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GANGA WATER QUALITY: MAHAKUMBH 2025

Shailza Pandey

This year the Mahakumbh Mela is held from January 13 to February 26, 2025 and is expected to host over 45 Crore pilgrims is labelled as the first digital Mahakumbh because of its adoption of technology and is also is touted as the first of its kind green Kumbh with sustainability and waste management at its score but do these claims of waste management match with realities on the ground. In 2024, a petition was filed by the former Indian Police Service Officer Amitabh Thakur in the National Green Tribunal inquired about the quality of water in the river Ganga. The petion argued that the Uttar Pradesh Pollution Control board and the Central Pollution Board did not upload any information in this regard.

At the Mahakumbh this year thousands of devotees will dip themselves into the river and they depend on it each day adding to the burden of river rejuvenation and conservation. Back in September 25, 2000 the the ministry of environment and forests in its notification prescribed the maximum permissible limits of outdoor.

The previous Kumbh Mela 2019 attracted 130.2 million people the biological oxygen demand which is the measure of oxygen required to break down organic matter at the cursor cut ranged from 2.5 to 8.6 MGR per litre against the permissive limit of 3 MGR per litre while at sangam the confluence of Ganga and Yamuna fecal coliform levels which is the bacteria found in fecal matter ranged between less than 0.8 to 23000 most probable number against the maximum permissible limit of 2500 MPN per 100 millimetres just two months before the Mahakumbh this year in November 2024 the count of total feal coliform bacteria at Downstream sum was measured 3300 MPM.

The petition filed by the former IPS officer further contended that there is no available data on the performance of sewage treatment plants (STPs) or GEO tubes. Additionally, analytical sample reports collected from the outlets have not been uploaded to the relevant websites. As per the directives of the National Green Tribunal, devotees should have been informed about the quality of the water they were immersing themselves in; however, it was found that this obligation was not fulfilled. In December , 2024, in an order the NGT stated that there should be an adequate availability of the Ganga wayter and it should be suitable for drinking and bathing but the report found out that the Ganga smaller streams has not been cleaned on January 14, 2025 the central pollution control boats realtime water quality monitoring system measured the biological oxygen demand or BOD level at the Prayagraj Sangam at 4 Mg/ml per millilitre exceeding the normal limit of 3 Mg/ml a higher BOD signifies a higher concentration of organic matter for the 45 days religious gathering the Indian space research organization (ISRO) and the Bhabha Atomic Research Center (BARC) have pissed into help with the treatment of sewage a hybrid granular sequencing batch reactor hgSBR is set up to the Mahakumbh to treat human waste and gray water which according to the BARC is a compact biological treatment method for effective removal of contaminants keeping in line with the governments plan to combat open defecation under the zero tolerance approach 1.45 lakhs toilets have also been fixed. The Mahakumbh Mela is a union that demands remarkable management of logistics and engineering currently the situation is so dire that the site of dead fish floating in the Ganga and the Yamuna is common. One wonders what happened to the rupees 40,000 crores spent on the Namami Gange program in the past decade.

So, the question remains can the river ecosystem take the shock of about 40 million people living bathing in it although there have been efforts to mitigate the issue the ganga will suffer another major blow to its ecosystem once the Kumbh Mela is over.

The Mahakumbh Mela 2025 in Prayagraj has drawn millions of devotees for the auspicious ritual of bathing in the Ganga River. Ensuring the river's water quality is safe for such activities has been a focal point for authorities.

Water Quality Monitoring and Current Status:
On January 14, 2025, the Central Pollution Control Board's (CPCB) real-time monitoring system recorded the Biochemical Oxygen Demand (BOD) level at the Prayagraj Sangam at 4 mg/l. This exceeds the standard of 3 mg/l, indicating potential organic pollution. Dissolved Oxygen (DO) levels were measured at 8.3 mg/l, which is within acceptable limits.

Further analyses revealed that while DO levels met bathing standards consistently, parameters such as pH, BOD, and fecal coliform levels did not always comply with the required norms. Notably, on auspicious bathing days, evening BOD levels were higher than morning readings, suggesting increased pollution during peak bathing times.

Measures Implemented to Improve Water Quality:
In response to these challenges, authorities have undertaken several initiatives: Industries in 23 districts were temporarily shut down to prevent effluents from contaminating the Ganga and its tributaries.

Thirty-four previously untapped drains in Prayagraj, which collectively discharged approximately 128.28 million liters of untreated sewage daily into the river, have been diverted to temporary sewage treatment plants (STPs) for filtration.

