

# News Links on Water Sector

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**CENTRAL WATER COMMISSION**

GOVERNMENT OF INDIA

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT &  
GANGA REJUVENATION

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# With CO<sub>2</sub> Levels Rising, World's Drylands Are Turning Green

By Fred Pearce

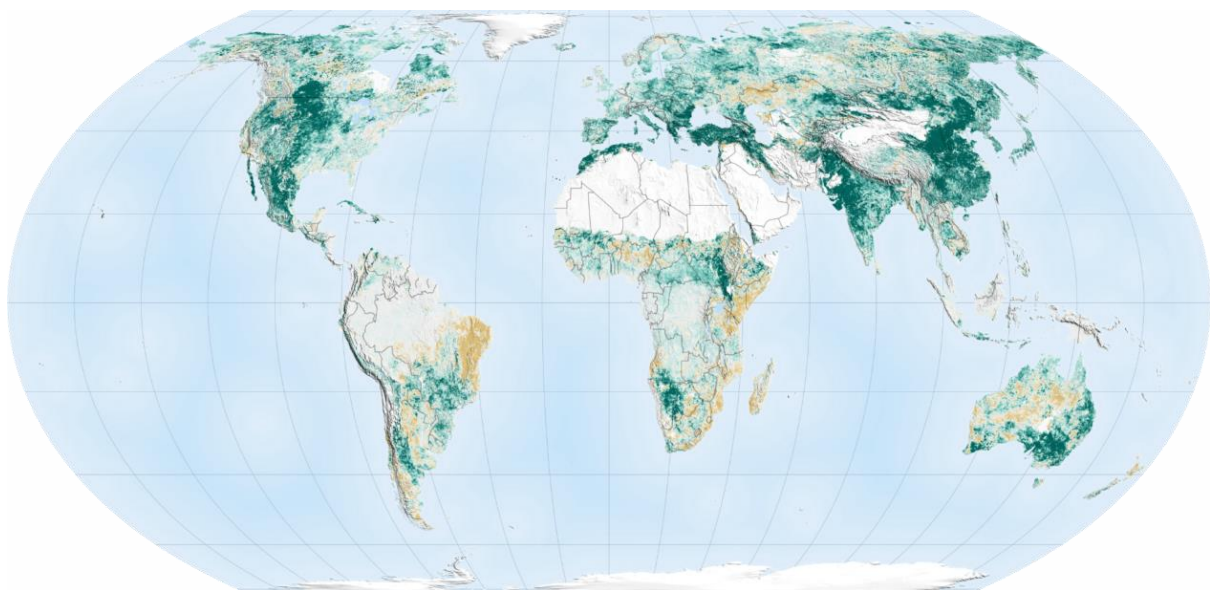
Date: 16/07/2024

**Despite warnings that climate change would create widespread desertification, many dry lands are getting greener because of increased CO<sub>2</sub> in the air — a trend that recent studies indicate will continue. But scientists warn this added vegetation may soak up scarce water supplies.**

Southeast Australia has been getting hotter and drier. Droughts have lengthened, and temperatures regularly soar above 95 degrees F (35 degrees C). Bush fires abound. But somehow, its woodlands keep growing. One of the more extreme and volatile ecosystems on the planet is defying meteorology and becoming greener.

And Australia is far from alone. From Africa's Sahel to arid western India, and the deserts of northern China to southern Africa, the story is the same. "Greening is happening in most of the dry lands globally, despite increasing aridity," says Jason Evans, a water-cycle researcher at the Climate Change Research Centre of the University of New South Wales in Sydney, Australia.

What is going on? The primary reason, most recent studies conclude, is the 50-percent rise in carbon dioxide concentrations in the atmosphere since preindustrial times. This increased CO<sub>2</sub> is not just driving climate change, but also fast-tracking photosynthesis in plants. By allowing them to use scarce water more efficiently, the CO<sub>2</sub>-rich air fertilizes vegetation growth in even some of the driest places.



