Addis Ababa University

College of Natural & Computational Sciences

Africa Water Security Conference

"Towards a Water-Secure and Resilient Africa"

21-23 September 2026

Venue: Adwa Victory Memorial Museum Hall, Addis Ababa, Ethiopia

Conference Program

Day 1 Morning (Sept. 21)			
Time	**Activity/Topic**	**Presenter**	**Moderator**
08:30 – 09:00 AM	Registration of participants	Organizing Committee	Organizing Committee
09:00 – 09:10 AM	Introduction of the program and the conference objectives	Prof. Feleke Zewge, Director, Africa Center of Excellence for Water Management	Prof. Feleke Zewge
09:10 – 9:20 AM	Introduction of CNCS and invitation	Dr. Bikila Warkneh, Executive Dean, College of Natural & Computational Sciences	Prof. Feleke Zewge
09:20 – 09:35 AM	Welcoming Speech	Dr. Samuel Kifle, President, Addis Ababa University	Dr. Bikila Warkneh
09:35 – 09:50 AM	Official opening Remark	Guest of honor	Dr. Samuel Kifle

09:50 – 11:20 AM	**Keynote speech:** From Data to Decision: Integrating Hydrological Science, Climate Intelligence, and Transboundary Governance for Water Security in Africa	**Prof. Assefa Melesse:** Distinguished Professor, Director, Graduate Program in Water Science, Department of Earth and Environment, Florida International University, USA	Dr. Semu Moges / Dr. Michael Mehari
11:20 – 11:50 AM	Coffee Break	Organizing Committee	Organizing Committee
11:50 AM – 1:30 PM	**High Level Panel Discussion on:** "Equitable and sustainable use of water for development"	TBA	Dr. Eng. Sileshi Bekele / Dr. Zebene Lakew Academician (TBA)
1:30 – 2:30 PM	Lunch Break	Organizing Committee	Organizing Committee
2:30 – 4:00 PM	**Plenary Lecture:** Toward Resilience: Distributed Water Innovations in Rapidly Growing Urban Areas	**Prof. Nancy Love:** JoAnn Silverstein Distinguished University Professor, Department of Civil and Environmental Engineering, University of Michigan, USA	Prof. Michael Templeton/ Dr. Adey Feleke
4:00 – 4:20 PM	Coffee Break/Poster Sessions	Organizing Committee	Organizing Committee
4:20 – 6:00 PM	Parallel Sessions	See Below	See Below

PARALLEL SESSIONS

Day 1: Afternoon: Parallel Session A: Drinking Water and Water Security

Time	Activity/Topic A maximum of 15 minutes of presentation and 5 minutes of Q&A session	Presenter	Moderator/ Rapporteur
4:20-4:40 PM	Shame, Disgust and Discomfort: Implications of Limited Access to Water, Sanitation and Hygiene on Quality of Life in Schistosomiasis Endemic Communities in Uganda and Cameroon	Lazaaro Mujumbusi	Prof. Nigus Gabiye / Dr. Seblework Mekonnen

4:40-5:00 PM	Prevalence of *Legionella* spp. in hospital water systems and pneumonia patients in Ethiopia: Evidence of misclassified Legionnaires' disease	Etsub Brhanesilassie	
5:00-5:20 PM	Turning Water Security Evidence into Action: Comparative Lessons from Four African Countries	Esayas Mengesha	
5:20-5:40 PM	Chitosan-Based Schiff Base Modified Carbon Paste Electrode for Electrochemical Determination of Pb(II) in Environmental water samples	Kidus Ayalew	
5:40-6:00 PM	Health Risk Assessments of Surface Water and Groundwater Quality for Drinking using Heavy Metal Indicators in the Opa Drainage Basin, Osun State, Southwestern Nigeria	Charles Konwea	

Day 1: Afternoon: Parallel Session B: Ecosystems and Water Security

Time	Activity/Topic **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	Presenter	Moderator/ Rapporteur
4:20-4:40 PM	Mapping of Flood Inundation, Under Future Climate Change Scenarios on Borkena River, Awash Basin, Ethiopia	Geteneh Teklie	**Prof. Abebe Getahun /Dr. Andualem Mekonnen**
4:40-5:00 PM	Development of ecoregion-stratified macroinvertebrate based multimetric indices for the Awash River: implications for incorporating Ethiopian lowland rivers in biological monitoring	Tesfaye Workie	
5:00-5:20 PM	Spatiotemporal dynamics of phytoplankton community and their relationships with water hyacinth (*Eichhornia crassipes*): The case of Koka reservoir, Ethiopia	Berhanu Gebrekidan	
5:20-5:40 PM	Vegetation Resilience to Hydro meteorological Drought in Baro River Basin: Insights from Multi-Timescale SPEI & Satellite-Derived Vegetation Indices	Tolossa Negassa	
5:40-6:00 PM	Integrated Biosorption and Computational Reactor Design Modelling for Heavy Metal Removal from the Mukuvisi River Using *Saccharomyces cerevisiae*	Edwin Mashayanye	

