Volume 2 Issue 26

REPUBLIC OF KENYA

KENYA WATER INSTITUTE KEWI Fountain Of Water Knowledge

WEEKLY Newsletter

July 6—July 12

KEWI to Enhance Utilities Bankability by Rolling Out Water Utility Creditworthiness Program

From Left: CPA Elvis Mwangi, Mr. Leornard Makokha, Ms. Florence Njeri, Ms. Everlyne Orwa and Mr. George Sato pose for a photo at Radisson Blu Hotel, Nairobi after graduating from Water Utility Creditworthiness Course.

BY: PIUS KIMANI

Kenya Water Institute (KEWI) Chief Executive Officer Dr. Leiro Letangule, EBS has pledged the support of the institute to water sector players in advancing knowledge that will help them improve on their operational and financial performance.

Speaking during the graduation ceremony of 36 participants who successfully completed a comprehensive training program focused on Water Utility Creditworthiness, Dr. Letangule reiterated that KEWI will fully support all programs including the just concluded Water Utility Creditworthiness Course that are geared towards improving water utilities in Kenya. During the colorful event that was held

HIGHLIGHTS

KEWI to Enhance Utilities Bankability by Rolling Out Water Utility Creditworthiness Program

KEWI CEO Dr. Leiro Letangule, EBS addresses participants during the Water Utility Creditworthiness Course graduation ceremony at Radisson Blu Hotel, Nairobi.

at Radisson Blu Hotel, Nairobi, all the 6 KEWI staff achieved an outstanding pass rate of 100%

"I reiterate our commitment to support all our water utilities through quality training programs to support and also ensure that we develop short courses that will go a long way in promoting the sustainability of our water utilities," he said.

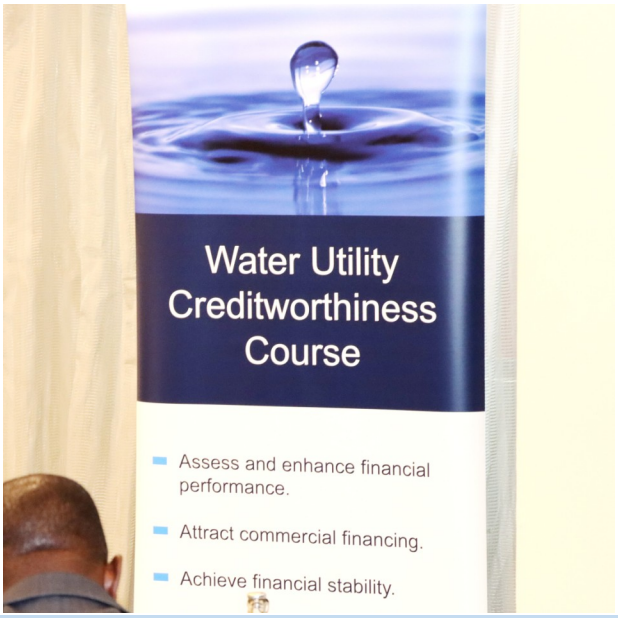
Towards this, he added that the institute will incorporate a program on Water Utility Creditworthiness in its short-term training schedule that will help build on the success of the training that saw participants gain invaluable skills on how to make their water utilities bankable. Once incorporated, the course will focus on training utilities on Non-Revenue Water (NRW) reduction strategies. This will ultimately help foster a more resilient, efficient and financially sustainable water sector.

His statement came shortly after Hon. Zachariah N. Njeru, EGH, the immediate Cabinet Secretary, Ministry of Water, Sanitation and Irrigation rallied state organs within the ministry to help water utilities build their resilient in the wake of a financial gap that may hinder realization of key milestones that they need to achieve.

In a speech read on his behalf by Water Secretary Eng. SAO Alima, Hon. Njeru insisted that the government was committed to progressively ensure that all the people were accessing sufficient, safe and affordable water. This, he said, was only possible if the organs mandated to offer water and sanitation services were suitably financed to do so.

"As we address the water issues, we must navigate the realities of limited financial resources that may impede achievement of our numerous developments." "This will require us to adopt new strategies of meeting the financial requirements that is much needed to push these developments ahead and our commitment will always be guided by how we allocate and use the resources that we have," he said.

