

Times of India 19-March-2021

# 42k of 11L govt schools lack drinking water, 15k toilets

TIMES NEWS NETWORK

**New Delhi:** Of the 10.8 lakh government schools in the country, over 42,000 lack drinking water supply and 15,000 have no toilets, education minister Ramesh Pokhriyal said on Thursday.

Responding to a written question in the Rajya Sabha, on whether the government has set any time bound targets to provide drinking water and sanitation facilities in all the schools, Pokhriyal said: "States and UTs have been repeatedly advised to ensure that all the schools should have provision for separate toilets for boys and girls; and safe and adequate drinking water facilities for

**Times View:** This is a distressing piece of statistics. Roughly 3% of the country's GDP is spent on education. This is a compelling reason why it should be closer to the 6% generally considered the minimum needed.

all children."

Quoting data from the Unified District Information System for Education (UDISE), he said, "As per UDISE, 2018-19, out of 10,83,747 total number of government schools in the country, 10,41,327 government schools have drinking water facility and 10,68,726 government schools have toilets," he said in his reply.

Deccan Herald 19-March-2021

## K'taka to file original suit in SC against TN river project

**BENGALURU, DHNS:** Karnataka will soon file an original suit in the Supreme Court against Tamil Nadu's river-linking project, Home and Law Minister Basavaraj Bommai said on Thursday.

The minister was responding to a question on the Cauvery-Vaigai-Gundar river-linking project raised by Congress' M Narayanaswamy in the Legislative Council.

The project proposes to use excess water in the Cauvery basin and channel it to arid regions within its borders.

"We have decided to take

legal recourse against it. We have taken suggestions from experts. We will ensure that our state's interests are not compromised," Bommai assured the Council.

The surplus water use requires the permission of all states. The state government has stated its objections to the Centre and the Central Water Commission, the minister added.

Deputy Chief Minister Govind Karjol, too, reiterated that the project did not have the Karnataka government's approval.



Business Standard 19-March-2021

# Catch the rain

New phase of Jal Shakti Abhiyan should improve water availability

**G**iven the urgency to alleviate widespread and steadily worsening water scarcity, the government has rightly decided to launch Phase-2 of its flagship water conservation programme Jal Shakti Abhiyan on April 1. Though various types of soil and water conservation programmes have regularly been taken up over the past several decades, the civic works related to them are rarely carried out before the onset of the monsoon, as should preferably be the case. The land is usually vacant and the water stock in the existing water bodies low or, in some cases, nil to allow maintenance and improvement works in the pre-monsoon period. But most often, such tasks are sought to be performed during the rainy season, which is the most inappropriate time for these activities. Phase-1 of the massive Jal Shakti initiative in 2019, too, was implemented from July 1 to November 30. The net gains from this phase, consequently, remained below par. In 2020, this programme could not make much headway because of the pandemic. The lags and lapses, therefore, need to be made up this year.

Another noteworthy aspect of this year's water conservation campaign is its well-advised motto: "Catch the rain where it falls and when it falls". This, essentially, is the sharpened version of the earlier slogan: "*Khet ka pani khet mein; gaon ka pani gaon mein*", meaning retaining field water in the fields and village water in the villages. Only a few states followed this principle — and, that, too, only partially — by promoting the digging of field-level ponds to store surplus rain water for crop-saving irrigation. Well-designed and location-specific water-holding infrastructure is needed to be put in place prior to the monsoon season for in-situ water conservation.

Going by the estimates floated by the NITI Aayog, nearly 600 million Indians face "high to extreme" water stress. What is worse, the paucity is projected to exacerbate as India's overall water demand is anticipated to double by 2030. This could potentially dent the country's gross domestic product by 6 per cent by 2050. The situation is particularly worrisome in the groundwater sector. The water table in many areas is receding at an alarming pace despite restrictions on installing water extraction systems in over-exploited zones. India is the world's largest extractor of groundwater. Its annual water withdrawals are more than those of the US and China put together. Such indiscriminate exploitation of groundwater is unsustainable. Adequate recharging of subsurface aquifers through rainwater harvesting is, therefore, indispensable.

Fortunately, the country's average annual rainfall of around 120 cm (comprising 79 cm of monsoon rainfall and the rest during other times of the year and in the form of snowfall) can easily meet the genuine needs if managed well. But over 80 per cent of it is allowed to run off wastefully, eroding the precious soil in its wake. That said, the truth also is that part of the likely gains from the Jal Shakti Abhiyan could be eroded if the available water is not used efficiently, especially in the agriculture and industrial sectors. For this, appropriate pricing of water is imperative. Also, free or subsidised power supply for groundwater pumping must stop.

Hindustan Times 19-March-2021

{ **DESPITE OPPOSITION** } DISASTER-PRONE HIMALAYAS

# Govt to allow completion of 7 hydel projects in U'khand

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**NEW DELHI:** The Centre has decided to allow the completion of seven under-construction hydropower projects in Uttarakhand, a top official in the environment ministry said, indicating the government's desire to push ahead with these projects despite opposition from activists and local residents, which has resurfaced again in recent weeks following the February 7 flash flood on the Rishi Ganga that claimed at least 72 lives and damaged two projects.

The decision has been taken by the ministries of environment, power and Jal Shakti, and will be communicated to the Supreme Court, which is hearing a matter on hydropower projects, this person added on condition of anonymity.

"Those hydropower projects which have completed 50% of construction will be allowed to go ahead," this person said.

Union environment minister Prakash Javadekar, too, tweeted on March 15 his response to a question in Rajya Sabha that sanctioned projects will be allowed to go ahead, but no new projects will be initiated in the upper reaches on Ganga.