Day 1: Afternoon: Parallel Session C: Transboundary Water Resources and Water Security			
Time	**Activity/Topic** **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	**Presenter**	**Moderator/ Rapporteur**
4:20-4:40 PM	A Century Scheme Eastern Nile Compact: A US$150 Billion Negotiation Compact to Dissolve the Nile Crisis	Semu Moges	**Prof. Aseffa Melesse/ Dr. Yonas Girma**
4:40-5:00 PM	Intelligent Water Governance for a Water-Secure Africa: Integrating Digital Innovation, Community Action, and Climate-Resilient Cooperation in Transboundary Basins	Farid Attarrchi	
5:00-5:20 PM	Analysing Securitised Transboundary Water Disputes: The Case of the Kishanganga Project on the Indus Basin	Abebe Yirga Ayenalem	
5:20-5:40 PM	Evidence-Based Water Management for Revitalizing the Amibara Irrigation Scheme, Ethiopia: Insights from Water Accounting	Kirubel Mekonnen	
5:40-6:00 PM	Co-designing a hydrological model for monthly fully distributed water availability in Awash, Webi Shebelle and Danakil Basins	Beir Alemayehu	

Day 2 Morning (Sept. 22)			
Time	**Activity/Topic**	**Presenter**	**Moderator/ Rapporteur**
9:00 – 10:30 AM	**Plenary Lecture: The critical importance of access to safe water in schistosomiasis-endemic regions of Africa**	**Prof. Michael Templeton: Professor of Public Health Engineering Department of Civil and Environmental Engineering Imperial College London, UK**	**Prof. Nancy Love / Prof. Nigus Gabiye**
10:30 – 11:00 AM	**Coffee Break/Poster Sessions**	**Organizing Committee**	**Organizing Committee**
11:00 AM-1:00 PM	**Parallel Sessions**	**As scheduled below**	**As scheduled below**

PARALLEL SESSIONS

Day 2: Morning: Parallel Session A: Drinking Water and Water Security			
Time	**Activity/Topic** **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	**Presenter**	**Moderator/ Rapporteur**
11:00- 11:20 AM	Impact of Land Use and Land Cover on Groundwater Recharge in Southern Africa: Implications for Groundwater Management	Tesfaye Tessema	**Dr. Paulos Getachew/ Dr. Getachew Tegegn**
11:20-11:40 AM	Identification and Removal of Tracer Dilution Artefacts for accurate Darcy velocity Estimation	Setjhaba Mofokeng	
11:40 AM-12:00 PM	Registered Self-Supply and Government Groundwater Wells in Addis Ababa: Distribution, Characteristic and Implication for Groundwater Management.	Yordanos Yimer	
12:00 -12:20 PM	Integrating the One Health Approach to Assess the Toxicological Impacts of Septic Tank Wastewater in Blantyre City, Southern Malawi	Rose Kachingwe	
12:20-12:40 PM	Aflatoxin Contamination and Food Safety Knowledge Along Ethiopia's Red Pepper Value Chain	Markos Makiso	
12:40-1:00 PM	Cercarial Attractants as Novel Surveillance Tools for Assessing Schistosomiasis Risk in African Water Bodies	Amelia Rupp	

Day 2: Morning: Parallel Session B: Ecosystems and Water Security

Time	Activity/Topic	Presenter	Moderator
11:00-11:20AM	Integrating Indigenous Knowledge and Community Practices into Nature-Based Solutions for Urban Water Resilience in African Cities	Jennifer Wangari	**Dr. Girum Ayalneh / Dr. Taye Alemayehu**
11:20-11:40 AM	WebGIS for Groundwater Information Management in Addis Ababa City Administration	Atnafu Lencha	
11:40AM-12:00 PM	Enhancing Groundwater Investigation in Semi-Arid and Complex Geological Settings Through Transient Electromagnetic Surveys: A Case Study in Dire Dawa, Eastern	Abebe Debele	
12:00-12:20 PM	Coupled Surface and Groundwater Geochemical Dynamics in the Awash River Basin (Ethiopia): Implications for Regional Water Security	Silvia Fornasaro	
2:20-12:40 PM	An Evaluation of Seasonal Variation on Shallow Groundwater Physicochemical Quality of the Granite Basement Complex Aquifer System of Makeni, Sierra Leone	Abdul Rahman	
12:40-1:00 PM	Projecting Precipitation and Potential Evapotranspiration under Climate Change Scenarios over Central Main Ethiopian Rift Valley Lakes Basin	Wondimu Hailesilassie	

