

24th WaterNet/WARFSA/GWP-SA Symposium Programme

Accelerating Change:
Fostering Innovation and Integration for
Sustainable Water Resources Management
in Eastern and Southern Africa

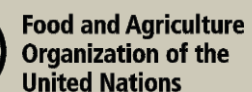
A blended event held virtually and at
Hotel Verde, Azam Resort and Spa, Zanzibar
United Republic of Tanzania

25th – 27th October 2023

Jointly convened with:

International Association of Hydrological Sciences (IAHS), AU/NEPAD Southern African Network of Water Centres of Excellence (AU/NEPAD SANWATCE), The Water Research Commission, the Food and Agricultural Organisation and the Local Organizing Committee led by the University of Dar es Salaam,

with support from the Government of the United Republic of Tanzania





Accelerating Change: Fostering Innovation and Integration for Sustainable Water Resources Management in Eastern and Southern Africa

Hotel Verde Azam - Zanzibar, United Republic of Tanzania

25 – 27 October 2023

Programme Manager: [Here](#)

Tuesday 24 October 2023	
14:00 - 20:00	Registration of Participants Venue: Robby
Wednesday 25 October 2023	
06:30 – 08:00	Registration of Participants / Welcome with tea Venue: Robby
	Official Opening Director of Ceremonies: Eng. Mgwisa Mpembe Rapporteurs: Ms. Naima A.M. Hersi & Mr. Faraji Nyudike Venue: Main Hall Link: Here
07:50	Visit of exhibition stands by: HE President of Zanzibar and Chairman of the Revolutionary Council, Dr. Hussein Ali Mwinyi
08:10	All Participants and Guests take seats, Singing of Anthems of Zanzibar, Tanzania and East Africa Community
08:20	Introductions by the 23rd Symposium Local Organising Committee Chairperson: Dr. Augustina Alexander
08:30	Welcome Speech: Vice Chancellor, University of Dar es Salaam: Prof. William-Andey Lazaro Anangisy
08:40	Remarks by the Chairperson of WaterNet Trust: Prof. Nnenesi Kgabi
08:50	Remarks by the Chief Executive Officer of the Water Research Commission: Dr. Jennifer Molwantwa
09:55	Remarks by the Executive Secretary of Global Water Partnership, Southern Africa: Mr. Alex Simalabwi
09:00	Remarks by the SADC Representative, Director Infrastructure and Services: Ms. Mapolao Mokoena
09:10	Remarks from Government Ministers Responsible for Education and Water
09:20	Keynote Address: Dr. Ade Freeman, Regional Programme Leader, FAO Regional Office for Africa - Science and Innovation for accelerating transformation of agrifood systems in Africa
09:40	Official Opening of the Symposium by the Guest of Honour: HE President of Zanzibar and Chairman of the Revolutionary Council, Dr. Hussein Ali Mwinyi
10:00	Citation on WaterNet Shields: WaterNet Executive Manager: Prof. Jean-Marie Kileshye Onema
10:05	Handover of WaterNet Shields by HE President of Zanzibar and Chairman of the Revolutionary Council: Dr. Hussein Ali Mwinyi to Institutions which have introduced Postgraduate Programmes in IWRM & ICM – Mbeya University of Science and Technology and the National University of Lesotho
10:15	Group Photo
10:25	Health Break

10:45 – 12:45					Sessions Start									
Changing hydro-climatic regimes and planning tools for climate resilient pathways			Water, Land, Energy and Agriculture			Open Special Session		Open Special Session						
Venue: Cardamom Link: Here			Venue: Cinnamon Hall Link: Here			Venue: Annato Link: Here		Venue: Maripa Link: Here						
Chair: Dr. Kawawa Banda Rapporteurs: Ms. Fortunate Kayira & Ms. Mwamba Safi Cynthia			Chair: Dr. Anna Matros-Goreses Rapporteurs: Mr. Mussa Kamanula & Mr. Misheck Chundu			Chair: Mr. Elisha Madamombe Rapporteur: Dr. Loreen Katiyo		Chair: Dr. Mamohlong Tlhagale Rapporteurs: Mr. Lehlogonolo Shane Tabana & Ms. Thandeka Ngobe						
10:45	Kechnit D, Tshimanga R, Ammari A & Trigg M <i>Virtual</i>	Application of remote sensing and in-situ measurements for discharge monitoring in large river.	van Lieshout A, Vekerdy Z & Rincon D.C	Research and Capacity Development for Water and Food Security using EO and Cloud Computing.	<p>Enhancing Transboundary Cooperation Between Mozambique and Zimbabwe in the Buzi, Pungwe and Save(BUPUSA) Shared Watercourses</p> <p>Convener: Global Water Partnership</p> <p>Programme Introduction to the Session: L Katiyo Keynote presentation: L Madamombe</p> <p>Reactions to the keynote presentation: Panel Members: IUCN; Member State Representatives for Moz & Zim; LIMCOM; SADC-GMI; UNESCO; World Bank; Development Partner representatives</p> <p>Question and answer session to the panel: All</p> <p>Closing remarks for the session: IUCN, Mr. Saruchera & Ms. Zuma</p>					<p>Strategic Engagement: Working with the Youth as the Future Leaders of the Water Sector</p> <p>Convenors: Water Research Commission, WaterNet, IUCN, University of KwaZulu-Natal & the University of Dar es Salaam</p> <p>Programme Welcome and introductions Opening remarks: Tlhagale M</p> <p>Co-convenor addresses:</p> <p>Opening Address: Capacitating the youth for current and future water resources management in Eastern and Southern Africa: Nobert J</p> <p>Keynote address: Youth participation to leadership in the African water sector: Molwantwa J</p> <p>Remark: Youth leadership in the Water and Sanitation sector: Otieno B.O</p> <p>Panel discussion: What are needs, priorities and challenges of the South and East African youth within the water sector Facilitator: Feziwe Mamba</p> <p>Southern Africa Speakers: Ms. Tavonga Takawira (<i>Zim</i>) Mr. Mussa Kamanula (<i>Malawi</i>) Zanele Lulane (<i>eSwatini</i>) Ms. Murenden Patriciah Ravele, M.r Sikelela Mqhayi</p> <p>East Africa Speakers Ms. Anne Njeri Mugatha (<i>Kenya</i>) Mr. Alphonce John Haruna (<i>Tanzania</i>)</p> <p>Facilitated discussion: How do we work together with the unit (priority areas, action points and responsibilities (panel and participants Facilitator: Prof. Mabhaudhi T</p> <p>Way forward and closure: Tlhagale M</p>				
11:00	Mwamba C.S, Kileshye Onema JM & Tshimanga R	Remote sensing and ground applications for reduced vulnerability to flooding in N'Djili River watershed, Kinshasa- DR Congo.	Conway D	Characterising and addressing water-energy-food interdependencies in the Rufiji River Basin, Tanzania.										
11:15	Paris A, Gal L, Oliveira R.J, Calmant S, Gosset M, Papa F, Kitambo B, Wongchuig S, Boussaroque M, Fleischmann A, Moreira D.M, Tshimanga R, Crétaux J.F, Andriambelosom J & Bogning S	Operational hydrology from space: prospects for African ungauged rivers.	Nhamo L, Mpandeli S, Liphadzi S, Molwantwa J & Mabhaudhi T	An integrated geospatial and multi-criteria decision approach and the factors required in irrigation suitability mapping.										
11:30	Dube T, Shoko C & Seaton D	Advancements in Earth Observation for Water Resources Monitoring and Management in Africa: A Comprehensive Review.	Nowbuth M.D, Torabally N.I & Joojee D <i>Virtual</i>	Using Remote Sensing and Geographic Information System (GIS) in Support of Sustainable Agricultural Development.										
11:45	Winsemius H, Annor F, Banda K, Hagenaaers R, Peña-Haro S, Grimmeisen F, Mather S, Realini E, Gatti A & Van De Giesen N	Co-development of Innovative and affordable surface water observations, the TEMBO Africa project.	Yaou L.O, Tshimanga R.M & Kihumba A.M	Assessment of irrigation potential in the N'djili River watershed.										
12:00	Kayira F, Chunga B, Wanda E & Ungwe A	Hydrogeochemical modelling of groundwater quality in Salima and Lilongwe districts in Malawi.	Paulus P.T, Muzhinji N, Borgemeister C, Chimwamurombe P & Ateba C	Application of water quality indices to characterise the physico-chemical properties of irrigation water in Namibia.										
12:15	Hersi N.A.M, Mulungu D.M.M & Nobert J	Getting ready for the impact of climate and land use change on groundwater recharge in Internal Drainage Basin, Tanzania.	Kotchofa P	Addressing Spatial Water Scarcity Issues in Ethiopia.										
12:30	Gomo M & Ngobe T	Hydrogeophysical investigation of the groundwater-pans interaction in the Khakhea – Bray dolomite transboundary aquifer (TBA).	Owusu A, Kagone S, Velpuri N, Leh M, Gumma M, Ghansah B, Thilina-Prabhath P, Akpoti K, Gebreyesus K, Tinonetsana P & Mohammed I	A Continental-Scale Framework for Partitioning Rainfed and Irrigated Croplands.										

