F N0. T-74074/10/2019-WSE DTE/1357

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन नदी विकास एवं गंगा संरक्षण विभाग
केंद्रीय जल आयोग
जल प्रणाली अभियांत्रिकी निदेशालय

सत्यमेव जयते

Government of India
Ministry of Jal Shakti
Dept. of Water Resources, RD&GR
Central Water Commission
Water System Engineering Directorate

दिनांक: 30.09.2019

विषय - समाचार पत्रों की कटिंग का प्रस्तुतीकरण।

जल संसाधन विकास और संबद्ध विषयों से संबंधित समाचार पत्रों की कटिंग को केंद्रीय जल आयोग के अध्यक्ष और सदस्य (कार्य योजना एवं परियोजना /अभिकल्प एवं अनुसंधान / नदी प्रबंध) के अवलोकन के लिए संलग्न किया गया है। इन समाचारों की कटिंग की सॉफ्ट कॉपी केन्द्रीय जल आयोग की वेबसाइट पर भी अपलोड की जाएगी।

अंजन
30.9.2019
वरिष्ठ कलाकार
जल प्रणाली अभियांत्रिकी निदेशालय

संलग्नक: उपरोक्त

उप निदेशक, (ज. प्र. आ.) निदे० विवेक 30/9/2019

निदेशक, (ज. प्र. आ.) निदे० प्रवीण कु. 30-09-19

सेवा में,

अध्यक्ष, के. ज. आ., नई दिल्ली

जानकारी हेतु - सभी संबंधित केन्द्रीय जल आयोग की वेबसाइट www.cwc.gov.in पर देखें।

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♦Conserve Water- Save Life♦

WSE Directorate, CWC documented following news item/letter/article/editorial published in THE TIMES OF INDIA dated 30.09.2019

48% above normal, Sept rain set to be highest in 102 years

Already India's Wettest Monsoon Season Since 1994

Amit.Bhattacharya
@timesgroup.com

Vigorous and relentless monsoon rain has put this month on course to be the wettest September India has seen in 102 years and lifted the June-September season's rain to 9% above normal, barely a percentage point short of excess monsoon rainfall.

With a day left in the month, all-India average rainfall in September stands at 247.1mm — 48% above normal and the third highest in India Meteorological Department's records since 1901. By Monday, the month's rainfall is likely to go past 1983's figure (255.8mm), as red alerts for very heavy rain have been issued for Gujarat and Bihar. If that happens, this will be the wettest September in India in over a century, behind only 1917 (285.6mm), when the highest rainfall for the month since 1901 was recorded.

This year's monsoon, which began with a delayed onset and a 33% rain deficit in June, will officially end on Monday with the country recording the highest rainfall for the four-month period in 25 years. The all-India average seasonal rainfall stands at 956.1mm, 9% higher than the normal of 877mm till Sunday.

The monsoon's retreat is still not in sight. "There are no signs of withdrawal for at least four-five days," said Mrutyunjay Mohapatra, director general of meteorology at IMD.

Monsoon has been active over the country almost without a break for over two months. Cumulative rainfall in August and September so far is the highest witnessed for these two months in 31 years. By Monday, August-September rainfall could end up as the highest in 58 years (since 1961) and fourth highest since 1901, as per IMD's records.

September has recorded just two days of below normal rains across the country. In August, that figure was 10, still low by normal standards.

▶Continued on P 17

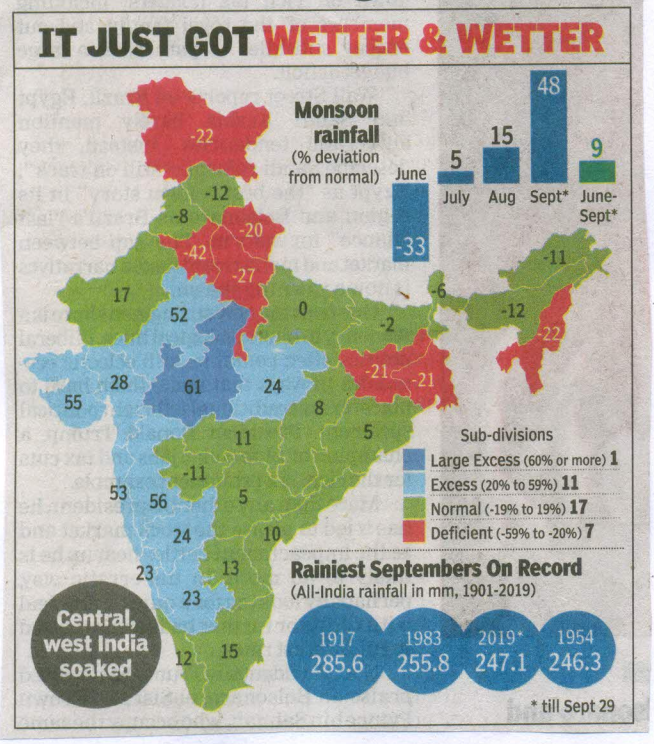
RAIN FURY KILLS 38 IN BIHAR, UP

Photo: PTI

Many Patna colonies are under neck-deep water

- 42 deaths reported from Bihar, UP, Gujarat & Pune in last 24 hrs. 22 dead in Bihar, 16 in east UP
- NDRF rescues 235 people in Patna, including HC judge's family. More rain likely today

Three reasons for monsoon deluge since Aug: IMD



▶Continued from P1

India Meteorological Department said there were three reasons for the monsoon deluge since August. "El Nino conditions over the Pacific Ocean, which suppress the monsoon, receded in July. At the same time, conditions in the Indian Ocean became favourable for monsoon with the Indian Ocean Dipole turning positive. The third factor was the development of a series of low pressure systems in the Bay of Bengal. Although the number of such systems wasn't unusually high, some of these caused heavy rains for a long time by persisting over the central Indian region," said Mohapatra.

The top IMD official particularly pointed to one low pressure system that continued to remain active for over 10 days, mainly hovering over Madhya Pradesh and east Rajasthan.

This pattern of rainfall, seen since the third week of July, soaked central India in particular. The region went from being 20% monsoon deficient to over 28% rain surplus by the end of the season. The turnaround was even more dramatic in south India, which was reeling under a monsoon deficit of nearly 30% by July 19, with drought conditions in many districts. By September-end, the region was 16% rain surplus for the season.

While the monsoon was adequate in northwest India, which currently has a slight deficit of 3%, the region clearly missed out on the rain bounty. Haryana, Delhi and east Uttar Pradesh in particular will end the season with high deficits.

News item/letter/article/editorial published on 30.09.2019 in the following newspaper

Hindustan Times (New Delhi)	☐	Deccan Herald (Bengaluru)	☐
The Statesman (New Delhi)	☐	Deccan Cronicle	☐
The Times of India (New Delhi)	☐	The Economic Times (New Delhi)	☐
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The Hindu (Delhi)	☐	The Tribune (Gurugram)	☐
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राष्ट्रीय सहारा (दिल्ली)	☐	दैनिक भास्कर (नई दिल्ली)	☐

हिंदुस्तान (नई दिल्ली)	☐		
नव भारत टाइम्स (नई दिल्ली)	☐		
पंजाब केसरी (दिल्ली)	☐		
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दैनिक जागरण (नई दिल्ली)	☐		
जनसत्ता (दिल्ली)	☐		
अमर उजाला (नई दिल्ली)	☐		

and documented at WSE Dte, CWC.

RAIN FURY KILLS OVER 100 IN 4 DAYS; PATNA WORST HIT

BS-30

PRESS TRUST OF INDIA
New Delhi, 29 September

Nearly 110 people died in rain-related incidents across the country in the past four days, with UP reporting the maximum deaths, while incessant rainfall in Bihar has badly hit normal life, with almost all areas of Patna under knee-deep waters and people struggling to meet their daily needs.

In what the weather department said could be the longest delayed withdrawal of Monsoon, rains continued to lash several states including Bihar, where at least 13 people have died over the past 48 hours, while large swathes were inundated, affecting railway traffic, healthcare services, schools and disrupting power supply. Chief Minister Nitish Kumar, after conducting a video conference with district magistrates, told reporters, "I would appeal to the people of the state to have patience and courage."

In UP, at least 79 people have died since Thursday. According to a state government report, 25 people died on Saturday, 18 lost their lives on Friday and 36 the day before. In Kolkata also, several streets have been waterlogged due to heavy rains.

PATNA

(Clockwise from top) **State Disaster Response Force workers rescue flood-affected residents in Patna, on Sunday; residents of Bahadurpur area relocate to a safer place** PHOTOS: PTI

KOLKATA

VARANASI

News item/letter/article/editorial published on 30.09.2019 in the following newspaper

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The Statesman (New Delhi)	☑ Deccan Cronicle	☐ नव भारत टाइम्स (नई दिल्ली)	☐
The Times of India (New Delhi)	☐ The Economic Times (New Delhi)	☐ पंजाब केसरी (दिल्ली)	☐
The Indian Express (New Delhi)	☐ Business Standard(New Delhi)	☐ राजस्थान पत्रिका (नई दिल्ली)	☐
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Pioneer (Delhi)	☐ Financial Express	☐ जनसत्ता (दिल्ली)	☐
राष्ट्रीय सहारा (दिल्ली)	☐ दैनिक भास्कर (नई दिल्ली)	☐ अमर उजाला (नई दिल्ली)	☐

and documented at WSE Dte, CWC.

Heavy rains claim 110 lives in 4 days, UP reports max deaths

ST-30

In hard-hit Bihar, a bird's view of Patna make city appear like a huge lake dotted with concrete structure

PRESS TRUST OF INDIA
NEW DELHI, 29 SEPTEMBER

Nearly 110 people died in rain-related incidents across the country in the past four days, with Uttar Pradesh reporting the maximum deaths, while incessant rainfall in Bihar has badly hit normal life, with almost all areas of capital city Patna under knee-deep waters and people struggling to meet their daily needs.

In what the weather department said could be the longest delayed withdrawal of Monsoon, rains continued to lash several states including Bihar, where at least 13 people have died over the past 48 hours, while large swathes were inundated, affecting railway traffic, healthcare services, schools and disrupting power supply. In Uttar Pradesh, at least 79 people have died since Thursday. According to a state government report, 25 people died on Saturday, 18 lost their lives on Friday and 36 the day before.

In Gujarat, three women drowned after their car was swept away at a flooded causeway in Rajkot district on Sunday following heavy rains in several parts of Saurashtra region, officials said.

As many as 13 deaths were also reported on Saturday from Uttarakhand, Madhya Pradesh and Rajasthan in incidents triggered by heavy rains.

