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REPORT

on



First African Young Water Professional's Forum

Steigenberger Hotel, 14-16 October 2018, Cairo Egypt

PREPARED BY

Dr. Mohamed S. Wahba
Chairman of ENCID and AfRWG

Amali Abraham Amali
Secretary General of AfRWG

International Commission on Irrigation and Drainage ICID . CIID

48 Nyaya Marg, Chanakyapuri, New Delhi - 110021, India

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EXECUTIVE SUMMARY

The Ministry of Water Resources and Irrigation of Egypt in collaboration with other ministries and international partners organized the first Cairo Water Week 14 -18 October 2018 (1st CWW). During the 1st CWW, the African Regional Working Group (AFRWG) of the International Commission on Irrigation and Drainage (ICID), seized the occasion to establish the African Young Water Professionals Forum (Af-YWPF) and organized its first meeting to discuss the forum's objectives and mandate.

The Af-YWPF was held from 14 -16 October 2018 under the auspices of the African Regional Working Group (AFRWG) of the International Committee on Irrigation and Drainage (ICID) and the Egyptian National Committee on Irrigation and Drainage (ENCID). The forum was supported by Ministry of Water Resources and Irrigation of Egypt (MWRI), International Commission on Irrigation (ICID), Korea Rural Community (KRC), International Water Management Institute (IWMI), Global Water Partnership-Mediterranean (GWP-MED), the Nile Basin Capacity Building Networks (NBCBN) as well as National Committees on Irrigation and Drainage of Morocco, Italy and South Africa. The aim was to create awareness among Young Professional's on water resources, irrigation and drainage challenges and capacity development to facilitate sharing of experiences between the Young Professional's (YP's) in water related fields.

The 3-day Training Workshop of the forum brought together 24 African future water leaders from 12 African countries including Sudan, Morocco, Ethiopia, Kenya, Mauretania, South Africa, Uganda, Nigeria, Malawi, Tanzania, Ghana and Egypt. The workshop included opening and closing sessions, four training workshops and four keynotes speeches given by international experts, with hopes to challenge and inspire young water professionals within the continent about leadership in the research and innovative space and motivate their action.

The training workshop exposed participants to important issues such as Water Food Energy Nexus, value engineering, current trends, technologies and research gaps in water resources, irrigation and drainage as well as simulation modelling in irrigation and drainage. Discussions ranged from climate change impact and vulnerability assessments in the Arab Region to using solar energy in irrigation. It was a fantastic opportunity for YP's to showcase their knowledge and broaden their perspective to sustainable water management in an international setting, learn from shared experiences to broaden their minds and thinking of new and experienced water professionals. This gave them the opportunity to reflect on the skills and attributes they can bring to leadership in their different organizations, encourage innovative thinking and motivate societal-driven research. It also provided an exceptional networking platform for YPs to mingle with themselves and establish meaningful connections to promote their innovations among organisations and future engagement in research and development and other work-related matters.



The forum ended with the establishment of Af-YWP Forum, the approval of the forum mandate, selection for seven coordinators for the Af-YWP Forum for the years 2018-2020 and concluded with the following recommendations:

1. Continually expose African Young Water Professional to ICID's aims, objectives, role and activities;
2. Future Training Workshops will draw from gaps in the TNA and discussions held during this training;
3. Foster efforts to make training workshops more interactive and give participants the opportunity to learn from each other;
4. Collaborate, build and establish cooperation with institutions, organizations and agencies whose visions tallies with our objectives;
5. Discussions and various forum activities shall serve the African Challenges as well as AFRWG-ICID to ensure effectiveness of the Forum.



1.0 INTRODUCTION

Africa's population is growing at a shocking rate. By 2050, the United Nations estimates the population to be 2.5 billion. With 60% of its current population below the age of 25, Africa is the world's "youngest" continent, and in less than a decade, it is set to become the greatest and youngest workforce in the world. Despite unprecedented unemployment levels, especially among young people, these concerns are not without merit and do indeed warrant attention. Large young population comes with high economic prospects if only the continent is prepared to reap the demographic dividends of the youths by leveraging their potentials to opportunities.

However, while a fast-growing population comes with inherent challenges, it can also be an opportunity to drive Africa's socio-economic development. One way of reaping the demographic dividends of the youths is by inclusive growth as well as a skillset that notches the continent towards a sustainable transition to green growth in the energy and agricultural sector; learning from the experiences of the nations who have gone ahead. And to these two developmental sectors, water is vital either for food or energy. Feeding and engaging a growing young population necessitates a paradigm shift from predominant rainfed, labour-intensive, non-resilient agriculture to irrigated agriculture that ensures continuous engagement, offsets import by increasing food production with export potential and wealth creation from portraying agriculture in new lights as a business rather than a way of life.

Water is one of the world's most important resources - the water challenges are becoming more complex and opportunities facing the experts of tomorrow will extend beyond those tackled today raising the need connectedness at regional and global scales. Future challenges will require forging new technologies, developing appropriate policy, and adapt existing water resource management strategies to the impacts of climate change. During the last decade great development have been achieved in technologies and researches in the fields of water resources, irrigation and drainage at the global level. Narrowed down to Africa, pressures of poverty, population growths, limited resources, climate change expands the already existing gaps which must first be identified and prioritized for optimizing available resources and achieving the sustainable development goals for the continent.

The International Commission on Irrigation and Drainage (ICID) has taken the initiative of establishing the Young Professional's Forum in 2015 aimed at building the capacity of young professionals and creating a new generation capable of facing future water challenges. This forum within a short while has grown to be an international platform for young irrigation and drainage professionals with more than 400 members; exposing young experts to the abundant lucrative opportunities in irrigation agriculture. During the Annual General Meetings of the African Regional Working Group and the International Executive Council (IEC) in Mexico City, October 2017, it was discussed and agreed to scale down this vision to Africa and establish the African Young Water Professional Forum (Af-YWPF) and to organize the 1st meeting of the forum in Cairo, Egypt 2018.



The Ministry of water resources and Irrigation of Egypt in collaboration with other ministries and international partners have organized the first Cairo Water Week 14 -18 October 2018 (1st CWW). Hence the African Regional Working Group and Egyptian National Committee on Irrigation and Drainage (ENCID) currently chaired by Dr. Mohamed Wahba (Egypt) used the water atmosphere to organize the 1st African Young Water Professional Forum under the platform of the 1st CWW.

The first African Young Water Professional's Forum (Af-YWPF) was organized in Cairo, Egypt from, 14 -16, October 2018. The forum was held under the auspices of the African Regional Working Group (AFRWG) of the International Committee on Irrigation and Drainage (ICID) and the Egyptian National Committee on Irrigation and Drainage (ENCID). Its primary focus is to build skills needed globally and strengthen the ability of Af-YWPs to engage in forms of team leadership that are common in the water sector. The forum was supported by Ministry of Water Resources and Irrigation of Egypt (MWRI), International Commission on Irrigation (ICID), Korea Rural Community (KRC), International Water Management Institute (IWMI), Global Water Partnership-Mediterranean (GWP-MED), Nile Basin Capacity Building Networks (NBCBN), as well as National Committees on Irrigation and Drainage of Morocco, Italy and South Africa. The aim was to create awareness among Young Professional's on water resources, irrigation and drainage challenges and capacity development to facilitate sharing of experiences between the Young Professional's (YP's) in water related sectors.

The Forum brought together 24 African future water leaders from 12 African countries including Sudan, Morocco, Ethiopia, Kenya, Mauretania, South Africa, Uganda, Nigeria, Malawi, Tanzania, Ghana and Egypt ([Appendix A](#)). The Forum succeeded in training Young Water Professionals by a team of well selected international experts ([Appendix C](#)) with scalable capacities on their return to retrain colleagues and co-workers (train-the-trainer) to lead more active roles within their organization.

The three-day workshop included the establishment of Af-YWPF, hands-on-training workshops, seminars and technical sessions to expose the youth towards abundant and lucrative opportunities in water sector at large and irrigation agriculture in particular



2.0 ACTIVITIES OF THE THREE-DAY FORUM

2.1 DAY ONE (Sunday October 14, 2018)

2.1.1 Opening Session of the First Af-YWP Forum

Heralding the training workshop of the Forum was a brief visit by H.E. Dr. Mohamed Abdel-Aty, Minister of Water Resources and Irrigation of Egypt who had a quick meeting with the distinguished guest of the forum and a group photo with the YP's of the Forum.



Meeting with H.E. Dr. Mohamed Abdel-Aty, Minister of Water Resources and Irrigation of Egypt before the opening session of the Forum



Group photograph of H.E. Dr. Mohamed Abdel-Aty, Minister of Water Resources and Irrigation of Egypt with the participants of the forum

Speakers at the opening session of the Forum were VPH Dr. Ragab Ragab., VP Dr. Marco, Secretary General of ICID Dr. Pandya, VPH & Chairman of AFRWG and ENCID Dr. Mohamed Wahba and Prof. Dr. Khaled Abdel-Hay President of National Water Resources Center on behalf of H.E. Minister of Water Resources and Irrigation of Egypt.

VPH Prof. Dr. Ragab Ragab acknowledged the efforts of the AFRWG and ENCID in organizing the forum and the goals on which it is initiated. Referring to the themes of the workshops training workshop for the he expressed his pleasure to share his experiences with them and contribute towards the success of the 1st AFYP-Forum. Following up, **VP Dr. Marco Arcieri**, highlighted the visions of the ICID as contained in the ICID Roadmap 2023 and her willingness to support capacity development initiatives among YPs. Mentioning the achievements of the IYPeF, Marco stressed the continuous support of the ICID Central Office to all the future activities of the YP's forum. He thanked the organizing committee of the forum for the invitation to contribute to the 1st AFYWP Forum for having put the events together.