12:45 – 13:45						Lunch Break							
13:45 – 15:45		Changing hydro-climatic regimes and planning tools for climate resilient pathways		Water, Land, Energy and Agriculture		Special Session		Special Session					
		Venue: Cardamom Link: Here		Venue: Cinnamon Hall Link: Here		Venue: Annato Link: Here		Venue: Maripa Link: Here					
		Chair: Dr. Kawawa Banda Rapporteurs: Ms. Cathrine Tlotlo Kerapetse & Ms. Mery Beatriz Marcelino Rodrigues		Chair: Dr. Anna Matros-Goreses Rapporteurs: Ms. Teboho Masupha & Mr. Petrus Tuhafeni Paulus		Chair: Prof. Innocent Nhapi Rapporteurs: Dennis Besigye, Placide Nshuti Kanyabujinja & Precious Agbesor		Chair: Ms. Ruth Beukman Rapporteurs: Mr. Carinus de Kock					
13:45	Hashweh L, Adar E & Reichert B	Assessing the shallow groundwater-streamwater interaction and flow trajectories in a wetland –“An example for the Ewaso Narok Floodplain, Kenya”.	Mabaya G	Impact of past irrigation rehabilitation efforts on the overall irrigation performance of smallholder irrigation schemes in Zimbabwe.	Water Resources Development and Management for Sustainable Agriculture Convener: Food and Agricultural Organization Programme Welcoming Remarks: Nzeyimana V Irrigation Development and Agricultural Water Management Strategy in Sub Saharan Africa, Main considerations (FAO RAF): Nzeyimana V Water Development for Livestock, Case of FAO Nigeria: Agbesor P Rainwater Harvesting for Agriculture Production, Case of FAO Uganda: Besigye D Small Scale Irrigation technologies in Rwanda, Innovative Approach to reduce Poverty and Hunger: Kanyabujinja P.N Closing Remarks	SADC Water Research Agenda – Sharing Results of Review and Update Convener: AUDA-NEPAD SANWATCE <i>(Southern African Network of Water Centres of Excellence)</i> Welcoming: de Kock C Opening address, setting the scene: SADC Water Introduction Background Presentation: SADC Water Research Agenda, Beukman R Reflection and Guidance: Beukman. R Discussion: Reflecting on the implementation of the Agenda: Discussion: Key themes and critical issues Closure and way-forward: Beukman R							
14:00	Mathuthu M, Mokhine N.D, Bowker S.L.A, Mathuthu J, Hendriks J & Dennis I	Determining the Recharge and Discharge Mechanisms of Ground Water Systems in the Gauteng and North West provinces of South Africa.	Olagbaju P.O & Wojuola B.O	Radiotoxic Assessment of Irrigation Water in Rustenburg, South Africa.									
14:15	Nhamo L, Mpandeli S & Mabhaudhi T	Prospects to sustainably manage water-related ecosystems under climate change and increasing demand.	Lyoba C, Tembo G, Chundu M, Banda K & Nyambe I	Land Use-Land Cover Change and Perception of Drivers in the Bangweulu Wetland and surrounding areas, Zambia.									
14:30	Chikozho, C <i>Virtual</i>	Understanding the Landscape of Long-term Strategy Development for Climate Change Adaptation Planning in Africa.	Masupha T, Moeletsi M & Tsubo M	Utilizing Innovative Technologies to Enhance Drought Prediction and Management for South Africa’s Agriculture.									
14:45	Kerapetse C.T	Hydro-climate variability assessment of water stressed semi-arid areas: Rainfall & Temperature analysis of Notwane Sub-Catchment.	Mapedza E, Gbегelegbe S, Huyer S, Mudege N, Homann-Kee Tui S, Nortje K, Jacobs-Mata I, Mutenje M, Kasoma-Pele W.K, Fakudze B & Gondwe T	Gendered Perception of climate change and implications for Climate Smart Agriculture.									
15:00	Shinhu R, Amasi A & Wynants M	Assessing the impacts of current land use and climate changes and future climate changes on river discharge towards Lake Victoria.	Kessy J, Alexander A & Mtamba J	Assessment of land use/cover change and its impacts on the surface water quality of the Mara River Catchment, Tanzania.									
15:15	Van Griensven A & Mukama E.B	Understanding the Interplay of Climate Variability and Human Activities in the Water Scarcity of the Great Ruaha Basin.	Moses B	Analysis of silting trends of Lwanyo Dam.									
15:30	Kibii J & Du Plessis K	Applicability of CHIRPS-based Pitman Model for Simulation of Projected Climate Change Flows.	Kibiiy J, Ndanga C & Mukuwa J	Soil stabilization using STEIN for multi-purpose use.									
15:45 – 16:00							Health Break						