Patients and their relatives at water-logged Nalanda Medical College and Hospital in Patna on Sunday. AFP

In hard-hit Bihar, a bird's eye view of state capital Patna made the city appear like a huge lake dotted with concrete structures. Posh low-lying areas like Rajendra Nagar and Pataliputra Colony are flooded. Private hospitals, medical stores and other shops were submerged in waist-deep water.

While people waded through the waterlogged streets, boats of Nation Disaster Response Force (NDRF) were also out in some areas of the city rescuing residents.

According to the weather department, the state capital has received more than 200 mm of rainfall since Friday evening, which Disaster Management Department Principal Secretary Pratyay Amrit described as "totally unexpected".

He also expressed concern over water having entered many power sub-stations which may affect the functioning of sump houses.

The East Central Railway, headquartered in Hajipur, said close to 30 trains have been cancelled and many others short-terminated or diverted on account of the flooding of Patna and Danapur junctions and many other smaller stations.

Chief minister Nitish Kumar, after from a video conference with district magistrates, told reporters, "We are making all possible efforts. I would appeal to the people of the state to have patience and courage."

"In the event of water entering a sub-station, power has to be disconnected to avoid major casualties. Sump houses then become dependent on diesel. But the availability of fuel is finite and if heavy rainfall persists, pumping out water from inundated streets could be hampered drastically," Disaster Management Department Principal Secretary Pratyay Amrit said.

Three people died in Bhagalpur when the boundary wall of a temple collapsed in Barari police station area while as many people were buried alive when a house caved in at Khanjarpur area, District Magistrate, Pranav Kumar said. In Danapur, on the outskirts of Patna, a one-year-old girl and three women died when a tree fell on an autorickshaw carrying them.

Three deaths also were reported from Bhabhua, the district headquarters of Kaimur, where continuous rain led to the collapse of two mud houses.

In Nawada, efforts were on to trace three locals who were reportedly swept away in the current. Meanwhile, President Ram Nath Kovind's scheduled programme on Sunday at Jharkhand's Gumla district has been cancelled, an official statement said.

Though the reason for the cancellation was not mentioned in the statement, sources said the decision was taken owing to heavy rain across the region.

Train services on the Ballia-Chhapra section of the North Eastern Railway (NER) was disrupted due to heavy rain on Sunday. In Kolkata also, several streets have been waterlogged due to heavy rains.

Monsoon officially ends today: IMD

NEW DELHI, 29 SEPTEMEBR

The four-month monsoon season is officially ending on Monday, but it is unlikely that it will withdraw in the coming week, IMD Director General Mritunjay Mohapatra said on Sunday.

The monsoon season officially begins on June 1 and ends on September 30. It reaches Ganganagar in west Rajasthan, the last post for the monsoon in the country, on July 15 and starts retreating from 1 September.

However, the monsoon has not shown signs of withdrawal. Instead, active monsoon still prevails over parts of Rajasthan, Bihar and Uttar Pradesh.

Parts of Gujarat and Rajasthan are getting rainfall due to a low pressure area and this could continue until October 5, Mohapatra said.

The IMD in its forecast until October 3 sees "large excess rainfall" likely over Bihar and adjoining areas of east Uttar Pradesh, Jharkhand and Gangetic West Bengal and "above normal" rains over Punjab, Madhya Pradesh, interior Maharashtra, north Odisha, Gujarat, Mizoram, Tripura, Kerala and Lakshadweep. PTI

News item/letter/article/editorial published on 30.09.2019 in the following newspaper

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राष्ट्रीय सहारा (दिल्ली)	☐ दैनिक भास्कर (नई दिल्ली)	☐ अमर उजाला (नई दिल्ली)	☐

and documented at WSE Dte, CWC.

MONSOON BOUNTY

Excess rain and the extended season may upset harvest predictions. Government must not artificially suppress prices

EVERY MONSOON IS different. This one's been even more so. In June, the country registered an average area-weighted rainfall deficiency of 32.8 per cent and it seemed this season would conform to the textbook case of an El Nino year, similar to 2002, 2004, 2009, 2015 and 2016. All those years had witnessed the abnormal warming of the equatorial eastern Pacific Ocean waters, known to impact rains in India during the monsoon season from June to September. With most global weather models predicting El Nino conditions, which had set in from roughly September 2018, to last at least till the first half of this monsoon season, a drought looked inevitable. And coming on top of an extended dry spell right from October through an excruciatingly hot summer, the return of food inflation appeared to present the re-elected Narendra Modi government with its first major challenge.

Then the tide turned. In July, the rainfall was 4.6 per cent higher than the historical long-period average. In August, the surplus was even higher at 15.3 per cent. And in the current month, not only has rainfall been a whopping 44.6 per cent above normal so far, but it may also end up being the wettest September in 102 years! The Meteorological Department, which had forecast a just-about "normal" monsoon while suggesting a 47 per cent probability of below normal/deficient rainfall even as late as on May 31, is now saying that its withdrawal phase may commence "only in the second week of October". Meanwhile, there are reports about large-scale damage to the standing kharif crop that is in late-maturity stage, if not ready for harvesting. Farmers, in other words, are suffering this time from too much rain. Worse, they aren't stopping when clear skies are what farmers would want at present. In all likelihood, the kharif harvest will be a less than a bumper one.

The big consolation, however, is the excess rains have helped substantially recharge the groundwater table and aquifers. Moreover, water levels in the country's 107 important reservoirs are 86.6 per cent of their full capacities, as against their 10-year average of 71.80 per cent at this time. So, even assuming some setback during kharif, a bumper winter-spring rabi crop is definitely in the offing. That would be great news, especially when there are indications of a price recovery in many crops from their lows. One hopes the government does not do things to artificially suppress prices, like the recent onion exports ban. Rather, this is the time to dismantle all controls on marketing, movement, stocking and exports of farm produce that are an anathema to liberalisation. There's no better antidote to the economic slowdown today than higher farm incomes.

WSE Directorate, CWC documented following news item/letter/article/editorial published in... Business Line, Delhi ..... dated 30.09.2019

'Govt plans to update national water policy'

National Bureau of Water Use Efficiency to be set up, says Gajendra Singh Shekhawat

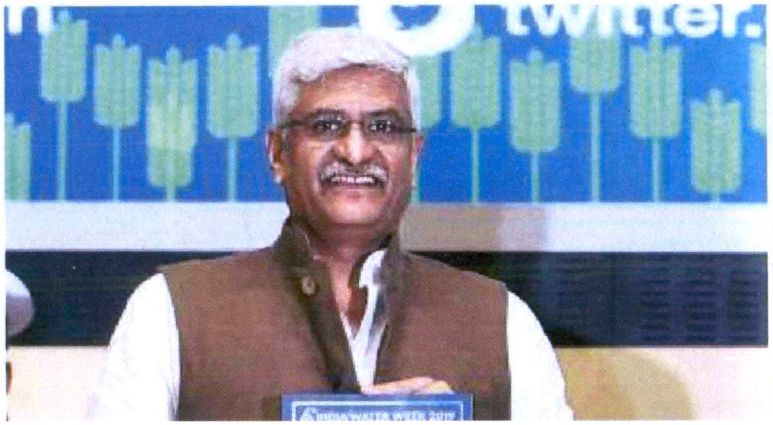
OUR BUREAU

New Delhi, September 29

The Centre plans to come out with an updated version of the National Water Policy with key changes in water governance structure and regulatory framework, besides setting up a National Bureau of Water Use Efficiency, said Gajendra Singh Shekhawat, Minister for Jal Shakti.

Hydrological boundaries, rather than administrative or political boundaries, should be part of the water governance structure in the country, and the Centre is currently talking to the States to build a consensus, said Shekhawat at the valedictory function of the sixth India Water Week 2019 (IWW-2019).

Building consensus among the States within the Constitutional framework is a pre-condition for making the changes, the Minister said, adding that water conservation, along with water harvesting and judicious and multiple use of water, are key to tackling the water challenges that India faces.



Gajendra Singh Shekhawat, Minister for Jal Shakti

Calling for the rejuvenation and revitalisation of traditional water bodies and resources through the age-old conservation methods, he stressed upon the need for disseminating modern water technologies in an extensive fashion. Dwelling on the idea of water trade, Shekhawat said that water-surplus States such as Chhattisgarh can gain by sharing the resource with the deficient ones.

Speaking on the occasion, UP Singh, Department of Water Resources Secretary, said there is a need to update the National Water Policy of 2012 in the light of new challenges, especially the adverse effects of climate change.

Batting for policy changes for giving incentive to crops using less water, he said that participatory groundwater management should be promoted in a big way to maintain quality and sustainability.

IWW-2019 was attended by 1,500 delegates from India and abroad, including 63 delegates from 28 countries.

Japan and European Union were were the partner countries of the mega event.

