Volume 1 Issue 40

REPUBLIC OF KENYA

KENYA WATER INSTITUTE KEWI Fountain Of Water Knowledge

WEEKLY Newsletter

December 09 -15 2023

KEWI CEO joins President Ruto in the Historic Kimalel Goat Auction

KEWI CEO Dr. Leiro Letangule, gives a handshake to President William Ruto during the Historic Kimalel Goat Auction in Baringo County.

BY: J. SUMANCHA

Kenya Water Institute (KEWI) Chief Executive Officer Dr. Leiro Letangule was among a host of high level guests who joined president William Ruto and his Deputy Rigathi Gachagua, during the historic and the 9th Annual Kimalel Goat Auction and Cultural Festival which was held at the Kimalel Grounds in Baringo County.

The Kimalel Goat Auction holds a special place in Kenya's cultural and economic landscape, showcasing the nation's rich agricultural heritage. The event, which draws participants from various sectors, highlights the significance of livestock in Kenya's rural economy.

HIGHLIGHTS

MAIN

KEWI CEO joins President Ruto in the Historic Kimalel Goat Auction

Dr. Leiro giving a handshake to Deputy President Rigathi Gachagua.

KEWI's involvement in such a traditional and agricultural event comes at a time when the institute recently signed a Memorandum of Understanding with the County Government of Baringo, on various aspects of collaboration among them, water resources management thus underscoring the organization commitment to holistic water resource management approach in the area.

Water is a critical element in sustaining livestock agriculture, and overall community well-being. KEWI's role extends beyond traditional water supply and sanitation, incorporating initiatives that promote sustainable water use in various sectors, include agriculture.

Dr. Letangules' presence at the historic event which saw more than 3000 goats auctioned raking in more than 40 million shillings serves as a testament to the institute dedication to ensuring water resources are effectively managed and utilized to support Kenya's diverse economic activities. Livestock farming, a key aspect of the country's rural economy, relies heavily on access to reliable water sources, and KEWI plays a pivotal role in advising and implementing strategies for sustainable water management in such contexts.

The convergence of leaders from all walks of life at the Kimalel Goat Auction highlights a united effort towards fostering agricultural and economic development. The Kenyan leadership's active participation in events like this, underscores the government's recognition of the vital role played by sectors like agriculture and water management in the country's growth.

As Kenya continues to strive for comprehensive development, the synergy between government officials including the President and Deputy President, and organizations like KEWI becomes paramount. By participating in events that celebrate and support the nation's agricultural heritage, they send a strong message about the interconnectedness of water, agriculture, and sustainable development.

In conclusion, the KEWI CEO's attendance at the Kimalel Goat Auction, marks a significant moment where the importance of water management in the agricultural sector is recognized and celebrated. This collaborative effort reinforce the commitment to fostering a resilient and sustainable future for Kenya's rural communities.

RESEARCH

Enhancement of Food Security and Agricultural Productivity in Kenya through New Research Model

BY: JUSTUS WERSONGUR

Irrigation plays a crucial role in ensuring food security and supporting sustainable agriculture. The Kenya Kwanza government has prioritized agriculture and food security as one of its five pillars of the country's economic recovery plan. The strategy to increase agricultural productivity is achieved through, among others, the development and application of technology.

In Kenyan irrigation schemes (Mwea, Ahero, Tana River, Bunyala, West Kano, and Perkerra Irrigation Schemes), irrigation canals are the lifelines that deliver water to farmlands, enabling efficient water distribution. However, due to tens of years of operations, the canal networks have been dilapidated, rendering them inefficient and unable to carry the design capacity. To optimize this process, irrigation canal conveyance modeling has emerged as a powerful tool. By leveraging advanced technology and mathematical modeling, this approach offers a range of benefits that contribute to enhanced water management, increased agricultural productivity, and overall sustainability.

A team of researchers and water resources engineers, from the Kenya Water Institute (KEWI), and Masinde Muliro University of Science and Technology (MMUST) modelled a decision support tool for canal network maintenance scheduling and planning applicable to irrigation schemes in Kenya. The project titled (Modeling Optimal Canal Conveyance Capacity for the Ahero Irrigation Scheme using the HEC-RAS) was conducted at Ahero in Kisumu County.

