جامعة أبو بكر بلقايد
UNIVERSITY OF TLEMCEN

IC-TWEP 26

DGRSDT
البحث العلمي في خدمة المواطن

INTERNATIONAL CONFERENCE ON

TRANSBOUNDARY WATERCOURSE PROTECTION AND ENVIRONMENTAL POLLUTION PREVENTION

Tlemcen, Algeria

Monday, October 26, 2026

Opening Ceremony & Official Welcome

3:00 – 5:00 PM

- Holy Quran
- National Anthem

WELCOME ADDRESS

Prof. Chérifa Abdelbaki
President of the conference

Prof. Mourad Meghachou
Rector of University of Tlemcen

Mr. Wali of Tlemcen

MINISTERIAL ADDRESS

His Excellency Prof. Kamel Baddari
Minister of Higher Education and Scientific Research, Algeria

KEYNOTE ADDRESS

Prof. Mihoubi Mustapha Kamel
Former Minister of Water Resources, Algeria

Prof. Nidal Salim
Director, Global Institute for Water, Environment and Health - Geneva, Switzerland

5:00 – 7:00 PM

- Coffee Break
- Welcome Cocktail



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IC- TWEP 2026 Program / Tuesday, 27 October. 2026

Start	End	Duration (min)	Chair Co-Chair	Room A – Climate Change & Pollution Impacts / Governance – Presentation	Chair Co-Chair	Room B –Socio-Economic Sector – Presentation
08:00	08:30	30	**Welcoming the participants / Registration**			
08:30	09:00	30	Prof. Nidal Salim Prof. Navneet Kumar	**Endogenous sustainable Protection of Transboundary Basins Volta – Niger in Burkina Faso** Prof. Mamounata Belem - Former Minister of Water, Hydraulic Development and Sanitation (MEAHA), Burkina Faso		
09:00	09:30	30		**Translating Science into Action for Transboundary Watercourse Cooperation.** Prof. Tirusew Asefa -Patel College of Global Sustainability. University of South Florida — USA.		
09:30	09:45	15		**Water Quality Challenges in a Transboundary Basin: The Case of the Hammam Boughrara dam catchment (Northwestern Algeria).** Badraoui Abderrahim — ABHOCC/AGIRE — Algeria.		
09:45	10:00	15		**Integrated assessment of transboundary surface-water pollution and its impacts on groundwater vulnerability using remote sensing, GIS and the DRASTIC method: The case of Oued Mouillah and the Maghnia aquifer (northwestern Algeria).** Bentekhici Nadjla — (ASAL) Algerian Space Agency — Algeria.		
10:00	10:15	15	**Discussions**			
10:15	10:30	15	**Coffee break / Poster session**			
10:30	10:45	15	Prof. Tirusew Asefa Prof. Tarek Merabtene	**Assessing meteorological and agricultural droughts in the Mitidja plain, Algeria: Trends and Impacts on agricultural productivity.** Abdelhadi AMMARI — ENSH — Algeria.	Prof. Megnounif Abdessalam Prof. Boulmaiz Tayeb	**Cooperation for sustainable development. From institutional construction to collective action** Deramchi Mohamed — SASS.
10:45	11:00	15		**Urban Expansion, Climate Change, and Environmental Degradation in Mila, Algeria: A Multi-Temporal Remote Sensing and GIS Assessment.** Imane Souci — University of Constantine 3 — Algeria.		**Summary of the main achievements of the water sector.** Aissiou Charif — Ministry of Hydraulics— Algeria.
11:00	11:15	15		**Integrated Flood Risk Assessment and Mitigation in Algeria: Hydrological Modelling, Artificial Intelligence, Climate Change and Resilience Strategies.** BOUTAGHANE Hamouda— Annaba University — Algeria.		**Prevention of Air, Marine and Water Pollution Risks in Algeria: Strategic Challenges and Perspectives for Developing General Disaster Risk Prevention Plans.** Naïma Touloulum — DNRM (Ministry of the Interior and Local Authorities) — Algeria.

