

Programme

23rd WaterNet/WARFSA/GWP-SA Symposium on:

Integrated Water Resources Management for Sustainable Development in Eastern and Southern Africa

A Blended Event to be held virtually and
at the Sun City Resort
North West Province
South Africa

19 – 21 October 2022

Jointly convened with:

International Association of Hydrological Sciences (IAHS),
AU/NEPAD Southern African Network of Water Centres of
Excellence (AU/NEPAD SANWATCE), and the Local Organizing
Committee led by the North-West University, South Africa

With support from the Government of South Africa



Integrated Water Resources Development and Management: Leaving no one Behind for Water Security in Eastern and Southern Africa

A Blended Event held virtually and at the Sun City Resort, North West Province, South Africa

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Programme Manager: Clement Monako / Warren Makgowe

| Tuesday 18 October 2022 | |
|---------------------------|--|
| 14:00 - 20:00 | Registration of Participants Venue: Foyer at Sun City Conference Centre |
| Wednesday 19 October 2022 | |
| 06:30 – 08:00 | Registration of Participants / Welcome with tea Venue: King's Boardroom |
| | Official Opening Director of Ceremonies: Ms. Lebogang Mawelela Venue: Foyer at Sun City Conference Centre Link: Here |
| 08:20 | All Participants and Guests take seats, Singing of the South Africa National Anthem |
| 08:30 | Introductions by the 23 rd Symposium Local Organising Committee Chairperson: Prof. Nnnesi Kgabi |
| 08:40 | Welcome Speech: Vice Chancellor, North-West University: Prof. Linda du Plessis |
| 08:50 | Remarks by the Chairperson of WaterNet Trust: Prof. Hodson Makurira |
| 09:00 | Remarks from The Royal Netherlands Embassy in South Africa: Ms Marlies Den Boer |
| 09:10 | Remarks by the SADC Representative, Director Infrastructure and Services: Ms. Mapolao Mokoena |
| 09:20 | Keynote Address: Achieving sustainable development under climate change: transformative futures for a water secure world: Prof. Tafadzwanashe Mabhaudhi, Senior Researcher - Agricultural Water Management, IWMI |
| 09:40 | Official Opening of the Symposium by the Guest of Honour: Dr. Jennifer Molwantwa, Chief Executive Officer, Water Research Commission of South Africa |
| 10:00 | Group Photo |
| 10:15 | Health Break |