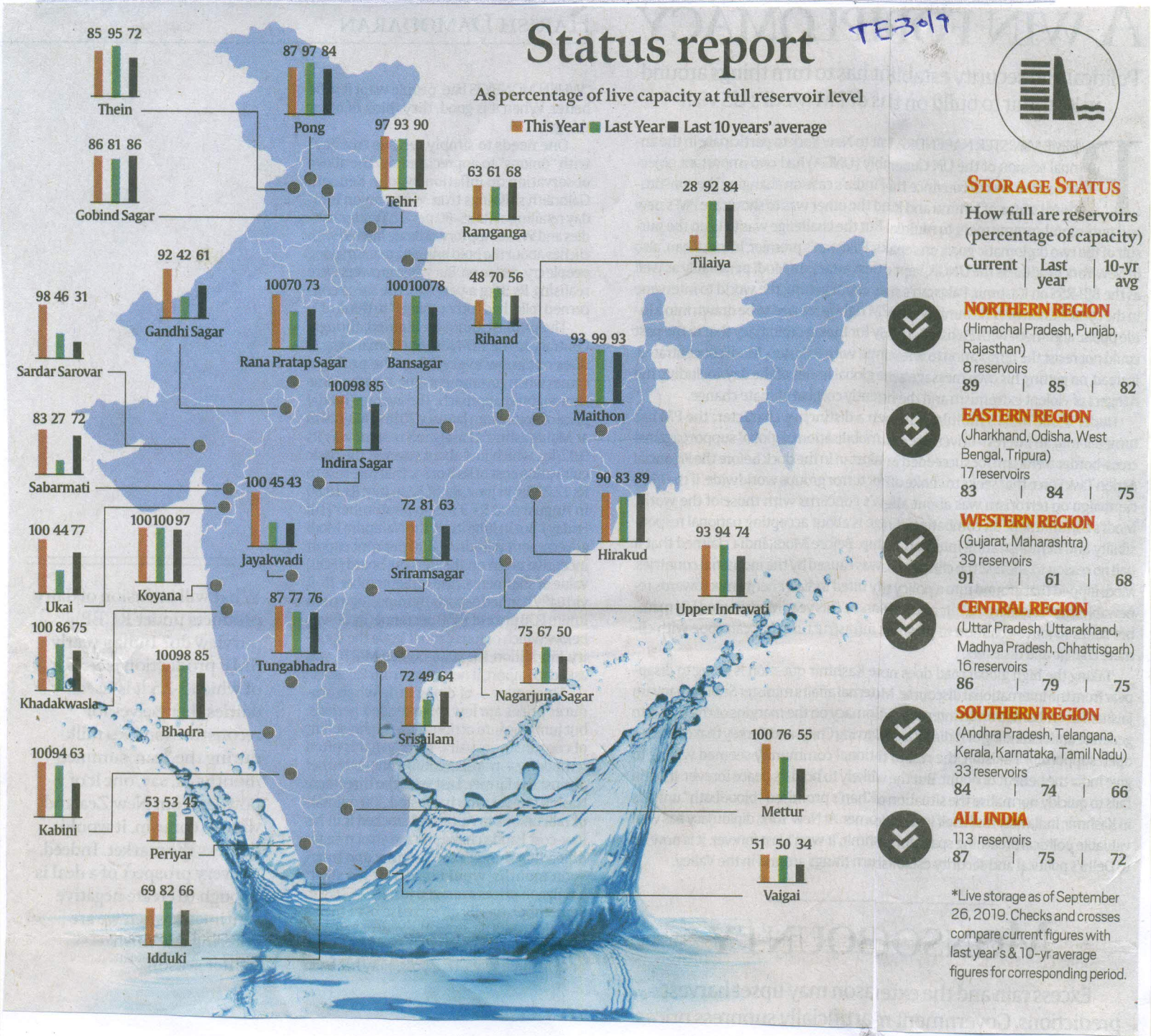
WSE Directorate, CWC documented following news item/letter/article/editorial published in THE INDIAN EXPRESS ..... dated 30.09.2019

Part 1 of 2

SIMPLY PUT

Season of plenty for reservoirs

June-September monsoon ends with reservoirs holding 21 per cent more water than 10-year average for this stage, 33 of 113 reservoirs at full capacity, and all river systems with higher storage than normal



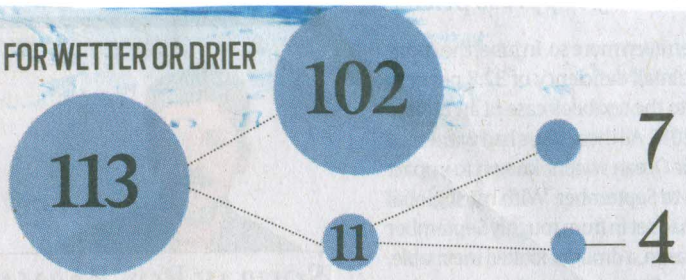
Part 2 of 2

RIVER BASINS, TOP & BOTTOM 3

Percentage departure from 10-yr average

Cauvery & neighbourhood	69.68
Narmada	36.54
Tapi	32.21
Mahi	5.50
Mahanadi & neighbourhood	4.91
Indus	4.01

FOR WETTER OR DRIER



- Out of the country's 113 reservoirs, the storage in 102 on September 26, 2019 was more than 80% of normal for this period
- Among the 11 reservoirs with storage below 80% of normal for this period, 7 had storage over 50% of normal, with only 4 stocking under 50%

Source: CWC,

ANJALI MARAR
PUNE, SEPTEMBER 29

AT THE end of monsoon season this year, the water stored in the 113 reservoirs monitored by the Central Water Commission (CWC) is better than it was at this time last year and also better than the last 10 years' average, the CWC's latest reservoir storage bulletin shows.

The total live storage capacity of these 113 reservoirs is 168.77 billion cubic metres (BCM) and their live storage as of September 26 was 146.2 BCM, or 87 per cent of this capacity. At this stage last year, the live storage was 127.23 BCM (75 per cent), while the 10-year average for this period is 121.18 (72 per cent). Put another way, the live storage available in the 113 reservoirs was 115 per cent of that at this time last year, and 121 per cent of the average storage over the last 10 years.

In 33 reservoirs, water was at full reservoir level (FRL) on September 26. Levels ranged between 71 per cent and 99 per cent of FRL in 56 other reservoirs. Only in 10 reservoirs were levels at 40 per cent or below.

In nearly every region, the available storage was higher than last year's corresponding storage and the 10-year average. The only exception was in the Eastern region comprising Jharkhand, Odisha, West Bengal, Tripura and Nagaland, where the available storage of 83 per cent (16.10 BCM) in 17 reservoirs was just below last year's 84 per cent, but way ahead of the 75 per cent average of the last 10 years.

The Western region has 39 reservoirs monitored by the CWC, in Maharashtra and Gujarat. These had 91 per cent storage (30.95 BCM), as compared to just 61 per cent at this stage last year, and a 10-year average of 68 per cent.

In the Northern region (Himachal Pradesh, Punjab and Rajasthan), the available storage in the eight CWC-monitored reservoirs was 17.13 BCM, or 89 per cent, as against the 10-year average of 82 per cent for the corresponding period. Last September, the available water storage here was 85 per cent.

In Central India, which has had excess rainfall during the last one month, the 16 reservoirs of Uttar Pradesh, Uttarakhand, Madhya Pradesh and Chhattisgarh held 37.6 BCM together, or 86 per cent of capacity. This time last year, the reserves were 79 per cent, while the 10-year average is 75 per cent.

In the Southern region (Andhra Pradesh, Telangana, Karnataka, Kerala and Tamil Nadu), where the CWC monitors 33 reservoirs, their stocks added up to 44.2 BCM, or 84 per cent of their total live capacity, up from 74 per cent at this stage last year, and much higher than the 10-year average of 66 per cent.

In Himachal Pradesh, Punjab, Jharkhand, West Bengal, UP, Tripura, Uttarakhand, Kerala and Chhattisgarh, the water in reservoirs was lower than the stocks at the same stage last year. In Rajasthan, Odisha, Nagaland, Gujarat, Maharashtra, MP, Andhra Pradesh, Telangana, Karnataka and Tamil Nadu, this year's storage exceeded last year's, owing to good rain throughout the season.

All river basins in the country have storage above normal this year.

THE INDIAN EXPRESS

EXPLAINED

Delay in monsoon retreat — almost by a month

PE-20

IN THE ongoing spell, the IMD has put Bihar and parts of Meghalaya and Assam on red alert with these states likely to receive heavy to very heavy rainfall on September 30. Thereafter, rainfall activity over Bihar is expected to subside. With the monsoon retreat not expected to begin before October 7 from the extreme north-western parts of the country, rainfall has been forecast over the Northeast, sub-Himayalan West Bengal, Gujarat and east Rajasthan during the first week of October. This means that the monsoon withdrawal, this year, will be almost over a month behind its scheduled date of September 1.

News item/letter/article/editorial published on 30.09.2019 in the following newspaper

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and documented at WSE Dte, CWC.

जापान के मॉडल को अपना सकता है भारत

H-30/9

नई दिल्ली | एजेंसी

भारत, जल संरक्षण, भूजल प्रबंधन एवं जल आपूर्ति कार्यक्रमों के लिए जापान के मॉडल को अपना सकता है। जल संबंधी कार्यक्रमों में जापान इंटरनेशनल कोओपरेशन एजेंसी (जीका) ने भी सहयोग की इच्छा व्यक्त की है।

जापानी उच्चायोग के आर्थिक मामलों के काउंसलर काजुहिरो कियोसे ने कहा कि भारत सरकार ने भूजल प्रबंधन, नल से हर घर जल आपूर्ति एवं जल संरक्षण के अनेक कार्यक्रमों की घोषणा की है। ऐसे कई कार्यक्रम जापान में सफलतापूर्वक लागू किए हैं। कुमामोटो भूजल संरक्षण एवं जल आपूर्ति मॉडल एक महत्वपूर्ण उदाहरण है जिसे देश अपना सकता है। देश ने गिरते भूजल स्तर में सुधार के साथ 2024 तक देश के 14.26 करोड़ घरों में नल से जल पहुंचाने का लक्ष्य बनाया है।

जल चक्र नीति मुख्यालय

जापान के भूमि, जल संसाधन, आपदा प्रबंधन विभाग के उप निदेशक योशितो सुगा ने बताया कि ह्यविश्व जल सप्ताह सम्मेलन के दौरान इस विषय पर सुझाव रखे गए हैं और हमारा मानना है कि भारतीय परिदृश्य में ये काफी उपयोगी हो सकते हैं। कहा कि भारत अपने यहां जापान की तर्ज पर जल चक्र नीति मुख्यालय भी स्थापित कर सकता है।

RAJASTHAN PATRIKA - 30.9.2019

RP-30/9

जल संरक्षण व प्रबंधन कार्यशाला

जल प्रबंधन के लिए 21वीं शताब्दी चुनौती भरी-राजेन्द्र सिंह

भीलवाड़ा. 21वीं शताब्दी में लोगों में जल संरक्षण एवं प्रबंधन जागरूकता की कमी है। ऐसे में पानी का संरक्षण और प्रबंधन नई चुनौती के रूप में सामने है। धरती का पेट पानी से भरा जाए और उसको सूरज की नजरों से बचाकर इस तरह संरक्षित करें कि जरूरत पड़ने पर किफायती तरीके से उसका उपयोग भी कर सके।

यह बात जल संरक्षण व प्रबंधन पर उल्लेखनीय काम करने वाले वाटरमैन राजेन्द्र सिंह ने रविवार को महाराणा प्रताप सभागार में भारतीय सांस्कृतिक निधि इन्टेक भीलवाड़ा चेप्टर एवं जिला प्रशासन की ओर से जल संरक्षण एवं प्रबंधन पर कार्यशाला में कही।

मैग्सेसे पुरस्कार से सम्मानित वाटरमैन राजेन्द्र सिंह ने कहा कि पांच सालों में विश्वभर में 60 से अधिक देशों में पानी के संकट के कारण हालात बदले हैं। मुख्य अतिथि जिला कलक्टर राजेन्द्र भट्ट एवं इन्टेक भीलवाड़ा चेप्टर के कन्वीनर बाबूलाल जाजू ने भी विचार व्यक्त किए। इन्टेक के जल संरक्षण एवं प्रबंधन फोल्डर व राजेन्द्र सिंह की पुस्तक 'गंगा पर श्वेतपत्र' का भी विमोचन किया गया।

News item/letter/article/editorial published on 29.09.2019 in the following newspaper

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राष्ट्रीय सहारा (दिल्ली)	☐ दैनिक भास्कर (नई दिल्ली)	☐ अमर उजाला (नई दिल्ली)	☐

and documented at WSE Dte, CWC.

