

From Secretary General's Desk...

Dear Colleagues,

Through this note, I would like to inform everyone the change of venue for the 72nd International Executive Council (IEC) meeting and the 5th African Regional Conference on "Sustainable Management of Irrigation for Improved Resilience of Agriculture in Africa" to be held from 24-30 November 2021 at Marrakech, Morocco. The Morocco National Committee of ICID (ANAFIDE) has informed us that the venue of the above events will now be **KENZI ROSE GARDEN** Hotel located at Avenue du Président Kennedy, Hivernage 400000 Marrakech. Therefore, I request all those who plan to attend the events to proceed accordingly. However, the Young Professionals Training will be organized



at the Zephyr hotel as planned earlier with no change.

Irrigation Australia has also been keeping us updated about the arrangements for the 73rd IEC, 24th ICID Congress to address two pertinent questions on "Innovation and Research in Agricultural Water Management to Achieve Sustainable Development Goals," and the International Conference in 2022 at Adelaide.

International Geosynthetics Society, with support of ICID, is organizing a virtual webinar series from 15-17 November 2021 on "Improving the Performance of Canals with Geosynthetics." The series is intended to introduce the engineering community to the use of geosynthetics in canal design and restoration. Several experts will be making presentations, and you may find them quite useful in your area of irrigation profession. You can register at <https://www.geosyntheticsociety.org/>

I take the opportunity to remind us

all that we have launched an online register of World Irrigation Projects. The register aims to create a global database of irrigation projects, having an operational area of >5000 ha each, along with their salient features to serve the irrigation communities around the world and facilitate knowledge exchange. All project owners and other associated agencies/ individuals are requested to provide information about their respective countries for populating the register. The entries are free and will earn you recognition as a contributor. I hope that you all will join ICID wholeheartedly in making this effort a success.

I look forward to interacting with you in Marrakech, Morocco, in a couple of weeks and at Adelaide, Australia, next year.

Best Wishes,



Ashwin Pandya
Secretary-General, ICID

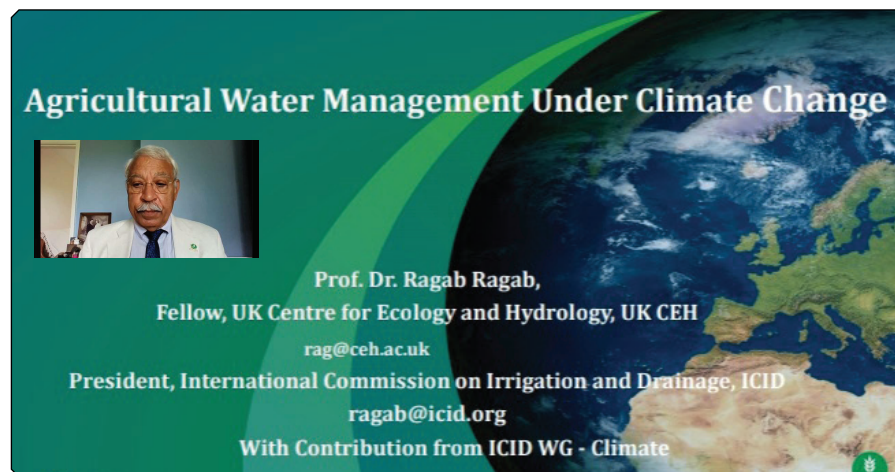
President Prof. Dr. Ragab Ragab Made a Presentation at the Glasgow University, UK

President Prof. Dr. Ragab Ragab gave a presentation on "**Agriculture Water Management Under Climate Change**" at the Glasgow University, U.K, held on 28 October 2021, just ahead of COP26. Some of the key issues highlighted are as below:

- a. **There is a need to narrow the increasing gap between water supply and demand for global Food Security**

Climate change affects the water supply and in some parts of the world widens the gap between water supply and demand. Water supply, in turn, affects the agricultural water needs (irrigation consumes around 70% of global freshwater resources). In addition, flood and drought events have an impact on drainage and the entire agricultural water management system.