The projects at Tapovan Vishnugad (520 MW) on Dhauliganga river which was completely destroyed in the February 7 glacier breach; Vishnugad Pipalkoti (444 MW) on Alaknanda river; Tehri Stage II (1000 MW) on Bhagirathi river; Singoli Bhatwari (99 MW) on Mandakini river; Phata-Buyong (76 MW) on Mandakini river; Madhyamaheshwar (15 MW) on Madhyamaheshwar Ganga; and Kaliganga II (6 MW) on Kaliganga river all meet this criterion.

"Most of the under-construction projects that the Centre plans to go ahead with are located in extremely sensitive areas in the vicinity of the paraglacial zone and are to the north of MCT. These include Tapovan Vishnugad, Vishnugad Pipalkoti, Phata Byung, Singoli Bhatwari, Madhyamaheshwar and Kaliganga. Phata Byung was completely buried in the 2013 disaster, Singoli Bhatwari was also destroyed. The Centre should have decommissioned these under-construction projects immediately after the 2013 disaster. The focus should shift to conserving the Himalayas and not making them further vulnerable to disasters by allowing these projects," said Hemant

Dhyani, member of the Supreme Court-appointed expert body to study the environmental impact of hydropower projects.

MCT or main central thrust is a geological fault that lies along the Himalayas.

Following the 2013 Uttarakhand flash floods which killed at least 5,000, the Supreme Court on August 13, 2013 ruled that no new hydroelectric power projects should be set up in the state. In all, 69 projects were envisaged in the region at the time; 24 had been granted environmental clearances, which were also stayed by the apex court.

The court sought a detailed assessment of the cumulative impact of hydropower plants in the state. Following the order, a committee headed by Ravi Chopra, director of the People's Science Institute, submitted a detailed report which warned that glacial retreat in the state, coupled with structures built for hydroelectricity generation and dams, could lead to large-scale disasters downstream.

It also underlined that paraglacial zones (above 2,000 metres) and areas north of the main central thrust are extremely vulnerable to landslides, Glacial Lake Overflow

Floods, and hence not ideal locations for hydropower projects.

Subsequently, the top court, in its order dated January 24, 2015 in Alaknanda Hydro Power Co. Ltd Versus Anuj Joshi & Ors, directed a common policy framework to be created by the ministries of environment, Jal Shakti, and power for implementation of projects in the upper reaches of the Ganga.

That process took time.

Minutes of a meeting held in the chamber of the principal secretary to the Prime Minister on February 25, 2019 said that no new hydropower project would come up on the Ganga or its tributaries in Uttarakhand, but made an exception for the seven projects under construction where 50% of the work was complete.

Now, the ministries are ready to present their conclusion to the court.

"This shows that the government is turning a blind eye to recurrent disasters. The only rationale to allow these seven is that the money has already been spent but that doesn't mean you have to go ahead with faulty and risky propositions," said Mallika Bhanot, an Uttarakhand based environment activist associated with Ganga Ahvaan.



Telangana Today 19-March-2021

# Funds flow for irrigation sector

STATE BUREAU  
Hyderabad

The irrigation sector, which played a key role in the rapid development of Telangana, has been allocated Rs 16,931 crore in Budget 2021-22, recording an increase of 53.18 per cent over last year's allocation of Rs 11,053.55 crore. Presenting the Budget in the Assembly on Thursday, Finance Minister T Harish Rao said after air, water is the most important requisite for the survival of all living beings.

"Sir Arthur Cotton rightly said revenue that comes from irrigated land is more than that comes from gold mining," he said, adding that agriculture and industries would flourish only when irrigation facilities are available abundantly. Stating that Telangana is fully aware of the significance of water since it had enough experience of water

## New LI schemes sanctioned in various constituencies

- Nallikal lift in Nagarjunasagar
- Pogilla, Kambalapally, Nambapuram-Peddagattu, Peddamunigaala and Akkampalli lifts in Devarakonda
- Dunnapothula gandhi-Balnepally, Bapalthanda, Kesavapuram-Kondrapole, Bothalapalem-Vadapalli, Veerlapalem and Thopucharla lifts in Miryalaguda
- Muktyala branch canal and Jaanpad lifts in Huzurnagar
- Nagamadugu lift in Jukkal
- Jakora, Chandur and Fathepur-Chittapur lifts in Bansvada
- Mucherla and Kamtam-Chikli lifts in Armur
- Kodicherla lift in Balkonda
- Sthambampalli, Velgaturu and Dammanapeta lifts in Dharmapuri
- Pipri lift in Mudhol
- Gattu lift in Gadwal
- Ellareddy lift in Dubbaka

## In the pipeline

- Gopaladinne lift in Kollapur
- Sangameshwara lift in Zahirabad and Sanga Reddy
- Basaveswara lift in Narayankand constituency
- Five lifts in Asifabad of East Adilabad, Sirpur, Bellampalli, Chennur and Mancherla constituencies
- Illendhu lift in Illendhu
- Pragadapalli lift in Bhadrachalam

scarcity, the Minister recalled the immense difficulties Telangana had faced under united Andhra

Pradesh. "If we write or recite those tragic stories, they may be larger than epics like the Ramayana and the Ma-

## MISSION KAKATIYA

Finance Minister T Harish Rao said Mission Kakatiya launched to rehabilitate lakes achieved good results. Thousands of ponds were restored and lakhs of acres of ayacut was stabilised. Due to an increase in water capacity, fish culture flourished and incomes of fisherman had increased. Groundwater levels too improved across the State. "There were no breaches to tanks. Earlier, many irrigation tanks faced this problem, but this year we could restrict such incidents, all credit to Mission Kakatiya," he added.

habharata," he said, adding wells and ponds had dried up and lack of water in borewells and shortage of

groundwater resources had made agriculture a nightmare before the State formation. Pointing out that farmers' suicides were a regular phenomenon and highlighting how successive governments planned projects that led to inter-State disputes besides reducing reservoir capacities, he said it was for this reason that Chief Minister K Chandrashekhara Rao himself took the lead to monitor the redesigning of projects.