| Sessions Start | | | | | | |
|----------------|---|--|---|---|--|---|
| 10:45 – 12:45 | Changing hydro-climatic regimes and planning tools for climate resilient pathways | | Water, Land, Energy and Agriculture | | Open Special Session | Open Special Session |
| | Venue: King Boardroom 1 Link: Here | | Venue: King Boardroom 2 Link: Here | | Venue: Seers Court 1 Link: Here | Venue: Seers Court 2 Link: Here |
| | Chair: Dr. Augustina Alexander Rapporteur: Mr. Leonard Maketa & Mr. Muyaka Kamamba | | Chair: Dr. Joel Kabika Rapporteur: Ms. Debora Mushi & Zivai Pswarayi | | Chair: Dr. Fungai Makoni/ Peter Karanja & Pamela Wamalwa Rapporteurs: Everlyn Atandi & Kabelo Tseestana | Chair: Prof. Tafadzwa Mabhaudhi Rapporteurs: Dr. Tsitsi Bangira |
| 10:45 | Winsemius H, Annor F, Hagenars R., Luxemburg W, Van Den Munckhof G, Heeskens P, Van De Giesen N | OpenRiverCam: open-source and free software to measure river flows with video recordings. | Gwambene B, & Mgala E (Virtual) | Enhancing land management for sustainable water resources and community livelihoods in Ngara District, Tanzania. | Innovation and appropriate technologies for sustainable WASH services for reaching impact and scale: Leaving no one behind Convener: World Vision Programme Idalina: Welcome and introductions Pamela Wamalwa / Dr. Fungai: Setting the Stage: Why are we here World Vision footprint: Programme focus/achievements Maybin Mgambi: Sustainability of Rural WASH infrastructure- A case of Insurance in piped water systems. Mulatu Kassa: Water resilience and security project Video presentations and break: Choose some videos with some innovations from our work. Kabelo Tseetsana: Hand hygiene Solutions in the era of COVID 19, the Case of Lesotho Jessy Samuyachi: Mapping of WASH Infrastructure using mobile to Web system - a case of mWater mapping tool, Zambia. 4lifesolutions: SAWA bag technologies and carbon credits: presentation and Video Paul Oyesigye: Household economic approach Isaiah and Noel: Integration of Sanitation Business model in Savings for Transformation programs to achieve sustainable sanitation services at scale in Malawi. Desalegn Ayalew: WASH business center Question & Answer: Belis Matibire: Closure and way forward: Idalina | Water–energy–food (WEF) nexus: from theory to practice Convener: University of KwaZulu-Natal and IHE-Delft Programme: Mpandeli S: Evolution of the WEF nexus in the SADC Mabhaudhi T: Introducing Nexus Gains Jewitt G: WEFTools Project: lessons from the MENA region Water–energy–food (WEF) nexus: from theory to practice Masia S: Songwe river basin Kumbirai S: SADC WEF Nexus Dialogue Programme Senzanje A: Introducing iWEF – an integrative WEF nexus analytical tool Taguta C: WEF nexus scenario planning Panel Discussion Mabhaudhi T: WEF Nexus Centre of Excellence |
| 11:00 | Mollel G, Mulungu D, Nobert J & Alexander A | Assessment of Climate Change Impacts on Hydrological Processes in Usangu catchment of Tanzania under CMIP6 Scenarios. | Mwafuka J, Masere T & Gwenzi W (Virtual) | A review of soil erosion trends and catchment conservation practices in semi-arid areas of Zimbabwe. | | |
| 11:15 | Maketa L, Valimba P & Nobert J | Assessment of climate and land use / cover changes impacts on streamflow in Katuma river catchment., Tanzania. | Mulaba-Bafubiandi A & Majoka C | A strategic approach to cosmetic plant waste water management : A case study. | | |
| 11:30 | Siame, M, Banda B, & Nyambe I | Exploring Infrastructural Preconditions for Adaptive Capacity of Water Utilities to Climate Change in Upper Zambezi River Basin. | Moseki O, Kanguuehi G & Chiteculo V | Assessment of rice water use efficiency and productivity in semi-arid conditions of Namibia. | | |
| 11:45 | Sifundza L & Beckedahl H (Virtual) | Identification of Potential Sites for Rainwater Harvesting Structures as an Adaptation to Drought Emergencies in Eswatini. | Kotze C.R | Determining the extent and potential of a Water-Smart Agriculture market in South Africa. | | |
| 12:00 | Chingeleshi I, Nyirenda E & Mwanaumo E (Virtual) | Flood Hazard Assessment of the Kafue Flats in South – Central Zambia. | Kaula A, Mudhara M & Senzanje A | Water-Energy-Food Nexus: Trade-offs in the use of water and energy for food production among smallholder farmers in KwaZulu-Natal Province, South Africa. | | |
| 12:15 | Baguant-Moonshiram Y, & Seeboo A (Virtual) | Resilient infrastructure for a more efficient flood mitigation in urban areas– case study Mauritius. | Mushi D, Mulungu D & Mtalo F | Assessing the impact of climate change on Rain-fed Agricultural Water supply and Demand Indices in Kagera River Sub-catchment, Tanzania. | | |
| 12:30 | Muchaka F.A (Virtual) | A Landslide and flood modelling in Eastern part of Zimbabwe. | Nowbuth M | Remote Sensing & GIS application for Precise Sugarcane Farming. | | |
| 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 | | Open Special Session | Closed Special Session |
|---------------|---|---|---|--|--|---|
| | Venue: King Boardroom 1 Link: Here | | Venue: King Boardroom 2 Link: Here | | Venue: Seers Court 1 Link: Here | Venue: Seers Court 2 Link: Here |
| | Chair: Dr. Augustina Alexander Rapporteurs: Ms. More-Grace Hungwe & Ms Gift Mollel | | Chair: Dr. Joel Kabika Rapporteurs: Mr. Zivai Pswarayi & Mr. Faraji Nyudike | | Chairs: Dr. Helmut Loewe & Ms. Nchedi Maphokga-Moripe Rapporteur: Ms. Joanna Fatch | Chair: Mr. Phera Ramoeli Rapporteurs: Dr. Loreen Katiyo |
| 13:45 | Nowbuth M | Study of meteorological drought 1998/1999 in Mauritius using three indices: PNI, SPI & SPEI. | Mushi, D, Mulungu D & Mtalo F | Assessing the impact of climate change on Rain-fed Agricultural Water supply and Demand Indices in Kagera River Sub-catchment, Tanzania. | WASA Program Development Workshop Conveners: BMBF/PTKA, GIZ, SANWATCE TOP 1: Opening remarks by by BMBF, DWS, SADC, AMCOW TOP 2: WASA initial phase & WASA Program development Overview of the WASA initial phase projects (PTKA) TOP 3: Perspectives of mandated governmental institutions in southern Africa <ul style="list-style-type: none"> • Botswana - Department of Water Affairs • Namibia - Ministry of Agriculture, Water and Land Reform & National Commission on Research, Science and Technology (NCRST) • South Africa - Department of Water and Sanitation & Water Research Commission • Zambia - Ministry of Environment, Water & Climate & Water Resources Management Authority • AUDA-NEPAD Southern African Network of Water Centres of Excellence (AUDA-NEPAD SANWATCE) • WaterNet TOP 4: Conclusions and Recommendations | Reflecting on the SADC region shared watercourses governance and management issues, challenges and opportunities over the last two decades Convener: OKACOM, ORASECOM, LIMCOM, BUPUSA, ZAMCOM Programme SADC: Setting the Scene OKACOM: Objectives of the meeting Keynote Presentation: reflecting on SADC transboundary water cooperation Discussions on keynote presentation Panel discussion with SWIs Facilitated by GWP SA <ul style="list-style-type: none"> • OKACOM • Namibia Commissioner • ORASECOM • ZAMCOM • SADC GMI All: Way forward (focused on responding and strengthening shared water governance in the SADC region) |
| 14:00 | Finini P & Kanyerere T | Assessing the hydrogeology of springs in Heuningnes Catchment in South Africa. | Ndlovu Z, Mpala C., Chisadza B (Virtual) | Evaluation of the technical performance of solar powered low head drip irrigation system in Lupane State University Farm and Tshongokwe Irrigation Scheme, Zimbabwe. | | |
| 14:15 | Tafila O, Kumar R & Evers M | Geological influences on groundwater flow in the Okavango Delta area. | Phiri M & Banda K | The Potential of Water Accounting Plus (WA+) in Data Based Decision Making at Sub-catchment Scale: A case study in the Lunsemfwa Catchment, Zambia. | | |
| 14:30 | Kerapetse C.T, Bushira K.M & Ngongondo C | A conceptual review on modelling surface-groundwater interactions in semi-arid areas. | Ningi T, Amon T & Zhou L (Virtual) | Livelihood implications of water and energy poverty on household food insecurity: Experiences from the Eastern Cape. | | |
| 14:45 | Lalumbe L, Ramusiya F | Development and Application of SDG 6.3.2 Groundwater quality methodology: Case study of South Africa. | Nyudike F, Nobert J, Munishi S | Assessment of Surface Water Availability Under Different Development and Management Scenarios in Kagera Basin, Tanzania. | | |
| 15:00 | Hersi N.A.M, Mulungu D.M.M & Nobert J | Groundwater recharge estimation for the Internal Drainage Basin, Tanzania under changing climate. | Nowbuth M | The Importance of Design Parameters for Climate Resilient Infrastructure. | | |
| 15:15 | Andries C.W, Clarke S, Jovanovic N & Kanyerere T | Using analytical hierachy process to design a groundwater monitoring network as an early warning system to detect the impacts of MAR. | Winsemius L, Chishala C, Silembo O, Muzumara M, Donchyts G, Rodena AM, Saccoccia L, Hes M, & Morgan A | Towards global near real-time monitoring of reservoir storage for improved Integrated Water Resources Management. | | |
| 15:30 | Igwebuike N, Muchingami I, Jovanovic N & Kanyerere T | Improving hydrogeological understanding for managed aquifer recharge using hydrogeophysics and diagnostic plot, West Coast, South Africa. | Chisadza B, Gwate O, Ncube F, & Macherera M (Virtual) | Land use/cover change and spatio-temporal variations of hydro-ecological vulnerability of the Upper Mzingwane sub-catchment. | | |
| 15:45 – 16:00 | Health Break | | | | | |