ICID, the International Commission of Irrigation and Drainage, is dedicated to improving the status of agricultural water management practices. It has



a working group on Climate Change Impact and Mitigation. https://icid-ciid.org/inner_page/111

Narrowing the gap and securing water for irrigation could include: increasing water supply (fresh + non-conventional water resources), increasing water use efficiency, better land management, suitable crops and crop rotations, use

of water-saving technologies, new technologies to accurately determine the crop irrigation water management (Eddy Covariance, Scintillometers, and COSMOS), and use of models as management tools for water management (e.g. SALTMED and IHMS).

b. The Increasing frequency of flood and drought requires mitigation and adaptation for human and food security

Flood Adaptation Measures: Integrated flood management to minimize the effect of climate change includes: Increasing drainage capacity, Using fishponds as retention ponds, Constructing pumping stations, Building flood diversion culverts, and other measures such as levees, floodwalls, flood bypasses, channel improvements, dams, dikes and many other engineering works need to be considered.

Drought Adaptation Measures: could include: Change the cropping system (e.g. more drought-tolerant varieties), as well as field water management (e.g. efficient irrigation system and water-saving techniques), Revisiting Design and Operation Criteria for Irrigation and Drainage Facilities (Operation of reservoirs and diversion weirs), Large storage to cope with increasing climate variability, changes in irrigation water demand for crops, Sustainable groundwater usage to avoid over-abstraction and establish Drought early warning system.

c. Mitigating greenhouse gases in agriculture requires the use of renewable clean energy

Agriculture contributes 30% to the GHG. Measures to reduce its contribution, could include land and water management (paddy rice change to dry and drip irrigation), using solar pumps for irrigation/drainage, using floating solar panels over reservoirs (has an added benefit of reducing evaporation), using floating wind turbines, producing energy from biogas using field and food waste), using solar powered irrigation systems (drip, centre pivot, and sprinkler).



5th African Regional Conference of ICID on Sustainable Irrigation for Improved Resilience of Agriculture in Africa and 72nd IEC of ICID 23-30 November 2021, KENZI ROSE GARDEN Hotel, Marrakech, Morocco

**Organized by Moroccan National Committee of ICID (ANAFIDE)
Website: <http://5arcid.ma/en/>**



ICID organizes regional conferences for four regions of the world – African Region, European Region, Asian Region, and Pan- American Region. The African Regional Conference (ARC) series was started with the first one held on Drainage in April 2004 in Cairo, Egypt. The 5thARC in the series will be organised on a hybrid mode (physical and online participation) by Moroccan National Committee of ICID (ANAFIDE) from November 23 to 26th, 2021 in Marrakech, Morocco with the support of the Directorate of Irrigation and Agricultural Land Planning.

Furthermore, the 72nd IEC of ICD will take place from 26th to 30th November 2021 and a training session for African young water professionals will be organised from November 19th to 23rd by ANAFIDE with support from ICID, Chinese National ICID Committee and Afro-Asian Regional Development Organisation, AARDO and IsDB.

A wide range of participants, including policy and decision-makers, professionals, academicians and researchers from Africa and beyond working in irrigation and drainage or closely related fields, are expected to attend this conference and side events. Morocco, a North African country, is a gateway to Europe with the straight of Gibraltar 14km distance to Spain is also rooted in Africa. It has a long and rich experience in agricultural water mobilisation, agricultural water management, various scales of irrigation schemes. It has a long and rich experience to share and transfer in the fields of design and management of irrigation schemes, water-saving and valorisation, new technic and systems in irrigation, including PPP projects.

Theme and Sub-Themes

The main theme of the conference is “Sustainable Management of Irrigation for

an Improved Resilience of Agriculture in Africa” with the following four sub-themes:

- 1. Strategies to cope with water scarcity**
- 2. Valorization of irrigation water**
- 3. Management of irrigation schemes at different scales**
- 4. Drainage and ecological issue**

Registration Fees

Registration fee covers: the conference proceedings (extended abstracts document and full papers on USB key), coffee breaks, receptions, lunches, sponsored dinners and 1-day technical tour on November 27th, 2021. Interested participants may register by visiting the website (<http://5arcid.ma>).

Conference Venue

The conference will be held in the City of Marrakech, a very attractive and tourist place with various accommodation options and flight services. Furthermore, the City is centrally located in an arid region where high demand for water uses



both for irrigation, domestic supply and tourism promotion requires challenging water management policies. The meeting place is the KENZI ROSE GARDEN Hotel located at Avenue du Président Kennedy, Hivernage 400000 Marrakech in Morocco.