Day 2: Morning: Parallel Session C: Transboundary Water Resources and Water Security

Time	Activity/Topic **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	Presenter	Moderator/ Rapporteur
11:00-11:20AM	Strategic Hydropower and Maritime Corridors: Leveraging the GERD and Hydro-diplomacy for Regional Water-Energy Security	Getachew Kebede	**Dr. Michael Mehari/ Dr. Yonas Girma**
11:20-11:40 AM	Relegating Hydro-Diplomacy: Navigating the New Alliance Dynamics and Power Politics over the Nile Waters	Abebe Alemu	
11:40AM-12:00 PM	From Conflict Management to Transformative Cooperation: Re-thinking Hydro-Diplomacy, Energy Trade, and Regional Peacebuilding in the Nile Basin	Dagnachew Ayenew	

12:00-12:20 PM	Upstream Development, Downstream Challenges: Modeling Grand Ethiopian Renaissance Dam (GERD) Operation under Cascade Hydropower Futures in the Upper Blue Nile Basin	Abebe Ephrem	
12:20-12:40 PM	Climate Adaptation Beyond Borders: Leveraging local Knowledge for Socioecological Resilience in the Lake Chad Basin	Nchedo Nnedinma	
12:40-1:00 PM	Historical Trajectories of Unilateralism in the Nile Basin: From Early Barrages to the Grand Ethiopian Renaissance Dam (GERD)	Tibebu Kebede	

Day 2 Afternoon (Sept. 22)

Time	Activity/Topic	Presenter	Moderator/ Rapporteur
1:00 – 2:00 PM	**Lunch Break**	**Organizing Committee**	**Organizing Committee**
2:00 – 3:30 PM	**Plenary Lecture: A Path Forward for Sharing the Nile Water: Sustainable, Smart, Equitable, and Incremental**	**Prof. Elfatih Eltahir: King Bhumibol Professor of Hydrology and Climate, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology (MIT), USA**	**Dr. Ted Lawrence / Prof. Abebe Getahun**
3:30 – 4:00 PM	**Coffee Break/Poster Sessions**	**Organizing Committee**	**Organizing Committee**
4:00 – 5:30 PM	**Parallel Sessions**	**As scheduled below**	**As scheduled below**

PARALLEL SESSIONS

Day 2: Afternoon: Parallel Session A: Drinking Water and Water Security

Time	Activity/Topic **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	Presenter	Moderator/ Rapporteur
4:00-4:20 PM	Probabilistic Assessment of Urban Storm Water Quality at Commercial Traffic Dominated and Residential Mixed Urban Catchments with the Help of Monte Carlo	Tamirat Abreham	**Dr. Dessie Nedaw / Dr. Tadesse Alemu**
4:20-4:40 PM	Effect of access to water on food security in Sub-Saharan Africa	Kouka Evariste Compaore	
4:40-5:00 PM	Adsorptive Removal of Dye over Acid-Activated Surface- Modified Ethiopian Kaolinite	Tadele Assefa	
5:00-5:20 PM	Spatiotemporal distributions of potentially toxic elements in Lake Tana and its major tributary rivers, Ethiopia	Balew Yibel	
5:20-5:40 PM	Strategic communication in water quality management: Addressing pollution, turbidity, and emerging contaminants: Lessons from KASHWASA	Mwidima Peter	

Day 2: Afternoon: Parallel Session B: Ecosystems and Water Security

Time	Activity/Topic **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	Presenter	Moderator / Rapporteur
4:00-4:20 PM	The impacts of climate change on the hydrological processes of the Guder River watershed, Blue Nile Basin, under CMIP6 Scenarios	Obsinet Abebe	**Prof. Abebe Getahun/ Dr. Andualem Mekonnen**
4:20-4:40 PM	Hydrological and Sediment Response to Selected Sustainable Land Management Practices in Regulating Surface Run-off and Sediment Loss in Ginchi Catchment, Ethiopia	Abebe Bezu	
4:40-5:00 PM	Quantifying runoff and total river discharge in Ethiopia based on water balance using satellite and reanalysis datasets	Habtamu Tsegaye	

