

Under the High Patronage of His Majesty King Mohammed VI



**International
Water Resources
Association**



XIX WORLD WATER CONGRESS
International Water Resources Association (IWRA)
Marrakech, Morocco | 1-5 December 2025

Kingdom of Morocco



**Ministry of
Equipment and Water**

Water and Nature: Innovative Solutions for City in Nature with Water: Using Enugu's Coal City to Water City as a Case Study

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Introduction

Special Acknowledgements

- His Excellency, Governor Peter Mbah, the Executive Governor of Enugu State, Nigeria, extends his goodwill greetings to His Majesty, Sidi Mohammed bin Hassan Al-Alawi, King of Morocco, the President of IWRA, Yuanyuan Li and all participants.
- We appreciate the Kingdom of Morocco for hosting this event and the International Water Resources Association (IWRA) for organizing this important conference.

This presentation highlights the potential transition of Enugu State in Southeast Nigeria from its historical nature as a coal city to a water city through the adoption of innovative management strategies.

Enugu's Brief History

- Enugu's history as a coal mining town has left environmental scars, including deforestation, erosion, and strained water resources.
- The city's rapid growth has exacerbated water management issues, including water scarcity and seasonal flooding.



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Enugu Evolution from Coal City to Water City

Governor Peter Mbah's Initiatives

Water Infrastructure Development: Governor Mbah has commissioned a 120 million liters per day water scheme, which is a significant step towards addressing the state's water challenges. The new water scheme has increased Enugu's water production capacity from 2 million liters per day to 120 million liters per day, benefiting over 2 million residents.

Gas-Powered Plant: A 4.4MW gas-powered plant ensures uninterrupted water supply to Enugu residents.

Pipe-Borne Water Expansion: The state government is extending pipe-borne water to all major residential areas across the state, reducing reliance on water tankers and modernizing the city water piping system.

Sustainability: The governor has assured residents that the water supply system is designed to be sustainable, with measures in place to prevent exploitation and ensure affordable water rates.



Community Engagement: Governor Mbah has underscored the importance of community participation and ownership in safeguarding water infrastructure. The government continues to maintain regular dialogue with communities to keep them informed about ongoing improvements and to strengthen their sense of responsibility toward these assets.

Investment in Water Sector: The state has secured a \$100 million investment from Austrian partners to upgrade its water distribution network. While this is a significant and impactful step forward, Enugu State still requires substantial additional investment to fully revitalize and modernize its entire water system.



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The Road Ahead

Nature-Based Solutions

As Enugu transforms from “coal city” to “water city”, there is a leapfrog opportunity to transform with nature across the state. The State Government through WASH Division of the **Local Government Service Commission** aim to explore the following nature-based solutions;

- **Sustainable Urban Drainage System (SUDS):** Instead of relying only on traditional drainage (gutters, pipes, and channels), SUDS uses natural or nature-based features to control flooding, improve water quality, and enhance urban environments. Examples Explored:
 - **Rainwater Harvesting:** Collecting and storing rainwater reduces stormwater runoff and alleviates pressure on urban drainage systems.
 - **Green Roofs:** Implementing green roofs helps absorb rainfall, reducing stormwater runoff and improving water quality.
 - **Urban Wetlands Restoration:** Restoring wetlands maintains water quality, supports biodiversity, and regulates water flows.
- **Rainwater Harvesting Models:** Collecting and storing rainwater reduces stormwater runoff and alleviates pressure on urban drainage systems.



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Benefits of Water City Approach



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Environmental Benefits: The initiative helps reduce pollution and improve overall air quality. It also strengthens the urban ecosystem by supporting greener spaces and promoting a more sustainable environment.

Economic Benefits: The project creates new job opportunities and boosts property values. It also supports better public health, which contributes to long-term economic stability and productivity.

Social Benefits: The initiative enhances the quality of life by improving essential services and reducing water scarcity. It also encourages community engagement and fosters a stronger sense of shared responsibility.





Enugu Evolution from Coal City to Water City

Community Engagement and Accountability

Public Participation: Strengthening community involvement in water management projects helps ensure that local priorities are accurately reflected. Increased participation also builds a stronger sense of ownership, leading to better protection and long-term sustainability of water infrastructure.

Policy Frameworks: Enhancing supportive policies and regulatory frameworks will enable broader adoption of green infrastructure and sustainable water practices. Clear, consistent policies help create an environment where innovation, investment, and responsible water management can thrive.

The Launch of Accountability Campaign by NEWARI: - a network of grassroots organizations committed to ending water poverty in the state - was instrumental in keeping the government on its toes to deliver on their campaign promises.



Challenges and Solutions



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Challenges:

- Overcoming legacy environmental issues from coal mining
- Managing rapid urbanization and population growth
- Balancing economic development with environmental sustainability



Solutions:

- Implementing innovative water management strategies
- Investing in green infrastructure
- Fostering community engagement and public participation



Replicating Enugu's Model



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Key Takeaways:

- Adopt a holistic approach to urban planning and water management
- Engage local communities in decision-making processes
- Invest in green infrastructure and innovative technologies
- Foster partnerships between government, private sector, and civil society

Benefits:

- Enhanced environmental sustainability
- Improved public health and quality of life
- Increased economic opportunities and job creation





Role of Community Engagement

Importance:

- Ensures that community needs and concerns are addressed
- Fosters a sense of ownership and responsibility
- Encourages behavioral change and promotes sustainable practices

Strategies:

- Public outreach and education
- Participatory planning and decision-making
- Capacity building and training for community members



Conclusion



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- Enugu's transformation from a "Coal City" to a "Water City" is a paradigm shift in urban development, demonstrating the power of water as a tool for urban regeneration.
- By adopting innovative water solutions and integrating nature into city planning, Enugu can create a sustainable, resilient urban environment.



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Thank you!

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