

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



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

दिनांक: 30.10.2019

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।

अभि
30.10.2019

वरिष्ठ कलाकार

जल प्रणाली अभियांत्रिकी निदेशालय

संलग्नक: उपरोक्त

उप निदेशक, (ज. प्र. आ.) निदे०

अभि
30.10.2019

निदेशक, (ज. प्र. आ.) निदे०

उप निदेशक
30.10.19

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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Why did monsoon end with so much rain? Hunt for clues in Indian Ocean

AMITABH SINHA
PUNE, OCTOBER 29

२६-३०

THE RECORD-breaking rainfall this monsoon season, particularly during August and September, has left weather scientists confounded. After a more than 30% shortfall in June, the season ended with 10% excess rainfall, the first time such a thing has happened since 1931. The September rainfall (152% of long period average, or LPA) was the highest since 1917, the August rainfall (115% of LPA) was the highest since 1996, and the overall seasonal rainfall (110% of LPA) was the highest since 1994.

Search for answers

As late as the first week of September, the India Meteorological Department maintained that the seasonal rainfall was going to be normal (in the 96-104% range). With an influencer like El Niño Southern Oscillation (ENSO) in the Pacific remaining largely neutral this year, scientists are trying to pin down the exact reason for the unusual rainfall.

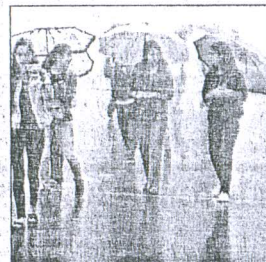
In the search for answers, one phenome-

non attracting some attention is the Indian Ocean Dipole or IOD, an ocean-atmosphere interaction similar to El Niño, but in the Indian Ocean. IOD is a measure of the difference in the sea-surface temperatures of the western Indian Ocean (Arabian Sea) and the eastern Indian Ocean, south of the Indonesian coast. When the western waters are warmer than the eastern, IOD is said to be positive; in the opposite state, IOD is negative.

Like ENSO in the equatorial Pacific Ocean, IOD too influences weather and climate events, though its impact is weaker because the Indian Ocean is considerably smaller, and shallower, than the Pacific. The IOD has an impact on the Indian monsoon: a positive IOD is understood to aid monsoon rainfall while negative IOD is known to suppress it.

Strongest ever

This year's IOD, which began developing around June and grew strong after August, has been one of the strongest on record. IOD records are not very old. Accurate measurements are available only since 1960, according to the Australian Bureau of Meteorology (ACB). "The current positive Indian Ocean



Rainfall 30% short in June, 10% excess for overall monsoon. Pradeep Kumar

Dipole event has strengthened significantly over the past month. The latest weekly value of +2.15°C is the strongest positive weekly value since at least 2001 (when the Bureau's weekly dataset commenced), and possibly since 1997, when strong monthly values were recorded," the ACB said in its latest bul-

letin on October 15.

This has led to scientists looking at IOD for possible clues to this year's bumper rainfall, especially since such strong IOD events in previous years, too, were associated with high monsoon rainfall.

"In previous years, we have had very strong IOD events in 1997 and 2006. In both those years, the southwest monsoon rainfall over India was around 100% of normal. 1997 also happened to be a strong El Niño year (El Niño suppresses monsoon rainfall), but thanks to the positive IOD, the monsoon rainfall was normal that year," said Sridhar Balasubramanian, associate professor of mechanical engineering and an adjunct faculty member at IDP Climate Studies at IIT Bombay. "This year the positive IOD started strengthening from July, and by September it evolved into the strongest positive IOD ever recorded in the history of Indian summer monsoon."

Tenuous link

Beyond the correlation, scientists are careful not to directly blame the IOD for this year's rains. That is because IOD's link with the Indian summer monsoon is tenuous at best.

It is only one of several factors that impact the monsoon, and not the most dominant.

In fact, the IOD's influence on the monsoon is not fully understood. It is known to have a much weaker influence than ENSO, though. IOD's relationship with the Indian summer monsoon is also much less studied compared to that of ENSO, said J Srinivasan, distinguished scientist with the Divecha Centre for Climate Change at IISc, Bengaluru.

Besides, it is not clear if the IOD influences the monsoon or if it is the other way round. The IOD generally takes shape towards the latter half of the summer monsoon, in August and September, and scientists do not rule out the possibility that the monsoon could play some role in its emergence.

"It is critical to remember that IOD usually peaks in September-October-November, and its impacts on monsoon are not very robust. It is unclear if monsoon itself plays a critical role in forcing the IOD," said Raghu Murtugudde of the University of Maryland, US. "The problem with using IOD as an explanation is that its definition is not really solid. It is defined as a gradient of east-west SST (sea surface temperature) changes, but

the action is all in the east," Murtugudde said.

This year, earlier years

This absence of 'action' in the western Indian Ocean was evident this year too, Srinivasan pointed out. "This year there was strong cooling south of Sumatra (in the east Indian Ocean) but the western Indian Ocean did not show a large warming," Srinivasan said.

Data from the Australian Bureau of Meteorology show that since 1960, there have been only 10 strongly positive IOD events before this year. Summer monsoon rainfall was deficient on four of those occasions, more 100% on four others, and normal on the remaining two.

The fact that IOD could have played a role in bringing excess rains in August and September can not be ruled out, but the extent of its influence is something that still needs to be studied.

"The high rainfall in August and September this year was a record, and as of now, it would not be wrong to say that we do not understand the reasons for it," Srinivasan said.

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RISE IN CO2 EMISSIONS

HT-30

India faces risk of annual coastal flooding: Study

HT Correspondent

■ letters@hindustantimes.com

NEW DELHI: A new research study has projected that 36 million people in India could face annual coastal flooding by 2050 if global CO2 emissions are not cut drastically. The findings are based on CoastalDEM, a new digital elevation model developed by Climate Central, a US based climate research and communications organisation.

According to Climate Central, coastal flood risks assessments were until now based on NASA's Shuttle Radar Topography Mission (SRTM) but it underestimated the elevation risks according to the



■ High tide in Mumbai. AFP FILE

study published in the journal, Nature Communications.