Marrakech is an imperial town with impressive and world-known monuments from the 12th century including, the Koutoubia Mosque and Minaret, the Jemaa El Fna square, the Badie Palace, the Menara reservoir, the Khetara historical traditional water tunnel, the Saadians tombs. It also includes modern attractive places such as Yves Saint Laurent Museum, Majorelle Garden.

Technical tour and Post-conference trips (optional)

Technical visit included in the registration fees: One day visit (November 27th) to the Haouz Irrigated area in the Marrakech region. The technical tour will include small, medium and large irrigation schemes. It will cover design and management aspects to cope with water scarcity management aspects by water, conflicting uses for water (drinking water and agricultural water), role of users associations in managing irrigation schemes and water saving, valorisation of water through the growing of vegetables and fruits.

Post-conference trips (optional) after the 72 IEC they will last (2 days: 1st and 2nd December 2021)

Post-conference Tour 1: to the Souss irrigated area (Southwest of Morocco) and the touristic coastal city of Agadir. The first day of the tour includes a visit to the first PPP irrigation project in the world at El Guerdane Scheme, where an area of 10000ha is irrigated with drip irrigation, using water taken by gravity from Aoulouz dam as well as a visit to the historical city of Taroudant. The second day of the tour includes a visit to the sea water desalination plant which will produce 400000 m3 of water per

day, half of it will be used to irrigate an area of 15000 ha with drip irrigation at Chtouka scheme and the other half for drinking water use by the city of Agadir. Also, a modern farm growing red fruits for export will be visited. It represents a model for irrigation water valorisation. Participants will also enjoy the attractive beach of Agadir located on the Atlantic coast.

Post-conference Tour 2: to the coastal and touristic town of Essaouira, a former portuguese city called Mogador, west of Marrakech. This tour will include on the visits to Qsob dam and irrigation scheme, farms and cooperatives for producing and marketing local and exotic agricultural products such argan oil, aromatic crops, etc. Participants will like very much the historical city of Essaouira (formerly called Mogader during Portuguese colonial period)

For more details, log on to <http://www.5arcid.ma>

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Turning Transboundary Challenges into Opportunities

The 9th session of the Meeting of the Parties (MOP9) to the UN-Water Convention concluded on 1 October after a week of sessions, all serving to review and propose action towards transboundary water cooperation. GWP Executive Secretary Darío Soto-Abril was a panellist in a high-level session on the theme of 'Water and Peace'. One of his key messages was on the importance of turning challenges into opportunities.

The high-level session on "Water and Peace" provided an opportunity to highlight and discuss the role of transboundary water cooperation in fostering trust, stability, and peace.

"Some of the challenges are around the lack of proper management mechanisms and cooperation. While progress has been made, the recent report from the SDG 6.5 survey on measuring the level of Integrated Water Resources Management (IWRM) implementation in the transboundary context shows that the

world still needs to pay a lot of attention to this topic. For instance, climate change brings stress to watercourses, both too much and too little water, affecting people's livelihoods and security. The geopolitical context and lack of willingness to collaborate is a challenge. GWP recommends addressing these challenges by turning them into opportunities and to bring countries and stakeholders together to solve them," said Soto-Abril.

GWP is working in regions that experience regional and national political instability and tensions, and the aim is always to foster cooperation over shared waters - this can greatly contribute to security. For example, GWP assisted in the initial steps of the joint mechanism created through the Framework Agreement on the Sava River Basin in the area of stakeholders' engagement.

"Building transboundary mechanisms of cooperation - as we are doing in the Drin Basin in cooperation with the UNECE - or

supporting them as we did in the Ohrid Basin - are additional concrete examples," said Soto-Abril.

Different approaches showcased in side events

The Water-Food-Energy-Environment nexus approach is a tested tool to understand trade-offs and benefits that arise from different water uses in transboundary basins, and to foster collaboration.

Jointly understanding the best way to utilize the resources, bringing co-benefits among sectors is key to enhancing cooperation - this was the topic of one of the side events that GWP organised in connection to MOP9. Practitioners formed a panel that shared field experiences on the results of, and potentials, in using this approach to operationalize solutions for advancing transboundary cooperation.

<https://www.gwp.org/en/About/more/news/2021/turning-transboundary-challenges-into-opportunities/>

A Message from Irrigation Australia

COVID-19 disrupted events on a global scale and Irrigation Australia was not immune from the impact of this pandemic. We were very disappointed not to hold the 24th Congress & 71st IEC Meeting, combined with the biennial Irrigation Australia Conference & Exhibition as scheduled in 2020. After our efforts to win the right to host this event and the extensive planning and work undertaken, we were very determined that the event could still be held in a post-pandemic environment. The date and location may have changed but the enthusiasm, commitment and warm hospitality of the organising committee has not.