Addressing the timeliness of the course, Hon. Njeru noted that according to the ambitious National Water and Sanitation Investment Plan (NAWASIP), Kenya was seeking to raise funds that would help seal the investment gap estimated to be



KEWI to Enhance Utilities Bankability by Rolling Out Water Utility Creditworthiness Program

A group photo of participants who graduated from the Water Utility Creditworthiness Course at Radisson Blu Hotel, Nairobi

$8.32 billion and that would help achieve universal access to water and sanitation by 2030.

Hon. Njeru said that the financial gap represented a significant opportunity for growth and development noting that to address the shortfall, all water sector players should come up with innovative solutions such as Public-Private-Partnerships (PPP) programs and blended financing mechanism.

"Concerted efforts for investments in this endeavor are crucial to ensure sustainable water and sanitation infrastructure and services that would guarantee access to clean water for all Kenyans," he emphasized.

He further asked the entire water sector stakeholder to develop an operation culture that was characterized by high efficiency, integrity, accountability and productivity as this would ensure that development expenditure would lead to real breakthrough for the water and sanitation sector.

While heaping praises to the World Bank and Water Services Regulatory Board (WASREB) for organizing the crucial training, Hon. Njeru noted that the course marked a pivotal moment for the sector as it would understand the importance of creditworthiness as a crucial tool and ingredient in making water utilities bankable and thus able to access commercial financing with ease.

"I rally our stakeholders like KEWI to also extend and offer training on this course," he added.

The training which saw attendees gain knowledge on assessing and enhancing the financial performance of water utilities, attracting commercial financing and achieving financial stability among other critical areas attracted crucial personnel from KEWI, WASREB, Ministry of Water, Sanitation and Irrigation (MWSI), Water Sector Trust Fund (WSTF) and selected Water Service Providers i.e. Kisumu, Muranga West, Kitui, Embu, Nithi, and Ruiru-Juja.

Mr. Leornard Makokha, HOD, Management Information Technology KEWI, addresses the Water Utility Creditworthiness participants at Radisson Blu Hotel, Nairobi.

TRAINING

PWaSS Honors 54 Graduates in Collaborative Training Initiative with KEWI, WASPA, and WIWAS

Deputy Director Corporate Services Dr. Kimeli M. Chirchir (in suit) poses for a group photo with KEWI graduands who graduated in Basic Water Course, Advanced Water Supply, and Waste Water Course at KEWI Headquarters, Nairobi

BY: FAIZAH JEPKORIR

54 graduands who successfully completed various courses under the Participation of Women in Kenyan Water and Sanitation Sector (PWaSS) project celebrated their achievements in a colorful graduation ceremony that was held at Kenya Water Institute (KEWI) headquarters, Nairobi.

PWaSS, in collaboration with KEWI, Water and Sanitation Providers Association (WASPA), and Women in Water and Sanitation (WIWAS) saw the graduation of seven Master Trainers, 24 Training of Trainers (ToTs), and 24 Water Operators, all who undertook rigorous training in Basic Water Course, Advanced Water Supply, and Waste Water Course. This ceremony marked a significant milestone in the institute's ongoing efforts to enhance the skills and knowledge of water sector professionals, with a notable number of graduands being members of KEWI.

The event which was presided by KEWI Governing Council Chairperson Hon. Patrick Musili Mbangula and graced by several distinguished guests, including KEWI CEO Dr. Leiro Letangule, EBS, Member of the Governing Council Ms. Fridah Gacheri, both outgoing and incoming WASPA CEOs, Mr. Anthony Ambugo and Mr. Anthony Jaramba; and Deputy Director Corporate Services Dr. Kimeli M. Chirchir.

Also present to acknowledge the hard work and dedication of the graduates were Deputy Director Academic Affairs Mr. Eric Wamiti, former WIWAS CEO, Dr. Leunita Sumba, PWaSS Project Manager Anne Kamau, and other esteemed attendees.

In his address, KEWI Governing Council Chairperson highlighted the critical role of women in water management, stating, "Empowering women in the water sector is not just a matter of equity; it is essential for sustainable development in Kenya." His remarks emphasized the transformative impact women can have when provided with the right training and opportunities.

