

# IWA YWP Regional Call Innovative Solutions to Water Scarcity led by IWA YWP Chapters in Africa

29/07/2025



# MODERATORS



Jacqueline Sampah-Adjei  
**IWA YWP Steering Committee**  
Ghana



Dr. Rita Moussa  
**IWA YWP Steering Committee**  
Lebanon

# AGENDA

- Welcome Message
- Introduction and housekeeping
- 1st Speaker - The role of local utilities & infrastructure challenges  
*Mutinta Namuyaano Munkombwe – IWA YWP Zambia Chapter*
- 2nd Speaker - Climate change and its impact on African water security  
*Mawunyo Kwami Kofiloto – IWA YWP Ghana Chapter*
- 3<sup>rd</sup> Speaker - Community-based solutions for water access and sanitation  
*Boitumelo Matshediso – IWA YWP South Africa Chapter*
- 4<sup>th</sup> Speaker - Innovations in water management & business-driven solutions  
*Victor Ambuso – IWA YWP Kenya Chapter*
- Q&A Panel Discussion
- Recap and Key Takeaways
- Final remarks

Be honest with  
yourself and  
others

Speak up and  
give feedback  
when needed

Maintain  
privacy within  
the group

Address your  
concerns  
openly

Treat everyone  
fairly and  
equally

Respect people  
and their  
background

Stay engaged  
and hold each  
other  
accountable

Work through  
challenges as a  
team

Speak  
personally and  
specifically





# EVENT INFORMATION

- Post questions using the chat function and feel free to introduce yourselves briefly to one another! Also, it is okay to share your social media.
- Mute / camera in the bottom left corner
- No need to share screen as slides have been added to this presentation



# BACKGROUND OF THE EVENT



- This session aims to bring together convene YWPs to explore the work of IWA YWPs in Africa in providing climate-smart strategies and cutting-edge solutions to tackle water scarcity.
- **Why This Session Matters:** YWPs are uniquely positioned to drive transformation through fresh ideas, regional insights, and interdisciplinary collaboration.
- **What We Aim to Achieve:**
  - Raise awareness about the work of IWA.
  - Showcase innovations in utility operations, community-based solutions, and water tech.
  - Build networks that can drive ongoing action and advocacy.

# MEET THE SPEAKERS



Mutinta N. Munkombwe  
Zambia



Mawunyo Kwami Kofiloto  
Ghana



Boitumelo Matshediso  
South Africa



Victor Ambuso  
Kenya

# WELCOME MESSAGE

Dr. Isabela Espindola – IWA HQ

**inspiring change**





## OUR VISION

**A world in which water  
is wisely, sustainably  
and equitably managed.**



# Driving Change

## Uniting Voices for Water Sustainability

Sustain a vibrant, diverse membership across IWA's spectrum of water interests, promoting connectivity, inclusivity, impact, influence, professional growth, and shared success within the global water community.

# Elevating Water Wisdom

## Leading the Charge for Sustainability

Solidify our role as a trusted authority and global hub for water knowledge, adeptly addressing and raising awareness on core water supply and sanitation needs, of wider emerging trends and issues, and championing sustainable outcomes worldwide through pioneering thought leadership and impactful programmes.

# Empowering Solutions

## Tailored Content for the Global Water Sector

Have diligently curated and delivered an expansive spectrum of professional content and programming, bolstered by empowering our members, and precisely tailored to meet the evolving demands of the water sector around the world.

# Global Collaboration

## for Water Innovation and Leadership Development

Leverage the participation of global leaders in research and practice in its network to drive water sector innovation, advancing governance and partnerships to achieve this, while at the same time supporting strengthening of sector capacity and leadership to facilitate tangible progress.

# Navigating the World's Water Challenges

## Leading Advocacy and Collaboration

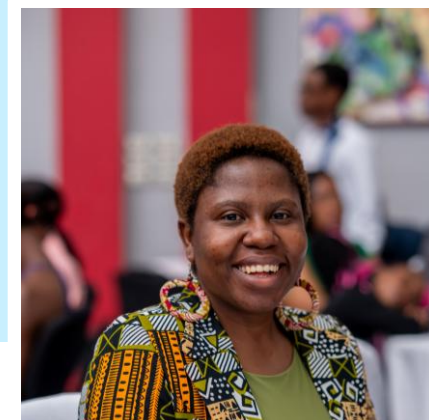
We will strengthen our position as a leading advocate for water within global communities, prioritising informed action on the Sustainable Development Goals and climate change, while also preparing for the post-2030 agenda, by fostering a secure environment for sharing water management knowledge and celebrating impactful collaborations.