Accordingly, on behalf of Irrigation Australia and the ICID Australian National Committee (IACID) we extend a warm invitation to you to participate in the 73rd IEC Meeting & 24th ICID Congress combined with the Irrigation Australia National Conference & Exhibition to be held in Adelaide, Australia from 3 October to 10 October 2022.

The Australian irrigation industry is delighted to have the opportunity to host this event and showcase our irrigated agricultural industry to the world. To add value to your participation in the International Congress, we have combined it with our biennial Irrigation Australia Conference and Exhibition, the biggest irrigation event in the southern hemisphere. ICID delegates will be able to attend the local conference sessions and our large international exhibition in addition to the comprehensive ICID program.

The theme for the 24th ICID Congress is 'Innovation and research in agricultural water management to achieve sustainable development goals'. Australia is the driest continent on earth and the efficient

use of water is at the forefront of our objectives and strategies to expand our domestic production of food production and to maintain our reputation as an exporter of high-quality foods to a growing world population.

The event will be hosted in Adelaide, which is Australia's 5th largest city and home to a vibrant culture of arts, culture and great food. It is renowned for its fantastic places to visit and close proximity to some of the leading agricultural production in Australia. The famous wine producing region of the Barossa Valley is easily accessible on a day trip from the city and here you can experience some of the finest wines and cellar doors in Australia, and in fact the world. The organising committee will be arranging a selection of interesting and informative study tours and further details on these will be released during 2021. Registrations and an invitation to submit abstracts will re-open in 2021 but you are welcome to register your interest now to ensure you receive communications to keep you updated with what will be an exciting and important event on the international irrigation calendar.

It is a great privilege to be awarded the opportunity to host the International Congress, which is being held in southern hemisphere for the first time since its inception in 1951. We hope that you plan well ahead to attend this event and take this long-awaited opportunity to catch up with old acquaintances, make new friendships and enjoy some 'true blue' Australian hospitality. If you have any questions or require assistance, please do not hesitate to contact us via email at icid2022@irrigation.org.au.

We look forward to seeing you in 2022 in Adelaide.

Forthcoming Events and Updates

5th African Regional Conference (ARC) and 72nd International Executive Council (IEC) - Theme "Sustainable Management of Irrigation for Improved Resilience of Agriculture in Africa" to be held from 23-30 November 2021, Marrakech, Morocco. Website: <http://5arcid.ma/en/>

NOTE: The venue has been changed from Mohamed VI Museum for the Civilisation of Water, Marrakech, Morocco to Kenzi Rose Garden Hotel, Marrakech, Morocco due to operational reasons. Inconvenience is regretted.

73rd IEC Meeting & 24th ICID Congress combined with the Irrigation Australia National Conference & Exhibition to be held in Adelaide, Australia from 3 October to 10 October 2022. Website: <https://www.icid2022.com.au/icid-home/>

74th IEC Meeting and 4th World Irrigation Forum (WIF4) will be held during 16-22 April 2023 in Beijing, China.

75th IEC Meeting and 25th ICID Congress will be held in November 2023, Visakhapatnam (Vizag), Andhra Pradesh State, India

76th IEC and 9th Asian Regional Conference (AsRC) will be held from 27 April-2 May 2024 in Sydney, Australia

UPDATE FROM CHINESE TAIPEI COMMITTEE: During the annual meeting of Chinese Taipei Committee Dr. Ray-Shyan Wu is elected as president and Dr. Wen-Pin Shu, elected as new secretary-general of CTCID

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President of the Moroccan National ICID Committee (ANAFIDE) Writes an Open Letter about the Morocco Events

5th African Regional Conference and 72nd International Executive Council

23-30 November 2021, Marrakech, Morocco

Theme Sustainable Management of Irrigation for Improved Resilience of Agriculture in Africa

Irrigation has been practiced in Morocco for many centuries. Water distribution is governed by embedded rules particularly in southern Morocco where scarce soil and water resources are valued. During the sixties, Morocco initiated plans to irrigate one million ha of agricultural land along with “Dams policy”. Thanks to this rewarding orientation, the country has managed to build more than one hundred and forty dams and supply with irrigation water close to a million and a half hectares.