To resolve inter-State disputes in a congenial atmosphere, the construction of various projects was taken up. The Kaleshwaram Lift Irrigation Scheme on the Godavari had almost completed and the Sitarama project is nearing completion, he said, adding that similarly, works of the Palamuru-Rangareddy lift irrigation project were progressing briskly. "With the construction of the Kalesh-

waram project, a magnificent event unfolded before us that will remain in the annals of history," he said. At a height of 618 feet, the Godavari flowed into Kondapochamma Sagar. As informed in the previous Budget, Ranganayaka Sagar and Kondapochamma Sagar have been completed, and water is being supplied to farmers this Yasangi.

"When we visit any village, for the first time in the last 20 years, people with eyes brimming with joy are saying that the tanks are full and canals are flowing," Harish said.

The Dindi lift irrigation project that could provide water to the lands under the Nagarjunasagar left canal near Nalgonda district would be completed soon. The Sammakka Sagar barrage (thupakulagudem), which is part of the Devadula project, is nearing completion.



Telangana Today 19-March-2021

# Indian engineers to find hydel solutions for US

Y V PHANI RAJ  
Hyderabad

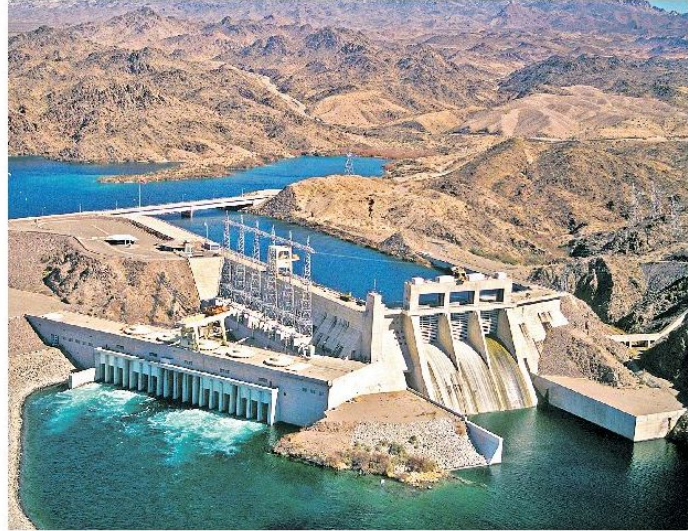
Freelancer.com, the world's largest freelancing and crowdsourcing marketplace, along with Arrow Electronics, an electronic components distributor, rolled out a \$250,000 Automated Maintenance of Protection Systems (AMPS) Challenge, for the Bureau of Reclamation of the US (which produces hydroelectric power). NASA is facilitating the challenge that allows Indian electrical and electronic engineers to contest, as well as those from other nationalities.

The aim of the challenge is to improve the reliability of hydropower plant generation by automating protection system testing and reducing plant downtime.

The Freelancer.com and ArrowPlus platforms are expected to attract a large number of candidates offering a variety of viable solutions from across the world, including India, which is known for its engineering talent pool.

Freelancer has broad expertise in engineering with over 2.5 million freelance engineers on its platform, with about 2,60,000 who specialise in electrical engineering. The platform has sourced over 13,000 product designs from more than 6,000 designers in contests run on behalf of NASA.

Freelancer chief executive Matt Barrie told Telangana Today, "There are over 1.26 crore Indian registered users on



*The solutions being developed will be used for the 53 hydropower stations operated by the Bureau of Reclamation in the US.*

Freelancer.com platform. This reclamation contest is open for every nationality including all Indian electrical engineers on Freelancer.com and ArrowPlus platforms. NASA's Open Innovation Service (NOIS) is a world leader in crowdsourcing and they have been using Freelancer.com since 2015 to crowdsourcing solutions to the most complex problems being faced by astronauts on the cutting edge of space exploration."

"For now, the solutions will be used for the 53 hydropower stations operated by the Bureau of Reclamation in the western US. However, the technology could be applicable to all types of electrical relays, not just in hydropower generation. This is akin to the invention of the windscreen wiper motor- an innovation that could be adopted universally," he added.

The Bureau of Reclamation's AMPS Challenge will be a two-phase challenge seeking improvements and/or fresh concepts to automate protection system testing at Reclamation hydropower facilities comprising a White Paper Challenge and a Prototype Challenge.

The White Paper Challenge offers a total prize of \$100,000, expecting to award up to 10 prizes of \$10,000 each. In the Prototype Challenge, commencing immediately after the White Paper Challenge ends, the best prototype will be awarded up to \$100,000 prize. In addition, up to \$10,000 awards will be presented for teams that excel in individual benchmarks for a total prototype purse of \$150,000. This is the first task order won by Freelancer under the \$25 million NOIS2 joint tender and is valued at \$365,000.



Morning Standard 19-March-2021

## Committee set up for restoration, monitoring of Yamuna riverfront



PARVEZ SULTAN @New Delhi

WITH authorities failing to rejuvenate the Yamuna river and its floodplain despite years of efforts and planning, the DDA on Thursday approved the formation of the River Yamuna Management Committee (RYMC) for effective monitoring of conservation and ongoing restoration projects along the riverfront.

Delhi's lieutenant governor will head the panel with city's chief secretary, vice-chairman of DDA, representative of the Union Ministry of Jal Shakti, civic bodies, Delhi Police and governments of Haryana and

Uttar Pradesh are members.

"The committee will coordinate with all the stakeholders so that restoration works to develop and maintain the river and floodplains are carried out in a harmonious manner. It will ensure periodical monitoring of the quality of drains and river water. Safety measures formation and development mechanisms for monitoring activities for the maintenance and management of the floodplains will also be the responsibility of the panel. The committee will meet once every six months," said an official.