16:00 – 18:00	Changing hydro-climatic regimes and planning tools for climate resilient pathways	Open Special Session	Open Special Session	Open Special Session
	Venue: Cardamom Link: Here	Venue: Cinnamon Hall Link: Here	Venue: Annato Link: Here	Venue: Maripa Link: Here
	Chair: Dr. Kawawa Banda Rapporteurs: Ms. Thandeka Ngobe & Ms. Anne Mugatha	Chair: Dr. Eben Chonguica Rapporteur: Dr. Eddie Riddell	Chair: Prof. Bongani Ncube Rapporteur: Dr. Evans Shoko	Chair: Dr. Marloes Mul Rapporteur: Dr. Seleshi Yalew
16:00	Mugatha A, Valimba P & N Robert J Flood inundation mapping for the Tana River Basin, Kenya.	Knowledge management approaches to informed transboundary planning in the Limpopo Basin	Water Governance and Economics as enablers for Innovation and Integration in Sustainable Water Resource Management	Remote Sensing for Water Accounting and Water Productivity Assessments in Africa – Spotlighting the WaPOR Database
16:15	Nyudike F, N Robert J & Munishi S Multi-Criteria Analysis of Water Allocation Scenarios in Kagera Basin, Tanzania.	Convenors: Limpopo Watercourse Commission & Global Water Partnership Southern Africa	Convenors: Cape Peninsula University of Technology- SA, CIRAD-France, University of KwaZulu-Natal-SA, Water Research Commission-SA, University of Zimbabwe & University of Waterloo-Canada	Convenors: IHE, FAO & IWMI
16:30	Gaegane L Integration of built and ecological infrastructure for sustainable dam catchment management in South Africa.	Programme	Programme	Programme
16:45	Winsemius H, Klein Holkenborg E, Gortzak E, Van den Homberg M, Comes T & Nyoni F Towards world-wide estimation and prediction of reservoir water volumes.	Introduction to the Session: Riddell E	Opening and welcome	Part I: Introduction: Moderators: Dr. Marloes Mul & Dr. Seleshi Yalew
17:00	Juizo D, Nhantumbo C, Macia A, Duvail S & Hamerlynck O Approach for estimating the environmental flow for Incomati River Basin Estuarine.	Keynote presentation: Chonguica E	Evolution of policy programs and outcomes – a global overview: Swatuk L	Introduction to WaPOR: Livia Peiser - WaPOR technical officer, Land and Water Division, FAO, Rome
17:15	Kamamba M, Banda K, Sichingabula H, Nyambe I Forest-Water Nexus: An Evapotranspiration assessment of the Kafue River Sub-Basin using remote sensing.	Reactions to the keynote presentation: All	Training on water economics and governance in Southern Africa: Farolfi S & Jourdain D	WaPOR quality assessment: Dr. Marloes Mul, Assoc. Professor of Water Resources Management, IHE Delft Institute for Water Education, Delft
17:30	Mokua R.A, Glenday & Mazvimavi D Understanding the drivers of the catchment hydrological cycle of the Jonkershoek Catchment, South Africa.	Question and answer session to the panel: All	Water Research Commission research in water governance in South Africa – challenges and opportunities: Dini J	Demonstration of a WaPOR based application: Dr. Seleshi Yalew, Lecturer/researcher on Land and Water Management, IHE Delft Institute for Water Education, Delft
17:45	Jumbi F.T, Mazvimavi D & Glenday F Understanding dominant hydrological processes and mechanisms of water flow in a semi-arid mountainous catchment.	Closing remarks for the session: Katiyo L	Water Governance in Zimbabwe: Makurira, H	Part II: Invited talks Moderators: Dr. Marloes Mul & Dr. Seleshi Yalew
			Water governance and economics in agricultural water management in Southern Africa: Mudhara M	FAO local representatives: WaPOR applications and capacity development in Africa
			SARChI Research Chair in Governance and Economics of Water and Sanitation Sector Institutions: Ncube B	IWMI representative: WaPOR applications in selected cases in Africa
			Discussion: Bringing it all together	Part II: Interactive Panel Moderators: Dr. Marloes Mul & Dr. Seleshi Yalew
				Panel discussion on the future prospects of remote sensing data in water management Q&A segment
				Closing Remarks

18:00-19:30	Poster Session Venue: Hotel corridor facing the Garden Area				
	Chair: Dr. Olagbaju Peter Oluwadamilare Rapporteurs: Ms. Dyna Uwambajimana & Mr. Joseph Mathuthu				
	Water, Ecosystems and the Environment for Poster Presentation	Changing hydro-climatic regimes and planning tools for climate resilient pathways	Innovative approaches, practices and technologies for affordable water supply, and sanitation services	Water governance for sustainable, equitable and affordable water services	Water, Land, Energy and Agriculture for poster presentation
	Number of posters for presentation: 9 See page 12 for details regarding each poster Posters being presented by young scientists have a green sticker of their pictures on the top right corner	Number of posters for presentation: 2 See page 12 for details regarding each poster Posters being presented by young scientists have a green sticker of their pictures on the top right corner	Number of posters for presentation: 8 See page 12 or details regarding each poster Posters being presented by young scientists have a green sticker of their pictures on the top right corner	Number of posters for presentation: 1 See page 12 for details regarding each poster Posters being presented by young scientists have a green sticker of their pictures on the top right corner	Number of posters for presentation: 8 Posters being presented by young scientists have a green sticker of their pictures on the top right corner
19:30 – End	Cocktail Venue: Hote Verde Garden				
19:00	Arrival of guests and entertainment				
19:45	Welcoming Address: Local Organising Committee				
19:50	Launching of SANWATCE Governance: Carrinus De Cock				
20:10	Dinner				
21:30	Entertainment and socialising				

