News Links on Water Sector

(28, OCTOBER 2024)

CENTRAL WATER COMMISSION

GOVERNMENT OF INDIA

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

MINISTRY OF JAL SHAKTI

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Smart irrigation market to grow 200% by 2031

Date: 09/10/2024

The global smart irrigation market is projected to grow at a CAGR of 14.74% from 2024 to 2031, according to a new report by Verified Market Research. The market was valued at $1.16 billion in 2024 and is expected to reach $3.48 billion by the end of the forecast period. If realized, this would mean a 200% growth over said period. Governments are actively encouraging its adoption through rebates and subsidies, raising farmer awareness of the technology's benefits, and enabling increased crop yields with reduced water and fertilizer waste. Additionally, as food production demands intensify amid water scarcity, smart irrigation solutions have emerged as a game-changer for large commercial farms and small agricultural operations.

Smart irrigation system monitors soil conditions, weather, plant water consumption, and the weather. These devices can automatically change watering schedules to guarantee that watering takes place at the appropriate moment.This enables farmers to reduce drainage from over-watering saturated soils, prevent irrigating at the wrong time of day, and ultimately boost crop output by assuring adequate water delivery when needed.The North American region holds the second-largest position in the global smart irrigation market. Continued government support is critical to increasing the adoption of these systems, with a focus on enhancing existing initiatives that promote water conservation and sustainable agriculture. This could involve expanding subsidies or tax incentives to encourage farmers to adopt smart irrigation. New funding for research and development could spur innovation, leading to even more efficient irrigation technologies.

Source: https://www.freshfruitportal.com/news/2024/10/09/smart-irrigation-market-to-grow-200-by-2031/

Irrigation in a changing climate: Adapting for the future

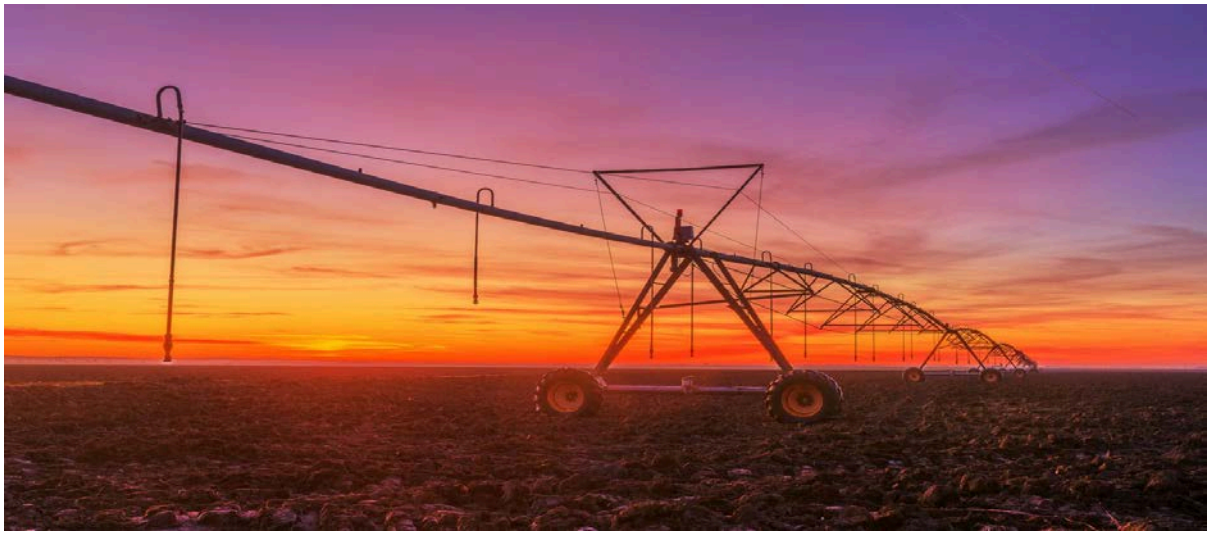
Date: 10/10/2024

With debate ongoing over water allotments from Western rivers, anticipated water shortages complicate the future outlook for agricultural irrigation. And extreme weather has changed the game for row crop farmers — even those with irrigation systems. The strategy with irrigation has always been to provide water — and higher yields – when water was hard to come by. But climate change is altering the standard operating procedures. Hard and fast rains lead to flooding, followed by dryer conditions that lead to drought and stressed crops.So where does irrigation fit in this new reality?

“Climate change affects us in that we need to be very flexible with how we manage water in times of increased and decreased availability,” says Mike Mills, director of sustainability solutions at Reinke. “It also means we look deeper at crop rotations and planting styles regionally, so that we can take advantage when there is an abundance of water and react when there is a reduction in availability.”

