

Deccan Herald- 01- July-2023

# Pennaiyar: K'taka tells Centre not to form tribunal

NEW DELHI, DHNS

**D**eputy Chief Minister D K Shivakumar on Friday said he had requested Jal Shakti Minister Gajendra Singh Shekhawat not to form tribunal to resolve the dispute over sharing of Pennaiyar river between Karnataka and Tamil Nadu.

"I have requested the Union Minister not to form the tribunal to resolve the dispute over sharing of Pennaiyar river water. Karnataka wants to resolve this issue amicably through talks," Shivakumar, who also holds Irrigation portfolio, told reporters here.

"I hope, Jal Shakti Ministry will again take the lead and help resolve the dispute

amicably," Shivakumar said. He met Shekhawat on Thursday to discuss state irrigation issues.

Though Tamil Nadu has been demanding the constitution of the tribunal before the Supreme Court, Karnataka was against that. Even though the Jal Shakti Ministry has said a new tribunal will be constituted by July 5, Karnataka sought time to talk to Tamil Nadu to resolve this issue, he said.

Officials in the Jal Shakti Ministry said that the previous two meetings for negotiations ended in failure. "We will give a few more opportunities to resolve it," the official said.

Recently, the Supreme

Court has asked the Jal Shakti Ministry to clarify its position on a plea filed by Tamil Nadu for setting up an inter-state water dispute tribunal.

Karnataka is building a dam across Markandeya river near Yargol village in Kolar district to provide drinking water to Kolar, Malur and Bangarpet taluks and 40 other villages. Karnataka has obtained all the required permission to build the dam at a cost of Rs 240 crore.

However, objecting to the project, Tamil Nadu claimed that since Markandeya river is tributary of Pennaiyar river, any construction of dam by Karnataka would obstruct natural flows downstream.

The Times of India- 01- July-2023

# In no position to release Cauvery water to TN: DKS

## Crisis In K'taka Due To Delayed Monsoon: Min

TIMES NEWS NETWORK

**New Delhi/Bengaluru:** Karnataka on Friday said it was not in a position to release Cauvery river water to neighbouring Tamil Nadu because there was not sufficient water in the state's reservoirs at present, even as the Supreme Court has directed a tribunal to be formed before July 5.

"There is not enough water to meet our drinking needs. There is severe shortage due to the delayed monsoon," water resources minister D K Shivakumar said in Delhi, a day after meeting Union Jal Shakti minister Gajendra Singh Shekhawat. "Even if we want to release, we don't have water. Bengaluru city too depends on Cauvery river," he added.

Madhusudhan SR



The current water level in KRS dam is 78ft as against its full capacity of 124.8ft. Authorities are now focusing on supplying the reserved water for drinking needs and have stopped releasing water for farm activities

He said Karnataka will host a meeting of water resources department officials from the Centre and various states most likely on July 8-9. "I have asked officials to find a

venue near KRS Dam in Mandya for the meeting so that TN and central officials get to see the real situation," he added.

► **Establishing tribunal, P 4**

The Times of India- 01- July-2023

## Time sought to negotiate with TN on establishing tribunal

► Continued from page 1

Since 2020, Tamil Nadu has realised a higher quantum of Cauvery water, said officials. Cumulatively, the state received about 281 tmc ft (thousand million cubic feet) between June 2021 and May 2022. In effect, it got 103.8 tmc ft more than the quantum of 177.25 tmc ft stipulated by the Supreme Court in the judgment.

On Thursday, when Shivakumar met Shekhawat, he sought time for fresh negotiations with Tamil Nadu to reconsider their demand to set up a tribunal. Shivakumar maintained that Congress never had the opportunity before, and the tribunal should not be formed before talks with Tamil Nadu.

The apex court recently

directed that a tribunal be formed before July 5 following a petition from Tamil Nadu that raised objections to the release of secondary treated sewage water to Koramangala and Challaghatta Valley (KC Valley) that helped fill tanks in two districts — Kolar and Chikkaballapur.