VP Dr. Marco Arcieri, during the opening session



Cross-section of Participants at the opening session of the forum

In his opening remarks, the **Secretary General of ICID Dr. Pandya** emphasized that ICID works to collect the wisdom of the National Committee's (NC's), to provide solutions for irrigation and drainage. He further stated that ICID as an organisation strives to play the role of an “envoy” in promoting cooperation between the NC's by building an institutionalized platform for sharing experiences and successful cases in water management, irrigation and drainage and other related sectors.

SG Dr. Pandya further emphasized that ICID will continue to maintain close contact with the organizations and institutions of various countries, to lead series of practices in addressing the main points and difficulties by facilitating exchanges and cooperation between multiple parties. Dr. Pandya urged the African YPs to get connected with the ICID network in their respective country. Highlighting ICID's proactive role in strengthening the ICID Young Professional e-Forum (IYPeF) to develop a breed of young water professional's adept in facing the future water challenges, Dr. Pandya exposed the young experts to the opportunities that exists in ICID including sponsored trips to conferences, congresses and World Irrigation Forum.



Dr. Pandya, Secretary General of ICID, delivering a speech in the opening session

The **Chairman of ENCID & AFRWG VPH Dr. Mohamed Wahba** expressed his warm welcome to all the participants and distinguished guests to the 1st Af-YWP forum by stressing the importance of the forum to the activities of the African Regional Working Group of the ICID. He noted the culmination of great and collective efforts which began in late 2017 when it was agreed during the AFRWG annual meeting in Mexico City to organize the first African Young Professional in Egypt in 2018.

Dr. Wahba stated the contributions of many institutions and individuals towards the organization of the forum and seized the opportunity to express deep appreciation and thanks to H.E. Dr. Mohamed Abdel-Aty, Minister of Water Resources and Irrigation of Egypt for his endless firm support for the African Young Water Professional's Forum. He also noted the efforts of the organizing committee of the Cairo Water Week and the ICID for the support and assistance given to the original initiative. He expressed his gratitude to the President of ICID, SG of ICID Dr. Pandya, Executive Director of ICID, Dr. Varma, and VPH Dr. Ragab Ragab. He noted the financial support and contribution of international organisations such as KRC, GWP-MED, IWMI, Italian NC, South African NC, NBCBN, ANAFIDE, ESCWA as well as the, towards making the forum a reality.

Dr. Wahba referred to the landmark achievement of the ICID in establishment of the Young Professional Forum aimed at building the capacity of young professionals and creating a new generation of water leaders capable of facing the future water



challenges and he considered this first meeting of the AF-YWP is an important step for the Forum. He concluded by reinstating the great confidence and faith in the African's Young Professional to face challenges ahead.



Dr. Wahba, VPH of ICID and chairman of AFRWG and ENCID, during the opening session

Giving the opening address, **Prof. Dr. Khaled Abdel-Hay** on behalf of H.E. Dr. Mohamed Abdel-Aty Minister of Water Resources and Irrigation of Egypt extended a very warm welcome to all participants and distinguished guest to the Af-YWP-Forum, held under the platform of 1st Cairo Water Week. Using the example of Egypt; a country situated at the North East extremity of Africa and the most downstream Nation in a Basin shared by nine other nations, Prof. Dr. Khaled recognised the active role of cooperation in addressing water issues and the impact of climate change on the water sector in different countries. He noted that the Cairo Water Week is the biggest water-related event in Egypt and is planned to be organized annually by the Ministry of Water Resources and Irrigation in collaboration with national, regional and international partners. It is aimed at promoting water awareness and fostering innovative approaches to face the most pressing water-related challenges, keep water stakeholders updated on global movements to address water challenges and identify modern tools and techniques for managing water resources.

In his capacity as the president of the National Water Resources Center, the research arm of the Ministry of Water Resources and Irrigation, consisting of twelve research institutes, Prof. Dr. Khaled expressed his full support for the African young professionals who are the leaders of our future. He expressed his thanks to the honorable guests and representatives of organizations supporting this important event in Cairo, and most particularly the International Commission on Irrigation and Drainage, the African Regional Working Group and the Egyptian National Committee on Irrigation for their great initiatives for organizing the forum.





Prof. Dr. Khaled Abdel-Hay, President of NWRC Egypt at the opening session

Dr. Wahba, gave a brief overview of the background of the African Young Water Professional’s Forum (Af-YWPF) stating how it started, current phase, future prospects as well as how the initiative relates to the goals and objectives of the ICID. He also provided insights into ICID-YPeF mandate and its activity roadmap, African Regional Working Group (AFRWG) and its mandate including outputs from the Annual General Meetings of the Working Group in Mexico and Canada, and decisions that led to the establishment of the Forum.



AFRWG and ENCID chairman Dr. Wahba



The report of the TNA as presented by the Secretary of AFRWG - Amali A. Amali, was designed and made accessible to all ICID National Committees in Africa; in English and French while pending Portuguese and Arabic versions. According to the report, 51 responses were received, representing 6 African Countries with all regions represented except Southern Africa Region. The analysis as presented indicated the rising need for modern and water saving infrastructure coinciding with the global call for a sustainable agriculture with environmental consideration. The TNA forms part of the mandate of the forum, the core basis upon which the objectives of the forum can be evaluated, capacity building proposals developed, and training workshops organised in collaboration with National and international organisations. The TNA will be conducted at certain intervals to identify trends and to fully understand who is left behind and why. It also reflected the strengths as well as the weaknesses of the different regions within the continent and called on National Committees to work more closely to achieve shared objectives.



Amali A. Amali during the TNA report presentation

Then **Dr. Wahba** followed up by giving brief on the Future Work Plan of the Af-YWPF 2018-2020 which will include a program for the E-discussion and the expert lectures. African YP's were requested to suggest topics along with experts who can be consulted to deliver webinars. A proposal for capacity building and development for Af-YP's based on the results of the TNA will be developed and will seek further cooperation and coordination for capacity building of YP's in related fields. Dr. Wahba encouraged all NC's to activate the role of YPs at Af-NC's, to establish of YP Working Groups at Af-NC's level, either as a group on WhatsApp or email-based communications to disseminate of publications, bulletins, news update among the members of the YP.



2.1.2 Keynote Lecture on "The Integrated Management of the Water-Energy-Food Nexus: Challenges and Approaches" by VPH Prof. Dr. Ragab Ragab

Prof Dr. Ragab delivering the keynote lecture pointed out the continuous rise in the atmospheric concentration of CO₂ at a time when the global population is also increasing. These changes in climate and population combined with on-going economic growth and increasing and changing consumption patterns will, by 2050, increase global food demand by 70-100% and global energy demand by 30-40% he noted. Justifying the basis for such training, Dr. Ragab noted that by 2030, a 40% gap between global water supply and demand is expected and is predicted to continually increase unless appropriate adaptation and/or mitigation measures are identified, evaluated and adopted.

Prof. Ragab outlined the holistic vision of Nexus sustainability that recognizes and tries to strike a balance between the different goals, interests and needs of people and the environment. He called on water experts to address the objectives of Water, Food and Energy security in an integrated manner, as a "nexus", with water at the heartbeat and connecting them all. This makes Improving water and energy use efficiency and productivity in agriculture practices very significant and valuable.

Dr. Ragab however clearly stated that the nexus approach which was employed in the past by farmers is not a new concept but now requires new thinking due to increased pressure on resources. Participants were exposed to current challenges of the nexus in producing more crop per drop per KW energy per unit area of land. Discussion spanned across water saving approaches using novel strategies; such as deficit irrigation (i.e. PRD, RDI), minimizing water losses using anti-transpiration agents, soil mulching and minimum tillage, reducing the use of fresh water by using non-conventional water resources (e.g. brackish saline water, agriculture drainage water, treated waste water and agro-industrial waste waters (food packaging, brewery, etc.)). The keynote lecture also featured the use of less water demanding crops, drought and saline tolerant crops (e.g. quinoa, amaranth), selection and breeding of drought and salt-resistant crop varieties offers possibilities of utilizing saline water for crop production and increasing water and nutrient use efficiency through smart cropping systems that include a rotation of deep-rooted crops following shallow rooting systems. The need to increase water supply through water harvesting, reservoirs and ponds, use of novel methods to accurately estimate crop water requirement "when and how much water to apply" was also discussed.

Dr. Ragab also identified the societal dimensions to water security and the need to improve the societal capability, reduce vulnerability, drought risk hazard and improve ecosystem resilience. Emphasising the role of models, he called on water experts to use field scale model application for water, crop, soil and fertilizers management, using Models as a management tool to optimize resource input and maximize output, and developing and using renewable energy systems (e.g. wind, solar, sea tide, hydropower, etc.)



2.1.3 Training Workshop on Water-Energy-Food and Ecosystem Nexus. (WEFE NEXUS) by Dr. Khaled Bedouin and Dr. Anthi Brouma; GWP-MED

The first training workshop was led by Prof. Michael Scoullas, Chair, GWP-Med with an introduction into the work of GWP globally and in the Mediterranean in particular. The Deputy Regional Coordinator, GWP-Med. further highlighted the role of the organisation in capacity development of Young Professionals and the how these opportunities can be harnessed. With the foundation already laid, Dr. Khaled Bedoui, Programme Officer, GWP-Med unravelled the interlinkages between the three resources water, energy, food and presented the ecosystem as a common base on which they all depend. He further presented the Nexus as a conceptual tool for achieving sustainable development and its contribution towards achieving the Global Sustainable Development Goals (SDGs).