| 16:00 – 18:00 | Changing hydro-climatic regimes and planning tools for climate resilient pathways | | Water, Land, Energy and Agriculture | | Open Special Session | Open Special Session |
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| | Venue: King Boardroom 1 Link: Here | | Venue: King Boardroom 2 Link: Here | | Venue: Seers Court 1 Link: Here | Venue: Seers Court 2 Link: Here |
| | Chair: Dr. Augustina Alexander Rapporteurs: Ms. More-Grace Hungwe & Mr Leonard Maketa | | Chair: Dr. Joel Kabika Rapporteurs: Mr. Micheal Phiri & Ms Zivai Pswarayi | | Chair: de Kock, C Rapporteur: Mr. Renoir Hindley | Chair: Ms. Shamiso Kumbirai Rapporteur: Ms. Teresa Chirwa-Ndanga |
| 16:00 | Kitambo B, Papa F, Paris A, Tshimanga R, Frappart F & Calmant S (Virtual) | A long-term monthly surface water storage dataset for the Congo basin from 1992-2015. | Kakanda E.T, Muamba R.T, Kileshye-Onema, J.M, Gumindoga W & Rwasoka D (Virtual) | Land use and landcover change for hydrological and hydraulic modelling in the Lukuya River Basin, DRC. | <p>The SADC Water Research Agenda – A Time for Reflection</p> <p>Conveners: AUDA-NEPAD Southern African Network of Water Centers of Excellence (SANWATCE)</p> <p>Msibi M: Welcome Kabeya P: Opening address Elema N: Presentation Nhapi I: Wastewater Recycling and Re-use Knayerere T: Presentation</p> <p>Break Kileshye Onema J.M: Discussion</p> <ul style="list-style-type: none"> • Opportunities to Enhance SADC Water Science Research Agenda • How to be more responsive? <p>Kujinga K: Closure/way-forward</p> | <p>WEF Nexus Session on Investment planning Convener: Global Water Partnership Southern Africa</p> <p>Programme Kumbirai K: Welcome and Session objectives Mabhaudhi T: Synthesis of key outcomes from the national dialogues, lessons learned and recommendations Ndekeya, A: Way Forward: national and regional initiatives and regional guidelines All: Question and Answer Kamanga P: Experiences from GCCA+ WEF Nexus demo project in Malawi and Zambia Chinemhiri E: WE4F Regional Innovation Hub All: Panel Discussion and Q&A</p> <p>Wrap up and closing</p> |
| 16:15 | Mukuka R & Nyirenda E (Virtual) | Improving Discharge Prediction for Poorly Gauged Hydropower Potential Sites – A Case Study of Mabula Kapi Site. | Nde S.C, Palamuleni L (Virtual) | Anthropogenic land use and land cover change as potential drivers of sediment source in the Crocodile River, North-west Province South Africa. | | |
| 16:30 | Kamamba M, Nyambe I, Banda K (Virtual) | Forest-Water Nexus: An evapotranspiration assessment using Remote Sensing. | Lyoba C, Nyambe I & Banda K | Land use change and its drivers in the Bangweulu wetland. | | |
| 16:45 | Fikileni S, Kanyerere T & Hlatywayo T | Application of bibliometric and scientometric techniques to showcase valid and reliable datasets on the impact of extreme events on groundwater. | Kuntumanji G, Samson Sajidu S & Namangale J | Groundwater evaluation in a rain-fed likangala irrigation scheme in Malawi. | | |
| 17:00 | Hungwe M.G, Gumindoga W., Baez-Villanueva O.M & Rwasoka D | Tropical Cyclone Prediction., and Detection: A remote sensing-based approach in flood-prone areas of Eastern Zimbabwe. | Ramcharan-Kolze C | Determining the extent and potential of a Water-Smart Agriculture market in South Africa. | | |
| 17:15 | Lweendo M & Sichalwe S | Impacts of climate change and human activities on runoff change in Upper Kafue River Basin, Zambia. | Nhamo L, Mpendeli S, Liphadzi S, Mabhaudi T | Securing land and water for food production through sustainable land reform: A nexus planning perspective. | | |
| 17:30 | Chisadza B, Gwate O, Ncube F & Mpofu N | Assessment and characterisation of hydrometeorological droughts in the Upper Mzingwane sub-catchment of Zimbabwe using station data. | Mukandiwa B, Gumindoga W, Rwasoka D & Chikwiramakomo L | Estimating crop water productivity using remote sensing data at plot scale in an irrigation system: the case of Chisumbanje and Ratelshoek Estate. | | |
| 17:45 | Tafamba K (Virtual) | Assessment of the hydro-meteorological triggers of floods and landslides in Chimanimani District, Zimbabwe. | Chiutsi C | Scenario Analysis Of Climate Change Impacts On Water Resources Allocation In Upper Manyame Sub Catchment. | | |
| 18:00-19:30 | Poster Session Venue: Warriors Hall | | | | | |
| | Chair: Prof. Manny Mathuthu Rapporteurs: Mr. Valentine Tawedzera & Mr. Muyaka Kamamba | | | | | |
| | 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: 11 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: 6 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: 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: None Posters being presented by young scientists have a green sticker of their pictures on the top right corner | | |