5:00-5:20 PM	Comparative Performance Analysis of Aerated and Non-Aerated Facultative Pond Series in a Full-Scale Tropical Waste Stabilisation Pond System	Gawachalo Nyondo	
5:20-5:40 PM	Impact of organic waste on edible king tuber mushrooms (Pleurotus tuber-regium) (Fr) Singer production in Kisangani, Democratic Republic of Congo	Jean-Claude Bulonza	
5:40-6:00 PM	Rainfall intensity duration frequency curves development under the changing climate: the case of Addis Ababa	Lideya Dabale	

Day 2: Afternoon: Parallel Session C: Transboundary Water Resources and Water Security			
Time	**Activity/Topic** **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	**Presenter**	**Moderator/Rapporteur**
4:00-4:20 PM	Red Sea Dynamics and Border Legacies: Geostrategic-Port Economics, Regional Integration, Ethiopia's Maritime Aspirations, Environmental-Migration Security, Comparative Chokepoints, and Horn of Africa Economic Reconfigurations	Getachew Kebede	**Dr. Zebene Lakew / Dr. Haileyesus Belay**
4:20-4:40 PM	Reframing the Grand Ethiopian Renaissance Dam: Hydro-Diplomacy, Regional Energy Interdependence, and the politics of peace in the Nile Basin	Dagnachew Ayenew	
4:40-5:00 PM	Scaling of Sand Dams: Analytical Approach to Water Retention and Drainable Water in Sand Dams	Alien Mnyimbiri	
5:00-5:20 PM	Integrating Climate Governance and Water Policy in Ethiopia: Toward Adaptive and Resilient Water Security	Alelegn Agegnehu	
5:20-5:40 PM	Historical Resource Relations and Governance in the Emerging Transboundary Tensions in the Wabe-Shebelle Genale-Dawa Basin in African Horn	Solomon Korsa	

Day 3 Morning (Sept. 23)			
Time	**Activity/Topic**	**Presenter**	**Moderator/ Rapporteur**
09:00 – 10:30 AM	**Plenary Lecture: Food, water, and regional security on Africa's Great Lakes: Threats, impacts, and solutions**	**Dr. Ted Lawrence, Executive Director, African Center for Aquatic Research and Education (ACARE)Ann Arbor, Michigan, USA; Senior Policy Advisor, International Institute for Sustainable Development (IISD) Winnipeg, Manitoba, Canada**	**Prof. Brook Lemma/Dr. Akewake Geremew**
10:30 – 11:00 AM	**Coffee Break/Poster Sessions**	**Organizing Committee**	**Organizing**
11:00 AM – 1:00 PM	**Parallel Sessions**	**As scheduled below**	**As scheduled below**

PARALLEL SESSIONS

Day 3: Morning: Parallel Session A: Drinking Water and Water Security			
Time	**Activity/Topic** **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	**Presenter**	**Moderator/ Rapporteur**
11:00- 11:20AM	Removal Efficiency and Fate of Four Antibiotics in the Full- Scale Upflow Anaerobic Sludge Blanket /Trickling Filter Wastewater Treatment Plant, Ethiopia	Joan Beryl Achar	**Dr. Adey Feleke/ Dr. Seblework Mekonnen**
11:20-11:40 AM	Economic Burden of Healthcare-Associated Infections Linked to Inadequate WASH in Zambia	Collins Himabala	
11:40AM-12:00 PM	Integrating Bi-LSTM Deep Learning and Sentinel-2 Remote Sensing for Advanced Spatiotemporal Water Quality Monitoring and Anomaly Detection	Wondimu Tolcha	
12:00 -12:20 PM	Computer Vision Models for Automated Detection of Surface Water Pollution	Akanu Ibiam	
12:20-12:40 PM	Microplastic Pollution in Lake Aba Samuel Addis Ababa, Ethiopia	Michael Girimay	

12:40-1:00 PM	Healthcare Waste Management Practice, Associated Factors and Impacts at Lake Tana Water Shore: The Case of Felege- Hiwot Comprehensive Specialized Hospital	Yalew Ebabu	

