



Capacity Building Program:

AI driven Digital Twin for Water Management for Limpopo River Basin and Inclusive Integration with Citizen Science

The International Water Management Institute (IWMI), in partnership with DIWASA, Enabel and CGIAR Digital Transformation Accelerator, cordially invites LIMCOM and member states to participate in a pivotal capacity building workshop, "**AI-driven Digital Twin for Water Management for Limpopo River Basin and Inclusive Integration with Citizen Science**," The event will be held in Gaborone, the capital of Botswana, from **9–11 June 2025**.

This three-day event aims to maximize the unique opportunity for collaboration, fostering innovative solutions for transboundary water management through stakeholder engagement.

Workshop Overview:

- **Day I (9 June 2025):** Digital Twin for River Basin Management – Exploring digital twin technologies, including live demonstrations and hands-on case studies on critical issues like - environmental flow, dam monitoring, irrigated area mapping and seasonal forecasting.
- **Day II (10 June 2025):** AI for Water Management – Focusing on AI governance, ethical issues, prompt engineering, and hands-on sessions with IWMI's Water Co-pilot prototype.
- **Day III (11 June 2025, Parallel Sessions):**
 - *Citizen Science Co-design* – Developing digital tools and co-designing data visualization and interpretation,
 - *Digital Twin for Researchers/Practitioners* – Hands-on training with Digital Earth Africa platforms, focusing on remote sensing and Python-based applications.
 - Listening Session Botswana - focusing on data challenges, data products, and capacity building needs

Emergency Contacts:

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Venue:

Permanent Okavango River Commission (OKACOM) Secretariat Boardroom, Ministry of Water & Human Settlements, Gaborone, Republic of Botswana (<https://www.okacom.org/>)



Schedule

Daily Reporting Time: 08:30-08:45 AM

(H: Hands on, D: Demonstration, P: Presentation)

Day I – 9 June 2025 digital twin for river basin management		
Time	Description	Contributors
8:30 – 9:00	Registration	
9:00-10:00	Welcome - Opening remarks by IWMI and LIMCOM representatives - Keynote speech from Hosting Member - Enabel opening remarks - Launch Official Partnership LIMCOM and IWMI for Citizen Science	Henry (IWMI), Sergio (LIMCOM), Hosting Member state member and Enabel (online)
10:00- 11:00	Overview of Digital Twin Project (P) - Digital Twin quick concepts and definitions recap - The vision for integrated water management across Africa Region a path toward scaling <u>Listening Session:</u> ☐ Data and capacity challenges ☐ Launch Digital Twin Task Team	Angie, Henry (IWMI), LIMCOM representative & LIMIS Task Team
11:00- 11:30	Group Photo and Tea	
11:30 – 12:00	Digital Twin Technology in Water Management (D) - Live demonstration of digital twin software platforms - Walk-through of user interface and functionalities - Overview of system components and data integration	Hugo
12:00 13:00	Hands on into Digital Twin Applications (H) Case studies on environmental flow monitoring, dam monitoring, water availability and seasonal forecast.	Hugo and Surajit
13:00 - 14:30	Lunch	
14:30 – 15:30	Hands on into Digital Twin Applications (H) Case studies on Irrigated area mapping and drought monitoring	Surajit and Zolo (online)
15:30 – 15:40	Break	
15:40 – 17:00	Feedback Session for Digital Twin Applications - MDII Survey – Digital Twin - Q&A session to clarify technical aspects - Participants feedback <u>Decision point:</u> Dates for capacity building in each country.	Hugo, Nicole and Felix

