



## Dear Reader

Welcome to KeSEBAE Newsletter. A fortnightly Newsletter touching on topical issues affecting our environment.

**KeSEBAE NEWS** is a Newsletter of the Kenya Society of Environmental, Biological and Agricultural Engineers (KeSEBAE)

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## KeSEBAE and MOALF&C Conduct Training of Graduate Engineers Amana Myrtle

The Kenya Society of Environmental, Biological and Agricultural Engineers (KeSEBAE) in collaboration with the Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MOALF&C) conducted a training of graduate engineers from the ministry on 14-17 June 2021 at Kenya Agricultural and Research Organisation (**KALRO**) research station in Naivasha, Kenya. The theme of the training was; **Training on Management of Contracts and Registration of Professional Engineers.**

The objective of the training was to equip the young engineers with contract management skills and to enlighten them on the significance of registration as professional engineers. The training was attended by 43 graduate engineers. The four-day event focused on the following topics;

- History and Practice of Engineering
- Engineering Practice in Kenya
- Procurement of Engineering Projects
- Contract Management for Engineers
- Site Management
- Experience of an Agricultural Engineer in Civil Service
- Case Study: Kimura Oluch project

## 1.0. History and Practice of Engineering

The trainees were enlightened on the history of engineering, the present state of engineering and the expected future with the projected opportunities.

The trainees were made to appreciate the engineering inventions of the past that changed the ways of human of doing things. In particular, the *evolution of agricultural engineering* was discussed. Agricultural engineering has since evolved as its scope expanded to include management of the environment, in addition to biological systems. This came in handy in dealing with emerging issues such as environmental protection while still meeting the biological production processes.

The current role of engineering now involves environmental and climate change, energy and machinery, irrigation, drainage and water and infrastructure and structures.

The future employment opportunities for environmental and biosystems engineering are in the areas of; agricultural and bioproduction, agricultural sector, IoT in future agriculture, manufacturing, universal health coverage and affordable housing.

## 2.0. Engineering Practice in Kenya

The trainees were broadly informed on the legal framework of engineering, the role of the Institution of Engineers in Kenya (*IEK*) and the process that one must undergo to be registered as a professional engineer. The Engineer's Board of Kenya (*EBK*) serves to regulate the engineering activities and conduct of practicing of engineers in the country under the Engineers Registration Act. (Cap 530)

Under the **Washington Accord**, engineers registered within the common wealth need not seek registration in more than one country since various registration institutions operate through mutual recognition under the accord.

The trainees were taken through the registration process and requirement for graduate engineers.



## 3.0. Introduction to the Procurement Process in Kenya

Public procurement in Kenya is governed by Article 227 of the Constitution of Kenya, 2010 and the Public Procurement and Asset Disposal Act, 2015.

The trainees enlightened on procurement as a process that deals with the sourcing activities, negotiation and strategic selection of goods and services that are usually of importance to an institution.

The trainees were guided through preparation of a procurement plan in accordance with the PPADA regulation.

## 4.0 Contract Management for Engineers

A contract was defined as a voluntary agreement between two or more parties that is enforceable by court. In Kenya, *the law of contract Act, chapter 23* of the Law of Kenya 2012 applies.

The trainees were taken through the concept of a contract, contract documents, FIDIC form of contract and the challenges in contract performance management.

The element of a contract include:

- Competent parties
- Proper subject matter
- Offer
- Acceptance
- Consideration.

The two types of contracts; which include express contracts and implied contracts were also discussed.

The trainees were advised on the dangers of implied contracts. Such dangers arise from hurriedly made decisions and loss of documents.

Contractors' staff and sub-contractors should be approved in an express way. If they work without approval for long it may be assumed they are approved. Implied conditions may lead to disputes in a contract.

The documents forming the contract are to be taken as mutually explanatory of one another. Some of the contract documents include; *the contract agreement, the letter of acceptance, the letter tender, the particular conditions (PC), General conditions (GC), the specification, the drawings, the schedules (BOQ with rates, staff equipment, method statements, joint venture undertaking and any other*

*document forming part of the contract.* The conditions under which the contract is deemed completed and the possible challenges encountered were discussed.