Assam Tribune, Guwahati ✓

Before the floods

Governments need to be more proactive in mitigating urban flooding, writes DHRITI PATHAK.

Across the globe, more and more cities are facing the problem of urban flooding or waterlogging. The case in India is no different. In recent years, major urban centres across the country have witnessed unprecedented flooding as a result of heavy rainfall. Guwahati, a city in the flood-prone state of Assam, is no exception. Every year, during the monsoon, the city faces the problem of waterlogging in varying degrees.

Not just heavy rainfall, even light showers can bring life to a standstill. Urban flooding also raises the risk of electrocution and loss of lives in these flood-affected areas. It is a story that is repeated every year, but despite knowing the causes, the measures that are usually undertaken by the concerned authorities are ineffective and mostly response-centric, including pumping out the excess water from the waterlogged areas, de-siltation of the Bharalu river, etc. However, these measures have so far not yielded results. The frequent cases of urban flooding call for an urgent need to look at alternatives to help citizens deal with the problem. It also deepens the need for development of a system that can, if not mitigate the issue, help citizens adapt to it.

While previous studies were conflicted regarding the causes of the urban floods in Guwahati, new developments in this area have linked it to the lack of planning and haphazard expansion of the city. The shifting of Assam's capital from Shillong to Dispur in Guwahati in 1973 accelerated the economic development and was the cause of widespread exodus of people. The rapid and sudden change led to the city's expansion, which was surrounded by hills on all sides. It was a major constraint, and unlike other cities that grew and sprawled across the surrounding regions, Guwahati saw massive encroachments in its hills and existing water bodies. The encroachments in the hills led to landslides in the region which then, ended up reducing the carrying capacity of the drains.

The de-silting of the Bharalu river is an important step undertaken by the authorities, but needs to be done before the monsoons so that the river can bear the additional load during the rainy season. This is also a challenge for the authorities, as much of the river bank has been encroached upon, making it difficult to broaden the channel. The management of the excess storm water is a crucial part in the mitigation of urban flooding in cities.

A flood early warning system (FLEWS) that can identify the flood hotspots and the extent of waterlogging based on the amount of rainfall in the region is an integral part of the disaster risk management strategy and is one of the many approaches that can be adopted to mitigate the risks of urban flooding. In India, this model is still in its testing phase in the cities of Mumbai, Chennai and Kolkata.

Since the floods in Guwahati are a case of flash floods contingent on the intensity of rainfall, the FLEWS can be a feasible option, given that the rainfall predictions issued by the Indian Meteorological Department (IMD) are quite accurate. The FLEWS model, instead of simply predicting floods, also assesses the risk faced by a particular region, i.e., the extent of flooding in a particular area based on the intensity and duration of rainfall predicted. Based on the intensity and duration of rainfall, it then sends out information regarding the extent of waterlogging in that area to the concerned authorities. Since this warning will be given by the concerned authorities to citizens in advance and will be localised, the residents of the affected areas will be able to take necessary measures to reduce losses and damages to their property and undertake adequate safety measures. If adopted, the FLEWS model will be a boon for many cities facing the menace of urban flooding, not just in India but also abroad.

(The writer is a Project Associate, Earth Sciences and Climate Change Division, TERI)

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हिंदुस्तान (नई दिल्ली)	☐		
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जनसत्ता (दिल्ली)	☐		
अमर उजाला (नई दिल्ली)	☐		

and documented at WSE Dte, CWC.

MONSOON MAYHEM: Patna Municipal Corporation workers rescue stranded people after heavy rain lashed the city on Saturday. Life was thrown out of gear in several parts of Bihar, affecting rail traffic, healthcare facilities and schools TOI-PB

India's monsoon gets a new and lower 'normal'

Vishwa.Mohan
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TOI-PB

New Delhi: Come Monday, the Indian monsoon will get a new 'normal'. Every year, the weather department benchmarks that season's rainfall against a 'normal' derived from long period average (LPA) of 50 years. This has now been revised downward from 89 cm to 88 cm.

"The LPA of 88 cm is now the new normal. The India Meteorological Department will release its final monsoon report using this new normal," Madhavan Rajeevan, secretary, ministry of earth sciences, told **TOI**. The IMD had arrived at the 89-cm figure based on average rainfall during 1951-2000 period. The new average figure of 88 cm is based on rainfall during 1961-2010 period, reflecting decline in average rainfall in India.

▶**Continued on P 18**

'19 monsoon set for 'above normal' tag

▶**Continued from P1**

The IMD has five categories to tell the 'status' of monsoon. Rainfall range of less than 90% of the LPA normal is considered 'deficient'; 90-96% of the LPA is called 'below normal', 96-104% of the LPA is categorized as 'normal', 104-110% of the LPA as 'above normal' and more than 110% as 'excess'.

"The five categorisations will, however, remain the same. Only LPA has changed," said the MoES secretary.

Rajeevan added that the 2019 monsoon was most likely to be 'above normal' as this year the country got more rain "because of positive Indian-Ocean Dipole (IOD)". IOD is a sea surface warming phenomenon also called 'El Nino of the Indian Ocean'. On the new LPA normal, he said the IMD had already started using it for its daily rainfall report. "It changes the 'normal' roughly every 10 years or so and starts using it whenever the data of all meteorological stations get updated using the new 50-year period," said Rajeevan.

The IMD had made its calculations for second half (August-September) of the monsoon based on revised LPA normal. "We have introduced it for the first time this year. Now, you'll get the overall monsoon figures based on 88 cm as new normal," said the secretary.

Asked whether the new normal would change the final status of the monsoon this year, the secretary said it would certainly be reflected in an overall percentage on slightly higher side.

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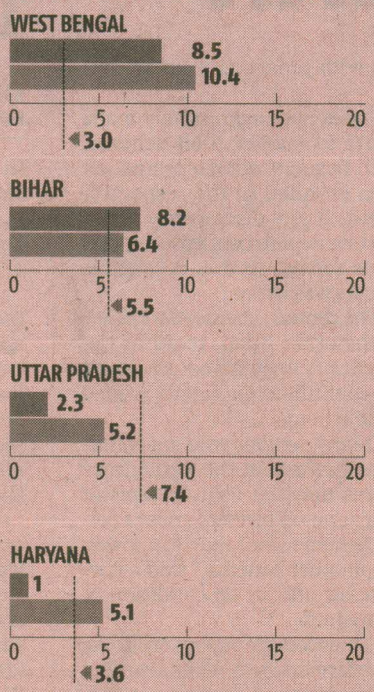
and documented at WSE Dte, CWC.

CRISIL DRIP

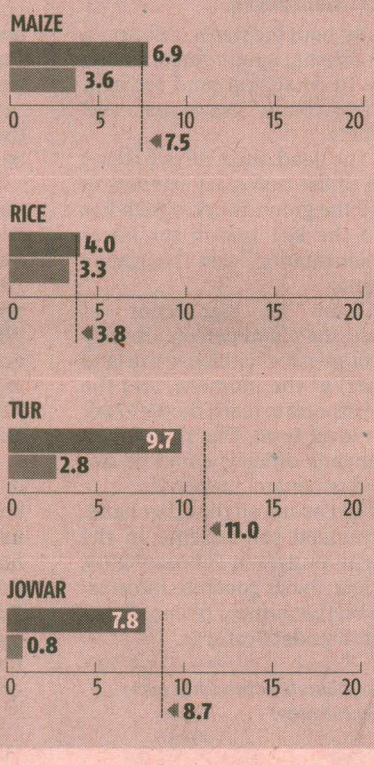
SOUTH-WEST MONSOON WINDS UP IN SURPLUS

State-wise DRIP scores

■ 2018 ■ 2019 ◀ Average of last 5 years



Crop-wise DRIP scores



THE 2019 SOUTH-WEST MONSOON season has ended with rainfall at 6 per cent surplus over the long period average (LPA) at the all-India level. A 'normal' season would mean rainfall at ±4 per cent of LPA.

However, uneven distribution of rains - both spatial and temporal — meant that sowing was initially slow but gained pace later. Excess rains in many places have also damaged crops, in addition to life and property. As of September 25, central India got a thorough drenching, with rainfall 25 per cent above normal. Relatively close was the southern peninsula, where cumulative rainfall was 16 per cent above normal. Deficiency, at 16 per cent below normal, was the highest in east and north-east, whereas the northwest was 8 per cent short.

Half of the country* received 'normal' rains this season. Compared with the past few years, fewer places saw normal rains, while close to a third saw 'excess' and the rest saw deficiency. The good part is most regions that received deficient rains enjoy good irrigation cover and therefore the impact on crop production would be somewhat cushioned.

Among major kharif growers, Karnataka, Gujarat, Maharashtra, Rajasthan, and Madhya Pradesh have received excess rains at 23-37 per cent above normal. By contrast, Haryana, West Bengal and Uttar Pradesh have seen rainfall deficiency of 20-43 per cent. And Bihar, which was deficient till the past week, has seen some catch-up.

Given the wild swings this year, deficiency in many others, rapid catch-up in a few areas and delay in others, some damage to crops and sowing is a given. The extent of this remains a monitorable. To be sure, some re-sowing or delayed sowing has also taken place, which would mitigate some of the damage. That said, rainfall volume data alone does not tell the whole story. We need to also consider vulnerabilities that arise from inadequate irrigation for a comprehensive perspective on states and crops.

CRISIL's Deficient Rainfall Impact Parameter (DRIP) does just that. The higher the CRISIL DRIP score, the more adverse the impact of deficient rains. We compare scores not just with the previous year, but also with the last five years' average, to get a more holistic picture.

The latest DRIP scores show some stress in 4 states. The scores are the highest and also higher than trend in two of these - West Bengal and Bihar whereas the relatively better irrigated states of Haryana and Uttar Pradesh have scores that are higher on-year but lower than trend.