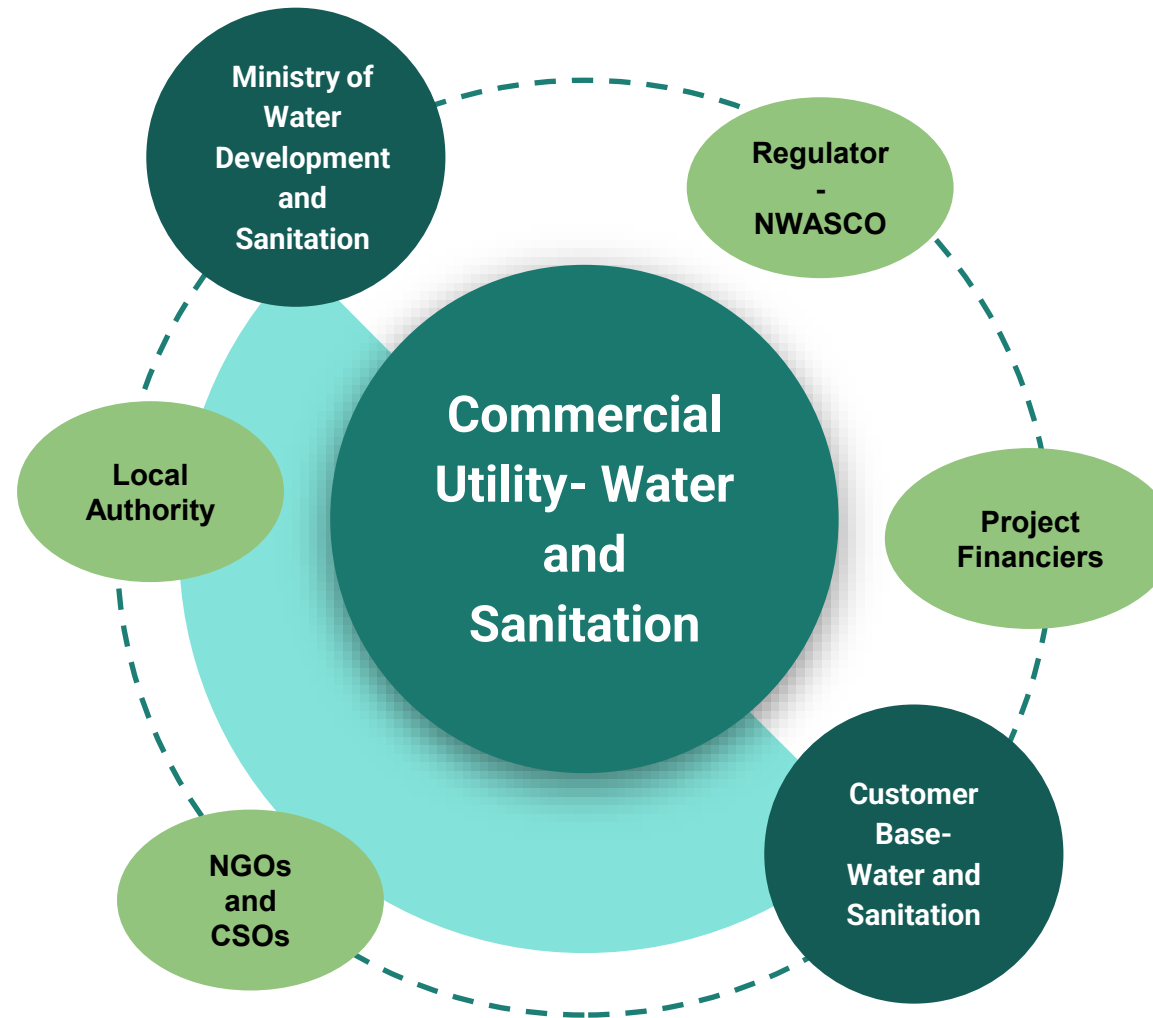
**IWA Strategic Plan 2025-2030**

# THE ROLE OF LOCAL UTILITIES AND INFRASTRUCTURE CHALLENGES

Mutinta Namuyaano Munkombwe, IWA YWP Zambia Chapter



# COMMERCIAL UTILITIES AT A GLANCE





# THE REALITY OF SERVICE PROVISION

1	<b>Rapid Urbanisation and Population Growth</b>	<ul style="list-style-type: none"><li>• Demand for services outpaces Infrastructure Development</li><li>• Challenging environment for Cross- Sector Coordination</li></ul>
2	<b>Aged and Dilapidated Infrastructure</b>	<ul style="list-style-type: none"><li>• High O&amp;M Costs</li><li>• Network Inefficiencies</li><li>• High Non-Revenue Water</li></ul>
3	<b>Low Investment and Financing</b>	<ul style="list-style-type: none"><li>• Inadequate Financing for Infrastructure development- 2% Budgetary Spending for WASH</li><li>• Non-Cost Reflective Tariffs</li></ul>
4	<b>Climate Change</b>	<ul style="list-style-type: none"><li>• Climate Shocks- Drought 2023/2024</li><li>• Reduced Water Production</li><li>• Inadequate resilience</li></ul>
5	<b>Vandalism and Infrastructure Loss</b>	<ul style="list-style-type: none"><li>• Damage and Disruption due to public behaviour</li><li>• Pollution control and safeguards for water sources</li></ul>

# ADAPTIVE GROWTH FOR DEVELOPMENT

## Infrastructure Financing

- Constituency Development Fund
- Grant Funding-Kafue Bulk Water Supply Project (KBWSP)
- PPPs-KBWSP Phase II
- Commercial Financing-Metering project

## Water Stewardship

- Community Level- Water Committees
- Private Sector Engagement- Lusaka West Water Supply Project
- Water Source Protection

## Climate Action

- Mainstreaming Climate Resilience into design - Utilising Solar Energy
- Drought Response and Cholera Elimination Program-MWDS

## Sanitation

- Fecal Sludge Management and on-site technologies
- Investment in Wastewater Treatment
- Trade Effluent Monitoring

**THANK YOU!**

**International Water Association  
(IWA) Young Water Professionals  
Zambia Chapter**



**SCAN CODE TO ACCESS MEMBERSHIP FORM**



**YOUNG WATER PROFESSIONALS ZAMBIA**



**IWA YOUNG WATER PROFESSIONALS – ZAMBIA**



**WP.ZAMBIA@GMAIL.COM**



**YOUNG WATER  
PROFESSIONALS  
ZAMBIA**

# CLIMATE CHANGE AND ITS IMPACT ON AFRICAN WATER SECURITY

Mawunyo Kwami Kofiloto, IWA YWP Ghana Chapter

**inspiring change**





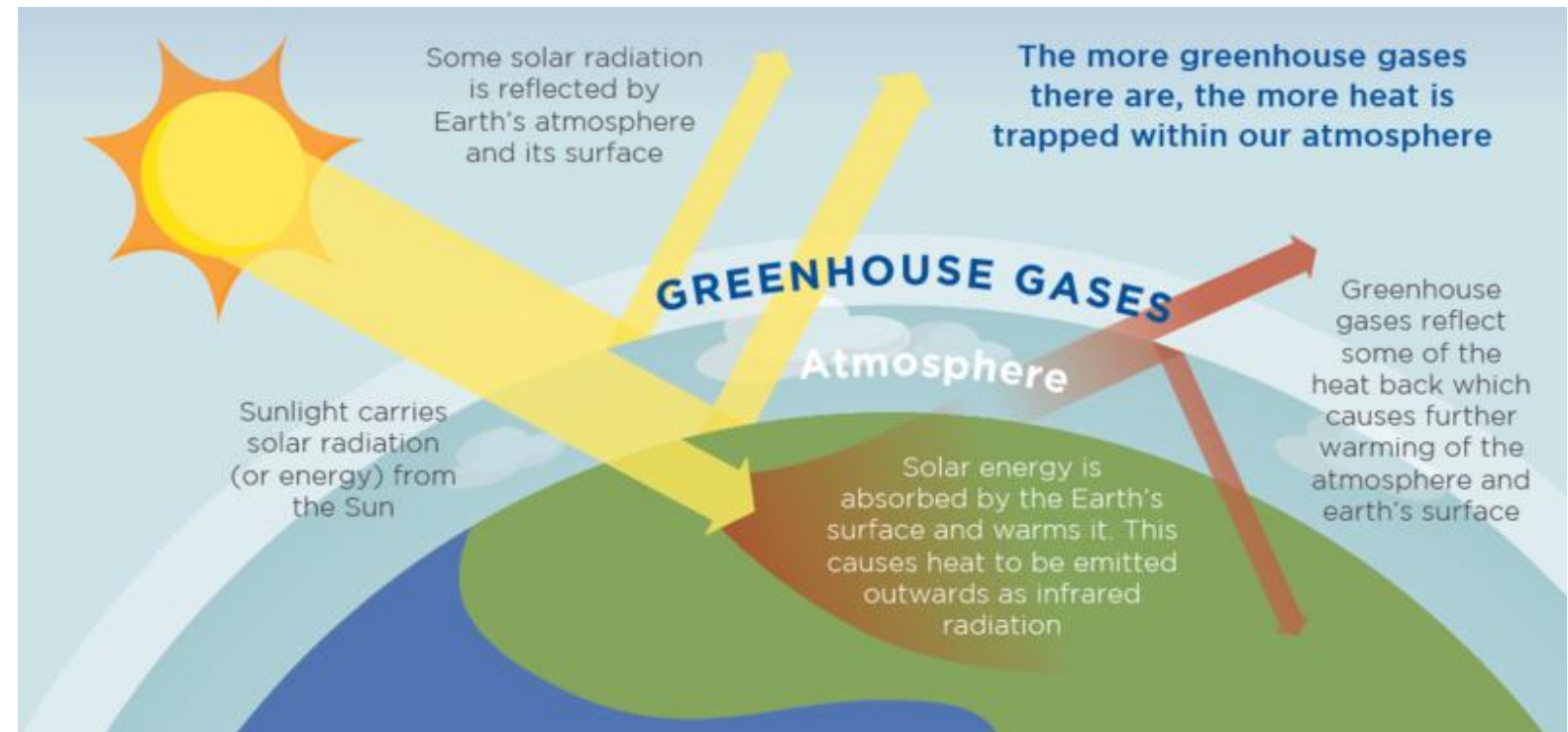
# Climate Change & Water Security

## Climate Change:

**Climate change refers to long-term shifts in temperatures and weather patterns. - (United Nations)**

## Water security:

**Water security is the availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems, and production. - (World Bank's Water Security Diagnostic Initiative, 2025)**



# AFRICA'S WATER RESOURCES

- Africa's water resources are unevenly distributed.
- Climate change has exacerbated variability in rainfall, increasing droughts and floods.