Observing the deterioration of the river due to years of ne-

glect, the National Green Tribunal (NGT) issued directions to develop an effective mechanism for monitoring.

The panel will rope in experts from various fields—science & technology, wetland, solid waste management, environmental planning, ecology, biodiversity, hydrology, and landscape architecture, which are relevant to the ecology of the floodplains.

The authority has been restoring and developing the floodplains of Yamuna by providing green buffers, planting native grass species, creating wetlands and also restoring the existing ones. The agency has

also planned continuous trails of kachcha pathways and cycle tracks along the bunds and embankments.

The officials said that an executive committee under the chairmanship of the vice-chairman of the DDA with various stakeholders as its member would be formed to undertake activities on behalf of RYMC.

"The executive committee will take day-to-day decisions. It will meet every three months. Various other Sub-Committees will also be set up as and when required to coordinate, supervise and enforce the directions of RYMC," said an official.

The Tribune 19-March-2021

# 75% water connections in Faridabad illegal: Survey

Majority of them in slums | Causing loss of over ₹5 crore every year

**BIJENDRA AHLAWAT**  
TRIBUNE NEWS SERVICE

**FARIDABAD, MARCH 18**

The Municipal Corporation of Faridabad has launched a metering project to legalise unauthorised water connections. The step has been taken after a recent survey by the civic body showed that around 75 per cent of the water connections in the city were unauthorised.

"The survey on property tax has revealed that there are 5.6 lakh units (residential and commercial) in the city but only 1.39 lakh units have legal water connections," said a senior MC official.

A majority of illegal connections are located in slum clusters and densely populated colonies in the NIT, old Faridabad and Ballabgarh.

Yashpal Yadav, MC Commissioner, said that illegal water and sewerage connections were causing a



A majority of illegal connections are located in slums and densely populated colonies in the NIT, old Faridabad and Ballabgarh.

## ONLY 1.39L HAVE LEGAL CONNECTIONS

“A property tax survey has revealed that there are 5.6 lakh units (residential and commercial) in Faridabad but only 1.39 lakh units have legal water connections. MC official

loss of more than Rs 5 crore to the MC every year. The MC supplies 240 million

litres per day (MLD) in the city having a population of 20 lakh against 300 MLD

required. The total annual revenue generated from water and sewerage connections is around Rs 12 crore, sources say.

They say that the tanker and private water supply mafia enjoying political patronage has been exploiting water resources and piped water supply, resulting in short supply.

"A comprehensive audit of the entire water supply network will be conducted and, if required, FIRs will be registered against the offenders to curb the menace of illegal connections," Yadav said.

The campaign to regularise illegal connections was launched earlier as well, but it failed to check water theft or pilferage because of poor planning and execution, the sources say.

"Tenders for the metering project are expected to be invited within a couple of weeks," Yadav added.



Millennium Post 19-March-2021

# About 2,000 water quality labs open to public for testing

## OUR CORRESPONDENT

**NEW DELHI:** In a major initiative that may bring a drastic change in the drinking water sector forever, an online drinking water quality management information system (WQMIS) with its App has come into operation under the Jal Jeevan Mission, a flagship plan of Jal Shakti Ministry.

According to an official statement, about 2,000 water testing laboratories have been opened to the public in the country wherein anyone can give sample and source coordinates of piped water supply will also be captured.

## Water quality testing reports are now generated and delivered online to person giving sample

It has simplified the process of water testing as water quality testing reports are now generated and delivered online to person giving water sample to the concerned public health engineer and also in the Central database for continuous monitoring and remedial action.

“During Covid-19 pandemic, the need-based sampling and testing protocol adopted for Covid-19 testing was widely acknowledged and appreciated. Following the same approach, NJJM in collaboration with ICMR developed the JJM-WQMIS framework for testing and remedial action,” it said.

Notably, the Jal Jeevan Mission is being implemented in partnership with states to provide assured tap water supply in adequate quantity, of prescribed quality on a regular and long-term basis to every rural household of the country by 2024.

Millennium Post 19-March-2021

# Make or break

*We now need to be more than obsessive about water and its management as it is the basis of health and wealth*



SUNITA NARAIN

**We know that climate change impacts are about heat — increased and scorching temperatures — and about variable and extreme rain. Both have a direct correlation with the water cycle. So climate change mitigation has to be about water and its management**

Every year, March 22 is observed as World Water Day. This year as we celebrate, and reiterate, the importance of water we need to remember the difference — this is the World Water Day in the age of climate change.

This means we have to do everything that we know we need to do: Augment water availability by harvesting every drop of rainwater; use it much more efficiently so that every drop of that rainwater is valued in the food we eat or the water we flush; and ensure that every drop of that used water is reused and recycled and not degraded by pollution. This we already know and we practice.

But this will not be enough in the age of climate change — we will have to do all we know at a faster pace, on a massive scale, and differently. Why do I say this?

We know that climate change impacts are about heat — increased and scorching temperatures — and about variable and extreme rain. Both have a direct correlation with the water cycle. So climate change mitigation has to be about water and its management.

Every year, we know now, is the hottest year in recorded history — till the next year comes around and breaks the record. In India, temperatures in parts of Odisha have crossed 40 degree Celsius as early as February — even before summer set in. North Indian states are breaking all records in terms of rising heat and higher than normal temperatures.

And this is when 2021 is the year of La Niña — the Pacific water currents that are known to bring cooler temperatures globally as compared to El Niño. But Indian weather scientists say global warming has offset this cooling effect of La Niña.

Rising heat has many implications for water security. First, it means that there will be greater evaporation from all waterbodies. It means that



With temperatures soaring, evaporation rates will increase — we need to plan; we need to do more

we need to work not just on storing water in millions of structures, but also plan for reducing losses due to evaporation. One option is to work on underground water storage — wells in other words.