Productive droughts

By carefully managing aquifers and crops, farmers can maintain productivity during droughts. This means evolving from outdated irrigation practices, such as overwatering. Thoughtful irrigation that prioritizes quality of water placement over quantity is key, according to Tyler Fields, senior director of Valley water delivery at Valmont Industries. “People have this mindset that if a little is good, then a lot is better, right? The next thing you know we have all this runoff,” Fields says. Rather than focusing on how much water is used, a better metric might be the amount of water that’s needed to maximize crop productivity.



Source: https://www.farmprogress.com/crops/irrigation-in-a-changing-climate-adapting-for-the-future

Sahara Desert witnesses severe flooding after September rainfall; lake Iriqui filled with water first time in 50 years

Date: 12/10/2024

One of the most arid places on earth, the Sahara Desert, is experiencing a dramatic turn of events and witnessed severe flooding after two days of torrential rainfall in southeastern Morocco, reported AP. According to Morocco's meteorology agency, the village of Tagounite — located 450km south of the capital Rabat — received over 100mm of rain in just 24 hours in September. The met agency also mentioned that just two days of September rainfall surpassed the yearly average of 250 mm, including in most arid areas.
The September storms left striking images of water gushing through the Saharan sands amid castles and desert flora, the report added. On September 10, the MODIS (Moderate Resolution Imaging Spectroradiometer) on NASA's Terra satellite captured a false-color image of the resulting runoff and floodwater. Two weeks ago, NASA's Earth Observatory satellite images showed the region is seeing a surprising burst of greenery, where water rushes in to fill Lake Iriqui, which is a famous lake bed between Zagora and Tata and dry for 50 years. The same region was dry and arid in the image captured on August 14.

What meteorologist say? According to meteorologists, these rains—extratropical storms—may change the course of the region's weather in months and years to come. The air retains more moisture, causing evaporation, which leads to more storms, added Youabeb.

Source: https://www.livemint.com/science/news/sahara-desert-witnesses-severe-flooding-greenery-after-september-rainfall-lake-iriqui-filled-with-water-11728725435268.html

National Water Awards: Odisha wins top spot for water conservation efforts, UP bags 2nd prize

Date: 14/10/2024

New Delhi: Odisha has been recognised as the top winner in the 5th National Water Awards 2023, with Uttar Pradesh securing the second spot, the Ministry of Jal Shakti said on Monday. Gujarat and Puducherry jointly secured the third spot in the awards, which cover nine categories, honour outstanding contributions to water conservation and management across India. Jal Shakti Minister C R Paatil announced the results. The award ceremony, set to be held on October 22, will be presided over by President Droupadi Murmu.

Odisha's remarkable achievements in water conservation include the construction of over 53,000 water conservation and rainwater harvesting structures and the renovation of 11,000 traditional water bodies, a senior official said. Additionally, 21,000 wastewater treatment plants were set up, transforming over 90,900 hectares of irrigated land to micro-irrigation systems, benefitting 87,000 farmers. The state has also made significant strides in afforestation, completing the plantation of 9 crore saplings, the official said. Uttar Pradesh, ranked second, was praised for its efforts under the Jal Jeevan Mission, where more than 17,900 villages were provided tap water connections, benefitting over 1.91 crore households, the Jal Shakti ministry said.

Source:https://economictimes.indiatimes.com/news/india/national-water-awards-odisha-wins-top-spot-for-water-conservation-efforts-up-bags-2nd-prize/articleshow/114223547.cms?from=mdr

After a decade-long wait, Cauvery water to finally reach Bengaluru's outskirts

Date: 15/10/2024

Bengaluru: The peripheral areas of Bengaluru, whose water taps have been running dry every summer, can breathe a sigh of relief as the Bengaluru Water Supply and Sewerage Board (BWSSB) is all set to launch the fifth phase of Cauvery Water Supply Scheme.

The project – which will fetch an additional 775 million liters per day (MLD) of water from a distance of about 100 km – is expected to help 50 lakh people, officials said. Speaking to select media houses on Tuesday, Deputy Chief Minister D K Shivakumar said the 775 MLD of water will help one third of Bengaluru's population spread across seven assembly constituencies including Mahadevapura and KR Puram. "We have provision to bring 30 TMC of water from river Cauvery. So far, Bengaluru received about 1,440 MLD of water (19 TMC).

The fifth phase (775 MLD or 10 TMC of water) can address Bengaluru's water requirements for the next ten years," he said.