To dilute pollutants, over 6,000 cusecs of water have been released into the Ganga from the Narora Dam in Bulandshahr district. This measure aims to improve water quality, especially during peak bathing periods.

National Green Tribunal (NGT) Directives:
Anticipating a 10% increase in sewage generation during the Mahakumbh Mela, the NGT has mandated that authorities ensure the Ganga's water quality is suitable for both drinking and bathing. This includes rigorous monitoring and the implementation of effective pollution control measures.

Public Awareness and Safety:
Despite these efforts, many devotees remain unaware of the current water quality status. It's crucial for attendees to stay informed and adhere to guidelines issued by health and environmental authorities to ensure their safety during the festival.

GLOBAL RECOGNITION AT DAVOS 2025

Sradhanjali Rout

As international water scarcity intensifies India offers its enhancing experience alongside fundamental resources to join forces on worldwide water management initiatives. Bharatiya Janata Party leader C.R. Patil from Gujarat recently declared at a time when worsening water scarcity threatens all nations because of climate change that India stands prepared to partner internationally on water solutions. His remarks published in The Economic Times drew global attention because they indicate India's desire to provide solutions that address water problems.

India's Role as a Global Leader in Water Management
India due to its massive and weather-different regions has experienced profound difficulties in managing its water resources throughout history. Economic and social development in India heavily depends on efficient water management because the nation faces both abundant population size and weather diversity. Through decades of research India has created a comprehensive set of water management approaches which combine rainwater harvesting systems and stepwell designs with advanced modern technologies to enhance both conservation practices and efficiency levels.

India's strength in water management expertise reaches beyond its national limits according to Patil. India proposes to share its advances in water conservation together with water management systems with international communities who confront identical water scarcity issues.

Water scarcity now demands global partnerships and collaborative efforts to discover lasting water management solutions according to this new initiative.

India's Role as a Global Leader in Water Management
India's extensive geographical variety presents long-standing difficulties to its water management systems. Due to its sizeable population alongside different climate zones India must prioritize water utilization efficiency to achieve both social and economic progress. India has evolved numerous water management practices through its history beginning with rainwater harvesting techniques and stepwells combined with contemporary technologies dedicated to enhance water efficiency and conservation. According to Patil India holds expertise which extends beyond its territorial borders. India proposes to share its advances in water conservation together with water management systems with international communities who confront identical water scarcity issues. Water scarcity now demands global partnerships and collaborative efforts to discover lasting water management solutions according to this new initiative.

Sharing lessons in India: a collaborative approach
India's offer of water management is based on the acknowledgement of the proposition that its experiences managing different water challenges can be useful to the world. These experiences incorporate Rajasthan, an arid region, wherein efficient water preservation systems such as rainwater harvesting have found a place in its management of water. Likewise, the experience of India in flood-prone regions, such as the Northeast, sheds light on water resource management in areas affected by surges in rainfall.

Watershed management, irrigation systems, and water conservation methods are further areas where India has also been able to make a significant mark in increasing water use efficiency in rural and urban areas. Through sharing further with other countries, India intends to promote best practices in water management that can be scaled to the international level, especially in areas that face similar climatic and environmental challenges.

The Role of Technology in Water Management

In addition to traditional methods of water management, India has increasingly embraced technology for its enhancement. Patil said the incorporation of appropriate technologies such as AI and IoT should take place in water systems. These technologies are revolutionising water resource monitoring and management. AI could help predict water availability by incorporating weather patterns, crop needs, and regional consumption levels. Whereas, IoT offers real-time data on water use, allowing for better decision-making by governments, businesses, and individuals.

Such technological adoptions could enhance the efficiency in water distribution, reduce leakage, and reveal consumption trends so that there can be a better use of water.

A Path Toward Sustainable Water Solutions

The urge for sustainable water management is at its highest peak in association with climate change, making weather patterns diffused, disrupted, and extremely demanding so far. Patil's plea for teamwork on the international scene is yet another reminder of teamwork as the only way to alleviate the water crisis. While nations may be faced with peculiar water problems, many are affected by common issues of groundwater depletion, ineffective irrigation practices, and pesticide or effluent pollution, which call for collaborative efforts and sharing of knowledge.

The team from India is willing to work together with others because it believes that only in this capacity is it possible to take on a sustainable water future by exchanging superior models of water management, best practices, and breakthrough technologies such as cross-border water management treaties, joint research programs, and design principles for desalination projects, smart irrigation, and water recycling.