India has for too long discounted the management of groundwater systems as irrigation bureaucracies have been built on the planned canals and other surface water systems. But this will need to shift in this age of climate change and water scarcity.

We need to find ways of reducing losses from tanks, ponds and canals as well. It's not that evaporation losses didn't happen in the past; but now the rates will increase with temperatures soaring. So we need to plan; we need to do more.

Second, increased heat means that it will dry up the moisture in soils; it will make the land dusty and will

increase the need for irrigation. In a country like India where the bulk of the food is still grown in rainfed regions — irrigated by rain — it will intensify land degradation and dust bowl formations. This means water management must go hand in hand with vegetation planning to improve the ability of soils to hold water, even in times of intense and prolonged heat.

Thirdly, and obviously, heat will drive up the use of water — from drinking and irrigation to fighting fires in forests or buildings. We have already seen devastating forest fires rage in many parts of the world, and in the forests of India. This will only increase as temperatures go up. So the demand for water will increase with climate change, making it even more imperative that we do not waste — either water or wastewater.

But this is not all. The

fact is that climate change is already showing up in terms of the increasing number of extreme rain events. This means that we can expect rain to come as a flood, making the cycle of floods followed by droughts even more intense. India already has fewer rainy days in a year — it is said that it rains for just 100 hours on average in a year. Now the number of rainy days will further go down, but extreme rainy days will increase.

This has a huge impact on our plans for water management. This means that we need to think more about flood management, not only to embank rivers but to optimise the floodwaters so that we can store them in underground and overground aquifers — wells and ponds. But it also means that we need to plan differently for the capture of rainwater.

Currently, our water struc-

tures, the many millions that are being constructed under the Mahatma Gandhi National Rural Employment Guarantee Act, for instance, are designed for normal rainfall. But now, as extreme rains become the normal, the structures will need to be redesigned so that they last over the seasons. The bottom-line is that we must plan deliberately to capture every drop, not just of rain but of floodwater, in this age of climate change.

Let's then be clear; we needed to be obsessive about water and its management yesterday because water is the basis of health and wealth. But now we need to be more than obsessive — we need to be determined and deliberate. This is the real make or break of our future.

*The writer is the Director-General of CSE and editor of Down To Earth. Views expressed are personal*

DTE



The Hans 19-March-2021

# Sea levels are rising fastest in big cities

SALLY BROWN,

ROBERT JAMES NICHOLLS

IT is well known that climate-induced sea level rise is a major threat. What is less well known is the threat of sinking land. And in many of the most populated coastal areas, the land is sinking even faster than the sea is rising.

Parts of Tokyo for instance sank by four metres during the 20th century, with two metres or more of sinking reported in Shanghai, Bangkok, and New Orleans. This process is known as subsidence. Slow subsidence happens naturally in river deltas, and it can be accelerated by the extraction of groundwater, oil or gas which causes the soil to consolidate and the surface to lose elevation.

Subsidence leads to relative sea level rise (sea level rise plus land sinking). It turns croplands salty, damages buildings, causes widespread flooding and can even mean the loss of entire coastal areas.

Subsidence can threaten flooding in low-lying coastal areas, much more so than rising sea levels, yet scientists are only just realising the global implications of the threat with respect to coastal cities.

In fact, while the average coastal area experiences relative sea level rise of less than 3mm per year, the average coastal resident experiences a rise of around 8mm to 10mm per year. This is because so many people live in deltas and especially cities on deltas that are subsiding. That's the key finding of our new research, where we analysed how fast cities are sinking across the world and compared them with global subsidence data including less densely populated coastal lines.

Our finding reflects that people often choose to live in river deltas, floodplains and other areas that were already prone to sinking, and in doing so will further enhance subsidence. In particular, subsiding cities contain more than 150 million people in the coastal zone – that's roughly 20 per cent of people in the world who live by the sea. This means relative sealevel rise will have a more sudden and more severe impact than scientists had originally thought.

## Here are a few of the most affected cities: JAKARTA

The Indonesian capital Jakarta is home to 10 million people, and is built on low-lying land next to the sea. Groundwater extraction caused the city to sink more than three metres from 1947 to 2010 and much of the city is still sinking by 10 cm or more each year.

Subsidence does not occur evenly, leading to uneven risks that make urban



Subsidence leads to relative sea level rise (sea level rise plus land sinking). It turns croplands salty, damages buildings, causes widespread flooding and can even mean the loss of entire coastal areas. Subsidence can threaten flooding in low-lying coastal areas, much more so than rising sea levels, yet scientists are only just realising the global implications of the threat with respect to coastal cities. In fact, while the average coastal area experiences relative sea level rise of less than 3mm per year, the average coastal resident experiences a rise of around 8mm to 10mm per year. This is because so many people live in deltas and especially cities on deltas that are subsiding

planning difficult. Buildings are now flooded, cracks are appearing in infrastructure which is being abandoned.

Jakarta has built higher sea walls to keep up with the subsidence. But since groundwater pumping continues, this patching-up policy can only last so long before the same problems occur again. And the city needs to keep pumping since groundwater is used for drinking water. Taking water, the very thing that humans need to survive, ultimately puts people at risk from inundation.

The battle against subsidence is slowly being lost, with the government proposing in 2019 to move the capital to a purpose-built city on the island of Borneo more than 1,000 km away, with subsidence being one of many reasons.

## SHANGHAI

Developing rapidly in the past few decades, and now with a population of 26 million, Shanghai is another sinker. The city has maximum subsidence rates

of around 2.5 cm a year. Again this is mostly caused by lowering groundwater levels, in this case thanks to drainage to construct skyscrapers, metro lines and roads (for instance Metro Line 1, built in the 1990s, caused rapid subsidence).