| Thursday 20 October 2022 | | | | | | | |
|--------------------------|--|---|--|--|---|---|---|
| 08:00 – 10:30 | 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: King Boardroom 1 Link: Here | | Venue: King Boardroom 2 Link: Here | | Venue: Seers Court 1 Link: Here | | Venue: Seers Court 2 Link: Here |
| | Chair: Prof. Collins Ateba Rapporteurs: Ms. Chisanga Lyoba & Ms. Naima Abdi Hersi | | Chair: Dr. Richard Kimwaga Rapporteurs: Ms. Delight Bhumhira & Mr Musyani Siame | | Chair: Mr. Davison Saruchera Rapporteurs: Ms. Georgina Mukwirimba & Geoffrey Mwananshiku | | Chair: Dr. Anna Matros-Goreses Rapporteur: Dr. Monde Mabuku |
| 08:00 | Chidulo G & Mkandawire T (Virtual) | Assessment of water quality in rivers that receive effluent from wastewater treatment plants in Blantyre city., Malawi. | Katambo J, Iyawa G, Ribbe L & Mabuku P | Applications of AI for Water Resources Management - A Review. | Mukwirimba G, Ndlovu S & Mukwirimba A.R | Assessment of Urban integrated water resources management for Bulawayo, Zimbabwe. | <p>Advancing the Regional Water Security Scientific Agenda through Inter/Multi/Transdisciplinary Research</p> <p>Convener: The Service Centre for Climate Change and Adaptive Land Management, the Namibia University of Science and Technology, and the International Centre of Water Resources and Global Change</p> <p>Programme Olwoch, J. M: Welcome note Molafhi, D. B: Keynote speech</p> <p>Panel discussion: “Understanding water-security challenges, and opportunities in the SASSCAL countries, and the SADC region”</p> <ul style="list-style-type: none"> • Ramoeli, P: Okavango River Basin Commission (OKACOM) Secretariat • Tacheba B: The Southern African Science Service Centre for Climate Change and Adaptive Land Management • Fatch J: The Southern African Development Community (SADC) Transboundary Water Management Programme, GLZ • Kileshye Onema J.M: WaterNet • Matros-Goreses A: Namibia University of Science and Technology (NUST) <p>Concluding remarks: Munyayi R</p> |
| 08:15 | Erasmus J.H, Truter M, Smit NJ, Nachev M, Zimmermann S, Sures B & Wepener V | One health approach to the assessment of element contamination of the Orange-Vaal River system, South Africa. | Ndzungu G & Zvinowanda C | The use of green water treatment chemicals to deal with climate change induced poor water quality challenges. | Ngilana S | Water reform institutions and pricing water in Lower Sundays Valley, Eastern Cape. | |
| 08:30 | Mauro M.H.C, Hilma H.R.A & Day J | Modeling of Phosphorus and Nitrogen Concentrations in the Cuando River, Okavango Zambezi Basin. | Onwudiwe D, Gobile N & Oyewo O | Zinc stannate modified graphitic carbon Vernitride for the photocataly in removal of hexavalent chromium in water. | Masona E., Kujinga K & Makurira H (Virtual) | Stakeholder Management for Integrated Catchment Management. A Case Study of Save Catchment, Zimbabwe. | |
| 09:00 | Nhamo L, Mpandeh L.S & Mabhaudhi T | Managing water-related ecosystems under climate change. | Malima T.P, Kilonzo B & Zuwarimwe | Effectiveness of the current rural water supply system to meeting potable water supply needs for rural communities in Vhembe District, South Africa. | Joshua M.D, Tompkins E, Schreckenber K & Wright J | Assessing affordability of drinking water in rural Malawi and formal institutions nexus. | |
| 09:15 | Letlaila F, De Necker L, Ayob N & Nkosi N | Improving hydrogeological understanding for managed aquifer recharge using hydrogeophysics and diagnostic plot, West Coast, South Africa. | Bhumhira D & Muisa N | Investigation of the demand and feasibility of a communal container case of Magunje Growth Point. | Takawira T, Zvikomborera Hoko Z, Gumindoga W & Gumbo B (Virtual) | Application of hydraulic modeling as a tool for real loss management for Harare. | |
| 09:30 | Mahoko K & Palamuleni L | Water quality of the Groen water Spruit using principal component analysis (PCA), South Africa. | Seleman A, Kimwaga R, Gabriellsson S & Alexander A | Fecal Sludge Conveyance from Remote Households using Movable Transfer Station in Dar es Salaam, Tanzania. | Swatuk L & Timberg L | Towards Effective Watershed Governance: A Case Study of the Grand River Basin, Ontario, Canada. | |
| 09:45 | Nwagbara V, Onjefu S.A, Tyobeka M & Naomab E | Assessment of heavy metals pollution., nutrients., and Physico-chemical characteristics of the Omaruru River Basin Sediment. | Oluwalana A.E, Musvuugwa T, Sikwila S, Sefadi J.S & Chaukura N | Efficient., low-cost remotion of emerging substances of concern from wastewater using copper-doped biochar: A pilot study. | van Huyssteen T, Nonhebel S & Thiam D (Virtual) | Electricity Production and the WEF Nexus: The case of South Africa. | |
| 10:00 | Souta M, Gwenzi W, Misi S & Mhizha A (Virtual) | Evaluating use of environmental tracers in contaminant transport from a closed pyrite mine waste dump. | Naicker A., Madyira D.M & Mashinini P.M | A literature study of hydraulic transients in pipe networks. | Sango I (Virtual) | Effectiveness of the South African water use licence application system. | |
| 10:15 | Teta C, Chere N, Carden K & Winter K | Urban informal settlements as pharmaceutical pollution hotspots. | Maphiri R | A lab-based experimental study of a bioretention system to remove selected pharmaceuticals in stormwater for reuse. | Nyoni F & Mundia P | An Evaluation of the legal frameworks for UN, AU AND SADC on water cooperation and governance. | |
| 10:30 – 11:00 | Health Break | | | | | | |