Dr. Anthi Brouma GWP-MED facilitating the WEFE Nexus Workshop

This was followed by a group discussion with and among participants facilitated by Dr. Anthi Brouma & Dr. Khaled Bedoui. Participants worked in groups to provide answers to the following question based on their experiences.

- What are the main interlinkages between Water-Energy-Food and Ecosystems sectors, some examples from your countries?
- How could the water-energy-food nexus Thinking/Approach help us in working towards achieving the Sustainable Development Goals?



Dr. Khaled Bedoui GWP-MED facilitating the Training workshop for WEF Nexus



Group Consultation during training workshop on WEF Nexus – organized by GWP-Med.





Group Consultation during training workshop on WEF E Nexus – organized by GWP-Med.



Group Consultation during training workshop on WEF E Nexus – organized by GWP-Med.





Group Consultation during training workshop on WEFE Nexus – organized by GWP-Med.



Group Consultation during training workshop on WEFE Nexus – organized by GWP-Med.



2.1.4 Opening ceremony of the Cairo Water Week

Under the auspices of His Excellency President Abdel Fatah El Sisi, the President of the Arab Republic of Egypt, H.E Dr. Mustafa Madbouli the Prime Minister of the Arab Republic of Egypt chaired the 1st CWW opening ceremony which was convened under the theme: "Water Conservation for Sustainable Development. The Cairo Water Week was officially opened by **H.E. Dr. Mohamed Abdel-Aty**, Minister of Water Resources & Irrigation who emphasized the importance of synergizing efforts to face the water challenges which confront the country under the current circumstances of water scarcity in the world.



H.E Dr. Mohamed Abdel Aty, Minister of Water Resources & Irrigation

H.E. Mr. Loïc FAUCHON, Honorary President, World Water Council presented the view of the World Water Council on rising water clusters. Congratulating the Government of Egypt, for the Cairo Water Week, he repositioned water at the heart of multiple crisis the world is currently faced with. Also, he stressed at our responsibility now is overwhelming to guarantee to our population proper water resources.

The FAO Assistant Director-General and Regional Representative for the Near East and North Africa, Mr. Abdessalam Ould Ahmed, further highlighted the key role of agriculture in the economy and the need to prioritize it while responding to the challenge of water scarcity in the region. He applauded Egypt's stand in realising optimum use of water resources including diverting water to more productive crops and even though agriculture remains the largest user of water in the region, he stressed the fundamental role it plays in building the resilience of the regional countries.

Hassan Kamal Aly, the Assistant Secretary-General for Economic Affairs at the League of Arab States congratulated Egypt for organizing such an important event. Pointing to water scarcity and Climate Change as one of the biggest challenges facing the Arab region, he stressed the importance of the week in attracting global attention.

Mr. Liu Zhenmin, the Under-Secretary-General for Economic and Social Affairs, United Nations further pointed out that water management is facing challenges of climate change and hindering the sustainable development. He enjoyed participants to use the upcoming days of the week as an opportunity to discuss water issues within sustainable development goals.

“We are at a crucial juncture, facing unprecedented economic, social, or environmental challenges whereas water is fundamental to the hopes and aspirations of all humanity”. These words resonated in the opening address of the Prime Minister of the Arab Republic of Egypt, H.E. Dr. Mustafa Madbouli, who welcomed the participants to the First Cairo Water Week and encouraged delegates to use the water atmosphere as a platform to exchange knowledge and share experiences.



H.E. Dr. Mustafa Madbouli the Prime Minister of the Arab Republic of Egypt

2.2 DAY TWO (Monday October 15, 2018)

2.2.1 Shared experiences from Korea on use of solar energy in irrigation.

Case Study 1: Groundwater Irrigation System combined with Solar Power for the Improvement of Agricultural Production in El Salvador. *By Dr. Bang, Sungsoo - KRC*

Korea ranks among one of the fastest growing economies in the world heralded by revolution in the ICT and its applications across sectors including agriculture. This was the emphasis of Dr. Bang's presentation while he shared the Korean experience in using solar power for irrigation in El Salvador. Recalling the birth of the initiative, Dr. Bang stated that solar powered irrigation in El Salvador was an effort to combat the challenges of growing the economy and reducing poverty in rural area which led to installation of efficient solar-powered groundwater irrigation system to secure stable water supply in El Salvador. He further justified this initiative using the cost benefits analysis before and after the project to prove its cost-effectiveness and showed that the concept of solar-powered groundwater irrigation system linked to the national grid can reduce Operation and Maintenance cost and improve agricultural productivity in El Salvador. Thus, to increase agricultural production in developing countries, he encouraged YPs to choose an efficient energy source for irrigation that matches the characteristics of their country and region.



Dr. Bang, Sungsoo - KRC – Korea

2.2.2 Shared experiences from Korea on use of solar energy in irrigation.

Case Study 2: Masterplan on the Development of Solar Power Plant by Dr. IM, Cheonggi - KRC.

Dr. Cheonggi presented the Korean Government's Renewable Energy 2030 policy; which aimed at expanding renewable energy by 20% in 2030 with more than 96% of new facilities currently composed of clean energy. The new value added by the energy development project is utilizing the agricultural infrastructure and KRC presently has the largest domestic infrastructure capable of developing renewable energy while maintaining the original purpose and function of agricultural infrastructure. This he stated has brought enormous socio-economic benefits such as

- i. The achievement of national renewable energy target and reduction of greenhouse gas,
- ii. Raise funds for improving public services, quality of life and fulfilling national affairs, and
- iii. promotion of new industry through large-scale renewable energy project, creation of job and contribution to increase income of farmer amongst others.

Dr. Cheonggi again joined the list of experts to challenge Young Professionals on the use of low-cost solutions in addressing country-based challenges while minimising the trade-offs as much as possible.



Dr. IM, Cheonggi - KRC – Korea

2.2.3 Session 2: Water-Energy-Food-Ecosystem Nexus *By GWP-Med*

The second phase of the WEFE Nexus training workshop started with an interactive reflective session of previous day discussions. This was followed by a panel discussion on "Sharing Knowledge's and experiences about Nexus and the role of young water professional in the design and the implementation of Nexus projects" facilitated by Dr. Khaled Bedoui. The mixed panel between senior and young professionals included;

1. Dr. Mohamed Wahba, Chairman of AFRWG – ICID
2. Prof. Michael Scoullou, Chair, GWP-Med
3. Dr. Makram Belhaj Fraj, Agronomy scientist, International Center for Biosaline Agriculture, ICBA
4. Mr. Abraham AMALI, Young Water Professional, (YWP) Nigeria
5. Ms. Adey Nigatu Mersha, Young Water Professional, Ethiopia
6. Ms. Tabara M'bodj, YWP, President of AISER CSO, Mauritania

The WEFE Nexus workshop was an opportunity to discuss and understand the interdependencies and inter-linkages between the Sectors (Water-energy-Food-Ecosystem), introduction to Water-Energy-Food-Ecosystem Nexus (WEFE Nexus), the relation between Nexus and the Goals SDGs, as well as understanding WEFE Nexus challenges and opportunities. The session was designed as an interactive event, with adequate time for discussion and exchanged learning by sharing of experiences. The introduction of an extra "E" representing Ecosystem was entirely new to the participants and opened doors for discussion among participants and as it differed from the conventional and familiar W-E-F Nexus. This was demystified as facilitators helped the participants see ecosystems as resource pools that needed to maintain for sustainability. Participants were inspired to view the WEFE Nexus as a tetrahedron with the Ecosystem as the base of the tetrahedron upon which the other sectors rest. This was a step away from the WEF Nexus often represented as a triangle.



Interaction by Dr. Mohamed Wahba during the WEFE Nexus Training workshop

The facilitators guided participants to identify the drivers of Nexus thinking and initiatives to advance the Nexus agenda in the region. IWRM was identified as been capable of serving the Nexus 'Water Path'. Challenges to the Nexus thinking were identified as;

1. Lack of political willingness to have Nexus Dialogues
2. Demanding stakeholders' dialogues (high number of stakeholders)
3. Limited knowledge of stakeholders: Unpredictable reaction to the dialogues and
4. Convening power and leadership for the decision making

This was an opportunity to highlight the role of young experts in promoting the Nexus thinking which requires flexibility and open-mindedness for effective implementation. Trade-offs identification and understanding needs flexibility by stakeholders which is often difficult for trained experts existing in their professional silos and highlights the opportunities for Young Professionals.



Feedback by VP Dr. Marco during the WEF Nexus Training workshop



Dr. Anthi Brouma-GWP-MED facilitating the WEFE Nexus Training workshop



Feedback by Prof. Dr. Michael, chairman of GWP-MED during the WEFE Nexus Training workshop



Feedback from Eng. Sara, during the WEFE Nexus Training workshop





Feedback by Dr. Pandya Secretary General of ICID during the WEFE Nexus Training workshop



Feedback by Eng. Enas from Sudanese National Committee during the WEFE Nexus Workshop



Panel Discussion during the WEF Nexus Training workshop



Cross-section of participants after the WEF Nexus Training workshop



2.2.4 Training Workshop on Value engineering by Prof. Dr. Hesham Osman (Cairo University)

Prof. Dr. Hesham presented Value Engineering (VE) process as an internationally practiced methodology that focuses on improving the value and functions required to accomplish the goal or objectives of any product, process, service, project or organization at the minimum possible cost by analyzing their functions and life cycle costs. Prof. Hesham gave an overview of the VE process by explaining how VE ideas are developed, functional Analysis (FAST technique), idea screening and evaluation, implementation of VE recommendations and the practical challenges that exists.