Shivakumar also asked Jal Shakti officials to mediate fresh negotiations to settle the dispute over water rates with Tamil Nadu in its complaint in 2019. The deputy CM apprised him of the importance of the contentious Mekedatu balancing reservoir across Cauvery and how the excess water can be used for drinking purposes. The Mekedatu multi-purpose project involves building a balancing reservoir near Kanakapura in Ramanagara district.



The Indian Express- 01- July-2023

**EXPLAINED SCIENCE**

# Excessive groundwater extraction has shifted the Earth's axis, finds study

**ALIND CHAUHAN**

NEW DELHI, JUNE 30

THE EXCESSIVE extraction of groundwater for drinking and irrigation has shifted the Earth's axis of rotation, according to a new study. Between 1993 and 2010, humans pumped out around 2,150 gigatonnes of groundwater, which moved the planet's axis about 80 cm towards the east.

The study, 'Drift of Earth's Pole Confirms Groundwater Depletion as a Significant Contributor to Global Sea Level Rise 1993–2010', was published in *Geophysical Research Letters* earlier this month. Although the shift isn't significant enough to have real-life consequences, the study illustrates the enormous amounts of water that have been taken out of the ground.

## Earth's axis keeps shifting

Earth spins around an imaginary axis passing through the north and south poles via its centre of mass. Scientists have known that the poles and the axis keep shifting naturally as the mass distribution in and on the planet changes. This phenomenon is known as "polar motion".

Rocks slowly circulating inside the Earth's mantle causes the planet's mass to shift, leading to polar motion. Polar motion is also caused by ocean currents and hurricanes. The lead author of the study, Ki-Weon Seo of the Seoul National University, told *The Indian Express* that the shift of the rotational axis, in fact, "varies about several metres in a year."

But this phenomenon is also impacted by human activities. Previous studies have shown that global warming, which has accelerated the melting of glaciers and ice in Greenland, has caused the Earth's axis to drift more than usual since the 1990s.



Groundwater extraction in Rajasthan. Illustrative photo/ Express Archive

## Findings of the new study

The researchers worked with observational data spanning 17 years and a computer model to figure out which factors affected the Earth's rotation of axis the most. Initially, the team wasn't able to match their prediction with the level of shift that scientists have observed in previous years.

"I calculated variations of the spin axis using many kinds of data including atmospheric pressure, ocean bottom pressure, artificial reservoirs behind dams, polar ice, mountain glacier, wind, current and finally groundwater. The estimated spin axis variations didn't agree with the observation when excluding the groundwater effect. After including it, estimation agreed really well with observation," Ki-Weon Seo said.

The study also noted that groundwater extraction in North America and north-western India, both located at the Earth's midlatitudes, had an outsized impact on the polar motion in comparison to the extraction taking place in poles or equators.

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The Hindu- 01- July-2023

# Karnataka ready to resolve water-sharing disputes through talks: Shivakumar

**The Hindu Bureau**  
BENGALURU

Karnataka Deputy Chief Minister D.K. Shivakumar on Friday said the State government is ready to resolve river water-sharing disputes between neighbouring States, particularly with Tamil Nadu, through mutual dialogue rather than intervention of the tribunals/courts.

Mr. Shivakumar on Thursday called on Union Jal Shakti Minister Gajendra Singh Shekhawat and discussed pending irrigation projects of Karnataka with him.

Mr. Shivakumar, who is also in charge of the Water Resources Ministry, met the Union Minister at his



D.K. Shivakumar

residence in Delhi, and discussed the contentious Mekedatu balancing reservoir across the Cauvery river and the Mahadayi drinking water project, among other irrigation projects in the State.

Speaking to reporters in the national capital, he said a petition would be submitted to the Supreme

Court seeking 12 weeks' time for resolving the dispute with Tamil Nadu through talks.

## **On Krishna tribunal**

He urged the Jal Shakti Minister to issue Krishna Tribunal Award gazette notification and pending permissions from the Centre for Kalasa Banduri Nala project. He also urged Mr. Shekhawat to facilitate early clearance for the Mekedatu dam project in the Cauvery basin in Karnataka, which has been opposed by neighbouring Tamil Nadu. Tamil Nadu passed a resolution against construction of the Mekedatu dam project saying it would curtail the flow of water to it.

# Reservoir water levels improve, now just 2% below last year's

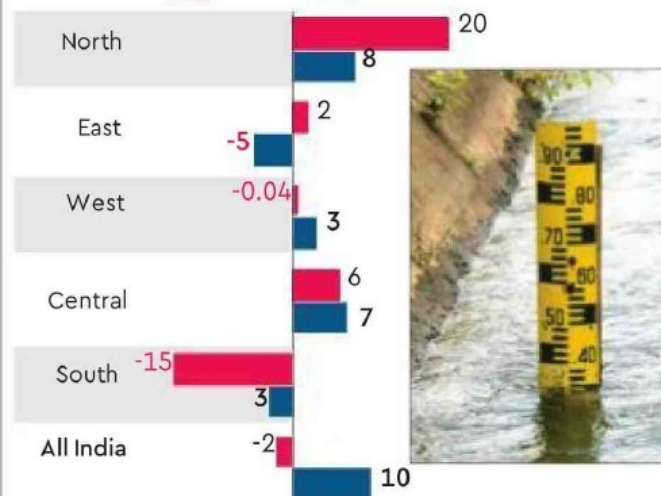
With the monsoon at the 'active' mode since last one week, water tables in India's reservoirs have improved. As against 8% below last year's record-high a week back, the water levels on Friday were only 2% below the year-ago level, reports

**Sandip Das.** The water storage is currently at

10% above the average in the previous 10 years. According to the Central Water Commission (CWC), water level of the country's 143 reservoirs stood at 47.95 billion cubic metres (bcm) on Friday, which is 27% of their combined capacity.

## Current water levels at reservoirs

(% change) ■ last year ■ 10-year average



Source: CWC, as on June 30, 2023



New ideas, better regulation, reclamation and smart tech can address the water challenge

# Let's Not Go for a Dry Run



Anil Nair

If you knew that water covers 70% of our planet, you would imagine there's no scarcity of this precious resource. If you also knew that naturally occurring freshwater, with low levels of dissolved solids and other salts, used for drinking, bathing, washing and irrigation, constitutes 3% of the world's water, you'd be alarmed. More so when you realise that two-thirds of such freshwater is frozen in glaciers and is unavailable.

The World Wide Fund for Nature estimates that 1.1 billion people lack access to water globally, and 2.4 billion suffer from inadequate sanitation, resulting in diseases like cholera, typhoid, diarrhoea and other waterborne diseases. The scarcity of water also affects the growth of crops, contributing to food insecurity.

In addition, it has manifested in many civil and international conflicts — with Iraq, Iran, Afghanistan, Yemen, Syria, Darfur, Sudan, Somalia, Peru and Brazil having experienced severe conflicts over water.

What are the main causes of this scarcity? Climate change is a major contributor. Higher temperatures enhance evaporation levels, disrupt rain patterns, cause flooding and deplete water reserves. Overpopulation is another, particularly in water-stressed areas such as West Asia, India and China. Inefficient water use, mainly for grain production and in the textile, farm products, beverages and automotive industries, is also critical.

The strain on the earth's finite resources makes this an urgent issue, calling for new visioning, higher-order regulation, reclamation and the deployment of potent technologies.

In the words of Lucas van Vuuren of the National Institute of Water Research in South Africa, 'Water should not be judged by its history, but by its quality.' Widely used processes for reclamation include:

► Membrane bioreactor solutions that combine membrane processes and

AMAZINGLY,  
IN SOME PARTS OF THE WORLD  
DRINKING WATER IS TRANSPORTED  
FOR DOZENS OF KILOMETRES



biological treatment, involving bacteria and protozoa.

► Ultrafiltration, a pressure-driven barrier that separates small particles and molecules to produce water of high purity.

► Reverse osmosis, typically used for desalination of pre-treated water for drinking purposes that flushes out bacteria, pathogens and pesticides.

► Electrodialysis reversal, a durable membrane system that relies on polarity reversal for treating turbid wastewater; and thermal evaporation and crystallisation for treating complex wastewater.