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| 11:00 – 12:45 | <p>Scientific Plenary Session Venue: King's Boardroom Link: Here</p> |
| | <p>Presentations on role in innovative technologies and approaches for sustainable water resources management by school children</p> |
| | <p>Chair: Ms. Rennie Munyayi Rapporteurs: Mr. Valentine Tawedzera & Mr. Muyaka Kamamba</p> |
| 11:00 | <p>Dr. J. Molwantwa: Opening Remarks</p> |
| 11:15 | <p>Olerato Phiri: Mogwase Technical</p> |
| 11:30 | <p>Tsimela Vanessa: Tswaidi Secondary</p> |
| 11:55 | <p>Onalerona Maso: Itumeleng Secondary</p> |
| 12:00 | <p>Rebaone Mogotsi: Holy Family Secondary</p> |
| 12:15 | <p>Closing Remarks and children leave for stemULATOR presentation Warriors Hall</p> |
| 12:45 – 13:45 | <p>Lunch</p> |

| 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 |
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| | Chair: Prof. Collins Ateba Rapporteurs: Ms. Naima Abdi Hersi & Mr. Sydney Sichilima, | | Chair: Dr. Richard Kimwaga Rapporteurs: Mr. Emmanuel Hweru & Mr Musyani Siame | | Chair: Mr. Davison Saruchera Rapporteurs: Mr. Geoffrey Mwananshiku & Ms. Ofentse Moseki | | Chair: Mr. Lazarous Sichone Rapporteurs: Mr. Lazarous Mwale & Ms. Emma Ndhlovu |
| 13:45 | Mabidi T.J, Izevbekhai O.U, Gitari M.W & Mudzielwana R | Preparation and Characterization of Acid Leached Diatomaceous Earth for Application in the Treatment of Oily Wastewater. | Naicker A, Madyira D.M & Mashinini P.M | Numerical modelling of hydraulic transients in pipe specials of varying branch deflection angles. | Chizyuka D | Unequitable access to water by persons with disabilities. | Restoration and protection of water systems for nature and people Convener: WWF Zambia Programme Session 1 Mbale, B: Introductions Nkomo N: Opening remarks WWF Zambia Country Director Mpamba H: Presentation of WWF's Current Research Activities Mbale B: Lukanga Swamps Hydrological sediment assessment WWF Zambia Team Lead Reed L: Hydro forecast for the Cuando River basin Rivers N: Freshwater Species Mapping for the Cuando, Cuito & Cubango Rivers Jani R: Magoye Restoration Plan Chomba M: Mimosa Mapping in the Barotse Plains Session 2: Panel Discussion Mazvimavi, M (Chair): Zambia's plan to the UN Water Convention – What are the benefits <ul style="list-style-type: none"> • Nkomo N: WWF Zambia; • Kaseke E: ZAMCOM • Chishala C: WARMA • Mpamba H.N: DWRD Closing Remarks Nkomo, N |
| 14:00 | Mamba F.B, Mbuli B.S & Ramontja J (Virtual) | Preparation and characterization of graphitic carbon nitride-based nanocomposites for photocatalysis of dyes from wastewater. | Zvimba J.N & Musvoto E | Emerging innovative technology for sustainable wastewater sludge management and value recovery. | Mwananshiku G | Development of a decision support tool to establish suitability of groundwater drilling zones in Lusaka., Zambia. | |
| 14:15 | Mofokeng S (Virtual) | Understanding the Influence of Artifacts on the Darcy Velocity Estimations from Point Dilution Tracer Tests. | Tawedzera V | A Decentralised Wastewater and Faecal Sludge Management Planning Study for Settlements in Hwange Urban: Cases of Empumalanga. | Palamuleni L | Water conservation by Managers at the workplace: Application of the Theory of Planned Behaviour to examine the relationship between attitudes and behaviour. | |
| 14:30 | Munzhelele E.O, Ayinde W.B, Gitari MW., Mudzielwana R & Izevbekhai O.U | Occurrence and fate of the most prescribed pharmaceuticals in wastewater and receiving water bodies of South Africa: A review. | Ndabambi L., Hoko Z & Misi S (Virtual) | Design of an eco-friendly wastewater treatment system for water reuse in agriculture for a smart settlement in Melfort., Goromonzi District (Zimbabwe). | Riedel J (Virtual) | Geographics of Climate Change Adaption Pathways – Institutional Dynamics and the Water Nexus. | |
| 14:45 | Mwakilama E, Kigo J, Wachira L., Nkoua G & Koudri M (Virtual) | A (2+1) dimensional analytical model with time dependent water velocity for monitoring transport of groundwater contaminant. | Siafwanzya C, Tembo M & Banda K (Virtual) | Challenges and opportunities of water supply and sanitation in unplanned settlements of Monze Urban, Southern Zambia. | Canivete C.R.C | Strategy for the Implementation of Building Information Modeling in the Integrated Water Resources Management in Angola. | |
| 15:00 | Tapfuma D & Naik Y (Virtual) | Nonlethal method to determine the effects of Mercury on Clarias gariepinus (African sharp tooth catfish) in aquatic ecosystems surrounding active. | Djamel K & Abdelhadi A (Virtual) | Dynamics GIS for optimal management of water supply networks. | Hambira W.L, Mmopelwa G, Moalafhi DB, Dhlwayo M, Motau A (Virtual) | Early warning information and community responses to floods in Gweta and Zoroga., northern Botswana. | |
| 15:15 | Waanders F., Maswanganyi. Bunt J & Fosso-Kankeu E | Mobilisation of PAHs from coal tar by various environmental aqueous solutions. | Pswarayi Z., Hoko Z & Mbiza H | Assessment of the impacts of household storage tanks on drinking water quality: A case study of Marondera, Zimbabwe. | Munyayi R, Sithole P, Swartz B, Brentführer R, Sauramba J, Bullock A, Orengho P & Eichholz M | Groundwater Governance Context Assessment: A first Step Towards Developing A Groundwater Country Support Tool For Namibia. | |
| 15:30 | Sichilima S, Kunda N & Mutale M | Application of Water Quality Index and Geo-Spatial Assessment Within Vulnerable Shallow Aquifer System in Peri-Urban Area of Zambia – A Case of Mulenga Compound. | Gijima T, Zvikomborero Hoko Z, Gumindoga W & Kubare M (Virtual) | Sanitation options in the high-water table and flood-prone areas of Zimbabwe and implications on water quality-A case study of Chimanimani district. | Amoroch-Daza H, van der Zaag P & Sušnik J | A System Dynamics approach to evaluate complex Water-Energy-Food-Ecosystems (WEFE) Nexus policy interventions under uncertainty at river basin scale. | |