Thursday 26 October 2023	
08:00 – 10:00	Scientific Plenary Session Venue: Main Hall Link: Here
	High level Panel: Implementation and operationalisation of integrated water resources management for accelerating change in the water sector
	Chair: Prof. Jean-Marie Kileshye Onema Rapporteurs: Ms Muvhulawa Mulaudzi & Mr Nlend Bertil Yvon
Part 1: High Level Panel	
08:00	Opening Remarks: Prof. Graham Jewitt
08:10	Introductions of Panelists: <ul style="list-style-type: none"> • Prof. Berit Arheimer: President of the International Association of Hydrological Sciences (IAHS) • Dr. Jennifer Molwantwa: Chief Executive Officer, Water Research Commission (WRC) <ul style="list-style-type: none"> • Mr. Alex Simalabwi: Executive Secretary, Global Water Partnership SoGWPSA • Dr. Anna Matros-Goreses: Executive Director, Research, Innovation and Partnership, Namibia University of Science and Technology (NUST) <ul style="list-style-type: none"> • Dr. George V Lugomela - Director of Water Resources Division, Ministry of Water
08:20	Questions to each panelists: Moderator
08:55	Questions to panelists from the floor
09:15	Summary of main points Way Forward: Mabhaudhi, T
Part 2: Launch International Association of Hydrological Sciences (IAHS) East Africa Chapter (Facilitator: Dr. Richard Kimwaga)	
09:25	Introduction remarks: Kongo V (Eastern Africa IAHS Regional Coordinator)
09:27	History and overview of IAHS Africa: Makurira H (Chair of Africa IAHS Board)
09:35	Global overview of IAHS and vision for Africa: Kileshye-Onema J.M (Secretary General IAHS)
09:40	Special IAHS Africa issue: Afua O (West Africa IAHS Regional Coordinator)
09:45	Launch of the Eastern Africa Chapter: Arheimer B (President of IAHS)
09:50	Way forward for Eastern African IAHS Chapter: Kongo V (Eastern Africa IAHS Regional Coordinator)
09:55	Vote of thanks on the IAHS launch: Mashauri D (Professor University of Dar es Salaam)
09:57	Closing Remarks On The Scientific Plenary: Prof. Ngila J.C
10:00 – 10:30	Health Break

10:30 – 12:45	Water, Ecosystems and the Environment		Innovative approaches, practices and technologies for affordable water supply, and sanitation services		Water governance for sustainable, equitable and affordable water services		Open Special Session
	Venue: Cardamom Link: Here		Venue: Cinnamon Hall Link: Here		Venue: Maripa Link: Here		Venue: Annato Link: Here
	Chair: Prof. Timothy Dube Rapporteurs: Ms. Feziwe B. Mamba & Ms. Zouera Sani Boubacar Goube Gaoth		Chair: Dr. John Ngoni Zvimba Rapporteurs: Ms. Marinette M. Bira & Ms. Conceptor Siafwanzya		Chair: Dr. Joseph Mtamba Rapporteurs: Mr. Sascher Tinashe Wagoneka & Mr. Edny Mucavele		Chair: Ms. Palesa Lefojane Rapporteur: Ms. Matseko Rankhasa
10:30	Mamba F.B, Mbuli B.S & Ramontja J	Improving the Efficiency of Dye and Heavy Metal Removal from Wastewater using Carrageenan Graphitic Carbonitride Bimetallic Decorated Biopolymeric Nanocomposites.	Chidavaenzi M, Chitsa G & Makoni F	Sand Abstraction; an alternative water supply for multiple uses in rural areas of Zimbabwe.	Tyhoyholo T & Ncube B	Structural configurations for South African urban water governance: the case of Cape Town.	<p>Integration of Catchment Planning Processes for Successful implementation of ICM in Lesotho Convenors: RENOKA, GIZ, WaterNET</p> <p>Programme Welcome Remarks: WaterNet</p> <ul style="list-style-type: none"> Objectives of Session & Interface TWM – ICM Lesotho Interface of ReNOKA and TWM Highlight of TWM activities e.g. Transboundary Campaigns Lessons learnt from the last Symposium GIZ – Palesa; GIZ – Mahlalele; Sethako <ul style="list-style-type: none"> ReNOKA – In a nutshell ICMDP - Overall Process Climate risk and vulnerability assessment (CRVA) Causal and Impact Chains ICU – Nthatua Kuleile <p>CAP Overall Process: ICU - CM Compendium of measures: GIZ – Mamojakisane Mojakisane Local level financing mechanism: UNCDF LoCAL – Mabohlokoa - Tau</p> <p>Monitoring Renoka Land Cover Atlas: Data Reference Group</p> <p>Skills & Knowledge: NUL contributions to ReNOKA: NUL WI Dr. Thamae Support to Tertiary Education: WaterNet</p> <p>Q&A facilitated discussion: Takeaways for the audience</p> <p>Closing remarks: WaterNet</p>
10:45	Mqhayi S, Clark S & Lindsay R	Investigation of radon, its geochemical interactions and application in understanding groundwater-surface water interactions, Heuningnes Catchment, South Africa.	Murebwayire M.L, Muhirwa E & Makoni F	Using mWater application to monitor the water services infrastructures: A case of Rwanda Universal Water Coverage.	Shoko E & Ncube B	Cooperation in common property resource management: a group engagement approach.	
11:00	Onwudiwe D, Seheri N & Kgabi N	The removal of As and Pb from groundwater using functionalized graphitic carbon nitride as adsorbent.	Ngambi M & Samuyachi J	Sanitation and Hygiene as a key driver for water supply provision - Case Study of World Vision's Water, Sanitation and Hygiene Program,Zambia.	Williams S, Ncube B & Carolissen M	An interface between indigenous knowledge and legislative frameworks and scientific research for sustainable water management.	
11:15	Ravele M & Onwudiwe D.C	Photocatalytic removal of ibuprofen from water using CuO nanoparticles incorporated into graphitic carbon nitride.	Zvimba J, Musvoto E & Mgwenya N	"Pathways, challenges and role of innovation as accelerator for transitioning water services to a circular economy".	Moolman J & Cronje Alberts R	Identifying key risks to the effectiveness of the Orange-Senqu River Commission Agreement: An overview of preliminary results.	
11:30	Lucas G, Komakech H, Shemsanga C & Selemani J.R	Hydrochemical characteristics of crater lakes and their influence on the downstream water supply sources; Emakat Lake, Northern Tanzania as a case study.	Oyesigye P, Ayesiga D & Makoni F	Utilizing a Household Engagement and Accountability Approach (HEAA) to Scale Rural WASH Services in Uganda.	Conway D	Applying behavioural and psychological research concepts to enhance water security.	
11:45	Siziba N & Teta C	Biomarkers for monitoring Pollutants of Emerging Concern in aquatic environments of urbanising landscapes: A review.	Siafwanzya C, Tembo J.M & Banda K	Challenges and opportunities of water supply and sanitation in unplanned settlements of Monze Urban Southern Zambia.	Mokadem M	The water use challenge faced by the Vaalharts local population (South Africa).	
12:00	Mabeo R, Molale-Tom L & Bezuidenhout C	Quantification of ESKAPE pathogens and antibiotic resistance genes (ARGs) in wastewater treatment plants (WWTPs) and their receiving waters in NW-P & GP.	Deen A, Gaima P & Makoni F	Providing WASH, Connectivity and Electrification through Solar Power to Off-Grid Health Care Facilities in Sierra Leone.	Wagoneka S.T, Gumindoga W & Rwasoka D	Groundwater monitoring and advisory system for Upper Manyame Subcatchment: A case study of Upper Manyame Zimbabwe.	
12:15	Chaparadza A & Zvinowanda C	Composite Materials based Passive Samplers for Monitoring Antiretroviral Drugs and their Metabolites in Surface Waters.	Tabana L, Kupa A & Tichapondwa S	Adsorption of Hexavalent Chromium from Wastewater using Magnetic Biochar Derived from Peanut Hulls.	van Koppen B, Mapedza E, Zane G, Buisson M.C, Murombo T, Sithole P, Dini J & Sawunyama T	Valuing water in equitable water resource allocation.	
12:30	Leburu E & Palamuleni L	Hydro-chemistry assessment of groundwater quality of the Grootfontein aquifer, North-West province, South Africa.	Tshililo F, Mutanga S & Gumbo T	Assessing the feasibility of decentralised water reclamation schemes in Diepsloot township, Johannesburg, South Africa. A systems dynamics approach.	Kandagor R & Thu Thu Aung W	Innovative Approaches To Water Crisis Management: GIS and MCDA In Kenya And Myanmar.	
13:45 – 15:45	Lunch						