After being introduced to the VE process, the workshop took a new dimension with participants divided in groups and presented with a real-life scenario on: **canal tail end irrigation problems**. YP's were tasked with first describing the problem, the functional analysis of the different components of a canal, how best to optimise them by developing creativity and finally evaluating available options for implementation.



Dr. Osman with Participants during the Workshop on Value Engineering

The hands-on training workshop was very useful to the YPs and presented VE as an intensive, interdisciplinary problem-solving activity. It is a primary tenet of value engineering that basic functions are preserved. However, despite WEF challenges many firms do not have a formal approach to value engineering which, if implemented, could potentially improve their effectiveness and achieve increased levels of client satisfaction. This stressed the need to apply VE with greater rigor than ever before to meet the current global business needs of sustainable development and growth.

Dr. Marco explained the conception of the expert system and how it has aided farmers in providing accurate information on irrigation scheduling in terms of crop water requirements, irrigation interval and frequency to adopt. The IRRIFRAME advise as presented by Marco can be easily accessed by Internet or delivered by SMS messages, sent directly to the farmer. The Consortia only need to provide geo-referenced data on their irrigated areas and information on irrigation intervals and conditions, according to climate and soil conditions. The system as described automatically provides up to date information on the meteorological conditions, water table and soil characteristics. According to results presented by ANBI, the introduction and adoption of IRRIFRAME software improved irrigation by saving about 15 – 25% of water and increasing quantity and quality of agricultural production.

As conveyed to YPs, the diffusion of this new approach is deemed as a strategic factor of irrigation in Italy, especially as future effects of climate change need to be taken into consideration. This also accounts for considerable variations in resource availability, water distribution over time and management. Climate change represents, therefore, a new challenge that Irrigation agencies should have to cope with, by proposing innovative forms of management and this calls for young minds which are flexible to ideas.



VP Dr. Marco Arcieri with participants during the training workshop

2.3 DAY THREE

2.3.1 Lecture on Climate Change Impact and Vulnerability Assessments in the Arab Region by Dr. Tarek Sadek - ESCWA

Dr. Tarek presented a brief on the Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR). He provided further insights into how it is currently been implemented by the United Nations, the League of Arab States and respective specialized organizations. In his lecture, Tarek emphasized the role of collaborative efforts in assessing the projected impacts of climate change on freshwater resources in the Arab region and the implications of these impacts to socioeconomic and environmental vulnerability. This according to him has led to the implementation of integrated vulnerability assessment which combined exposure, sensitivity and adaptative capacity indicators to develop vulnerability maps for the Arab region. He demonstrated the results and findings of RICCAR in the Arab Climate Change Assessment Report 2017 and how these outputs will be disseminated through the establishment of a Regional Knowledge Hub (RKH) that is currentted being developed. Concluding, Dr. Tarek added that an initial design of the RKH will enable future use of these outputs, data and information by all stakeholders including researchers, government officials, planners, and the public at large and called on YPs to take advantage of this unique opportunity.



Lecture about RICCAR by Dr.Tared Sadek ESCWA

2.3.2 Training workshop on Simulation Modelling in Irrigation and Drainage. By VPH Prof. Dr. Ragab Ragab

Prof. Dr. Ragab during the training workshop demonstrated to the participants how simulation models can significantly reduce the required time, cost and effort often due to natural system complexity of field experiments. This he emphasized can be used to describe the performance of the water management systems and once a model has been calibrated and validated, it can be used as a management tool for decision makers for long term planning of the water management systems.

Prof. Ragab using live demonstration introduced the SALTMED model as a Water, Land and Crop Management tool which he co-developed with the Center for Ecology and Hydrology. He also gave a live demonstration of the model and its application. He guided participants on how to install the SALTMED model, inputting the parameters, running the model as well as interpreting the model results. The objectives were to;

1. Bring the recent advances in water, soil and crop management to the participant
2. Demonstrate the benefit of modelling as a tool for management under current and future scenarios.
3. Enable participants to run field scale models using existing or own data

The course offered a unique integrated management approach to improve water use efficiency, water productivity and food security. Participants gained modelling and field management skills & knowledge by using data of field experiments and the SALTMED model.



VPH Dr. Ragab Ragab with participants during the Simulation Modelling Training Workshop



Cross-section of participants during workshop on use of SALTMED Model



Cross-section of participants during workshop on use of SALTMED Model

3.0 CLOSING SESSION OF THE FIRST Af-YWP FORUM

3.1 Keynote Address. *By Ms. Amira Sayed*

Closing the forum was a Keynote Address by **Ms. Amira Sayed** - Founder and President of Egypt Youth Parliament for Water and Egypt Representative at World Youth Parliament for Water. As a trained journalist with heightened interest for water, Ms. Amira expressed the role of journalism in water advocacy and giving a voice to water related activities. Congratulating the success of an African born Initiative, she called for collaboration between different Youth-led water initiatives within the continent and showed the willingness of her organisation to collaborate with Af-YWPF towards achieving common objectives.

3.2 Take Home Lecture. *By Dr. Ashwin Pandya – Sec. General of ICID*

Dr. Pandya gave a final take home lecture to the participants first on “Assessing Water Resources Using Global Data”. During the lecture, Dr. Pandya emphasized the role of collective datasets can help to understand current distribution, use and value of water increase in productivity through current infrastructure and develop scenarios with new infrastructure as well as understanding the risks of climate change. These platforms he stated aimed to move from the sophistication in scientific research to present results in forms that can be easily accessed and support decision making at all levels. Building on this, Dr. Pandya explored with participants the “Knowledge Management Strategy for Irrigation and Drainage” of the ICID as an integrated knowledge hub and data management. He demonstrated the different inputs required for the knowledge portal and guided participants on how to navigate and access the pool of data that is currently been collected. He called on YPs to seize the opportunity to contribute in form of research papers and scientific finding to aid in further development of the portal.



Dr. Pandya delivering a Take Home Lecture during the closing session of the forum

3.3 Closing Panel Discussion

To summarise the activities of the 3-day event, a panel discussion was held between participants and trainers and an online live platform; [Mentimeter](#) was used to collect reflections from the audience. The panel was moderated by Amali Abraham Amali and on the panel were;

- Dr. Khaled Bedouin - GWP Med
- Dr. Ragab Ragab - VPH ICID
- Dr. Marco Arcieri - Vice President ICID
- Engr. Sara Boularbah - YP, Morocco
- Engr. Andrew Kasibante - YP Uganda
- Dr. Eman Ragab - YP Egypt

During the 3-day training workshop, participants were assigned rapporteur roles to produce a summary of every training session. A collection of these rapporteurs was reflected in the panel to have a broad summary across participants and trainers. Response across and between panellist reflected satisfactory 3 days of deliberations with a lot to take back home. This can also be inferred from the feedback as shown in Fig. 1. Below. The discussion called for more innovative ways in bridging the gap between science and policy as well as leverage the research gaps that exists in the continent. It also received plausible suggestions on how to mainstream YPs into irrigation and drainage agriculture and options on how the Af-YWPF can play key roles in achieving this. Participants received great inputs on how to capitalise on data scarcity within the region and use innovative, less costly solutions to achieve results. It also presented landmarks on which the success of the Forum can be assessed in the future.

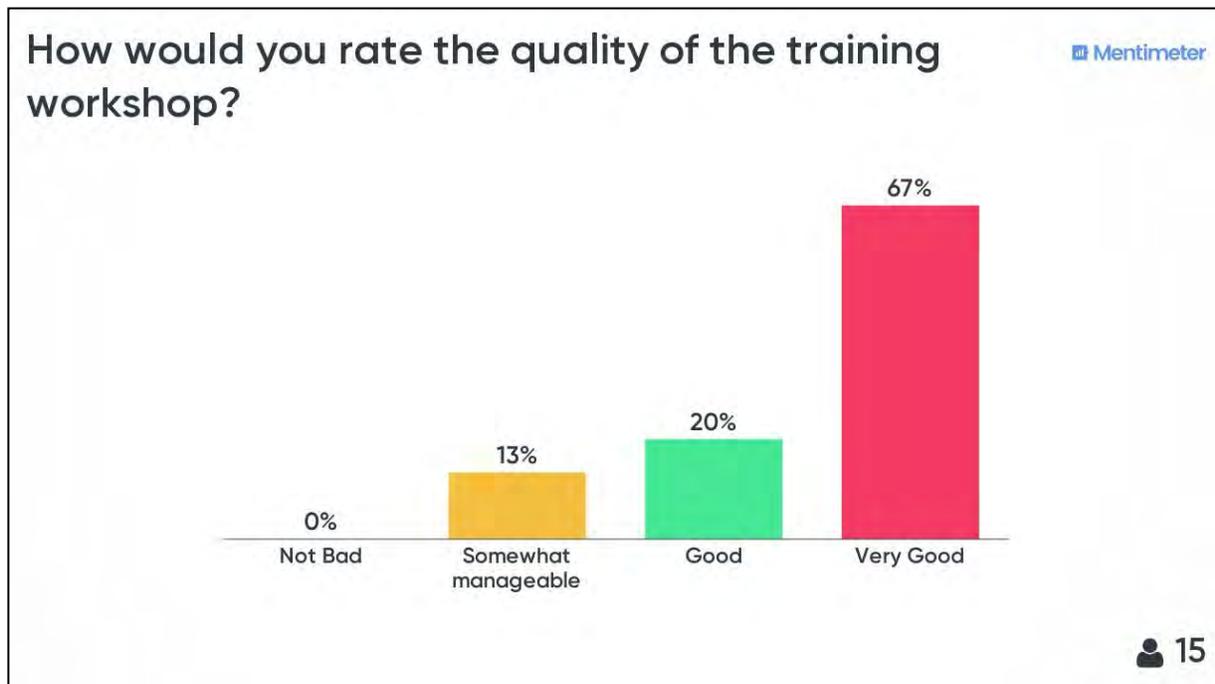


Fig. 1: Worksop Impression Survey from participants

At the end of the plenary, panellists suggested topics which needs to be further explored within the forum. Among these are;