| 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: King Boardroom 1 Link: Here | | Venue: King Boardroom 2 Link: Here | | Venue: Seers Court 1 Link: Here | | Venue: Seers Court 2 Link: Here | |
| | Chair: Prof. Caliphs Zvinowanda Rapporteurs: Ms. Chisanga Lyoba & Mr. Faraji Nyudike | | Chair: Dr. Richard Kimwaga Rapporteurs: Ms. Delight Bhumhira & Chiamba Ricardo Chiteculo Canivete | | Chair: Dr. Claudious Chikozho Rapporteurs: Ms. Georgina Mukwirimba & Mr. Mauricio Honorato Clemente Mauro | | Chair: Ms. Rosenblum, Zoe Rapporteur: Mr. Elisha Madamombe | |
| 16:00 | Xaza, A. & Kanyerere T | Using seawater fraction and hydrogeochemistry tools to investigate seawater intrusion, Heuningnes, Cape Agulhas, South Africa. | Tihoaele L & Phalamuleni L.G | The effective implementation of Ecological VIP within the Capricorn District., Limpopo Province. | Gaegane L | Sustainable dam siltation management., a pragmatic approach to enhancing water security. | Data and Decision-Making in Transboundary Waters Conveners: GWP-IUCN-OSU Programme First Hour Welcome and Introduction to the Session <ul style="list-style-type: none"> Mazvimavi D: Keynote Speaker McCracken M: Reflections on Keynote, Global Perspective. Panel Discussion with perspectives from the local, regional, and global levels. Final Remarks / Q&A Second Hour <ul style="list-style-type: none"> Interactive Activities. Global Water Datasets. Facilitators will briefly present global water datasets that are available online, including the Transboundary Freshwater Diplomacy Database. Overcoming Data Challenges. Facilitators will briefly present a region-specific water data problem. In small groups, participants will discuss potential challenges and approaches to resolve the problem. The activity will conclude with a story of what actually happened. Closing Remarks / Q&A | |
| 16:15 | Mathuthu M, Seepamore D.H & Maselesele V | Application of IAEA Radio-Photoluminescence Glass Dosimeter for Radiation dose monitoring in ground water systems. | Bouwman H | Waterbirds as indicators as aquatic pollution | Rasifudi K.J | The Application of an Integrated Catchment Model for the Crocodile(west) Catchment - South Africa. | | |
| 16:30 | Naicker A, Madyira D.M & Mashinini P.M | Development of validated numerical models for surge compensation in pipe specials of varying branch deflection angles. | Chikozho C | Leaving no one behind? Analysis of trends in access to water and sanitation services in the slum areas of Nairobi., 2003–2015. | Werner M, Van Den Momberg M, Nyamakura BK, Masih I | I-CISK: Towards a framework for co-creating social and behaviourally informed climate services. | | |
| 16:45 | Ncube P, Zvinowanda C, & Ntuli F | Heterogeneous Photocatalytic degradation of Emtricitabine, Lamivudine, and Nevirapine in wastewater using the UV/TiO ₂ /H ₂ O ₂ process. | Kimwaga R | Use of non-parametric method to investigate the impact of toilet and containment design and operational factors on fecal sludge characteristics. | Riede, J | Geographies of Climate Change Adaption Pathways – Institutional Dynamics and the Water Nexus. | | |
| 17:00 | Sichilima S, Kunda N & Mutale M (Virtual) | Application of Water Quality Index and Geo-Spatial Assessment Within Vulnerable Shallow Aquifer System in Peri-Urban Area of Zambia – A Case of Mulenga Compound. | Okoro H.K, Orosun M.M, Adeniyi A.G, Zinowanda C, Olanrewaju C.A & Oluwagbemi S.B (Virtual) | Manifestation and Potential Human Health Risk Assessments of Trace Estrogen PAEs in Bottled Water. | Moyo P.L & Kativhu T (Virtual) | Analysis of the Impact of Prepaid Water Meters on Water Management in Plumtree Town's Residential Suburbs. | | |
| 17:15 | Maphiri R | A lab-based experimental study of a bioretention system to remove selected pharmaceuticals in stormwater for reuse, Cape Town, South Africa. | Kanyama M.N, Shava F.B, & Gamundani A.M | Machine learning anomaly detection techniques applicable to smart water metering networks – A systematic review. | Mwale N.S, L.M.S, Chilima, P.P, Chongo M, Nyongwana A, Mbinji J, Bunda K, Tiruneh K. J, Takawira A & Simalabwi A | The Gender Transformative Approach for Climate Resilient Water Security Investments – A Zambian Case Study. | | |
| 17:30 | Pandelani M.E, Ayinde W.B, Gitari M.W, Mudzielwana R & Izevbekhai | Co-adsorption of F ⁻ and As ³⁺ from aqueous solutions and bacterial disinfection using Fe-Ce doped Poly (p-phenylenediamine) composite. A comparative study. | Hweru E, Chinyama A & Nyakutsikwa B | Improving The Quality of Abattoir Effluent Using Nature Based Tertiary Treatment Methods. A Case of Binder Abattoir Goromonzi, Zimbabwe. | Moolman J, Alberts R & Relief F | Effectiveness of the South African water use licence application system. | | |
| 17:45 | General Discussion | | Nambundunga, B., Onjefu, S & Kgabi, N | Water quality and the impact on the health of Grünau and Bethanie residents in Namibia. | Chiluwe Q.W, Ncube B, Msimang B & Modiba I (Virtual) | Strengthening the knowledge base and capacity to support the transformation of Irrigation Boards into Water User Associations in South Africa. | | |
| 19:00 - End | Cocktail Venue: Warriors Hall 1 & 2 | | | | | | | |
| Master of Ceremony: Mr. Clement Manoko (NWU) Entertainment: Marimba Band Welcome: Ms Lena Miga MEC: Department of Cooperative Governance, Human Settlements and Traditional Affairs, North West Provincial Government | | | | | | | | |