SRTM measured elevation of surfaces closest to the sky such as tree tops and rooftops wherever they blocked the ground. CoastalDEM reduces these errors. For instance, based on SRTM data, only 5 million people in India were expected to face coastal flood-

ing by 2050. The study also states that coastal flooding could affect 300 million people globally by 2050 and high tide lines could permanently rise above land occupied by some 150 million people, mostly in Asia. "Estimates based on unchecked emissions (not meeting the 2015 Paris Agreement) and the potential for early-onset ice sheet instability project that sea level rise could threaten areas where as many as 640 million people now live — 340 million of whom are on land forecast to fall below the high tide line by 2100. In eight Asian countries, that scenario means regular high tides would be higher than land currently home to

at least 10 million people," Climate Central said in a statement on Tuesday.

Global mean sea level rose by 11-16 cm in the 20th century. Even with sharp, immediate cuts to carbon emissions, it could rise another 0.5m this century. But the study warns that under higher emissions scenarios, 21st century rise may exceed 2m in the case of early-onset Antarctic ice sheet instability.

Bangladesh and China would face worse impacts. The new data suggests about 93 and 42 million people in China and Bangladesh respectively are likely to be affected by severe coastal flooding by 2050.

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Jagan blames flood for sand scarcity, to hold sand fest

STATESMAN NEWS SERVICE
HYDERABAD, 29 OCTOBER

Stung by criticism over mis-handling of sand policy leading to its scarcity across the state, chief minister YS Jagan Mohan Reddy today blamed the floods which made it impossible to mine sand from the reaches in the monsoon season and announced the state government will hold a sand festival to ease the problem.

The TDP has been relent-



less in its attack accusing the government of bungling the

situation leading to the death of five construction workers who unable to find work committed suicide.

Jana Sena chief Pawan Kalyan has given a call for a rally by construction workers on 3 November at Vizag.

Mr Reddy today dismissed the allegation and pointed out due to floods in many rivers sand can be mined only from 60 reaches instead of 267 reaches which has resulted in a shortfall.

However, he said floods will bring new sand to reaches and normal supply will resume soon.

Adding that the new government has wiped out corruption by initiating a new sand policy the chief minister instructed the DGP to ensure that sand is not supplied to states across the border.

Under the new policy any person can carry sand in one tractor from the local reaches and take it to any desti-

nation upto 20 km after seeking permission from village secretariat.

Former chief minister N Chandrababu Naidu today alleged that under the new dispensation sand has become costlier than cement.

He pulled up the chief minister saying people are commenting that Mr Reddy was busy playing video games.

According to Mr Naidu, the YSRCP government has registered false cases against the TDP MLA from Gan-

navaram, Vallabhaneni Vamshi Mohan in order to exert pressure on him to quit the party.

Speaking to TDP workers of Krishna district Mr Naidu said the MLA had distributed some land pattas among the poor in his constituency but the new government has registered false case against him citing technicalities.

He urged his cadres to fight against the misdeeds of the government without being apprehensive about cases.

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36 million Indians face flood risk: study

Number of those affected may be underestimated'

JACOB KOSHY
NEW DELHI

The number of Indians who stand to be affected by rising sea levels may have been underestimated by as much as 88%, according to a study that uses a new modelling approach.

In India, 36 million people would face annual flooding by 2050 and 44 million by 2100 if emissions continue to rise unabated. Nearly 21 million – and not 2.8 million – are expected to be living below the High Tide Line, the boundary that marks the farthest to which the sea reaches into the land at high tide.

The study, which appears on Thursday in the peer reviewed scientific journal *Nature Communications*, employs a new software called CoastalDEM. Estimates on the risks posed by flooding

The tidal threat

A new study suggests that in India, as of today, nearly 17 mn people live on land below the high tide lines and 31 mn on land below annual flood levels. The numbers are a sharp increase from previous estimates. Table lists new estimates and change from old estimations of population under threat

Population in areas prone to once-a-year-on-average coastal flooding (mn)

Country	New estimates	Change
China	81	56
India	31	27
Vietnam	28	20.5
Bangladesh	28	25
Indonesia	20	15.7
Thailand	8	7.54
Philippines	5.4	4.52
Netherlands	4.9	-1.2
Japan	4.1	0.1
World	250	185

Population in areas below high tide line (mn)

Country	New estimates	Change
China	23	17.5
Vietnam	19	14.5
India	17	14.9
Bangladesh	9.3	8.2
Indonesia	8.9	7.4
Philippines	4.3	3.7
Netherlands	4.1	0.1
Egypt	3.9	3.9
Japan	3.2	-0.2
World	110	82

now rely on detailed maps of the globe taken by the Shuttle Radar Topography Mission (SRTM), which was a radar mapping system that travelled aboard the space shuttle Endeavour in 2000.

The maps so prepared form the basis for determining the elevation of the earth's topography.

However, say the authors of the study, this approach overestimates the elevation

of land surfaces and frequently miss. CoastalDEM, they claim, is more accurate and "reduces linear vertical bias from 4.71 m to less than 0.06 m".

It does so because it uses more variables – vegetation cover, population indices – to estimate the actual land surface and more sophisticated modelling techniques, claim the authors Scott Kulp & Benjamin Strauss, of Cli-

mate Centre, an independent organisation of scientists and journalists working on climate change.

Below tide lines

Their analysis suggests that globally nearly 110 million people live on land below the current high tide lines and 250 million on land below annual flood levels, in contrast with SRTM-based estimates of 28 million and

65 million respectively.

Current climate studies say that climate change has caused global mean sea level to rise by 11-16 cm in the 20th century and is expected to by as much as 2 m by the end of this century. Other than India, the flood risk has also been underestimated for China at 93 million, as opposed to the current estimates of 29 million; Bangladesh at 42 million vs 5 million; Vietnam 31 million vs 9 million; Indonesia 23 million vs 5 million; Thailand 12 million vs 1 million.

"These assessments show the potential of climate change to reshape cities, economies, coastlines, and entire global regions within our lifetimes," said Dr. Kulp in a statement.