Source: <https://e360.yale.edu/features/greening-drylands-carbon-dioxide-climate-change>

# Scientists discover 'dark oxygen' being produced by seabed metals in ground-breaking study

By Sam Meredith

Date: 23/07/2024

An international team of scientists has found that oxygen is being produced in complete darkness approximately 4,000 meters (13,100 feet) below the ocean's surface.

**It was previously thought that only living organisms such as plants and algae could use energy to create the planet's oxygen through a process called photosynthesis, which requires sunlight.**

Researchers sampled the seabed of the Clarion-Clipperton Zone, an abyssal plain between Hawaii and Mexico, to assess the possible impacts of deep-sea mining.

**The findings, which were published Monday in the Nature Geoscience journal, defy the scientific consensus of how oxygen is produced — and could even force a radical rethink of the origins of complex life on Earth.**



Critical minerals such as cobalt, nickel, copper and manganese can be found in potato-sized nodules at the bottom of the seafloor.

Source: <https://www.cnbc.com/2024/07/23/dark-oxygen-discovered-in-the-deep-sea-in-groundbreaking-study.html>

[https://youtu.be/h3IXUk\\_PgKw](https://youtu.be/h3IXUk_PgKw)

# Company makes revolutionary development in hydropower with 'fish-safe turbines': 'Basically an airbag for fish'

By: Susan Elizabeth Turek

Date: 24/07/2024

The future of hydropower just got fishier in the best possible way thanks to United States-based company Natel Energy, which has developed revolutionary "fish-safe turbines."

**As detailed by MIT Technology Review, the company's design "focuses on preventing fast-moving equipment from making fatal contact with fish," supporting Natel's stated goal of promoting biodiversity, aiding river health, and reducing harmful pollution from the electric grid.**

According to the International Energy Agency, hydropower is a "forgotten giant" with immense untapped potential to generate low-carbon electricity. It can also contribute to secure, flexible, and reliable energy systems, proving to be a cost-effective way for developing economies to increase access to power for their populations without generating large amounts of pollution linked to concerning health issues, including asthma and an increased risk of dementia.



Source: <https://www.thecooldown.com/green-tech/fish-safe-turbines-hydropower-natel/>

<https://youtu.be/JY9X4ckUCw0>

# Major cell company launches first-ever trial of hydropower technology: 'So simple it can be manufactured with a 3D printer'

By Tina Deines

Date: 20/07/2024

Japanese mobile phone operator NTT Docomo recently unveiled the country's first-ever trial of a self-powered hydropower cellular base station, Renewable Energy Magazine reported.

The company aims to utilize the technology to help power mobile communications networks by 2025. This is all part of a larger commitment by Docomo to reach net zero for planet-warming pollution from its operations by 2030 and from its entire supply chain by 2040.

**The system utilizes a jet turbine with a nozzle that emits a stream of water, which rotates the turbine and generates electricity. It can be set up in irrigation canals and similar waterways.**

Most hydroelectric power systems have separate turbines and nozzles, but combining the two makes it "so simple it can be manufactured with a 3D printer," according to the publication.



The system can be set up in irrigation canals and similar waterways.

Source: <https://www.yahoo.com/tech/major-cell-company-launches-first-173000302.html>

# G20 adopts measures to ensure universal access to water

Date: 22/07/2024

The ministers of the G20 member countries highlight common solutions and underline the importance of drinking water and basic sanitation in reducing poverty and promoting social justice. The need for investment to achieve the goals was underlined.

At the opening session, Minister Mauro Vieira emphasized the importance of investing in sanitation and water distribution to achieve the SDGs and thanked the G20 countries for their efforts to reach an agreement on action plans in this area. "Drinking water and basic sanitation are crucial not only for economic and social progress, but also for guaranteeing human rights, including the right to a clean, healthy and sustainable environment," said Brasil's Foreign Minister.

Minister Simone Tebet emphasized the seriousness of the global and national situation in terms of access to water and sanitation, stating that "according to the United Nations, there are 2.2 billion people on the planet without access to treated water and 3.5 billion without basic sanitation. In Brasil, there are still 32 million people without treated water and 90 million without treated sewage".