14:45 – 15:45	Water, Ecosystems and the Environment		Innovative approaches, practices and technologies for affordable water supply, and sanitation services		Water governance for sustainable, equitable and affordable water services		Open Special Session
	Venue: Cardamom Link: Here		Venue: Cinnamon Hall Link: Here		Venue: Annato Link: Here		Venue: Maripa Link: Here
	Chair: Prof. Timothy Dube Rapporteurs: Ms. Murendenji Ravele & Mr. Sikelela Mqhayi		Chair: Dr. John Ngoni Zvimba Rapporteurs: Ms. Tavonga Takawira & Mr. Benton Otieno		Chair: Dr. Joseph Mtamba Rapporteurs: Mr. Mussa Kamanula & Ms. Estella Mgala		Chairs: Prof. Tafadzwa Mabhaudhi & Prof. Graham Jewitt Rapporteur: Dr. Wendy Geza
13:45	Clemencio N, Sumbana J, Vaz Rodrigues M.N.C, Dosse M, Joaquim D, Pedro Santos R, Monteiro S & Juizo D	Antibiotic resistance in Maputo. Pre-assessment of full picture: humans, animals and water.	Takawira T, Hoko Z & Gumindoga W	Application of hydraulic modelling and GIS for real losses management in non revenue water.	Mokadem N	The water use challenge faced by the Vaalharts local population (South Africa).	<p>Catalysing the WEF Nexus for relevance and operationalization: Convenors: IWMI, IHE-Delft, UKZN & GWPSA</p> <p>Programme Welcome and purpose: Mabhaudhi T & Jewitt G</p> <p>Catalysing the WEF Nexus for relevance and operationalization: Mabhaudhi T</p> <p>WEFTools - Building human and technical capacity to operationalise the WEF nexus approach: Jewitt G</p> <p>Catalysing the WEF Nexus for real-world application Building the case for supporting WEF nexus investments: Ndeketeya A</p> <p>Broadening the dimensions of the WEF nexus to include environment and health: Senzanje A</p> <p>Developing a people and gender-inclusive WEF nexus framework: Chibarabada T</p> <p>Case study – Lessons from Goma Panel Discussion: WEF Nexus Community of Practice: IHE/UKZN/Nexus Gains</p> <p>Closing Remarks</p>
14:00	Okoro H, Orosun M, Umar S, Ngila J, Zvinowanda C, Emenike E & Iwuozor K	Human and ecological risk assessments of potentially toxic elements in sediments around a pharmaceutical industry in Ilorin, Nigeria.	Oluoch B, Otieno B, Ojwach S & Odindo A	Reduction of pathogens in domestic wastewater using advanced oxidation processes for crop production.	Masona E, Kujinga K & Gumindoga W	Exploring strategies for combating catchment degradation in the Save Basin. A case of Save catchment, Zimbabwe.	
14:15	Yalew S.G & Mul M.L	Exploring and Mitigating Invasive Aquatic Weed Challenges on Water Bodies in Africa: An Agent-Based Modelling Approach.	Nyambiya I, Chapungu L, Sawunyama L, Musvoto E.V, Zvimba J.N & Nhamo L	Circular economy drivers, opportunities and barriers, for wastewater services within low- and medium-income countries.	<i>Virtual</i> Macheca A.D & Laurinda Mazive A.T	Strategic financial planning as an important pillar for an efficient and sustainable provision of water supply services in Africa: The case study of Mozambique.	
14:30	Chibwe C, Nyambe N, Banda K, Sichingabula H & Nyambe I	Biodiversity and condition factor of Luapula Basin Fishes for Ecological Assessment of Interbasin Water Transfer.	Oyaro D, Kuria W & Ochieng O	Behaviors among primary school children. A Case of the WASH UP! Program in Kajiado and Machakos Kenya.	Storie M, Itimu L & Riddell E	Cooperation advancing joint management of freshwater resources in the Great Limpopo Transfrontier Conservation Area (GLTFCA), in the light of climate impacts.	
14:45	Kazekula J	Quality Characteristics of Surface Water in The Luapula and Kafue Basins.	Haruna A, Kimwaga R & Ndibalema E	Performance evaluation on the physical and combustion properties of faecal sludge briquettes using different binding materials.	Mremi A, Kimwaga R & Mulungu D	Evaluation of Participatory Geographic Information Systems (PGIS) for Faecal Sludge Management in Unplanned Settlements in Kinondoni District.	
15:00	Muma S, Kasabila K, Mwandira W, Banda K & Nyambe I	A Geochemical Characterisation of Uchi Mine Tailings for Future Restorations of the Tailing dumps.	Bira M.M, Tangou T.T & Tshimanga R.M	Estimating the quantities and qualities of faecal sludge in Funa Catchment, Dr.Congo, for improved management solutions.	Kamanula M & Kafatia K Jr	Social-economic importance and dynamics of swamp vegetation around lake chilwa, Zomba District, Malawi.	
15:15	Steven R, Fiwa L, Chipula G & Kumambala P <i>Virtual</i>	Estimation of Soil Erosion Using RUSLE Model and GIS: The Case of Mwimba Catchment in Kasungu, Malawi.	Samuyachi J & Ngambi M	Sustainability of Open Defecation Free (ODF) - Case Study of Madzimawe Chiefdom in Chipata District, Zambia.	Chambwe M & Tseane-Gumbi L	The Role of Water Resources in the Advancement of Tourism Development in Rural Communities.	
15:30	Gaoh Z.S.B.G, Mwamba R.T, Katshiatshia H.M, Odume N & Ali B.T	Relationship between land use and water quality in a tropical urban catchment of the Congo basin.	Zimpita N, Sei I, Roi I & Makoni F	Assessing Factors Contributing to Open Defecation Slippage in Malawi; The Case of Traditional Authority Onga in Chiradzulu District.	Tseane-Gumbi & Chambwe M	Urban water resources management and the sustainability of aquatic tourism.	
15:45 – 16:00	Health Break						

