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Q: HOW CAN SUSTAINABLE WATER MANAGEMENT ADDRESS THE CHALLENGES OF CLIMATE CHANGE, POPULATION GROWTH, AND POLLUTION TO ENSURE FUTURE WATER AVAILABILITY?

A: Global warming, driven by climate change, along with a rapidly growing population and rising pollution levels in oceans, lakes, and rivers, is making access to clean water increasingly critical. The availability of safe, potable water is under serious threat as these challenges will continue to intensify.

Sustainable water management has become crucial for present and future generations. To secure future water availability, we must implement comprehensive strategies that address these interconnected threats. Diversifying water sources through integrated systems that combine surface water, groundwater, and recycled water will create reliability. Modernizing aging infrastructure can eliminate the significant water loss water utilities experience through old supply networks. Digital technology, smart metering and real-time monitoring will help identify waste and optimize distribution. These technical solutions must be paired with conservation programs that encourage efficient water use by all users.

Strong regulations on industrial and agricultural runoff, combined with protection of water sources can prevent contamination before it occurs.

Advance treatment technologies and nature-based solutions can clean contaminated water sources, while proper wastewater management prevents new pollution. The future of water management lies in integration and innovation. While the challenges are significant, we have the knowledge and tools to ensure water security for future generations.

Q: WATER LOSS IS A SIGNIFICANT CHALLENGE FOR WATER UTILITIES ACROSS THE COUNTRY. HOW CAN IT BE EFFECTIVELY ADDRESSED?

A: In the face of aging infrastructure, manual management, water scarcity, population growth and growing regulatory pressures, water loss is a worldwide concern confronting water utilities across continents. The distinguishing factor is that in India, this issue accounts for nearly half of the total water production. The alarming reality is that despite having a significant population and water consumption reaching trillions of litres of fresh water, nearly half of treated, pumped water is lost in the distribution system. The leaks and breaks in the water pipeline that allows water to escape are also dangerous to public health as it becomes the major source of contamination with impurities entering the distribution system impairing the quality of water.

Ensuring reliable and sustainable operations is a major challenge that affects customers and businesses, and water utilities everywhere are taking

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steps to modernize their operations.

Underscoring the need for a shift towards smarter, more sustainable water operations, water utilities should prioritize implementing smart water solutions, including:

- Accurate demand forecasting and management-Meet consumer demand with precision.
- Strategies for water loss reduction Protect water supply, enhance pipeline integrity, and reduce inefficiencies.
- Infrastructure modernization Upgrade for future-readiness and data reliability
- Real-time monitoring and leak detection -Monitor distribution network, repair leaks and minimize losses.

 Awareness and stakeholders' engagement -Collective approach to water conservation and reduce wastage.

By adopting these strategies, water utilities can transition towards more resilient, sustainable, and efficient operations, ensuring a reliable water supply.

Q: COULD YOU SHARE INSIGHTS INTO SPML'S EXPERIENCE WITH EXECUTING A WATER LOSS MANAGEMENT PROJECT?

A: SPML Infra Limited successfully executed a water loss management project in selected areas of Bengaluru. Utilizing advanced leak detection technologies, we traced underground leaks and addressed issues by removing and rehabilitating old, deteriorated pipelines. This targeted project yielded impressive outcomes, reducing water loss from an initial 53% to 19%, leading to a remarkable conservation of almost 52 million litres of potable water on a daily basis.

Water utilities in India must ensure that the water they deliver is safe and compliant with drinking water regulations while at the same time they have to ensure that minimum water is lost during the transmission and distribution. By addressing leaks, optimizing infrastructure, and implementing efficient monitoring systems, utilities can achieve a more sustainable supply while maximizing resource efficiency and maintaining financial stability. Reducing water loss not only conserves valuable resources but also strengthens the reliability of the water network and supports long-term resilience in the face of increasing demand and scarcity.

Q: THE UNTREATED DISCHARGE OF WASTEWATER INTO WATER BODIES RESULTS IN EXTENSIVE WATER POLLUTION. WHAT IS YOUR VIEW ON WASTEWATER TREATMENT IN INDIA?