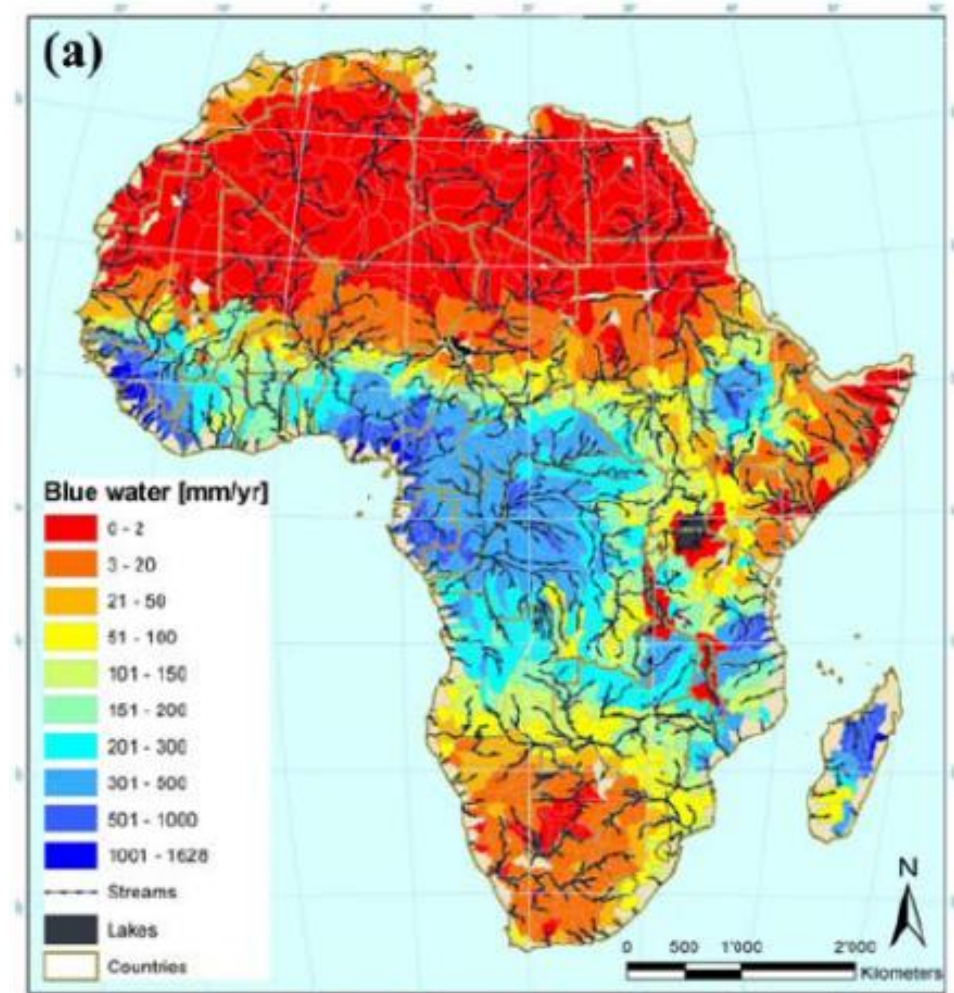
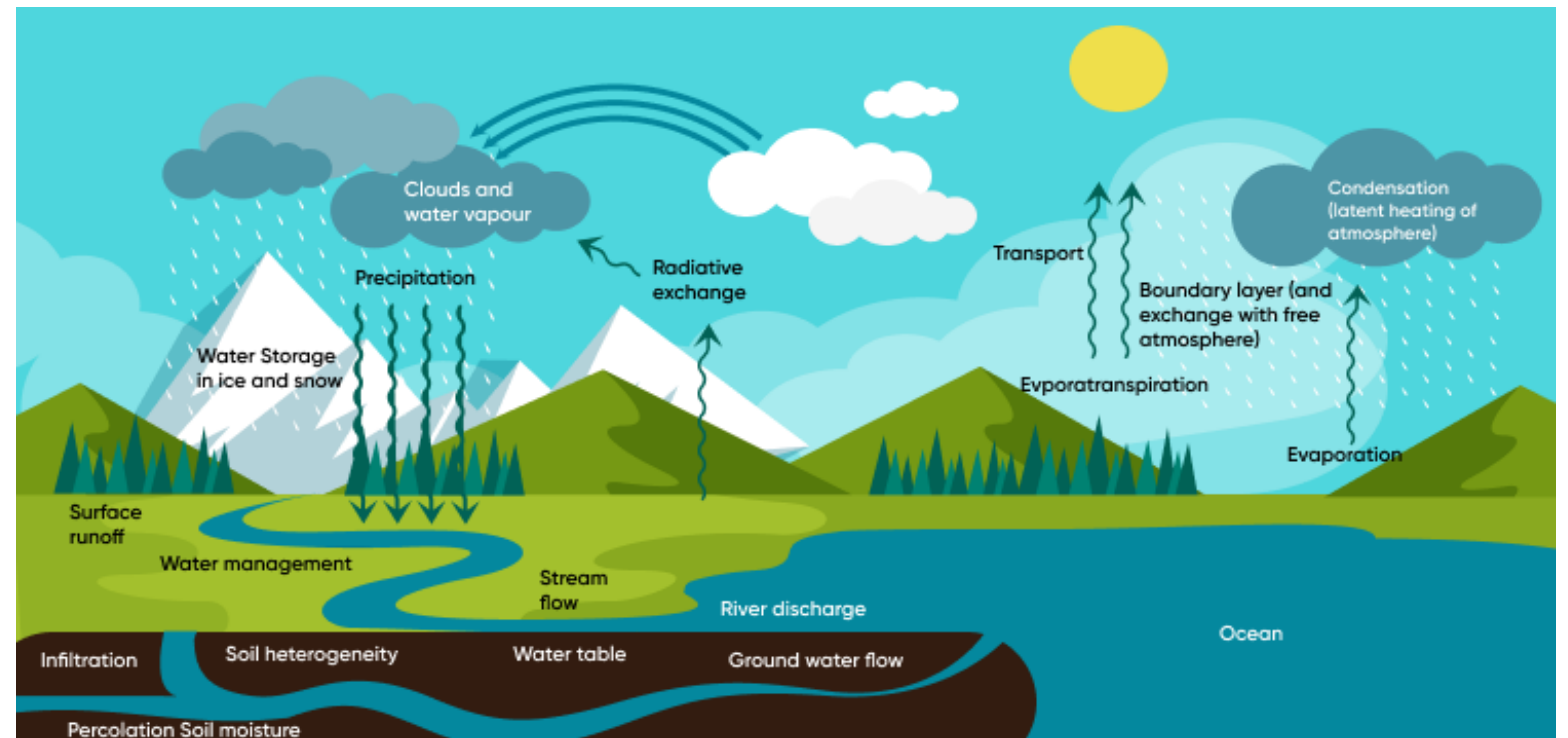