16:00 – 18:00	Water, Ecosystems and the Environment		Innovative approaches, practices and technologies for affordable water supply, and sanitation services		Water governance for sustainable, equitable and affordable water		Open Special Session
	Venue: Cardamom Link: Here		Venue: Cinnamon Hall Link: Here		Venue: Annato Link: Here		Venue: Maripa Link: Here
	Chair: Prof. Timothy Dube Rapporteurs: Ms. Zouera Sani Boubacar Goube Gaoh & Mr. Sikelela Mqhayi		Chair: Dr. John Ngoni Zvimba Rapporteurs: Mr. Barnabas Oluoch & Mr. Lehlogonolo Tabana		Chair: Dr. Joseph Mtamba Rapporteurs: Mr. Sascher Tinashe Wagoneka & Mr. Edny Mucavele		Chair: Prof. Preksedis Ndomba Rapporteurs: Dr. Frank Wambura & Dr. Catherine Mushi
16:00	Mathuthu J, Dzimba O.E & Mathuthu M	Environmental Monitoring of Tritium (3H) and Radiocarbon (14C) Levels in Mafikeng Groundwater Using Alpha/Beta Spectrometry.	Mafuta W & Makoni F	Triggering handwashing behaviour among children by soap embedded with toys in Somaliland.	Schoeman Y, Oberholster P & Erasmus M <i>Virtual</i>	Towards Sustainable Water Management: A Novel Classification System for Ecological Engineering Solutions as new-order Anthromes in Human-Modified Landscapes.	The Past, The Present and Future Water Resources Management NTWAM Water and Environment Initiative Programme Welcome Part I: Overview of NTWAM Water & Environment Initiative Briefing & Documentary: Executive Director Part II: The Past, Present and Future Water Resources Management Approaches Keynote presentation: Executive Director Panel discussion: NTWAM team Question and Answer: All Participants Vote of thanks: Administrative Director Closing & Networking
16:15	Mhlanga S	Laboratory-scale production and testing of a bio-nanomaterial-derived flocculant technology for wastewater treatment.	Mjee J, Mcharo J, Kitomari R, Mwanga K & Vungu S	Nudging influence in improving hand washing behaviour among school aged children: Soapplay project in Karatu District.	Mhando C & Willbroad H	Technologies by Itself Cannot Facilitate Water Management Efficiency; The Case of Arusha Five Villages Water Project.	
16:30	Gumbo D & Kapangaziwiri E	Opportunities for environmental flow determination using functional flows approach for rivers in South Africa: A review.	Machecha A.D & Tichapondwa S	Innovative Wastewater Treatment Technologies for Sustainable Water Management.	Gwanu L, Banda K & Nyambe I	Stakeholder Engagement in Integrated Water Resources Management: Assessing Knowledge, Attitudes, Experiences, and Methods for Active Participation in the Upper Zambezi sub-Basin.	
16:45	Muisa N, Vuthari V, Ruziwa W, Musaidi-Manyuchi M, Nhapi I & Tichapondwa S	Reuse of waterworks' alum sludge as adsorbent of methylene blue dye from textile industry wastewater.	Otieno B, Khune M, Tshilenge J, Osifo P & Ochieng B	Anaerobic Co-Digestion of Municipal Wastewater Sludge with Food Waste using a Solar-Heated Pilot Bioreactor.	Katonda D	Drumbeats and Floods: Local Interpretations of Napolo and Cyclone Freddy in Malawi.	
17:00	Rodrigues M, Nhantumbo C, Sumbana J, Kouta R, Mussagy A & Juizo D	Evaluation of the Water Quality of the Infulene River Basin.	Moyo N, Chimhundi J & Brink H	Performance Assessment of Water Treatment Plants: Case Study of Criterion Water Treatment Plants, Bulawayo, Zimbabwe.	Mgala E & Gwambene B	Reassessing Water Resource Challenges in a Changing Climate in the Kagera Transboundary River Basin, Tanzania.	
17:15	Pindihama G.K, Sathekge S.N, Mugeru Wilson Gitari M.W & Mudzielwana R	Pollutants co-occurring with microcystins in hypereutrophic waters used for irrigation and in agricultural soils.	Komakech H.C	Potential of Remote Monitoring for Sustainable Operation and Maintenance of Rural Water Supply Infrastructures in Tanzania.	Kifanyi G & Ndambuki J	Conjunctive Use Management of Surface and Groundwater Resources under Uncertainty: A Retrospective Optimization Approach.	
17:30	Kazekula J	Quality Characteristics of Surface Water in The Luapula and Kafue Basins.	Mandimutsira C & Chibaya L	Design of eco-friendly zeolite based filter impregnated with silver ions for innovative water purification.	Mbuliro M	Flash Flood Early Warning System for Nile Basin Countries.	
17:45	Rasifudi K.J & Ndiritu J	The Effect of Complexity on Water Quality Modelling Performance and Uncertainty.	Achieng S, Nzai L & Osano C	Digital Tracking Integration of Household Water Quality Test Findings in WASH Programming.	Nhantumbo C, Alexandre P, Mangujo N, Mucavele E & Juizo D	Synoptic survey on the impact of human activities in Pungwe and Buzi river basins in Mozambique.	