**This refers to the 36 sub-divisions in the country where rainfall is tracked by IMD*

Source: Indian Meteorological Department, Ministry of Agriculture, CRISIL

WSE Directorate, CWC documented following news item/letter/article/editorial published in THE NEW INDIAN EXPRESS ..... dated 29.09.2019

'DEPLETING WATER RESERVE A CHALLENGE'

A subject like water needs to be treated holistically, Union Jal Shakti Minister **Gajendra Singh Shekhawat** says, as he speaks to **Richa Sharma** about the challenges in conserving the fast depleting resource and fulfilling the promise on piped water

Water has been a key focus area of Modi 2.0. What is the progress so far?
Nature has given us a lot. The total precipitation that our country gets is 4,000 billion cubic metres per year. But our water holding capacity over the surface is very low, about 250 billion cubic metres per year – only 8 per cent. Our total requirement for drinking water is only 50-60 billion cubic metres per year.

Our surface holding capacity is very less and after processes like evaporation and others, our usage capacity is only around 200 billion cubic metres. The water what we are getting as replenished water every year is more than 400 bc3/year. But the water we are drawing from under the ground is very high, around 750 billion cubic metres per year. This is the problem. It is like someone is depositing ₹400 and withdrawing ₹700.

What are the challenges in achieving targets?
The biggest challenge what we face today with regard to water is that the entity was fragmented under various roles and ministries. A subject like water needs to be treated holistically. All types of water are important. Be it water beneath the surface or on the surface of the earth, irrigating water, discharged water or effluents. In India, the challenges we saw and the visible impacts of climate change made it important that we deal with the subject holistically. We are drawing almost one-fourth of the world's underground water and we are drawing more than 1.5 times water than both the US and China combined. Creation of water holding capacity over the ground and under the ground is the challenge.

What are the focus areas?
As far as water holding capacity over the ground is concerned, we started a programme last time — AIPB (Accelerated Irrigation Programme Benefit). Under the programme, 99 projects have been identified which had been pending for a long time. We have taken up a mission to complete them. Almost 50 per cent of these pending projects have been completed. After the completion of all, our irrigation capacity will increase by 5 million hectares, apart from boosting drinking water supplies.

However, underground water reserve is a big challenge. We are monitoring around 6,800 blocks by CGWA. Of these 1,500 are over exploited or critically exploited. This number is increasing rapidly. To resolve this problem, the PM, in his first Mann Ki Baat address after assuming power for the second time, expressed concern over the issue. He wrote 2.5 lakh letters in 12 different languages to gram pradhans and sarpanchs.

PM has set a target of providing piped water to every household by 2024. What is the status?
As far as drinking water is concerned, the PM has taken it up like a challenge. In 72 years, we have created infra to provide drinking water through taps to 3 crore households, which is only 20 per cent of the total households. We have to do four times more work in the next 60 months as compared to what has been done in the past 72 years. It is a big challenge.

Agriculture is a water guzzling sector and how do you plan to address that?
India is the only country where there one can draw any amount of water and it is a serious issue. If we fragment domestic water use, it is just 6 per cent and 5 per cent is industry and rest 89 per cent is agriculture. Our waters are least productive water in the world. To grow a kilogram of rice, average requirement of water is 5,600 litres while China is growing same quantity from 350 litres of water. The technologies are available with us and they have not been disseminated to farmers and farmers' legacy does not allow them to use them. It is time that all states will have to take a call to increase efficacy of water use in agriculture. Simultaneously, we have to come in big way to create infrastructure for treatment of sewage water.

Any policy for water regulation?
Water is a state subject, so we cannot regulate it. States will have to create water use policy. We are ready to provide them all technological support and assistance for diversion of crops, increased water use efficacy, micro irrigation and drip irrigation.

The country's first river inter-linking project is still stuck?
Ideally it is much required. For 70 years, one-third of our nation was under floods and another one-third under drought. India is a big country and our river basins are different from Europe's where water comes from glaciers. Leaving Indus Basin Rivers, most of our rivers get water during monsoon. Interlinking is a big challenge but very soon we will see work on it start.

A Supreme Court committee has called Ken-Betwa interlink economically unviable?
Maybe, but at some point, we have to think beyond economics. It is the country's requirement. There were many issues and we have got all statutory clearances and compliances.

Another key project was Ganga cleaning. Where do we stand today?
First of all, I absolutely disagree with the notion that the Ganga is a dirty river. It is one of the cleanest rivers in the country from source to end and among the 10 cleanest rivers in the world. We have cleared almost 298 projects to stop the pollution, to stop disposal of untreated sewage and industrial effluents. About 100-plus have been completed and the remaining will be completed in next two years.

We have started cleaning of tributaries also and I can say with full confidence that before the Kumbh in January 2021, no untreated sewage and industrial effluents will flow into the Ganga, right from the Gangotri to Rishikesh.

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and documented at WSE Dte, CWC.

एनजीटी ने पेयजल को अधिकार बता कड़ी नाराजगी जताई

जहरीले पानी वाले इलाकों में स्वच्छ जल मुहैया कराएं

H-29/9

नई दिल्ली | प्रभात कुमार

कानपुर के कुछ हिस्सों में जहरीले पानी पीने को मजबूर हजारों लोगों को स्वच्छ पेयजल मुहैया नहीं कराए जाने पर नेशनल ग्रीन ट्रिब्यूनल ने कड़ी नाराजगी जाहिर की है। इसे गंभीरता से लेते हुए उत्तर प्रदेश के मुख्य सचिव को प्रभावित इलाकों में टैंकर के जरिए स्वच्छ पेयजल मुहैया कराने के लिए तत्काल समुचित कदम उठाने का आदेश दिया है।

एनजीटी प्रमुख जस्टिस ए.के. गोयल की अगुवाई वाली पीठ ने स्वच्छ पेयजल को लोगों का मौलिक अधिकार बताया है। साथ ही कहा है कि सरकार की यह जिम्मेदारी है कि वह लोगों को स्वच्छ पेयजल मुहैया कराए। ट्रिब्यूनल ने इस मामले में यूपी सरकार के अधिकारियों की ओर से पेश रिपोर्ट पर भी सवाल खड़ा किया। पीठ ने कहा कि अधिकारी लोगों को स्वच्छ पेयजल मुहैया कराने के बजाए बेहतर रिपोर्ट पेश करने में लगे हैं। ट्रिब्यूनल ने कहा है कि संबंधित विभागों की विफलता की वजह से हजारों लोग दूषित पानी पीने को मजबूर हैं और उनका स्वास्थ्य खतरे में है। पीठ ने राज्य के मुख्य सचिव को प्रभावित इलाकों में तत्काल टैंकर के जरिए स्वच्छ पेयजल मुहैया कराने के लिए समुचित कदम उठाने का आदेश दिया है। पीठ ने मुख्य सचिव को जस्टिस अरुण टंडन समिति के सिफारिशों के अनुरूप पेयजल मुहैया कराने का आदेश दिया है।

प्रमुख सचिव पर कार्रवाई का आदेश : ट्रिब्यूनल ने कड़ा रुख अपनाते हुए मुख्य सचिव को राज्य के शहरी विकास विभाग के प्रमुख सचिव, कानपुर जल निगम और राज्य के प्रदूषण नियंत्रण समिति के संबंधित अधिकारियों के खिलाफ समुचित कार्रवाई शुरू करने का निर्देश दिया है।

जस्टिस टंडन समिति की सिफारिश

कानपुर नगर, कानपुर देहात, रानिया, राखी मंडी व अन्य प्रभावित इलाकों सभी हैंडपंप/ बोरवेल, ट्यूबवेल को सील करने और किसी को इसमें से पानी निकालने पर पूरी तरह से प्रतिबंध हो। प्रभावित इलाकों में लोगों की सुविधाओं के अनुसार सिंटेक्स की टंकी लगाने और इसे पाइप लाइन से जोड़ने का आदेश। इसके लिए प्रयागराज में कुंभ के दौरान इस्तेमाल सामानों का प्रयोग करने का आदेश दिया।

गंगा में न बहे शोधन के बगैर सीवेज का पानी

एनजीटी के यूपी के मुख्य सचिव को यह सुनिश्चित करने का आदेश दिया है कि गंगा नदी में किसी भी हाल में सीवेज का पानी शोधन के बगैर नहीं बहे। इसके लिए उन्हें समुचित कदम उठाने का आदेश दिया है।

कानपुर के कई इलाकों में पानी में क्रोमियम

कानपुर नगर, कानपुर देहात, रानिया, राखी मंडी इन इलाकों में क्रोमियम डंप किए जाने की वजह से पानी पूरी तरह से प्रदूषित हो गया है। एनजीटी के आदेश पर जस्टिस अरुण टंडन की समिति ने इस इलाके का दौरा किया था।

News item/letter/article/editorial published on 29.09.2019 in the following newspaper

Hindustan Times (New Delhi)	☐ Deccan Herald (Bengaluru)	☐ हिंदुस्तान (नई दिल्ली)	☐
The Statesman (New Delhi)	☐ Deccan Cronicle	☐ नव भारत टाइम्स (नई दिल्ली)	☑
The Times of India (New Delhi)	☐ The Economic Times (New Delhi)	☐ पंजाब केसरी (दिल्ली)	☑
The Indian Express (New Delhi)	☐ Business Standard(New Delhi)	☐ राजस्थान पत्रिका (नई दिल्ली)	☐
The Hindu (Delhi)	☐ The Tribune (Gurugram)	☐ दैनिक जागरण (नई दिल्ली)	☐
Pioneer (Delhi)	☐ Financial Express	☐ जनसत्ता (दिल्ली)	☐
राष्ट्रीय सहारा (दिल्ली)	☐ दैनिक भास्कर (नई दिल्ली)	☐ अमर उजाला (नई दिल्ली)	☐

and documented at WSE Dte, CWC.