Dr. Letangule expressed immense pride and appreciation for the

TRAINING

PWaSS Honors 54 Graduates in Collaborative Training Initiative with KEWI, WASPA, and WIWAS

collaborative efforts that contributed to the success of the PWaSS project.

"Over the course of one year of collaboration, I have witnessed fast-tracked education, ingenuity, and a relentless pursuit of excellence in certified PWaSS activities. When we embarked on this journey together in August 2023, we envisioned creating something impactful that would not only meet the needs of our institutions and stakeholders but also push the boundaries of innovation," he stated.

He further commended the graduates for their exceptional contributions and praised the PWaSS project team for their unwavering support and guidance. "As we reflect on this achievement, let us also look ahead with optimism and enthusiasm. This project is not just a culmination but a stepping stone towards even greater endeavors. Together, we have set a standard of excellence that will inspire future collaborations and innovations," he added.

Addressing the graduates, WASPA CEO Mr. Jaramba urged them to apply the knowledge and skills gained during the training to make a significant impact in the water sector. "You are now equipped with the tools and expertise to drive change and innovation in our water systems. This is just the beginning, and I am confident that you will all play a pivotal role in shaping a sustainable future for our communities," he said.

The PWaSS project, sponsored by bbw gGmbH in partnership with KEWI, WIWAS, and WASPA, aims to provide training and capacity building in water and wastewater management, with a particular focus on empowering women. This initiative facilitated fully funded coursework to enhance water accessibility and quality by addressing root causes. By recognizing the underutilized potential of women in the water sector, the program seeks to empower them to play a more prominent role in operations and management. This approach not only unlocks valuable competence, experience, and expertise but also uplifts entire communities, underscoring the importance of women's participation in the sector.

The graduation ceremony underscored the importance of continuous learning and collaboration in addressing the challenges faced by the water sector. KEWI and its partners remain committed to advancing the sector through innovative training programs and projects that enhance the capacity and expertise of water professionals.

Ultimately, the graduation ceremony was a testament to the power of partnership and the shared vision of improving water management and sustainability. KEWI, PWaSS, and the partners continue to lead the way in fostering educational excellence and professional development in the water sector, ensuring a brighter and more sustainable future for all.

TRAINING

KEWI Kisumu Students Gain Practical Insights through Field Trips to Water and Sewerage Companies

BY: J SUMANCHA

Kisumu Campus students during a field study trip at Lake Victoria South Water Works Development Agency

As part of its commitment to offering a Competency-Based Education and Training model, Kenya Water Institute (KEWI) Kisumu Campus recently organised several educational field trips for students enrolled in various water-related courses, including Plumbing and Pipe Fitting Technology (PPFT), Diploma in Water Engineering Technology (DWET), and Certificate in Water Engineering Technology (CWET). The tours aimed to bridge the knowledge gap between classroom theory and practical applications by giving direct exposure to the operations of water supply and sewerage firms.

By providing first-hand exposure to the workings of water supply and sewerage industries, the trips attempted to close the knowledge gap between classroom theory and real-world applications. The students visited four key water and sewerage companies in the region, namely Kisumu Water and Sewerage Company (KIWASCO), Siaya Bondo Water and Sewerage Company (SIBOWASCO), Amatsi Water and Sewerage Company, and Homa Bay Water and Sewerage Company (HOMAWASCO).

The visits provided invaluable learning experiences, enhancing their understanding of water treatment and distribution systems.

At KIWASCO, the students delved into the intricacies of wastewater treatment processes, exploring both stabilization ponds and conventional treatment methods. This visit underscored the importance of proper waste treatment, safe disposal, and reuse. Students gained a deeper appreciation of how effective wastewater management protects scarce water resources and mitigates pollution, ultimately reducing the costs associated with drinking water treatment.

They were particularly fascinated by the different pumping systems and power sources utilized, including hydropower, electricity, and solar energy.

The trip to SIBOWASCO provided students with insights into the water supply treatment processes. They learned about the various stages involved in transforming raw water into potable water. The practical

TRAINING

KEWI Kisumu Students Gain Practical Insights through Field Trips to Water and Sewerage Companies

demonstrations reinforced their theoretical knowledge and highlighted the significance of maintaining high standards in water treatment to ensure public health and safety.

