



# Capacity Building (CECB) .



**ENGINEERING COUNCIL OF ZIMBABWE**

*"Regulating Engineering Practice in Zimbabwe"*

**UPDATE TO THE WFEO PARIS EXCO 26-10-2022**

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**CHAIR – CAPACITY BUILDING (WFEO)**

**Immediate Past President :- Federation of African Engineering Organisations (FAEO).**

**Past President :- Southern African Federation of Engineering Organisations (SAFEEO).**

**Past Chairman :- Engineering Council of Zimbabwe (ECZ). PAST President :-Zimbabwe Institution of Engineering (ZIE)**

# Outline of Presentation



**No problem can be solved from  
the same level of consciousness  
that created it.**

Albert Einstein

- Background and Context
- Strategic Plan and Action Plans for 2021/2024
- Themes for 2021-2024.
- Activities performed so far
- Planned Activities 2022
  - Projects
  - Events
  - Meetings
- Conclusion



# Capacity Building Committee Mandate

The WFEO-CECB shall support the WFEO and engineering profession worldwide by:

- Encouraging and supporting CECB theme leaders to organize international webinars, workshops and seminars related to their work within the strategic plan.
- Developing and promoting Engineering Capacity Building policies, strategies and practices for sustainable development.
- Drafting practice guidelines and policies related to Engineering Capacity Building for the consideration and approval of the WFEO Executive Council and WFEO members.
- Representing the CECB as one of the WFEO delegates on issues to do with Engineering Capacity Building.
- Communicating to WFEO and the international community on the work of the CECB.



## CONTEXT FOR CAPACITY BUILDING

Engineering professionals, the custodians of infrastructure, have taken it upon themselves:

- to not only facilitate and enhance their own knowledge,
- but also to assist decision makers from all levels of society to ensure a sustainable world for all.
- *CECB is a lever for economic, social and sustainable development, and is recognized as a priority in the global engineering community.*



# WORLD CAPACITY BUILDING IN ENGINEERING CONFERENCE 2022



WFEO CECB  
JOINTLY HOSTED A  
CAPACITY BUILDING  
CONFERENCE IN  
VICTORIA FALLS, ZIMBABWE.

- KEY PARTNERS:  
WFEO, FAEO, OTHER  
WFEO STCs, FAEO,  
SAFEQ, FEIAP, and  
Africa Asia Pacific Accord.
- Date: 16-20 August 2022

# THE WFEO CECB CONFERENCE VIC FALLS

**Africa Asia Pacific, WFEO-CECB Capacity Building in Engineering Education International  
Forum and Zimbabwe Institution of Engineers Biennial Conference**

**In Partnership with UNESCO**

**16 -20 August 2022 - Victoria Falls, Zimbabwe (Elephant Hills Resort Conference Centre)**

**“Engineering the Future through Quality Engineering Education, Partnerships, Capacity  
Building and Innovative Infrastructure.”**

# SPECIAL PRE-CONFERENCE EVENTS AND TRAINING

- *12-16 AUGUST 2022: - WFEO CECB, FAEO, DSI SA and STELLENBOSCH University facilitated Capacity Building Training on Water and Sanitation Infrastructure Assets Maintenance to Local Authorities' Management and Engineering Practitioners in the SADC at WFEO-FAEO-FEIAP-ECZ-ZIE Engineering Conference in Zimbabwe.*
- *UNESCO, WFEO, CECB, AND ECZ ROBOTICS BOOTCAMP FOR VICTORIA FALLS SECONDARY AND PRIMARY SCHOOLS RUNS IN PARALLEL FROM 16 TO 17 AUGUST 2022.*



## THE PLANNED ACTIVITIES

- *The following are the themes for 2020-2023 which will produce tangible outcomes.*
  - i) *Implementing the WFEO 2030 Plan to create Partnerships, Co-operations, Global Alliances and Networking to achieve the Sustainable Development Goals (SDGs).*
  - ii) *Engineering Capacity Building Activities in Developing and Developed Countries.*
    - *Projects (Compendium, Digital Platform for CPDs, MOOC, e-Books for CECB)*
    - *Events (Africa Engineering Week, Congresses, WEF, WEC, Gas etc)*
    - *Meetings*
  - iii) *Engineering Capacity Building Awareness, Training and Development of Systems.*
  - v) *Engineering Capacity Building Projects and co-operative initiatives.*
  - v) *Engineering Capacity Building Publications (webinars, newsletters, magazines).*