- Lobbying for sustainability projects and how to develop proposals;
- Capacity building challenges for YPs to engage more in research;
- Understanding what's happening to the climate, understanding the process;
- Necessary communication skills in research and policy development. How to convey your message in a precise way and to a targeted audience;
- Building technical knowledge on the nexus approach;
- Improving water productivity in the region more production not only per unit of water used, but also per unit of energy consumed and per unit area; and
- Solving the scaling up issue of generated technologies.

These was also reflected in the Mentimeter survey received from the participants as shown in Fig. 2 below. The Forum hopes to develop these suggestions amongst others to be reflected in future capacity building and development proposals.

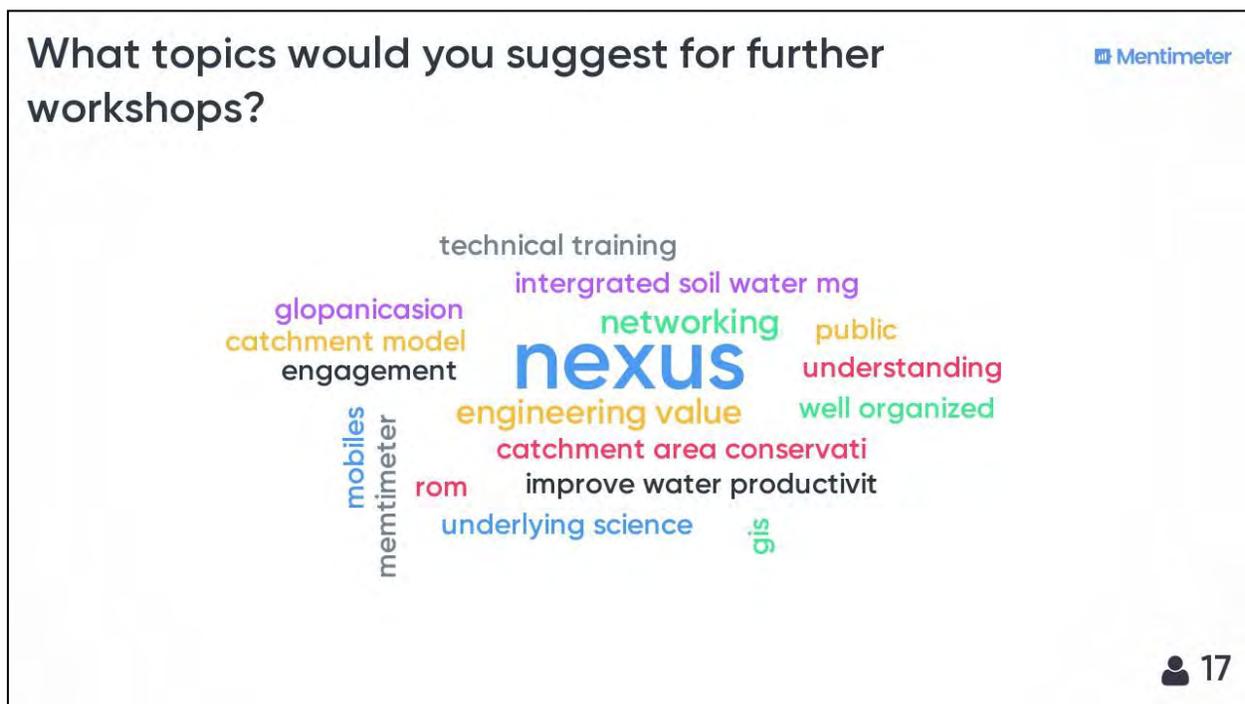


Fig. 2: Suggestions for future workshops.

As shown in Fig. 3 below, the feedback from the participants clearly indicated such a forum is a welcome development and should become an existential part of the working Group. With plans to organize a greater collection in 2020 during the 5th Regional Conference, YPs were encourage to reach out with lessons learned and strengthen the forum for a collective good.



Fig. 3: Feedback rating of Training Workshop

3.4 Af-YWP Forum Coordinators 2018-2020

To coordinate the affairs of the Forum for the next two years, a team of 7 coordinators were selected by VPH Dr. Mohamed Wahba, the chairman of ENCID and AFRWG in consultation with the ICID Central Office and CV of participants. It is hoped that the coordinators serving also as the steering committee will draft the guidelines of the forum as well as develop a structure upon which the forum will build upon. Among others, they will also formulate guidelines for e-discussions, webinars and election of new coordinators that ensures equal representation across the continent, inclusivity as well as active involvement of YPs.

Coordinator	Assistant Coordinator
Eng. Amali Abraham Amali (Nigeria)	Dr. Eman Ragab Nofal (Egypt)

Joint coordinators

Eng. Adey Nigatu Mersha (Eithopia)	Eng. Marwa Salman Mohamed (Sudan)
Eng. Sara Boularbah (Morocco)	Eng. Richard Lee Hay (South Africa)
Eng. Aya Elkholi (Egypt)	



Selected coordinators for the Af-YWP Forum 2018-2020 with the Chairman of AFRWG

3.5 Launching the Af-YWP Forum and the Af-YWPeF Mandate

Commemorating the 3-day training workshop was the inauguration of the African Young Water Professionals Forum which was declared open by Engr. Dr. Mohamed Wahba with support from the Secretary General of the ICID and collaborating organisations present. The inauguration was marked by unveiling a new LinkedIn Group “**African Young Water Professionals e-Forum (Af-YWPeF)**” which is linked to the IYPeF.

The Af-YWPeF from its establishment is expected to run with the following mandate;

1. Encourage and promote a high standard of professional development amongst the young professionals in the field of irrigation, drainage, and flood management;
2. Provide a platform for African young water, irrigation and drainage professionals, to exchange information, ideas, tools, experiences and possibly develop a Af-YWPeF Mentorship program;
3. Expose African Young Water Professional to ICID’s aims, objectives, role and activities;
4. Maintain and strengthen linkages with national and international youths having interests in water-related subjects or the activities, as relevant to ICID objectives.
5. Af-YWPeF would also organize e-discussions and webinars on the topics of interest to African Young Water Professionals. Share the knowledge generated at individual and institutional level for mutual benefit of the agricultural water management community across Africa and the World.

6. Af-YWPeF would serve as a provider of African Young Water Professionals to facilitate activities in Africa through the AfRWG.
7. Liaise with ICID Young Professionals' e-Forum (IYPeF) and actively participate in all its activities.

3.6 Presentation of Certificates.

For a 3-day fully packed training Workshop, a document to attest participation and to serve as official reference was necessary. Trainers and facilitators were on stage to congratulate participants and commend their show of eagerness and enthusiasm during the period. with A well-deserved certificate of attendance signed by the ICID Central Office and the Chairman of the African Regional Working Group was presented to all the 24 - Young Professionals that participated in the 3-day training workshop.



Presentation of certificates during the closing session



Presentation of certificates during the closing session

3.7 Closing Remarks by Dr. Mohamed S. Wahba - Vice President Honorary of the ICID, Chairman of ENCID and AFRWG

In his closing remark, Dr. Wahba stated that it was a great honor to have all the distinguished participants in the forum and commended their efforts without which the success would not have been recorded. He also extended his appreciation to H.E. Dr. Mohamed Abdel Aty Minister of water resources and irrigation of Egypt for his endless firm support for the African Young Water Professional's Forum. To the organizing committee of Cairo Water Week and the ICID he further noted that their overwhelming confidence in this initiative was key to its realisation. He commended the African National committees and various international organisations that contributed to and facilitated towards the success of the 3-days event. Expressing his heartfelt appreciation to the trainers, Dr. Wahba emphasized the sacrifice of time and priority that translated into a successful event.

Dr. Wahba gave a special thanks to Prof. Dr. Hesham Mostafa, the deputy chairman of ENCID, and Ms. Ranya Ekram, the financial and administrative key person in ENCID for their great efforts for the preparation of the forum. He however noted that although three days was not enough, the training workshops was very useful and encouraged YPs to take home the various lessons learnt and apply it to higher effectiveness in their domains. As a farewell remark, Dr. Wahba apologizing for inconveniences and setbacks typical of first-time events expressed his confidence in the coordinators to build on it for better forum activities and wished participants safe travels to their destinations.