At Amatsi Water and Sewerage Company, students observed the different methods of water distribution, including gravity-fed and pumped systems. This visit offered a comprehensive view of the operational and maintenance activities essential for the smooth functioning of water supply plants. Students appreciated the critical role of workplace safety in ensuring the reliability and efficiency of water services.

The final stop was HOMAWASCO, where students were exposed to advanced water treatment technologies and the integration of innovative practices in the water sector. This visit provided an excellent opportunity for students to engage with professionals in the field, many of whom were KEWI Alumni. This connection fostered mentorship and allowed students to envision their future career paths in the water industry. The field trips significantly enhanced students' retention and understanding of the concepts taught in the classroom.

Through observing the practical implementation of their academic knowledge, students acquired valuable skills and knowledge that will be advantageous in their future employment. The practical experience brought home how crucial it is to protect water resources, put pollution control measures in place, and embrace sustainable practices in the water sector.

KEWI and MUST Forge Strategic Partnership to Enhance Learning and Research

BY: BRITNEY MOKEIRA

In a significant move to advance better learning, the Kenya Water Institute (KEWI) and Meru University of Science and Technology (MUST) convened a crucial meeting to discuss the signing of a new Memorandum of Understanding (MoU). This strategic partnership aims to foster collaborative efforts in research, training, and consultancy.

The meeting, held at the KEWI Main Campus, brought together key representatives from both institutions. The discussion centered on the primary objectives of the MoU, focusing on several key areas of joint collaboration. First, KEWI and MUST will engage in joint research and training initiatives in mutually agreed areas, which will be further elaborated upon in subsequent meetings to ensure alignment with the strategic goals of both institutions. Additionally, the collaboration will include efforts to jointly apply for grants and funding, aiming to secure financial resources to support extensive research and development projects.

Another vital component of the collaboration is offering joint consultancy services and providing outreach programs targeting the water sector and related industries. This initiative is expected to enhance the practical application of research findings and extend their impact beyond academia. In addition, KEWI and MUST will create opportunities for student internships and attachments, organizing field visits to give students hands-on experience and exposure to real-world challenges in their fields. The partnership will also emphasize the use of cutting-edge research, science, technology, and innovation in the development and management of water resources, sanitation, and water infrastructure.

During the meeting, both institutions' representatives outlined specific activities to ensure the effective implementation of the MoU. Both institutions will provide qualified personnel to mentor students during their attachments, field visits, and internships. This mentorship programmes will be crucial in guiding students through practical experiences and enhancing their professional skills.

Additionally, training and research activities will be conducted in accordance with an agreed-upon framework, ensuring that both institutions align their efforts and achieve their common objectives. KEWI and MUST will also collaborate on writing proposals and sourcing grants for agreed research activities, increasing their chances of securing funding and advancing their research initiatives.

The meeting concluded with a shared commitment to formalize the MoU in the coming weeks. Both institutions expressed optimism about the potential impact of this collaboration. By combining their expertise and resources, the institutions aim to make significant contributions that will be benefiting both the academic community and society at large.

As KEWI and MUST prepare to sign a new MoU, this partnership marks a significant step towards addressing key challenges in Kenya through collaborative research, innovation, and practical training. The initiatives outlined in this agreement promise to enhance the capacity of both institutions and create a positive ripple effect.

TRAINING

Kenya Water Institute (KEWI) Gears Up For the Eagerly awaited September 2024 Intake

BY: JOHN KITONGA

Students queue at the admissions office during a previous admission exercise.

The Kenya Water Institute (KEWI) is eagerly preparing for its September 2024 enrollment, anticipating a significant increase in applications from passionate students keen to hunt careers in water engineering and related fields. Distinguished for its prestigious standing and devotion to outstanding education, KEWI looks forward to welcoming a diverse group of committed individuals poised to contribute profoundly to water related fields.

With admissions period looming, administrators and faculty at KEWI are thoroughly gearing up to guarantee a streamlined and effective application exercise. Prospective students can anticipate a wide range of programs aimed at equipping them with the expertise needed to tackle the intricate issues surrounding water industry both on a local and global scale.

