

تحت الرعاية السامية لصاحب الجلالة الملك محمد السادس نصره الله

UNDER THE HIGH PATRONAGE OF HIS MAJESTY KING MOHAMMED VI
MAY GOD ASSIST HIM

SOUS LE HAUT PATRONAGE DE SA MAJESTE LE ROI MOHAMMED VI
QUE DIEU L'ASSISTE



PROGRAM/ PROGRAMME

10th International Micro Irrigation Conference (10IMIC) on the Topic

Micro-irrigation in the Era of Technology Innovation and Digital Transformation



10ème Conférence Internationale de la Micro Irrigation sur le Thème

La Micro-irrigation à l'Ere de l'Innovation Technologique et de la Transformation Digitale

25-27 January 2023
Conference Center -
Dakhla Morocco.

PARTENAIRES SCIENTIFIQUES /SCIENTIFIC PARTNERS FOR SIDE EVENTS



Wednesday 25 January 2023

Salle de Conférence /Conference Room

- **09h00-10h00 ACCUEIL -INSCRIPTIONS/ REGISTRATION**
- **10h00-11h00 CÉRÉMONIE D'OUVERTURE/OPENING SESSION**

- **11h00-11h30 PAUSE CAFE/COFFEE BREAK**

SESSION 1

PLENARY SESSION

MAIN CONFERENCE ROOM/ SALLE DE CONFERENCE

- **11h30-11h45- Misunderstanding and Misconceptions in the Irrigation Water Management**, Dr Ragab RAGAB, UK, President of ICID, International Commission of Irrigation and Drainage

- **11h45-12h00 Readiness of agriculture for 4th Industrial Revolution** . Dr Fedro ZAZUETA; Emeritus Professor, Agricultural and Biological Engineering **University of Florida Gainesville USA- Secretary General of CIGR**, International Commission of Agricultural and Biosystems Engineering

- **12h00-12h15- L'économie d'eau d'irrigation au cœur de la stratégie agricole au Maroc** Zakaria EL YACOUBI, Direction de l'Irrigation et de l'Aménagement de l'Espace Agricole, MAPMDREF, **Maroc**

- **12h15-12h30 Utilisation des géosynthétiques pour l'économie d'eau en micro irrigation**, Dr Nathalie TOUZE, Président du Centre INRAE-Ile de France **Jouye- en- Josas-Antony, VP Honoraire de l'Association Internationale des Geosynthétiques IGS, France**

- **12h30-12h45- Enabling Drip Irrigation Development through Market System Approach**, Dr Youssef BROUZIYNE, Institut International de Gestion de l'Eau **IWMI-Cairo Office**

- **12h45-13h00 The role of CIHEAM Bari in promoting use of innovative technologies and digitalisation in the field of irrigated agriculture**, Nouredin Driouech, CIHEAM Bari, **Italy**

- **13h00-13h30 DISCUSSION**

- **13h30-15h00 LUNCH/DEJEUNER**

SESSION 2
(PARALLEL SESSION)
MAIN CONFERENCE ROOM/SALLE DE CONFERENCE
PUBLIC POLICIES AND THE PROMOTION OF MICRO IRRIGATION:
LESSONS LEARNED
POLITIQUES PUBLIQUES ET PROMOTION DE LA MICRO-IRRIGATION:
LEÇONS APPRISSES