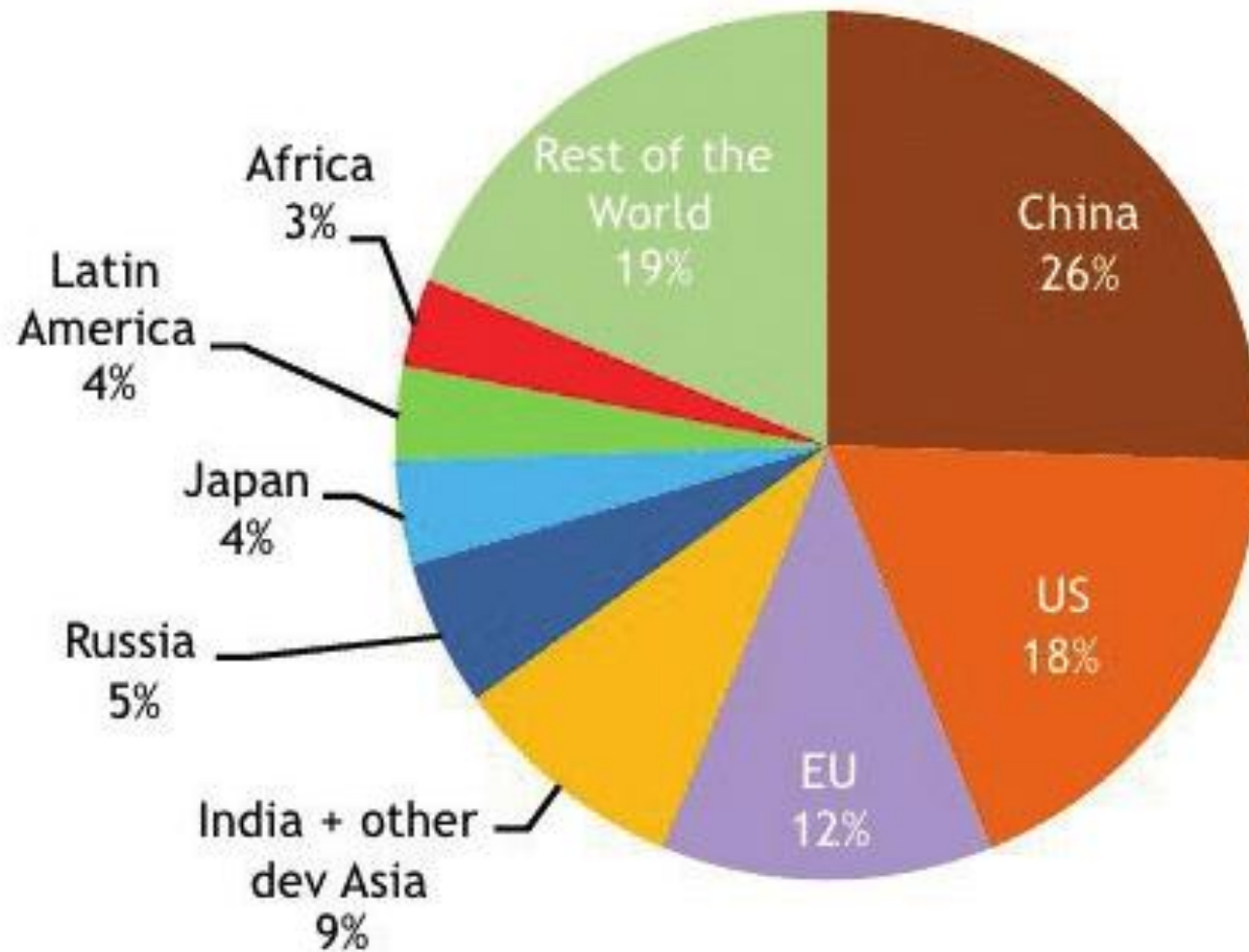
Image Source: WETechData

# CLIMATE CHANGE IMPACTS ON AFRICA'S WATER RESOURCES

Climate change shifts precipitation patterns and increases evaporation, reducing available water.



# AFRICA'S GREEN HOUSE GAS CONTRIBUTION

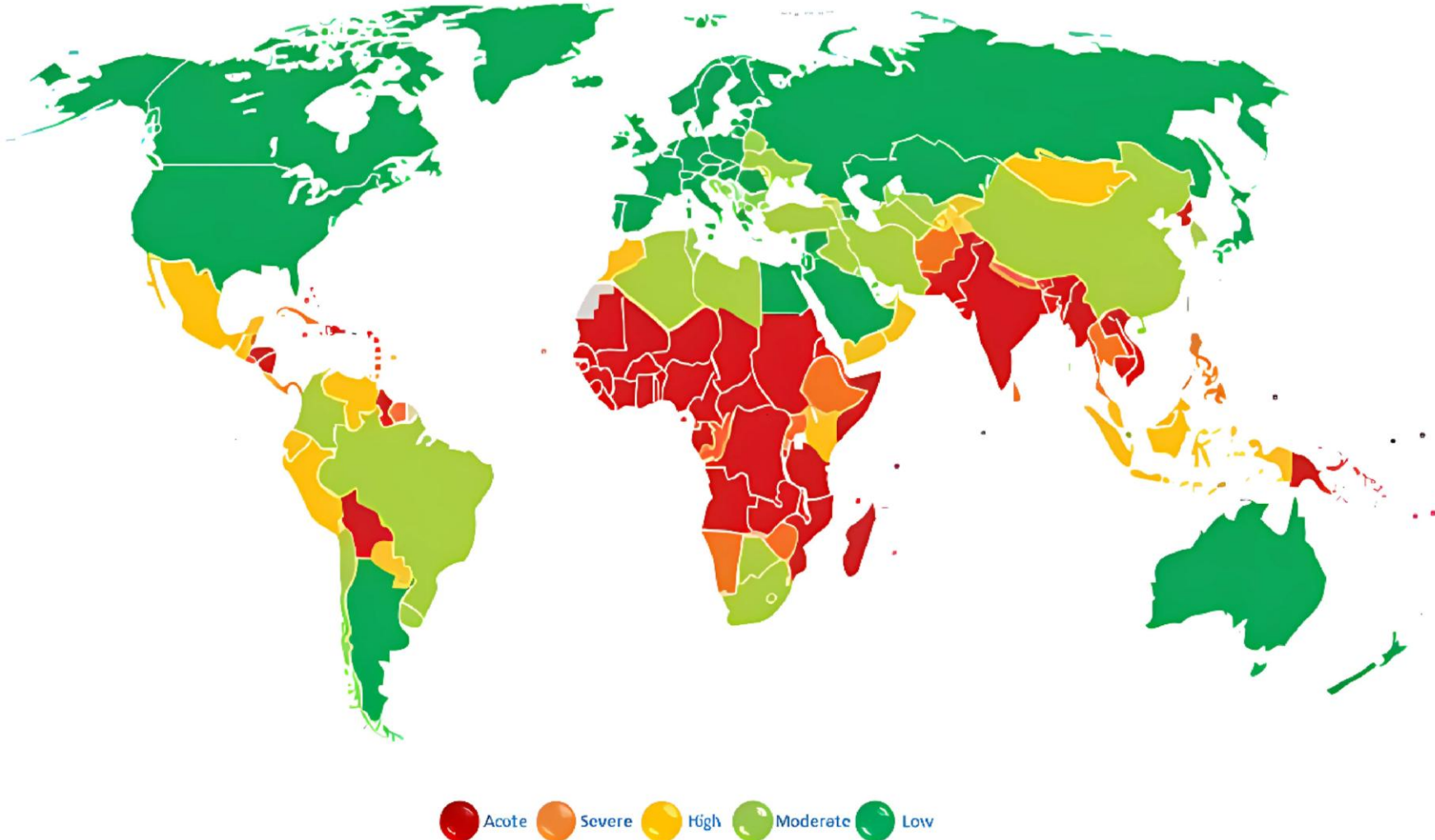


Despite low emissions (3% of global CO<sub>2</sub>), water security remains a critical challenge.

*Africa constitutes 15% of the global population but contributes just 3% of the global CO<sub>2</sub> emissions*



# AFRICA'S CLIMATE VULNERABILITY



The average rate of warming in Africa was  $+0.3\text{ }^{\circ}\text{C/decade}$  between 1991 and 2022, compared to  $+0.2\text{ }^{\circ}\text{C/decade}$  between 1961 and 1990

- (World Meteorological Organization)

Map Source: Ateba Boyomo Henri Aurelien

# WHAT IS WATER INSECURITY?

- Water insecurity: When water demand exceeds availability or access to safe water is limited (Matchawe et al., 2022).
- Key drivers in Africa:
  - Swelling urban growth.
  - Environmental degradation.
  - Anthropogenic pollution.