Tebet highlighted the goals of the Multi-Year Plan (PPA) and the new Growth Acceleration Program (PAC) to improve these rates in Brasil by 2027, "we have a target of 98.3% of urban households with treated water and 87.7% with treated sewage in this period".



Source: <https://www.g20.org/en/news/g20-adopts-measures-to-ensure-universal-access-to-water>

# Natural solution: why nature is our best water manager to tackle climate change

By Paul Hackett

Date: 22/07/2024

Climate change, pollution, and ever-growing demand are putting a huge strain on our water resources. But could the natural world help us? In this Crash Course, we explore how Nature-based solutions (NBS) are increasingly being used to tackle floods, droughts, and water scarcity. The European Commission defines Nature-based solutions as:

“Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits, and help build resilience. Such solutions bring more and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.”

Key examples of NBS

**Wetland Restoration:** Improves water filtration and flood control.

**Green Roofs:** Absorb rainwater and improve urban air quality.

**Permeable Pavements:** Reduce runoff and recharge groundwater.

**Rain Gardens:** Capture and absorb storm water runoff.

**Reforestation:** Enhance soil infiltration and reduce runoff.



Source: <https://www.euronews.com/green/2024/07/23/natural-solution-why-nature-is-a-our-best-water-manager-to-tackle-climate-change>

# Budget allocation for Water Resources, Ganga Rejuvenation surges 55 pc

Date: 23/07/2024

The total budget allocated for the Department of Water Resources, River Development, and Ganga Rejuvenation has surged to Rs 30,233.83 crore, 55 per cent up from last year's allotment of Rs 19,516.92 crore. The revised budget for 2024-25 shows a sharp rise in the allocations, particularly for major irrigation projects and the Namami Gange. While announcing the Budget on Tuesday, Finance Minister Nirmala Sitharaman announced a comprehensive financial support plan of Rs 11,500 crore to enhance flood control measures and irrigation projects across several states.

Presenting the Budget in the Lok Sabha, Sitharaman highlighted that the government, through the Accelerated Irrigation Benefit Programme and other sources, will provide financial support

Source: <https://economictimes.indiatimes.com/news/economy/policy/budget-allocation-for-water-resources-ganga-rejuvenation-surges-55-pc/articleshow/111963002.cms?from=mdr>



# Innovative System Tackles Water Scarcity through Solar Power

Date: 25/07/2024

In a world struggling to balance the competing demands of an ever-growing population and a perilous climate crisis, innovative solutions to water scarcity have become essential. A new research breakthrough unveils a revolutionary approach to freshwater generation through a sustainable technology known as solar-driven atmospheric water extraction (SAWE). This method not only holds the promise of providing accessible drinking water but also offers a potential solution for irrigation in even the most arid environments.

The research carried out by a team of scientists at the King Abdullah University of Science and Technology (KAUST) focused on creating a fully passive SAWE system capable of producing freshwater without the need for maintenance. This novel system is designed to capture moisture from the air, using solar energy to drive the production process and deliver water for drinking and agriculture.



Source: <https://evrimagaci.org/tpg/innovative-system-tackles-water-scarcity-through-solar-power-1847>

# Rainwater harvesting takes centre stage in Bengaluru's water crisis

Date: 26/07/2024

Out of the immediate crisis mode, Bangalore Water Supply and Sewerage Board (BWSSB) — the agency responsible for supplying water and sanitation facilities — has finally made rainwater harvesting mandatory in the city. The Board mandated in 2009 that new residences with 30x40-foot sites either recharge the groundwater table by harvesting rainwater or store it in a sump or tank; the Bengaluru Water Supply and Sewerage (Amendment) Act, 2021 extended this requirement to older constructions on 60x40-foot or larger sites. In 2011, BWSSB even discussed penalising citizens who failed to harvest rainwater in their buildings. The penalty mentioned disconnection of the water supply.

Understanding the relationship between restoration and groundwater recharge is the best approach the city could take — and it is doing so. BWSSB is planning a comprehensive community rainwater harvesting programme to address the city's ongoing water scarcity and promote sustainable water management practices.

