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

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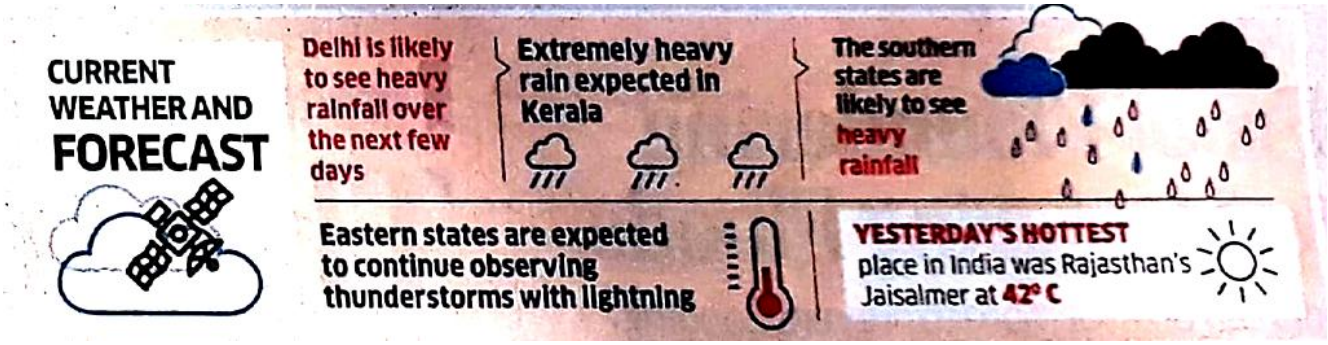

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Rain batters Kerala: 4 dead, red alert in dists

SNS/PTI
THIRUVANANTHAPURAM, 21 JULY

Heavy rains continue to lash Kerala on Sunday, affecting normal life in various parts of the state. Four persons have died and three, including two fishermen from Tamil Nadu, are missing as rains continued to lash Kerala, with red alert being sounded in Kasargod, Idukki, Kozhikode and Kannur districts of the state till July 23.

Heavy rain destroyed a house and damaged eight dwellings in Taliparambataluk in Kannur district . As many as 89 people were shifted to relief camps. Flooding was reported from some parts in Madayi and Kadamburpanchayats in Kannur

A red alert indicating extremely heavy rainfall has been issued for Malappuram, Kozhikode, Wayanad, and Kannur for Monday. Many low-lying parts of the Kasaragod district witnessed flooding over the past two days due to heavy downpour. The meteorological department informed that heavy rain is likely in the state for four more days.

Though the southern region of the state witnessed a slight lull in the rains, parts of Pathanmathitta district was flooded due to a rise in the water levels of different rivers flowing across the district. The coastal areas in Kerala remained in a state of high alert for the third consecutive day on Sunday as high waves battered seawalls and groins and threatened to devour large tracts of land.

Meanwhile, the body of one of the three fishermen who went missing from the coast of Neendakara was washed ashore on Anchuthengu beach. The deceased has been identified as SahayaRaju, a Tamil Nadu native. A search has been going on to find the other two.

In the hilly Idukki district, a minor landslide occurred Saturday morning at Konnathady village, causing crop loss. There were no casualties, official sources said, adding people have been advised against travelling to hilly areas.

Flood waters receding in Assam

An elderly man and a child take shelter on a boat at the flood-affected Kayakuchi village in Assam. AFP

GUWAHATI, 21 JULY

The flood waters showed a receding trend in Assam where the death toll due to rain-related incidents mounted to 59 with 12 more deaths reported on Saturday while the number of affected districts decreased to 24, officials said.

The waters of the deluge, which wreaked large scale devastation across the state, receded from Baksa, Hojai and Majuli districts but continued to submerge 1.51 lakh hectare of crop land and a large part of Kaziranga National Park, where 10 rhinos have been killed.

According to the Assam State Disaster Management Authority flood bulletin, five deaths reported from Morigaon district, three from Barpeta, two from South Salmara and one each from Nalbari and Dhubri districts during the day taking the toll to 59.

A Defence release said a large-scale flood relief operation is underway in flood-hit areas of lower Assam by the Army and rescue columns are operating round the clock. PTI

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Govt eyes reduction in farm water use

Saubhadra Chatterji
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HT-22

NEW DELHI: The Narendra Modi government is likely to aggressively push for less consumption of water in agriculture as a key priority in its second term in office in keeping with the Centre's thrust on conservation of the scare resource, officials familiar with the matter said.

A committee of secretaries (CoS), formed under directions of the PM, to look into agriculture and related matters, is set to emphasise on the need to cut down on water usage on crops, especially paddy and sugar-cane, in its report to the cabinet secretary.

Soon after coming to power for the second term, Modi formed around 10 committees of secretaries (CoS) to look into major issues and vet schemes before the Union cabinet would take the final call on those matters.

The water ministry, a part of the CoS on agriculture and rural development, has pitched for less water for crops as a high priority issue. It has suggested production

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IN HARYANA, SAVING WATER BY GIVING UP PADDY ››P11

WATER WOES

The water ministry has pitched for less water for crops as a high priority issue

WHAT HAPPENS TO GROUNDWATER

6% Domestic use

5% Industrial purposes

89% Agriculture

60% irrigated water guzzled by paddy, sugar-cane alone

IN COMPARISON

5,600 litres of water used to produce 1kg of paddy in India

400 litres of water used to produce 1kg of paddy in China

Farm water use

of alternative crops, a better irrigation system and financial incentives to farmers for optimal water usage.

"The water requirement for agriculture is considerably high in India. Out of our total groundwater availability, we use 6% for domestic use and another 5% for industrial purposes. The remaining 89% goes for agriculture. Our studies say that to grow one kilogramme of paddy, we consume 5,600 litres of water whereas China produces the same amount of paddy with just 330-400 litres of water," Union minister for Jal Shakti, Gajendra Shekhawat, said on Sunday.

"We have to re-look at our water consumption, especially when there is a severe water crisis in many parts of the country," Shekhawat said, pointing out that of the 178.7 million rural households in the country, only 32.7 million or 18% got drinking water from tap connections.

Modi has called for a mass movement on water conservation along the lines of Swachh Bharat, flagging concern over depleting water levels in the country. In his first Mann ki Baat after his government retained power in the national polls this summer, Modi urged upon all citizens to create awareness on water conservation, share knowledge of "traditional methods" to conserve water and highlight success stories on conservation. The recent Economic Survey stated that "By 2050, India will be in the global hot spot for 'water insecurity'."

The survey said, "Focus should shift from land productivity to 'irrigation water productivity'. Therefore devising policies to incentivise farmers to improve water use should become a national priority. Thrust should be on micro-irrigation that can improve water use efficiency."

A senior official added that for sugarcane, India consumes less water than the global average but is less efficient than South Africa and Thailand. "On average, India gets around 5.2 kg of sugarcane in one cubic metre of water. This is better than the global average of 4.80 kg/m3. But South Africa produces up to 7.8 kg with the same quantity of water and Thailand gets between 5.8 and 6.5 kg/m3 of water."

India is the second-largest producer of rice after China. And the two Asian giants contribute nearly half of the world's total rice production. But the recent Economic Survey pointed out that around 89% of groundwater extracted is used for irrigation and crops such as paddy and sugarcane consume more than 60% of irrigation water.

The CoS is expected to submit its report shortly with action points and new policy proposals. Modi also wants the CoS to identify areas where "impactful decisions" can be taken in the near future. According to a member of that panel, water consumption in agriculture is likely to be one such area.

Achirangshu Acharya, economist with Viswabharati University, said, "Worldwide water is fast becoming a shrinking resource. It's about time that India changes its water habits. Indian agriculture needs to depend on newer technologies to reduce dependence on groundwater. We can't be a net-importer of water in the agriculture market."

Shekhawat added that rationalisation of water can only be done with the help of the states. "In Punjab farmers get free power to use pumps to extract groundwater. The state government has started a scheme whereby farmers are given cash incentives if they consume less electricity in agricultural fields. Lower use of pumps means less extraction of groundwater. In Maharashtra, farmers are encouraged to use drip irrigation for sugar-cane cultivation. It is also a proven fact that sugar-cane fed by drip irrigation has better sugar yield. So, we need the help of all states to address the issue of over-exploitation of water," the minister said.

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NGT order on groundwater ignored, 57 units have NOC

MUKESH TANDON
TRIBUNE NEWS SERVICE

PANIPAT, JULY 21

Only 57 industries and commercial companies across the state have no-objection certificate (NOC) from the Central Ground Water Authority (CGWA) to extract groundwater.

As per the National Green Tribunal (NGT) order, it is mandatory for all groundwater users to get NOC from Central Ground Water Board (CGWB) for extraction of groundwater.

Following the NGT's order, the CGWB has issued notification in which it clearly mentioned that all the users drawing groundwater without a valid NOC from CGWA are liable to pay fine as well as environmental compensation/damages to be decided by the NGT.

According to the information available, only 57 industrialists or commercial users in 14 districts have NOC from CGWA while in six districts, nobody has NOC for withdrawal of groundwater.

Sources say that over 400 registered dyeing units are operating in the city. Of these, 300 are in Sector 29 part-2 and others are in Sector 25 part-1, 2 and Sector 29 part-1. As for the illegal dyeing units, they are scattered all over the city.

The extraction of groundwater by dyeing units is about 80 million litres per day (MLD). During inspections conducted by teams of central pollution control boards (CPCB) of various dyeing and textile units in April and May, the teams found that these units were extracting groundwater without installing flow meters.

"They have not even installed any system for the recharge of groundwater," said a senior official of the Haryana State Pollution Control Board (HSPCB) on the condition of anonymity.

Even government units — the Panipat Thermal Power Plant, National Fertilisers Limited (NFL) and Indian Oil Corporation Limited (IOCL) — are extracting groundwater without NOC. Bharat Petroleum (BPCL) near IOCL has taken NOC from CGWB in May, said sources.

Amit Rathee, an RTI activist, said it was shocking that only 57 have valid permission from CGWA to extract water from the ground while thousands of industrial units, big developers and mining units are operational in Faridabad, Gurugram, Bahadurgarh, Jhajjar, Rohtak, Palwal, Mahendergarh, Rewari, Sonepat and Panipat.

Nem Chand Jain, an environmentalist, said that Haryana's maximum clusters have been included in the over-exploited zone by the CGWB which is a matter of concern. There should be a check on withdrawal of groundwater and it should be monitored by the authorities seriously, Jain added.

Dalbir Rana, Hydrologist (groundwater cell), Karnal and Rohtak division, said Samalkha and Bapoli blocks in Panipat district were notified as dark zones in 2012, but all blocks of the district were in the over-exploited category.

Around 52 unit owners in Panipat have applied for the NOC. The last date for applying for NOC is September 30, maintained Rana.

REPRESENTATIONAL PHOTO

The extraction of groundwater by dyeing units is 80 million litres per day.

Official permission

District	NOC issued by CGWA
Ambala	5
Faridabad	6
Bhiwani	2
Gurugram	6
Hisar	2
Jhajjar	5
Mahendragarh	1
Mewat	1
Palwal	2
Panchkula	4
Panipat	7
Rewari	7
Rohtak	2
Sonepat	6
Yamunanagar	1
Total	**57**

** (No NOC in Fatehabad, Jind, Kaithal, Kurukshetra, Karnal and Sirsa districts.)*

Tribunal guidelines

- As per the National Green Tribunal order, it is mandatory for all groundwater users to get NOC from Central Ground Water Board for extraction of groundwater

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Govt blames Haryana as it struggles to tame Ghaggar

Says it stopped channelisation work on 17-km stretch near border

RAJMEET SINGH
TRIBUNE NEWS SERVICE

CHANDIGARH, JULY 21

The state government has blamed Haryana for the damage caused in Patiala and Sangrur districts due to the overflowing Ghaggar.