- **15h00-15h10- Micro-irrigation et gestion durable des ressources en eau.** Mouloud SAFINE,-Groupe Eau , Lauréats IAV Hassan II **Maroc**
- **15h10-15h20- Investigating the current extent of new technologies use in irrigation water management in the Nile Delta-Egypt,** Youssef BROUZIYNE, International Water Management Institute (IWMI), MENA office, Giza, **Egypt**
- **15h20-15h30 Urban Agriculture Development and irrigation in Singapore,** Prof Wee Liang TAN, Vice Chairman International Association for Agricultural Sustainability IAAS, **Singapor**
- **15h30-15h40 Status-quo, Opportunities and Challenges of Irrigation in Morocco: A Critical Analysis based on a Comparative Study,** Ayoub GUEMOURIA et al, Mohammed VI Polytechnic University, International Water Research Institute, IWRI- **Morocco**
- **15h40-15h50 Micro irrigation au Niger: Situation et Besoins,** Issaka. O. Gaoh Aboubacar, West African Srvce Center on Climate Change and Adapted Land Use WASCAL, **Niger**
- **15h50-16h00 Les normes et contrôle qualité dans la conception et l'installation des systèmes de micro irrigation,** Ben el Mamoune Mohammed and Derradji Abdelkrim, LABOTEST Kenitra, **Morocco**
- **16h00-16h20 PAUSE CAFE/COFFEE BREAK**
- **16h20-16h30 Desalination of seawater in Morocco: an integrated vision for the management of irrigation water in the context of climate change. Case study of Chtouka and Dakhla PPP projects;** "Oudrhiri Salma 1, Youssra Outmrhoust 2, Imane Mourjanou 2 and Wafae Elkhousmi 2 , 1-Direction de l'Irrigation (DIAEA-MAPMDREF), 2-IAV Hassan II Morocco
- **16h30-16h40 Use of wind energy for desalination of seawater in the field of irrigation,** Rajaa Tanji, Direction de l'Irrigation, DIAEA, MAPMDREF, **Morocco**
- **16h40-17h00 DISCUSSION**

SESSION 3

MICRO-IRRIGATION FOR SMALL-SCALE FARMING, CHALLENGES, OPPORTUNITIES AND INITIATIVES MICRO-IRRIGATION POUR L'AGRICULTURE À PETITE ÉCHELLE, DÉFIS, OPPORTUNITÉS ET INITIATIVES (PARALLEL SESSION)

MAIN CONFERENCE ROOM/SALLE DE CONFERENCE

- **17h00-17h10 Best practices in micro-irrigation development for small farmers, future needs and the way forward**, Dr Mohamed Wahba, HVP of ICID, Former Researcher at National Research Center, **Egypt**
- **17h10-17h20 Low-cost Technologies use in managing irrigation water in the MENA region: Study case of Nile Delta in Egypt**, Youssef Brouziyne, International Water Management Institute (IWMI), MENA office, Giza, **Egypt**
- **17h20-17h30 La micro-irrigation pour l'agriculture à petite échelle: défis-opportunités -initiative. Cas du Sénégal**. Sidibe Rahmatoulaye, Direction des Barrages, Retenues et Lacs Artificiels DBRLA, **Sénégal**
- **17h30-17h40 Challenges of rice drip irrigation: field assessment toward sustainability in Lis valley, Portugal**, Gonçalves, Instituto Politécnico de Coimbra, Escola Superior Agrária de Coimbra,, **Portugal**
- **17h40-17h50 Modernization of irrigation systems: Collective reconversion to drip irrigation in El Haouz area (Analysis and Lessons)**, Charafi Soufyane, Regional Office of agricultural development (ORMVAH), **Morocco**
- **17h50-18h00 Situation de la Micro -irrigation en Mauritanie**, Mame Semou Niang Chargé de projets ONG-AISER, **Mauritanie**
- **18h00-18h10 Micro-irrigation practice in Ethiopia and Somalia: the case study of Juba-Shebelle basin**, Sinafeksh Girma Wolde, Ismail Elhassnaoui and Abdirahman Ismail Dhaqane
- **18h10-18h30 DISCUSSION**

Thursday 26 January 2023

Session 4

SALLE DE CONFÉRENCE/MAIN CONFERENCE ROOM

SESSION EN PARALLELE /PARALLEL SESSION

**INNOVATION IN MICRO-IRRIGATION DESIGN AND TECHNOLOGY TO IMPROVE
RESILIENCE TO CLIMATE CHANGE**

**INNOVATION DANS LA CONCEPTION ET LA TECHNOLOGIE DE MICRO-IRRIGATION
POUR AMÉLIORER LA RÉSILIENCE AU CHANGEMENT CLIMATIQUE**

