GLOBALLY COMPETITIVE INDIA: PARTNERSHIPS FOR SUSTAINABLE AND INCLUSIVE GROWTH

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Harnessing Water for a Resilient Future

HARNESSING WATER FOR A RESILIENT FUTURE

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As the world grapples with the impacts of climate change, burgeoning populations, and rapid urbanisation, the demand for sustainable water management has never been more pressing. Industries and the agricultural sector stand at the vanguard of efforts to secure a water-resilient future. By implementing innovative water management practices, integrating cutting-edge technologies, and advocating for forward-thinking policies, these sectors can significantly contribute to a water-secure world.

Escalating Water Crisis: Present-Day Challenges

The global water supply is currently experiencing unprecedented strain. According to the Food and Agriculture Organisation (FAO), agriculture is the primary consumer of the world's freshwater resources, using 70%, with industry consuming nearly 20%, and domestic or municipal use accounting for 12%. Climate change further aggravates this situation by increasing the occurrence of droughts, floods, and extreme weather events, intensifying the crisis as global water demand continues to grow.

India faces a significant water challenge, largely due to its expansive agricultural sector, which uses almost 90% of the nation's freshwater. Inefficient irrigation practices exacerbate this issue, with traditional methods losing up to half of the water through evaporation and runoff.

The dual pressures of rising water demand and diminishing resources underscore the urgent necessity for sustainable water management practices in India. Embracing efficient irrigation technologies and implementing additional water-saving strategies will be essential for mitigating water scarcity and ensuring a secure future for the country's population.

Innovative Water Management Practices

Industries and agriculture are traditionally seen as significant consumers of water resources. However, with strategic management, they can transform into stewards of water sustainability. Innovative water management practices such as precision farming, circular water use, and integrated watershed management are pivotal.

Precision Farming: This approach minimises water use while maximising crop yield by deploying technologies like soil moisture sensors and satellite imagery. Precision farming enables farmers to apply

water only where necessary, thereby reducing wastage and conserving this precious resource.

Circular Water Use: Industrial sectors are increasingly adopting recycling and reuse strategies, where wastewater is treated and reused within the production cycle. This approach not only reduces freshwater withdrawal but also minimises wastewater discharge into the environment, thus ensuring a closed-loop water system.

Integrated Watershed Management: By considering the entire watershed in management strategies, industries and agricultural sectors can ensure sustainable water use that maintains ecosystem health. This involves managing upstream and downstream water interactions and engaging local communities in water conservation efforts.

Cutting-Edge Technologies

Harnessing the power of technology is crucial for advancing water sustainability in industrial and agricultural domains. Technologies such as IoT devices, artificial intelligence (AI), and biotechnology are becoming game changers.

IoT and Sensor Technologies: Internet of Things (IoT) devices and sensors provide real-time data on water usage, leaks, and quality. This information allows industries and farmers to make data-driven decisions that optimise water use and prevent wastage.

Artificial Intelligence: AI can analyse vast amounts of data to predict water needs, detect anomalies, and even automate irrigation processes. This reduces the margin for error and increases efficiency in water use.

Biotechnology Innovations: Biotechnology provides solutions like drought-resistant crops and microbes that enhance soil moisture retention. These innovations play a critical role in ensuring agriculture can thrive even under water scarcity conditions.