This initiative is intended to collect and store rainwater at the community level, reducing reliance on traditional water sources and mitigating the effects of water shortages during dry periods, as well as the extra water diverted to nearby lakes, which will help the lake maintain its water level and recharge the groundwater.



The Silicon Valley of India was once known for its water wealth in the form of its lakes and waterbodies but now has lost a chunk of it to urbanisation iStock

Source: <https://www.downtoearth.org.in/water/rainwater-harvesting-takes-centre-stage-in-bengalurus-water-crisis>

# Still Wasting AC Water? This Housing Society Saves 5000 Litres/Day with a Brilliant Idea

By Sowmya Mani

Date: 26/07/2024

Every drop of water counts. This should be a mantra for everyone as the world faces a severe water shortage. Do you know how much water is used every time you flush? In older toilets installed in India, almost five to ten litres of water is used per flush. For a family of four using the toilet at least three times a day each, that's a staggering 3,600 litres of water per month!

While newer toilets come with low flush options, what can people with older toilets do? This question troubled the residents and management committee members of Saprem Co-operative Housing Society in Thane, Maharashtra.

To find an alternative water source, they conducted a geological survey and dug a borewell. They struck water 350 feet below the surface and began using this water for their toilets. This immediately solved their water woes, providing a 24-hour water supply!

Not stopping there, the residents sought a way to recharge the groundwater. To this end, they built a rainwater harvesting system. "The rainwater that was being collected on the terrace was going to waste, in a drain. We wanted a system that would collect this water and divert it into the borewell," says Arun Deshmukh, management committee member, Saprem CHS.

Corrugated sheets have been installed on the rooftop with bars on the side. Eight pipes have been fixed across the length of the rooftop to collect rainwater. These pipes are connected to pipes on the ground that channel the water to the borewell.



Source: [https://thebetterindia.com/358216/air-conditioner-ac-water-waste-reuse-saprem-cooperative-housing-society-thane-rainwater-harvesting-sustainable-living/#google\\_vignette](https://thebetterindia.com/358216/air-conditioner-ac-water-waste-reuse-saprem-cooperative-housing-society-thane-rainwater-harvesting-sustainable-living/#google_vignette)

# Tension mounts in Europe over water use and storage for agriculture

By Anna Martino, Hugo Struna and Maria Simon Arboleas

Date: 26/07/2024

Water management and storage systems raise questions in southern European countries, while a French movement is preparing protests over water reserves for farmers and aims to mobilise citizens up to the Venice lagoon in northern Italy.

**In the face of water shortages, prolonged droughts and irregular rainfall, in its Strategic Agenda 2024-2029, the EU Council pledged to strengthen water resilience and “invest in large-scale cross-border infrastructure, including water infrastructure”.**

However, this type of development may cause considerable tension. On the day of von der Leyen’s speech in Strasbourg, several thousand people demonstrated in Marais Poitevin, western France, against the construction of ‘mega-basins’, open-air water reservoirs enabling farmers to secure access to water resources.



Source: <https://www.euractiv.com/section/agriculture-food/news/tension-mounts-in-europe-over-water-use-and-storage-for-agriculture/>

# 40% of the world's water needs will go unmet by 2030 as desalination tech plateaus

By Anousheh Ansari

Date: 26/07/2024

**Around the world, most major cities are past Day Zero—the day when the water supply is estimated to run out. Currently, one in four people worldwide do not have access to safe drinking water, and 4 billion people live in water-scarce areas, a number that is predicted to rise to 5 billion by 2050.**

This issue does not discriminate. Many people on the planet already encounter water stress, which will only be exacerbated as water scarcity increases. It impacts communities from the Middle East and North Africa to places in the United States such as Texas, California, Florida, Arizona, Colorado, and Oklahoma.