यूपी-बिहार में बारिश से तबाही जारी

PK-29/9

पटना, (पंजाब केसरी): शुक्रवार रात भर हुई भारी बारिश से पटना में बाढ़ जैसी स्थिति हो गई है। पाटलिपुत्र, राजेंद्रनगर, बोरिंग रोड समेत राजधानी के अधिकतर इलाकों में कहीं कमर भर तो कहीं घुटने भर पानी भर गया।

इकोपार्क और पटना जू के आसपास के इलाके में पानी भरा है। इस क्षेत्र में मंत्री, विधायक और बिहार सरकार के बड़े ऑफिसर के आवास हैं। उपमुख्यमंत्री सुशील मोदी के घर में भी पानी भर गया। शिक्षा मंत्री कृष्णनंदन वर्मा का आवास इकोपार्क के सामने है। उनके आवास में भी पानी घुस गया है। पटना सिटी स्थित नालंदा मेडिकल कॉलेज एवं अस्पताल में घुटने से अधिक पानी भर गया। यहां सड़क पर कमर तक पानी है, जिसके चलते न कोई एम्बुलेंस नहीं आ रही है और न जा पा रही है। अस्पताल के वार्ड में कहीं घुटने भर तो कहीं घुटने से अधिक पानी जमा हो गया है। अस्पताल के कर्मचारी मरीज को स्ट्रेचर पर लादकर पानी के बीच से ले जा रहे हैं। यहां कई मरीजों और परिजनों को ऑडिटोरियम में रखा गया है। भारी बारिश के चलते बोरिंग रोड में घुटने भर पानी जमा हो गया। वहीं, एसकेपुरी रोड में स्थिति और गंभीर है। यहां कमर तक पानी जमा हो गया है।

बारिश का पानी घरों और दुकानों में घुस गया है। पानी घुसने के चलते कई ऑफिस बंद किए गए हैं। नाला रोड में रहने वाले पटना हाईकोर्ट के वरीष्ठ अधिवक्ता और एनएमसीएच के वरीय कार्डियोलॉजिस्ट अजित कुमार सिंह और अरुण कुमार सिंह के घर में दो फीट पानी जमा है। दोनों ने कहा कि 1975 के बाद पहली बार ऐसा जलजमाव हुआ है। हथुआ मार्केट के ग्राउंड फ्लोर पर मौजूद 70 से अधिक दुकानों में पानी भर गया है। पानी भरने के चलते व्यापारियों को बहुत अधिक नुकसान हुआ है। यही स्थिति ठाकुरबारी रोड की है। यहां तीन सौ से अधिक दुकानों में पानी घुसा है।

यूपी में बारिश ने तोड़ा 11 साल का रिकॉर्ड

यूपी के कानपुर समेत आसपास के कई शहरों में लगातार बारिश हो रही है। कानपुर में शुक्रवार की बारिश ने 11 साल का रिकॉर्ड तोड़ दिया। मौसम विभाग से जारी आंकड़ों के अनुसार, 27 सितंबर को तड़के से लेकर देर शाम तक 90 मिमी बारिश रिकॉर्ड की गई है। इस सीजन में एक दिन में इतनी बारिश भी पहली बार हुई है। 27 सितंबर 2018 को मात्र 5.8 मिमी बारिश हुई थी। इससे पहले 2008 तक बारिश नहीं हुई। इस बीच, आजमगढ़ और मिर्जापुर जिलों में शनिवार को बारिश के बीच कच्चे मकान ढहने की घटनाओं में छह लोगों की मौत हो गयी। वहीं, पिछले 24 घंटों के दौरान प्रतापगढ़ में बारिश के कारण हुए हादसों में 10 तथा बाराबंकी में चार लोगों के मरने की खबर है।

जम्मू भी जलमग्न...

जम्मू (भाषा) : जम्मू प्रांत के कई हिस्सों में भारी बारिश के चलते जलभराव और यातायात जाम लगने के कारण शनिवार सुबह जनजीवन बाधित हो गया। बहरहाल, बारिश से किसी तरह के बड़े नुकसान की कोई खबर नहीं है। पिछले कुछ दिनों से गर्मी झेल रहे शहर के लोगों के लिए यह बारिश राहत लेकर आयी है। मौसम कार्यालय ने एक अक्टूबर तक क्षेत्र में कुछ स्थानों पर छिटपुट बारिश का अनुमान जताया है। सुबह की शुरुआत होते ही आसमान में बादल घिर आए जिसके बाद बारिश आयी और पनामा चौक तथा कनाल रोड समेत विभिन्न स्थानों पर जलभराव और यातायात जाम का सामना करना पड़ा। अधिकारियों ने बताया कि बाढ़ के कारण जल स्रोत भरने के चलते निचले इलाकों में मकानों और दुकानों में बारिश का पानी भर गया जिससे लोगों को दिक्कतें हुईं।

NAVA BHARAT TIMES - 29.09.2019

पावर प्रोजेक्ट से खतरे में कई गांव, दरक रहे घर

NBT-29/9

■ **विस, नई दिल्ली :** श्रीनगर, गढ़वाल के एक पावर प्रोजेक्ट से इलाके की ग्रामीण आबादी खासी नाराज है। उनका कहना है कि इस प्रोजेक्ट की एक नहर से हो रहे रिसाव ने उनकी जिंदगी को दिक्कतों से भर दिया है। इसके कारण उनके मकानों में दरारें आ रही हैं और फसलें बर्बाद हो रही हैं। अलकनंदा पावर प्रोजेक्ट शुरू से ही विवादों में घिरा रहा है। इसके मैनेजमेंट पर अवैज्ञानिक तरीके से काम करने के आरोपों के साथ ही प्रोजेक्ट का मलबा नदी में डालने के इल्जाम भी लगे हैं।

मातु जनसंगठन के विमलभाई कहते हैं कि इस प्रोजेक्ट में बिजली बनाने के लिए इस्तेमाल हो रहा एक पावर चैनल यानी खुली नहर चार किलोमीटर लंबी है। इसमें 2015 में रिसाव हुआ था।

इसके कारण इलाके के मंगसू, सुरासू और नोर-थापली गांवों में कई मकानों और फसल को खासा नुकसान पहुंचा था। कंपनी से बार-बार इस रिसाव को रोकने के इंतजाम करने को कहा गया, मगर ठोस काम नहीं हुआ। विमलभाई का कहना है कि नैशनल ग्रीन ट्रिब्यूनल ने नहर में हो रहे रिसाव को रोकने के आदेश दिए हैं। पावर कंपनी को इससे पहले देहरादून के वाडिया इंस्टिट्यूट ऑफ हिमालयन ने भी रिसाव को रोकने के लिए कहा था।

News item/letter/article/editorial published on 28.09.2019 in the following newspaper

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The Statesman (New Delhi)	☐	Deccan Cronicle	☐
The Times of India (New Delhi)	☐	The Economic Times (New Delhi)	☐
The Indian Express (New Delhi)	☐	Business Standard(New Delhi)	☐
The Hindu (Delhi)	☐	The Tribune (Gurugram)	☐
Pioneer (Delhi)	☐	Financial Express	☐
राष्ट्रीय सहारा (दिल्ली)	☐	दैनिक भास्कर (नई दिल्ली)	☐

हिंदुस्तान (नई दिल्ली)	☐		☐
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पंजाब केसरी (दिल्ली)	☑		☐
राजस्थान पत्रिका (नई दिल्ली)	☐		☐
दैनिक जागरण (नई दिल्ली)	☐		☐
जनसत्ता (दिल्ली)	☐		☐
अमर उजाला (नई दिल्ली)	☐		☐

and documented at WSE Dte, CWC.

ET-28

ET GRAPHICS

Improved Monsoon Sets Stage for Good Harvest

This year's monsoon started on a weak note with fears of a drought, but it has progressively improved every month after the June jitters and sets the stage for a good harvest. **ET's Himanshi Lohchab** looks at the monsoon performance

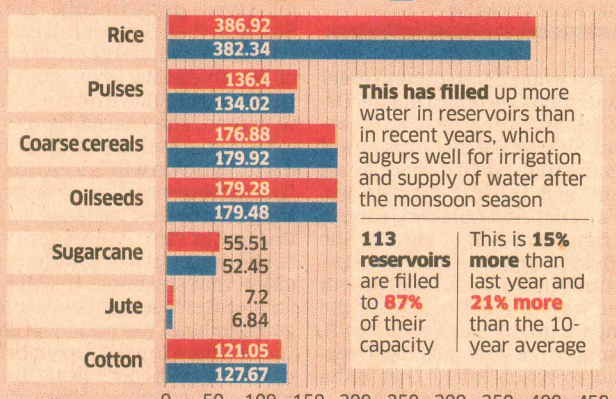
Rainfall: % Change from Normal

Month	
June	-32.8
July	4.6
August	15.4
Sep1-27	40

Year	
2015	-11
2016	-12
2017	-5
2018	-9
2019	7

Heavy showers since July has also raised planting to same level as last year for most crops except rice, which is still being planted, while cotton and oilseed area is more than last year

Crop Planting



This has filled up more water in reservoirs than in recent years, which augurs well for irrigation and supply of water after the monsoon season

113 reservoirs are filled to **87%** of their capacity

This is **15% more** than last year and **21% more** than the 10-year average

News item/letter/article/editorial published on 28.09.2019 in the following newspaper

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हिंदुस्तान (नई दिल्ली)	☐	☐
नव भारत टाइम्स (नई दिल्ली)	☐	☐
पंजाब केसरी (दिल्ली)	☑	☐
राजस्थान पत्रिका (नई दिल्ली)	☐	☐
दैनिक जागरण (नई दिल्ली)	☐	☐
जनसत्ता (दिल्ली)	☐	☐
अमर उजाला (नई दिल्ली)	☐	☐

and documented at WSE Dte, CWC.

Where Rains Bring Misery

Parts of Haryana have salty groundwater and rains add to the salt content, reports Parshant Krar 05-28

"Monsoon always brings misery," lamented Harish Kadian, a marginal farmer from Sampal village in Haryana's Rohtak district.

The gripe appears quite conflicting given the insatiable need for irrigation and momentous groundwater depletion in the cereal bowl state of Haryana. But Kadian's pain is ubiquitous among 8 lakh farmers whose land is affected by high content of salt in the agrarian states of Haryana and Punjab.

In Haryana, salinity has tinkered so deeply with economic sustainability in the southern-western districts of Rohtak, Jhajjar, Sirsa, Jind, Bhiwani, Sonepat, Fatehabad and Mewatthat farmers there call themselves the "poor cousins" of those inother districts where the quality of soil and water is better.

The problem has affected productivity on more than 3.2 lakh hectares, or around 10% of the total cultivated area in Haryana. In Punjab, high salt content in the groundwater is affecting crops in the districts of Fazilka, Abohar and Muktsar.

The groundwater is salty in the affected areas and when it rains, the groundwater level comes up, bringing more salt to the surface.

"Rainwater surfaces more salt each year," said Hari Ram, who plants paddy and wheat on his four-acre field in Sonepat. "Wheat production is 30-50% less than other districts with fertile soil, and we cannot imagine a third crop like vegetable in this soil," he said.

Ram Chander, in Wazirpur village of district Jhajjar, had to skip sowing for two years in the rabi season as fields were waterlogged, which also meant increased soil salinity. "I had to buy wheat from the market for own consumption for those years," he said.

pletion of oxygen and increase of carbon dioxide in the root zone of crops, Sharma said. This causes the loss of plant nutrients and useful microorganisms at the expense of the growth of harmful ones.

Even though salinity has affected fewer farmers in Punjab at present, it is increasing in some pockets. This is causing farmers to spend more on agricultural inputs, even as their farm output is falling.