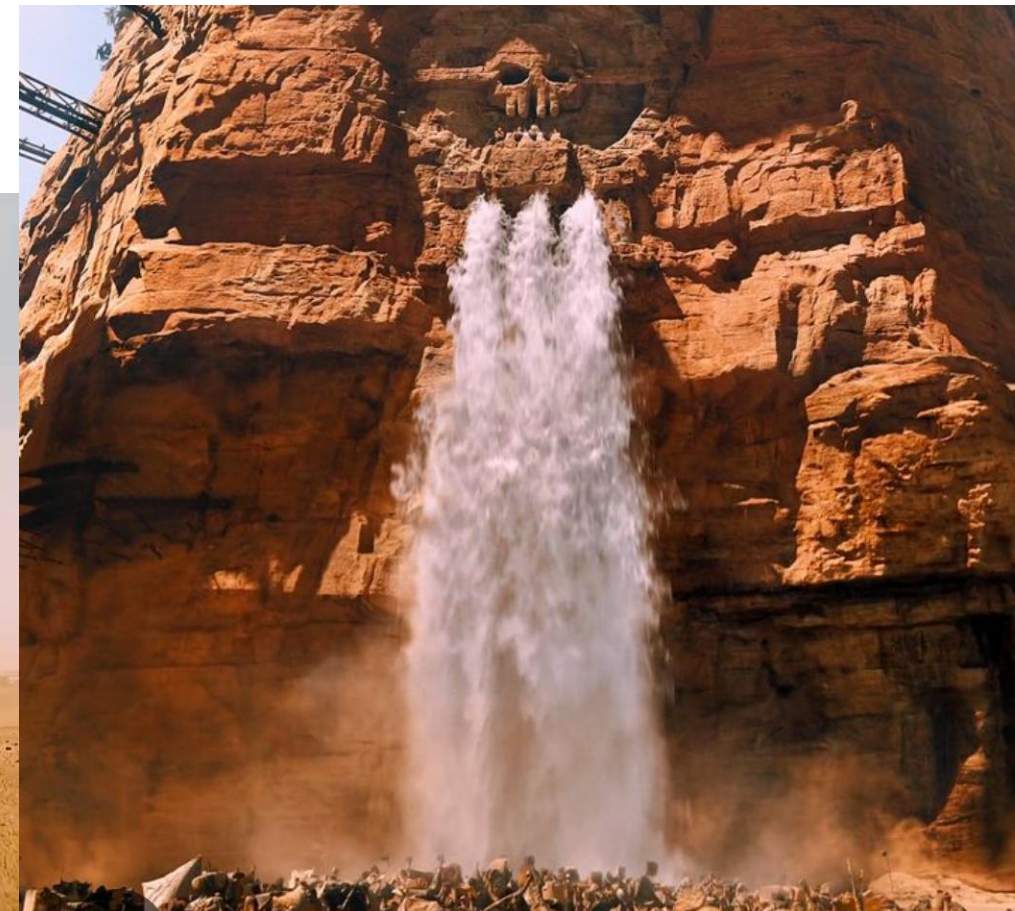


# REGIONAL CASE STUDIES

Region	Climate Impact	Water Security Effects
<b>Sahel</b>	Increased aridity, delayed rainy seasons	Lower reservoir inflows; reliance on boreholes
<b>Horn of Africa</b>	Multi-year droughts	Severe urban rationing (e.g., Somali cities); rural hand-pump failures
<b>Southern Africa</b>	Mix of prolonged droughts and extreme floods	Dam level collapses (Kariba Dam dropping to record lows); flood damage
<b>West Africa</b>	Variable rainfall, rising temperatures	Intermittent supply in Accra; heightened contamination during floods



WATER...





# SECURING SCARCE WATER RESOURCES

“The wars of this century have been over oil, the wars of the next century will be over **water**”



Ismail Serageldin - 1995

## THE NILE BASIN: A WATER CONFLICT HOTSPOT

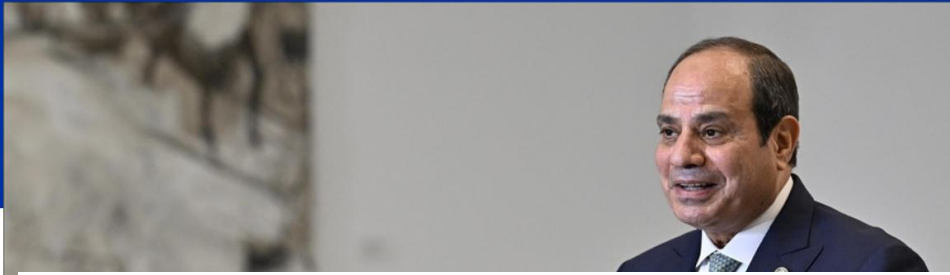
- The Nile is critical for Egypt, Sudan, and Ethiopia.
- Climate change and population growth (e.g., Ethiopia's energy requirements) strain water management.
- Egypt relies on Nile for 90% of water; upstream diversions could provoke tensions.

# WATER SECURITY

## Egypt welcomes Trump's call for 'just agreement' to dispute over Nile dam project

'Egypt also appreciates President Trump's keenness on reaching a just agreement that safeguards the interests of all parties regarding the Ethiopian Dam,' Egyptian president says

Hussien ElKabany and Betul Yilmaz | 15.07.2025 - Update : 15.07.2025



BBC

World

## Why is Egypt worried about Ethiopia's dam on the Nile?

13 September 2023

Share Save



## KEY STRATEGIES USED IN ADDRESSING WATER INSECURITY

- Adopt Sustainable Agricultural Practices
- Invest in Water Infrastructure
- Preserve and Restore Natural Ecosystems
- Encourage Water Reuse and Recycling



# Key strategies to address Water Insecurity

- Agriculture

Climate-smart agricultural practices, like drip irrigation, to reduce water use in farming while maintaining yields.





## Key strategies to address Water Insecurity

- Water Storage

Building and maintaining water storage infrastructure, such as dams, appears to be a practical step to buffer against droughts.





## Key strategies to address Water Insecurity

- Restore and Protect Wetlands, Mangroves, and Peatlands

- Conserve and restore ecosystems to maintain water quality, reduce flood risks, and store carbon.
- Improves natural filtration, flood protection, and carbon sequestration, supporting water security.