Ms. Beatrice Muchemi, officer in charge of Admissions at the institute, expressed enthusiasm about the readiness of the institute for the upcoming September intake. She noted a projected rise in applications this period, stressing on the increasing appreciation of water management's critical role in sustainable development.

KEWI's educational programs are renowned for their combination of academic and practical applicability depth, aimed at addressing the shifting demands of the water industry. They offer some range of opportunities in education, from certificate courses to diploma programs specializing in water and wastewater, water engineering among others, making sure that their exist options to twinset diverse interests and career goals.

Prospective students are recommended to visit official website of KEWI ahead of the admissions process in order to familiarize themselves with the criteria for application and deadlines. The institute is devoted to upholding a procedure that is open and equitable in guidance of fairness and merit principles.

Dedication of KEWI to excellence in academics, is enriched by its modern facilities and partnerships with forerunners in water industry as well as research organizations. This broad approach ensures that graduates are fully equipped to make significant impacts on enhancing practices in water management, whether at local or global level. As the institute makes arrangements of welcoming its next set of students, the institute reiterates its obligation to promoting integrity, innovation, and inclusiveness in education. The current intake (September 2024) is poised to offer an educational opportunity that is transformative for all applicants, signaling the start of an accomplishing career in water related fields.

For more information about the September 2024 intake and range of educational programs offered at Kenya Water Institute (KEWI), prospective students are encouraged to visit (www.kewi.go.ke).

In summary, KEWI's readiness for the September 2024 intake shows its dedication to excellence in academics and cultivation of prospective leaders in water sector, assuring an engaging and influential academic year going forward.

Water Quality Monitoring Using Smart Grids

BY: OTIENO FREDRICK

Water quality monitoring is a crucial part of water resource management and is widely regarded as panacea to water pollution and diminishing water resources. While laboratory methods are still in use in many parts of the world, uncertainties and errors in physical sampling and high costs of laboratory analysis necessitate adoption of more accurate and cost-effective alternatives. Indeed, the high costs of analysis limit continuous monitoring as changes in environmental conditions sustain variations in water quality values with time.

Moreover, collection and conveyance of samples are susceptible to errors yielding adverse outcomes on water quality measurements. In addition, changes in biochemical composition of water have been traced to microbial activity and alterations to carbon (IV) oxide and dissolved oxygen concentrations. The foregoing changes are also lead to alteration of nitrate concentration, pH, and other parameters while also justifying the need for real time tracking of water quality.

Smart water grid has gained prominence as an alternative to conventional water quality monitoring. The smart grid integrates wireless sensor networks, and Internet of Things (IoT) to deliver timely and continuous measurement of water quality, analysis, and dissemination of values through wireless networks.

Smart grids eliminate the limitations of laboratory analysis such as costs of sampling and analysis, and time consumed in sampling wide areas. Smart grids make use of information communication technology to convey data into central data storage, process and display output through microcomputers, smart phones and computers. IoT technologies also facilitate processing and transmission of water quality data and immediate feedback through alerts via mobile networks.

The IoT component mainly consists of sensors which are used to measure and monitor water quality. The most common sensors in the market include temperature sensor, pH sensor, turbidity sensor, electrical conductivity sensor. The networks are sustained by software for processing of data from the sensors and transmission to databases or the cloud. In this way, smart grids provide round the clock feedback on water quality data to water utilities.

The assimilation of sensors, programmable microcontrollers, data transmission module, microcomputers, and phones in the smart grids have proven invaluable in monitoring hydraulic circuits for inordinate water quality readings while providing timely updates to water service providers.

As the main processing unit, the microcontroller unit should meet minimum standards of durability, scalability, ease of assimilation to diverse development tools and ecosystems, processing speed, memory, and power consumption.

For instance, the Arduino Mega ATmega2560-based microcontrollers are popular for their cost-effectiveness and low power consumption. Most microprocessors have Wi-Fi modules with universal asynchronous receiver-transmitter (UART) interfaces for wireless communication.

Analysis and interpretation of stored data is achieved through mobile phones and computers in the IoT environment forming the basis of data driven responses.

With growing interest in smart water management, numerous low priced water quality sensors are available in the market. These incentives allow for acquisition of sensors which can be can be put in strategic locations especially at the beginning of main supply lines, and regions where service lines separate from the main lines.