- **09h30-09h40 Smart Drip Irrigation Technologies: A global Perspective, Dr Felix Reinders, HP of ICID, South Africa**
- **09h40-09h50 Assessment of performance of ULE drip irrigation system in comparaison with traditional system applying the WEFI approach case of Morocco, Anas El Mansouri et al, ICARDA Rabat, Morocco**
- **09h50-10h00 Le système de Télégestion au service de la gestion de la zone de reconversion collective au Tadla, Tazrouti Mohamed, ORMVA du Tadla, Maroc**
- **10h00-10h10 Hydraulic characteristics of SLECI and Moistube irrigation system as influenced by pressure operating, water quality and soil texture? Elmajetni I.1, Wahid N.1 J. Zascerska 2, Sering Y. 2, Hansmann H. 2, Sabri A.3 Bouazzama B.3- 1: Sultan Moulay Sliman University, Beni Mellal - Morocco; 2: Wismar University - Germany; 3: National Institute of Agronomic Research (INRA) – Morocco ;**
- **10h10-10h20 Effect of low pressure irrigation on crops production in Morocco: Case of citrus and olive, Dr Rachid Moussadek, INRA Rabat, Morocco**
- **10h20-10h30 Stratégies d'irrigation et de gestion du stress hydrique pour garantir la qualité des raisins et améliorer la résilience du vignoble. Mr Bruno GRAWITZ et Jacques BERAUD, SCP, le Tholonet France**
- **10h30-10h40 Effects of Water Saving on Stomatal Conductance, Electron Transfer Chain of the Light Reactions of Photosynthesis, Growth and Yield of Table Grapes Grown Northeast of Morocco, Mohammed El GUETTABI¹ and Kamal ABERKANI²**
1Irrigation Service, Provincial Directorate of Agriculture, Nador, Morocco
2Research Team on Applied Biology and Biotechnology, Laboratory of Bioresources, Biotechnologies, Ethnopharmacology and Health, Multidisciplinary Faculty of Nador, University Mohammed First, Selouane, Morocco
- **10h40-10h50 Effects of Water Scarcity using two Irrigation Strategies on Physiology and Productivity of Eggplants Crops Grown under Mediterranean Climate Conditions of Morocco, Maachi Dina, Samri Salah Ed-dine and Aberkani K. Research Team on Applied Biology and Biotechnology, Laboratory of Bioresources, Biotechnologies, Ethnopharmacology and Health, Multidisciplinary Faculty of Nador, Morocco**
- **10h50-11h00 L'effet de l'azote, apporté par fertigation, sur la productivité de la betterave irriguée par micro-irrigation installée dans un climat semi-aride TADLA, Nora TOUFIKI, Université Sultan Moulay Slimane, Faculté de Sciences et Techniques, Equipe d'Ecologie et de Développement Durable Beni-Mellal, Maroc**
- **11h00-11h15 DISCUSSION**