11:15	11:30	15		**Climate Change Impacts on Soil Erosion Susceptibility in the Transboundary Medjerda Watershed: A Machine Learning Approach for Climate Resilient Land Management.** Asma Bouamrane — Kyoto University— Japan.		**Essential prerequisites for launching a consultation mechanism for transboundary waters.** Ansari Taha — ANRH— Algeria.
11:30	11:45	**Discussions**				
11:45	12:00	15	Prof. Tirusew Asefa Prof. Tarek Merabtene	**Source Apportionment of Surface Water Pollution in a Deltaic River System Using United State Environmental Protection Agency (USEPA), Positive Matrix Factorization (PMF): The Case of Ede Onyima Creek, Niger Delta, Nigeria.** Emmanuel Francis — National Mathematical Center — Nigeria.	Prof. Megnounif Abdessalam Prof. Boulmaiz Tayeb	**Role of environmental monitoring and physico-chemical analyses in assessing the effects of climate change on water sources: the case of the Upper Tafna.** Boukhateb Imen — Environmental Directorate,ONEDD. —Algeria
12:00	12:15	15		**Development of a Computer Model for Atmospheric Dispersion to Prevent Pollution of Coastal Aquatic Environments.** Abdallah Bouam — C.R.N.B — Algeria.		**Hammam Boughrara Dam: the current situation.** Nait Amrane Soufiane — ANBT, Hammam Boughrara Dam — Algeria
12:15	12:30	15		**GIS-Based Assessment of Groundwater Quality for Irrigation in Souk-Ahras Province Using an Integrated Water Quality Index.** Hamza Bouguerra— Badji Mokhtar -Annaba University— Algeria		**Surface waters of the Mouilah Wadi: where, when, and why does water quality deteriorate?** Belarbi Halima- -CUM-EOLE, University of Tlemcen, Algeria
12:30	12:45	15		**Linking hydrochemical variability to climatic conditions: Assessment of irrigation water quality using multivariate analysis and classification methods.** Aicha El Mahi —Mustapha Stambouli University, Mascara — Algeria.		**Pollution control in Oued Mouillah: an environmental and socio-economic imperative for the sustainable management of transboundary water resources.** Benadda Lotfi — BET BAHDJA – ONA, Algeria
12:45	13:00	15	**Discussions**			
13:00	14:00	60	**Lunch break**			
14:00	14:30	30	Prof. Mamounata Belem Prof. Abdelhadi AMMARI	**Future Challenges in Water Resources Modeling and Management: Basins' Resilience in an Uncertain Century - Bridging Numerical Physics and Transboundary Diplomacy.** Prof. Tarek Merabtene -Sharjah Smart Center for Climate Resilience.		
14:30	15:00	30		**Modelling Water Availability and Irrigation Savings under Afforestation Scenarios in Degraded Croplands** Prof. Navneet Kumar (Head of the Geo-Meteorological Risk Management Division (GMRMD) at the National Institute of Disaster Management (NIDM), under the Ministry of Home Affairs, India.		
15:00	15:15	15	**Coffee break / Poster session**			

15:15	15:30	15	Prof. Ahmed Al-Busaidi Prof. Meddi Mohamed	**Bassin Guir–Saoura : le barrage de Djorf Torba face au Changement climatique et aux pressions transfrontalières. Disponibilité et qualité de l'eau en zone aride, Sud-Ouest algérien.** Dr. Merzougui Touhami, University of Bechar, — Algeria.	Prof. Rouissat Bouchrit Prof. Bouanani Abderrazak	**Remote management and SCADA: pillars of the digital transformation of water infrastructure.** Fekir Walid — SOGERHWIT EPE SPA— Algeria.
15:30	15:45	15		**Transboundary Waters: When Hydropolitical Realities Surpass International Law.** Sofiane ABAIDIA — Hassiba BENBOUALI University of Chlef— Algeria.		**Transboundary threat posed by the waters of Boughrara Dam: diagnosis and prospects.** Abi Ayad Linda — DRE— Algeria.
15:45	16:00	15		**Rainwater Harvesting as a primary water resource in all circumstances.** Chicgoua Noubactep — Hohai University— -China.		**The role of ONID in developing agricultural water management in large irrigated perimeters.** Ikhlef Saliha — ONID— Algeria.
16:00	16:15	15		**Explaining the Perception–Action Gap in Urban Flash Flood Contexts: Evidence from Jordan.** Jalal Al-Qaryouti — TU Darmstadt — Germany.		**Surface-water quality at Beni Bahdel Dam: combined effects of climate variability and anthropogenic pressures.** Hadjila Othman — ADE, Algeria.
16:15	16:30	15		**Optimizing Deep Learning Pipelines for Flash-Flood Detection in Hyper-Arid Environments Using C-Band SAR Data.** Mahmoud Akhamouk — Ghardaia University— Algeria.		**Interpretable Machine Learning for Urban Wastewater Quality Prediction: A Coupled XGBoost–SHAP Framework Applied to a Full-Scale WWTP.** Abdelhakim Kellouche — National Sanitation Office — Algeria.
16:30	16:45	15		**FOSSIL WATER: A GUARANTEE OF WATER SECURITY IN ALGERIA.** Boualem Remini — Blida 1 University— Algeria.		
16:45	17:00	15	**Discussions; Closing session, 2nd day**			