Friday 27 October 2023

Friday 27 October 2023			
08:00 – 10:00	Open Special Session	Open Special Session	Open Special Session
	Venue: Cinnamon Hall Link: Here	Venue: Annato Link: Here	Venue: Maripa Link: Here
	Chair: Eng. James Sauramba Rapporteur: Ms. Rennie Munyayi	Chairs: Ms. Idalina Roi & Mr. Maybin N'gambi Rapporteurs: Ms. Pamela Wamalwa & Mr. Sylvester Vungu	Chair: Dr. Mamohlodig Tihagale Rapporteurs: Ms. Muvhulawa Mulaudzi, Ms. Murendeni Patriciah Ravele & Dr. Peter Oluwadamilare Olagbaju
08:00	<p>Development of Groundwater Policy, Legal and Institutional Enabling Environment Roadmaps Towards Sustainable groundwater Management and Socio-Economic Development in Southern Africa</p> <p>Convenor: SADC Groundwater Management Institute</p> <p>Programme Session 1: Setting the Scene</p> <p>Introduction of Session, Programme Overview, and Expected Outcomes: Munyayi R</p> <p>Welcoming Remarks: Sauramba J</p> <p>The Significance of Adequate Groundwater Policy, Legal and Regulatory Frameworks, in Achieving Long-Term Water Security in Southern Africa: Pietersen K</p> <p>Innovative Financing of Groundwater Initiatives for Sustainable Socio-Economic Development: TBA</p> <p>Session 2: Panel Discussion Facilitated by: Ms. Rennie Munyayi & Dr. Pinimidzai Sithole</p> <p>SADC Groundwater Roadmap: Regional Priorities to Create an Enabling Environment for Sustainable Groundwater Management (A Call for Action): TBA</p> <p>Visioning the integration of GW into new RBOs: TBA</p> <p>RBO Perspective on the Immediate and Indirect Socio-Economic Consequences of Groundwater Depletion and Contamination, Focusing on the Possible Adverse Effects on Agriculture, Livelihoods, and Ecosystem Services: Sitoe S</p> <p>Aligning Sustainable Development Goals 5 on Gender Equality and Goal 6 on Clean Water and Sanitation - Gender Transformative Approaches to Ensure Sustainable, Equitable, and Inclusive Water Groundwater Management Practices, Improved Livelihoods, and Economic Empowerment: TBA</p> <p>The Role of Capacity-Building Programmes, Research, and Innovation Advancements in Improving Groundwater Monitoring, Data Gathering, and Sustainable Use: Musiyarira H</p> <p>Session 3: Plenary Discussion All</p> <p>Mobilising the SADC Member States and the Broader Stakeholders to Strive Towards a Shared Vision of Securing Groundwater for the Well-Being and Prosperity of Current and Future Generations: Sauramba J</p>	<p>Innovative Approaches, Practice and technologies for Affordable and sustainable WASH services: Bridging Theory, practice and Impact</p> <p>Convenor: World Vision</p> <p>Programme Welcome and introductions: Idalina Overview of World Vision's goals for achieving SDG 6: Dr. Fungai Makoni</p> <p>Using data for water system planning and climate smart decision-making Using mWater application to monitor the water services infrastructures: A case of Rwanda Universal Water Coverage: Marie Leonce Murebwayire</p> <p>Real-time Remote Hydromet monitoring to improve water resource evidence-based planning: A Case of Somalia: Mulatu Kassa</p> <p>Capacity Development as a pre-requisite for improved WASH services World Vision's capacity building programmes and partnership universities (DRI and Drexel, etc): Dr. Fungai Makoni</p> <p>Innovations on the cutting edge of WASH Providing WASH, Connectivity and Electrification through Solar Power to Off-Grid Health Care Facilities in Sierra Leone: Partick Gaima</p> <p>Alternative financing to accelerate progress towards SDG 6 Utilizing a Household Engagement and Accountability Approach (HEAA) to Scale Rural WASH Services in Uganda and connecting this work to household microfinance: Paul Oyesigye</p> <p>Strong Governance as the main driver of sustainability Assessing Factors Contributing to Open Defecation Slippage in Malawi; The Case of Traditional Authority Onga in Chiradzulu District: Noel Zimpita</p> <p>Sustainability of waterborne Sanitation Facilities in School in Rural Zambia: Dela Banda</p> <p>Sustainability of Open Defecation Free: Jessy M. Samuyachi</p> <p>Discussion & Q&A: Maybin N'gambi</p>	<p>Strategic Engagement: Strengthening Research Development and Innovation (RD) Transboundary River Basin Organisation Cooperation</p> <p>Convenor: Water Research Commission, WaterNet, ORASECOM, IUCN</p> <p>Programme Welcome and introductions</p> <p>Opening remarks: Tihagale M</p> <p>Co-conveners addresses Opening Address: WRC CEO and DWS: Molwantwa J</p> <p>Keynote address: WaterNet "The importance of RBO cooperation in Africa": Swatuk L</p> <p>Resourcing the RBO/ Transboundary cooperation: Mthembu D</p> <p>Panel discussion: Areas of cooperation: Facilitator: Mwamyalla T</p> <ul style="list-style-type: none"> • KOBWA: Shongwe T • LIMCOM: Chonguica E • Woman in Water Diplomacy: Dlamini Z • IUCN: Mazenzele D • ORASECOM: Thamae L • E – BUPUSA: Madamombe • UNESCO ROSA: Munamati M <p>Facilitated discussion - finalisation of interests, possible areas of cooperation and prioritisation": Dr. Mamohlodig Tihagale</p> <p>Way forward and closure: Tihagale M</p>
08:15			
08:45			
09:00			
09:15			
09:30			
09:45			
10:00	Health Break		