Day II - 10 June 2025 AI for water management		
9:00 – 10:30	Data and AI governance (P) - Foundation of Data and AI governance and what it means for transboundary water management <u>Discussion:</u> - Data and AI Capacity Challenges - Panel Discussion on AI and data policy, and system sustainability - Data access best practices and data challenges in water sector deployment	Angie and Daniella (Invited Speaker)
10:30 – 10:45	Coffee Break	
10:45 – 12:00	Hands on GenAI Basics: The art of prompt engineering (H) Introduction to GenAI and its applications in daily work. Understanding existing tools, Basics of Prompting, using GenAI for brainstorming, translation, researching ideas, and text analysis. AI Ethics Guidance and computational cost associated	Angie and Daniella
12:00 – 1:30	Lunch	
1:30 – 2:00	IWMI's Water Co-pilot prototype (D) - Intro to prompts for water management - Walk through functionalities	Hugo
2:00- 4:00	Hands On Water Co-pilot prototype (H) - Guided use cases - Reporting creation (multi-language capabilities) - Free testing	Hugo, Surajit and Keerthanan (Online), Zolo (Online)
16:00 – 16:10	Break	
16:10 – 17:00	MDII Survey – Water Co-pilot (P & D) - Feedback Question - New functionalities Request	Felix, Nicole and Daniella

Day III Parallel Session #1 - 11 June 2025: Session 1 Citizen Science		
9:00 – 9:30	Citizen Science Enable Project (P) From Concept to implementation and the vision for scaling - Enabel Presentation (15 min) - Citizen Science Project (10 m)	Henry, Enabel (Online) and UNICEF (Online)
09:30 – 10:00	Overview of the Citizen Science effort in the Limpopo River Basin (P) <u>GroundTruth (20 min and 10 min Q&A)</u> - Digital tools to enable data collection - Actors in the Basin - Present how these data have been visualized and used by management - examples as case studies - Implementation plan	GroundTruth (Online)



10:00 – 11:30	Co-design Visualization of citizen science data into the digital twin (P & H) Group discussion by countries to facilitate discussions • Purpose and applications of CS in DT • Identifying key success metrics • Co-development of visualization - on paper, freehand drawings and text, and at the end of the session, key findings to be consolidated <u>Decision Point:</u> Clear definition of the visualization tool for each member state, identify similarities and differences	Hugo, GroundTruth (online), Nicole
11:30 – 11:45	Coffee break	
11:45 – 12:15	Youth Incentivation and Digital Inclusivity (P) (20 min and 10 min Q&A) • Incentivization model - Education, engagement, upskilling • Inclusion evaluation of the project • Results from partner survey	Daniella, Nicole and UNICEF (Online)
12:15 – 12:20	Group photo	
12:20 - 14:00	Lunch	

Day III Parallel Session #2- 11 June 2025: Session 2 Digital Twin for Researchers (python skill required) Max 12 people		
9:00 – 9:30	DIWASA Concept and Implementation • DIWASA project overview • Integration of Digital Earth Africa (DEA) products into the digital twin platform • Applications developed on drought application	Hugo and Surajit
9:30 - 10:00	DEA & Digital Twin Technology in Water Management (D) • Overview of system components and data integration • Walk-through of user interface and functionalities • Live demonstration of the platforms	Hugo and Surajit
10:00 –10:15	Coffee break	
10:15 - 12:30	Hands on into Digital Twin Applications (H) • Group 1 (Remote sensing skill): Digital Twin Platforms • Group 2 (Python skill): DEA sandbox & API Access • Group 3 (No programming skill): Water Copilot	Hugo, Surajit Keerthanan (Online) and Zolo (Online)
	Wrap up the technical sessions	
12:30 - 14:00	Lunch	

Day III Round table discussion		
14.00 - 16.00	Data Availability and Accessibility for Sustainable Future High-Level overview and discussion on ▪ Available data and needs assessment	Angie, Henry, Hugo, LIMCOM and Host country



	- Data sharing protocol - Future plan to mitigate the data challenges - Collaboration scope Listening session with Botswana - Identify data challenges and scaling scope - Identify data products to push to LIMIS - Identify capacity-building needs	representative (Botswana Only), Researcher/student working in Botswana
16:00 –16:10	Break	
16.10 -16.30	Closing Remarks - LIMCOM closing points and feedback - Task Team Feedback - Next Step - Closing the session by the Host country representative	

Online meeting link

Time: Jun 9 to 11, 2025 (**9–11 June 2025**)

Join Zoom Meeting

<https://gwp-org.zoom.us/j/87261160492?pwd=sC37GO7XmuU8Jr9kUujdge6xgaWD2.1>

Meeting ID: 872 6116 0492

Passcode: 965452