"We recommend 25% higher dosage of urea as saline soil restricts absorption of nutrients by crops," an agricultural officer in Muktsar said. As much as 25% of the cultivated land in the district is affected by salinity, the officer added.

Canal water is used for irrigation in most villages in the central and south-western districts in Haryana, as groundwater has become too saline for growing crops.

ANIRBAN BORA

The situation worsened after floods hit Rohtak in 1995, when waterlogging caused saline groundwater to come to the surface, said VS Raparia, the additional director Haryana's agriculture department.

Salinity has increased also in canal feed areas as irrigation has raised the groundwater level and surfaced saline water, he said.

SALINITY TAKING OVER

Apart from injudicious surface water irrigation, the cup-shaped topography in Haryana has made it prone to salinity, according to experts. The saline area has grown by 35% to 80,000 hectares in 20 years in Haryana, as per a 2016 study by the Central Soil Salinity Research Institute (CSSRI), an organisation working under the Indian Council of Agriculture Research.

"The increase in area in Haryana is cause by the movement of subsurface saline water due to a vacuum created by pumping of sweet groundwater in adjoining areas," CSSRI director PC Sharma said. Out of 6.73 million hectares nationally affected by alkaline and salty soils, as much as 2.14 million hectares have so far been reclaimed, he said.

Predominantly, salts of chlorides and sulphates of sodium, calcium and magnesium have caused de-

SLOW PACE OF RECLAMATION

Out of the 2.96 million hectares affected by salinity in India, around 15% is in Haryana.

But due to a long-drawn process, narrow time window and lack of machinery, less than 70,000 hectares of saline land has been reclaimed nationally so far, CSSRI's Sharma said. In the past 20 years, around 10,500 hectares has been reclaimed in Haryana.

"It will take 50 years to reclaim the saline soils completely at the current pace," the CSSRI director said. Nationally, there are 6.73 million hectares with saline and alkaline soils that require reclamation, he said.

Reclamation through bio-drainage — by plating eucalyptus — has been achieved in low-lying areas in some blocks. To deal with falling agricultural output, varieties of wheat, paddy and mustard that are resistant to saline water and soil have been developed by CSSRI.

News item/letter/article/editorial published on 28.09.2014 in the following newspaper

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The sown area under kharif crop has come down by 15 per cent.

Kharif sowing hit by rain deficit in Jammu

DINESH MANHOTRA
TRIBUNE NEWS SERVICE

JAMMU, SEPTEMBER 27

The sown area under kharif crops has come down by nearly 15 per cent this year due to the deficit in rainfall in the Jammu province, comprising 10 districts.

Although the authorities are busy in compiling the exact report about the areas where crops have been damaged due to less rainfall, initial data has indicated that 15 to 20 per cent of the kharif crops were affected.

"It is a dangerous indication as not only a huge chunk of the cultivated area in the Kandi belts remained unsown, the paddy crop area in the plains has also shrunk by nearly 15 per cent due to the deficit," Dr Vivek Arya, senior scientist at the Sher-e-Kashmir University of Agricultural Sciences (SKUAS) and an expert in climate change told The Tribune.

The main kharif crops of the Jammu region are paddy, maize, pulses, vegetables and fodder, covering 78 per cent of the net sown area (NSA). As per an official document, maize is grown in 3.19 lakh hectares, followed by paddy in 2.58 lakh hectares and pulses in 0.30 lakh hectares.

Pulses are mostly grown in the Kandi belts of Jammu, Samba, Kathua, Reasi, Udhampur, Rajouri and Poonch. As far as paddy is concerned, it is sown mainly in plains.

"Sixty to 65 per cent of the agricultural area in the Jammu province is rain-fed due to the non-availability of assured irrigation," Arya pointed out, adding, "keeping in view the continuous rain deficit during the past five years, coping up with this situation is a big challenge before the authorities".

Dr Mohinder Singh, scientist at the SKUAST, said rainfall was sufficient at the time of sowing, but there was deficit during the potential growth period of kharif crops. "Rain deficit at the time of growth period has affected the paddy crop," he said.

JAMMU PROVINCE DATA

DISTRICT	RAIN DEFICIT (%AGE)
Jammu	56
Samba	52
Kathua	36
Rajouri	48
Udhampur	32
Doda	2
Kishtwar	Normal
Ramban	4
Poonch	15
Reasi	2

THE STATESMAN - 28.9.2014

Maharashtra min. blames unauthorised construction for Pune flood

PUNE, 27 SEPTEMBER 28ST

Senior Maharashtra minister Chandrakant Patil on Friday blamed unauthorised construction on nullahs and streams for the flood a day earlier in Pune, which killed 17 people.

Patil, who is guardian minister of the district, said probe was needed to find out who gave permissions for such construction, adding that an inquiry could begin after the end of code of conduct post state Assembly polls.

Calling the flood "extraordinary", Patil said the administration was not prepared for such strong downpour, though some preemptive measures like shifting people to safer places in Baramati were taken.

The city recorded 106 millimetres of rainfall on Thursday. Over 3,000 people were shifted to safety on Thursday, officials had said, adding that 59 villages in the district were affected.

News item/letter/article/editorial published on 28.09.2019 in the following newspaper

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and documented at WSE Dte, CWC.

Tap water samples from 11 areas fail quality tests

Union Minister calls for meeting on Oct 3 to address issue

NEW DELHI, SEPTEMBER 27

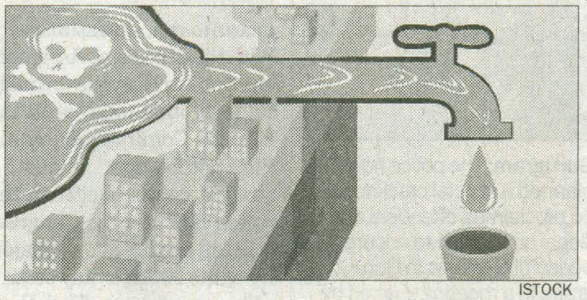
A preliminary investigation of tap water samples collected randomly from 11 areas in the Capital has revealed that the water was not safe for drinking, a government source said on Friday.

The samples did not meet the quality norms laid down by the Bureau of Indian Standard (BIS), a national body that frames quality standards for products and services, the source said.

The parameters such as pH level, odour and acidity were much higher than the prescribed norms. The final report is expected in a month, the source added.

The samples, sent voluntarily by Delhi households, were tested by the BIS. The samples collected were from tap water supplied by both the Delhi Jal Board (DJB) and the New Delhi Municipal Corporation (NDMC).

To address this issue, Union Food and Consumer Affairs Minister Ram Vilas Paswan has called a meeting on October 3. Senior officials from the Delhi Government, DJB, NDMC and the urban development ministry will be present.



ISTOCK

'POTENTIALLY HARMFUL CONTAMINATED WATER'

- The samples did not meet the quality norms laid down by the Bureau of Indian Standard, said the source
- The parameters such as pH level, odour and acidity were much higher than the prescribed norms.

"BIS has tested samples of tap water randomly taken from 11 areas. A preliminary report prima facie showed that the tap water supplied by DJB and NDMC was not safe for drinking at all," the source said.

The samples did not meet the BIS quality standards in terms of parameters like pH level, odour and acidity. In some areas, the water did not meet any of the quality parameters, the source said. The samples will be further investigated and the final report is expected to be released in a month, the source added.

Responding to Paswan, Delhi Chief Minister Arvind Kejriwal, who is also the chairman of DJB, had recently said the water utility would take corrective action if there were any shortcomings found. Currently, BIS standards on drinking water are voluntary in nature. — PTI

News item/letter/article/editorial published on 28.09.2019 in the following newspaper

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and documented at WSE Dte, CWC.

No contamination in flood-hit areas

T28

APARNA BANERJI
TRIBUNE NEWS SERVICE

JALANDHAR, SEPTEMBER 27

The groundwater tests in four of the flood-hit villages show no major contamination. But not taking any chances in 20 other villages, the Water Supply and Sanitation Department has pressed 15 potable water tankers into service.

Mobile testing teams of the department had collected samples from Yusufpur Darewal, Kra Ram Singh, Sabhuwal and Manak villages. In other villages, officials fear seepage of polluted Chitti Bein/Sutlej into groundwater through pipes/borewells has caused contamination.

The DWSS is also distributing pamphlets, urging villagers not to consume water of regular supply.

Notably, the initial water samples are only from nine tube wells set up by the DWSS at 20 Lohian villages.

NP Singh, XEN, Water Supply and Sanitation Department, Jalandhar, said, "The initial samples are only from our department tube wells. These have been taken both directly from tube wells and indirect water supply to homes. All these samples are of 500-600 feet deep water. It is estimated that contamination has affected only the upper strata, especially up to 150-200 feet deep. With contamination ruled out, we have restored their water supply, but not to other villages until we receive reports."

Officials of the PPCB too took water samples from 25 villages. Reports are awaited, officials said.

An official takes water samples from a village in Jalandhar.

WSE Directorate, CWC documented following news item/letter/article/editorial published in THE TRIBUNE dated 28.09.2019

Only 18% of treated water being put to use

Local Govt's time-bound action plan for reuse of waste water

RAJMEET SINGH
TRIBUNE NEWS SERVICE

9-28

CHANDIGARH, SEPTEMBER 27

Even as the state heads for a severe water crisis due to over exploitation of water resources, only 18 per cent of the water treated at sewage treatment plants (STPs) is being put to use in 167 urban areas of the state.

Of the 1,609 million litres per day (MLD) of waste water being treated at the 90 STPs, only 300 MLD is being put to use, while the remaining is discharged into nearby drains and other water bodies, according to the data available with Local Government Department.

Though the Punjab Municipal Building Byelaws, 2018, make it mandatory to use treated water, lack of infrastructure to supply it to the end-users has been hampering the cause.

Now, the Local Government has come out with a time-bound action plan to ensure "reuse of treated waste water" for gardening, road washing, construction and industrial purposes. The 'State Treated Waste Water Policy' has been notified, listing guidelines for waste water collection, treatment and reuse.

A time frame—varying from six month to a year—has been fixed for the urban local bodies (ULBs) to put in place infrastructure to supply treated water to end-users. These bodies have also been asked to implement the water metering policy in a year and undertake feasibility studies for supply of treated water to end-users.

Principal Secretary (Local Bodies) A Venu Prasad said the department would strictly enforce the guidelines.

An official maintained there were 167 urban local bodies with a population of 1.03 crore. At present, 92 STPs, having a total capacity of around 1,600 MLD, were functional, while 25 more STPs (271 MLD) had been approved, he added.