The state has pointed out that timely channelisation of the 17.5-km stretch from Makror Sahib to Karail by the Punjab's Drainage Department could have saved marooning of several areas along Ghaggar's embankments, but Haryana did not allow it.

Sensing gravity of the situation and loss suffered by farmers, Chief Minister Capt Amarinder Singh has decided to take up the issue with the Centre. "The misery of the people due to flooding needs to be addressed at the earliest, rising above political differences on water sharing," said a senior official in the CMO.

The state's Drainage Department has requested the Central Water Commission (CWC) to depute its officials to visit the affected areas to get first-hand information on the necessity to undertake the pending channelisation work.

Chief Engineer (Drainage) Sanjeev Gupta said, "I have requested the CWC to visit the flooded areas. This would allow us to explain the need to carry out channelisation as per the recommendations of the study conducted by Irrigation and Power Institute, Amritsar."

The state has sought strengthening of the embankments raised by villagers from Makror Sahib to Karail. The damage to villages due to swollen Ghaggar has once again brought to the fore the tussle between Punjab and Haryana over water sharing.

While Haryana wants release of water in the Hansi-Butana canal, it is not letting the Punjab Government channelise the Ghaggar near Khanauri on the interstate border.

The river had caused huge damage in Patiala, Sangrur and Mansa districts in 1988, 2010 and 2015. This year too, the river has been in spate due to incessant rains, creating havoc in numerous villages.

WHAT IS NEIGHBOURING STATE'S OBJECTION?

- The work of constructing 22.45-km embankments on both sides of the river was completed in 2009 under phase-1 of channelisation from Khanauri to Makror Sahib.
- Haryana raised objection before the Central Water Commission (CWC) over the phase 2 from Khanauri to Karail, stating that further channelisation will endanger its villages.
- After villagers of Moonak belt filed a special leave petition in the Supreme Court seeing continuation of the work, the matter was referred to the CWC.
- After six years, the CWC conducted a meeting of the Ghaggar standing committee in March and directed to carry out a model study of Ghaggar basin by an independent agency to settle the dispute.

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The curious case of the 'missing' canals

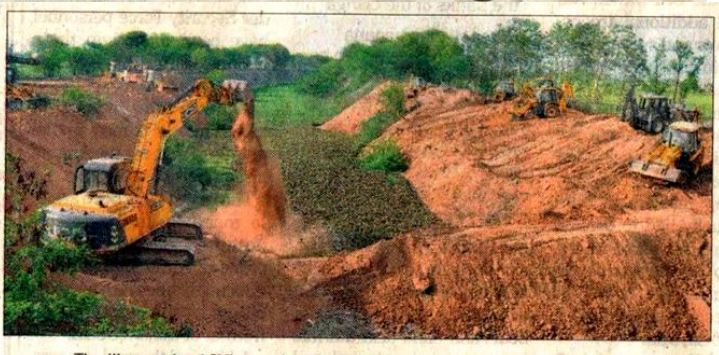
PPS GILL

THIS is the story of two canals: Sutlej-Yamuna Link (SYL) and Dasmesh. The former is like an 'abandoned, orphaned child' and the latter a 'stillborn' one. The ill-conceived SYL project was born of vested political interests. In Punjab, right from its conception, the project was perceived as 'hydrological suicide'. Its remnants are a grim reminder of the wanton waste of money and manpower and the loss of lives.

Right from the word go, the SYL project was mired in controversy that vitiated the atmosphere in Punjab and Haryana. For Punjab, while SYL stands buried, the proposed Dasmesh canal is viewed as SYL in a new avatar! Both have had a chequered history. If SYL stands abandoned for good, there is a forlorn hope that the Dasmesh canal may be 'revived'.

An indication to this effect was given in the Punjab Vidhan Sabha session last February, when some members had raised the issue to 'revive' the 'shelved' Dasmesh canal irrigation project to provide water to farmers in the Kandi area. The minister concerned had said the offtake of the proposed canal was to be from SYL and since that project itself had been abandoned and land acquired for the purpose 'de-notified', there was no point in taking up the issue. However, on the intervention of the Speaker, it was decided to constitute a House committee, across party lines, to study the proposal afresh and suggest steps to supply water to the areas concerned.

Experts say that even if the House committee comes up with suggestions to 'revive' the Dasmesh canal, the 'revival' would still be wrapped in a complicated web of problems, as in the intervening 21 years, the ground reality has changed drastically. Construction has come up in a big way on large tracts of land, while the government has transferred hundreds of hectares to the Greater Mohali Area Development Authority, Biotech etc. and also 'de-notified' the land acquired for SYL. The farmers in the command area, who had hoped for a new beginning, are now demanding their land back. Fresh acquisition that may become imperative would not only mean uprooting of people but also involve a huge cost for the purpose.



The ill-conceived SYL canal project was born of vested political interests.

The Central Ground Water Board's (north-western region) draft report has warned that Punjab will be heading towards 'desertification' within the next 25 years if underground water resources continue to be exploited at the current rate, without being recharged. This warning has set the alarm bells ringing in the corridors of power, making Chief Minister Capt Amarinder Singh take cognisance of the impending water crisis, which affects both rural and urban areas, particularly Malwa, where water is largely unfit for irrigation and drinking.

At the current rate of extraction, all available groundwater resources in the state, till the depth of 300 metres, will end in 20-25 years, and groundwater resources till the depth of 100 metres within the next decade. Also, on groundwater recharge, of the state's 138 blocks, 109 are overexploited, two critical and five semi-critical. Only 22 are safe.

Besides announcing the convening of an all-party meeting, the CM has given in-principle nod to set up a state water authority to ensure better management of water for domestic, agriculture, industrial and other purposes. A committee has also been formed under the Additional Chief Secretary, Development, and the PAU Vice Chancellor to explore the possibility of a "change in the existing cropping patterns, and developing viable schemes to motivate farmers to give up paddy sowing and switch over to other crops" to save water. The Cabinet sub-committee for the Punjab Water Resources (Management and Regulation) Bill has been reconstituted.

It was on September 4, 1998, that then Chief Minister Parkash Singh Badal had announced the construction of the Dasmesh canal, while speaking at a function at Dera Bassi, to irrigate farms in that area. The cost of the canal was then pegged at Rs 450 crore. It was aimed at providing better canal irrigation facilities/deep tubewells in several blocks of the then and later new districts: Ropar, Patiala, Fatehgarh Sahib and Mohali.

The canal project was envisaged to cover 109,800 hectares of gross command area (GCA) and 89,500 hectares of culturable command area (CCA); 35,850 hectares of GCA and 12,950 hectares of CCA was to be covered under the deep tubewell system. There was a provision for further extension of the area under the canal system. Notably, the project was 'de-linked' from the SYL project.

The Dasmesh project envisaged to 'pump up' water from the left Bhakra Main Line into the 'balancing reservoir' and it was to flow by gravity, as the canal was designed to run primarily in the foothills of the Shivaliks. Documents of the irrigation project reveal details of the length of the main and branch canal, layout of the distributaries and minors; land to be acquired, production estimates of agricultural produce, expenditure to be incurred and operational costs etc.

In addition to the augmentation of irrigation, the canal project was to help recharge groundwater reservoir, arrest the depletion of groundwater and assure supplementary irrigation since the areas to be benefited were largely dependent on deep tubewells. Other benefits were in terms of diversification of agriculture and employment generation. However, given the complex groundwater behaviour in the area to be benefited, it was observed that the output of deep public tubewells did not exceed 40 per cent. Rapid urbanisation and industrialisation, since 1998, has deepened the water crisis.

Farmers of the Banur area were in a very difficult situation when the Dasmesh project was initiated. It has aggravated since then. At the time of Partition, the area had inherited the non-perennial Banur canal system, whose head regulator was located in the Chhatbir Zoo area. But at the time of building/excavating the SYL, the canal command area of the Banur canal system was transferred to be fed from the SYL.

Likewise, the Rajpura plateau was to be supplied water from the SYL — 500 cusecs — by means of the 'multiple lift irrigation' pump system. Today, the area that had hoped for adequate and additional irrigation facilities has been left high and dry.

It appears that water scarcity, fast depleting groundwater, negligible recharge, low farm output, unremunerative agriculture, migration from rural to urban and semi-urban pockets, and growing unemployment will further precipitate the woes of the people and the state.

Repair and maintenance of the irrigation network and cleaning up of the drains, besides the steps announced by the Chief Minister, would need massive investment and copious financial help from the Centre. Punjab is already facing a financial crisis. Will the Centre oblige?

The author is a former Information Commissioner, Punjab

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The scarce essential

It has been indicated that 600 million Indians face 'high to extreme' water stress. The situation will only worsen in the days to come. Thus, we are virtually sitting on a ticking time-bomb in the form of a potential health emergency waiting to unfold. Poor state regulation and gross mismanagement over the years by our water managers have resulted in our rivers and water systems being heavily contaminated by solid waste

The Rain God has been playing pricey for a while. All the skyward prayers and rain-invoking rituals seem to have been in vain with the rainfall still remaining elusive and erratic in many parts of India. The delayed onset of rains is said to have resulted in a 27 per cent drop in the sowing of Kharif crops. With the water crisis looming large on the horizon, the subject experts and scribes are having a field-day diagnosing the problem and related issues, while also prescribing any number of solutions.

This is where the rub lies. We have all known the problem and solutions for long. But when it comes to acting on the recommendations, everyone everywhere falls short and comes a cropper. And this has something to do with the way we engage in politics today. Our decision-making capability is beholden to the generosity of the political class who, more often than not, shrink from taking the right decisions while playing to the gallery of the voters. It is this attitude and the emergent situation which have been playing havoc with the way we deal with every issue in this country including water.

The policy of almost 'free water', 'no user charge' or 'free electricity' has somehow cost us dearly, with the same resulting in the extensive and mindless use of ground water by all the stakeholders, almost verging on the criminal.

The stakeholders including agriculturalists, industrialists or the hoi-polloi see no merit in water conservation by way of prudent consumption of the same. However, the time has definitely come for all of us to soak in all the available "water wisdom" by reflecting on our water consumption patterns.

Today, 18 per cent of the global population in India has access to only 4 per cent of its usable water, with 163 million Indians lacking access to safe potable water. The National Institution for Transforming India (NITI Aayog) in its recent report has portrayed a very grim water scenario. As per a report shared by NITI Aayog, 22 cities, including New Delhi, shall run out of water by 2020. One shudders to imagine the resultant chaos and mayhem unless we immediately start bracing ourselves for the eventuality.

An estimated 21 per cent of our diseases are water-borne and with no access to safe drinking water, almost 200,000 Indians reportedly die every year because they don't have access to water that is fit for consumption. It has been indicated that 600 million Indians face 'high to extreme' water stress. The situation will only worsen in the days to come. Thus, we are virtually sitting on a ticking time-bomb in the form of a potential health emergency waiting to unfold. Poor state regulation and gross mismanagement over the years by our water managers have resulted in our rivers and water systems being heavily contaminated by solid waste. The high coliform content makes the water unusable and unfit for human consumption.