## KEY PROJECTS

- **Capacity building in sustainable development goals (SDGs) for other STCs and WFEO National Members.**
- Capacity building in lifelong engineering education, and improving quality, needs and numbers and continuous professional development.
- Develop a new edition of the capacity building manual and a Compendium in order to meet the engineering capacity to deliver the SDGs.
- **Capacity building for engineering project planning, design, implementation and management, in light of the fourth industrial revolution and sustainable development.**
- **Developing of a hub linking and an online Resources Centre for WFEO to facilitate continuous professional development. ( e.g online courses like MOOCS about Anticorruption from GIACC, Sustainability from MOOCS Engineers Canada, and about Disaster Risk management from Peru, Japan and China).**



## THE COMPENDIUM

- Repository for All Efforts
- Developed the Guidebook for International Use



the six pillars of capacity for sustainable engineering

# THE COMPENDIUM PROJECT

- It was decided that the most suitable way to realise this would be through the production of a "**Guidebook for capacity building in the engineering environment**" and an associated **compendium** of programmes and initiatives.
- THIS will be achieved by working on this Compendium which will -
  - Store the accumulated knowledge and experience, but summarised, sifted and analysed.
  - Lessons learned in one nation can be shared with others.
  - Many who are undertaking capacity building activities are isolated from support systems – thus a guidebook can provide advice and prevent wasteful re-invention of the wheel

# CONTEXT FOR CAPACITY BUILDING



- Strong Relationship between: Critical mass of educated and skilled engineering and science graduates and economic and social development.
- Stronger efforts should be made to develop and build in developing nations both:
  - engineering and science capacity and
  - informed decision-making capacity



## Human Capacity Building Context: Focus on AFRICA

- It is estimated that some 2.5 million new engineers and technicians in sub-Saharan Africa – Sustainable Development Goals
- 1 engineer per 7 000 in sub-Saharan Africa
  - 1/311 in UK
  - 1/227 – Brazil





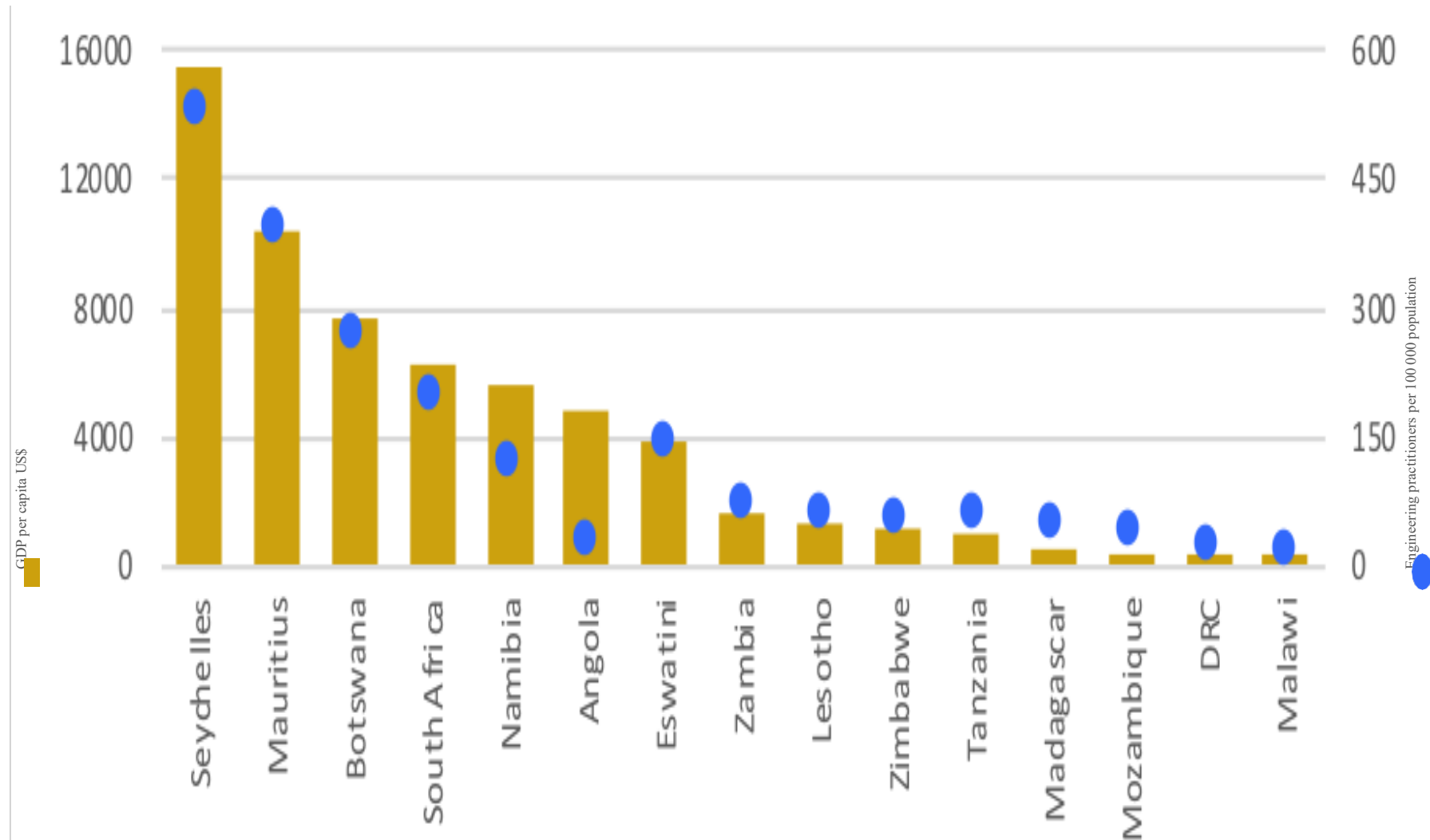
# Challenges of leaving no one behind on Due to Lack of Capacity Gaps – Engineering Capacity Building is the Answer.