"As the tideline rises higher than the ground people call home, nations will increasingly confront questions about whether, how much, and how long coastal defences can protect them."

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Millennium Post, ✓

Don't kill the flow

Lack of ecological flow disrupts a river's self-purifying mechanism, rendering it to the mercy of its users who either pollute or overuse it



SUNITA NARAIN

The problem also is that cities and industries take water, but return waste and pollution. They destroy the river, and in this way, the available and scarce resource of water is further diminished

The 2019 World Water Prize was awarded to South African Jackie King for her work to establish the need for ecological flows in rivers. In our world of today, this is a critical issue — how to establish the rights of our rivers in an age of growing demand for water and growing risks for climate change insecurity?

We must understand that the issue of river flow is really about the politics of power. The question of rights of the river becomes much more complicated and much more political when water is scarce and rights are contested.

In India and many other countries, water was allocated to farmers — who needed it to grow our food. But now cities and industries are growing new users of water. The fight is over the re-allocation of this resource between the old and the new users. Re-allocation creates tensions and even leads to bloodshed in some cases.

It is also important to understand our difference with the rest of the world. In the already developed world, for instance, in countries of Europe, water moved to cities and industries because people and livelihoods also moved. But in India, millions still work on the land; they continue to need water for their livelihoods.

The problem also is that cities and industries take water, but return waste and pollution.



Overpolluted rivers fail to assimilate solid waste, thereby failing to clean itself

They destroy the river, and in this way, the available and scarce resource of water is further diminished. So, in this fight, the river then has no rights — there is no water for flow. But there is then an additional problem. Because the river has no water, it cannot assimilate the waste of humans. It cannot clean itself. It dies many deaths.

And, all this is happening in an age of climate change. The fact is that today, we need to rethink everything we know and understand about water management. Today when it rains, it does not pour; it is a deluge. In the monsoon season of 2019, we have seen over 1,000 instances of heavy and extreme rain events; many places have had 1,000-3,000 per cent more rain in a single day, as compared

to their average.

So, there is flood. But worse, after the flood, there is drought because regions, cities, villages do not have the capacity to hold the rain; the drainage systems, ponds and tanks have been destroyed; the streams have been filled up. In this way, we have a flood at the time of drought. This is not the new normal. This is completely abnormal. And remember, climate change impacts are only just beginning. Global temperatures will rise further.

We will even have to rethink the role of dams in this extreme rain age. Dams were built to hold water; modulate the flow. But now this holding of water is becoming the biggest risk as dam managers have no option but to release the water when

there is such high rainfall — all unpredicted and this then makes the flood, a deluge. It destroys lives; massively.

So, this is where we need to go back to the drawing board of Jackie King so that we begin to face the reality of deciding the rights of rivers. This is where the opportunity lies as well because if we give the river its rights to water; we will learn to do more with less.

Firstly, agriculture will have to be much more wise with its water use. But this does not only mean using drip irrigation. It also means that we will have to change our diets so that we eat food that uses less water and that we do not grow our meat using the industrial farming methods of the rich countries. This requires the government

to prioritise the procurement of crops that are water prudent like millets as against rice.

Secondly, cities will have to learn to take water from rivers and return water and not waste. This is where there is huge opportunity to do excreta management, which is affordable and so sustainable. This is where cities need to be told that they have to recycle and reuse every drop of the sewage they generate. In fact, cities should be asked to take their drinking water downstream of their sewage discharge points. It will make them clean up their waste, return water to the hydrological cycle and add to our water security.

Thirdly, and most critically, we must realise that the only way we can cope with extreme and variable rain is to harvest every drop and to build deliberately for drainage. Every waterbody and every drain must be deepened and protected to store the floodwater. India has extraordinary and diverse traditions of building water storage systems. These structures must become our new temples — every drain, every ditch and every water body must be protected so that the floodwater can be used to recharge groundwater and this can be used in the coming season of drought.

DOWN TO EARTH

Sunita Narain is the Director General of CSE and the editor of Down To Earth. Views expressed are strictly personal

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Pioneer,

On Nov 6, PM to review 30 aspirational districts

PNS ■ NEW DELHI

Prime Minister Narendra Modi will review the performance of 30 of the 117 most underdeveloped districts in the country on November 6 on various indicators such as health, nutrition, education and agriculture. The Niti Aayog had identified these districts for the Government's Transformation of Aspirational Districts Programme.

"This is first time that the focus would be exclusively on 30 aspirational districts," a senior Government official said.

Twenty have shown 'best improvement' and 10 'low progress' on various development indices, according to a communicate to ministries and depart-

ments concerned.

The communique stated that the Prime Minister has decided to include the aspirational districts programme as one of the agenda items in the forthcoming PRAGATI meeting, scheduled to be held on November 6.

PRAGATI is an integrating and interactive platform to address public grievances and review programmes.

The Prime Minister will interact with chief secretaries and secretaries to review the progress made by these 30 most underdeveloped districts on various indicators like health and nutrition, education, agriculture and water resources, financial inclusion and skill development and basic infrastructure, officials said.

Don't mix cricket with Teesta: Hasina

OUR SPECIAL CORRESPONDENT

Calcutta: If a Bengali invites another Bengali to enjoy a game of cricket, there is no point "mixing Teesta" and pouring cold water over it.

Bangladesh Prime Minister Sheikh Hasina sent out this message on Tuesday as she rested the media to decouple an impending Calcutta visit — to watch the first India Bangladesh Test match at the Eden Gardens — from the Teesta water sharing agreement.

Hasina confirmed she would be in Calcutta on Day One of the Test beginning November 22 but was quick to add she was coming "only because of an invite from a Bengali".

"Sourav Ganguly was an exceptional cricketer. When he took over as the first Bengali BCCI president, he immediately wanted to speak to me and we spoke over the phone. He gave me an invitation to be present at the beginning of the match. I agreed," Hasina told a news conference at Gano Bhaban, her official residence in Dhaka.