India's move to put forth its expertise is another important impetus toward global water security. United efforts will enable the nations to face water scarcity challenges and furnish subsequent generations with clean and reliable water resources.

Looking to the Future

Patil's remarks reflect a welcome change in India's approach to the global fight against water scarcity. India is no longer flagging its own domestic water problems; it is setting itself up as an active leader in the global battle for water sustainability. With the world facing a future in which water will become an increasingly precious and contested resource, India's willingness to collaborate with countries holds the promise of innovative solutions.

Through research, technology-transfer endeavors, and strategic partnerships, India makes an impact in how the world will transition toward restorative futures. Challenges are immense, but not impossible to solve, and with continued teamwork and innovation, nations will work together to make sure that water resources are protected and available for generations to come.

Arunachal CM Warns of ‘Water Bomb’ Threat from China’s Megadam

Stuti Nayantara Horo

Arunachal Pradesh Chief Minister Pema Khandu has raised significant concerns regarding China's plan to construct the world's largest hydropower dam on the Yarlung Tsangpo River in eastern Tibet. He warns that this massive infrastructure project could be utilized by China as a "water bomb," posing severe risks to downstream regions, including Arunachal Pradesh, Assam, and even Bangladesh.

Risks to Local Communities

Khandu specifically pointed out that the Adi tribe in Arunachal Pradesh and millions of residents in Assam could face severe consequences from this project. The chief minister warned that the dam "the mighty Siang or the Brahmaputra river would dry up during winters disrupting life in the Siang belt and the plains of Assam." It could disrupt water availability during critical periods, such as droughts, ultimately threatening livelihoods and ecological balance. He highlighted that Tibet, often referred to as the "Water Tower of Asia," plays a crucial role in supplying water to over a billion people in the region. Thus, any disruption in its environmental health could have far-reaching effects beyond national borders.

International Water Laws and India's Position

India's concerns are compounded by China's non-signatory status to several global treaties regarding transboundary waters. The lack of binding agreements raises questions about cooperative management of shared water resources. The UN Watercourses Convention and the Helsinki Rules provide frameworks for equitable and reasonable use of shared watercourses, emphasizing cooperation among nations sharing transboundary rivers. However, without China's participation in these agreements, India faces challenges in ensuring its water security.

Environmental Implications

The construction of large dams in ecologically sensitive areas like Tibet raises concerns about environmental degradation. The Himalayan region is characterized by fragile ecosystems that are vulnerable to disturbances caused by infrastructure projects. Khandu highlighted that the dam's impact on local ecology could extend beyond immediate flooding risks; it may also disrupt biodiversity and alter natural habitats crucial for maintaining ecological balance.

Regional Cooperation

Given these challenges, there is an urgent need for India to engage in diplomatic efforts aimed at fostering regional cooperation on water management. Collaborative approaches could include bilateral dialogues with China and initiatives involving other downstream countries like Bangladesh. Such engagement would not only address immediate concerns but also contribute to long-term strategies for sustainable management of shared water resources.

The looming threat posed by China's hydropower project on the Yarlung Tsangpo underscores the complexities of transboundary water governance in South Asia. As Arunachal Pradesh's Chief Minister Pema Khandu articulates grave concerns over potential flooding and ecological disruption, it becomes evident that cooperative frameworks are essential for managing shared rivers effectively. India's position is further complicated by China's non-participation in international treaties governing transboundary waters, necessitating proactive diplomatic efforts to safeguard regional water security and ecological health. The situation calls for a concerted response from India not only to protect its own interests but also to engage meaningfully with neighboring countries in addressing shared challenges related to water resources. As environmental issues increasingly transcend national borders, collaborative governance will be key to ensuring sustainable development and ecological resilience in the region

GUILLAIN-BARRÉ SYNDROME SURGE IN MAHARASHTRA LINKED TO WATER CONTAMINATION

Soumya Tripathy

Maharashtra is currently grappling with a significant increase in Guillain-Barré Syndrome (GBS) cases, particularly in the Pune district. GBS is a rare neurological disorder where the body's immune system attacks the peripheral nerves, leading to symptoms such as muscle weakness, tingling, numbness, and pain. In severe instances, it can result in paralysis. The recent surge has been primarily observed in areas along Pune's Sinhagad Road, including Dhayari, Ambegaon, and Narhe. As of January 31, 2025, the state has reported 130 suspected GBS cases, with the majority concentrated in these regions.