Call for September 2024 Intake

Quote of the Week

"Leaders become great, not because of their power but because of their ability to empower others." **John Maxwel**

EDITORIAL TEAM

Editor

Dorine Eva Irungu

Writers:

Pius Kimani
Faizah Jepkorir
Britney Mokeira
Fredrick Otieno
John Kitonga
J Sumancha

Photographer

Pius Kimani

Designer

Pius Kimani

Round up of The Week's Events

Photos of graduands who successfully completed various courses under the Participation of Women in Kenyan Water and Sanitation Sector (PWaSS) project as they celebrate their achievements in a colorful graduation ceremony held at Kenya Water Institute (KEWI) headquarters, Nairobi.

Long - Term Programmes

Diploma in Water Engineering Technology (DWET) Diploma in Wastewater
Diploma in Water, Sanitation Engineering Technology (DWSET)
Diploma in Water Resources Management Technology (DWRTM)
Diploma in Irrigation and Drainage Engineering Technology (DIDET)
Diploma in Information Communication Technology (DICT)-KNEC
Diploma in Water Laboratory Technology (DWLT)
Certificate in Wastewater and Sanitation Engineering Technology (CWSET)
Certificate in Water Resources Management Technology (CWRMT)
Certificate in Information Communication Technology (CICT)- KNEC
Certificate in Water Laboratory Technology (CWLT)
Certificate in Water Engineering Technology (CWET)
Drilling Operations and Management (DOM)
Plumbing and Pipe Fitting (PPF)
Water Operators Course (WOC) in:

- Water Supply
- Meter Reading
- Sewerage Operations

Short - Term Programmes

Use of Earth Observation Tools and GIS for Water Resources Management
Entrepreneurship and Financial Management for Water Managers
Operation and Maintenance of Water Supply Networks
Metering and Installation of Water Supply Networks
Leak Detection & Repair techniques
Drilling Operations and Management (DOM)
Operation & Maintenance of Pumping Stations
Pump Selection, Installation and Maintenance
Plumbing, Pipe Fitting and Solar Water Heating
Instrumentation for Water and Wastewater Systems
Water Governance, Management and Technology
Application of GIS for Water Utilities Mapping
Drilling Operations and Management
Water Quality Sampling and Testing
Microbiological Water Quality Assessment
Integrated Water Resources Management
Non-Revenue water
Water Management
Customer Care

Vision

A Technical Centre of Excellence in Training, Research, Innovation and Consultancy in the water, Sanitation and Irrigation Sector.

Mission

T o offer Competency-Based Training, Research, Innovation, Consultancy and Outreach Services in the Water, Sanitation and Irrigation Sector for sustainable development.

Core Values

Good Corporate Governance
Professionalism
Customer Focus
Innovativeness
Inclusivity
Patriotism
Integrity

GET IN TOUCH WITH US

The Director,
Kenya Water Institute,
P.O. Box 60013-00200 Nairobi
TEL: +254 722-207757
Email: info@kewi.or.ke
Website: www.kewi.go.ke

For enquiries about our TVET programs
Contact the Registrar, Admissions Office.
Phone: 0735339206
Email: admissions@kewi.or.ke

KEWI Nairobi Campus
P.O. BOX 60013—00200
Tel: 0722207757
Email: info@kewi.or.ke

KEWI Chiakariga Campus
P.O. BOX 12—60215
Tel: 0729009104
Email: chiakariga@kewi.or.ke

KEWI Kitui Campus
P.O. BOX 1514—90200
Tel: 0707566395
Email: kitui@kewi.or.ke

KEWI Kisumu Campus
P.O. BOX 7825—40100
Tel: 0722207757
Email: kisumu@kewi.or.ke

OTHER SERVICES OFFERED

Water Quality Laboratory Services
Drilling and Test Pumping Services
Ground water Assessment Services
Conferencing Services
Troubleshooting of pumps boreholes and distribution systems
Repair of pumps boreholes and distribution systems

Your feedback is crucial for our improvement

 **communications@kewi.or.ke**  **@kewi_kenya**  **Kenya Water Institute**  **www.kewi.go.ke**