Since Ganguly has also invited Prime Minister Narendra Modi and Bengal chief minister Mamata Banerjee to the game — official confirmation of the duo's presence was awaited till Tuesday evening — there has been speculation in Dhaka on whether the three leaders will try to resolve the Teesta impasse on the side



Sheikh Hasina

lines of the Eden match.

The sharing of water from the Himalayan river has been an emotive issue in Bangladesh since Delhi's plan to seal a deal with Dhaka got derailed in 2011 due to Opposition from

Mamata. Since then, expectations of a breakthrough on the Teesta arise each time the Bangladeshi Prime Minister meets her Indian counterpart or Mamata.

On Tuesday, Hasina was asked whether any meeting on the Teesta was lined up during her one-day visit for the Test match to Calcutta. The Bangladesh Prime Minister hit the poser for a six in characteristic style.

"I am not going on the invitation of the PM or the CM. A Bengali has invited another Bengali for a cricket match... Why are you mixing Teesta with it?" Hasina said.

"We have discussed it in the past and will discuss it in the future also. There is no

point of bringing Teesta into a cricket match and creating bitterness over it," she added.

It was clear Hasina was trying to temper the Teesta expectations. She visited Delhi earlier this month, on October 3, amid expectations in Bangladesh about progress on the Teesta pact but that didn't happen.

Instead, Hasina agreed to a proposal for India to draw water from the Feni river for a drinking water project in Tripura, which led to howls of protests back home. The only progress was an agreement to prepare a draft framework for water-sharing on rivers like the Manu, Muhuri, Khowai, Gumti, Dharla and the Dudhkumar.

The contentious issue of Teesta was also discussed and Hasina was firm on sticking to a 2011 formula the two countries had agreed.

"Because of Bengal's resistance, there hasn't been any progress on Teesta water sharing. The Bangladesh PM is probably aware there isn't any likelihood of an immediate resolution and that's why she has delinked the water issue from the visit," said a source in Dhaka.

Sources in Dhaka said the list of who would accompany Hasina to Calcutta was yet to be finalised.

"It is not a bilateral visit and there is not much protocol involved. The details are being worked out," said a source.

AP likely to drop interlinking of Godavari through Telangana

SAMBASIVA RAO M

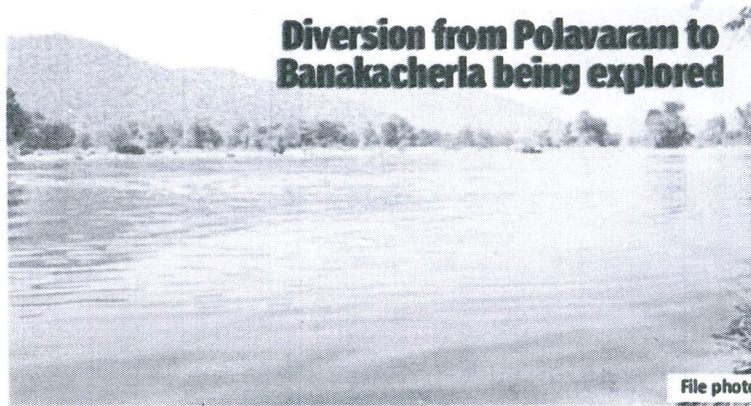
Amaravati: It looks like the AP government is likely to reject the proposal to divert Godavari water to Krishna through Telangana state. Instead, it is keen on diverting Godavari water from Polavaram to Banakacherla in Kurnool district.

Principal Secretary Adityanath Das told The Hans India that "whichever is economically and hydrological more feasible would be examined for consideration."

It may be mentioned here that Telangana Chief Minister K Chandrashekar Rao and AP Chief Minister Y S Jagan Mohan Reddy at a luncheon meeting held recently had come up with a proposal to divert the Godavari river water to Krishna and to ensure that water reaches every nook and corner of both the States.

It was felt by KCR that scarce water was causing hardships to the Rayalaseema region in AP, Palamuru and Nalgonda in Telangana. To mitigate the

Diversion from Polavaram to Banakacherla being explored



hardships faced by these regions for decades together, it would be beneficial for both the states if Godavari water was diverted to Srisailem reservoir.

Following this, the opposition parties and irrigation experts in the state felt that any such move would prove to be disadvantageous for Andhra Pradesh. Later, Jagan during his visit to Delhi urged Prime Minister Narendra Modi and Union Minister for Jal Shakti Gajendra Nath Singh Shekhawat

and Home Minister Amit Shah to extend financial help to take up the project. He informed them that this would solve the water problems of both the states.

However, the government now appears to have changed its mind and feels that if the interlinking of the river water was taken up at Polavaram and Banakacherla it would help in meeting the requirements of the Rayalaseema region as well.

Continued on Page 4

AP likely to drop interlinking of Godavari through Telangana

Continued from P1

The proposed Godavari Banakacherla Interlinking Project intends to divert about 210 tmc ft of Godavari Water from Polavaram dam in 105 days. It will be taken to Banakacherla Head Regulator. It also plans to construct a balancing reservoir at Bollapalle village and Mandal in Guntur district with a capacity of 150 tmc ft by lifting water from Nagarjunasagar Right Canal. It is estimated that the project would cost Rs 60,000 crore.

It may be recalled that then chief minister N Chandrababu Naidu also proposed the same project in the name of interlinking Godavari Penna with an estimated cost of Rs 80,000 crore. It is learnt that WAPCOS has now been asked to prepare the DPR and work will start after a detailed study and approval of DPR. This issue is also likely to be discussed at the Cabinet meeting to be held on Wednesday.

The Hans India

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● MONSOON EFFECT

Late kharif harvesting may hit rabi sowing & output

PRABHU DATTA MISHRA
New Delhi, October 29

BARRING BAJRA, MOONG and sunflower, market arrivals of all other kharif crops are now lower than a year ago mainly due to late sowing during the monsoon season and excess rains in September. If this trend continues for a longer while, the sowing of key rabi crops like wheat, mustard and chana may get delayed, potentially bringing down their yield as northern India has been witnessing above-normal temperature from March, the month when rabi harvesting commences, during the past few years.