| Friday 21 October 2022 | | | | | |
|------------------------|---|--|---|---|---|
| 08:00 – 10:00 | Water, Ecosystems and the Environment | | Open Special Session | Open Special Session | Open Special Session |
| | Venue: King's Boardroom 1 Link: Here | | Venue: King's Boardroom 2 Link: Here | Venue: Seers Court 1 Link: Here | Venue: Seers Court 2 Link: Here |
| | Chair: Prof. Caliphs Zvinowanda Rapporteurs: Ms. Chisanga Lyoba & Mr. Zivai Pswarayi | | Chair: Mrs. Sethako Mahlalele Rapporteur: Dr. Koetlisi Koetlisi | Chair: Mr. Tiyani Chauke Rapporteur: Ms. Mpho Kapari | Chair: Ash Seetal Rapporteur: Rhulani Shingwenyana |
| 08:00 | Mthembu S, Gumbi B & Cele Z (Virtual) | Role of green technology in recycling concentrated brine water resulting from water. | ReNOKA – Restoring land and water together in the mountain water tower: Ecosystems services and their continued provision fortify livelihoods support and natural resources conservation Convener: The Integrated Catchment Management Unit (ICU), Ministry of Water, Government of Lesotho Welcome Remarks Katiyo L Sethako M: Objectives of Session & Interface TWM – ICM Lesotho Makomoreng F, Sedia S & Kuleile N: <ul style="list-style-type: none"> • ReNOKA in a nutshell • Emergency measures in the sub-catchments • Compendium of measures (how a joint guideline of catchment management measures that includes best practices from relevant sectors) Beuster J: ReNOKA Planning processes (community/council planning vs. catchment management area planning) Mathafeng K: Use of Earth Observations for Land Cover Mapping and Statistics in Lesotho Mosiuo M: Community Engagement for ICM in Lesotho – in a nutshell, Impacts of community engagement and activities Mona L: Behavioural change: How does science support the change? Leketa K: Lessons learnt from Lesotho: Professional short courses and education opportunities in ICM Katiyo L: Facilitated discussion: Takeaways for the audience Closing remarks Makomoreng F | The use of Technology and Innovations to Improve Water Supply Service Delivery Case Studies from Southern and Eastern African Countries and Argentina Convener: Water Research Commission Programme Welcome and introductions Participants Opening remarks Dr. Mamohlong T Dr. Naidoo V: Opening Address: Promoting Technology and Innovation uptake by utilities to improve service delivery Presentation of Case studies Facilitator: Chauke, T: "Improving service delivery through innovative solutions" <ul style="list-style-type: none"> • Meschengieser, G Foreign Affairs Manager at Agua y Saneamientos Argentinos • Ncube, E, Randwater • NamWater representative. • Moraka, W, South African Local Government Association Panel Discussion: The implementation innovative solutions to improve service delivery: Facilitator: Dr. Ramcharan-Kotze C <ul style="list-style-type: none"> • Lucero, E - AYSA. • Ncube, E - Randwater • Moraka, W - South African Local Government Association • NamWater Question & Answer Dr. Ramcharan-Kotze C Closure Mr. Tiyani Chauke | A Water Data Repository for Southern Africa (WaRes) Convener: Council for Scientific and Industrial Research Programme: Opening and Welcome: Pienaar H: Project Background and Context: Mwenge Kahinda J.M: WaRes African context and perspective (SANWATCE and CSIR-SU-AUDA/NEPAD CoE): Elema N: Centre of Excellence Panel Inputs: <ul style="list-style-type: none"> • Kenabatho P: Climate Change • Banda K: Hydrology • Senzanje A: Agriculture • Kanyerere T: Groundwater • Water Quality • Ngongondo C: Science and Research Discussion (50 min) – including SADC and SADC-GMI contributions Way Forward and Closure |
| 08:15 | Wepener V & Botha T | The adverse outcome pathways construct: a promising tool for assessing risk of emerging contaminants. | | | |
| 08:45 | Mqhayi S | Investigation of radon, its geochemical interactions and application in surface and groundwater interactions, Heuningnes. | | | |
| 09:00 | Ralekgetho B, Mienie C, Molale-Tom L & Bezuidenhout C | Establishing the Incidence of Potentially Pathogenic Bacteria in Groundwater Systems of the North-West Province. | | | |
| 09:15 | De Necker L, Le Roux H, Mothapo N, Lindeque F, Smit NJ & Wepener V | Schistosomiasis in South Africa: Vector distribution and human perceptions and practices. | | | |
| 09:30 | Shumba A, Gitari M, Mudzielwana R, Ayinde W.B & Ochieng, A | Comparing effectiveness of sonication and flocculation in neutralization of acid mine drainage (AMD) using calcined magnesite. | | | |
| 09:45 | Masekesa T | Land use and climate change impacts on river system sediment yield and water quality. | | | |
| 10:00 | Health Break | | | | |