Presently, the country continues to devote major attention to promote irrigated agriculture and enhance water saving systems within the frame work of “Green Morocco Plan”. Large as well as small and medium irrigation schemes are being irrigated with surface water from dams or rivers and/or from ground water. At present, irrigation is contributing to a large share of gross domestic product in several African countries. With a view to valuing the efforts made in this area, Morocco is continuing his south-south cooperation with African countries particularly in the frame work of “the Triple A initiative”, aiming at a better adaptation of African Agriculture to Climate Change.

Although, substantial progress has been accomplished to develop irrigation, there are still several challenges related to increasing water scarcity, low irrigation efficiency, constraints from climate change, insufficient resilience of small farms, low agricultural productivity and degradation of natural resources. In fact, most of the African countries are confronted with similar common problems in varying degree within the agriculture sector. Irrigation represents and remains a great potential towards a better resilience of agriculture in Africa. In order to cover these issues and exchange experiences about lessons drawn, innovative

technologies, irrigation development strategies to reduce negative impacts of Climate Change on African agriculture, ANAFIDE is organizing under the auspices of ICID and in collaboration with IAV Hassan II and the African Regional Working Group (AFRWG) of ICID, the 5th Regional African Conference on irrigation and drainage with main topic: “SUSTAINABLE MANAGEMENT OF IRRIGATION FOR IMPROVED RESILIENCE OF AGRICULTURE IN AFRICA”.



This conference will take place at the Water Museum, Marrakech, Morocco from November 23 to 30, 2021. It will bring together stakeholders, decision makers, professionals as well as researchers and donors. ANAFIDE which is a long-time active member of ICID and has already organized the 30th IEC meeting in 1979 in Rabat as well as the 38th IEC and the 13th International ICID Congress in 1987 in Casablanca. It will spare no effort to make this coming conference very successful. The Moroccan national committee of ICID is pleased to invite you to attend and contribute to this important regional conference that will be held in Morocco at the Water Museum in Marrakech, famous for its historical sites and its parks, especially the Menara olive grove and the Agdal gardens. An irrigation system built under the Almoravids dynasty is still used to water the city’s gardens. Your participation to this conference will also give you the opportunity to visit Moroccan achievements in modernized irrigated agriculture and appreciate historical attractive places in the country.

Aziz FERTAH

President of ANAFIDE

Director of Laboroute d’Essais et d’Etudes

Regional President of the CGEM for Meknes- Ifrane Region

ICID President’s Activities – October 2021

1	Working Group on Use of Non-Conventional Water Resources for Irrigation (WG-NCWRI): Chairman: Dr. Wenyong Wu	20 October 2021
2	Working Group on Institutional and Organizational Aspects of Irrigation/ Drainage System Management (WG-IOA): Chairman: Dr. A. Hafied A. Gany	21 October 2021
3	Asian Regional Working Group (ASRWG): Chairman: Prof. Dr. Tsugihiko WATANABE	27 October 2021
4	Working Group on Climate Change and Agricultural Water Management (WG-CLIMATE) Chairman: Dr. Ray Shyan Wu	29 October 2021

The Emphasis on Agricultural Water Management in the IPCC Climate Report 2021 and the Role of the International Commission on Irrigation and Drainage

Dr. Ray Shyan Wu, President CTCID and Chairman of WG-CLIMATE

The UN's Intergovernmental Panel on Climate Change (IPCC) Working Group I, report released on Aug 9, 2021 is the first part of the IPCC's Sixth Assessment Report (AR6). The IPCC scientists warned that global warming of 2°C will be exceeded during the 21st century, unless immediate, rapid, and large-scale reductions in greenhouse gas emissions occur in the coming decades, limiting warming to below or close to 1.5°C.

The report indicated that the human-induced climate change is already affecting many parts of the world through climate extreme events of flood and drought. Climate change is significantly affecting the water cycle, causing intense rainfall and subsequently flooding (e.g. flood in central Europe countries such as Germany, Belgium, Luxemburg, in July 2021), as well as more severe drought in many regions (e.g. USA, Turkey, Greece, Algeria, July-August 2021). Furthermore, it is affecting rainfall patterns as well. In high latitudes, precipitation is likely to increase, while it is projected to decrease over large parts of the subtropics. Changes to monsoon precipitation are expected, which will vary by region. These changes will affect the water resources availability, agriculture and food production.