At least 1,609 million litres waste water is treated per day at 90 STPs. TRIBUNE PHOTO

DOWN THE DRAIN

1.03 CR	Population in 167 urban local bodies
2,400 MLD	Potable water being consumed
1,609 MLD	Water being treated at STPs
300 MLD	Treated water being used in ULBs
1,309 MLD	Treated water has been going waste

AWARD FOR PHAGWARA STP

The Phagwara sewage treatment plant (STP) has been chosen by the Centre for the National Water Mission Award for ensuring utilisation of treated water for irrigation. The plant is one among the 23 nationwide projects which have been chosen.

News item/letter/article/editorial published on 28.02.2019 in the following newspaper

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and documented at WSE Dte, CWC.

Roots of Change

ET-28

Falling groundwater levels is driving farmers in Punjab to move away from the traditional crop of paddy, writes Parshant Krar

Navjot Singh Shergill has moved away from traditional crops to growing strawberries

The humble maize is the new calling for Gurmail Singh, who had been cultivating paddy for the past three decades. A decline in the yield from paddy has necessitated the shift away from the traditional crop. Paddy is seen as a water-guzzling crop, and the water being fetched by a submergible pump from an existing tube well in his field has been falling by every passing season.

With the groundwater level around his village of Bhathadua in Punjab's Ludhiana district declining rapidly, and since deepening the tube well and investing in a more powerful pump would need to him to borrow more, Singh looked for options other than paddy. Maize fit the bill.

Singh is one among an increasing number of farmers in Punjab who are taking up cultivation of crops such as cotton, maize and basmati that aren't as much water dependant as paddy.

"Groundwater has depleted too deep around the village to grow paddy, and another crop loss would push my family deep into debt," said the 48-year-old, who is farming on four acres of leased land in addition to three acres he owns.

"Maize required just two rounds of irrigation as rains were adequate this year, unlike in paddy where 10-20 times more water is required," he said.

It is still an experiment and the success of it depends on the yield and remuneration they get. But farmers of the ilk of Singh have already started contributing in another way to a larger cause.

This season, farmers in Punjab have sown 3 lakh hectares less of paddy. That means, they saved water enough to meet an entire month's consumption in the whole country, said

To produce a kilogramme of rice, 2,500-5,500 litres of water is needed, as per the Indian Council of Agricultural Research

Sutantar Kumar Airi, the director of agriculture in the state.

To produce a kilogram of rice, 2,500-5,500 litres of water is needed, as per the Indian Council of Agricultural Research.

This insatiable need for irrigating paddy crops is believed to have contributed to the depletion of groundwater in 80% of Punjab, according to the state agriculture department.

In several pockets in the districts of Mansa, Sangrur, Ludhiana, Bathinda, Hoshiarpur, Jalandhar, Moga, Pathankot and Patiala, groundwater has gone very deep. "The groundwater that was around 10 metres deep before the Green Revolution has depleted to 40-50 meters in central Punjab and paddy-growing districts," a senior official at Central Ground Water Board said.

CROP DIVERSIFICATION

Paddy farmers in Punjab account for 11-12 million tonnes of rice annually, or more than a tenth of India's output of the staple grain. The northern state, along with neighbouring Haryana, is also among the largest producers of wheat. While the winter crop of wheat doesn't need so much of water, and hasn't seen any fall in acreage, farmers are abandoning paddy and planting other crops.

In the ongoing kharif season, cotton is planted on 1.4 lakh hectares more than the last season in Punjab, additional chief sectary Vishwajeet Khanna said. The acreage of maize has increased by 60,000 hectares and basmati by 1.2 lakh hectares.

Will this be sustainable? That depends on a good harvest and remunerative price, say government officials and agriculture experts. For this year, the results will soon be out, as harvesting starts next month.

"Surely crops like cotton, maize and even basmati consume substantially less amount of water than paddy. But we need to find ways to keep it profitable for the farmers," Khanna said.

Government assistance, he acknowledged, was a must at this stage to encourage farmers to diversify.

GOVERNMENT HANDHOLDING

The state government is taking steps to support farmers as they shift to new crops, said Khanna.

The ongoing thought process within the Punjab government is to bring in a price-deficiency support scheme to supplement farmers' income, he said.

So far, there has been no serious incentive scheme to promote crop diversification. But a Nabard programme that provides compensation of up to Rs 23,000 per hectare has facilitated few hundred farmers to try new crops.

Officials said they were providing training and technical support to farmers who wanted to diversify.

"We are exhorting farmers to grow alternative crops by recommending suitable hybrids, fertilisers and other inputs to ensure optimal yields," chief agriculture officer Baldev Singh said. Ahead of each sowing period, training modules on cultivating alternative crops and seminars by experts on best agricultural practices are being conducted, he said.

COST OF WATER

Rice is the staple food for more than half the world's population and is the main cereal in most states in India.

In the 1960s and 1970s India had given special focus to expand the acreage and yield of paddy, or unhusked rice, through the Green Revolution, to make the country self-sufficient in food grains. But now, paddy is being blamed for contributing to a major worry that the humankind is staring at — water scarcity.

It is high time to move away from paddy and opt for less water-consuming crops like oil seeds and pulses, Central University of Punjab chancellor and agriculture economist SS Johal said. "Water exploitation is fast turning Punjab into a desert and it is not at all in the interest of the country as Punjab is the largest provider of food grains for national food security," he said.

Johal sees the availability of free water to farmers as the main hurdle in promoting diversification from water-guzzling paddy.

"Cost-free water needs to go as farmers are in illusion that it is providing them financial benefit. In fact, governments are keeping farmers in illusion and this benefit is actually passed on to the consumers across India in the form of rice and farmers are not benefitted by the largesse," he said.

The cost of water is not factored in while fixing the minimum support price of paddy, he pointed out. The expenditure towards providing free water should be diverted to installing efficient irrigation systems, like drip or sprinklers, he suggested.

Intensive groundwater-based irrigation has deteriorated the quality of soil, making it alkaline in Punjab even as neighbouring Haryana is tackling rising salinity

"Otherwise, the government could pass on the subsidy to farmers based on cultivated land and such aid will not offend WTO provision for agriculture," he said.

In the ongoing financial year, the Punjab government has made a provision of Rs 8,969 crore to supply free power for irrigation.

SOIL DEGRADATION

In Punjab, the need for diversification was first felt in 1984 — not due to over-exploitation of groundwater at that time.

A surplus paddy output had caused serious glitches in procurement, resulting in rotting of the food grains. It raised the need for altering cropping pattern.

"I had submitted a diversification roadmap as early as in 1982 and then in 2002, but subsequent droughts in the later years allowed the policymakers to push the reports under the carpet," Johal said.

Intensive groundwater-based irrigation has deteriorated the quality of soil, making it alkaline in Punjab even as neighbouring Haryana is tackling rising salinity.

The intense paddy-wheat cropping — paddy in summer, followed by wheat in winter — has affected productivity and quality of water as well as soil.

Some well-to-do farmers like Navjot Singh Shergill, a resident of Munjal Khurd village 20 km from the city of Patiala, had taken to farming of strawberry in a part of his ancestral land.

"I diversified from traditional crops out of realisation that parts of Punjab will be desert in less than a decade given the extent of the exploitation of groundwater," he said.

MARKET DYNAMICS

In the southern districts of Punjab, market dynamics are driving farmers to change. They are increasingly planting cotton, thanks to demand from local textile mills and cross border trade with Pakistan.

"The earnings from cotton could surpass paddy by 40-50% in a good crop year," said Shamsher Singh, a cotton grower from Bathinda.

However, the cotton market has currently been hit by the prevailing tension between India and Pakistan. Direct exports of raw cotton and cotton yarn to Pakistan have been affected.

Meanwhile, Gurmail Singh, the Ludhiana farmer, is bullish about the crop of maize on his field as it is in excellent condition. The cost of inputs has come at par with paddy, but he isn't concerned about that.

"The yield is going to be higher than my expectation," Singh said, even as he thanked the district agriculture department for hand-holding him to move beyond paddy.

He is hopeful that the demand for more than 2 million tonnes of maize from the poultry sector in Punjab alone would keep prices above the minimum support price of Rs 1,700 per quintal last year.

"The demand has increased maize prices much above the minimum support price in the last year," he said.

WSE Directorate, CWC documented following news item/letter/article/editorial published
in.... Pioneer, Delhi ..... dated 28.09.2019

Digital bid to save 3m Himalayan springs

ARCHANA JYOTI ■ NEW DELHI

The Government will soon undertake a mega exercise of demarcation and mapping of around three million springs in the Indian Himalayan Region on the GPS platform. The move is aimed at conserving these aquifers to gear up for a likely water scarcity in future.

A pilot project will be kicked off from Uttarakhand's Tehri district soon as the Union Jal Shakti Ministry is exploring various technologies, including that of the ISRO, to carry out the project.

Over 50 million people are dependent on the spring water for their livelihood in the IHR, said Mustafa Ali Khan, team leader of the Indian Himalayas Climate Adaptation Programme, at an event organised by the Centre for Media Studies (CMS) recently.

The 12 States under IHR include Uttarakhand, Himachal Pradesh, Meghalaya, Manipur, Mizoram, Sikkim, Nagaland, Tripura, Arunachal Pradesh and now Union Territory Jammu and Kashmir. Two partial hilly States Assam and West Bengal are also included.

"We are exploring various technologies like that of the space agency to conduct the task which would need massive human resources. We are working on the technology to be deployed for mapping these springs," said an official from the Ministry.

The move follows a NITI Ayog report released in August 2019. "The Himalayan springs are drying up primarily due to changes in land use, ecological degradation and the so-called developmental activities. These have depleted aquifers in the mountains," says Himanshu Kulkarni, convenor of Pune-based Advanced Center for Water Resources Development and Management.

For instance, with almost 64% of the cultivable area in the Himalayas fed by natural springs, they are often the only source of irrigation in the region.

"Spring discharge is reported to be declining due to degradation and erratic trends in precipitation," the document observed stressing an urgent need to restore, revive and sustain springs. "Lack of knowledge, understanding and awareness on springs has further compounded the problem while also inducing elements of conflicts and haphazard development. Land-use changes, rapid urban expansion and growing commercial consumption are affecting forests and impacting spring water availability," it noted.

Currently, National Remote Sensing Centre (NRSC), ISRO at Hyderabad monitors the status of all the water bodies in the country using satellite images and provides water spread area information on a fortnightly basis. However, water springs in the Himalayan region are out from its ambit.

Rather, all surface water features like reservoirs, tanks, lakes, ponds, rivers and streams in the plains are included. Due to presence of cloud cover, the daily processed data are time-composited and fortnightly water spread information is made available through Bhuvan Geo-spatial Platform.