Source: https://www.deccanherald.com/india/karnataka/bengaluru/after-a-decade-long-wait-cauvery-water-to-finally-reach-bengalurus-outskirts-3233582

A Mathematical Approach to California's Water Woes

Date: 15/10/2024

Severe drought and climate change have adversely affected groundwater aquifers globally, and an Illinois Institute of Technology researcher is working to help the state's agriculture industry redistribute the dwindling natural resource.Igor Cialenco, professor of applied mathematics, has earned a National Science Foundation grant along with Mike Ludkovski, professor of statistics and applied probability at University of California, Santa Barbara, to develop a mathematical solution to groundwater distribution."There is a real risk of exhausting groundwater supplies in parts of the world unless an equitable and adaptive water allocation mechanism is implemented—one that balances multiple objectives while preserving economic viability," Cialenco says. "Until now, groundwater management has been extensively studied by resource economists, hydrologists, and environmental scientists, but there is no underpinning mathematical theory to describe desirable water allocations."

California is among the first states to shift toward regional groundwater planning and is anchored by the California Sustainable Groundwater Management Act (SGMA) of 2014, which mandated the creation of Groundwater Sustainability Agencies to oversee yearly water budgets. The related Groundwater Sustainability Plans have forced stakeholders to consider aquifer replenishment, consumption, and conservation, but also trading water rights among themselves. At the same time, environmental demands of preserving and protecting ecosystems heightened the importance of multi-year planning

Source: https://www.iit.edu/news/mathematical-approach-californias-water-woes

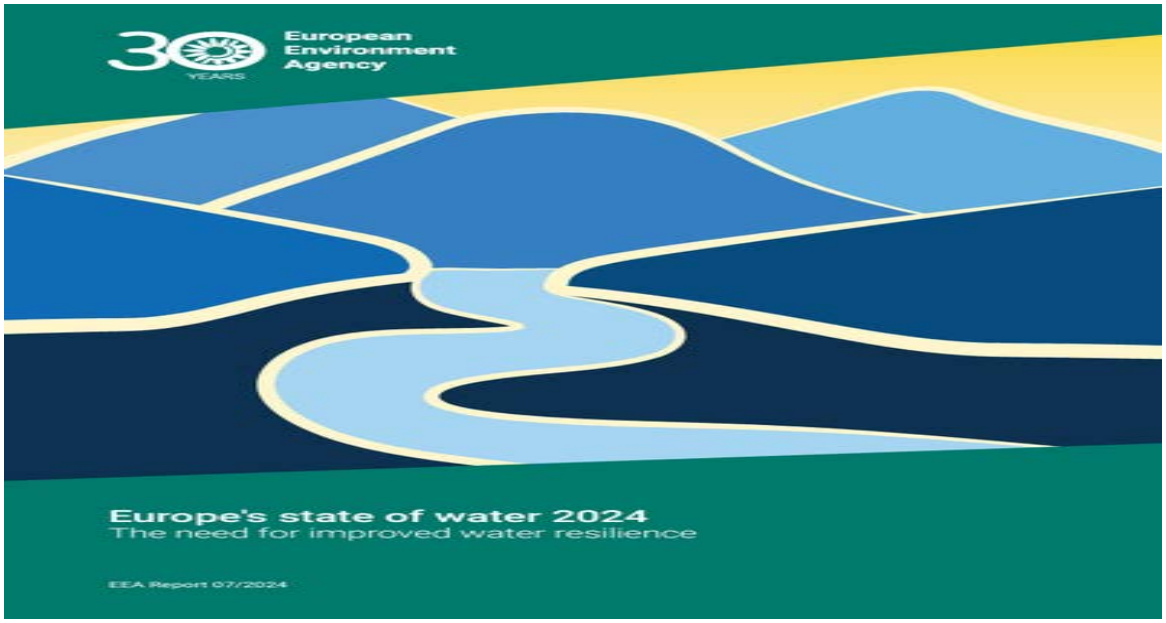
Pollution, over-use and climate change threaten water resilience in Europe

Date: 15/10/2024

Agriculture is the most significant pressure impacting both surface and groundwaters, according to the EEA report 'Europe's state of water 2024: the need for improved water resilience'. This results from water use and pollution from the intensive use of nutrients and pesticides, according to Member States' own monitoring. Agriculture is by far the highest net water consumer in Europe and, without changes in practices, demand from irrigated agriculture is likely to increase with climate change.