KEWI played a significant role in this project as survey equipment from KEWI Kisumu engineering workshop were used for data collection. A section of KEWI Kisumu students were also involved in the data collection phase of the project. The paper that was produced from this research has been accepted at a peer reviewed and reputable Journal of Water Management Modeling (JWMM) and published by the Canadian CHI publishers (DOI: https://doi.org/10.14796/JWMM.C510/ link https://www.chijournal.org/C510).

(The research, part of Eng. Justus Msc. In Water Resources Engineering at MMUST.)

Expected benefits of the research project if implemented would include;

Improved Water Efficiency: One of the primary advantages of irrigation canal conveyance modeling is its ability to enhance water efficiency.

By accurately simulating the flow of water through canals, the model helps identify inefficiencies such as leaks, evaporation losses, and uneven distribution.

The published information therefore empowers farmers and water managers to implement targeted improvements, minimizing water wastage and ensuring that every drop reaches its intended destination.

RESEARCH

Enhancement of Food Security and Agricultural Productivity in Kenya through New Research Model

Eng. Justus of KEWI (in pink shirt standing middle) flanked by Prof Ong'or (Eng.) and Dr. Mukolwe (Eng.) and MMUST academia team during the dissemination of the project results and paper presentation.

Optimized Resource Allocation: Conveyance modeling allows for the optimization of resource allocation, including water, energy, and manpower. By understanding the dynamics of water flow within the canal network, farmers can make informed decisions about when and where to allocate resources, ensuring that crops receive the right amount of water at the right time. This targeted approach minimizes resource wastage and maximizes the effectiveness of irrigation practices.

Reduced Environmental Impact: Effective irrigation canal conveyance modeling helps reduce the environmental impact of agricultural practices. By minimizing water wastage and optimizing resource use, farmers contribute to the conservation of natural resources. Additionally, the reduction in energy consumption for pumping water through canals leads to lower greenhouse gas emissions, fostering a more sustainable and eco-friendly agricultural system.

Mitigation of Water Scarcity: As the global demand for water continues to rise, water scarcity becomes a significant challenge for agriculture. Irrigation canal conveyance modeling aids in the effective management of limited water resources. By identifying areas with high water stress and optimizing water distribution, the modeling helps mitigate the impact of water scarcity, ensuring that agricultural activities can continue even in regions facing water constraints.

Enhanced Infrastructure Planning: Conveyance modeling provides valuable insights into the performance of existing canal infrastructure. This information is crucial for planning and designing new irrigation systems or upgrading existing ones.

Engineers and planners can use the data to identify areas where improvements are needed, such as widening canals, installing control structures, or implementing automation, thus ensuring the

TRAINING

Enhancement of Food Security and Agricultural Productivity in Kenya through New Research Model

the long-term sustainability of the irrigation network.

Adaptive Decision-Making: Irrigation canal conveyance modeling facilitates adaptive decision-making in response to changing environmental conditions. By incorporating real-time data, weather forecasts, and other relevant information, the model allows for dynamic adjustments to irrigation schedules and water distribution plans. This adaptability is particularly valuable in the face of climate change, where unpredictable weather patterns can impact traditional irrigation practices.

Concisely, irrigation canal conveyance modeling is a powerful tool that offers a myriad of benefits for sustainable agriculture.

By enhancing water efficiency, optimizing resource allocation, reducing environmental impact, mitigating water scarcity, facilitating infrastructure planning, and enabling adaptive decision-making, this approach plays a pivotal role in ensuring the long-term viability of irrigation systems.

As technology continues to advance, the integration of irrigation canal conveyance modeling into agricultural practices will likely become even more critical for addressing the challenges of a growing global population and a changing climate.

The writer is a Water Resources Engineer and a Lecturer at KEWI Kitui Campus.

Quote of the Week

"If everybody is doing it one way, there is a good chance you can find your niche by going exactly in the opposite direction."

-Sam Walton.

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Round Up of the Week's Events

Attendees of the Training Workshop on Rainwater Harvesting during field study trips on Greenhouse farming and open land farming in Kiambu and Machakos Counties.

Round Up of the Week's Events

The inauguration of KEWI's Water Resource Centre has paved way for KEWI to host an international training on Rainwater Harvesting by Gansu Academy for Water Conservancy-China, where attendees experienced exceptional services including catering services spearheaded by Epha Robin (standing, centre), Cateress.

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

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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

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