- **11h15-11h30 PAUSE CAFE/COFFEE BREAK**

SESSION 5

SALLE DE CONFÉRENCE/MAIN CONFERENCE ROOM SESSION EN PARALLELE /PARALLEL SESSION

- **11h30-11h40 Irrigation management with poor quality water resources**, Marco Arcieri, HVP of ICID- Secretary General of Italian National Committee of Irrigation and Drainage-Italy
- **11h40-11h50 Rice irrigated with treated urban wastewater – trial safety assessment in Portugal**, Isabelle Duarte, Instituto Politécnico de Coimbra, Escola Superior Agrária de Coimbra, 3045-601 Coimbra, **Portugal**
- **11h50-12h00 Modélisation géologique 3d–de l’aquifère côtier du paléogène (Dakhla-sud ouest du Maroc)**, Ayoub AFQUIR1, 2, Aicha SAAD 1, Sidi Mokhtar ELKANTI 2-1 Faculté Polydisciplinaire de Taroudant; 2 Agence du Bassin Hydraulique de Sakia Elhamra et Oued Eddahabb, **Morocco**
- **12h00-12h10 Enhancing dam management performance under deficit irrigation. Study case: Ziz watershed**, Dr Ismail Elhassnaoui, Mohammed V University, Mohammadia School of Engineers, Rabat, **Morocco**
- **12h10-12h20 Effect of treated wastewater drip-irrigation for ornamental plants: Lantana and Hibiscus**, Basir Ikram et al., Agronomic and Veterinary Institute Hassan II, **Morocco**
- **12h20-12h30 Numerical simulation of clogging of two types of emitters with similar properties**, Hamza Ouarriche, Mechanics and Energetics, Modelization and Applications Team, OPTIMEE Laboratory, Faculty of Sciences, Moulay Ismail University, **Morocco**
- **12h30-12h40 Experimental study of clogging of two different types of emitters with similar properties**, Mohamed El Bouhali, Mechanics and Energetics, Modelization and Applications Team, OPTIMEE Laboratory, Faculty of Sciences, Moulay Ismail University, **Morocco**
- **12h40 - 13h30 DISCUSSION**
- **13h30-15h00 DEJEUNER/LUNCH**

SESSION 6

SESSION PARALLELE/PARALLEL SESSION SALLE DE CONFERENCE/ CONFERENCE ROOM

DIGITAL TRANSFORMATION FOR THE MANAGEMENT OF MICRO-IRRIGATION **TRANSFORMATION NUMÉRIQUE POUR LA GESTION DE LA MICRO-IRRIGATION**

- **15h00-15h10 Digital Agriculture Technologies for Irrigation efficiency**, Alessandro Matese, Senior Researcher at the National Research Council (CNR-ITALY) in Florence at the Institute of BioEconomy (IBE). Visiting Associate Professor at the Geosystems Research Institute (GRI) at Mississippi State University (MSU-USA). PhD in Agriculture, Forest and Food Science. **Italie**
- **15h10-15h20 La micro-irrigation de précision combinant le digital et le savoir faire agronomique**, Faissal Sehbaoui AgriEdge, **Maroc**
- **15h20-15h30 Using Digital Technology Based on Soil Moisture Sensors for Saving Irrigation Water for the Moroccan Horticultural Production Farms**, Aberkani K¹ and Ferrer L², ¹Research Team on Applied Biology and Biotechnology, Laboratory of Bioresources, Biotechnologies, Ethnopharmacology and Health, Multidisciplinary Faculty of Nador, **Morocco**, ²ARVUM SARL, Alicante,
- **15h30-15h40 IRRISMART, an innovative solution for smart and precise drip irrigation management in Morocco**, Abouabdillah, Aziz¹, Bouabid Rachid¹, Ibndahou Idrissi Amine^{1,2}, El Bergui Omnia^{1,2}, ¹ Ecole Nationale d'Agriculture de Meknès, Maroc, ² Institut Agronomique et Vétérinaire Hassan II, Rabat, **Maroc**,
- **15h40-15h50 Intelligent Underground Irrigation using PVT Energy Applications for a Sustainable Agriculture**, Youness El Mghouchi, Moulay Ismail University; **Morocco**
- **15h50-16h00 Integrated irrigation automation system under kundalia irrigation project (kip)**, Madhya Pradesh, Upmanyu Ashwani Kumar¹, Kolhe Rakesh², **India**
- **16h00-16h30 DISCUSSION**
- **16h30-17h00 PAUSE CAFE/COFFEE BREAK-**

17h00-17h45- SESSION DE CLOTURE/CLOSING SESSION

Main Conference Room/Salle de Conférence

SESSION DE CLOTURE/CLOSING SESSION

Friday 27 January 2023

9h00 - 13h00 VISITE TECHNIQUE -TECHNICAL VISIT

-VISITE d'Exploitations Agricoles

**Production sous serres, de fruits et cultures maraîchères à haute valeur ajoutée ,
avec micro-irrigation et utilisation de l'eau souterraine**

-VISIT To Farms

**Growing high value added fruits and vegetables, under Green houses, with micro
irrigation and use of underground water**

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