If no additional protection is built, by 2100 this rate of subsidence and sea level rise mean that a storm surge could flood around 15 per cent of the city.

## NEW ORLEANS

In New Orleans, centuries of embankments and ditches had effectively drained the city and sunk it, leaving about half of it below sea level.

Much of New Orleans is below sea level (red) and relies on sea walls to stay dry. The Data Center, New Orleans, CC BY-SA

When Hurricane Katrina breached the levees in 2005, the city did not stand a chance. The hurricane caused at least US\$40 billion (£29 billion) in damage and particularly took its toll on the city's

African American community. More than 1,570 people died across the state of Louisiana.

If the city had not subsided, damage would have been greatly reduced and lives would have been saved. Decisions that were made many decades or more ago set the path for the disasters that are seen today, and what we will see in the future.

## There are no simple solutions

So what can be done? Building a sea wall or dike is one immediate solution. This of course stops the water coming in, but remember that the sea wall is sinking too, so it has to be extra large in order to be effective in the long-term. In urban areas, engineers cannot raise ground easily: that can take decades as buildings and infrastructure are renewed. There is no simple solution, and large-scale urban subsidence is largely irreversible.

Some cities have found "solutions". Tokyo for instance managed to stop subsidence from about 1960 onwards thanks to stronger regulations on water pumping, but it cannot get rid of the overall risk as parts of city are below sea level and depend on dikes and pumps to be habitable. Indonesia's bold proposal to move its capital city may be the ultimate solution.

Increased urbanisation especially in deltas areas and the demand for freshwater means subsidence will remain a pressing issue in the coming decades. Dealing with subsidence is complementary to dealing with climate-induced sea level rise and both need to be addressed. A combination of rising seas and sinking lands will increasingly leave coastal cities at risk.

(Courtesy: Down to Earth)



Amar Ujala 19-March-2021

# प्रबंधन समिति को मंजूरी, स्वच्छ होगी यमुना

संरक्षण और कायाकल्प की संभालेगी जिम्मेदारी, डीडीए बोर्ड की बैठक में लिए गए कई अहम फैसले

अमर उजाला ब्यूरो

नई दिल्ली। यमुना नदी की निगरानी और उसके आसपास के इलाकों को विकसित करने के लिए दिल्ली विकास प्राधिकरण (डीडीए) ने बृहस्पतिवार को उपराज्यपाल अनिल बैजल की अध्यक्षता में यमुना नदी प्रबंधन समिति को मंजूरी दे दी है। यह समिति यमुना की निगरानी करने के साथ संरक्षण व कायाकल्प की जिम्मेदारी भी संभालेगी। बोर्ड की बैठक में फैसला लिया गया कि समिति की अध्यक्षता उपराज्यपाल करेंगे और इसमें दिल्ली के मुख्य सचिव, डीडीए उपाध्यक्ष, जल शक्ति मंत्रालय के प्रतिनिधि, नगर निकाय, हरियाणा व उत्तर प्रदेश सरकार के प्रतिनिधि, जलबोर्ड व दिल्ली पुलिस सदस्य के रूप में शामिल रहेंगे।

यमुना के बाढ़ग्रस्त इलाकों में डीडीए हरियाली बढ़ाने के साथ वेटलैंड को बढ़ावा देकर नदी के किनारों को सुरक्षित कर रहा है। यमुना को संरक्षित करने के लिए समिति में विज्ञान क्षेत्र, पर्यावरण और वेटलैंड विशेषज्ञों के साथ वास्तुकार आदि की सलाह ली जाएगी। समिति का मुख्य उद्देश्य सभी स्टेट होल्डर के साथ समन्वय



## पार्किंगों मानदंडों में होगा बदलाव

पार्किंग की समस्या से जूझ रही राजधानी में पार्किंग मानदंडों को लेकर भी बदलाव किए जाएंगे। अब इसे आवासीय इकाइयों की संख्या से हिसाब से तय किया जाएगा। डीडीए ने प्राथमिक तौर पर इसे मंजूरी दे दी है। अगले 45 दिनों तक डीडीए नए पार्किंग मानदंडों को लेकर लोगों से सुझाव लेगा और अंतिम रूप से योजना तैयार करेगा। वर्तमान में दिल्ली में पार्किंग के मानदंडों को अभी की जरूरत के हिसाब से तैयार किया गया था। इस वजह से देखने में आता है कि क्षमता से अधिक पार्किंग होने पर सड़क पर भी जाम की समस्या हो जाती है। मौजूदा हालत में आवासीय इलाकों में जगह के हिसाब से पार्किंग की जगह को मंजूरी दी जाती है। वहीं, बैंकवेट हॉल व अस्पतालों और कार्यालयों में भी पार्किंग को लेकर नए मानदंड तैयार होंगे।

बैठाना होगा, जिससे कोई बाधा उत्पन्न न हो। यह समिति समय-समय पर नाटियों से बहने वाले पानी की गुणवत्ता व बाढ़ प्रभावित