The EEA's report shows that, despite some progress, Europe's waters and aquatic ecosystems are still severely impacted by chemicals, predominantly by air pollution from coal-powered energy generation and diffuse pollution by nutrients and pesticides from agriculture. Habitat degradation is also widespread. Adding to the challenge to protect aquatic ecosystems is climate change, which is disrupting weather patterns and further increasing pressures on water resources and management.

Only 37% of Europe's surface water bodies achieved 'good' or 'high' ecological status, a measure of aquatic ecosystem health, under EU's Water Framework Directive and only 29% achieved 'good' chemical status over the 2015-2021 period, according to data reported by EU Member States.



Source: https://www.eea.europa.eu/en/newsroom/news/state-of-water

Less than 40% of Europe’s surface waters are healthy: Report

Date: 16/10/2024

Water crisis of any sort be it about shortage, contamination or conflict, is generally understood to be a nuisance on the continents of Asia, Africa and South America to some extent. However, a recent report has called for the need to address a host of issues endangering the sources of water in Europe. The report, published by the European Environment Agency (EEA), has noted that less than 40 per cent of surface waters, such as rivers and lakes, are currently healthy. “The report underscores the urgent need for stricter implementation of the Water Framework Directive (WFD), significant changes to agricultural production, pollution reduction, and urgent ecosystem restoration,” the report titled *Europe's state of water 2024: the need for improved water resilience*, noted.The biggest takeaway from the report was the finding that nearly 25 per cent of groundwater bodies do not have a good chemical status, even though they provide almost two-thirds of drinking water in Europe.
It also highlighted that harmful agricultural practices, particularly the intensive use of nutrients and pesticides, continue to be the most significant pressure on water and pollution pressures from agriculture affect 32 per cent of groundwaters and 29 per cent of surface waters. “The persistently lousy state of Europe’s waters shows that Member States are failing to address the water crisis, year after year. The Water Framework Directive has been in place for over two decades, but its goals remain largely unmet because national governments do not take its requirements seriously,” Claire Baffert, Senior European Union Policy Officer, Water & Climate Change Adaptation at WWF European Policy Office, was quoted in the press statement. The report also mentioned that the Europeans are increasingly paying the price for their government’s inaction on the water crisis.

Source: https://www.downtoearth.org.in/amp/story/water/less-than-40-of-europes-surface-waters-are-healthy-report

How Artificial Intelligence Can Help Solve India's Water Utility Problems

Date: 23/10/2024

Senior government and industry leaders will gather in Washington in late October for annual meetings between the World Bank and the International Monetary Fund (IMF). Water and digital solutions rank among the World Bank's top priorities under its Global Challenge Programs and are expected to be highlighted during the meetings.

India has a unique opportunity to further build on global momentum and use artificial intelligence (AI) to transform its water and sanitation sectors. National policies so far have been ineffective in technology integration with utilities at scale. However, AI can assist the government in overcoming challenges within the water, sanitation, and hygiene (WASH) value chain for utilities.

India should take three steps to modernize the WASH ecosystem: leverage and scale up AI to address nonrevenue water (NRW), augment private sector participation, and improve corporate reporting.

Source: https://www.csis.org/analysis/how-artificial-intelligence-can-help-solve-indias-water-utility-problems

How Water Insecurity Impacts Women's Health

Date: 23/10/2024

Anthropologists and local activists in Indonesia and Peru uncover links between water scarcity and gendered violence, and work together to lessen the harms of gender inequality.

In the northern desert of Peru, a tin roof shades women from the beating sun as they wait for rusty water tanker trucks that are often delayed. The trucks will dump water into algae-lined cement reservoirs, from which the women will fill their plastic jugs.

This water station, organized by the local authorities and community members, is appreciated by locals. But it is not sufficient. Each week, the station provides 120 liters of water to each family. The United Nations recommends each individual receives, at a minimum, 700 liters of water per week.

To compensate, many women buy expensive water from private water trucks or walk 40 minutes to the river, hauling babies and toddlers on their backs. The women say the river water is cochino, or dirty like a pig. Their community lies downstream from a larger town that dumps its sewage into the river and from mining operations that release mercury and other toxins into the waterways.

Source: https://www.sapiens.org/culture/water-insecurity-gender-based-violence/

Water crisis putting 50% of world's food production at risk, and other nature and climate stories you need to read this week

Date: 23/10/2024

Half of the world's food production is at risk of failure by 2050 due to the accelerating global water crisis, according to a new report.

Nearly 3 billion people and more than half of the world's food production are in areas where total water storage is predicted to decline, says the report from the Global Commission on the Economics of Water (GCEW), an organization convened by the government of the Netherlands and facilitated by the Organisation for Economic Co-operation and Development (OECD).