SAUMITRA MOHAN

The writer is an IAS officer, presently posted as the Commissioner of School Education, West Bengal. Views are personal and don't reflect those of the Government

Seventy years since Independence, safe piped drinking water reaches only 70 per cent of urban and 19 per cent of rural households. It is really laudable though that the Government has pledged to supply piped water to all rural households in five years by launching a *Nal Se Jal* (Water from Tap) scheme. Also on the anvil is a dedicated Ministry in the form of 'Jal Shakti Mantralaya' for a more holistic and coordinated approach to the water problem.

A better convergence with national programmes like *Namami Gange, Swacch Bharat Abhiyan* and similar state government initiatives could ensure better policy outcomes, thereby addressing the problem of inegalitarian access to water resources in certain parts of India. If we don't wake up in time to evolve a geographically-customised water policy, our dream of becoming a developed country or a 'superpower' is bound to be dashed against our water woes, not to speak of our health and food security being severely compromised.

Some of the solutions that the Government needs to consider are: a sound watershed management; building of smaller check-dams rather than big-ticket behemoths; construction of more percolation tanks linked to the main service tanks; popularising dedicated 'on-farm tanks and ponds' for agricultural purposes; better networking and deepening of our canal systems; imposing a population-specific progressive user charge; a regional river-linking plan to be gradually upgraded into a full-fledged national river-linking project; incentivising water harvesting and water conservation behaviour; encouraging more and more afforestation; renovating and redoing our traditional water systems while creating more water storage capacities for better recharging of our groundwater aquifers.

The required policy and regulatory support should be immediately in place. It is felt that all the municipal and PRI bodies should hugely incentivise and make it mandatory for all the private and public buildings to have a 'roof-top water harvesting structure' as far as practicable, while also recycling most of the water we use to make the same usable for different purposes, including drinking. The regulatory machinery must ensure zero discharge of industrial, household and municipal waste into our rivers and water systems, thereby not only improving the quality of water, but also saving the entire aquatic ecosystem.

We also need to reflect on our cropping patterns. By traditionally cultivating water-intensive crops like rice, sugarcane, soyabean, wheat and cotton, we have been unwittingly depleting our water resources. The export of such crops actually means an indirect export of water to the recipient countries.

We must selectively switch from the more water-intensive crops to the more water-efficient crops like pulses, oilseeds and other cash crops which yield better returns on the investment of all kinds of resources including water, labour and capital.

According to the Central Water Commission, India receives 4000 billion cubic metres of rains, while it requires only 3000 billion cubic metres of waters for its populace as of now.

However, as per the recent Composite Water Management Index Report prepared by NITI Aayog, the country's demand for water is projected to be twice the available supply by 2030. According to the World Health Organisation (WHO), an individual requires 25 litres of water each day for meeting one's basic needs in terms of hygiene and food.

While India's average per capita use of water is much more than this as of now, the same is going to be severely compromised in the near future if we don't take corrective measures sooner rather than later.

We must also raise the general awareness among all stakeholders regarding the looming water crisis and the related imperative to conserve the same. We urgently require the framing of a National Water Policy to ensure a more responsible water ethos. Hopefully, with determination and effort the raging water crisis will be suitably addressed.

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Dredging is the way forward

Desilting of the canal-feeding lakes can help in easing Punjab's water woes, writes **Harjap Singh Aujla**

ACCORDING to the Central Government's assessment published in the media, only 15 per cent of the blocks in Punjab are not stressed as far as underground water is concerned. The rest have seriously depleted their underground reserves of water. Many of these stressed blocks are close to the rivers. The Sutlej forms the boundary between Ludhiana and Jalandhar districts; the water table has deepened from an average of 40 ft in the mid-1960s to more than 200 ft in Ludhiana and a little less in Jalandhar. In some areas of Moga, which is on the southern bank of the Sutlej, the water table has dropped to more than 300 ft. The situation in Hoshiarpur, Gurdaspur, Kapurthala, Amritsar and Tarn Taran is no better. These districts are located on both sides of the Beas. The situation along the Ravi in Gurdaspur and Amritsar districts is also not rosy. The primary reason for this depletion is the overexploitation of underground water for the cultivation of the coarse variety of rice.

During the 1960s, the Centre was desperate to become self-sufficient in foodgrains. It was fed up with importing wheat and rice. The US was supplying wheat under the PL480 programme. The farming community of Punjab took up the challenge thrown by the Centre and started planting the water-guzzling coarse variety of rice which quickly began to adversely impact the water table. The Centre was under the impression that there was sufficient river water in Punjab, which was adequate for its own needs and that it could spare water for the neighbouring states. Punjab's policy of giving free power for irrigation wells and the Centre's decision on the procurement of paddy at the minimum support price (MSP) emboldened the farmers.

> After Bhakra and Pong dams were constructed and the storage at headworks in Nangal, Ropar and Harike was taken into account, the availability of canal water in Punjab was assessed to be 16 million acre ft. Of this, 8.1 million acre ft was allocated to Rajasthan, much to Punjab's chagrin.

After a protracted tussle, a World Bank-brokered deal for sharing the waters of the Indus Basin was signed by India and Pakistan in 1960. It estimated that 33 million acre ft (MAF) of water was available from the three eastern rivers — the Sutlej, Beas and Ravi. All this water was allocated exclusively to India. India had pleaded that this water was necessary for the irrigation needs of Punjab, which included Haryana at that time, and the desert state of Rajasthan, which was heavily water-deficient. The water of the three western rivers — Chenab, Jhelum and the Indus — was estimated to be 80 MAF. All this was allocated to Pakistan. India could utilise only 20 per cent of the waters of the western rivers for power generation, fish breeding, navigation and potable use. Since most of the Indus Basin was in Pakistan, this allocation was considered fair by both countries. After the Bhakra and Pong dams were constructed and the storage at the headworks in Nangal, Ropar and Harike was taken into account, the availability of canal water in Punjab was assessed to be 16 MAF. Of this, 8.1 MAF was allocated to Rajasthan, much to Punjab's chagrin.

Rajasthan's share of water was to be given mostly from the Harike headworks. According to the figures provided by the design office of the Punjab PWD irrigation branch, the capacity of the Rajasthan canal off-taking from Harike was 18,500 cubic ft per second (cusecs). The Ferozepur feeder was designed to carry 11,192 cusecs and the local area-irrigating Makhu canal was designed to carry roughly 300 cusecs.

The conflict between Punjab and Rajasthan originates from the Harike headworks. This lake's original storage capacity was 67,900 acre ft. Due to the cutting of trees on a massive scale all over agricultural and urban Punjab, this lake has been silted up so heavily over the past 66 years that its storage capacity has come down to merely 9,300 acre ft. How can we store more water when there is hardly any storage capacity left in the lake? I recommend immediate deep dredging of the Harike lake to augment its storage capacity to more than 80,000 acre ft. The dredged material can be dumped on government land or on specifically acquired land in adjoining Tarn Taran district and Sultanpur Lodhi tehsil of Kapurthala district.

Dredging of the Harike lake alone will ensure authorised quantity of water for both Rajasthan and the Malwa belt of Punjab. Water will flow to Pakistan only in the event of continuous week-long rain. At present, only Muktsar and some parts of Bathinda are getting adequate quantity of canal water. The Abohar area gets the left-over water from Muktsar at the tail-end. With augmented supply, some more parts of Ferozepur, Moga, Faridkot and Fazilka districts will get the supply by gravity flow or pumped flow. In case of very low water level in the lake, provision can be made for pumping with high-volume pumps.

The Ropar headworks and the Madhopur headworks, though not as badly silted up, need dredging too. Doubling their capacity will ensure adequate water for irrigating the districts of Ludhiana, Nawanshahr, Jalandhar, Pathankot, Gurdaspur, Amritsar and Tarn Taran round the year. There are some drains in the former waterlogged areas of Gurdaspur and Amritsar and excess water can be released into these drains, too, for recharging the water table. At least 200 cusecs of Beas water should be released daily in Kali Bein of Kapurthala. This will help in de-stressing a big chunk of area in Bholath, Kapurthala and Sultanpur Lodhi tehsils. All blocks in Patiala and Sangrur districts are also stressed. The Bhakra Main Line supplying water to Haryana passes through Patiala. Under a special arrangement, Patiala and Sangrur should get additional water from Bhakra in lieu of stopping the cultivation of paddy.

Punjab is fund-starved. It has to request the Centre to provide funds to the tune of thousands of crores for dredging and transportation and deposition of dredged soil. Estimates can be made by the Punjab Public Works Department (PWD) and the Centre's Water Commission. Mechanical wet dredging is probably the best available option for desilting of Punjab's canal-feeding lakes. Meanwhile, cultivation of paddy should be banned in all non-canal-fed areas of Punjab.

The author is a retired water resources engineer

Send SOS to Centre

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WATER CONSERVATION

From trenches, a Telangana district goes about harvesting rainwater

SREENIVAS JANYALA
PEDDAPALLI, JULY 21

RESIDENTS AND officials of Peddapalli district in Telangana had grown accustomed to facing water shortages. Infrequent and diminishing rainfall, as well as a widespread loss of trees resulted in groundwater levels falling drastically, so much so, that even borewells were rendered useless. This was a bleak picture for a district that was otherwise essentially several hills surrounded by farmland. Farmers such as 40-year old Kondaiah of Nagulapalli village, who own four acres on average, could barely farm on half of their land due to water shortage. The reduced water availability was causing an adverse impact on the everyday life of the villagers.

But an innovative experiment begun in 2016 turned things around in Peddapalli. Officials at the District Rural Development Agency (DRDA) studied the topography of the area and found that even when it rained, most of the water simply ran off the hill slopes. Their solution was as effective as it was simple: dig trenches to slow down the water run-off. The officials identified 259 out of the 299 hillocks in the district where trenches could be dug.

They decided to dig two types of trenches on the hills. First were the "staggered" trenches. These trenches were dug in a zig-zag fashion, starting from the top of the hill. At the base of the hill, a long unbroken trench — known as continuous contour trench — was dug. When the water reached the contour trench at the base, it was directed towards a farm pond.

The groundwater officer of the district, B Shayam Prasad Naik, said that Peddapalli saw a 32 per cent rainfall deficit in 2017-18, which resulted in groundwater tables falling by up to 12 metres in many places barring the area where the trenches had been dug. Similarly, farmers who had farms close to the hillocks said that many dry bore wells have sprung back to life. Water is now available at depths of 100-200 feet instead of the 500-800 feet earlier. Farmers like Kondaiah have been cultivating previously unused land.

The trenches are 10 metres long, 3 metres deep, and just over a half metre wide; Each house in the village has a soak pit that facilitates water absorption.

There were other positives as well. The soil from trenches was distributed among farmers to layer their farms, and this further improved cultivation. Successful digging of trenches also gave the officials the idea to dig soak pits outside each house in the villages. Almost all households would earlier release water from their kitchens and bathrooms onto roads or into gutters. The digging of trenches and soak pits turned out to be a great way to generate local employment, as the work was funded under the rural employment guarantee scheme. The total cost so far, including wages and material, has been Rs 30.33 crore. Since 2016-17, the digging of soak pits has generated 5,23,380 man-days, that of staggered trenches has created 14,72,719 man-days, and digging of continuous contour trenches has created 1,02,885 man-days of work.

Until June 30 this year, the length of the trenches dug on the 259 hillocks was 613 km; work on another 163 km of trenches was ongoing. The work on trenches is by no means done and, going by the evidence, Peddapalli has better days ahead.

No surprises then that the district and its officials recently received praise from Param Iyer, Secretary, Union Ministry of Drinking Water and Sanitation, when he tweeted about their "excellent work".

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Delhi will not survive without Yamuna, says NGT chairman

SHIVNARAYAN RAJPUROHIT
NEW DELHI, JULY 21

FE-22

SAYING THAT Delhi will not survive without the Yamuna, the National Green Tribunal (NGT) has given one more "opportunity" to authorities to list steps taken to rejuvenate the river within two weeks. "Killing Yamuna will ultimately kill Delhi — if not today, then tomorrow," observed NGT Chairman Adarsh Kumar Goel.

The four-member bench led by Goel was hearing a bunch of petitions on reviving the Yamuna earlier this month. The NGT order said Rs 10 crore performance guarantee deposited by the Delhi, Haryana and UP governments each, and Rs 50 lakh by DPCC "may have to be forfeited" for not implementing its directions.

NGT has sought reports from 3 states, DDA, DJB and DPCC

Criticising the three states and their agencies, Goel said, "Large-scale violations require stern punishment. But no action (has been taken)... That's unfortunate."

The NGT order asked the three states, DDA, DJB and DPCC to file affidavits on action taken, action required and reasons for delay in executing its earlier order.

It had earlier ordered setting up of STPs and upgrading existing ones; trap drains; stop discharge of toxic water into the river; clear Yamuna floodplains of encroachments; and set up common effluent treatment plants in industrial zones, among other measures.

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नदियों में प्रदूषण कम करने के लिए 5800 करोड़ से अधिक धनराशि मंजूर

PK-22/7

नयी दिल्ली,(भाषा): देश के 16 राज्यों में गंगा को छोड़कर 34 नदियों में प्रदूषण कम करने के लिए 5800 करोड़ रूपये से अधिक की धनराशि मंजूर की गयी है।पर्यावरण राज्य मंत्री बाबुल सुप्रियो ने हाल ही में लोकसभा में कहा कि राष्ट्रीय नदी संरक्षण योजना (एनआरसीपी) के तहत मंजूर 5870 करोड़ रूपये में से 2522 करोड़ रूपये केंद्र ने राज्यों को जारी कर दिये हैं।उन्होंने एक सवाल के जवाब में कहा, ''विभिन्न शहरों में उनसे सटी नदियों में प्रदूषण कम करने के लिए राज्यों से परियोजना प्रस्ताव मिलते हैं और एनआरसीपी के तहत वित्तीय सहायता पर गौर किया जाता है।''उन्होंने कहा, ''एनआरसीपी में 5870.55 करोड़ रूपये की मंजूर लागत से 16 राज्यों के 77 शहरों में 34 नदियों के प्रदूषित खंडों में प्रदूषण कम किया जाएगा।''उन्होंने कहा कि पिछले एक साल में एनआरसीपी के तहत नदियों में प्रदूषण कम करने के लिए राज्यों को 143 करोड़ रूपये दिये गये हैं।

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तामिलनाडु को पानी छोड़ने पर किसानों में आक्रोश

RP-22/

मंड्या. गत चार दिनों ने कावेरी जल प्रवाह क्षेत्र के कबिनी और कृष्णराज सागर (केआरएस) बांधो से तमिलनाडु को पानी छोड़े जाने पर मंड्या तथा मैसूर जिले के किसानों में आक्रोश है। पानी छोड़ने के विरोध में पिछले दो दिनों से इन जिलों में प्रदर्शन जारी है जिससे दो जिलों मे तनाव व्याप्त है। पिछले कई दिनों से इन जिलों के किसान सिंचाई के लिए नहरों में पानी छोड़पे की मांग कर रहे थे, लेकिन नहरों में पानी नहीं छोड़ने से किसान नाराज थे।

इस बीच इन बांधो से तमिलनाडु के लिए पानी छोड़े जाने की खबर मिलते ही आक्रोशित किसानों ने बेंगलूरु-मैसूरु सड़क पर चक्का जाम कर दिया है।

राज्य किसान संघ के अध्यक्ष कोडीहल्ली चंद्रशेखर के मुताबिक कावेरी जल प्राधिकरण के निर्देशों के तहत 19 जुलाई से प्रति दिन केआरएस तथा कबिंनी बांधों से तमिलनाडु के लिए 8 हजार 500 क्यूसेक पानी छोड़ा जा रहा है। इसके विपरीत मंड्या तथा मैसूर जिले के किसानों को सिंचाई के लिए पानी उपलब्ध करने पर कोई निर्णय नहीं किया गया है।

इस बीच, कावेरी जलाधिग्रहण क्षेत्रो में पिछले कुछ दिनों से अच्छी बारिश हो रही है। बावजूद इसके फिलहाल केआरएस में पानी का अंतर्वाह केवल 600 क्यूसेक है। हालांकि अगले कुछ दिनों में इसमें तेजी आने की संभावना है। वहीं किसानों का कहना है कि मौजूदा स्थिति में केआरएस से तमिलनाडु के लिए 8 हजार क्यूसेक से अधिक पानी छोड़ा जाना स्थानीय किसानों के साथ अन्याय है। 49 टीएमसी पानी भंडारण की क्षमता वाले केआरएस में केवल 7 टीएमसी पानी संग्रहित है। कावेरी जलबहाव क्षेत्र में अभी तक पिछले वर्ष की तुलना में कम बारिश हुई है।

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पानी के बहाव का आपदा बन जाना

H-22/7

पहले जो बाढ़ बिहार में महज ढाई दिन का मामला मानी जाती थी, अब वह पूरे ढाई महीने तक लोगों को परेशान करती है।

दिनेश मिश्र
जल विशेषज्ञ

बहते पानी में अगर थोड़ी देर खड़ा रहना पड़ जाए, तो पैरों के नीचे से जमीन खिसकने लगती है, और जब जमीन सिर्फ रेत की बनी हो, तो पानी में संभलना बहुत मुश्किल हो जाता है। जमीन खिसकने का यह मुहावरा ऐसे ही किसी बाढ़ वाले क्षेत्र में ईजाद हुआ होगा। इन पंक्तियों के लिखे जाने तक बिहार में 12 जिले बाढ़ से त्रस्त हैं, 921 ग्राम पंचायतों में एक फुट से छह फुट तक पानी भरा ही नहीं है, बल्कि वह तेज धारा के साथ बह भी रहा है। 55 लाख से ज्यादा लोग बाढ़ की चपेट में हैं और दर्जनों बदनसीब लोगों की जान जा चुकी है।

सरकार ने बचाव और राहत-कार्य शुरू कर दिए हैं। नेपाल में हाई-डैम बनाने की वार्ता के संकेत भी दिए गए हैं। साथ ही निकट भविष्य में नदियों के तटबंधों की लंबाई बढ़ाने का वादा भी कर दिया गया है। ये सब काम अमूमन अगस्त महीने के अंत या सितंबर में होते हैं, लेकिन इस साल जुलाई के पहले पखवाड़े में ही करने पड़े, क्योंकि राज्य एक सप्ताह पहले तक भयंकर सूखा झेल रहा था, मगर जुलाई के पहले सप्ताहांत से जो वर्षा शुरू हुई, वह बहुत तेजी से दूसरे सप्ताह के मध्य में बाढ़ में बदल गई।

चित्रांकन : सुदर्शन मल्लिक

ऐसा प्रायः हर साल होता है, इसलिए जनता आवाज उठाती है कि बाढ़ की समस्या का स्थाई समाधान होना चाहिए, पर व्यवस्था इसका कोई दीर्घकालिक समाधान खोज ही नहीं पाती। बाढ़ग्रस्त क्षेत्रों के बुजुर्ग पहले की बाढ़ को ढाई दिन की बाढ़ बताते थे। बस पानी आता था और चला जाता था। बाढ़ का पानी जानवरों को बांधने वाले खूंटे को देखकर डरता था। गांव के सबसे बाहरी घर के खूंटे से ही वापस चला जाता था। नदी की बाढ़ का उत्सव मनाकर स्वागत होता था। स्त्री-पुरुष नावों में बैठकर गाते-बजाते निकल जाते थे। लेकिन अब पानी ढाई दिन की जगह ढाई महीने रहता है और खेती को चौपट करता है। यही नहीं, अब शहरों में भी बाढ़ आने लगी है, जो पहले केवल गांवों तक सीमित रहती थी। अब तो शहर को बचाने के लिए भी गांव की कुर्बानी ली जाती है।

पहले पानी आता था और चला जाता था, तो इसका सीधा मतलब है कि पानी के रास्ते में कोई रुकावट नहीं थी। विकास के नाम पर तटबंध, सड़क, नहरें बनाकर और रेल लाइन आदि बिछाकर हमने जो सुविधाएं बढ़ाई हैं, बस उनसे होकर पानी की निकासी का इंतजाम करने में ही सारी बचत कर ली और उसी का परिणाम अब सामने आ रहा है। शायद ही किसी राज्य में पानी की निकासी का कोई सम्यक अध्ययन हुआ हो, जिसके आधार पर कोई कार्रवाई हुई हो। सन् 1903 से लेकर अब तक कई सिंचाई आयोग या बाढ़ आयोग देश व राज्य स्तर पर गठित हुए, लेकिन जल-निकासी को वह महत्व कभी नहीं मिला, जो उसे मिलना चाहिए।

बीसवीं शताब्दी के प्रारंभ में बंगाल राज्य के चीफ इंजीनियर डब्ल्यू ए इंग्लिश ने अवकाश ग्रहण करने के बाद सीमित बाढ़ नियंत्रण का प्रस्ताव किया था, जिसमें तटबंधों में पानी की निकासी के लिए स्पिलवे (बांध के ऊपर से नियंत्रित पानी छोड़ने) जैसी संरचनाएं निर्धारित दूरी पर बनाने की बात कही गई थी। इसमें नदी का पानी एक सीमा तक बढ़ने के बाद तटबंधों के ऊपर से निकल जाने का प्रावधान था। इससे बाढ़ का प्रकोप खत्म तो नहीं होता, मगर कम जरूर होता। उनका विचार था कि नदियों की छाड़न, यानी मृत धाराओं का उपयोग इस पानी को बहाने में किया जाए। ऐसा करने से नदी का पानी तटबंधों के आस-पास तो फैलता, मगर उसका प्रकोप बहुत घट जाता। कुछ इसी तरह की बात बिहार के एक पूर्व इंजीनियर इन चीफ भी कहते हैं। दुर्भाग्यवश उन्होंने भी यह बात अवकाश प्राप्त करने के बाद ही कही। इस विकल्प के साथ यह जरूरी था कि एक व्यापक शिक्षण कार्यक्रम जनता के बीच चलाया जाता कि बाढ़ को एकदम समाप्त कर देना समाज और कृषि के हक में ठीक नहीं है। बाढ़ तो आनी ही चाहिए।

बाढ़ का बने रहना जरूरी है। इसकी हिमायत बिहार के 1930-40 के दशक में रहे चीफ इंजीनियर कैप्टन हाल भी करते थे। तटबंधों के धुर विरोधी कैप्टन हाल कहते थे कि गाद से भरपूर नदियों पर तटबंध बनाकर हम अपनी भावी पीढ़ी पर ऐसा कर्ज लादेंगे, जिसका भुगतान उन्हें अपने ऊपर विपत्ति ओढ़कर करना पड़ेगा। मगर इनमें से किसी की बात सरकारों ने नहीं सुनी। अब हम विपत्ति भोगने के लिए अभिशप्त हैं, क्योंकि हमारे समाज में ऐसे भी राजनीतिक दृष्टि से ताकतवर लोग थे, जिन्होंने बाढ़ से पूरी सुरक्षा की गारंटी लेकर बाढ़ पीड़ितों का मन मोह लिया था।

अभी बाढ़ का मौसम समाप्त नहीं हुआ है। अभी सिर्फ शुरुआत है। बिहार की 1987 की बाढ़ में 26 जिले, 359 प्रखंड, 23,852 गांव और 2.82 करोड़ लोग प्रभावित हुए थे, जिनमें से 1,373 लोग मारे गए थे। 47 लाख हेक्टेयर जमीन पर बाढ़ का पानी फैला था और 16.82 लाख घर गिरे थे। उस तरह की बाढ़ का अगर आज मुकाबला करना पड़ जाए, तो हमारे बाढ़ सुरक्षा तंत्र का क्या होगा? साल 2007 की बाढ़ में बिहार में 22 जिले प्रभावित हुए थे। 18,832 पंचायतें, 24,442 गांव, 2.44 करोड़ लोग बाढ़ के पानी में फंसे थे। 7.84 लाख घर गिरे और 1,287 लोग मारे गए। इस बार 34 स्थानों पर तटबंध दरके व नहरें टूटीं और 54 जगहों पर नेशनल और स्टेट हाई-वे टूटीं। 829 स्थानों पर ग्रामीण सड़कें भी टूट गईं। हमारी समझ है कि इतनी जगहों से बाढ़ का पानी अपने निकलने का रास्ता खोज रहा था और जब उसे रास्ता नहीं मिला, तो वह इन्हें तोड़कर आगे बढ़ गया। इन स्थानों पर पानी की निकासी के लिए पुल, कलवर्ट या उसी तरह की संरचनाएं बनाने की जरूरत थी, लेकिन हमने उसे पहले से ज्यादा मजबूती से बांध दिया। अब पानी है, तो कहीं न कहीं जाएगा ही। रास्ता नहीं मिलेगा, तो बाधाएं तोड़कर जाएगा। किसी की समझ में यह बात आती है क्या?

(ये लेखक के अपने विचार हैं)

News item/letter/article/editorial published on 21.07.2019 in the **Hindustan Times, New Delhi** and documented at WSE Dte, CWC.

No respite from flood fury as toll reaches 168

MONSOON MISERY Over 10 million people across Assam and Bihar affected by floods

Sadiq Syed and Subhash Pathak
letters@hindustantimes.com

GUWAHATI: The death toll in the two worst affected states of Assam and Bihar has risen to 62 and 92 respectively, bringing the flood related casualties up to 168 across the north and northeastern states.

In Assam, even as the number of flood-affected districts came down to 24 from the earlier 30, 12 more deaths were reported from Morigaon, Barpeta district, South Salmara, Dhubri and Nalbari, the Assam State Disaster Management Authority said.

In Bihar, the maximum casualty was recorded in Sitamarhi, where 27 people have died during the current spell of the floods. Bagmati and Burhi Gangak rivers were in spate raising concerns about their embankments in Sitamarhi, Muzaffarpur and Darbhanga, while Madhubani was put on high alert after the Kamala Balan river began to rise.

Both Sitamarhi and Madhubani are also heritage sites, where the remains of the earliest aboriginal population known as Tharus, Bhars and Kiratas, can be found. There are also several ancient temples, dating back to the Pala dynasty, in these regions. There are also archeological digs in Darbhanga and Madhubani.

"Our main concern is the damage this flood water may cause to the heritage sites and ancient temples. Old structures are quite vulnerable to the damage and destruction caused by flood fury," Atul Kumar, state archaeology director, said. "But the virtual status and level of damage may be estimated once the flood situation will be over," he said.

According to latest reports, 4.4 million people are affected by floods across Assam, while 6.6 million people of 12 north Bihar districts are affected.

"Relief and rehabilitation work is underway in the state. The CM is working hard to provide maximum aid to the flood-affected people in the state," said water resources minister Sanjay Kumar Jha, adding that a sum of ₹30 crore was transferred to the bank accounts of 69,000 families hit by the floods.

In Assam, while 689 relief camps are operational, many others in far flung Chars (riverine islands) are still struggling for basic amenities. "The water is receding but the situation is still bad and over 1.1 million people are affected," said Moferjal Sarkar, District Project Officer, ASDMA, Dhubri. "We have been receiving reports about people needing doctors and medicines in Char areas. We are planning to put more boat clinics tomorrow onwards to get to the affected people," Sarkar said.

In Dhubri, an undertrial who escaped from judicial custody taking advantage of the floods was caught on Friday night, police officials said. According to Nirupam Hazarika, Additional Superintendent of Police, Hafizur Rehman (28) who was arrested on charges for allegedly raping a minor escaped from the Dhubri Girls College, which was notified as a temporary jail after the Dhubri Jail was submerged in the floods.

"He escaped probably by jumping through the ventilator from the second floor on July 16," Hazarika said adding 409 inmates were moved to Dhubri Girls College on July 15 and 16.

The Chief Minister Relief Fund continued to receive contribution including from the state's directorate of information and public relations whose officials at the headquarters in Guwahati contributed a day's salary, according to a statement from Chief Minister Sarbananda Sonowal's office.

Meanwhile, Kaziranga National Park, the world heritage site in central Assam recorded a fall of 142cm in the flood water levels, even as the number of casualties rose to 141. According to KNP officials, as many as 12 rhinos are among the dead, including 11 who drowned in flood waters.

(With inputs from Reena Sopam)

Medical officers distribute medicines to flood-hit people in Gagalmari, in Assam on Friday. AP FILE

IN KERALA, 3 DIE AS RAINS CONTINUE

THIRUVANANTHAPURAM: Three people died as rains continue to lash Kerala for the second day on Saturday. Some areas in Kasaragode received 25 cm of rain, said the Kerala Disaster Management Authority.

Three fishermen from Tamil Nadu whose boat capsized near Kollam coast two days back are still missing. In Thiruvalla, Verghese Koshy, 53, slipped into Manimala river. His body was found. Another man died in Kollam after a tree fell on him and one died of electrocution in Kozhikkode in north Kerala. HTC

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Narmada dam: MP, Guj spar on rehabilitation

PTI
AHMEDABAD, 20 JULY

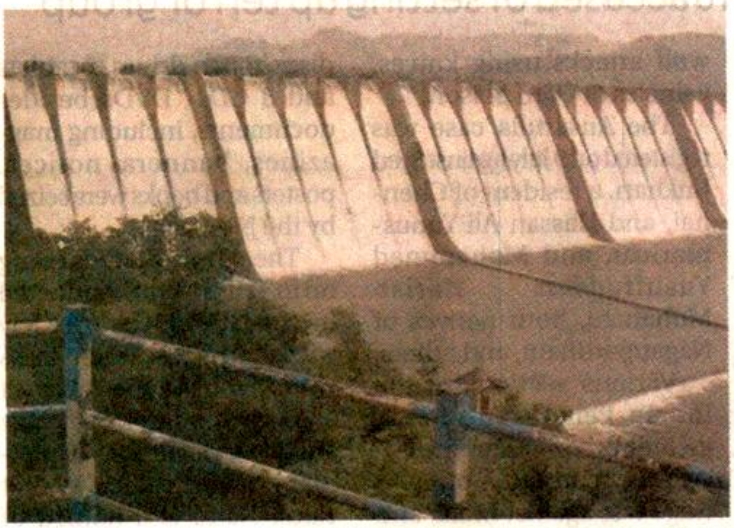
A Madhya Pradesh minister Saturday threatened not to release the Narmada water for the Sardar Sarovar dam unless the Gujarat government and the Centre addressed its concerns about the dam-affected people.

Gujarat Chief Minister Vijay Rupani said the Congress government in the neighbouring state should not politicize the issue, and both the governments are bound by the rulings of the Supreme Court and Narmada Control Authority (NCA).

Madhya Pradesh Minister for Narmada Valley Development Surendra Singh Baghel alleged that the Gujarat government was not holding the meetings of the NCA "seriously" for finding agreement on rehabilitation of the project-affected people.

Nor was it releasing water for power generation (a large chunk of power goes to Madhya Pradesh), he alleged.

"So we have decided, after giving a lot of thought to it, that unless Gujarat and Central governments decide on dam-affected people, we are not going to release water," Baghel said, speaking to reporters in Bhopal.



Rupani hit back, saying the threat showed "lack of information and understanding of the legality of the Supreme Court-appointed Narmada (Water Disputes) Tribunal".

"It is a political statement, it is unfortunate, and made with the bad intention to play politics on water.

"The states are bound by the judgment of the Supreme Court, and water distribution decision is taken by the Narmada Control Authority," the chief minister said.

"Displaced people have been rehabilitated from 2017 to date as per the order of the Supreme Court," Rupani said.

The Madhya Pradesh government suddenly raised the issue of displaced people with Gujarat chief secretary in a letter dated May 27, 2019, saying that 6,000 dam-affected families were yet to be relocated, he said.

The Resettlement and Rehabilitation sub-group of the NCA held a meeting on the issue on July 12, but no senior official of the MP government participated, Rupani alleged.

"They also boycotted a meeting of the Sardar Sarovar Reservoir Regulation Committee on July 18," he said.

"The MP government is questioning the neutrality of an autonomous body like NCA out of bad political intentions. For 42 years until 2024, no state can change the historic judgment of the tribunal. Threatening not to release Narmada water is not at all justified," the Gujarat chief minister said.

Baghel contended that MP government officials had to shun the NCA meeting "because they (Gujarat government and the Centre) are not taking us seriously".

"This is a rainy season. How do we release water when Gujarat is not releasing water (further downstream from the dam) and is not generating electricity too? If they do not release water, people will get affected by the dam (with the water level of reservoir rising)," the minister added.

"Gujarat should generate electricity. The solution is that they should consider the points we want to make," Baghel added.

The two hydel electricity generation plants at the dam have a capacity of 1,450 MW, which is shared by Madhya Pradesh (57 per cent), Maharashtra (27 per cent) and Gujarat (16 per cent).

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Release of water from KRS to Tamil Nadu triggers protests

No water for crops, say farmers; raise slogans against Karnataka government

SPECIAL CORRESPONDENT
MANDYA

The Bengaluru-Mysuru highway witnessed gridlocks on Saturday as farmers held protests against the discharge of water to Tamil Nadu at Srirangapatna, Induvalu, Mandya, Maddur, and other places.

The outflow from the Krishnaraja Sagar (KRS) in Karnataka to Tamil Nadu was increased at the rate of 4,802 cusecs on Saturday evening.

Coming to a halt: Farmers blocking traffic on the busy Bengaluru-Mysuru highway on Saturday. • SPECIAL ARRANGEMENT

Precarious level

The farmers raised slogans against the Karnataka government, Chief Minister H.D. Kumaraswamy, and Minor Irrigation and district incharge Minister C.S. Puttaraju.

The farmers said they had been demanding water to save standing crops in the district. But the government that had not taken any steps to help them was discharging water to Tamil Nadu. They wanted the the water release stopped immediately as the level at the KRS was precariously low due to a weak monsoon. The reservoir level stood at 90.03 ft on Saturday morning, as against the full level of 124.80 ft. The reservoir had attained almost maximum level on the same day last year.

While Saturday's live storage was just 7.575 tmcft, there was 38.2 tmcft on this day last year.

Boat operations curbed

Boat operations have been suspended at the Ranganathittu Bird Sanctuary in Karnataka from Saturday for an indefinite period, as the flow in the Cauvery has significantly increased.

A senior Forest Department official told *The Hindu* that it was not advisable to continue the operations considering the safety of visitors. However, there won't be restrictions on their entry to the sanctuary.

Tourists take boat rides to watch migratory birds and their nesting from close quarters.

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Water level in Ghaggar starts receding

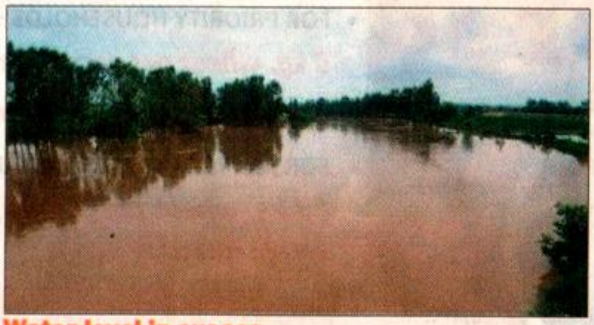
SUSHIL MANAV
TRIBUNE NEWS SERVICE

T.21

CHANDIGARH, JULY 20

The water level has started receding in the Ghaggar, a seasonal river that has inundated hundreds of acres of agricultural land near Moonak in Punjab and Kaithal in Haryana and was also threatening to wreck havoc in Fatehabad and Sirsa districts also.

The water discharge in the Ghaggar at the Guhla Cheeka point in Kaithal district was measured at 39,953 cusecs at 1 pm today compared to 48,220 cusecs at 4 pm and 50,774 cusecs at 6 am on Friday, according to sources in the Haryana Irrigation and Water Resources department at Panchkula.



Water level in cusecs

Place	July 19	July 20	Danger Mark
Guhla Cheeka	50,774	48,220	51,733
Khanauri	14,775	14,150	25,000
Chandpur	11,900	11,700	25,000

The water level (measured in feet) in the river has also come down from 22.9 feet at 4 pm and 23.7 feet yesterday to 20.2 feet at Guhla Cheeka today.

The danger mark for the Guhla Cheeka point is 24 feet and the maximum water discharge is 51,733 cusecs. The water from Tangri and Markanda rivers join the Ghaggar a little ahead of the Guhla Cheeka gauge point and hence the water level and its discharge at this level are considered important to forecast floods in downstream districts of Haryana and Punjab.

At the Khanuri gauge point in Sangrur district of Punjab, the water discharge has receded from 14,475 cusecs on Friday to 14,150 cusecs Saturday afternoon.

The water discharge at the Chandpur gauge point in Fatehabad district has also come down from 11,900 cusecs recorded at 4 pm on Friday to 11,700 cusecs at 1 pm today.

The water level at Chandpur has also come down from 5.7 feet recorded yesterday to 5.6 feet today. The danger mark at Chandpur is at 6.5 feet.

In Sirsa district, the water discharge in the Ghaggar downstream of Ottu head was recorded at 13,800 cusecs today, which is much below the danger mark of 25,000 cusecs.

Originating from the Shivalik hills of Himachal Pradesh, the Ghaggar flows in a serpentine way from east to southwest though several districts of Punjab and Haryana to enter Rajasthan from where it travels onto Pakistan.

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ILLUSTRATION: J.A. PREMKUMAR

Looking for WATER

The crisis is almost here to haunt us

HEMA NAIR

If you wish to raise a glass of wine in salute, and make the toast in Hebrew, you give voice to words from far ancient times – *L'chaim*. It is pronounced *La-haim*, meaning 'To Life'.

I think the time has come for us to make the toast every morning to ourselves and to those with us, with a glass of water. Perhaps it will remind us how precious those drops are, and how scarce it is becoming. While we were distracted by our socio-political turmoil, war of words, or the clash of ideals, our manna was being sucked out of this earth, dried out from the skies and melted from our mountains. We are looking into a Mad Max-like future, and it appears now that the nightmare will step out of the big screen and turn into our reality not too far away.

As school kids trot off to the first day of school, the monsoon always came in to ruin the shine on the brand-new shoes and white school uniforms. But it is July now, and the whole month of June went by without significant rain. The monsoon with its resonant thunderstorms and forbidding black skies is only a memory from last year. If July is scarce, too, I wonder what will happen to us for the rest of the year.

As I cycle around the villages near my home, scarcely do I go more than a couple of kilometres before I find a borewell that pumps out water into a tanker, which then carts it off into the city for thirsty apartment complexes. All too often, the din of another new borewell rig pierces your eardrums.

In those moments I often think of these monstrosities as giant spears piercing the flesh of Mother Earth, trying to suck the marrow out of her body. Many of you may not think in the hyperbole as I tend to, but I hope you catch the drift.

If the rain doesn't come and the earth dries up, where will we go for water?

In school, we were taught that the rivers in the northern parts of India were perennial rivers that flow year-round, because their source was not always rainfall, but also the melting Himalayan glaciers.

A few months back, trekking in the mountains above Gaumukh, the primary source of the Ganga, I saw erosion lines on the mountain-side a few kilometres long. It has taken 200 years for the glacier to recede 3 km, but the rate has escalated alarmingly since 1971 to about 22 metres a year.

They say it is only going to be a few decades more before they evaporate into nothingness.

If the northern rivers are in jeopardy from the disappearing Himalayan snow cover and the southern ones are parched from absent rainfall, where will we go for freshwater?

In the beautiful city I live in, we have lost 80% of our green cover and wetlands in just 50 years. Translating this in terms of numbers that we can crunch, this would be like walking along in a wooded area with an electric saw, to chop down four trees and leave only the fifth one standing. Imagine the woods after that – the empty skyline, the homeless birds, the scorching sun on the ground and the all-pervasive heat and dust. This fear may not belong to a remote dystopian future anymore. If the monsoon doesn't come to our land soon, this could well be our present.

Suddenly, toasting with a tumbler of water 'To Life' doesn't seem all that far-fetched.

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जल शक्ति अभियान के लिए 256 अधिकारियों ने किया प्रवास, प्रारंभिक रिपोर्ट सुखद

RP-2117

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जोधपुर. केन्द्रीय जलशक्ति मंत्री एवं जोधपुर सांसद गजेन्द्रसिंह शेखावत दो दिवसीय प्रवास पर शनिवार को जोधपुर पहुंचे। अपने निवास पर उन्होंने जनसुनवाई की। इसके बाद वे राज्यसभा सांसद नारायण पंचारिया के साथ फलोदी रवाना हो गए। शेखावत ने पत्रकारों से बातचीत में कहा कि यह अभियान देशभर में चल रहा है। इसके तहत 256 जिलों में देश के बड़े अधिकारी और भारत सरकार में काम करने वाले हाइड्रो इंजीनियर्स का पहला प्रवास हुआ है। प्रारंभिक रिपोर्ट सुखद है। उन्होंने पानी को लेकर गहरा रहे संकट पर चिंता जताई। उन्होंने कहा कि विश्व में पानी का संकट है लेकिन भारत में जनसंख्या अधिक होने से भी स्थिति और गंभीर हो जाती। ऐसी स्थिति में हमें पानी को लेकर जागरूक होना होगा। सभी विषयों पर एक साथ काम करना होगा।

पुराने जल स्रोतों को ठीक करना होगा। बहुत दुर्भाग्यपूर्ण है कि वाटर ट्रेन से पाली को पानी पहुंचाना पड़ रहा है, इससे पहले जोधपुर में पाली से पानी लाया जाता था। पाली के जवाई बांध ने दशकों तक जोधपुर को पानी पिलाया है। पाली सांसद ने इसको लेकर रेलमंत्री से मुलाकात की थी। इस समस्या का जल्द समाधान करेंगे।

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तकनीकी शिक्षण संस्थानों में 22 को मनेगा जल संरक्षण दिवस

एआईसीटीई ने इंजीनियरिंग फार्मेसी और मैनेजमेंट कॉलेजों को लिखा पत्र

नई दिल्ली। देश के सभी उच्च शिक्षण संस्थानों में 22 जुलाई को जल संरक्षण दिवस मनेगा। इंजीनियरिंग, आर्किटेक्चर, मैनेजमेंट व फार्मेसी कॉलेजों में जल शक्ति अभियान के तहत आयोजित जल संरक्षण अभियान में विद्यार्थियों को पानी के बचाव, संरक्षण पर जागरूक किया जाएगा। खास बात यह है कि 11 बिंदुओं पर आधारित थीम के तहत कॉलेजों को जागरूकता अभियान चलाना होगा। कार्यक्रम से संबंधित फोटो समेत अन्य रिपोर्ट एआईसीटीई को भेजनी अनिवार्य है। अखिल भारतीय तकनीकी शिक्षा परिषद के चेयरमैन प्रो. अनिल डी सहस्रबुद्धे की ओर से सभी 10 हजार तकनीकी शिक्षण संस्थानों के प्रिंसिपल व डायरेक्टर को पत्र लिखा गया है, जिसमें केंद्र के अभियान के तहत परिषद के सभी संस्थानों में जलदिवस मनाने का निर्देश दिया गया है। ब्यूरो

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A Very Fishy Tale from an Erratic Monsoon

Inadequate rains affect freshwater hilsa supply in major metros, price shoots up to ₹1,300/kg

Sutanuka.Ghosal@timesgroup.com

Kolkata: Patchy rains have many fallouts — among them, this year, a big shortage of the piscine delicacy, freshwater hilsa.

Supplies of the fish prized for its flavour have hit a five-year low. Prices have shot up, retailing at ₹1,200-1,300 per kg, and in some cases even more, in major metro markets. And here's another market twist — most good-sized hilsas being sold currently are frozen varieties imported from Myanmar, not fresh catch from Bengal.

Scientists at the Central Inland Fisheries Research Institute (CIFRI) said lower rainfall in South Bengal affected hilsa migration from the Bay of Bengal to estuaries of the Hooghly river.

Traders say there has been no major landing of hilsa since the beginning of monsoon, and that smaller hilsas that have been caught are being sold locally in Bengal.

Adult hilsas migrate to fresh waters from the sea for spawning. The young, upon hatching, rear in the river channels and estuaries before descending to the sea. Fishermen catch the hilsa during the migration and from the breeding grounds.

UK Sarkar, head of reservoir & wetland fisheries at CIFRI, said, "There is hardly any rainfall in south Bengal that can accelerate the migration of hilsa fish from Bay of Bengal to the estuaries of Hooghly and its channels. Weather is the stumbling block for migration this year." According to the regional meteorological department, there has been 50% deficient rainfall from June 1 till date in the Gangetic West Bengal.

Fish traders from Delhi and Mumbai said that they are selling hilsa from Myanmar. A fish retailer in Navi Mumbai said there's "huge demand for hilsa but that supply was "very low".

Those who love freshwater hilsa have got another reason to hope for better rains in the latter part of monsoon.

MONSOON COVERS ENTIRE COUNTRY

Rainfall Deficit Narrows to 18%

With monsoon winds reaching west Rajasthan, the monsoon has covered the entire country on Friday. India's rainfall deficit now stands at 18% since the monsoon season began on June 1. ▸▸ 13

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Monsoon Covers Entire Country, Rain Deficit Stands at 18%

Commuters wade through a flood affected area, following heavy monsoon rain, in Bathinda

IMD predicts above avg rainfall for most parts of the country for next two weeks

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New Delhi: The monsoon has covered the entire country with rain clouds reaching west Rajasthan on Friday, the weather office has said. It is four days behind its usual date of July 15.

The rain deficit since the start of the monsoon season on June 1 stands at 18% as of Friday, India Meteorological Department said.

But the department has predicted above average rainfall across the country, barring the northern mountain regions and the eastern states, for the next two weeks.

Rainfall in June was 33% below long-term average, collecting only 112.1mm against a normal rainfall of 166.9 mm, due to a delayed landfall and slow progress. The deficit had indicated that this year's monsoon could be one of the worst in a century, according to official data.

But July started strongly and the country experienced its first surplus week of rain this season between July 3 to July 10, recording 28% rain above normal. The rainfall for July is currently only 3% below normal with almost two weeks to go.

The rainfall for July is currently only 3% below normal with almost two weeks to go

Natural factors point to an encouraging monsoon season ahead, experts said.

Currently, weak El Nino conditions over the Pacific Ocean indicate that the El Nino Southern Oscillation (ENSO) will remain in the neutral phase over the coming months, according to the Australian Bureau of Meteorology (BOM). Additionally, the forecaster has said the Indian Ocean dipole (IOD) will remain between neutral to positive.

IOD refers to the temperature difference between different parts of the Indian Ocean.

Water levels in India's 91 major reserves are at 88% of their live storage capacity at present, according to data from the Central Water Commission.

Earlier, the government had announced an increase in the minimum support price of pulses and oilseeds due to a fall in the plantation of kharif crops, owing to the delayed onset of rains. This led to an increase in the prices of pulses between 1% to 8%, with traders and analysts expecting further price hikes.

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Monsoon covers entire India, but four days late

BS-20

SANJEEB MUKHERJEE
New Delhi, 19 July

The southwest monsoon, which has had an erratic run this year, covered the entire country on Friday — four days behind schedule. The India Meteorological Department (IMD) said the monsoon had progressed into the remaining parts of West Rajasthan. The progress of the rains has been in fits and starts, and the quantum of rain has also varied across different regions.

Of the 36 meteorological subdivisions, 21 had deficit rain and 15 had normal. In Marathwada, Vidarbha, Telangana, Saurashtra, and Kutch, the cumulative rainfall deficiency has been more than 35 per cent so far.

The rains entered India on June 8, after a delay of more than a week. Its progress across south, central and east India was hampered by Cyclone Vayu. As a result, the rains reached these parts almost 10-15 days behind schedule.

In June, the total rain across the country was 33 per cent below normal — this is the worst performance in five years. As a result, kharif acreage went down and reservoirs dried up as a heat wave intensified. In end-June, sowing of kharif crops was almost 25 per cent less than the normal area covered in past five years. This deficiency increased in the first week of July.

Water levels in the reservoirs also dipped from 30.5 billion cubic meters (BCM) on June 6 to 26.94 BCM in the first week of July. But, thereafter, the rains revived and within of span of less than a fortnight, the cumulative monsoon shortfall dropped by almost 64 per cent. "The all-India rainfall during 1 to 19 July is 165.7 mm against its normal rainfall of 170.5 mm (deficient by 3 per cent)," the Met department said.

The rains though again went for a mid-month break. The weakness over central and west India might continue till end-July.

This has also widened the kharif-sowing deficit and shortfall in cumulative rains has also increased to 18 per cent less than normal.

COUNTING GRAINS

Sowing of kharif crops as on July 19 (mn hectares)

	2018	2019	% chg
Rice	15.41	13.96	-9.43
Pulses	7.39	6.21	-15.93
Coarse cereals	11.0	10.18	-7.41
Oilseeds	11.89	11.05	-7.08
Cotton	9.27	9.63	-3.93
Total	**60.9**	**56.73**	**-6.8**

NOTE: Total might not match as all crops haven't been included
Source: Ministry of Agriculture

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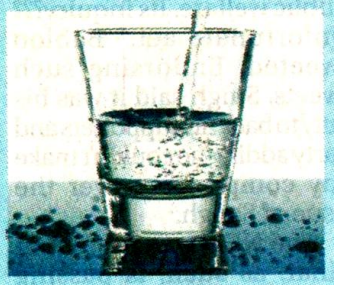
UP Assembly's new water policy: Only half a glass

PRESS TRUST OF INDIA
LUCKNOW, 19 JULY

JT-20



Only half-a-glass of water will be served at a time in Uttar Pradesh Assembly premises to prevent its wastage, the Speaker has directed.

The order has been issued by Principal Secretary of the Assembly Pradip Dubey on the directive of Speaker Hriday Narain Dixit.

"It has been seen that mostly full glass of water is not used. More water can be provided if people want it," Dubey said in the order.

Therefore, in the secretariat and all sections on the campus, only half-filled glass of water will be initially given to people, the order said, adding that it is expected of the officials and staff that this order is followed with immediate effect.

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Fear of flood looms large over colonies on Tangri riverbed

MONSOON FURY 1,800 families worry their houses will get inundated

NITISH SHARMA
TRIBUNE NEWS SERVICE

AMBALA, JULY 19

Residents of colonies located on the Tangri riverbed in Ambala Cantonment are living under constant fear of floods.

Tangri is a seasonal river and it swells when there is heavy rainfall in the Shivalik region. Residents are worried that if there is a flood, it would damage their houses.

Sudama, a resident of New Ajeet Nagar, said, "I have been living here for 20 years. The houses and land were offered to us on cheaper rates by property dealers. For the last few years, whenever there is heavy rainfall in the Shivalik region, the water enters our houses and damages furniture and other belongings."

"As the river water has been entering our houses for many years, the foundation of a large number of houses has weakened and the walls have developed cracks. Last year, a boundary wall of my house had collapsed and rooms had submerged," he said.

Deepak Kumar, a shopkeeper, said, "We have been paying taxes and other bills just like any other resident. We appeal to the government to find some permanent solution as the majority of people living here are poor and can't bear repeated loses. The government should do something for us."

Sunita Devi, who works as a domestic help, said, "Whenever the Tangri swells, we are left with no food and water. Though the administration ask us to shift to safer places, it is not easy to leave our house."

More than 1,800 families have been residing on the riverbed.

An official said, "The land belongs to people but as per the rules, no one can do any construction on the riverbed. Due to illegal colonies mushrooming on the riverbed, the water body has shrunk."

Praveen Gupta, executive engineer, Irrigation, said, "The creek has been widened further this year, the obstacles have been removed and the desilting work has also been carried out to ensure the smooth flow of water. We are expecting that the river will be able to carry about 13,000 cusecs of water smoothly."

Subhash Sihag, SDM, Ambala Cantt, said, "Dharmashalas have been identified where people will be shifted in case of emergency."

The Tangri riverbed in Ambala Cantonment swells every monsoon. TRIBUNE PHOTO

APPEAL TO GOVT

"We have been paying taxes just like any other resident. We appeal to the state government to find some a permanent solution as the majority of people living near Tangri river are poor and can't bear repeated loses."
Deepak Kumar, SHOPKEEPER

'WE'RE ON THE JOB'

"Teams have been formed and we will get information about five to six hours before Tangri river overflows. Dharmashalas have been identified where people will be shifted in case of emergency."
Subhash Sihag, SDM, AMBALA CANTT

AMBALA AREAS STILL IN DEEP WATERS

It has been three days since the incessant rain had stopped after pouring heavily for almost a week, but there has been no respite to residents as several pockets in the city are still in deep waters. Bhakra Beas Management Board (BBMB) and Haryana Vidyut Prasaran Nigam (HVPN) residential areas, office complexes, a rest house and a 220-KV power grid sub-station are still submerged. Since Tuesday, booster pumps and JCB machines have been draining out rainwater but the task seems enormous. The situation in villages and low-lying areas on both sides of the Chandigarh-Ambala highway and Baldev Nagar remain grim. The service road leading to Baldev Nagar remained out of bounds for the third day consecutively as rainwater drained out from the flooded areas was discharged on it. The district administration, meanwhile, claimed that overall, situation was under control. TNS

Ghaggar recedes

OUR CORRESPONDENT

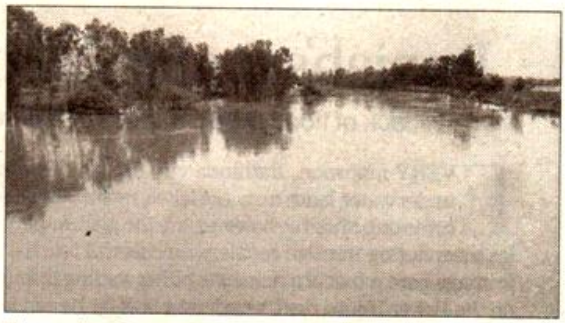
KAITHAL, JULY 19

A day after water level in the Ghaggar river touched 24 ft (a ft more than the danger mark), it receded on Friday to 22 ft as farmers heaved a sigh of relief. Their crops have been submerged owing to overflowing Ghaggar.

Deputy Commissioner Dr Priyanka Soni said the flooded Ghaggar had affected crops spread over 3,000 acres. "The loss will be ascertained once the water level recedes," she said.

RS Mittal, Superintending Engineer, Irrigation, said: "On Friday, a small "bandh" adjoining Urlana village breached but it was plugged before it could cause any damage."

The DC asked villagers to call up helpline numbers 01743-221555, 01746-234528, 9215213085 and 01746-234358.



The swollen Ghaggar river in Guhla. TRIBUNE PHOTO

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जल संरक्षण के प्रति जागरूक करेंगे जल मित्र

RP-20

रायपुर @ पत्रिका. जल शक्ति अभियान के तहत लोगों को जल संरक्षण के प्रति जागरूक किया जाएगा। जल शक्ति अभियान के तहत जिले में आयोजित की जाने वाली गतिविधियों के संबंध में कलेक्टर डॉ. एस. भारतीदासन ने शुक्रवार को कलक्टोरेट परिसर में जिले के समस्त शासकीय एवं अशासकीय महाविद्यालय के प्राचार्यों की बैठक लेकर आवश्यक निर्देश दिए। उन्होंने कहा कि महाविद्यालय के भवनों में जल संरक्षण के बेहतर प्रबंधन के लिए वाटर हार्वेस्टिंग संरचना का निर्माण किया जाना है। जल शक्ति अभियान के तहत जिले में विभिन्न कार्यक्रम कर लोगों को गिरते भू-जल स्तर के प्रति जागरूक करते हुए जल संरक्षण में सभी की सहभागिता करनी है।

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मौसम की उलटबांसी

औसत वर्षा घटी लेकिन बाढ़ का खतरा बढ़ा

इन दिनों पूर्वोत्तर राज्यों, खासकर असम में बाढ़ से हाहाकार मचा हुआ है। राज्य आपदा प्रबंधन अथॉरिटी के अनुसार इस बार असम के 33 में से 30 जिले बाढ़ से गंभीर रूप से प्रभावित हुए हैं। हालांकि सरकार की तत्परता की वजह से इस बार अब तक 30 लोगों की ही मौत हुई है, जबकि 2018 में 45 लोग मारे गए थे और 2017 में 85 जानें गई थीं। बाढ़ का तात्कालिक कारण भारी वर्षा है लेकिन चौंकाने वाली बात यह है कि नॉर्थ-ईस्ट में मॉनसूनी बरसात में लगातार कमी आती जा रही है। पूर्वोत्तर राज्यों, खासकर असम में सन 1870 से ही औसत मॉनसूनी बारिश में लगातार कमी देखी जा रही है जबकि अचानक भारी बरसात से आने वाली बाढ़ का ट्रेंड बढ़ गया है। भारतीय मौसम विभाग के आंकड़ों से इसका खुलासा हुआ है। औसत वर्षा में कमी आने की गति 1981 में तेज हुई। असम में औसत वार्षिक वर्षा 1,524.6 मिलीमीटर होती है। 1871 से 1916 के बीच बरसात में औसत 0.74 मिलीमीटर कमी आई। पर 1981-2016 में यह 5.95 मिमी हो गई। पुणे स्थित इंडियन इंस्टीट्यूट ऑफ ट्रॉपिकल मेट्रॉलजी ने पिछले साल आईएमडी के आंकड़ों के आधार पर यह निष्कर्ष निकाला था। इसी अवधि में पूर्वी उत्तर प्रदेश, मेघालय, उप-हिमालयी क्षेत्र और पश्चिम बंगाल में भी औसत वर्षा में गिरावट आई, जबकि पूर्वी राजस्थान, सौराष्ट्र, कच्छ और दीव में बढ़ोतरी दर्ज की गई। पूर्वोत्तर के और राज्यों नगालैंड, मेघालय, मणिपुर, मिजोरम, और त्रिपुरा में भी औसत वर्षा में 10 प्रतिशत की कमी आई। लेकिन भारी वर्षा वाले दिनों में बढ़ोतरी हुई है, जिसकी वजह से ब्रह्मपुत्र घाटी के कई हिस्सों में भयंकर बाढ़ आई है। कई और अध्ययनों में भी साफ हुआ है कि भारत में औसत मॉनसूनी वर्षा कम हुई है लेकिन बाढ़ लाने वाली भारी वर्षा में 5 फीसदी की वृद्धि हुई है। इससे एक भ्रम पैदा हो रहा है। हम बाढ़ को देखकर सोचते हैं कि ठीक-ठाक बरसात हो रही है, जबकि यह गलत है। असम में बाढ़ के लिए राज्य में होने वाली बारिश ही जिम्मेवार नहीं है। चीन और भूटान में होने वाली बारिश से भी यहां बाढ़ आती है। दरअसल असम की दोनों बड़ी नदियां ब्रह्मपुत्र और बराक तथा उनकी उपनदियां विदेश से निकलकर भारत की तरफ आती हैं। इस बार चीन और भूटान में जबर्दस्त बारिश हुई इसलिए असम में बाढ़ की स्थिति गंभीर बनी हुई है। लेकिन यह कैसी विडंबना है कि एक तरफ देश के कई हिस्से बाढ़ की चपेट में हैं, दूसरी तरफ कुछ हिस्से सूखे का संकट झेल रहे हैं। यह मौसम में भारी असंतुलन का संकेत है और आगे यह और बढ़ने वाला है। इसे एक चेतावनी की तरह लेते हुए हमें अपने रहन-सहन में भारी बदलाव करना होगा, साथ ही बाढ़ और सूखे जैसी दो विपरीत आपदाओं से एक साथ निपटने की तैयारी भी रखनी होगी।

डूबा नॉर्थ-ईस्ट

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कहां ले जाएगी जल की अनदेखी

जल के मामले में यह याद रखना होगा कि प्रकृति के नियम अर्थशास्त्र के नियमों की तुलना में अधिक अपरिवर्तनीय और अधिक प्रकोप वाले हैं।

रामचंद्र गुहा
प्रसिद्ध इतिहासकार

बहुत साल हो गए, जब मेरा सामना पर्यावरण संबंधी जिम्मेदारी की चौंकानी वाली परिभाषा से हुआ था, 'हम एक सीमित क्षेत्र के भीतर से जो कुछ भी चाहते हैं, उसका उत्पादन करते हैं, तो हम उत्पादन के तरीकों की निगरानी की स्थिति में होते हैं; जबकि अगर हम पृथ्वी के किसी अन्य छोर से अपनी आवश्यकताओं की पूर्ति करते हैं, तो वहां उत्पादन की स्थितियों की गारंटी देना हमारे लिए असंभव हो जाता है।' यह सूत्र वर्ष 1948 में आजादी के तुरंत बाद जे सी कुमारप्पा ने गढ़ा था। महात्मा गांधी के करीबियों में शामिल अर्थशास्त्री कुमारप्पा के शब्द मेरी याद में तब लौटे, जब मैं गांवों के हिस्से के पानी को बेंगलुरु शहर की ओर मोड़ने के विरोध के बारे में पढ़ रहा था।

मेरे शहर बेंगलुरु की जरूरतें एक समय उसकी झीलों, जलाशयों के नेटवर्क से बहुत हद तक पूरी हो जाती थीं, लेकिन जब यह बड़ा नगर बन गया, आबादी कई गुना बढ़ गई, तो झीलें कंक्रीट से भर दी गईं। मेरे पिता 1940 के दशक के बेंगलुरु को अक्सर याद करते थे कि नगरपालिका की सीमाओं के अंदर ही कई दर्जन जलाशय थे। पिता उनमें तैरते थे या उनके चारों ओर साइकिल चलाते थे। अब केवल दो जलाशय बचे हैं। 1930 के दशक में ही स्थानीय जलाशयों को बेंगलुरु की जरूरतों के लिए पर्याप्त न मानते हुए 20 मील पश्चिम की ओर थिप्पेगोंडाहल्ली में डैम का निर्माण किया गया था। इसमें दो नदियों, अराकावती और कुमुदावती का पानी एकत्र होता था। वर्ष 1931 में नगर की आबादी मोटे तौर पर तीन लाख थी। 1970 के शुरुआती वर्षों में यह पांच गुना बढ़कर 15 लाख हो गई। तब नगर के पश्चिम की ओर 60 मील दूर बहने वाली कावेरी का पानी बेंगलुरु लाने की परियोजना आई। आबादी बढ़ी, तो और भी परियोजनाएं बनीं। कावेरी परियोजना चरण एक, दो, तीन, चार और अभी पांचवां चरण चल रहा है। अब लगता है, कावेरी के पास देने के लिए और पानी नहीं बचा। अब बेंगलुरु को पानी के लिए और आगे शारावती तक जाना होगा। यह नदी नगर के उत्तर-पश्चिम दिशा में 180 मील दूर बहती है। नगर के बाशिंदे इस नदी पर नजरें गड़ाए बैठे हैं और कर्नाटक सरकार विस्तृत परियोजना बनाने में जुट गई है।

कावेरी और शारावती, दोनों ही बेहद खूबसूरत नदियां हैं। इंसानों ने पहले उन्हें सिंचाई और घरों को रोशन करने के लिए बांधा और अब वे इनसे पानी हड़पकर अपने नल, बगीचे भरना चाहते हैं, अपने औद्योगिक कूलिंग प्लांट चलाना चाहते हैं। पहले एक नदी 20 मील दूर, फिर एक नदी 60 मील दूर और अब एक नदी जो 180 मील दूर है। हालांकि मेरा शहर जो कर रहा है, वह आर्थिक रूप से अपव्यय ही है, क्योंकि लंबी दूरी तक पाइप बिछाने और बिजली के पंप चलाकर पानी लाने में बहुत खर्च आता है। यह सामाजिक रूप से भी अन्यायपूर्ण है। कई गांव और छोटे शहर वंचित हो जाएंगे। शिवमोगा उस जिले का मुख्यालय है, जहां से शारावती निकलती है, वहां पानी का रुख राज्य की राजधानी बेंगलुरु की ओर मोड़ने के विरोध में बंद भी हुए हैं। पानी लाने का यह कदम पर्यावरण की दृष्टि से अविवेकपूर्ण है, जिसकी चेतावनी बहुत पहले ही जे सी कुमारप्पा ने दे दी थी। संसाधन जितनी दूर से आएगा, उसका उपभोग करने वाले उसके मूल्य व किफायती इस्तेमाल के प्रति उतने ही ज्यादा लापरवाह रहेंगे। त्रासद यह कि बेंगलुरु के नागरिक मानकर चल रहे हैं कि वे राज्य के सबसे शक्तिशाली नागरिक हैं, अतः उनके लिए पानी की आवक जारी ही रहेगी।

यह केवल मेरे शहर की समस्या नहीं है, इस समस्या की गूंज देशव्यापी है। भारत अनेक खामियों और समस्याओं की भूमि है, लेकिन इनमें से सबसे गंभीर जल समस्या है। 1980 के दशक में पर्यावरणविद जयंत बंदोपाध्याय ने दूरदर्शिता के साथ लिखा था कि जल की गुणवत्ता और उपलब्धता केंद्रीय विषय रहेगी और भारत का भविष्य जल है, तेल नहीं। तब उन्हें किसी ने नहीं सुना, लेकिन आज हर संवेदनशील व्यक्ति इस विषय की गंभीरता जान चुका है।

हमारी बड़ी और छोटी नदियों में प्रदूषण का स्तर बहुत चौंकाने वाले उच्च स्तर पर है। देश के सभी राज्यों में भूजल स्तर नीचे जा चुका है, भूजल दूषित हो चला है। असमान वर्षा हो रही है, पहले से ज्यादा जिले सूखाग्रस्त हो रहे हैं। शहर दर शहर नल सूखते जा रहे हैं। इन सभी कारणों से जल के उपयोग, दुरुपयोग, उपलब्धता, अभाव से जुड़े प्रश्न देर से ही सही, सार्वजनिक और राजनीतिक बहस के विषय बनने लगे हैं।

मैं इच्छुक लोगों को इस विषय पर बेहतरीन किताबें पढ़ने की सलाह दूंगा। दो किताबें अंग्रेजी में हैं और एक हिंदी में। मिहिर शाह और पी एस विजयशंकर द्वारा संपादित किताब- *वाटर : ग्रोविंग अंडरस्टैंडिंग, इमर्जिंग पर्सपेक्टिव।* जयंत बंदोपाध्याय की किताब- *वाटर, इकोसिस्टम ऐंड सोसायटीः ए कंफ्लुएंस ऑफ डिसिपलिन्स* और अनुपम मिश्र की किताब- *आज भी खरे हैं तालाब।*

मैं इस विषय का विशेषज्ञ नहीं हूं, लेकिन चेतावनी के कुछ शब्द सामने रखना चाहता हूं। पहला, जब शहर विपत्ति और लालच के लिए दोषी हैं, तो गांव भी नैतिक रूप से उदाहरण नहीं बन पाए हैं। जब राज्य दर राज्य मुफ्त बिजली का प्रावधान किया गया, तो अपव्यय को ही बढ़ावा मिला। दूसरी बात, हमें आपूर्ति सापेक्ष दृष्टि की बजाय मांग सापेक्ष दृष्टि रखनी चाहिए। जल की महंगी परियोजनाएं बनाने की बजाय हमें जल का उपयोग मितव्ययिता के साथ करना चाहिए। तीसरी बात, समाधान की तलाश में हमें ठोस वैज्ञानिकता से संचालित होना चाहिए, नरम आध्यात्मिकता से नहीं। ऐसा क्यों है कि हमारी पवित्र नदियां ही ज्यादा दूषित हैं और उन्हें ही सर्वाधिक बांधा भी गया है? हमें और हमारी सरकारों को जलविदों, पर्यावरणविदों, नगरीय योजनाकारों और पर्यावरणीय अर्थशास्त्रियों को गौर से सुनना चाहिए। चौथी बात, प्रकृति के नियम अर्थशास्त्र के नियमों की तुलना में अधिक अपरिवर्तनीय और अधिक प्रकोप वाले हैं। अर्थशास्त्र के नियमों की अनदेखी हमें व्यक्तिगत उद्यम की विफलता या वित्तीय घाटे की बढ़त की ओर ले जाएगी, लेकिन प्रकृति के नियमों की अनदेखी हमें एक गांव, एक शहर, एक राज्य, एक देश और सभ्यता की मौत की ओर ले जाएगी।

(ये लेखक के अपने विचार हैं)