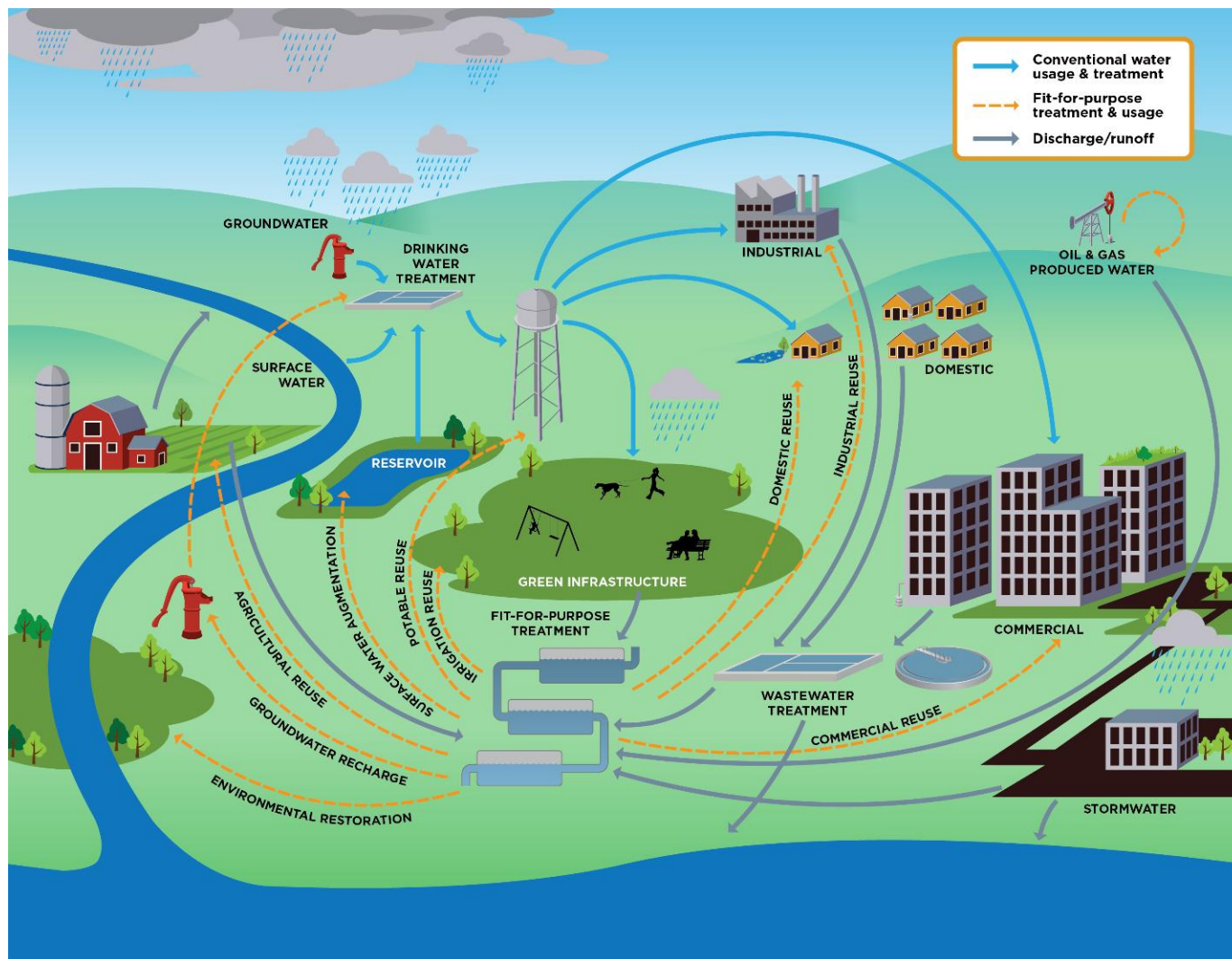




# Key strategies to address Water Insecurity

- Promoting Water Recycling and Reuse

Treating and reusing wastewater for non-potable uses like irrigation augments water supply, reducing demand on freshwater sources



## Conclusion and Call to Action

Climate change amplifies water scarcity, threatening security and development in Africa.

Join the IWA YWP Ghana Chapter to Support our efforts!



# COMMUNITY-BASED SOLUTIONS FOR WATER ACCESS AND SANITATION

Boitumelo Matshediso, IWA YWP South Africa Chapter

**inspiring change**





# WHO ARE THE IWA WISA YOUNG WATER PROFESSIONALS?



- **Who We Are:** We are an Empowerment Platform under WISA Founded in 2008; IWA YWP-ZA is a national network of early-career water professionals and students.
- **What We Do:** Build the capacity of youth to drive sustainable water solutions. YWP-ZA connects young experts from diverse fields, provides training and networking, and elevates youth voices in national and international forums.
- **Why Youth & Communities:** We see ourselves as a bridge between innovation and lived experience, empowering the next generation of water and sanitation leaders and ensuring youth voices are heard where it matters.

## Parent organisations



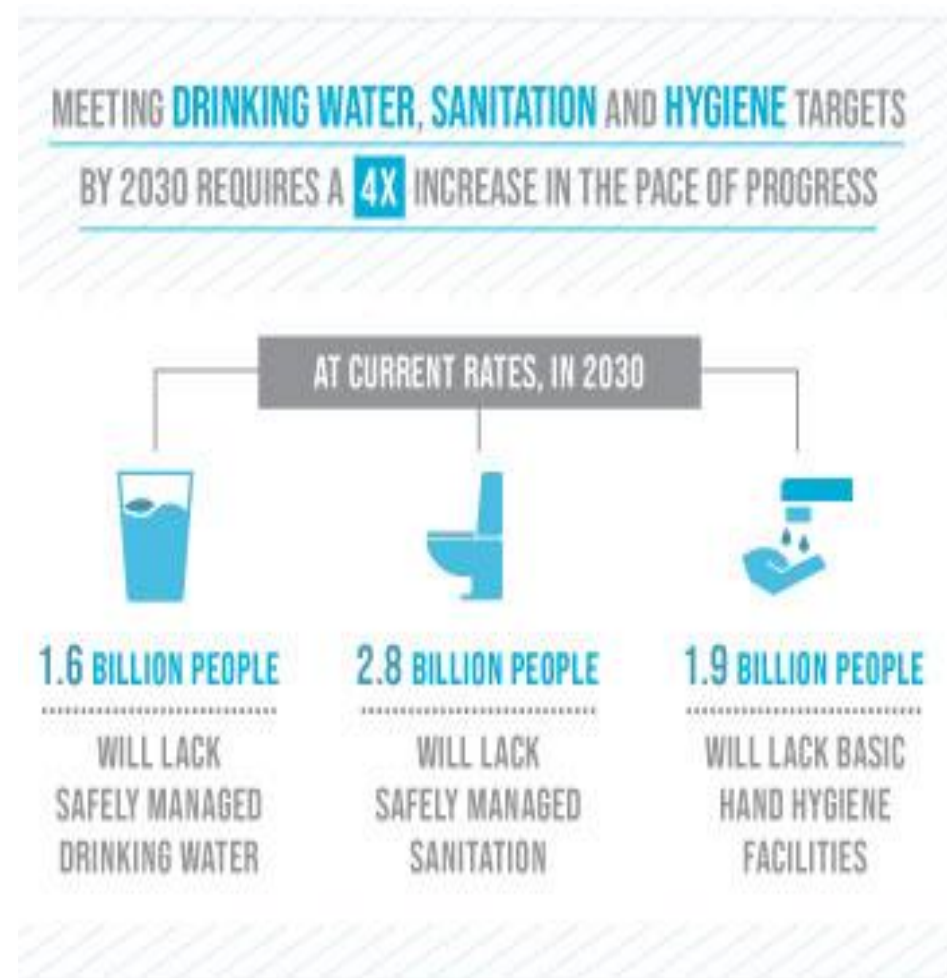
# WATER & SANITATION IN SOUTH AFRICA

## Progress Made:

- 83% of households have some form of sanitation. However, delivery is uneven, as many rural & informal areas still lack safe and reliable services.

## Ongoing Fragilities:

- The Hammanskraal cholera outbreak (2023) left +-30 dead, exposing the deadly impact of failing water infrastructure.
- Many communities still face frequent water cuts, unsafe water, and broken toilets.
- These challenges reveal that pockets of vulnerability persist, even in a relatively developed system.



# WHY COMMUNITY-BASED SOLUTIONS MATTER?

- **Global Water & Sanitation Gaps:** Millions lack safe water and toilets, especially in fragile regions. Community-driven approaches are crucial to closing this gap.
- **SDG 6b – Participation:** The UN explicitly calls for local community involvement in water and sanitation management.
- **Contextual Blind Spots in Engineering:** Many African engineering projects fail when they don't include community voices. Studies show that top-down retrofitting often ignores social, racial, and cultural contexts.
- **Empowering Communities:** When communities lead solutions, projects are more sustainable and context-appropriate. Local buy-in reduces dependency on outside aid.



# KEY APPROACHES – HOW COMMUNITY SOLUTIONS TAKE SHAPE?

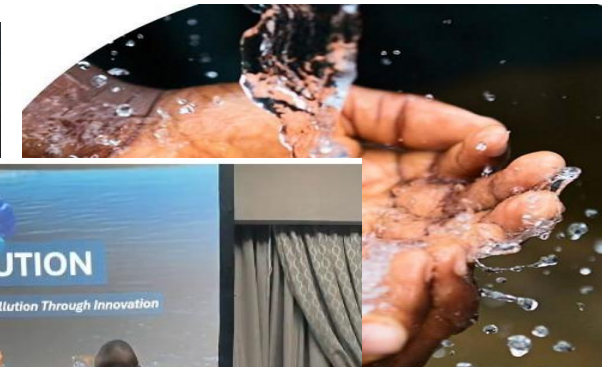
## Low-Cost Water & Sanitation Technologies

- Simple, affordable systems.



## Hygiene Promotion & Education

- Infrastructure alone isn't enough; behaviour change is essential.