Alongside, the water crisis could also hit global gross domestic product (GDP), with an average 8% drop for high-income nations by 2050 and as much as 15% for lower-income countries.

The crisis will affect the most vulnerable "first and hardest", the commission reports, with densely populated areas, including northwestern India, northeastern China and south and eastern Europe, at particular risk. But the problem is global and interconnected, it says.

Source: https://www.weforum.org/agenda/2024/10/water-crisis-nature-and-climate-stories-read-this-week/

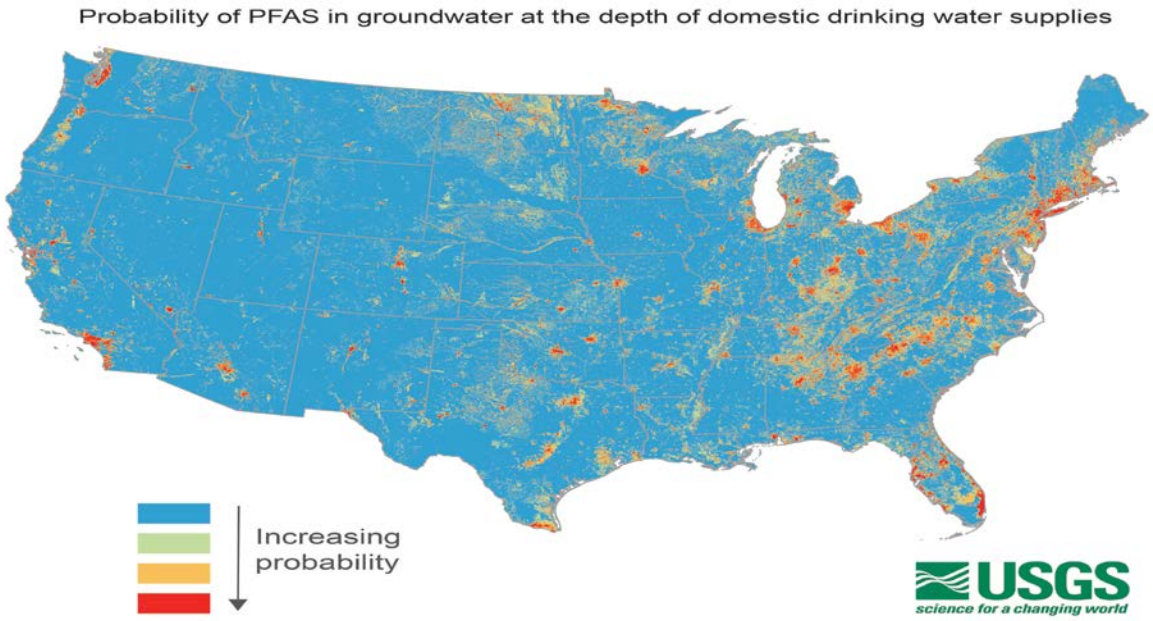
Millions in the US may rely on groundwater contaminated with PFAS for drinking water supplies

Date: 24/10/2024

Approximately 71 to 95 million people in the Lower 48 states—more than 20% of the country's population—may rely on groundwater that contains detectable concentrations of per- and polyfluoroalkyl substances, also known as PFAS, for their drinking water supplies. These findings are according to a U.S Geological Survey study published in the journal Science.

The predictive model results can help members of the public, water suppliers and regulators understand the potential for PFAS contamination, guide future studies and inform strategic planning for water resources.

USGS scientists are the first to report national estimates of PFAS occurrence in untreated groundwater that supplies water to public and private wells. This research also provides the first estimate of the number of people across the country who are potentially affected by PFAS-contaminated groundwater.



Source: https://phys.org/news/2024-10-millions-groundwater-contaminated-pfas.html

Soil conservation boosts water retention in 40 tribal villages

Date: 28/10/2024

Chennai: Soil conservation and water retention measures were rolled out across 40 tribal villages in the Tirupattur Forest Division as part of a project aimed at reclaiming and improving tribal lands.

The initiative, spearheaded by Tamil Nadu Biodiversity Conservation and Greening Project Climate Change Response (TBGPCCR), is expected to benefit these villages by reducing soil erosion and boosting groundwater levels.

HF. Poluxe Project director I Anwardeen said eight methods were introduced to manage natural water resources more effectively. These methods include well recharge pits, water absorption trenches, trench-cum-bunds, stone bunds, loose rock check dams, recharge shafts, and percolation ponds. Each technique was tailored to address specific soil and water challenges in the region.

Source:http://timesofindia.indiatimes.com/articleshow/114664127.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst