



# KeSEBAE NEWS



Newsletter of the Kenya Society of Environmental, Biological and Agricultural Engineers

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## Climate Change in Engineering

By Yvonne Madahana



Climate change is one of the most pressing issues facing humanity today. It refers to significant alterations in weather patterns over extended periods, primarily due to the increased concentration of greenhouse gases. It affects natural ecosystems and communities worldwide. In the context of engineering, climate change presents both challenges and opportunities for innovation. It is therefore important to understand how these changes influence the design, construction, and maintenance of various infrastructures. Engineering plays a role in both contributing to and mitigating the impacts of climate change. Historically, traditional engineering methods have increased greenhouse gas emissions, especially in sectors like construction, transportation, and energy. Yet, the environment in which engineering projects are carried out is greatly impacted by climate change. This means that engineers need to address climate change through sustainable practices and adaptive strategies. One adaptation strategy used to deal with these changes is designing infrastructure that can withstand extreme weather events like floods and hurricanes.

### DEAR READER

*Welcome to KeSEBAE Newsletter.*

*A monthly 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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This entails using stronger building materials, elevating structures in flood-prone areas, and improving drainage systems.

Urban planning should also factor in susceptibility of cities and urban centers to climate change. Engineers should work on enhancing transportation, and putting in place efficient drainage systems in all of the major cities and towns.

Engineering solutions are crucial for effective disaster response and recovery. This includes developing early warning systems, designing evacuation routes, and creating good communication networks.

In order to mitigate the effects of climate change and deal with it, adaptive techniques are insufficient. For a long-term solution, it is important for engineers to incorporate sustainable practices to all of their projects. This involves designing and implementing projects that minimize environmental impact. Some of these practices include but are not limited to green building design for buildings to use less energy and resources. This can be achieved by incorporating renewable energy

sources like solar panels. Climate change affects water availability, therefore engineering solutions for water management are crucial. Engineers are developing systems for water recycling, desalination and efficient irrigation to ensure sustainable water use. Lastly, reducing waste through recycling and the use of sustainable materials is an adaptive strategy that is being adopted. Engineers are creating processes for converting waste into energy and developing biodegradable materials.

Technological innovations have also provided engineers with new tools to address climate change. Some of them include renewable energy technologies, energy storage solutions, smart grids as well as carbon capture and storage.

Consequently, climate change demands a re-evaluation and redesign of engineering systems globally. Engineers across all disciplines must recognize the urgency of addressing climate change to prevent further damage. Each engineering discipline plays a unique role in mitigating the effects of climate change, therefore a collective effort across all the engineering fields is essential in combating climate change.

### **Young Engineers Chapter**

The Young Engineers Chapter of the Kenya society of Environmental, Biological and Agricultural Engineers (YEC-KeSEBAE) is a lobby platform for junior engineers. The chapter is governed by a sub-committee under KeSEBAE.

The Chapter was formed in the year 2022 with the following purpose;

- i. Provide a forum to support junior engineers within KeSEBAE
- ii. Promotes continued professional training, development and registration of junior engineers
- iii. Promote cooperation and mutual assistance among its members
- iv. Serve the professional interest of the general membership
- v. Act upon matters concerning the thematic Engineering Professions

- vi. Link with the industry, politicians and academic associations

Functions;

- i. Networking, building mutual understanding, and providing skills
- ii. Lobby and create linkages with industry to give opportunities to members
- iii. Advocate for rights and welfare of members

Vision and Mission Statements of YEC

Our vision is to be the first step young KeSEBAE engineers takes to move forward and advance their profession development.

Mission

To promote and offer trainings, support, and linkages for professional development of our members.

### Core values

- Honesty
- Professionalism
- Teamwork and System Thinking

### Activities of YEC in the Year 2024

i. Mobilized fifty (50) young graduate engineers from the Society for the Training of Clerks of Works on Contract Management and Registration as Professional Engineers. This event took place at Burch Resort in Naivasha from June 17-21, 2024, under the Ministry of Agriculture and Livestock Development (MOALD).

#### Benefits:

a. The graduate engineers benefited from courses taught by our senior engineers, which prepared

them for real-world project challenges and provided guidance on building their careers progressively.

b. Those not in any job placements were recruited as clerks of works in the Build Resilience for Food and Nutrition Security Project by MOALD.

ii. Student Members Sensitization: KeSEBAE, through the Kenyatta University Biosystems Engineering Chapter (KUBEC), held a mini-webinar on June 13, 2024, to sensitize students about KeSEBAE. The webinar was attended by over 30 students, primarily from Kenyatta University. The webinar agenda included History of KeSEBAE, YEC-KeSEBAE, Organization Structure of KeSEBAE, Functions of KeSEBAE and Benefits of Joining KeSEBAE.



*A Photo of Young Graduate Engineers of KeSEBAE who Attended the Training of Clerks of Works on Contract Management and Registration as Professional Engineers in Naivasha together with KeSEBAE Senior Engineers who were Executing the Training.*

SAIAE and PASAE Conference 2024



**AfroAgEng**  
THE AFRICAN SOCIETY FOR AGRICULTURAL ENGINEERING

**SAIAE & PASAE International Symposium**  
23 – 25 October 2024

Engineering within the Agricultural Environment.

The South African Institute of Agricultural Engineers (SAIAE) and the Pan African Society for Agricultural Engineering (PASAE) are proud to invite interested parties to its International Symposium. As mentioned in the previous announcement, this year's edition will be coinciding with the SAIAE's 60th Anniversary, which will ensure a milestone Conference. The SAIAE and PASAE International event will be PASAE's 6th International Conference.

The International event will take place from 23 - 25 October 2024 at the Houw Hoek Hotel, in the scenic Western Cape province of South Africa. Please note the date has been changed since the first announcement.

This announcement highlights and provides details on the call for abstracts, registration, and accommodation costs, physical and virtual (online) attendance, sponsorship, registration, the Symposium deadlines and much more!

**The Culmination of 60 years of Agricultural Engineering Excellence in Africa with SAIAE & PASAE!**

**SECOND ANNOUNCEMENT: Call for Abstracts, Registration, Symposium Costs and Sponsorship!**



**Call for Abstracts**

The SAIAE and PASAE Council hereby invites engineers, technicians and other interested parties working in the Agricultural Engineering field to submit abstracts to be considered for presentation at the Conference. Contributions should address relevant current Agricultural Engineering methods/techniques, tools, innovations, or projects in one of, but not limited to, the following fields/topics:

**Abstract Topics**

- 4th Industrial Revolution
- Agricultural Mechanization
- Aquaculture & Hydroponics
- Circular Economy
- Climate Change
- Energy Management
- Farm Road Design
- Food Engineering & Post-Harvest Management
- Soil Conservation
- Renewable Energy
- Food & Fibre Production Processing
- Big Data and Internet of Things (IoT)
- Hydrology & Dams
- Irrigation Design and Management
- Use of Artificial Intelligence in Agricultural Engineering
- Packaging & Parking Facilities
- Primary Production
- Precision Agriculture
- Structural Engineering in Agricultural Production and Processing Systems
- Surface and Subsurface Drainage System in Agriculture
- Water Supply & Water Resource Management

Abstracts should be no longer than 300 words and include a suitable title as well as a photo and contact details of the corresponding author of the paper. [senzo@saiae.co.za](mailto:senzo@saiae.co.za) or [londiwe@saiae.co.za](mailto:londiwe@saiae.co.za) if can be submitted to [senzo@saiae.co.za](mailto:senzo@saiae.co.za) or [londiwe@saiae.co.za](mailto:londiwe@saiae.co.za) with the subject line "Symposium Abstract" by 05 August 2024.

## Symposium Sponsorship

Several sponsorship opportunities and exhibition space are available. The sponsorship options can be found by following this link: [SAIAE & PASAE Symposium Sponsorship Request Letter](#).

Some of the sponsorship options on offer consist of the following:

- Platinum (main) sponsor.
- Gold sponsor.
- Silver sponsor.
- Bronze sponsor.
- Technical tour sponsors.

Companies or organizations are invited to contact SAIAE's Business Manager Mr Senzo Masikane to discuss the various sponsorship options [senzo@saiae.co.za](mailto:senzo@saiae.co.za).




## Registration

To register for the SAIAE & PASAE Symposium, please contact Mr Senzo Masikane - [senzo@saiae.co.za](mailto:senzo@saiae.co.za) or Ms Londiwe Mbambo - [londiwe@saiae.co.za](mailto:londiwe@saiae.co.za) to receive the registration form or click on the following link: [SAIAE & PASAE Symposium Registration Form](#). A registration portal will also be available on the SAIAE website for delegates to utilize.

## Event Activities

The Symposium will take place over 3 days, with 3 nights' accommodation at the Houw Hoek Hotel from the 23rd to the 25th of October 2024. The Symposium will kick off with registration from 07:00 on the 23rd of October and the symposium proceedings will start at 09:00 with exciting presentations and technical tours, concluding at 15:00 on the 25th of October. Delegates are invited to bring along their spouses or partners to enjoy the experience with the Agricultural Engineering community in this beautiful location in South Africa with many nearby tourist attractions.

## Accommodation

Accommodation is offered on a single bedroom and sharing basis (Two delegates per room). A letter of invitation from SAIAE is available for delegates that require this for their employers and for visa purposes.

The main hotel accommodation is the Houw Hoek Hotel [3-Star] - <https://houwhoekhotel.com/>. The alternative accommodation options are as follows:

- The Caledon Hotel and Spa [4-Star] - [https://www.tsogosun.com/hotel/the-caledon-hotelspa/?utm\\_source=google&utm\\_medium=businesslisting&utm\\_campaign=hotel\\_the-caledon-hotel-spa](https://www.tsogosun.com/hotel/the-caledon-hotelspa/?utm_source=google&utm_medium=businesslisting&utm_campaign=hotel_the-caledon-hotel-spa)
- The Arabella Hotel Golf & Spa [5-Star] - <https://www.southernsun.com/arabella-hotel-golf-and-spa>

### Symposium Costs

The registration fees and accommodation costs for the Symposium can be found in the below table:

	Conference Fee			
	Conference Fee Only	Conference Fee Incl. Accommodation (3 Nights)		
		Howe Hook	Caledon	Arabella
Member Single	\$ 300	\$ 612	\$ 716	\$ 1028
Member Sharing	\$ 350	\$ 582	\$ 598	\$ 704
Non-member Single	\$ 500	\$ 720	\$ 822	\$ 1136
Non-member Sharing	\$ 550	\$ 660	\$ 706	\$ 812
Student Fee	\$ 100	\$ 252	-	-
Day Fee (per day)	\$ 185	-	-	-
Virtual member	\$ 270	-	-	-
Virtual non-member	\$ 360	-	-	-



### Partner/Spouse Activities

The Symposium will have in excess of relaxing and spectacular activities catered for delegates partners or spouses. The activities that are on offer are as follows:

**Day 1 (23 October)**  
 Franschoek Wine Train  
 Babylonstoren Wine Estate, Spa @ Caledon.

**Day 2 (25 October)**  
 Table Mountain Cableway  
 Boat Cruise  
 V & A Waterfront

To book an activity or should you require additional information, please contact Ma Lindie Mlombo - [ma@saiae.co.za](mailto:ma@saiae.co.za)




### Virtual Option

We are pleased to inform you that the SAIAE & PASAE Symposium will have a virtual option. Delegates will be able to join us virtually from anywhere in the world to be part of the Symposium and enjoy the presentations that will be at hand.

The fees for the for the virtual option are as follows:

- Virtual members: \$ 270
- Virtual non-member \$ 360



### Technical Tours

The Symposium Technical Tours set to take place on the 25th of October (Last day of the Symposium) are to be announced in the coming weeks!

### Shuttle Services

We are pleased to inform you that shuttle services will be available for delegates travelling between the alternative accommodations and the conference venue.

### Important Dates

Symposium Registration Period Opens:	03 May 2024
Abstract Submission Deadline:	16 August 2024
Authors notified of abstract acceptance:	20 August 2024
Preliminary Symposium Programme:	09 September 2024
Proof of payment for all registrations:	04 October 2024
Symposium Commences:	23 October 2024
Symposium Closes:	25 October 2024

## The Symposium is supported by the following organizations:

  
UNIVERSITY OF KWAZULU-NATAL  
INYUVESI YAKWAZULU-NATALI

  
UFS

  
South Africa  
NATIONAL CONVENTION BUREAU

  
WESGRO  
Wages from & western Cape  
Tourism, Trade & Investment

  
CIR

  
EWB SA  
Engineering Without Borders South Africa

  
Royal Academy of Engineering

  
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SANCOLD

  
University of Venda  
Creating Future Leaders

  
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Excellence in Research and Development

## Symposium Endorsement

To endorse or support the Symposium, please contact Mr Senzo Masikane - [senzo@saiae.co.za](mailto:senzo@saiae.co.za).

## The Culmination of 60 years of Agricultural Engineering Excellence in Africa with SAIAE & PASAE!





EARN 20 PDUs

## 2024 ANNUAL CONFERENCE

THEME: ENGINEERING CLIMATE CHANGE



WED 27 – FRI 29 NOV 2024



UNIVERSITY OF NAIROBI TOWERS

Early Bird Discount!!

Pay Before 31 July 2024  
and get **50% Off**

### SUB-THEMES

- Green Economy
- Carbon Trading
- Industrialization For Climate Change
- Agricultural Mechanization For Climate Change
- Waste Management For Climate Change
- Energy Systems For Climate Change
- Housing And Infrastructure For Climate Change
- Irrigation and Water Resources
- ICT Systems
- Engineering Education and Practice For Climate Change

### KEY DATES:

**Abstract Submission:** 30 SEPT 2024  
**Paper Submission:** 13 OCT 2024  
**Payment Deadline :** 07 NOV 2024

### CHARGES

**Members:** KES 15,000 ( \$150)  
**Non Members :** KES 20,000 (\$200)  
**Undergrad Students:** KES 2,000 (\$20)  
**Field Visit :** KES 5,000 (\$50)  
**Virtual:** KES 5,000 (\$50)

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[info@kesebae.or.ke](mailto:info@kesebae.or.ke)



## 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:

Chairperson, JEAE Editorial Board via Email: [jeae@kesebae.or.ke](mailto:jeae@kesebae.or.ke) or Online via: <https://kesebae.or.ke/journal/index.php/kesebae/about/submissions>

### Criteria for Article Selection

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

- a. Are written in the English language
- b. Are relevant to the application of engineering and technology in agriculture, the environment and biological systems
- c. Have not been previously published elsewhere, or, if previously published are supported by a copyright permission
- d. Deals with theoretical, practical and adoptable innovations applicable to engineering and technology in agriculture, the environment and biological systems
- e. Have a 150 to 250 words abstract, preceding the main body of the article
- f. The abstract should be followed by the list of 4 to 8 "Key Words"
- g. Manuscript should be single-spaced, under 4,000 words (approximately equivalent to 5-6 pages of A4-size paper)
- 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)
- i. Are supported by authentic sources, references or bibliography

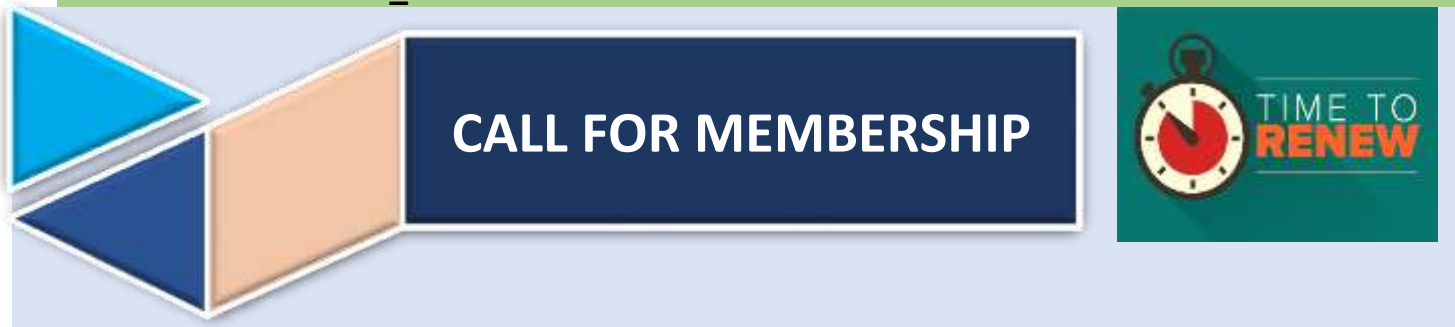
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### CALL FOR ARTICLES TO KeSEBAE NEWS

**KeSEBAE NEWS Editorial** wishes to call for topical articles for publication in future editions of KeSEBAE NEWS.

Please transmit the same via Email: [info@kesebae.or.ke](mailto:info@kesebae.or.ke)

**NOTE:** A payment will be made to the author of each selected article



### 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: The annual dues are as follows:

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

### Membership Renewal

Members of all grades are requested to renew their **2024** membership as follows.

Membership Category	Annual Subscription Fee (KES)
<i>Fellow</i>	5,000
<i>Member</i>	2,000
<i>Ass. Member</i>	1,000
<i>Aff. Member</i>	500
<i>Student Member</i>	300

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	<a href="https://web.facebook.com/kesebae1/">https://web.facebook.com/kesebae1/</a>

### PAYMENT DETAILS

Bank	
Bank	Absa Bank Kenya Plc
Branch	Nairobi University Express Branch
Account Name	Kenya Society of Env. Bio. & Agric. Engineers
Account No.	2038150696
Swift Code	BARCKENX
Currency	Kenya Shillings

### M-PESA DETAILS

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



Important Links	
<b>KeSEBAE</b>	<a href="https://www.kesebae.or.ke/">https://www.kesebae.or.ke/</a>
<b>JEAE</b>	<a href="https://www.kesebae.or.ke/journal/">https://www.kesebae.or.ke/journal/</a>
<b>EBK</b>	<a href="https://ebk.or.ke/">https://ebk.or.ke/</a>
<b>IEK</b>	<a href="https://www.iekenya.org/">https://www.iekenya.org/</a>
<b>PASAE</b>	<a href="http://www.pasae.org.za/">http://www.pasae.org.za/</a>
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