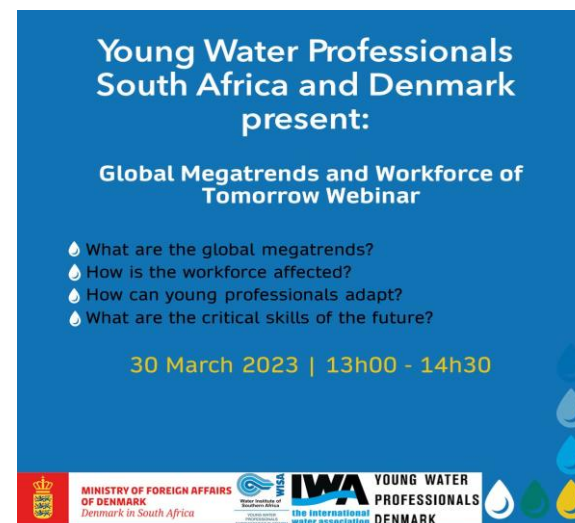


*Lasting change comes from combining the right technology with community ownership, education, and local leadership.*



# KEY APPROACHES – INCLUSION & PARTNERSHIPS

- **Empowering Women & Youth:** Women and young people are often closest to water challenges but are excluded from decisions.
- **Partnering for Impact:** Community efforts succeed when backed by strong partners.
- **Why It Matters:** Inclusive participation and multi-stakeholder collaboration ensure water solutions are trusted, responsive, and built to last.





# YWP-ZA IN ACTION – EMPOWERING COMMUNITIES



## Knowledge Sharing & Advocacy

- YWP-ZA hosts webinars and forums to raise community water issues and influence national policy.
- YWP-ZA advocates for engineering-social science integration, reminding youth innovators to include social realities in water designs.

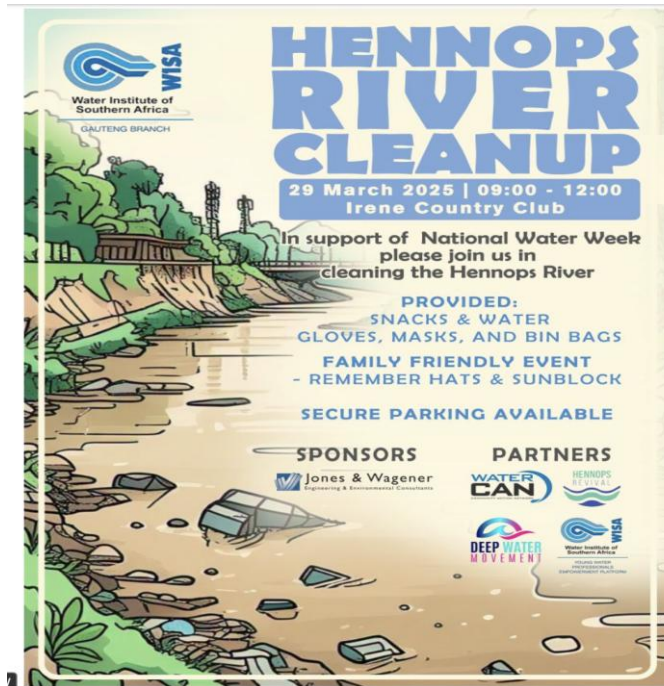
## Education & Environmental

- YWPs engage schoolchildren on water, hygiene, and sanitation, planting seeds for long-term stewardship.
- Clean-Ups - Chapters lead river and neighbourhood clean-ups, promoting local pride and environmental care.

## Innovation & Partnerships

- Through collaborations like WetSkills, YWPs co-create solutions with local communities and global partners.
- YWP-ZA also actively ensures these innovations remain community-centred, serving as expert mentors and adjudicators in WetSkills cases to reinforce the social impact of proposed solutions.

# YWP-ZA IN ACTION – EMPOWERING COMMUNITIES



The @YWPZA Limpopo Chapter in partnership with @LepelleW on the ground in Polokwane cleaning local wetland due to the high levels of pollution in the area and raising awareness about wetlands and the importance of keeping our environment clean! #WetlandCampaign #CommittedToAction

1:20 PM · Feb 24, 2023 from Cape Town, South A



Young Water Professionals South Africa @YWPZA · Mar 16

The @YWPZA Kwa-Zulu Natal Chapter was proud to be a partner with @UmgeniWater and BORDA (SA) on the important Wushini “WALK WITH ME - SCHOOL SHOES DRIVE” outreach program, assisting six schools in the Wushini area severely damaged by the April 2022 KZN floods





## CONCLUSION – DRIVING FORWARD COMMUNITY SOLUTIONS

### Water is Everyone's Responsibility

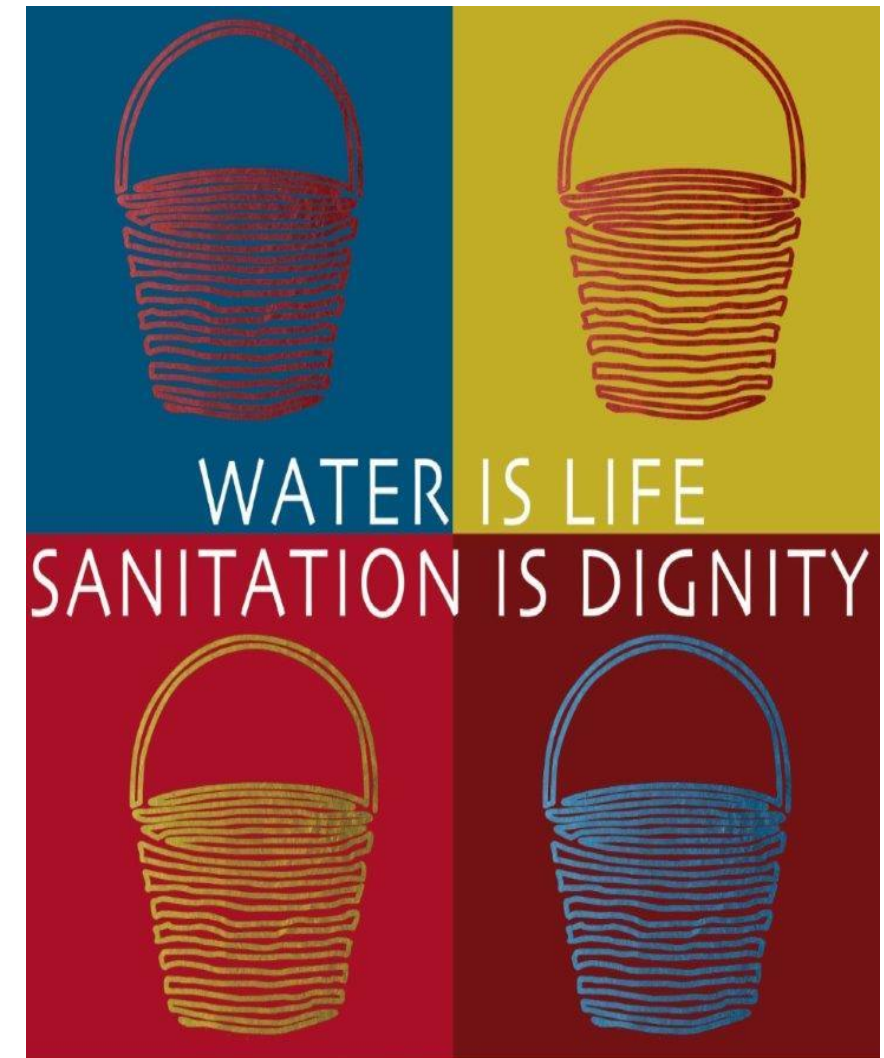
- Sustainable water and sanitation cannot succeed in silos.
- Engage communities and collaborate across disciplines, from engineers to educators, from youth groups to policy-makers.

### YWP-ZA's Commitment

- Innovating with communities, not for them.
- Building capacity through education and action.
- Breaking silos by uniting voices across sectors.

### Call to Action:

- Whether you're a student, researcher, or decision-maker, partner with youth, support grassroots efforts, and centre community voices in your work.