Water scarcity can fuel unrest and migration while also disproportionately impacting women and compromising security. The increased pressure on available resources caused by urbanization, climate change, and a growing population all contribute to the challenges of ensuring the 0.5% of Earth's water that is available and usable can support all 8 billion people. This is a global challenge on a scale never seen before—and breakthrough innovations are not just needed but also necessary.



Source: <https://fortune.com/2024/07/26/40-world-water-needs-2030-desalination-tech-plateaus-environment-health-international/>

# The next drought will not be a water drought, but worse: experts are already talking about a return to the Middle Ages

By D. García

Date: 26/07/2024

As the world grows and technology advances are optimized to improve living conditions, the global consumption of energy resources needed to run the machinery of computer systems also increases. The energy crisis in America is already being felt and experts estimate that it will be the next drought that mankind will witness.

**Artificial intelligence and the data centres that support the huge computing system is one of the biggest challenges facing the global power grid. The latest updates in generative models consume 33 times more energy than traditional algorithm systems.**

Companies such as Meta, Open AI, Google and X are developing new language models every day that are used in America, requiring hundreds of thousands of graphics cards or TPUs that consume more and more power as they grow in size.

The latest machine learning models predict fast answers to millions of simultaneous queries by generating content from scratch. This system consumes more and more electricity considering that in 2022 it was 460 TWh and is expected to reach more than 1,000 TWh by 2026.



Source: <https://www.ecoticias.com/en/next-drought-not-water-technology-energy/4989/>

# The Intensifying Impacts of Upstream Dams on the Mekong

By Nguyen Minh Quang, Nguyen Phuong Nguyen, Le Minh Hieu, and James Borton

Date: 27/07/2024

From March to June 2024, the lower Mekong region – including northeast Thailand, Cambodia, Laos, and Vietnam – experienced high temperatures far exceeding expectations. Extreme dryness was observed in the Golden Triangle, Tonle Sap Lake in Cambodia, central Laos, and along Vietnam’s coast. Severe salinity intrusion affected Vietnam’s coastal provinces, causing many Mekong Delta residents to struggle with a lack of fresh water.

Hydropower production and water flow significantly impact drought conditions in the Mekong, though the extent varies seasonally. According to the Stimson Center’s Mekong Dam Monitor (MDM) reports, the 2024 dry season saw the lowest hydropower releases in three years. This was mainly due to the 2023 wet season drought in China, which resulted in reduced hydropower production, and the near-complete filling of the Tuoba Dam’s reservoir during the dry season. Consequently, river levels along the Thai-Lao border, from Chiang Saen to Nakhon Phanom, dropped significantly, potentially disturbing the ecological balance in those areas.



Source: <https://thediplomat.com/2024/07/the-intensifying-impacts-of-upstream-dams-on-the-mekong/>

# Flood plain zoning: Centre contemplates for making it ‘mandatory’ as only four States comply with law

Date: 28/07/2024

“With only four States complying despite repeated reminders, the Centre is contemplating making it mandatory for States to enact Flood Plain Zoning legislation if they want to access Central flood-management funds,” officials have said.

The four States that have enacted such legislations are: Manipur, Rajasthan, Uttarakhand, and the erstwhile Jammu & Kashmir. A senior official said the Ministry of Jal Shakti has been in continuous communication with State Governments, urging them to notify the Flood Plain Zoning Act and demarcate flood zones. “Recently, the Central Water Commission updated the Model Act, and the Ministry plans to initiate another round of consultations with States,” the official said.

The official said the Ministry has proposed making the enactment of the Flood Plain Zoning Act, a prerequisite for States to access funds under the Flood Management and Border Areas Programme (FMBAP).

"We are going for Cabinet approval for the next phase of the Flood Management and Border Areas Programme. For that, now the condition for any State to access resources under the FMBAP will be that the State must have enacted the Flood Plain Zoning Act. So, you will not get money if you have not enacted the Flood Plain Zoning Act," the official said. The official said the Ministry has made several other efforts to address these issues.



Source: <https://www.thehindu.com/news/national/flood-plain-zoning-centre-contemplates-for-making-it-mandatory-as-only-four-states-comply-with-law/article68456426.ece>