The agricultural and ecological drought events increased in 12 regions: Western North America, North-Eastern South America, Western and Central Europe, Mediterranean, Western Africa, Central

Africa, West Southern Africa, East Southern Africa, West Central Asia, East Central Asia, East Asia, Southern Australia, respectively, but only decreased in Northern Australia region. In the future, several changes in the climate system will become greater in response to the increasing global warming. Such changes will include an increases in the frequency and severity of agricultural and ecological droughts in some regions.

The scientists emphasized in their report that the future of the planet will depend to large extent on the choices the humanity is making today. Since agriculture globally accounts for 70% of fresh water resources use and contributes up to 30% of greenhouse gas emissions, it contributes to and is threatened by climate change. Adaptation and enhancing the resilience of water management system, policies and practices to the climate variability are the way forward. A number of tasks are currently carried out by the WG-Climate and the other Working Groups of ICID including: Enhancing weather forecasting and monitoring, applying improved water harvesting and storage, supplementing the water requirement for rain-fed crops, adopting highly efficient irrigation systems and best water management practices. These activities are essential to address the increasing variability of rainfall, and to reduce the adverse impacts of extreme events of floods and droughts.

Given the importance of the Climate Change impact on Agriculture, ICID



addressed these issues by establishing a dedicated Working Group on Climate Change and Agricultural Water Management (WG-CLIMATE). Given the climate change is a cross cutting subject, ICID's other Working Groups also deal with relevant issues of climate change impact and adaptation. The Working Group on Climate is dedicated to the mitigation and adaptation of agricultural water management to the changing climate. The working group is gathering useful information and case studies on climate change for practical use especially in improving the impact assessment and adaptation development. In line with Climate Urgency, currently the working group is preparing an important publication entitled "A Guide to Innovative Irrigation and Drainage Management under the Changing Climate", scheduled to be released by the end of the year 2021 This Guide will include case studies from 25 member countries and report their successful practices of adaptation to the climate change impact.



COP26: Sweden Steps Up to Help At-Risk Small-Scale Farmers Adapt to Climate Change

Sweden today signalled its strong commitment to help some of the world's poorest small-scale farmers to adapt to climate change, by pledging SEK100 million (nearly US\$11.7 million) to the UN's International Fund for Agricultural Development (IFAD). The announcement was made at the UN climate change conference (COP26) in Glasgow.

The commitment, made through Sweden's Ministry of Foreign Affairs, will direct funding to the Enhanced Adaptation for Smallholder Agriculture Programme (ASAP+), a climate financing mechanism launched by IFAD in January. It is envisioned to be the largest fund dedicated to channelling climate finance to small-scale producers to help them adapt to climate change and combat

hunger and malnutrition.

"The world's poorest farmers are the hardest hit by the impacts of climate change, but have contributed least to its cause. At the same time, efforts to strengthen agriculture and food production are critical for sustainable development. By increasing financial assistance to small-scale farmers for enhanced climate adaptation, we can support climate resilient food systems and ensure food security for the most vulnerable," said Per Olsson Fridh, Sweden's Minister for International Development Cooperation.

Recent research supported by IFAD shows that the yields of staple crops such maize could decrease by as much

as 80 percent by 2050 in parts of Angola, Lesotho, Malawi, Mozambique, Rwanda, Uganda, Zambia and Zimbabwe due to climate change, resulting in increased hunger and poverty. If nothing changes, climate change could push more than 140 million people to migrate by 2050.

Sweden is a founding member of IFAD and it has committed more than \$476 million to the Fund since 1978. With a specific focus on helping small-scale farmers adapt to climate change, Sweden has contributed substantially to building the resilience of more 30 million rural people.

<https://www.ifad.org/en/web/latest/-/cop26-sweden-pledging-millions-to-ifad-climate-fund>

4th African Young Water Professionals Forum, 25-27 October 2021

The African Regional Working Group (AFRWG), through the Af-YWPF, organized the 4th Af-YWPF virtually (online) from 25-27 October 2021 under the platform of Cairo Water Week 2021 collaboratively with International Commission on Irrigation and Drainage (ICID), the Ministry of Water and Irrigation of Egypt, United Nations Economic and Social Commission for Western Asia (ESCWA), Arab Center for the Study of Arid and Drylands (ACSAD) of the League of Arab States, Global Water Partnership-Mediterranean (GWP-MED)/GWP Africa Coordination Unit, and the Islamic Development Bank (IsDB).