A: The issue of untreated wastewater being released into water bodies and causing water pollution is a significant concern. Approximately 80 billion liters of municipal wastewater is generated daily in urban India. From this substantial amount, only around onethird undergoes treatment before being released. The remaining almost two-third is discharged into water bodies without any form of treatment resulting in polluted rivers, lakes and ponds.

India generates nearly 14 billion litres of industrial wastewater as well, which requires proper treatment before being discharged so that it meets environmental norms.

Roughly just over half of this wastewater undergoes treatment, leaving the remaining portion untreated before being released into the land and water bodies. This strongly underscores the urgent need for enhanced wastewater management in the country.

The traditional concept of wastewater treatment plants is now becoming obsolete and a real desire for change can be felt throughout the sector. Wastewater treatment plants must transition into a circular economy model, emphasizing the repurposing of resources and energy. It is imperative to take proactive steps to ensure the safeguarding and preserving water resources.

New technologies for treatment and management are quite effective to meet industry and irrigation water needs and comply with existing regulations. Several examples from different countries are available where they are using treated wastewater for useful purposes even some of them is meeting their potable water needs through the reclaimed water.

The most effective strategy moving forward would involve the establishment of decentralized wastewater treatment facilities, flexible enough to accommodate a wide range of operational requirement. These facilities could be deployed in settings such as small townships, urban and rural clusters, gated colonies, factories, and industrial parks. The advantage of such solutions lies in their onsite installation, enabling direct treatment of wastewater at its origin for various purposes. Reuse of treated wastewater is an issue that has not received much attention as yet in government policies. The Central Public Health and Environmental Engineering Organization reports that the treated wastewater can be used for irrigation, cleaning operations (roads, vehicles, trains), fire-fighting, industrial refrigeration, toilet flushing, and horticulture.

The effective treatment and reuse of wastewater, aiming to repurpose it for beneficial utilization across various activities are progressively gaining attention as an attractive and practical solution. This approach not only tackles water scarcity challenges but also effectively addresses concerns related to pollution.

Q: HOW SPML INFRA POSITIONING ITSELF TO LEVERAGE EMERGING OPPORTUNITIES IN INDIA'S EVOLVING WATER SECTOR?

A: The Indian water sector has experienced significant growth in recent years. In the third term of the government, the sector is poised for unprecedented expansion, driven by several ambitious initiatives like

Jal Jeevan Mission, AMRUT (Atal Mission for Rejuvenation and Urban Transformation), Namami Gange, Pradhan Mantri Krishi Sinchayee Yojana, National River Linking Project, Atal Bhujal Yojana, Dam Rehabilitation and Improvement, and National Hydrology Programme. These initiatives have created a landscape rich with opportunities for SPML Infra and other companies in the water infrastructure sector.

SPML Infra, a leading player in the industry, is strategically positioned to capitalize on these opportunities. With over four decades of experience, we have established ourselves as a trusted partner for executing complex water infrastructure projects. The company's proven track record and extensive experience qualify it to bid for water projects worth up to Rs. 1,500 crore. This capability allows SPML Infra to pursue large, prestigious water supply projects, further cementing its position as a key player in India's water sector.

> By improving water infrastructure, the government can enhance water security, mitigate the impacts of climate change and create sustainable opportunities for economic expansion, thereby fostering long-term prosperity for the nation.

As the industry evolves to meet the challenges of climate change and urbanization, SPML Infra's technical prowess and execution capabilities make it well-equipped to drive transformative change. The company's ability to adapt to new technologies and implement innovative solutions positions it as a frontrunner in India's water infrastructure revolution.

By leveraging its expertise, market presence, and qualification for high-value projects, SPML Infra is poised to play a crucial role in shaping the future of India's water sector. As the country strives to achieve its water management goals, SPML Infra will be instrumental in turning ambitious plans into reality, contributing to India's sustainable development and water security.