इलाकों की भी निगरानी करेगी। इसके लिए प्रत्येक छह माह में बैठक की जाएगी।

भविष्य में डीडीए उपाध्यक्ष की

## कम किराए वाले आवासीय परिसरों को मिली हरी झंडी

डीडीए ने कम किराए वाले आवासीय परिसरों अपोर्टमेंटल रेंटल हाउसिंग स्कीम (एआरएचसी) को भी मंजूरी दे दी है। इससे शहरी प्रवासी व गरीबों वर्ग के लोगों को लाभ मिलेगा। इस नीति के तहत निजी व सरकारी वित्त पोषित आवास को कम किराए पर लोगों के कार्यस्थल के पास ही विकसित किया जाएगा। शुरुआती तौर पर इसे योग्य उम्मीदवारों को तीन साल के लिए डीड लाइसेंस के आधार पर दिया जाएगा। मंजूरी के बाद अब इस पर लोगों से सुझाव लिए जाएंगे। इसके बाद योजना को अमलीजमा पहनाया जाएगा। दरअसल, इस योजना को गत वर्ष केंद्र की प्रधानमंत्री आवासीय योजना के तहत लाया था। नीति के तहत निजी व सरकारी एजेंसी की जमीन पर आवास तैयार किए जाने हैं। इसमें डीडीए की ओर से नीलाम प्लॉटों को भी शामिल किया गया है, जिन पर बिल्डर निर्माण के लिए रुचि दिखा सकते हैं। मंजूर किए गए मानदंडों के मुताबिक, सिंगल व डबल बेडरूम के अलावा चार व छह विस्तर वाले आवास को तैयार किया जाएगा। प्रस्ताव के तहत मंजूर किए गए फ्लोर एरिया रेशो के 10 फीसदी हिस्से को व्यावसायिक रूप से इस्तेमाल करने की अनुमति होगी।

## होटल पर अतिरिक्त एफएआर स्वीकृत

बोर्ड की बैठक में व्यावसायिक संपत्तियों में शामिल होटलों पर भी अतिरिक्त एफएआर को मंजूरी दे दी गई है। इसमें उन होटलों को शामिल किया गया है जिनमें वर्ष 2018 में अतिरिक्त एफएआर को मंजूरी नहीं मिली थी। इसको देखते हुए होटल उद्योग की ओर से चार्ज में संशोधन की मांग की जा रही थी।

## अनधिकृत कॉलोनियों के गोदाम मालिकों को राहत

डीडीए ने अनधिकृत कॉलोनियों में 30 मीटर से कम चौड़ी सड़कों पर स्थित गोदाम मालिकों को भी राहत दी है। अब इनकी समय सीमा 31 दिसंबर 2023 तक दो साल के लिए बढ़ा दी गई है।

## टेक्नोलॉजी पार्क की भूमि के उपयोग में बदलाव

जाफराबाद में बनाए जा रहे टेक्नोलॉजी पार्क की भूमि उपयोग में बदलाव को भी मंजूरी मिली है। इसके तहत सामुदायिक केंद्र के पास 1006 वर्ग मीटर जगह निर्धारित की गई है।

समिति की बैठक प्रति तीन माह में आयोजित होगी। इसके अलावा भी यमुना के संरक्षण के लिए कई समितियों का गठन किया जाएगा।



Haribhoomi 19-March-2021

**खबर संक्षेप****पीने के पानी की समस्या से जूझ रहे दिल्लीवासी**

नई दिल्ली। दिल्ली में गर्मियों से पहले ही पीने के पानी की समस्या से लोग परेशान होकर जिस प्रकार से धरना प्रदर्शन कर रहे हैं उससे आने



वाले समय में हालात बिगड़ सकते हैं। गुरुवार को दिल्ली में पानी को लेकर लोगों ने विरोध किया और जलबोर्ड पर भ्रष्टाचार के आरोप लगाए। देवली विधानसभा अंतर्गत संगम विहार कॉलोनी एल ब्लॉक के लोगों ने पानी की समस्या को लेकर विधायक के खिलाफ नारेबाजी करते हुए भ्रष्टाचार के गंभीर आरोप लगाए। लोगों के आरोप हैं कि पानी कई साल से पानी टैंकर माफियाओं की जुगबंदी से यहां पीने के पानी की समस्या खड़ी रहती है।

Haribhoomi 19-March-2021

## यमुना नदी प्रबंधन समिति के गठन से सुधरेगी खादर की तस्वीर

यमुना नदी प्रबंधन समिति के गठन के बाद यमुना में आने वाली बाढ़ से बचाव के लिए काम होगा। समिति यमुना नदी और उसके



जल प्रवाह की उचित निगरानी करेगी। आसपास के मैदानों को अलग-अलग हिस्सों में पुनर्जीवित और विकसित करेगी। जिसमें खादर व मैदानी भाग पर रास्ते और नदी के किनारे पर तटबंधों के साथ साइकिल ट्रैक बनाया जाएगा। समिति विकास गतिविधियों को बढ़ावा देगी और यमुना में गंदगी रोकने के लिए काम करेगी। इसके अध्यक्ष उपराज्यपाल होंगे जबकि दिल्ली के मुख्य सचिव, डीडीए के उपाध्यक्ष, जल शक्ति मंत्रालय के प्रतिनिधि, हरियाणा और यूपी सरकार, दिल्ली जल बोर्ड, दिल्ली के नगर निगम और पुलिस, विज्ञान और प्रौद्योगिकी, वेटलैंड विशेषज्ञ, ठोस अपशिष्ट प्रबंधन, पर्यावरण नियोजन, पर्यावरण प्रभाव आकलन, पारिस्थितिकी, जैव विविधता, जल विज्ञान, लैंडस्केप वास्तुकला या बाढ़ के मैदानों की पारिस्थितिकी से संबंधित अन्य क्षेत्र के विशेषज्ञ भी समिति में शामिल होंगे।



Hindustan 19-March-2021

# ● दिल्ली प्रदूषण नियंत्रण समिति ने जारी किए आंकड़े ● बीओडी की मात्रा 37.36 मिली, जबकि होना चाहिए तीन मिलीग्राम

## ओखला बैराज पर यमुना में 12 गुना ज्यादा प्रदूषण

आफत

नई दिल्ली | संजय कुशवाहा

यू तो राजधानी दिल्ली में यमुना का पानी कहीं भी पीने लायक नहीं है। लेकिन, ओखला बैराज पर हालत सबसे ज्यादा खराब है। यहां पर मानकों से 12 गुना ज्यादा प्रदूषण पानी में मौजूद है। दिल्ली प्रदूषण नियंत्रण समिति के आंकड़ों के मुताबिक यहां बीते साल बायोलॉजिकल ऑक्सीजन डिमांड यानी बीओडी की मात्रा 37.36 मिलीग्राम प्रति लीटर रही। मानकों के अनुसार, इसे तीन मिलीग्राम प्रति लीटर से कम रहना चाहिए।