## 5.0 Site Organisation and Management

Site Management involve the management of the following resources hitherto referred to as 5M's:

- Methods
- Men
- Machines
- Materials
- Money

The trainees were taken through on what a site organisation and management is in engineering A well organised site leads to establishment of well-coordinated system that ensure safety, productivity and higher profits as stated by the trainer. For effective management of a site, a contractor is required to have a copy.

The process of programming construction activities must be a continuous one. Site meetings ensure communication cooperation and proper coordination of site activities. The guidelines to disputes settlement were discussed which includes but not limited to conciliation, mediation, arbitration and litigation

## 6.0 Experience of an Agricultural Engineer in Civil Service

The trainees were taken through the concept of civil service, civil servants, and agricultural engineers.

Civil service is service provided by the Government within its policies for citizens and the state. Civil servants are individuals employed by the Government on merit and operate in the general public's interest.

Agricultural engineering is a field of study on the application of engineering science and designs principles for agricultural purposes, combining various disciplines of mechanical, civil, electrical, food science, environmental, software, and chemical engineering to improve the efficiency of farms and agribusiness enterprises as well as to ensure the sustainability of natural and renewable resources.

The engineer must gain continuous practical learning during the application of engineering science and design principles while rising in ranks (through a system of career development and progression in the form of a scheme of service.)

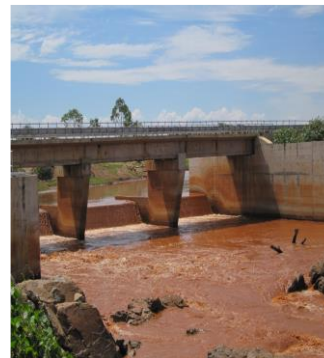
The challenges an agricultural engineer encounters in the civil service are were also discussed.

## 7.0 Case Study: Kimira Oluch project

The construction of Kimira Irrigation Scheme was studied. The project has been proceeding well since commencement albeit some delays in some work components. The time lost will be recovered in the adjusted working schedule of the Contractor.

### Site re-organisation

The Bridge shown in picture 1 was not part of the original design but was necessitated to enable movement of people between the two rivers banks to access the dispensary services on one side of the river. This resulted a design review and hence cost variation from the original plan.



Picture 1



Picture 2

### Dispute resolution

The bitumen Kendu – Homa Bay road at the time of the design, was a murrum road. Kenya National Highways Authority (KeNHA) had to be requested to delay the works at this section until the siphons crossed the road. The crossing trench shown in picture 2 was done and the two contractors disagreed on compaction of the soil. A meeting was called, between KeNHA, the two Contractors, Consultants & the Ministry of Agriculture, Livestock and Fisheries.



## THE NEXT EDITIONS OF JEAE

# JEAE

*Journal of Engineering in Agriculture and the Environment*

The Journal of Engineering in Agriculture and the Environment (JEAE) is a Publication of the Kenya Society of Environmental, Biological and Agricultural Engineers (KeSEBAE) through which researchers in the fields of Environment, Agriculture and related fields share research information and findings with their peers from around the globe.

The JEAE Editorial Board wishes to invite interested researchers with complete work in any relevant topic, to submit their papers for publication in the next editions of the Journal.

Manuscripts may be submitted online or via email to:

**Prof. Lawrence Gumbe**, Chairperson, JEAE Editorial Board

Via Email: [info@kesebae.or.ke](mailto:info@kesebae.or.ke) or online via: [https://www.kesebae.or.ke/journal/manuscript\\_submit.php](https://www.kesebae.or.ke/journal/manuscript_submit.php)

## Criteria for Article Selection

Priority in the selection of articles for publication is that the articles:

<ul style="list-style-type: none"> <li>a. Are written in the English language</li> <li>b. Are relevant to the application of engineering and technology in agriculture, the environment and biological systems</li> <li>c. Have not been previously published elsewhere, or, if previously published are supported by a copyright permission</li> <li>d. Deals with theoretical, practical and adoptable innovations applicable to engineering and technology in agriculture, the environment and biological systems</li> <li>e. Have a 150 to 250 words abstract, preceding the main body of the article</li> </ul>	<ul style="list-style-type: none"> <li>f. The abstract should be followed by the list of 4 to 8 “Key Words”</li> <li>g. Manuscript should be single-spaced, under 4,000 words (approximately equivalent to 5-6 pages of A4-size paper)</li> <li>h. Should be submitted in both MS word (2010 or later versions) and pdf formats (i.e., authors submit the abstract and key words in MS Word and pdf after which author uploads the entire manuscript in MS word and pdf)</li> <li>i. Are supported by authentic sources, references or bibliography</li> </ul>
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## Be a KeSEBAE Member:

The annual subscription fees, admission fees and reinstatement fees for members of all grades (except Honorary and Life Members who shall pay no dues or fees) are indicated below:

Membership Category	Annual Subscription (KES)	Admission Fees (KES)	Reinstatement Fees (KES)
Fellow	5,000	1,000	2,000
Member	2,000	1,000	2,000
Ass.Member	1,000	1,000	2,000
Aff.Member	500	1,000	2,000
Student	300	100	-

## Membership Renewal:

Members of all grades who are yet to renew their 2021 annual membership are advised to do so. The annuals fees are as follows:

Membership Category	Annual Subscription Fees (KES)
Fellow	5,000
Member	2,000
Ass.Member	1,000
Aff.Member	500
Student	300

## BANK PAYMENT DETAILS

Bank: **Barclays Bank of Kenya**  
 Branch: **Nairobi University Express Branch**  
 Account Name: **Kenya Society of Env. Bio. & Agric. Engineers**  
 Account Number: **2038150696**  
 Swift Code: **BARCKENX**  
 Currency: **Kenya Shillings**

**Note:** For bank payment, mail us a scanned copy of the receipt to: [info@kesebae.or.ke](mailto:info@kesebae.or.ke).

For more information, contact us: via **Email:** [info@kesebae.or.ke](mailto:info@kesebae.or.ke) or **Phone:** [+254 788 712 156](tel:+254788712156)

## M-PESA PAYMENT DETAILS

Pay Bill No.: **4002575**  
 Account No: **Your Full Name**



## KeSEBAE EXECUTIVE COMMITTEE

On 13 July 2021, KeSEBAE Executive Committee held a virtual meeting. The meeting discussed:

- KeSEBAE 2021 Annual Conference
- KeSEBAE Membership Recruitment
- KeSEBAE ongoing projects.

The next executive committee meeting is scheduled for 17 August 2021.

# KeSEBAE 2021 CONFERENCE



KeSEBAE Annual Conference is scheduled for 24-26  
November 2021.

**ATTENDANCE:** Mixed mode attendance: both virtual and in-person



Submit abstract for conference to [info@kesebae.or.ke](mailto:info@kesebae.or.ke)

## Important Links

- KeSEBAE** : <https://www.kesebae.or.ke/>  
**JEAE** : <https://www.kesebae.or.ke/journal/>  
**EBK** : <https://ebk.or.ke/>  
**IEK** : <https://www.iekenya.org/>  
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## KeSEBAE NEWS EDITORIAL

The **KeSEBAE NEWS** is a Newsletter of the Kenya Society of Environmental, Biological and Agricultural Engineers

*Submit your articles to:*

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The **Kenya Society of Environmental, Biological and Agricultural Engineers**

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**NAIROBI, KENYA**

Visit our website at [www.kesebae.or.ke](http://www.kesebae.or.ke)

**KeSEBAE:** *“Promoting Engineering and Research for Environmentally Sustainable Biological and Agricultural Systems”*

## *Pictorials of the Naivasha Training*



*Trainees intently listening to the presentations.*



*Eng. Prof. Lawrence Gumbe during his presentation titled, "Engineering for life."*



*Mr. Ezekiel Oranga giving a presentation on Procurement process in Kenya*



*Eng. Wilfred Onchoke giving a spirited presentation on the Experience of an Agricultural Engineer in the Civil Service.*



*Eng. Shiribwa Mwanzali delivering his presentation on the state of the Engineering Practice in Kenya.*