At the opening session, Dr. Mohamed Wahba - Chairman of AFRWG - welcomed all partners, their representatives and distinguished participants and thanked them for their kind support and contributions in AFYWP-Forum activities. He then invited representatives from all the partners to give their opening remarks.

In his opening remarks, ICID Secretary General Er. Pandya welcomed the participants and provided a broad overview of ICID's history, vision, mission, thematic areas, current and planned future activities. He also gave a brief introduction to different working groups of ICID and its role in cooperating in the development of irrigation and drainage.

In his opening remarks, Dr. Wahba indicated that due to the 1st, 2nd and 3rd African Young Water Professionals Forum (Af-YWPF), the network of Young Water Professionals in the AFRWG of the ICID has grown to attract more than 5900 members from Africa. This success has led to the Young Professionals Group becoming a credible platform to build the capacity of future leaders in the water and agriculture sectors in the continent. Dr. Wahba discussed the severe challenges in Africa, such as poverty, hunger, health, droughts and floods, and climate change impacts. He mentioned that these challenges need more hands to work together for visible sustainable development. He expressed the willingness to work for capacity development, training and education in water, irrigation, drainage, agriculture, environment and other related fields in Africa and other regions.

In his opening remarks, Er. Walid Hakiki, Director of Kitchener Drain Depollution and Rehabilitation Project and Deputy of the Cairo Water Week Executive Director, MWRI, Egypt, welcomed the participants. He specified how CWW is growing and is an important international event. In 2021, 1000 participants attended the CWW physically, 800 virtually with contributions from 50 international organizations, seven high-level meetings, five workshops, and other side events. He mentioned that CWW has a long history of cooperation with AFYWP Forum, AFRWG and ICID since they started together with 1st CWW and AFYWP-Forum in 2018. CWW is keen

to support youth in general and is looking forward to their participation in the 5th AfYWP-Forum under the platform of CWW222.

Mr. Hamzeh Yasin, a Regional Programme Manager for Environment/Climate Change and Good Governance in the Swedish Development Cooperation MENA in the Swedish Embassy in Jordan, in his opening remarks, gave a small presentation about Swedish cooperation in MENA, he greeted the participants from Amman, thanked the partners, focused on the youth and talked about Swedish activities in the region. He indicated the intensity of the disasters that happened alone in 2020 in the region, such as infectious diseases, water crises and climate change extreme weather events. In the end, he highlighted their five-year strategy to deal with such issues.

Dr. Naser Edin Obeid, Director General of Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD), in his opening remarks, talked about the importance of water to the life and about activities of ACSAD in the region towards achieving the water and food security and sustainable development goals. He also provided information about the previous training conducted by ACSAD to African and Arab in different related fields. He ended his remarks by thanking the Egyptian Government, CWW AFRWG, ICID, ESCWA and all partners.

In her opening remarks, Ms. Carol Chouchani Cherfane, the Director of Arab Centre for Climate Change Policies, Climate Change and Natural Resource Sustainability Cluster from ESCWA, thanked all who have engaged in the forum and appreciated the partnership with ICID, AFRWG and other partners in essential activities such as these for the future leaders under the umbrella of Cairo Water Week. Ms. Carol also gave a brief introduction to ESCWA. She further stated that they would contribute to this forum through various activities whilst cooperating with ACSAD and the Swedish government.

In his opening remarks, Mr Amer Bukvic, Acting Chief Products and Partnerships (CPO) Directorate of the IsDB, thanked all partners and explained the different activities of water sector policy by IsDB.

ICID President Prof. Dr. Ragab Ragab welcomed all and gave a keynote at the opening session about current and future water and food security challenges. Such challenges are only expected to grow in the face of increasing population and limited water resources; by 2050, the water use is expected to increase by 50%, whereas the food production needs to double to feed 9 billion. He further indicated how by 2030,



Attendance of youngest participant in the 4th AfYWP Forum- (Ayoub Hassen- Tunis) during the closing session

the overall gap between the global water demand and the supply is expected to be 40%; there will be a 30-40% increase in the global energy demand, the productive lands will be limited, nearly 30% of the irrigated lands are already degraded now which will further deteriorate. He further highlighted the challenges, including the availability of limited nutrients such as phosphorus & potassium, competition between biofuel and food and food waste (amounts to 40%), the vulnerability of the agriculture sector, especially in the developing countries due to predicted climate change, acceptance of newer interventions such as biotechnology (e.g. development of weatherproof, pest resistance and the use of non-conventional crops), the introduction of affordable intensive and precision agriculture and so forth. Satisfying these demands while maintaining ecosystems, livelihoods, fisheries, and biodiversity is a critical issue that needs immediate action. We need to increase water supplies and improve water use efficiency, increase water supplies by using non-conventional water resources, and save water through various measures such as accurate estimation of crop water requirement using new technologies.