दिल्ली इकोनॉमिक सर्वे 2021 के मुताबिक, यमुना का 54 किलोमीटर हिस्सा दिल्ली से होकर गुजरता है। वजीराबाद से असगपुर गांव तक यानी लगभग 22 किलोमीटर का हिस्सा सबसे ज्यादा प्रदूषित है। यमुना नदी की कुल लंबाई का यह केवल दो फीसदी है लेकिन यमुना का 76 फीसदी प्रदूषण इसी दो फीसदी हिस्से में होता है। दिल्ली प्रदूषण नियंत्रण समिति की ओर से यमुना में नौ जगहों पर पानी की गुणवत्ता की निगरानी की जाती है।

**पिछले साल लिए गए थे नमूने:** वर्ष 2020 में जनवरी से लेकर दिसंबर तक इन जगहों से लिए गए नमूने बताते हैं कि दिल्ली में सिर्फ पल्ला और सूरघाट में ही

**54** किलोमीटर हिस्सा यमुना नदी का दिल्ली में है, दिल्ली इकोनॉमिक सर्वे 2021 के मुताबिक

**76** फीसदी प्रदूषण सिर्फ दिल्ली क्षेत्र में होता है यमुना नदी में, जबकि यह हिस्सा कुल लंबाई का केवल दो फीसदी है

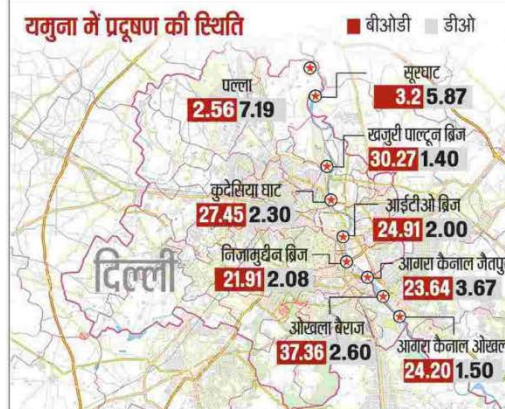


कालिंदी कुंज के पास यमुना के प्रदूषित जल में फैला झग। ● फाइल फोटो

यमुना का पानी नहाने लायक है। यहां पर पानी की गुणवत्ता बायोलॉजिकल ऑक्सीजन डिमांड (बीओडी) और डिजाल्वड ऑक्सीजन (डीओ) के मानकों के अनुसार पाए जाते हैं। सात जगहों पर यमुना का पानी बेहद प्रदूषित

### इस तरह मापी जाती है नदी के पानी की गुणवत्ता

नदी के पानी की गुणवत्ता को बीओडी और डीओ के मानकों पर मापा जाता है। बीओडी यानी बायोलॉजिकल ऑक्सीजन डिमांड का मतलब है कि पानी में किसी जैविक पदार्थ को डिकंपोज करने के लिए किसी बैक्टीरिया या सूक्ष्म जीव को कितनी ऑक्सीजन की जरूरत है। डीओ यानी डिजाल्वड ऑक्सीजन उस पानी में घुली ऑक्सीजन के बारे में जानकारी देती है। पानी में बीओडी की मात्रा तीन मिलीग्राम प्रति लीटर या उससे कम होनी चाहिए, जबकि, डीओ की मात्रा पांच मिलीग्राम प्रति लीटर या उससे ज्यादा होनी चाहिए।



### सिर्फ पल्ला और सूरघाट का पानी ठीक

दिल्ली में पल्ला और सूरघाट में यमुना का पानी सबसे अच्छा है। यहां के पानी में बीओडी और डीओ का स्तर मानकों पर खरे उतरते हैं। यानी, इस पानी से स्नान किया जा सकता है। पल्ला में बीओडी का औसत स्तर 2.56 और डीओ का स्तर 7.19 रहा है, जबकि सूरघाट में बीओडी का स्तर 3.42 और डीओ का स्तर 5.87 रहा है।

है। खजूरी पाल्टून पुल पर तो प्रदूषण पानी की गुणवत्ता बायोलॉजिकल ऑक्सीजन डिमांड (बीओडी) और डिजाल्वड ऑक्सीजन (डीओ) के मानकों के अनुसार पाए जाते हैं। सात जगहों पर यमुना का पानी बेहद प्रदूषित

**सीवेज का पानी पेशानी:** दिल्ली से गुजरने वाले यमुना में 24 बड़े नालों के जरिए घरेलू सीवेज का बड़ा हिस्सा

पहुं चता है। उद्योगों से निकलने वाले सीवेज का भी काफी हिस्सा यमुना में पहुंचता है। इसी के चलते यमुना को भारी प्रदूषण का सामना करना पड़ता है।

**प्राकृतिक तरीके से सफाई हो:** यमुना बायोडायवर्सिटी पार्क के वैज्ञानिक

प्रमुख डॉ. फैयाज ए खुदसर ने बताया कि यमुना को प्राकृतिक तरीके से साफ किए जाने की जरूरत है। यमुना के डूब क्षेत्र को पुनर्जीवित करने के साथ ही स्थानीय क्षेत्र के वन और घास लगाने चाहिए। वजीराबाद से ओखला तक

यमुना में गिरने वाले नालों को कृत्रिम नमभूमि (कंस्ट्रक्टेड वेटलैंड) के जरिए साफ किया जाना चाहिए। दक्षिण दिल्ली बायोडायवर्सिटी पार्क में इसका प्रयोग शुरू भी किया गया है। यह तरीका सबसे ज्यादा सस्ता और टिकाऊ है।