IC- TWEP 2026 Program/ Wednesday, 28 October 2026

Start	End	Duration (min)	Chair Co-Chair	Room A – Digital Transformation in Water Management – Presentation	Chair Co-Chair	Room B – Innovative Technologies / Science, Education & Innovation & Regional Cooperation
08:00	08:30	30	Conference Registration			
08:30	09:00	30	Prof. Koichi Unami / Prof. Hani Shemy	**The water crisis in the MENA region: climate change impacts and adaptation strategies.** Prof. Hany Farhat Abd Elhamid Attia -Department of Environmental Engineering. Faculty of Civil Engineering, Technical University of Kosice, Slovakia.		
09:00	09:30	30		**Water resources management & climate change adaptation : The Tunisian experience** Prof. Noureddine Gaaloul – INGREF— Tunisia.		
09:30	10:00	30		**Governing Shared Scarcity: Trust, Equity, and Adaptive Cooperation in Transboundary Water Systems** Prof. Hassan Qudrat-Ullah -York University, Canada.		
10:00	10:30	30		**Flowing from land to sea: why, what to do and who to engage for water security** Dr. Siméon Kenfack - AFWASA, Cote d'ivoire		
10:30	10:45	15	Coffee break / Poster session			
10:45	11:00	15	Prof. Hany Farhat Abd Elhamid Attia / Prof. Hasbaia Mahmoud	**Optimising Coastal Aquifer Management under Seawater Intrusion.** Farmani Raziyeh — University of Exeter— UK.	Prof. Hassan Qudrat-Ullah / Prof. Kabo Bah Amos	**[2] Environmental Challenges under Climate Change: Water from Air for Sustainable Crop Production Using Green Energy.** Ahmed Al-Busaidi — Sultan Qaboos University— Oman.
11:00	11:15	15		**Modeling of sedimentary dynamics and impacts of coastal urbanization and desalination infrastructure on coastal erosion in the Mediterranean.** Faiza Hallouz — USTHB— Algeria.		**[84] Wastewater-food-health nexus: Biological treatment for safe agricultural reuse and transboundary watercourse protection.** Awoke Guadie — Arba Minch University— Ethiopia
11:15	11:30	15		**Assessing Hydrological Drought Dynamics and Groundwater Recharge in Semi-Arid Basins: A Coupled IV-ITA, SSI, and HBV-light Approach.** Fayçal Djellouli — Nour Bachir University Center—Algeria		**[233] Integrating GIS and the Analytic Hierarchy Process (AHP) for Groundwater Potential Zonation in the Arid Chott-El-Gharbi Watershed.** Abdessamed Derdour — University of Naama— Algeria