Arrivals of 11 major kharif crops such as paddy, maize, soyabean, tur and cotton were down 3-57% during October 1-28 compared with whole of October last year (see chart). For seven of 11 crops, the decline in arrivals was over 30%.

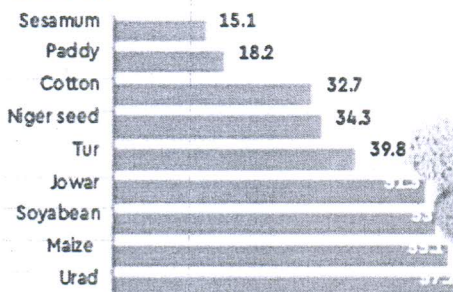
There is unlikely to be any significant changes in arrivals in the next three days, experts said. The four-month monsoon season started with 33% deficient rain in June but was 52% above normal in September. Monsoon this year started retreating from the north west region on October 9, against the normal date of early September.

This year, rabi output is expected to be robust as most reservoirs have high water levels due to the above-normal monsoon and prolonged rain season. "Due to climate change, temperature in northern plains has been above normal from March in the past few years. Variation in temperature beyond prescribed limit will drag down productivity of the standing winter crops," said a former agriculture commissioner.

The government targets 143.20 million tonne (MT) of food grains production during rabi this year and it includes 100.5 MT of wheat and record 11.6 MT of chana, the

Mandi arrivals* of kharif crops

(% fall y-o-y)



*Oct 1-28, source: agmarknet portal



main pulse crop of the winter season. Target output of mustard, the key winter-grown oilseed, has been fixed at 8.24 MT in 2019-20 crop year (July-June).

The sowing window of high-yielding varieties of mustard such as RH-749, RH 725 is already over as the ideal time is to complete the sowing by October 25. These varieties, which take 145-155 days of maturity, have 28-30 quintal/hectare productivity when sown and harvested in the prescribed time period. Even another high-yielding mustard variety Giriraj (DRMRJ-31), having 135 days maturity and 28 quintal/hectare yield, will not be suitable any more.

"There may not be drop in overall acreage of mustard but due to late rains in September and October, farmers are waiting for water to dry up from their fields in low-lying areas. This has delayed the sowing a bit and it is expected that farmers will complete mustard planting by mid-November," said PK Rai, director of Bharatpur-based Welcome to ICAR-Directorate of Rapeseed-Mustard Research.

There are some late-sown varieties like NRC HB 101, though with lower yield compared to RH 749 and others, which should be adopted by farmers when they sow the mustard crop next month, he said.

On the other hand, G.P. Singh, director of Karnal-based Indian Institute of Wheat and Barley Research, is quite optimistic for wheat crop with the high level of moisture this year due to late withdrawal of monsoon. The wheat area will be around the normal level of 30 million hectare and there is every possibility that India may have a record production this year if all weather conditions remain favourable.

"Already wheat sowing has started in Punjab and Haryana with 80% of paddy field cleared for the rabi cereal crop. In next one week, it will pick up in other states like Madhya Pradesh and Rajasthan. While sowing has begun in western Uttar Pradesh, the eastern parts of the state and Bihar traditionally go for late-sowing," Singh said. The Centre is yet to start releasing its weekly compilation of sowing data of rabi crops from states this year.

Financial Express

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निगरानी समिति ने दिल्ली सरकार को निर्देश जारी कर पर्यावरण मंत्रालय से संपर्क करने को कहा

यमुना को कानूनी संरक्षण देने की कवायद

H-30/10

तैयारी

नई दिल्ली | प्रभात कुमार

यमुना नदी को बचाने के लिए इसे कानूनी संरक्षण देने की कवायद शुरू हो चुकी है। नेशनल ग्रीन ट्रिब्यूनल द्वारा गठित निगरानी समिति ने यमुना और इसके आसपास के क्षेत्र को इको-सेंसिटिव जोन घोषित करने की वकालत की है।

समिति ने दिल्ली सरकार को

3200 एकड़ जमीन पर अवैध खेती

डीडीए ने यमुना निगरानी समिति को बताया कि नदी के कछार की 3200 एकड़ जमीन पर अवैध खेती होने के साथ-साथ इस पर कब्जा भी हो रहा है। साथ ही कहा कि अभी हाल ही में अवैध खेती व जमीन को अतिक्रमण मुक्त करने के लिए अभियान चलाया गया। लेकिन, सिर्फ 62 हेक्टेयर जमीन को ही खाली कराया गया।

केंद्रीय पर्यावरण एवं वन और जलवायु परिवर्तन या जल शक्ति मंत्रालय से संपर्क करने का निर्देश दिया है। हाल ही में सभी संबंधित विभागों के साथ हुई बैठक के बाद

यमुना निगरानी समिति ने सरकार को यह निर्देश जारी किया है। बैठक में सरकार के सिंचाई एवं बाढ़ नियंत्रण विभाग (आईएफसीडी) ने समिति को बताया कि यमुना किनारे

अधिकांश जमीन का मालिकाना हक निजी हाथों में है। यहाँ निर्माण का मलबा डालने, अतिक्रमण, खेती और भूजल के अवैध दोहन की निगरानी का कोई तंत्र नहीं है।

निर्माण पर रोक लग जाएगी:

यमुना नदी और इसके आसपास के क्षेत्र को इको सेंसिटिव जोन घोषित किए जाने के बाद एक निश्चित दायरे में निर्माण की इजाजत नहीं होगी। ऐसी कोई गतिविधि भी नहीं होगी, जिससे नदी की जैव विविधता को नुकसान पहुंचे।