4.0 CONCLUSION AND RECOMMENDATION

4.1 Conclusion

The success of the First African Young Water Professional's Forum can be evidently inferred from the feedback received from participants. Despite limitation of time, YP's capitalized on the international exposure to learn from themselves and build networks that will increase effectiveness in their different roles. Training workshops across the 4 themes of the forum were not only timely but important in addressing global challenges in the water sector especially in Africa. The concepts may be familiar, but it was evident that the African Water sector called for a paradigm shift in thinking and approaches to problem solving. It was also an opportunity to reflect on the setbacks of the continent and how innovation can make use of cheap and locally available resources to provide solutions across sectors.

4.2 Recommendations

For a first-time event, learning how not to do this and better ways of achieving results would be key. The 3-day Forum ended with the following recommendations for improvements from participants.

1. Continually expose African Young Water Professional to ICID's aims, objectives, role and activities;
2. Future Training Workshops should draw from gaps in the TNA and discussions held during this training;
3. Foster efforts to make training workshops more interactive and give participants the opportunity to learn from each other. To this regard, lecture modes will be discouraged, and interaction will be prioritised.
4. Collaborate, build and establish cooperation with institutions, organizations and agencies whose visions tallies with our objectives
5. Young professionals should be involved in designing future activities of the forum, tailor-made to their needs and reflective of the goals and objectives of ICID;
6. Selection of future participants to the forum will be done through a transparent and inclusive process and will ensure equal representation from all regions.
7. Language barriers will be addressed in future forums to ensure active participation by all young professionals irrespective of their professional working language.
8. A better and more efficient way of mobilising funds will be identified to avoid major setbacks and allow YPs full concentration in the activities.
9. Young Professionals through the Coordinators will be actively involved in selection of trainers and facilitators for future forum events.
10. If live demonstrations are involved, the limited time can be should be used more effectively by encouraging participants to read on the themes before the activities of the forum to allow time for more discussion and where software's are needed, YPs will be encouraged to install it prior to their arrival.





Group photograph after the closing session of the forum

APPENDICES



APPENDIX A: LIST OF PARTICIPANTS

1ST AFRICAN YOUNG WATER PROFESSIONALS FORUM

14-16 OCTOBER 2018

LIST OF PARTICIPANTS

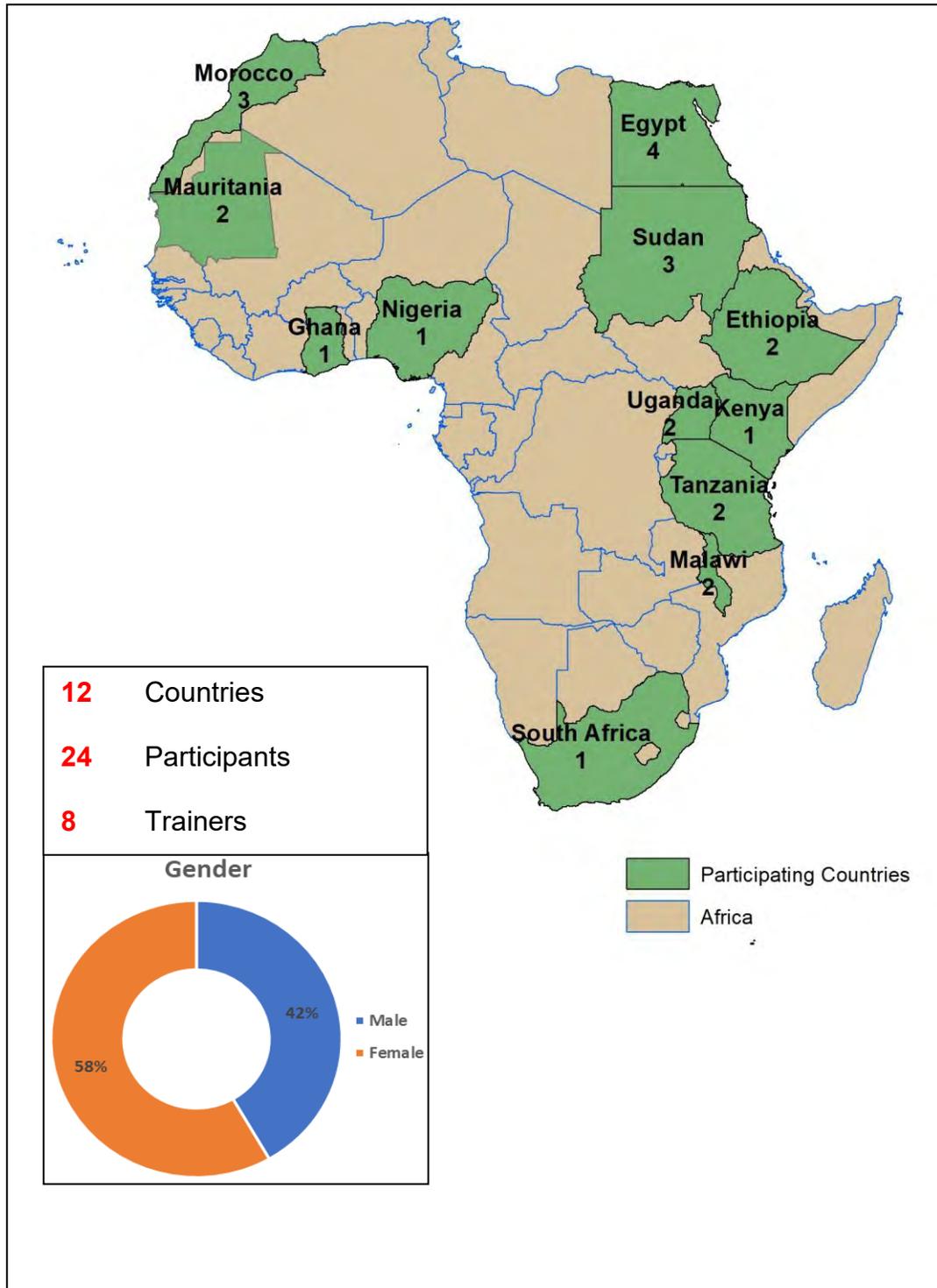
No.	NAME	Country	AGENCY or ORGANIZATION	POSITION
1.	Mina Adel Zaki Ibrahim	Egypt	Ministry of Water Resources and Irrigation, Egypt. Water Management	Assistant Lecturer,
2.	Adey Nigatu Mersha	Ethiopia	UNESCO-IHE Institute for Water Education, Delft, The Netherlands, Land and Water Development Research.	Fellow, PhD Researcher
3.	Amali Abraham Amali	Nigeria	Institute for Technology and Resources Management in the Tropics and Subtropics. ITT TH-Köln	MSc. Integrated Water Resources- Management - with Focus on MENA
4.	Andrew Kasibante	Uganda	Ministry of Agriculture, Animal Industry and Fisheries (Government of Uganda)	Agricultural engineer
5.	Anderson Fyson Mbozi	Malawi	Ministry of Agriculture, Irrigation and Water Development	Chief irrigation officer (planning, design and construction)
6.	Aya Mohammed Elkhoully	Egypt	Ministry of Water Resources and Irrigation in Egypt	Director of works assistance
7.	Eman Ragab Mohamed Nofal	Egypt	Research Institute for Groundwater (RIGW), National Water Research Center (NWRC), Ministry of Water Resources and Irrigation (MWRI).	Researcher
8.	Enas Adam Ahmed	Sudan	Ministry of Agriculture and Forests General Administration of Natural Resources and Sustainable development	Soil Specialist in Land Use Department
9.	Haji H. Saleh	Tanzania	Ministry of Agriculture, Natural Resources, Livestock and Fisheries, Zanzibar	Director, Department of Irrigation,
10.	Husen Maru Ahmed	Ethiopia		
11.	Kaoutar El Oumlouki	Morocco	National Institute of Agricultural Research (INRA)/ Ibn Tofail University, Faculty of Sciences	PhD student
12.	Marwa Salman Mohamed	Sudan	Ministry of Water Resources, Irrigation & Electricity	Water Resources Engineer (Researcher)
13.	Nagla Barakat Abdalla Mohammed	Sudan	Ministry of Water Resources, Irrigation and Electricity. General Director of Project and planning-Unit of design.	Civil Engineer
14.	Maiada Mohamed Anwar	Egypt	Ministry of Water Resources and Irrigation, Egypt, Egyptian Public Authority for drainage Projects	Vice – Chairman Technical Office
15.	Richard Lee Hay	South	University of Pretoria	Research Assistant



		Africa		
16.	Sara Boularbah	Morocco	State Engineer in Rural Engineering of the Agronomy and Veterinary Medicine Institute Hassan II (IAV)	PhD student, research Assistant
17.	Tabara M'bodj	Mauritania	NGO AISER citizenship and human rights	Division chief
18.	Youssouf Mohamed Vall	Mauritania		Hydrogeology and hydrology engineer
19.	Ruth S. Phiri	Malawi	Cairo University	
20.	Saumu Zuberi Mwessongo	Tanzania	Cairo University	
21.	Julian Cheptoo Kenduiywa	Kenya	Cairo University	
22.	Khadija Allaoui	Morocco	Ministry of Agriculture, Maritime Fisheries, Rural, Morocco	
23.	Vincent Gilbert Quarshie	Ghana	Cairo University	
24.	Rwotonen Innocent Bob	Uganda	Cairo University	



APPENDIX B: Workshop Delegates Profile (Participants)



Amali Abraham Amali (Nigeria – Af-YWPF Coordinator 2018-2020)



Graduate Student of Integrated Water Resources Management, ICID Young Professionals' e-Forum Coordinator and Secretary of the African Regional Working Bachelor's Degree in Agricultural and Environmental Resources Engineering from Nigeria. He served as Young Professional Rapporteur for SIWI World Water Week 2018 and currently a Member of International Review Committee for the Third World Irrigation Forum.