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| | <p>Adjudicators' Meeting Venue: Seers Court 1</p> |
| | <p>Chief Symposium Rapporteur and Session Rapporteurs' Meeting Venue: Seers Court 2</p> |
| | <p>Closing Plenary Venue: King's Boardroom Master of Ceremonies: Mr Warren Makgowe Link: Here</p> |
| 11:20 | <p>Remarks and Introduction of the International Scientific Committee and Team of Reviewers by the Chairperson of the International Scientific Committee: Prof. Masengo Ilunga</p> |
| 11:30 | <p>Overview of the 23rd WaterNet/WARFSA/GWP-SA Symposium presentation by the Chief Symposium Rapporteur: Dr. Monde Mabuku</p> |
| 11:50 | <p>Remarks by the Guest Editor of the Special Edition of the Journal of Physics and Chemistry of the Earth: Prof. Cosmo Socrates Ngongondo</p> |
| 12:10 | <p>Vote of Thanks: WaterNet Executive Manager, Prof. Jean-Marie Kileshye Onema</p> |
| 12:20 | <p>Announcements: LOC</p> |
| 12:30 – 13h30 | <p>Lunch</p> |
| 14:00 – 17:00 | <p>Excursion</p> |
| 18:30 – 22:00 | <p>Closing Gala Dinner Programme</p> <ul style="list-style-type: none"> • 19h00: Arrival of guests and entertainment • 19h15: Welcoming: Collen Lemawane • 19h20: Dinner • 20h00: Award ceremony • 20h40: Annoucement Venue and Presentation for Symposium 24 • 21h00: Entertainment and socialising |

Poster Session

| Venue: Warriors Hall | |
|---|---|
| Chair: Prof Manny Mathuthu Rapporteurs: Mr Valentine Tawedzera & Mr Muyaka Kamamba | |
| Water, Ecosystems and the Environment for Poster Presentation | |
| Pandihama G.K, W & Mukangaya S | Application of Solid Phase Adsorption Toxin Tracking Technology (SPATT) for Monitoring Microcystins in farm dams. |
| Lyoba C | Land Use Change And It's Drivers On The Bangweulu Wetland |
| Umunezero A.A & Kanyerere T | Application of the multi-method approach to assess river-aquifer interaction in Heuningnes catchment., Western Cape., South Africa. |
| Hendricks N, Olatunji O & Gumbi B (Virtual) | Occurrence of copper nanoparticles in sediments of Mgeni River System. |
| Nyingi R, Mwangi J & Kiptala J | Evaluating the effects of inter basin water transfer tunnelling on groundwater flow in upper Tana Basin. |
| Pindihama G.K, Gitari W & Mukangaya S | Application of Solid Phase Adsorption Toxin Tracking Technology (SPATT) for Monitoring Microcystins in farm da. |
| Metsing N, Molale-Tom L & Bezuidenhout C | Incidence and characteristics of antibiotic resistant bacteria in raw and drinking water from Western Cape. |
| Mzinyati T, Seopela M, Lehtuso R & Thwala M | Identification and detection of antibiotic-toxin-producing Enterobacteriaceae from groundwater systems in the North West Province., South Africa. |
| Mulaudzi M (Virtual) | Environmental risk assessment of environmentally transformed engineered nanomaterials (ENMS)released from nano-enabled products. |
| Changing hydro-climatic regimes and planning tools for climate resilient pathways | |
| Igwebuike N, Muchingami I, Jovanovic N & Kanyerere T (Virtual) | Application of the flow characteristic method to estimate aquifer parameters, West Coast Aquifer System, South Africa. |
| Ndhlovu D.J & Mpala C | Crop water productivity of winter maize in Lukosi Irrigation Scheme in Diki Village of Hwange District, Matabeleland North Province, Zimbabwe. |
| Water governance for sustainable, equitable and affordable water services | |
| Fuyane-Mpofu F, Kgabi N & Piketh S | Flood risk mapping of selected communities in the Cuvelai-Etosha Basin in Namibia. |
| Innovative approaches, practices and technologies for affordable water supply, and sanitation services | |
| Nambundunga B, Onjefu S & Kgabi N | Water quality and the impact on the health of Grünau and Bethanie residents in Namibia. |
| Heita J | Improving rural community resilience to climate change through Desalination using Hybrid Renewable Energy powered Membrane Technology. |
| Kanyerere J.M, Clarke S & Muchingami I | Assessing the effectiveness of groundwater remediation technologies to a coastal aquifer within an urban environment in South Africa. |
| Tshuma M, Mpala C & Chisadza B (Virtual) | Design of an Aquaponics System For Lupane State University. |
| Magome T, Bezuidenhout C & Mienie C | Microplastics as a vector of potentially pathogenic microbial groups harbouring resistant genes in a South African river system. |
| Robertson J | Exploring factors influencing learners' use of sanitation facilities and personal hygiene practices, boarding school, Zomba, Malawi. |
| Water, Land, Agriculture and Livelihoods | |
| Wandera C, Dindi W, Jaoko F, Koeh M (Virtual) | Assessment of behavioural response and adaptation of small-holder farmers to climate change in Nambale sub-county of Busia County. Kenya. |
| Ojo B, Arotiba O, Mabuba N | Sonoelectrochemical degradation of ciprofloxacin in water on a Ti/BaTiO ₃ electrode. |
| Matange N.L | Impacts of climate change on hydropower generation at Lake Kariba, Zimbabwe. |

NB: Highlighted in grey are young water scientists

Special Sessions Conveners:



Sponsors



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