	Adjudicators' Meeting Venue: TBA
	Chief Symposium Rapporteur and Session Rapporteurs' Meeting Venue: TBA
	Closing Plenary Venue: Main Hall Master of Ceremonies: Eng. Nancy Mduma Link: Here
11:20	Remarks and Introduction of the International Scientific Committee and Team of Reviewers by the Chairperson of the International Scientific Committee: Prof. Cosmo Socrates Ngongondo
11:30	Overview of the 24th WaterNet/WARFSA/GWP-SA Symposium presentation by the Chief Symposium Rapporteur: Dr. Muchaneta Munamati
11:50	Remarks by the Guest Editor of the Special Edition of the Journal of Physics and Chemistry of the Earth and Proceedings of IAHS (PIAHS): Prof. Hodson Makurira
12:10	Vote of Thanks: WaterNet Board of Management Member: Prof. Zacharia Katambara
12:20	Announcements: Dr Richard Kimwaga, LOC Representative
12:30 – 13h30	Lunch
14:00 – 17:00	Excursion: Spice tour at Kizimbani
18:30 – 22:00	Closing Gala Dinner Venue: Madinat Hotel Al Bahr Hotel
19:00	Arrival of guests and entertainment
19:15	Welcoming: Collen Lemawane
19:20	Dinner
20:00	Award ceremony
20:40	Announcement of venue and presentation for Symposium 25
21:00	Entertainment and socialising

Poster Session

Venue: Hotel Corridor (facing the Garden Area)	
Chair: Dr. Olagbaju Peter Oluwadamilare	
Rapporteurs: Ms. Dyna Uwambajimana & Mr. Joseph Mathuthu	
Water, Ecosystems and the Environment for Poster Presentation	
Kurbatova A, Mikhaylichenko K, Gushchina A & Adarchenko I	Health risk assessment of drinking water in Moscow Region: to drink or not to drink.
Kavishe R, Mulungu D & Alexander A	Assessing impacts of livestock grazing on soil properties of Usangu catchment in southern highlands of Tanzania.
Dube T, Dube T & Dalu T	Assessment of illegal mining activities in an Austral semi-arid river system: a multivariate analysis approach.
Kurbatova A, Mikhaylichenko K, Gushchina Y & Adarchenko I	Health risk assessment of drinking water in Moscow Region: to drink or not to drink.
Nyambe N, Chibwe C, Banda K, Sichingabula H & Nyambe I	Benthic Macroinvertebrate Assemblage and Feeding Functional Groups as Surrogates of Water Quality and Ecosystem Health.
Tembo G, Banda K & Nyambe I	Terrestrial and Aquatic provisioning ecosystem services in Bangweulu Wetland, Zambia. Holistic Approach: Ecological, Social and Economic approach.
Oberholster P.F & Botha A.M	Limnology study of Kalkfontein Dam, South Africa after an upstream diamond mine tailing dam collapsed.
Chundu M.L, Lyoba C, Greyfold T, Banda K, Sichingabula H & Nyambe I	Modeling Land Use/Land Cover Changes Using Quad Hybrid Machine Learning Model in Bangweulu Wetland and Surrounding Areas, Zambia.
Tuwa T & Deus D	Determination of Groundwater Potential Zones using RS and GIS based multi-criteria analysis in Wami/Ruvu Basin, Tanzania.
Changing hydro-climatic regimes and planning tools for climate resilient pathways	
Winsemius H, Annor F, Hagenaaers R, Mather S & Van De Giesen N	OpenRiverCam: the free and open-source software ecosystem for measuring surface water velocity and flow with camera videos.
Kalima C.U	A comparative analysis of the impact of deforestation on the evapotranspiration regimes in Luweya and Linthipe Basins.
Water governance for sustainable, equitable and affordable water services	
Mbewe S, Banda K, Nyambe I, Sichingabula H & Zimba H	Vulnerability of Zambezi Headwaters to Potential Contaminants: A Case Study of Ikelenge District, North- Western, Zambia.
Innovative approaches, practices and technologies for affordable water supply, and sanitation services	
Vungu S	Barriers Contributing To Hand Washing Compliance And Wellbeing Among Pupils At Hayedesh Primary School Karatu Tanzania.
Vungu S	The Impact Of The Subsidized Community Led Total Sanitation In Improving Household Sanitation In Buhigwe District.
Oberholster P.J, Botha & Schoeman Y	Is Africa ready for natural base solutions to treat domestic wastewater as an alternative solution? A case study.
Mulaudzi M	Application of molecular methods for detecting pathogens in wastewater treatment plants and groundwater for improved water security, Cape Town.
Malunda K.B & du Plessis A	A systematic assessment of water supply potential and its influence on water-access in the Katrivier Valley.
Mantchombe T. A, Richard E.N & Idzori F	Potential Use of Alum Sludge as a Substrate in a constructed wetland for grey water treatment.
Tarimo D., Kimwaga, K & Alexander, A (Virtual)	Assessment of Adoption and Diffusion of Biogas Technology in Dar es salaam City, Tanzania.
Richard G, Kimwaga R & Mulungu D	Health Risk Assessment on Consumption of Amaranthus mangostanus Grown in Soil Enriched with Fecal Sludge and Municipal Solid Waste Co-compost in Shinyanga, Tanzania.
Water, Land, Agriculture and Livelihoods	

NB: Highlighted in grey are young water scientists

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