The fact that the energy content in waste is far greater than the energy needed for its treatment is what's encouraging new thinking on the subject.

Smart ideas combined with digital technology can yield numerous and substantial benefits.

Checking water consumption is an excellent first step. Smart meters enable consumption monitoring and analytics to sense patterns and provide insights to encourage conservation. San Francisco reduced voluntary water consumption by 10% this way.

Digital tools are particularly useful in providing real-time information to

WHILE IN OTHERS  
IT'S THOUSANDS



dissuade high-cost consumption during peak periods. Singapore has cut the demand for water by 30% with such proactive interventions.

Sensors can continuously monitor quality parameters, including pH levels, bacteria, residual chlorine, temperature, turbidity and contaminants. Early detection ensures timely mitigation. Many cities, including Chicago, New York and London, use digital sensors to reduce waterborne diseases.

Water treatment plants can also reduce energy consumption with real-time monitoring. Advanced analytics and modelling techniques can predict demand and optimise pumping and maintenance schedules, improving operational efficiencies significantly.

Sensors can detect leaks in water pipes and distribution systems. Early action can save substantial water losses, optimise maintenance schedules and extend the lifespan of the infrastructure. Barcelona has deployed sensors with a GIS system to isolate and reduce water leakage in ageing pipes by 25%. Smart sensors can monitor and regulate water pressure to avoid pipe bursts. Austin has reduced such

instances by 50%.

In flood situations, digital technologies like remote sensing, advanced analytics and predictive modelling are used extensively to create early warning systems and facilitate pre-emptive actions, vastly improving emergency response.

World Bank data suggests India is a highly water-stressed country, with 18% of the world's population and just 4% of its water. NITI Aayog predicts that 21 Indian cities will run out of groundwater in 2030, affecting 40% of India's population. A recent EY article, 'Water 4.0: Digital Journey of Water', underscores how advanced technologies

**When will we create water in the lab at scale — combining two flammable hydrogen atoms with one oxygen atom that feeds flames?**



like artificial intelligence (AI), advanced analytics, industrial Internet of Things (IIoT), smart grids, neural networks and digital twinning dominate 'Smart Water'.

It references the Delhi Jal Board's use of IIoT, AI and predictive analytics to treat wastewater and signal high water levels in sewers and potential pipeline bursts; and Central Water Commission's work that leverages machine learning (ML) and inundation modelling to predict flooding and sends out timely alerts, a system now being scaled up to cover most river systems across India.

What's ahead? When will we create water in the lab at scale — combining two flammable hydrogen atoms with one oxygen atom that feeds flames? The jury's out on that. Extracting water from the air as water vapour, like the Whisson Windmill that produces 2,600 gallons daily at low cost, seems a worthy alternative.

It's riveting to see technology being used not just to avoid war among communities and nations in a water-starved world but to calm the wrath of nature.

The writer is founder, ThinkStreet



**Overpopulation is another cause for scarcity, particularly in water-stressed areas such as West Asia, India and China**



Dainik Jagran- 01- July-2023

# जन आंदोलन बना जल जीवन मिशन



विनोद के. पाल

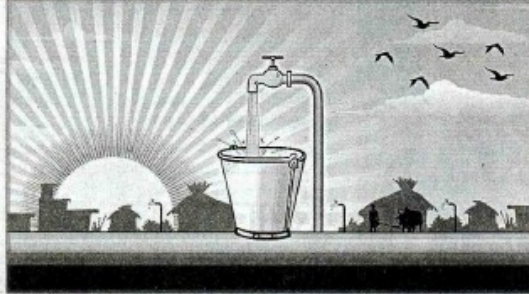
हर घर जल योजना लोगों का जीवन बचाने के साथ परिवारों को सशक्त बनाने का भी काम कर रही है