Government Response and Attribution to Water Contamination

Chief Minister Devendra Fadnavis addressed the rising concerns, attributing the spike in GBS cases to water contamination in Pune. He emphasized that while GBS is not new to Maharashtra, the current increase is notable. Investigations identified a contaminated pond in Nanded village on Sinhagad Road as the primary source. Following corrective measures, there has been a reported decline in new cases.

Fadnavis assured the public that the situation is under control and highlighted that treatment for GBS is covered under the Mahatma Phule Jan Arogya Yojana (MPJAY) scheme, ensuring patients can access care in both government and affiliated private hospitals.

Impact on Daily Life in Affected Areas

The outbreak has significantly disrupted daily life along Sinhagad Road. Schools have reported decreased attendance as parents opt to keep their children at home due to health concerns. Housing societies, traditionally reliant on private water tankers due to inadequate municipal supply, have ceased purchasing from these sources over fears of contamination. This decision has led to a sharp decline in water tanker prices, with a 1,000-liter tanker dropping from ₹2,000-₹2,500 to significantly lower rates. Residents are now seeking alternative water sources, including neighboring societies with borewells and enhanced filtration systems.

Broader Implications and the Need for Water Safety

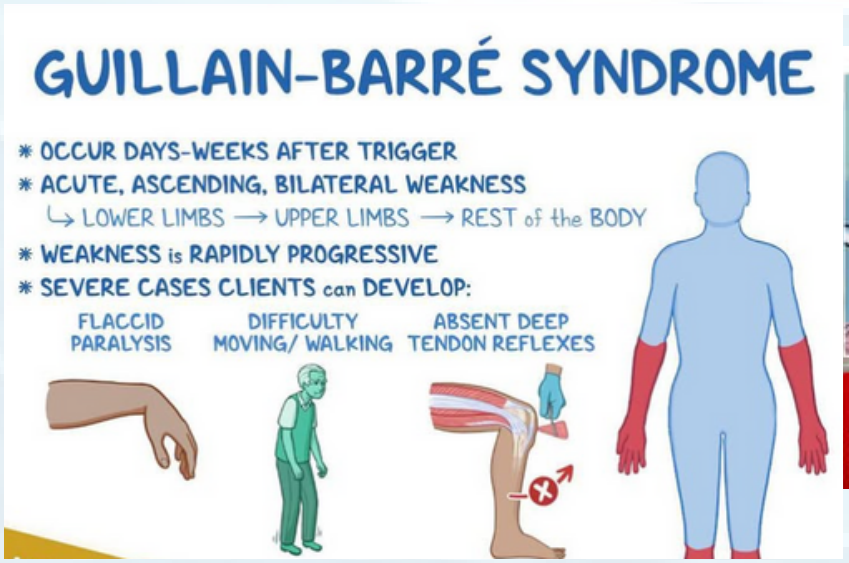
This health crisis underscores the critical importance of water safety and quality. Contaminated water not only poses immediate health risks but can also lead to long-term neurological conditions like GBS. The situation in Pune serves as a stark reminder of the need for robust water management systems, regular quality assessments, and prompt corrective actions to prevent such outbreaks.

Transboundary Water Laws in India

While the current GBS outbreak is localized, it brings attention to the broader context of water governance in India. India shares several transboundary rivers with neighboring countries, necessitating comprehensive water laws and cooperative agreements to manage shared resources effectively.

Internationally, the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (1997) provides a framework emphasizing equitable and reasonable utilization of shared watercourses and the obligation not to cause significant harm to other riparian states. However, neither India nor China is a party to this convention, which limits its applicability in resolving disputes between the two countries.

Within India, water laws are primarily governed at the state level, with the central government playing a coordinating role. The Indian Constitution lists water under the State List, granting individual states the authority to legislate on water-related matters.



However, in cases of inter-state rivers and river valleys, the central government can intervene to regulate and develop these waters in the public interest.

India has entered into bilateral treaties with neighboring countries to manage transboundary water resources. Notable examples include the Indus Waters Treaty (1960) with Pakistan and the Ganges Treaty (1996) with Bangladesh. These agreements establish frameworks for water sharing and cooperation. However, no such treaty exists between India and China, leaving a significant gap in the management of shared watercourses like the Brahmaputra.

The GBS outbreak in Maharashtra highlights the immediate need for stringent water quality monitoring and management. It also serves as a reminder of the broader challenges in water governance, both within India and in its transboundary contexts. Ensuring safe water is not only a matter of public health but also of geopolitical stability and sustainable development.

Thank you for reading!

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