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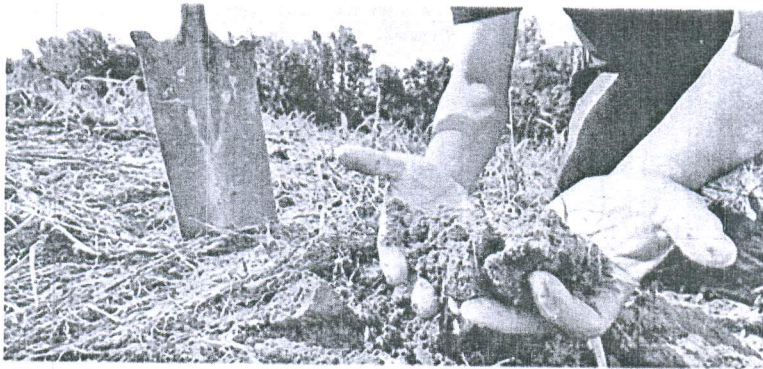
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देशभर की मिट्टी में पोषक तत्वों की भारी कमी, घट रही है उत्पादकता

रिपोर्ट ▶ प्रोजेक्ट की ताजा रिपोर्ट में सामने आया सच, बिगड़ रही मिट्टी की सेहत

पंजाब व हरियाणा को छोड़ देश के बाकी हिस्से में नाइट्रोजन की कमी

सुरेन्द्र प्रसाद सिंह, नई दिल्ली



देश में सालाना 133 से 134 किलोग्राम यूरिया प्रति हेक्टेयर प्रयोग किया जा रहा है।

प्रतीकात्मक

फर्टिलाइजर के असंतुलित प्रयोग से देश के ज्यादातर हिस्सों की मिट्टी में पोषक तत्वों की भारी कमी हो गई है। इसके चलते एक ओर जहां फसलों की उत्पादकता घट रही है वहीं कृषि उपज की पोषकता पर भी विपरीत असर पड़ रहा है। राष्ट्रीय स्तर पर कराये गये मृदा परीक्षण की रिपोर्ट में यह सच सामने आया है। देश के लगभग सभी हिस्सों की मिट्टी में सूक्ष्म पोषक तत्वों की कमी से कृषि उपज की गुणवत्ता प्रभावित हो रही है।

सॉयल हेल्थ कार्ड प्रोजेक्ट की रिपोर्ट से खेती में कई तरह की सहाय्य होने की संभावना है। इंडियन काउंसिल ऑफ एग्रिकल्चरल रिसर्च (आईसीएआर) के महानिदेशक डॉक्टर त्रिलोचन महापात्र ने बताया कि देश में औसतन 133 से 134 किलोग्राम यूरिया सालाना प्रति हेक्टेयर प्रयोग की जा रही है। जबकि कुछ प्रदेशों और कुछ जिलों में यूरिया का प्रयोग 300

से 400 किलोग्राम प्रति हेक्टेयर सालाना हो रहा है। 'जागरण' से बातचीत में डॉक्टर महापात्र ने बताया सॉयल हेल्थ कार्ड प्रोजेक्ट से कई तरह की जानकारी मिली है। मिट्टी में माइक्रो न्यूट्रिएंट्स की जबर्दस्त कमी पाई गई है जिनमें जंक, बोरॉन व गंधक प्रमुख हैं।

डॉक्टर महापात्र ने बताया, 'देश के 95 फीसद जमीन में नाइट्रोजन की कमी है। 90 फीसद जमीन में फॉस्फोरस और 55 फीसद जमीन में पोटाश की कमी है।' सस्टेनेबल एग्रिकल्चर के लिए माइक्रो न्यूट्रिएंट्स समेत अन्य सभी पोषक तत्वों का होना जरूरी है।

प्रधानमंत्री नरेंद्र मोदी ने अगस्त, 2015 में परंपरागत और जैविक खेती पर जोर देने की बात कही थी। मिट्टी में कार्बन की कमी को पूरा करने के लिए जैविक खाद की तत्काल जरूरत है। जमीन की पूर्ण उर्वरता को बनाए रखना जरूरी है। महापात्र ने कहा, 'आइसीएआर का अपना अनुसंधान है, जिसमें जैविक खाद के साथ फर्टिलाइजर का प्रयोग बहुत अधिक लाभप्रद होगा।' इन दोनों के बीच संतुलन बनाने से फसलों की उत्पादकता में 50 फीसद तक की वृद्धि हो सकती है।

देश में फर्टिलाइजर के संतुलन के बारे में

महापात्र ने बताया 'देश की मिट्टी में फिलहाल नाइट्रोजन, फॉस्फोरस और पोटाश की 4-2-1 के अनुपात में प्रयोग की जरूरत है। जबकि देश में इस समय 7-3-1 के अनुपात में इन खादों का प्रयोग हो रहा है। इसका असर उपज की गुणवत्ता पर पड़ता है। इसे लेकर किसानों में जागरूक करने की सख्त जरूरत है।

पंजाब और हरियाणा जैसे राज्यों में जरूरत से ज्यादा खाद और कीटनाशकों का प्रयोग किया जा रहा है। देश के 14.5 करोड़ किसानों में से 10 करोड़ किसानों के खेतों की मिट्टी की जांच कर उन्हें सॉयल हेल्थ कार्ड सौंप दिये गये हैं। स्वायत्त हेल्थ कार्ड पर दर्ज सूचनाओं के अनुरूप फर्टिलाइजर का प्रयोग करने की जरूरत है।

इस बारे में फर्टिलाइजर सचिव छबिलेंद्र राउल ने बताया कि वर्ष 2018-19 में खेती में कुल 320 लाख टन यूरिया खाद की खपत हुई। जबकि गैर-यूरिया खादों का प्रयोग 200 लाख टन रहा। सॉयल हेल्थ कार्ड परियोजना और नीम कोटेड यूरिया आने से यूरिया की खपत में कमी आई है।' राउल ने बताया कि आने वाले दिनों में जल्द फर्टिलाइजर का वितरण किसानों के सॉयल हेल्थ कार्ड के आधार पर दिया जाएगा। इससे फर्टिलाइजर का प्रयोग वैज्ञानिकों के सलाह के अनुसार होगा।

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☐ Deccan Chronicle
☐ The Economic Times (New Delhi)
☐ Business Standard (New Delhi)
☐ The Tribune (Gurugram)
☐ Financial Express
☐ दैनिक भास्कर (नई दिल्ली)

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

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and documented at WSE Dte, CWC.

545 किलोमीटर पैदल चलकर जानी गंगा की सेहत

जागरण संवाददाता, कानपुर

नदियों के पानी की गुणवत्ता व जल स्तर मापने की तकनीक विकसित करने वाले आइआइटी कानपुर के पूर्व छात्र श्रीहर्षा ने हरिद्वार से प्रयागराज तक 32 दिन में 545 किमी पदयात्रा कर गंगा और उसके आसपास खेतों की पड़ताल की। उनकी रिपोर्ट के अनुसार पांच वर्ष में गंगा जल साफ तो हुआ है लेकिन कानपुर, फर्रुखाबाद व फतेहपुर में सर्वाधिक प्रदूषण मिला। जाजमऊ में स्थिति सबसे ज्यादा खराब है। यहां काला पानी गंगा में मिल रहा है। श्रीहर्षा यह रिपोर्ट जलशक्ति विभाग, नमामि गंगे व केंद्रीय जल आयोग को देंगे।

आइआइटी से सिविल इंजीनियरिंग में बीटेक व वाटर रिसोर्स एनर्जी से एमटेक करने वाले श्रीहर्षा ने 25 सितंबर से 26 अक्टूबर तक गंगा किनारे पदयात्रा कर प्रदूषण, जल स्तर व जलीय जंतुओं की स्थिति देखी। इस मिशन में गंगोत्री स्थित आश्रम के स्वामी पुष्करानंद भी शामिल रहे। श्रीहर्षा ने बताया कि गंगा व अन्य छोटी नदियों की स्थिति सुधरी है। ग्रामीण अब नदियों में कूड़ा नहीं फेंक रहे हैं। हालांकि शहरों में नदी किनारे व पुल पर प्लास्टिक के साथ

▶ हरिद्वार से प्रयागराज तक 32 दिन में पूरी की पदयात्रा

▶ आइआइटी कानपुर के पूर्व छात्र ने की पड़ताल, केंद्र को सौंपेंगे रिपोर्ट

पूजन सामग्री फेंकने पर रोक नहीं लग पा रही है। इसके अलावा नाले भी गंगा में गिर रहे हैं।

गंगा में गहराई कम : श्रीहर्षा ने पदयात्रा के दौरान तीन सौ से अधिक लोगों से गंगा व खेती किसानों के संबंध में बातचीत की। 80 से 90 साल के वह बुजुर्ग भी थे, जिनके समय में गंगा का पानी स्वच्छ हुआ करता था। उन्होंने बताया कि 30 साल पहले गंगा में मछली, केंचुए व अन्य जलीय जीवों की भरमार थी। मगर, अब नजर नहीं आते। गंगा की गहराई बहुत कम हो चुकी है जिससे गर्मी के दिनों में कई स्थानों पर पानी सूख जाता है।

बस, दाल-रोटी चल जाए : कृत्सनम टेक्नोलॉजीज स्टार्टअप के संस्थापक श्रीहर्षा ने बताया कि गंगा किनारे खेती करने वाले किसानों से बातचीत में यह बात भी सामने आई कि उन्हें अधिक मुनाफे की उम्मीद नहीं है। वह इतना ही सोचते हैं कि फसल की लागत निकल आए और घर की दाल-रोटी चल जाए।

जलवायु परिवर्तन ने खाद्य उत्पादन और पोषण को कमजोर किया है, जिसकी मार गरीबों पर पड़ी है भुखमरी से लड़ना है तो पर्यावरण सुधारें



अनिल पी. जोशी

वैश्विक भुखमरी सूचकांक यानी ग्लोबल हंगर इंडेक्स (जीएचआई) में दुनिया के 117 देशों में भारत 102वें स्थान पर है। आयरिश एजेंसी 'कंसर्न वर्ल्डवाइड' और जर्मन संगठन 'वेलथहंगरहिल्फे' द्वारा संयुक्त रूप से तैयार इस इंडेक्स में भुखमरी और कुपोषण के मामले में भारत अपने छोटे पड़ोसी देशों पाकिस्तान, बांग्लादेश और नेपाल से भी पीछे है। 2018 में भारत 119 देशों में 103 वें स्थान पर था जबकि साल 2000 में वह 113 देशों में 83 वें स्थान पर था। इस सूचकांक को तैयार करने के लिए विभिन्न देशों को चार प्रमुख संकेतकों के आधार पर रैंकिंग दी जाती है- अल्प पोषण, बाल मृत्यु, पांच साल तक के कमजोर बच्चे और बच्चों का अवरुद्ध शारीरिक विकास।

■ मौसम का मिजाज

आखिर ऐसा क्या हुआ कि हम इस मामले में नीचे होते चले जा रहे हैं। एक तरफ भारतीय अर्थव्यवस्था के लगातार आगे बढ़ने की बात की जाती है, दूसरी तरफ देश की एक बड़ी आबादी भुखमरी और कुपोषण से ग्रस्त है। दरअसल विकास को बड़ी इमारतों और गाड़ियों से नहीं मापा जा सकता। अगर देश में हर नागरिक का पेट नहीं भरा है, उसे संतुलित भोजन नहीं मिल रहा, वह स्वस्थ और प्रसन्न नहीं है तो यह डिवेलपमेंट अभूरा ही कहा जाएगा। भारत में विकास का जो विरोधाभास दिखाई देता है, उसके लिए सरकार की नीतियां जिम्मेवार हैं। शिक्षा और स्वास्थ्य ही नहीं, खेती-बाड़ी, बाल विकास, महिला कल्याण

की सहायता से जुड़ी सारी मदों पर होने वाले खर्च के आंकड़े साफ बताते हैं कि सरकार की प्राथमिकता सूची में इनकी जगह बहुत नीचे है। किसी भी कीमत पर विकास दर बढ़ाने में जुटी सरकार ने अपनी सारी आर्थिक ताकत देश का औद्योगिक माहौल सुधारने में झोंक रखी है।