Amali is strongly committed to professional development, ongoing learning and career advancement in groundwater hydrology, surface water resources; its exploration, exploitation and management especially as it concerns water resources in arid regions through direct professional commitment to sustainability and advancement towards accessibility. He remains optimistic that

the Af-YWPF will provide a platform for African YPs to leverage the huge potentials that exist in the African water and agricultural sector and provide innovative solution to country-specific problems. Amali has co-authored several research articles and remains active in various youth-led water focused organisations and is keen on identifying pathways for achieving local realities by promoting cooperation for shared learning and co-benefits to African Young Water Experts.

Contact

Mobile: +4917656718831

Email: Amali.A_Amali@outlook.com

LinkedIn: <https://www.linkedin.com/in/amaliamali>

Twitter: @Amali_AAali

Dr. Eman Ragab M. Nofal (Egypt – Af-YWPF Assistant Coordinator 2018-2020)

Eman is a Senior Hydrologist/Researcher with the Research Institute for Groundwater, National Water Research Center, Ministry of Water Resources and Irrigation, and ICID Young Professionals' e-Forum Joint Coordinator. A Researcher in Irrigation and Drainage, she holds a PhD and MSc. in Irrigation and Hydraulics and a Bachelor's Degree in Civil Engineering.



Eman has contributed to several projects including Groundwater Modelling Analysis in the Nile Delta, and a study on Climatic Changes Impact on Groundwater Potentiality and fresh/ salt Water Interface in the Coastal aquifer of Nile Delta. She has participated in various international conferences including the 2nd World Irrigation Forum in Thailand and the 3rd Mediterranean Water Forum in Egypt.

Proficient in several modelling and simulation packages including MODFLOW, SEAWAT and ArcGIS, Eman has co-authored several scientific publications both in National and International Journals and hopes to help African YPs explore the huge opportunities in the water sector.

Contact

Mobile: +201001594004

Email: emanragab29@yahoo.com

LinkedIn: <https://www.linkedin.com/in/eman-ragab-05102bb/>

Twitter: @EmanNofal20



Eng. Adey Nigatu Mersha (Ethiopia – Af-YWPF Joint Coordinator 2018-2020)

Adey is currently a PhD Research Fellow with the Water Science and Engineering Department, UNESCO-IHE Institute for Water Education and ICID Young Professionals' e-Forum Joint Coordinator. A researcher in IWRM for sustainable irrigation development, she holds an MSc. in Soil and Water Engineering from Ethiopia. Before taking this position, Adey was a WaSH program officer with the Catholic Relief Services where she carried out situational assessment leading to program design and supported the implementation of water sanitation and hygiene projects for humanitarian emergency relief programs.



As a young professional in the field of Water Resources and Irrigation, Adey believes the workshop is particularly designed to build capacity of YPs at a broader scale and grow their experience by the exceptional knowledge sharing opportunity with other professionals in the region. This she hopes will help in finding solutions to practical challenges faced in the field of Irrigation and Drainage which plays a great role in achieving food security targets of countries within the region. She anticipates this will also broaden her perspective through the interactive sessions to improve her ability or innovative solutions to professional related problems and for future engagement in research and development and other work-related matters. Adey is optimistic that time spent attending the training will be compensated through increased efficiency due to added technical and behavioural skills as well as improved communication skills and assertiveness in work environment. Participating in the Af-YWPF workshop, Adey plans to promote the general initiatives and objectives of the training workshop through discussion with colleagues as well as the agenda of the Forum.

Contact

Mobile: +251978786148

Email: adeybeth@gmail.com

LinkedIn: <https://www.linkedin.com/in/adey-n-mersha-7657b91b/>

Eng. Marwa Faisal Salman Mohamed (Sudan – Af-YWPF Joint Coordinator 2018-2020)



Marwa is a counterpart in a Japan International Cooperation Agency funded project on “Enhancement of the Integrated Water Resources Management for the Republic of Sudan”. In this capacity, she is responsible for estimating water resource potential, capacity of water supply facilities vs water demand and analysing present conditions to make recommendations on policies and institutions for water resources management. A researcher in Water Resources, she holds a Bachelor’s Degree in Civil Engineering and currently enrolled for an MSc. in Water Resources Engineering with Khartoum University.

Marwa has kept the pace at active learning including a recent training on “Basin Water Resources Management for Sustainable Water Use” Organized by Japan International Cooperation Agency in Morocco and an author of various publications.

Contact

Mobile: +249916885915

E-mail: marwa.faisal1313@gmail.com



Eng. Sara Boularbah (Morocco – Af-YWPF Joint Coordinator 2018-2020)



Sara is a State Engineer in Rural Engineering and currently enrolled for her PhD with the Department of Water and Environment of the Agronomy and Veterinary Medicine Institute Hassan II, Rabat, Morocco. A lecturer and researcher in Irrigation, Water Management and environment, she holds an MSc. in Water and Agriculture with an excellent background in Mathematical Science. She currently lectures students, monitor them during while conducting research work and participating in projects. She sees lack of financial means as a setback to her work.

Sara is optimistic that the training workshop is an occasion to discuss and widen her knowledge on multiple subjects related to water resources management, strengthen her insight on water management issues to ameliorate her approaches to this pressing problematic. She anticipates a rich workshop in terms of experience exchange between the participants and she plans to transfer knowledge gained to colleagues and students through reunions and work sessions.

Contact

Mobile: +212668875141

Email: sara.boularbah@gmail.com

LinkedIn: <https://www.linkedin.com/in/sara-boularbah-51713187/>

Eng. Richard Lee Hay (South Africa – Af-YWPF Joint Coordinator 2018-2020)

Richard is a Graduate Student of Agronomy with the University of Pretoria and currently a Research Assistant on a Water Research Commission funded project where he is investigating the sustainability of water usage in the Tshwane Agriparks by collecting and interpreting water samples. A networking professional at the heart of [smallholder farmers](#), he also holds a Bachelor's Degree in Applied Plant and Soil Sciences from South Africa. Currently, Richard is focused on investigating water-usage and irrigation potential but having difficulties in estimating accurate water usage information. He believes expanded training in modelling will help him overcome these challenges and make more accurate predictions in research as well as in expanding the impact of his work in assisting more small-scale farmers.



While participating in the Af-YWPF, Richard hopes to expand his knowledge and skill set with regards to water modelling, in order to establish himself as a future water researcher within South Africa; as well as to network with other young water professionals from across Africa to establish connections and lay the groundwork for future transnational collaborations. By using the skills and knowledge gained from this training course, plans to use knowledge gained to assist his colleague take up an MSc. programme in Irrigation Water Research.

Contact

Mobile: +27833890457

Email: richardleehay@gmail.com

Facebook: www.facebook.com/haythererichard

Twitter: @HaysHarvest Instagram: @HaysHarvest



Eng. Aya Mohammed Hassan Elkhoully (Af-YWPF Joint Coordinator 2018-2020)

Aya is proficient user of Computer Applications; designing and supervising implementation of hydraulic structures for the Ministry of Water Resources and Irrigation Egypt, where she is engaged as a Civil Engineer. She is currently enrolled for her MSc. and holds a BSc. in Civil Engineering from Egypt. Aya is proficient in computer aided design using AutoCAD and 3D-MAX and in 2018, she attended a training course on "Seawater and Bitter Salinity Water Utilizing Technology for Countries Under Belt & Road Initiative" in China.



Contact

Mobile: +201060898828

Email: aya.elkholi_90@hotmail.com

Husen Maru Ahmed (Ethiopia)



Husen is enrolled as a PhD scholar with the College for Development Studies, Addis Ababa University. He also doubles as Lecturer at the Department of Geography and Environmental Studies of Wolaita Sodo University, Ethiopia where he conducts research and provides community services. Prior to this, he was a Senior Researcher with DAB Development Research and Training PLC. where he designed studies and projects, conducted baseline studies as well as supervised field phase data collection for projects. He sees issues of scale as one of the challenges in his water related studies. In 2016, Husen participated in a training programme on "Conceptual Modelling" organised by the Center for Development Research (ZEF), University of Bonn, Germany.

At the Af-YWPF, Husen hopes to have an international exposure on water related issues and believes the training will be a golden opportunity for him to understand how Africans are challenged by related crisis and the ways to co-overcome them. In addition, as a PhD student, working on his dissertation on irrigation and livelihood, he hopes the training without doubt, will capacitate him to produce powerful research outputs for which having a global link with African YPs will be an additional motivation. Husen anticipates the themes of the training will provide for him innovative solutions for more efficient water management; better integrated water management schemes; as well as new approaches to manage water sustainably including. On return, Husen plans to share the materials with his colleague, arrange a discussion, and highlight to him what he gained from the training. The ideas, concepts, and experiences gained from the training will motivate him to transfer the information to his students on return to Ethiopia.

Contact

Mobile: +251913308975

Email: tohusen@gmail.com

Facebook: <https://www.facebook.com/husenmaruf>

Twitter: @husen_maru

ResearchGate: https://www.researchgate.net/profile/Husen_Ahmed2



Eng. Nagla Barakat Abdalla Mohammed (Sudan)



A Civil Engineer with the Sudan Ministry of Water Resources, Irrigation and Electricity, and proficient in Engineering drawing using AutoCAD, Nagla is responsible for design of large- and small-scale irrigation channels as well as maintenance of irrigation structures and calculation of pipeline losses and pumps. Specialized in remodelling existing channels, she holds an MSc. from the Institute of Irrigation and Water Management at Gezira University, Sudan with recent training in Water Resources Assessment from IHE Delft Netherlands. She also holds a Diploma in Shared Water Resources from Cairo University.