11:30	11:45	15	**Accurate Daily Reservoir Evaporation Prediction Using Advanced Boosting Machine Learning Models under Climate Variability for Sustainable Water Management.** Abderzak Moussouni — University of Mila— Algeria	**[145] Assessing Groundwater Quality for Irrigation: A Case study of Chott Saboun, northeastern Algeria.** Athamena Ali — University of Batna 2, — Algeria
11:45	12:00	15	**Implementation of the Revised Universal Soil Loss Equation Model Calculation within the Google Earth Engine Cloud Computing Environment.** Youcef Fekir — University of Mustapha Stambouli Mascara— Algeria.	**Comparative Performance Analysis of Machine Learning Models for Modeling and optimization of coagulant dosage in water treatment plants.** Mohammed Achite — Hassiba Benbouali of Chlef, Algeria.
12:00	12:15	15	**Artificial Intelligence-Based Modelling of Sediment Discharge in the Oued Mouilah Watershed, Northwestern Algeria.** Hellal Abdelkader — University Centre of Maghnia— Algeria.	**Machine Learning-Based Assessment of Nitrate Contamination in a Shallow Aquifer under Agricultural Pressure: A Decadal Study in the Mascara Basin (Algeria).** Laouni Benadela — University of Mascara— Algeria.
12:15	12.30	15	**Evaluating Future Water Security in the Moyen Cheliff Basin (Algeria) Using the WEAP Model Under Climate and Demand Scenarios.** Nourredine Touati Benali — ENSH— Algeria.	**Application of Artificial Neural Networks for Predicting the Irrigation Water Quality Index (IWQI) of the Alluvial Aquifer of the Western Middle Cheliff Plain, Algeria.** Abdelhamid Bradai — Hassiba Benbouali University — Algeria
12:30	12:45	15	**Forecasting and Source Attribution of River Water Pollution Using Machine Learning and Spatio-Temporal Graph Models: A Case Study on the River Ganga.** Varad Sabane — VIIT, India.	**AI-Driven Optimization of Toluene Removal from Oilfield Wastewater Using Machine Learning and Zinc Oxide Nanoparticles.** Imane Tiffour — University of Tissemsilt— Algeria.
12:45	13:00	15	Discussions.	
13.00	14:00	60	Lunch break	

14:00	14:30	30	Prof. Mihoubi Mustapha Kamel Prof. Boumedienne Maamar	**Géopolitique de l'eau et hydro diplomatie- Water Geopolitics and Hydro-Diplomacy.** Prof Tatah Boualem —MESRS—Algeria.		
14:30	15:00	30		**African Hydrofrontiers: Governing Shared Waters between Sovereignty, Water Security, and Climate Resilience** Prof. Meddi Mohamed – ENSH- Blida, Algeria.		
15:00	15:15	15	**Coffee break / Poster session**			
15:15	15:30	15	Prof. Chettih Mohamed Prof. Athamena Ali	**Green-Synthesized Silver Nanoparticles and Calcium Metasilicate as Novel Adsorbents for Optimized Arsenic and Selenium Removal: A Full Factorial Design Approach** Nadia Badr — Alexandria University—Egypt	Professor Noureddine Gaaloul Dr. Siméon Kenfack	**The Medjerda Climate Stress Index (MTCSI): Synchronous Aridification of a Transboundary Basin (1981–2024)** Fatima Zohra Tebbi — Batna 2 University— Algeria.
15:30	15:45	15		**GIS-Based Groundwater Potential Zone Mapping Using AHP and Random Forest Machine Learning: A Case Study of the Constantine Region, Northeastern Algeria** Nouh Rebouh — Research Centre for Regional Planning— Algeria		**Beyond Water Scarcity: Institutional Capacity and the Water Development Gap in West Africa** Ibrahim Lawal — PAUWES— Algeria
15:45	16:00	15		**Impact of water pollution and development of sustainable solutions for its monitoring and treatment** Benyahia Khadidja — ENPO-MA —Algeria.		**Sustainable Wastewater Treatment: Performance Evaluation of Prickly Pear Cactus (Opuntia ficus-indica) as a Bio-Flocculant** Racha Bouchenak Khelladi — Djilali Liabès University Sidi Bel Abbes, —Algeria.
16:00	16:15	15		**Degradation of a Binary Pollutant System (Azure B Dye and Humic Acid) by Electro-Fenton Process** Bensaad Naoual — ENPO-MA —Algeria.		**Optimising 3D directional-well trajectories for groundwater pollution management through inference from seismic, geophysical and geological models.** Dehni Abdellatif —ASAL— Algeria.
17:00	17:15	15		**Streamflow prediction using Machine Learning approach and HEC-HMS conceptual model : A Comparative Assessment** Noureddine Makhloufi — Chlef university— Algeria.		**CIAPOL: the driving force behind environmental pollution prevention in Côte d'Ivoire** Kambo Martial Atse — Pan-african Think Do African Network Of Young Researchers— Ivory Coast
17:15	17:30	15	Discussions; Closing session, 3rd day – Closing of the conference			

Workshops and round-table discussion (parallel sessions)/ Wednesday, 28 October 2026