यह कोई गलत बात नहीं है लेकिन गहरी विषमताओं वाले भारतीय समाज में पहले से ही कमजोर सामाजिक निवेश का और कमजोर होना एक बड़ी आबादी के लिए मुश्किलें खड़ी करता है। लेकिन बात सिर्फ इतनी नहीं है। सामाजिक निवेश बढ़ाने के साथ-साथ अब पर्यावरणीय चुनौतियों की ओर भी ध्यान देना होगा। हमें तमाम नीतियां इन चुनौतियों को ध्यान में रखकर ही बनानी होंगी क्योंकि पूरी दुनिया में खाद्य सुरक्षा को यह तत्व बड़े स्तर पर प्रभावित करने लगा है। जलवायु परिवर्तन ने वैश्विक खाद्य उत्पादन और पोषण पर नकारात्मक असर डालना शुरू कर दिया है जिसकी मार सबसे ज्यादा कमजोर तबके

एफएओ के अनुसार 1990 के दशक से मौसम-संबंधी भीषण आपदाओं की संख्या दोगुनी हो गई है, जिससे प्रमुख फसलों की उत्पादकता प्रभावित हुई है

पर पड़ रही है। जलवायु परिवर्तन का प्रमुख कारण ग्लोबल वार्मिंग और वायुमंडल में बड़े पैमाने पर कार्बन डाइऑक्साइड का छोड़ा जाना है, जो एक साथ मिलकर हीट वेव, सूखे और बाढ़ जैसी भीषण मौसमी घटनाओं को जन्म देती हैं। इन खतरों के चलते खाद्य उत्पादन कम होने और उनकी गुणवत्ता में कमी आने की भी आशंका है।



C Suresh Kumar

चेन्नै में मरीना बीच पर ग्लोबल वार्मिंग के खिलाफ एक जनजागृति अभियान

खाद्य एवं कृषि संगठन (एफएओ) के अनुसार 1990 के दशक के बाद से मौसम-संबंधी भीषण आपदाओं की संख्या दोगुनी हो गई है, जिससे प्रमुख फसलों की उत्पादकता प्रभावित हुई है। सूखा, बाढ़ और तूफान जैसी जलवायु से संबंधित आपदाएं अंतरराष्ट्रीय आपदाओं का 80 फीसदी हैं। 2011-2016 के दौरान गंभीर सूखे ने विश्व के बड़े हिस्से को प्रभावित किया। अनुमान है कि इससे 51 देशों के लगभग 12.40 करोड़ लोग भयानक खाद्य असुरक्षा से प्रभावित हुए थे। 2015-2016 के अल नीनो प्रभाव ने कई मुल्कों को अपनी चपेट में लिया, जहां गंभीर सूखा पड़ा। अल सल्वाडोर, ग्वाटेमाला, होंडुरास आदि देशों में इसने 50 से 90 प्रतिशत तक फसलों को प्रभावित किया। आने वाले समय में बढ़ती

ग्लोबल वार्मिंग और कार्बन उत्सर्जन से वैश्विक स्तर पर खाद्य उत्पादकता तेजी से कम होगी। जाहिर है, इसका खामियाजा हाशिये पर पड़े और पहले से ही भुखमरी के सूचकांक में निचले स्तर पर मौजूद देशों को भुगतना पड़ेगा।

जलवायु परिवर्तन ने भोजन के पोषण स्तर को भी प्रभावित किया है। वातावरण में उच्च कार्बन डाइऑक्साइड सांद्रता फसलों में प्रोटीन, जिनक और लोहे की कमी पैदा करती है। विशेषज्ञ मानते हैं कि 2050 तक अनुमानित 17.50 करोड़ नए लोगों को जिनक की कमी हो सकती है और अतिरिक्त 12.20 करोड़ लोग प्रोटीन की कमी की मार झेल सकते हैं। इसका सबसे ज्यादा नुकसान उन्हें होगा जो अपनी पोषण संबंधी जरूरतों को पूरा करने के लिए लगभग पूरी तरह से फसलों पर

निर्भर हैं। दक्षिण और दक्षिण पूर्व एशिया, अफ्रीका और पश्चिम एशिया में गरीब तबके का स्वास्थ्य सबसे ज्यादा खतरे में है। गौर करने की बात है कि इन क्षेत्रों में सार्वजनिक स्वास्थ्य प्रणाली काफी कमजोर है। खाद्य पदार्थों के पोषक तत्वों पर जलवायु परिवर्तन का प्रभाव उनके स्वास्थ्य को बदतर बना देगा। ऐसे में भारत सरकार की प्राथमिकता जीडीपी नहीं होना चाहिए क्योंकि यह मुड़ी भर अमीर लोगों के विकास का सूचक है और सही मायने में यह उनके लिए भी बेहतर नहीं है। सचाई यह है कुपोषण तो संपन्न लोगों में भी एक समस्या का रूप ले चुका है। बदलती फूड हैबिट के कारण उनमें भी कुपोषण बढ़ा है। इसलिए विकास के सूचक जीवन से जुड़े होने चाहिए, न कि सुविधाओं और विलासिता से।

■ नदी और तालाब

ग्लोबल वार्मिंग की चुनौती को देखते हुए भारत को घरेलू जरूरतों के लिए कोयले पर निर्भरता कम करनी होगी। भारत में ग्रीनहाउस गैस उत्सर्जन में 68 फीसदी हिस्सेदारी ऊर्जा उत्पादन सेक्टर की है। पिछले कुछ समय से नवीकरणीय ऊर्जा क्षमता बढ़ाने की कोशिश जारी है। इसे और रफ्तार देने की जरूरत है। हमें पर्यावरण के अनुकूल कृषि नीति बनानी होगी। बिजली और यूरिया पर सब्सिडी तथा फसलों का न्यूनतम समर्थन मूल्य किसानों को ऐसे राज्यों में भी धान और गन्ना जैसी फसलें लगाने के लिए प्रेरित करता है जहां पानी की उपलब्धता कम है। दूरदर्शी कृषि नीति न होने की वजह से पानी की कमी और पराली जलाने जैसी समस्याएं बढ़ रही हैं। इसलिए वर्तमान चुनौतियों के अनुरूप कृषि नीति बनाने और सूख रहे नदी-तालाबों को नया जीवन देने की जरूरत है।