Day 3: Morning: Parallel Session B: Ecosystems and Water Security

Time	Activity/Topic **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	Presenter	Moderator/Rapporteur
11:00- 11:20AM	Field-based selection and prioritization of Nature-Based Solutions for climate-resilient water management in Ethiopian drylands	Sara Pennellini	**Dr. Yonas Girma/ Dr. Sirak Tekleab**
11:20-11:40 AM	Irrigation Efficiency as Agricultural Adaptation Strategy to Manage Irrigation Water demand under Changing Climate: The case of Upper Blue Nile Basin, Ethiopia	Elias Abdella	
11:40AM-12:00 PM	The development of a biochar-based composite adsorbent for Cr(VI) removal from industrial wastewater	Jemal Fito Nure	
12:00 -12:20 PM	Integrated Wastewater Management and its Reuse in Sustainable Agricultural Practice – A Green Circular Economy Concept	Singanan Malairajan	
12:20-12:40 PM	Spatiotemporal Rainfall Variability and Climate Teleconnections in the Arid Lowlands of Eastern Ethiopia: Implications for Zone-Specific Climate Adaptation	Merkato Markos	
12:40-1:00 PM	Post Treatment of Up flow Anaerobic Sludge Blanket Treated Domestic Wastewater using Horizontal Subsurface flow Constructed Wetland: A Case Study in Addis Ababa,	Elsa Teshome	

Day 3 Afternoon (Sept. 23)

Time	Activity/Topic	Presenter	Moderator
1:00 – 2:00 PM	**Lunch Break**	**Organizing Committee**	**Organizing**
2:00 – 3:40 PM	**Parallel Sessions**	**As scheduled below**	**As scheduled below**
3:40 – 4:00 PM	**Coffee Break/Poster Sessions**	**Organizing Committee**	**Organizing**
4:00–5:00 PM	**Moment of silence and tribute in memory of Prof. Tenalem Ayenew**	**Organizing Committee**	**Organizing Committee**

	Closing Remarks	**Prof. Worash Getaneh, Research and Innovation Vice President, AAU**	**Organizing Committee**

PARALLEL SESSIONS

Day 3: Afternoon: Parallel Session A: Drinking Water and Water Security			
Time	**Activity/Topic** **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	**Presenter**	**Moderator/ Rapporteur**
2:00-2:20 PM	Remediation of Heavy Metal Pollutants from the Industrial Wastewater and Surrounding Water Bodies in Ibadan, Nigeria, Using Green Synthesized Silver Nanoparticles	Nurudeen Akinade	**Prof. Nigus Gabiye/ Dr. Tadesse Alemu**
2:20-2:40 PM	Smart Inversion of VES Resistivity Data for Hydrostratigraphic Insight in the Lake Tana sub-basin, Ethiopia	Lingerew Nebere	
2:40-3:00 PM	Decision support systems to improve schistosomiasis preparedness and control in the era of global change	Kayla Kauffman	
3:00-3:20 PM	Impact of Water Mineral Composition and Coffee Grind Size on the Biochemical Profile, Acrylamide Content, and Safety of Traditionally Brewed Ethiopian Coffee	Dhaba Mengesha	

3:20-3:40 PM	Biophysical monitoring for Nature-based solutions to strengthen urnban water resilience: Early lessons from the SUNCASA project in Eastern and Southern Africa	Stanley Chasia	

Day 3: Afternoon: Parallel Session B: Ecosystems and Water Security

Time	Activity/Topic **A maximum of 15 minutes of presentation and 5 minutes of Q&A session**	Presenter	Moderator/Rapporteur
2:00-2:20 PM	Climate-Resilient Water Safety Planning and Strategic Communication: Lessons from KASHWASA	Mwidima Peter Charles	**Prof. Brook Lemma/ Dr. Gebremedhin Tesfaye**
2:20-2:40 PM	Digital Soil Moisture Monitoring Using Cosmic Ray Neutron Sensing for Smart Irrigation Management in Ethiopia.	Ashebir Haile	
2:40-3:00 PM	Evaluating the Performance of Multiple Satellite-Based Rainfall Products and Citizen Science Rainfall Monitoring in a Data-Scarce Region, Genale River Watershed, Ethiopia	Girma Sahilu	
3:00-3:20 PM	Climate Change Impacts on Potential Evapotranspiration and Crop Water Demand in the Tana Sub-Basin, Upper Blue Nile Basin, Ethiopia.	Habtamu Eshetie	
3:20-3:40 PM	Hydrological Resilience to Climate Extremes in a Data-Scarce Basin and Its Implications for Water Security in the Baro River	Shimelash Molla	