प्रत्येक ग्रामीण परिवार को नल के पानी का कनेक्शन प्रदान करने के उद्देश्य से प्रधानमंत्री नरेन्द्र मोदी द्वारा 15 अगस्त, 2019 को लाल किले के प्राचीर से जल जीवन मिशन (जेजेएम) की घोषणा की गई थी। इस 'हर घर जल' कार्यक्रम का लक्ष्य प्रत्येक ग्रामीण परिवार को निर्यात रूप से और दीर्घकालिक आधार पर पर्याप्त मात्रा में निर्धारित गुणवत्ता वाला पेयजल उपलब्ध कराना है। 2019 में इस मिशन के शुभारंभ के समय (कुल 19.4 करोड़ में से) मात्र 3.23 करोड़ ग्रामीण परिवारों के पास नल के पानी के कनेक्शन थे। यह आंकड़ा गांवों में रहने वाली कुल आबादी का महज 16.7 प्रतिशत था। 14 जून, 2023 तक कुल 12.29 करोड़ से अधिक ग्रामीण परिवारों (63.2 प्रतिशत) के पास पेयजल उपलब्ध है। वर्तमान में 131 जिलों, 1,357 प्रखंडों और 1,66,880 गांवों को 'हर घर जल' के रूप में दर्ज किया गया है, जिसका अर्थ है कि इन गांवों में प्रत्येक ग्रामीण परिवार, स्कूल, आश्रमशाला, आंगनवाड़ी, स्वास्थ्य

केंद्र और सार्वजनिक संस्थान को नल के जरिये शुद्ध पेयजल मिल रहा है।

प्रधानमंत्री के अन्य प्रमुख कार्यक्रमों के तरह ही 'जल जीवन मिशन' गति और पैमाने की दृष्टि से विशिष्ट है। वर्तमान में यह मिशन हर सेंकेंड पेयजल का एक नया कनेक्शन प्रदान कर रहा है। यह मोटे तौर पर प्रति घंटा 3,600 पानी के कनेक्शनों या प्रति दिन 86,000 से अधिक कनेक्शनों को जलापूर्ति शुरू करने योग्य बना रहा है। इसका मतलब यह हुआ कि प्रतिदिन लगभग 3.5 लाख नागरिकों का जीवन हमेशा के लिए सकारात्मक रूप से बदल रहा है। इस मिशन के पूरा होने तक कुल 16 करोड़ परिवारों को पेयजल आपूर्ति की सुविधा उपलब्ध हो चुकी होगी। यह लगभग 70 करोड़ लोगों को पेयजल की आपूर्ति सुनिश्चित करने के बराबर होगा। यह अमेरिका (33 करोड़), ब्राजील (21 करोड़) और इंग्लैंड (5.6 करोड़) की संयुक्त आबादी के बराबर है। इतना व्यापक है इस मिशन का पैमाना। पांच राज्यों (गुजरात, तेलंगाना, गोवा, हरियाणा और पंजाब) और तीन केंद्र शासित प्रदेशों (अंडमान एवं निकोबार द्वीप समूह, दमन एवं दीव तथा दादरा एवं नगर हवेली और पुदुचेरी) ने इस मिशन के तहत शत-प्रतिशत कवरेज की सूचना दी है। कुल 98.9 प्रतिशत कवरेज के साथ हिमाचल, 96.3 प्रतिशत कवरेज के साथ बिहार भी निकट भविष्य में शत प्रतिशत कवरेज की ओर अग्रसर हैं।

साफ और शुद्ध पानी जीवन को बचाता है। हाल में विश्व स्वास्थ्य संगठन द्वारा 'जल जीवन मिशन' के तहत सुरक्षित रूप से प्रबंधित पेयजल के बढ़ते कवरेज के कारण होने वाले स्वास्थ्य संबंधी लाभों