Time	Activity	Content
10:30 – 17 :00	Workshop 1:	Flood Susceptibility Mapping Using Machine Learning and Remote Sensing
10:30 – 17 :00	Workshop 2	Part 1: AI-Driven Digital Twin & Google Earth Engine for Dam Watershed Intelligence Part 2: AI-Driven Digital Twin & Google Earth Engine for Mining Intelligence
10:30 – 17 :00	Workshop 3	Integrating Disaster Risk Reduction (DRR) into Local Development Planning
14:00 – 17 :00	Round-table discussion PAUWES— Algeria.	Education, Research and Entrepreneurship for Water and Sanitation in Africa: Empowering Youth and Advancing Gender Equality

IC- TWEP 2026 Program/ Thursday, 29 October 2026

Start	End	Duration (min)	Activity Co-Chair	Room A – Digital Transformation in Water Management – Presentation	Chair Co-Chair	Room B – Innovative Technologies / Science, Education & Innovation & Regional Cooperation
08:00	08:30	30	Welcoming the participants / Registration			
08:30	09:00	30	Prof. Tirusew Asefa Dr. Bessedik Madani	**Science, Education, and Innovation Without Borders: Building Bridges Through Academic and International Collaboration** Dr. Fateh Baher— Future Earth Africa Hub Leadership Centre - University of Rhodes— South Africa.		
09:00	09:30	30		**Strengthening the Role of Universities in Watercourse Protection and Environmental Sustainability** Prof. Hani Shemy — Faculty of Agriculture, Cairo University— Egypt.		
09:30	10:00	30		**Interdisciplinary Perspectives on Human Communities and Groundwater Resources** Prof. Koichi Unami Kyoto University— Japan.		
10:30	11:00	30		**Treatment of highly saline water using a novel class of subnanoporous hydrophobic membrane** Prof. Noreddine Ghaffour— KAUST—Djeddah—KSA.		
11:00	11:15	15	Coffee break / Poster session			
11:15	11:30	15	Prof. Nadia Badr Dr. Benada Lotfi	**AI-Based Multi-Sensor Satellite Monitoring of Dissolved Oxygen in Algerian Reservoirs for Water Quality and Pollution Prevention** Tayeb Boulmaiz — Badji Mokhtar Annaba University—Algeria.	Prof. Koichi Unami Prof. Ghenim Abderrahmane	**Intelligent Land, Water and Livelihoods: An AI Driven Water, Energy and Food Nexus Approach for Africa's Great Green Wall and its Transboundary Basins** Prof. Amos Tiereyangn Kabo-Bah— Ghana.
11:30	11:45	15		**Impact of Treated Wastewater Reuse on Soil Properties in the Hennaya Irrigated Perimeter (Northwestern Algeria)** Badraoui Abderrahim — University of Tlemcen.		**The Trounsboundary Medjerda River Basin: Resouces, Threats and Opportunities** Habib Abida — University of Sfax— Tunisia.
11:45	12:00	15		**AI-Powered Decision Support System for Real-Time WWTP Performance Optimization: A Machine Learning Framework for Operational Excellence** Zorgani Naima — University Centre of Maghnia—Algeria.		**Multilevel Water Governance: Balancing Global Standards and Local Specificities.** Zaoui Ahmed Sadaq — University of Mascara— Algeria.

12:00	12:15	15	**Evaluating the water quality of the Djorf Eltorba dam (Algeria) using water quality Indices** Kouar Lazhari — University of Béchar—Algeria.	**Fostering Social Inclusion in Citizen Science: A Comparative Analysis of Communication Frameworks** Khadidja Bousmaha — Alger2 University—Algeria.
12:15	12:30	15	**AquaNexus.** **Water for AI: A Climate-Resilient Framework for Energy- Efficient Data Center Cooling in the MENA Region.** Ibrahim Adetayo Lawal— PAUWES— Algeria.	**The Medjerda Transboundary Basin Facing Climate Challenges: Governance Models for a Resilient Territory.** Amina Baala — PAUWES— Algeria.
12:30	12:45	15	**Spatio-Temporal Multimodal Intelligence for Anticipatory Flash Flood Forecasting Using Hybrid SAR–Rainfall Deep Neural Architectures** Flamin David — St. Joseph's college of engineering— India.	
12:45	13:00	15	**Discussions, Recommendations and prospects for cooperation** **Official closing of the conference**	
13:00	14:00	60	**Lunch**	
From 14:00			**Touristic / Guided tour**	