In addition to increasing her expertise in the field of water and Irrigation, at the 3-day workshop of the Af-YWPF, Nagla's anticipation was to exchange experiences with competent experts in water relationships and develop water policies based on the principle of regional cooperation. She hoped the training experience will help in creating regional and international cooperation as well as economic, social and political partnerships aimed at achieving water security, peace and stability.

Contact:

Mobile: +249918195041

Email: naglamadani.nm@gmail.com

Facebook: [NajlaBarakat.9@facebook.com](https://www.facebook.com/NajlaBarakat.9/)

LinkedIn: <https://www.linkedin.com/in/najla-barakat-41274252/>

Kaoutar El-Oumlouki (Morocco)

Kaoutar is a last year PhD student in Science of Chemistry and Environment at the University Ibn Tofail, Faculty of science Kenitra in collaboration of National Institute of Agricultural Research. With a Specialized Master's degree in environmental chemistry, Kaoutar has in recent years equipped herself in training courses on "Resilience and Adaptations to Climate Change for Sustainable Management of Tidal Areas" and "On Farm Water Use and Management" in Taiwan and Egypt respectively.

Competent in water and soil quality, her motivation for attending the Af-YWPF was to meet different young Africans who work in the water sector and develop cooperation with research teams from other countries. She expects to get acquainted with new information about water at the African Union, master new model for irrigation and drainage as well as exchange ideas and information between her colleagues. In attempt to scale up the training, on her return, Kaoutar plans to organise a meeting with her colleague and share with her new concepts learnt during the 3-day training workshop.



Contact:

Mobile: +212615787247

Email: Kaoutar18@gmail.com

LinkedIn: <https://linkedin.com/in/kaoutar-el-oumlouki-a0b9319a/>



Youssef Mohamed Vall (Mauritania)

Youssef is a description of an African Water enthusiast, undeterred by prevailing circumstances. His contribution to the Mauritanian Water Sector earned him a GWP scholarship to attend the Af-YWPF. An MSc. holder in Hydrology and Water Resources from Mohammed V University in Morocco, Youssef is committed to active learning including a recent training with the National Center for Water Resources.



For his continuous involvement in the field of water and specifically in rural areas, this training represents for Youssef a real opportunity to learn and exchange with actors in the field and get over with issues of financial autonomy in the water sector. He intends his involvement in the Af-YWPF will help him to better understand the different methods to deal with climate change and LRS technology adopted. He plans to utilise the materials and lessons learned to green rural communities and the water sector at large.

Contact

Mobile: +22236264604

Email: Ghaliyoussef55@gmail.com

Facebook: <https://www.facebook.com/ghali.youssouf>

LinkedIn: <https://www.linkedin.com/in/mohamed-vall-yousseuf-a62353172/>

Maiada Mohamed Anwar (Egypt)



The Egyptian born scholar holds a BSc. in Civil Engineering from Cairo University and is currently the Deputy Manager, Technical Office of Ministry of Water Resources and Irrigation, Egyptian Public Authority for drainage Projects. In this capacity, Maiada is responsible for activities related to the environment where she conducts Environmental Impact Assessment on projects as well as participate in monitoring & evaluation of telemetry for water quality parameters to upscale drainage in Egypt.

As a water practitioner, she expects the Af-YWPF workshop will help improve skills on her current job as it relates to water extreme events, data processing, preparation of analysis, assessment and mitigation. She is enthusiastic that the training opportunity will avail her decision support tools for climate change, as well as enhance knowledge transfer and exchange experiences among institutions related to protection of water resources. Maiada believes this would provide a golden knowledge about her area of work through linkage between research assignments, advanced courses and learning from established experts. She hopes the training course will provide her with an opportunity for assessing and reflecting her capabilities and desire for developing leadership, negotiation, exceptional planning and conflict management skills. She plans to share the knowledge gained with colleagues through; mailing lists having identified a target audience, across websites as well as decide on the best type of presentation, seminars and workshops to present her learning experience.

Contact

Mobile: +201223358539

Contact: maiada_ma@hotmail.com

LinkedIn: <https://linkedin.com/in/maiada-mohamed-14988485/>



Andrew Kasibante (Uganda)

Andrew is an Agricultural Engineering Graduate from Makerere University in Uganda. Skilled in embedded systems simulations, hydrology and water resources engineering and irrigation systems design, he is engaged with the Uganda Ministry of Agriculture, Animal Industry and Fisheries where he serves as an Agricultural Engineer focused on Agricultural infrastructure, mechanisation and water productivity.



A Postgraduate Certificate holder in Monitoring and Evaluation, Andrew has mastered the skills of report writing, planning and budgeting, proposal development, project management, Agricultural Research, and experimental design. He looks forward to creatively applying technical and tactical multi-disciplinary approach towards achieving water and food security in Africa.

Contact

Mobile: +256775646240

Email: kasibantegcf@gmail.com

Anderson Fyson Mbozi (Malawi)

Anderson is currently the Chief Irrigation Officer (Planning, Design and Construction) with the Malawi Ministry of Agriculture, Irrigation and Water Development. He is Professional Registered Irrigation Engineer with the Malawi Board of Engineers and a holder of MSc and BSc in Irrigation Engineering. Highly experienced in design of irrigation and drainage systems, sustainable land and Water development projects, community-based management and development programmes in irrigation and water sector, Anderson manages the construction activities of the Department of Irrigation in line with the policies, strategies and performance goals. This includes the Transboundary Songwe River Basin Development Project between Malawi and Tanzania which intends to develop 6000 hectares of irrigation land and smallholder irrigation schemes.

Anderson has co-authored several irrigation research papers and plans to assist poor farmers to plan, design, implement, operate and maintain their irrigation and water development projects sustainably and profitably using local resources, human capacity and community participation.

Contact

Mobile: +265999471544

Email: andyambozi@yahoo.com

Mina Adel Zaki Ibrahim (Egypt)

Mina is an Assistant Lecturer, Ministry of Water Resources and Irrigation, Egypt.



Contact

Mobile: +201275408018

Email: engmina93_hbk@yahoo.com

engmina93@gmail.com

Tabara M'bodj (Mauritania)



Tabara is a Division Chief, of a Non-Governmental Organisation AISER Citizenship and Human Rights

Contact

Mobile: +22236605052

Email: tabarines@yahoo.fr

Enas Adam Ahmed (Sudan)

Enas is a Soil Specialist with the Land Use Department of Sudan's Ministry of Agriculture and Forests, General Administration of Natural Resources and Sustainable Development.



Contact

Mobile: +249919253528

Email: inass4235@yahoo.com



Haji H. Saleh (Tanzania)



Haji is currently the Director, Department of Irrigation, Ministry of Agriculture, Natural Resources, Livestock and Fisheries, Zanzibar.

Contact

Mobile. +255777424374

Email: hajisaleh76@yahoo.co.uk

Ruth Sosten Phiri (Malawi)

Ruth is currently a graduate student with Cairo University Egypt.

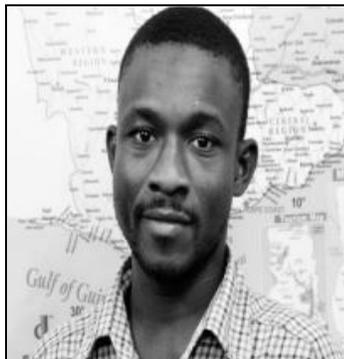


Contact

Mobile: +201555903578

E-mail: ruthphiri23@gmail.com

Vincent Gilbert Quarshie (Ghana)



Vincent is a Senior Hydrologist/Researcher at RIGW, NWRC, Cairo University

Contact

Mobile +201022617523

E-mail: vgquarshie@st.ug.edu.gh



Saumu Zuberi Mwessongo (Tanzania)

Saumu is currently a graduate student with Cairo University Egypt.



Contact

Mobile: +2001022617328

E-mail: saumuzuberi87@gmail.com

Julian Cheptoo Kenduiywa (Kenya)

Julian is currently a graduate student with Cairo University Egypt



Contact

Mobile: +2001022656974

E-mail: julietcheptoo@yahoo.com

Khadija Allaoui (Morocco)

Khadija is currently engaged with the Morocco Ministry of Agriculture, Maritime Fisheries, Rural.



Contact

Mobile: +2120661401444

E-mail: allaouigr@gmail.com



Rwotonen Innocent Bob (Uganda)

Rwotonen is a graduate student with Cairo University Egypt



Contact

Mobile: +201022617047

E-mail: rwotonen123@gmail.com

APPENDIX C: List of Trainers and Instructors

S/No.	Names	Affiliation
1.	VPH Prof. Dr. Ragab Ragab	Centre for Ecology and Hydrology, CEH, UK
2.	Dr. Khaled Bedoui	Global Water Partnership Mediterranean
3.	Dr. Anthi Brouma	Global Water Partnership Mediterranean
4.	Dr. Bang Sungsoo	Korea Rural Cooperation
5.	Dr. IM, Cheonggi	Korea Rural Cooperation
6.	Prof. Dr.Hesham Osman	Cairo University
7.	VP Dr. Marco Arcieri	Italian National Committee on Irrigation and Drainage
8.	Dr. Tarek Sadek	United Nations Economic and Social Commission for Western Asia