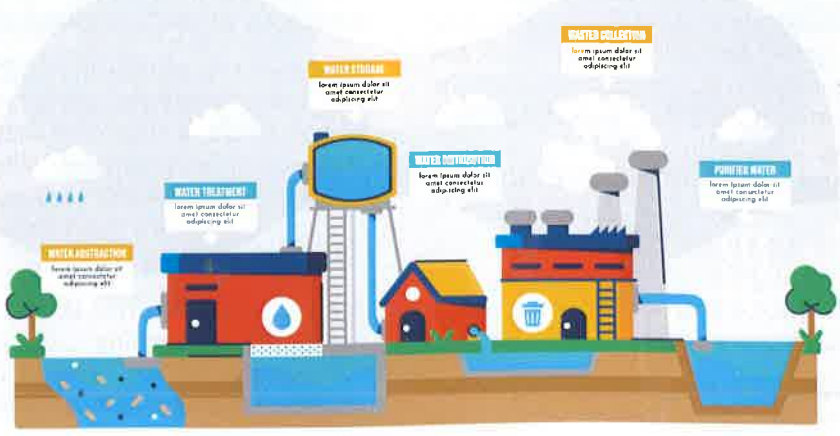
Advocating for Resilient Policies

The transition to a sustainable and water-secure future is not solely reliant on practices and technology; it also requires robust policy frameworks. Industries and the agricultural sector must advocate for policies that encourage sustainable practices and investments in water infrastructure.

Community Engagement and Education: A water-secure future also depends on the active involvement of communities in water stewardship. Educational initiatives that raise awareness about water conservation and sustainable practices can foster a culture of responsibility and care for water resources.

Global and Local Partnerships: Collaboration across borders and sectors can facilitate the transfer of knowledge and technologies, enabling regions facing severe water challenges to implement successful strategies. Local partnerships ensure that water solutions are tailored to specific contexts, enhancing their effectiveness and sustainability.

Commitment to Sustainable Development Goals: Aligning efforts with the United Nations Sustainable Development Goals, particularly Goal 6 (Clean Water and Sanitation), provides a framework for industries and agriculture to contribute to global water sustainability targets.



The Role of Industries in Water Sustainability

Industries are responsible for 19% of global freshwater withdrawals, with this figure increasing to 54% in high-income nations. Despite their significant water use, inefficiencies remain prevalent, with up to 30% of water lost due to leaks or obsolete practices. To address these inefficiencies, we should:

- Implement smart metering systems to monitor consumption and identify waste.
- Promote the recycling of water across EPC projects to encourage circular water use.
- Collaborate with governmental and private entities to align with sustainability initiatives, such as the Jal Jeevan Mission.

Public-Private Partnerships: A Catalyst for Water Management

Public-Private Partnerships (PPPs) represent a robust model for tackling water-related challenges. By merging the expertise of both governmental and private sectors, PPPs can enhance infrastructure development, facilitate technology adoption, improve risk management, and promote community involvement.

Through PPPs, governments can harness private sector innovation and efficiency, while private companies can benefit from government backing and regulatory support. This cooperative strategy can lead to more sustainable and effective water management solutions.

Water Vision @ 2047 & Jakson Infra's Role in Water Security

Jakson Infra is committed to supporting the Indian government's Water Vision @ 2047 initiative, which focuses on building climate-resilient water infrastructure and fostering Public-Private Partnerships (PPPs). This initiative emphasizes key areas such as Universal Access to Safe Drinking Water and Sustainable Water Management to secure water resources for future generations. A significant aspect of this effort is the completion of the Jal Jeevan Mission, which aims to provide safe and reliable drinking water to all rural households. As part of this mission, Jakson Infra is involved in rural water supply projects that will provide clean water access to 200,000 consumers by 2024, thereby improving the quality of life.

Jal Sanchay Jan Bhagidari Program

Supporting other initiatives is the government's 'Jal Sanchay Jan Bhagidari' program, which aims to construct approximately 24,800 rainwater harvesting structures to bolster water conservation. By engaging communities in water sustainability, the program highlights the crucial role of collective ownership in ensuring long-term water availability.

The initiative also encourages Public-Private Partnerships (PPPs) to drive large-scale water projects while emphasizing community participation and capacity building to empower local communities in managing their own water resources. Additionally, there is a commitment to water quality improvement, efforts to reduce water wastage, and enhanced inter-state collaboration for efficiently managing shared water resources. Together, these efforts aim to secure sustainable water access for all by 2047.

With global water demand projected to rise by 55% by 2050, and the global economy at risk of losing $470 billion annually due to poor water management, the stakes are high. Addressing water scarcity is a critical challenge that requires innovative solutions and collaborative efforts.

In conclusion, the path to harnessing water for a resilient future is paved with innovation, technology, and proactive policy advocacy. By transforming challenges into opportunities, industries and the agricultural sector can secure a water-abundant future, ensuring prosperity for generations to come.