cuts to be able to sell enough electricity to

adjoining states for revenue generation. The Union reservoir, the State's main source of electricity, has almost bottomed out to deepen the crisis.

Assam, the most industrialised among the seven north-eastern states, has been the hardest hit. "We can do nothing about the unprecedented power crisis if the rainless climate continues," said Assam State Electricity Board chairman Anil K Sachan. "Because of humidity, peak hour demand has crossed 900MW but we have been able to provide only 260MW."

Deficit rainfall has affected generation of ASEB's 250MW Kopili hydropower project. Drastic reduction in water level has resulted in North East Electric Power Corporation Ltd's Rangnadi (in Lower Subansiri district of Arunachal Pradesh) producing only 130 million units from March to May as compared to 282 million units during the same period in 2008.

The installed capacity of Rangnadi is 400MW and Assam gets 200MW of this under normal circumstances.

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SIDELIGHTS

'El Nino effect not responsible'

Scientists of the Indian Meteorological Department (IMD) and the Indian Institute of Tropical Meteorology both in Pune, declared on Tuesday that contrary to popular belief, the El Nino effect was not responsible for the delayed monsoon. El Nino is a peculiar ocean-atmosphere phenomenon that suppresses winds of their strength. "El Nino is still in the formative stage," said A.K. Srivastava, director, National Climate Centre, IMD.

YOGESH JOSHI, PUNE

No Doppler help for Mumbaiites

Doppler radar, the latest gizmo in the arsenal of the Mumbai's Met Department to ensure accurate forecast, will remain parked in boxes and will not be of any use this monsoon or July-October to get better weather updates.

SOUBHIC MITRA, MUMBAI



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BROAD'S FIVE-WICKET HAUL PUTS ENGLAND IN STRONG POSITION 23

As heavens open up, it's hell on city roads

TIMES NEWS NETWORK

New Delhi: For the second time this season, the heavens opened up over the capital and brought on hell for commuters and residents within a space of a few hours on Friday evening. As it turned dark and rain came down in sheets accompanied by strong winds, thrilled Delhiites soon witnessed the horror of familiar traffic chaos across the city. Several areas were completely flooded in the 74mm rain and

STALLED BY STORM PAGES 3 & 4

many people spent hours on the road, stuck in traffic jams. The IGI Airport proved to be the biggest embarrassment as part of the roof of the new departure terminal got blown off and a large part of the terminal got waterlogged. Many flights were delayed and diverted as visibility fell to between 100 and 300m. Several passengers also missed even delayed flights because they were stuck on the road.

The city lost several trees (NDMC said 100 trees were fully or partially damaged, while MCD said 14 trees were uprooted in its area) which blocked roads, aggravating jams. Parts of central Delhi were also hit by hail.

Yogesh Kumar



NOWHERE TO GO: A driver takes a break during a massive jam

Yet again, underpasses and flyovers were a sore point as acute waterlogging in and around them led to traffic diversions. Traffic lights also stopped working. Clogged

roads and overflowing sewers and drains also saw water entering many houses. The maximum temperature early Friday afternoon — 36.6°C — fell to 20.7°C within

RAIN & PAIN

What Came Down

- 74mm of rain in an afternoon storm with windspeeds up to 91 kmph (Palam)
- Temperature by 16°C (from 36°C to 20°C)
- Power demand by 1,500MW (from 4,000MW to 2,500MW)

What Went Up

- Stress levels and chaos. Just one car helpline got 600 breakdown calls by 9pm

5 Slowest Trips*

- Gurgaon-SP Marg. Time: 5 hrs
- New Friends-South Ex: 3 hrs
- IP Extra-India Gate. 2.15hrs
- Delhi Gate-Mandi House. 2 hrs
- IGI-Domestic Terminal. 1.30 hrs

*Based on commuter feedback

Airport Down Under

- Part of new 1D terminal roof blown away. Operations stalled

Forecast

- Isolated showers over northwest India in next 48 hrs

► Avg speed 5kmph, P 4

short stories

DELHI FINALLY RAIN-SURPLUS

8 mm

Delhi's rain surplus till Friday evening

NEW DELHI: The Capital's rain shortage is over. The late part in monsoon activity had left the city with an 8mm rain surplus by Friday evening.

Against 578.1mm rain, which is considered 'normal' for Delhi by September 11, the city had recorded 586mm rain by Friday evening.

The city received 9.9 mm rain on Friday. The Met office has predicted the same amount of rain on Saturday.

Thanks to the wet weather, the temperature, too, has been hovering between 24 and 20 degrees Celsius.

HTC

Roof collapse kills mother, child

GHAZIABAD: Two persons, including a three-year-old child, were killed and four other members of the family were critically injured on Friday when the ceiling of their house collapsed due to heavy rains. The victims were residents of Indraprastha Colony in the Loni area of Ghaziabad. The incident happened around 4 am. Police said that following incessant rains, the roof of house number B-5 came down, leaving the family members buried under the debris.

Rajni Garg (35) and her

It's raining trouble

TOO MUCH OF A GOOD THING

Unabated rainfall is breaking up roads, causing traffic jams and b

204.83 m Yamuna's danger mark in Delhi

203 m Water level recorded on Friday

207.49 m Record water level on June 6, 1978, when even Model Town was flooded



SOMU MEHTA/HT PHOTO

■ The Yamuna is expected to breach its danger mark by Saturday afternoon.

Yamuna's bank rupture looks imminent

HT Correspondent

Flood Control department to be on its guard.

The moment we

cusses of water (12 million litres per second) — that's equal to

Yamuna's danger level was decided by the British in the

Dengue malaria to take

BREEDING TO multiply in wet

Jaya Shroff Bhalla

jaya.shroff@hindustantimes.com

NEW DELHI: The belated onset rains in the Capital is now signalling a delayed outbreak of dreaded mosquito-borne diseases — dengue and malaria.

"We have already received eight cases and are expecting the figures to rise. Delay in monsoons only delays water-borne diseases, but this certainly does not mean that we should expect cases this year," says Dr NK Yadav, chief medical officer, Municipal Corporation Delhi (MCD).

"We have intensified checking. Soon after rains, there is bound to be increase in breeding and hence a greater chance of water-borne infections." Delhi doctors are worried as queues of patients with viral fever outside the clinics and out-patient departments in hospitals are getting long.

"As soon as the rains start, cases of mosquito-borne diseases will start coming. Sporadic rains provide a perfect breeding ground for the dengue-causing *Aegypti* and malaria-causing *Anopheles* mosquitoes."

Monsoons and calendar

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- ▶ and it requires knowledge of math and astronomy