अश्वेत राजपूत

के बारे में एक अध्ययन किया गया है। उसके अनुसार, जब 2024 तक 'जल जीवन मिशन' के तहत हर ग्रामीण घर में पेयजल उपलब्ध होगा तो यह डायरिया से होने वाली मौतों को आधा करने में मदद करेगा। चार लाख लोगों की जान बचाई जा सकेगी। इसी तरह नोबेल पुरस्कार विजेता माइकल क्रेमर के अनुसार, यदि सभी परिवारों को शुद्ध पेयजल उपलब्ध करा दिया जाए तो शिशुओं की मृत्यु दर में लगभग 30 प्रतिशत तक की कमी लाई जा सकती है। जेजेएम के सफल कार्यान्वयन से भारत में प्रति वर्ष पांच साल से कम आयु वाले 1.36 लाख बच्चों की मौतों को रोका जा सकेगा। आर्सेनिक और फ्लोराइड से दूषित पानी स्वास्थ्य के लिए गंभीर खतरा पैदा करता है। इस मिशन के शुभारंभ के समय 22,016 बस्तियों को पेयजल के स्रोतों में आर्सेनिक और फ्लोराइड के संदूषण की समस्या से जूझना पड़ रहा था। इनमें से 14,020 बस्तियां आर्सेनिक के संदूषण से प्रभावित थीं और 7,996 बस्तियां फ्लोराइड के

संदूषण से पीड़ित थीं। देश के विभिन्न हिस्सों में फैली 1.79 करोड़ आबादी इस संदूषण से प्रभावित थी। आज आर्सेनिक और फ्लोराइड के संदूषण से प्रभावित इन बस्तियों को शुद्ध पेयजल की सुविधा के दायरे में ले आया गया है।

योजनाओं को दीर्घकालिक रूप से टिकाऊ बनाए रखने की दृष्टि से इस कार्यक्रम में शुरू से ही समुदायों की भागीदारी को शामिल किया गया है। देश में 5.24 लाख से अधिक ग्राम स्तर की जल एवं स्वच्छता समितियां/पानी समितियां का गठन किया गया है, जिनमें महिलाओं का प्रतिनिधित्व 50 प्रतिशत है। महिला सशक्तीकरण को ध्यान में रखते हुए 22.13 लाख से अधिक ग्रामीण महिलाओं को फील्ड टेस्ट किट का उपयोग करके पानी के नमूनों का परीक्षण करने के लिए प्रशिक्षित किया गया है, ताकि यह सुनिश्चित किया जा सके कि हर घर और सार्वजनिक संस्थान में शुद्ध पानी पहुंच रहा है। समुदायों की भागीदारी के कारण यह कार्यक्रम एक जन आंदोलन बन

गया है। केंद्र सरकार ने पांच साल की अवधि के लिए 2.08 लाख करोड़ रुपये का बजट आवंटित किया है। जलापूर्ति में सुधार का संबंध स्वास्थ्य संबंधी देखभाल को लागत में कमी और उत्पादक समय की उपलब्धता में वृद्धि के जरिये लोगों को समग्र लागत में होने वाली महत्वपूर्ण बचत से है।

महिलाएं 'हर घर जल' कार्यक्रम के केंद्र में हैं। 2018 में लगभग 42 प्रतिशत ग्रामीण परिवारों को अपने परिसर से बाहर होने वाली जलापूर्ति से पानी इकट्ठा करना पड़ता था। इस समूची कवायद का मुख्य भार महिलाओं को वहन करना पड़ता था। यह अनुमान लगाया गया है कि एक महिला को प्रतिदिन पानी इकट्ठा करने में आम तौर पर 45 मिनट का समय खर्च करना पड़ता था। नल के पानी की नियमित आपूर्ति महिलाओं और युवा लड़कियों को हर दिन सिर पर पानी का भारी बोझ ढोने से राहत देती है। महिलाएं अब इस बचे हुए समय एवं प्रयास का उपयोग आयु सृजन की गतिविधियों, नए कौशल को सीखने तथा अपने बच्चों की शिक्षा में सहायता के लिए कर सकती हैं। किशोरियों को अब पानी लाने में अपनी मां की मदद करने के लिए स्कूल नहीं छोड़ना होगा। जल ही जीवन है और 'जल जीवन मिशन' का संबंध इस जीवन रेखा को हर ग्रामीण परिवार तक पहुंचाने से है। घर में नियमित रूप से पर्याप्त मात्रा में शुद्ध पेयजल की पहुंच सुनिश्चित करके, यह प्रतिष्ठित मिशन अभूतपूर्व पैमाने पर बेहद तेज गति से परिवारों को सशक्त बना रहा है और लोगों के जीवन को बचा रहा है।

(लेखक नीति आयोग के सदस्य-स्वास्थ्य है)

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