More than 154 Young Water Professionals from 31 African countries and 15 from 5 Arab Mashreq countries had participated in the 4th African YWP-Forum. The three-day forum included seven training sessions, covering the following topics: Climate change adaptation in the agricultural sector, Climate change assessment to inform adaptation, Using AquaCrop to assess climate change impacts on agricultural productivity, Adaptation measures, Full and deficit Irrigation, Adaptation measures: Deficit and supplementary irrigation, Challenges facing irrigation and drainage in Africa and the way forward (ICID), mobilizing youth for a gender transformative approach to water, climate and development in Africa, IsDB's water and agricultural projects in Africa)- a new model of engagement.

Attendance of youngest participant in the 4th AfYWP Forum- (Ayoub Hassen- Tunis) during the closing session.

ICID Initiative for a Global Inventory of Irrigation and Drainage Projects



Need for a Global View

Irrigated agriculture forms the kingpin of the food and water security of the country and the region. Systematic irrigation is practised through irrigation projects of various sizes, which provide the assured source for a sustainable and timely water supply. Thus, an irrigation project forms the atomic unit of irrigation and water resources development. Across the world, irrigation is practised under varying agro-climatic conditions and topography and area appropriate solutions for the same determine the features of individual irrigation projects.

A global view of the irrigation and drainage projects provide great insights into various development approaches followed across the world, their success and their performance. It is observed that the topographic, hydrologic, agronomic and social conditions form a unique combination in which an irrigation project gets planned and implemented. Hence, there is a need to have a global view of the developments which show us the measures adopted and their contexts under a multi-dimensional environment. Attempts are made by various researchers

and practitioners to examine specific issues but examination of a project as a whole in a global context requires a repository of information through which the individual projects of interest can be visualised and approached for lessons.

ICID is the only major international scientific and technical organisation that, through its membership network, spans across more than 90% of the irrigated areas of the world. The necessity for having a global view of projects devoted to irrigation and drainage is greatly felt by the member countries and also across the world by various agencies. ICID has, therefore, taken initiative to collect and provide a community knowledge base of irrigation and drainage projects which can work as a common pool resource for understanding the status of development and approaches used for the development and management project under varying conditions.

Setting up a Register of World Irrigation Projects

Various registers exist in the field of engineering structures and other entities, the most notable from the water resources

angle being the World Register of Dams being maintained by the International Commission on Large Dams (ICOLD). ICID is also maintaining a World Register of Heritage Irrigation Structures and awards recognition to the structures meeting the eligibility criteria.

Most registers examined are about structures and individual components of a system and none recording the features of irrigation and/or drainage project on a worldwide scale. It is, therefore, felt that such a register should be established for irrigation projects and ICID being a key player in the fields of irrigation and drainage is the most suitable agency for the establishment of a Register on "World Irrigation Projects". The authenticity of the projects in the register will be obtained through ICID National Committees.

The facility is presently located at <https://www.icidevents.org/WorldIrrPrjs/Default.aspx> and is in the development phase. At the appropriate time, once a critical mass of data is available, the same will be migrated to a dedicated domain duly registered.



President Prof. Dr. Ragab Ragab Attended the International Event on "International Symposium Mitigating Agricultural Greenhouses Gases and Increase Carbon Sequestration in a Circular Economy"

ICID President Dr. Ragab Ragab participated in the "International Symposium Mitigating Agricultural Greenhouses Gases and Increase Carbon Sequestration in a Circular Economy," hosted by the alliance of McGill University and Agriculture & Agrifood Canada on 29 September 2021. PH Prof. Chandra Madramootoo organized the symposium. Dr. Ragab discussed the ICID, including its goal, vision, mission, and how it helps the partner nations achieve their Sustainable Development Goals in a given time frame.