# YWP-ZA 2024-2026 NATIONAL COMMITTEE



**ANYA EILERS**  
OUTGOING NATIONAL  
LEAD



**LINDIWE NKABANE**  
NATIONAL LEAD



**CRAIG TANYANYIWA**  
NATIONAL VICE LEAD



**MMAKGOMO MALATJI**  
NATIONAL VICE LEAD



**PHILADELPHIA NGOBENI**  
NATIONAL  
MARKETING AND  
COMMUNICATIONS LEAD



**BIOTUMELO MATSHEDISO**  
NATIONAL  
FINANCE LEAD



**ALUVUYO BIXA**  
NATIONAL  
COORDINATION LEAD





# YWP-ZA 2024-2026 NATIONAL COMMITTEE



**PHATHUTSHEDZO MATHULE**  
LIMPOPO LEAD



**ONKARABILE MOOKETSA**  
NORTH WEST LEAD



**CHARLENE SIBANDA**  
EASTERN CAPE LEAD



**NOMPILO CHILIZA**  
KWAZULU NATAL LEAD



**TSHIRELETSO MADUMO**  
GAUTENG LEAD



**BOMKAZI VAVA**  
WESTERN CAPE LEAD



# 8TH WISA YWP-ZA BIANNUAL CONFERENCE



Water Institute of  
Southern Africa

YOUNG WATER  
PROFESSIONALS  
EMPOWERMENT PLATFORM

**8<sup>TH</sup>**

**WISA Young Water Professionals Conference**

**FROM SILOS TO SYNERGY:**

**SUSTAINABLE AND COLLABORATIVE WATER MANAGEMENT SOLUTIONS**

**November, 25 - 27 2025**

**The Boardwalk, Gqeberha, Eastern Cape South Africa**

THANK YOU!



Young Water Professionals  
South Africa



@YWPZA



YOUNG WATER  
PROFESSIONALS  
SOUTH AFRICA



Water Institute of  
Southern Africa

YOUNG WATER  
PROFESSIONALS  
EMPOWERMENT PLATFORM

# INNOVATIONS IN WATER MANAGEMENT AND BUSINESS-DRIVEN SOLUTIONS

Victor Ambuso, IWA YWP Kenya Chapter





# OVERVIEW

- Smart Water Management.
- Community Engagement and Capacity Building.
- Policies in Water Management.



# SMART WATER MANAGEMENT

Some of the interventions include;

- Use of prepaid Dispensers
- Water ATMs
- Smart meters
- “Jisomee” Meters
- Service reliability.
- Maximization of revenue collection
- Informed decision Making.
- Non-Revenue Water management.



# Community Engagement and Capacity Building

Community engagement plays a key role in the success of the various intentions in the communities;

- Ownership of projects
- Supporting Local Initiatives
- Dissemination of utilities policies
- Equity and inclusivity





## Governance in Water Management

Players in the sector as far as governance is concerned include;

- Governments(National/State/Counties)
- Regulators
- Private sectors
- Communities
- International Communities.

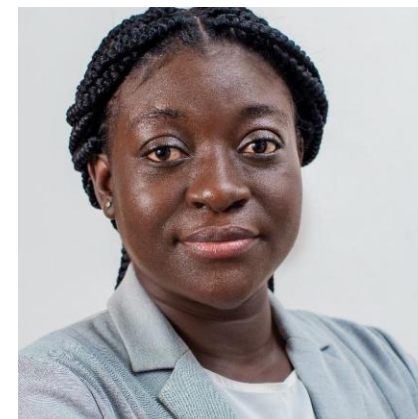
Coordinated efforts are very critical among the players in the sector to ensure that these interventions are actualized.

**THANK YOU!**

# Q&A

Jacqueline Sampah-Adjei – IWA YWP STEERING COMMITTEE

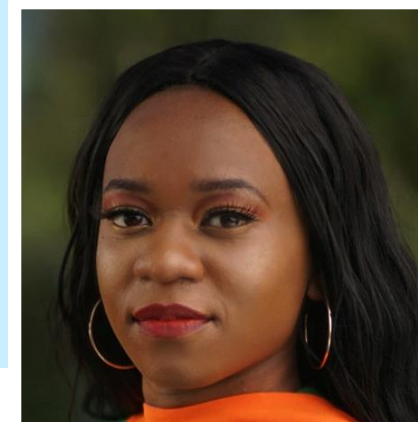
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# RECAP AND KEY TAKEAWAYS

Natasha Mumba - IWA YWP STEERING COMMITTEE (Vice Chair)




# UPCOMING IWA EVENTS



**YOUNG WATER  
PROFESSIONALS**


# **YWP GET-TOGETHER**

## **Championing Meaningful Youth Engagement (MYE) in the Water Sector**

**12 AUGUST 2025**  
09:00 BST

**REGISTER NOW**  
[www.iwa-network.org/iwa-learn](http://www.iwa-network.org/iwa-learn)

**YOUTH  
ACTION  
FOR SDG6**  


**YOUNG WATER  
PROFESSIONALS  
PHILIPPINES**

## UPCOMING IWA EVENTS

The poster features a background image of a city skyline (London) with a network of glowing blue lines and nodes overlaid, symbolizing connectivity and technology. A faint world map is visible in the upper half. The text is centered and uses a mix of blue and yellow colors.

**WATER HORIZONS 2025**  
**Transforming Utilities for a  
Resilient, Net Zero Future**

**24-25 SEPTEMBER 2025**  
**LONDON, UK**

**IWA**

[www.waterhorizonsevents.org](http://www.waterhorizonsevents.org)



# UPCOMING IWA EVENTS



Theme: Water, sanitation & innovation – pathways to progress and a resilient future

Join experts and innovators tackling challenges around:

- ✓ Safe drinking water
- ✓ Sustainable wastewater treatment
- ✓ Smart water management
- ✓ Utility operations and governance
- ✓ Protecting ecosystems from land to sea

Early bird ends 31 August.














# UPCOMING IWA EVENTS



**IWA** the international water association **WATER AND DEVELOPMENT CONGRESS & EXHIBITION** 8-12 December 2025 **BANGKOK THAILAND**

**7th Emerging Water Leaders Forum Programme Committee**

 <b>CHELSEA HAYWARD</b> AUSTRALIA CHAIR	 <b>HAYAT RAZA</b> CANADA	 <b>DANIA AL KHAFAJI</b> IRAQ	
 <b>DYLAN CLARKE-HERBERT</b> BARBADOS	 <b>MERCELINE OLALA</b> KENYA	 <b>CHOTIWAT JANTARAKASEM</b> THAILAND	 <b>NICOLE NAWROT</b> POLAND
 <b>YUMENG ZHAO</b> CHINA	 <b>OMI KUMARI</b> INDIA	 <b>EVELYN MUKAJUSI</b> UGANDA	 <b>IFTITA RAHMATIKA</b> INDONESIA



# UPCOMING IWA EVENTS



## Digital Water Summit

ISTANBUL TÜRKIYE

7-9 April 2026

Join the Transformation Journey

[www.digitalwatersummit.org](http://www.digitalwatersummit.org)

SAVE THE DATE!





# UPCOMING IWA EVENTS



Shape the future of water at the #WorldWaterCongress 2026 in Glasgow!

From 4–8 October, join 10,000+ global water leaders to drive bold ideas and real-world solutions for a resilient and prosperous future.

Submit your proposal for:

- Technical Presentations
- Interactive Workshops
- Hands-on Training Sessions

Theme: Water Action – The Path to Resilience and Prosperity

## JOIN OUR NETWORK OF WATER PROFESSIONALS!



IWA brings professionals from many disciplines together to accelerate the science, innovation and practice that can make a difference in addressing water challenges.

Use code **YWP25** for a **20% discount off** for a new membership.

Join before 31 December 2025 at:

<https://iwa-network.org/join/>

inspiring change

## JOIN OUR NETWORK OF WATER PROFESSIONALS!



### **Exclusive Members Discounts**

- Short-term courses
- Self-paced courses
- Webinars (live and on-demand)
- Master's Degree (in partnership)

### **IWA Treasure Chest on Connect Plus**

Over 8,000+ resources free to use with your IWA membership - Enjoy a rich range of water sector content from around the world.

### **IWA Learn**

Access content from a diverse, global network of professionals through networking, collaboration and exchange of knowledge

### **IWA Communities**

Engage with water professionals around the world, join specialised communities and explore your potential as leader of these groups.



<https://iwa-network.org/young-water-professionals/>