Source: United Nations, 2019

# INCREASING THE NUMBER OF ENGINEERS

**SADC Countries GDP per capita 2016 vs engineering practitioners per 100,000 population**





## Capacity Building Strategic Thrusts

A Strategic Plan and Action Plans for 2021/2024, was presented to the WFEO Board and Council and they approved and we seek this special General Assembly to Endorse these Recommendations. This will be our WED2021 Gift from WFEO as ECZ, FAEO and indeed the whole World.

- Be recognized as the respected and reliable source of advice and guidance on engineering capacity building
- Be at the forefront of international engineering capacity building efforts
- Improve the visibility/presence, and stature of WFEO, and attain support of National and International engineering Organization
- Continuously improve the work and quality of the STCs outputs and outcomes.

The WFEO-CECB Strategic Pillars are shown on the diagram below. CECB aims to be the voice of engineering Capacity Building in WFEO, by being the premier WFEO STC that offers sustainable quality engineering capacity building.



FIGURE 2: The Vision, Mission, Motto and Value System Matrix.

### 3.2.1 COMMITTEE VISION

#### **The Committee on Engineering Capacity Building's vision:**

*"to make WFEO (through its CECB) the world leader in promoting, supporting and providing guidance on engineering capacity building and sustainable development to sustain and enhance human, institutional and infrastructure capacity to achieve the SDGs".*

# UNESCO AFRICA ENGINEERING WEEK



- Week-long focus on engineering aims to educate the youth and the general public about the engineering profession, through strategic outreach activities in each country, such as educational workshops, public awareness events, mentoring activities and university events.
- The aim of these events is to show how engineers are key players in the solutions to important continental challenges, such the provision of clean drinking water, sustainable housing, and issues around climate change.
- **THE LAST AEW TOOK PLACE IN GHANA IN OCTOBER 2022.**
- **THE NEXT IS IN ETHIOPIA, ADDIS ABABA, 2022.**



# 7<sup>th</sup> Edition of Africa Engineering Week



WFEO / FMOI

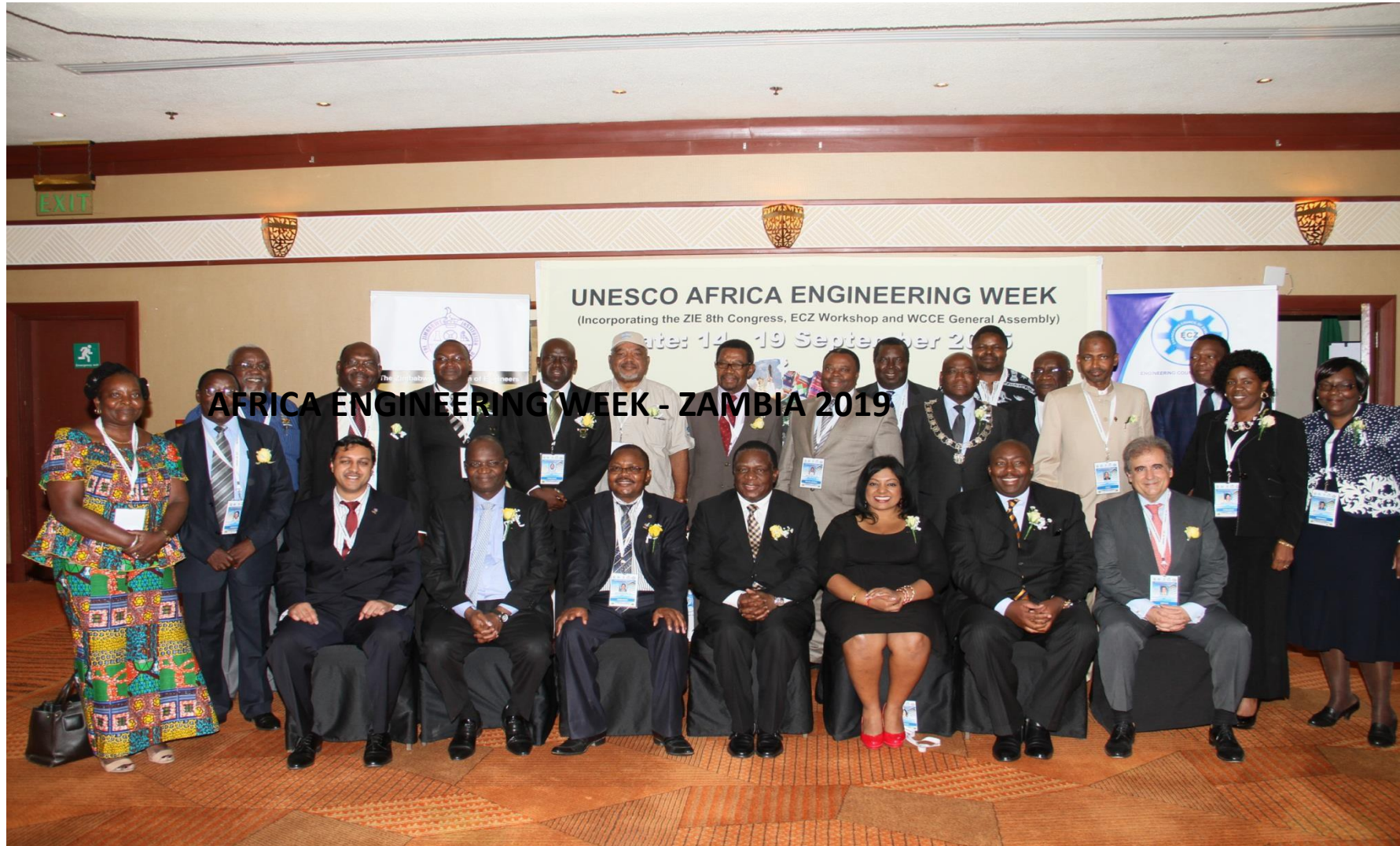
*Engineering  
the Future*

# 1<sup>st</sup> UNESCO AFRICA AFRICA ENGINEERING WEEK – SOUTH AFRICA 2014





# HISTORY OF AFRICA ENGINEERING WEEK - ZIMBABWE 2015





# AFRICA ENGINEERING WEEK - ZAMBIA 2019





## 2021 AEW

- GHANA, ACCRA, GHIE were hosts
- October 2021
- ROBOTICS COMPETITION





# IMPACT - WFEO CECB AT THE AFRICA UNION





World Federation of Engineering Organizations  
Fédération Mondiale des Organisations d'ingénieurs  
Official partner of UNESCO (associate status)



# CONCLUSION

**Our Committee will work with International and National Members of WFEO by CECB and our partners across different Cultures, Nations, Ideologies, and Leadership Styles.**

**CECB WILL WORK AS A TEAM AND IN PARTNERSHIP WITH YOU**

WE WILL ALWAYS REPEAT THIS AFRICAN PROVERB

**If you want to go fast, go alone**

**If you want to go far, go together**

**YES WE CAN GO FASTER**

**TOGETHER**



**It always seems  
impossible until it's done.**

Nelson Mandela