



ENGINEERING COUNCIL OF ZIMBABWE

# WFEO Committee on Engineering Capacity Building. (CECB) COSTA RICA GA , MARCH 2022

**Eng. Martin Manuhwa**

**CHAIR – CAPACITY BUILDING (FAEO)**

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

**Past President :- Southern African Federation of Engineering Organisations (SAFE0).**

**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

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

# 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

# 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.



# 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.

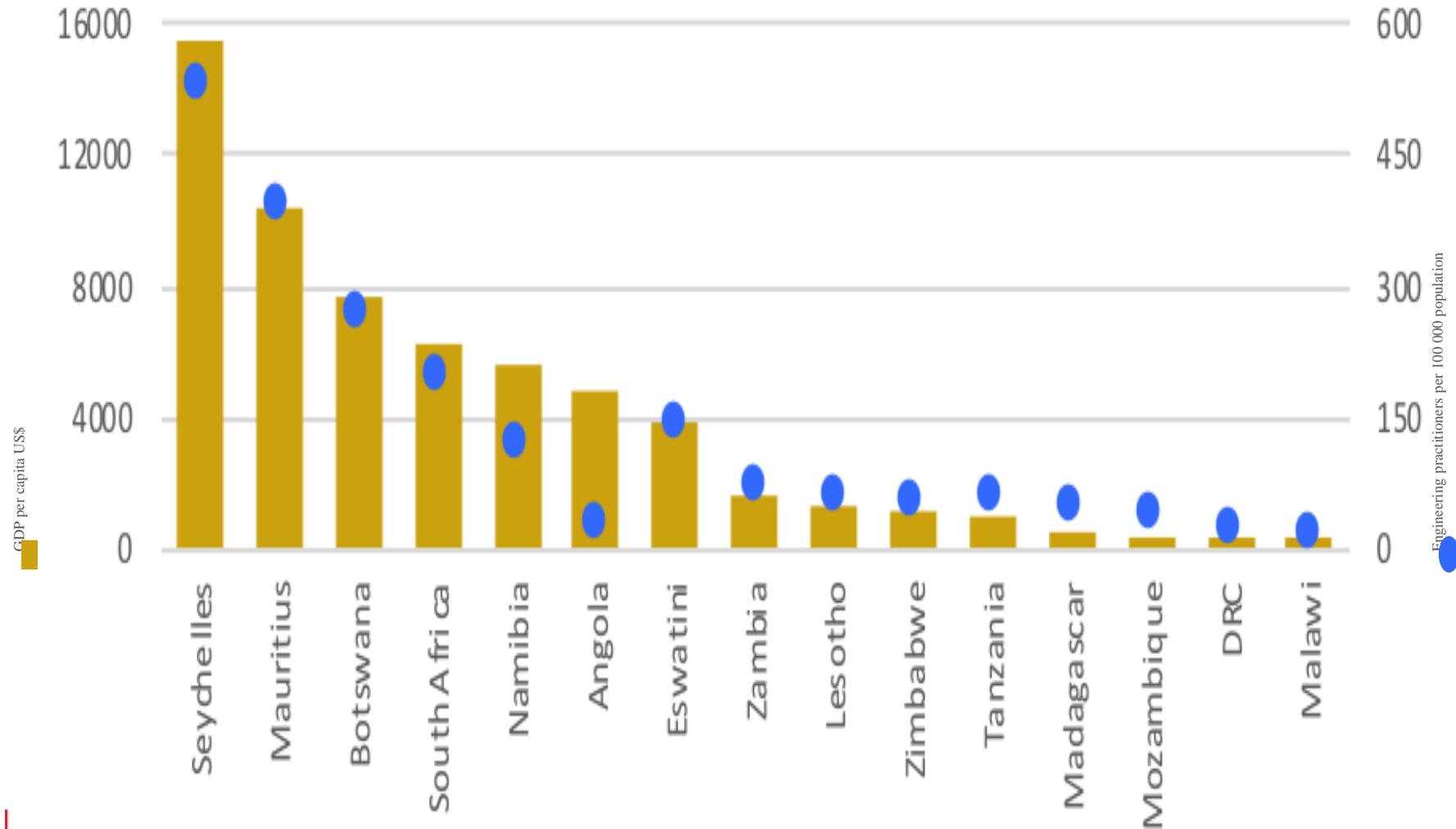


Source: United Nations, 2019



# 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".*





# 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.





## THE PLANNED ACTIVITIES

- *The following are the themes for 2020-2023 which will produce tangible outcomes.*
  - Implementing the WFEO 2030 Plan to create Partnerships, Co-operations, Global Alliances and Networking to achieve the Sustainable Development Goals (SDGs).*
  - 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*
  - Engineering Capacity Building Awareness, Training and Development of Systems.*
  - Engineering Capacity Building Projects and co-operative initiatives.*
  - Engineering Capacity Building Publications (webinars, newsletters, magazines).*



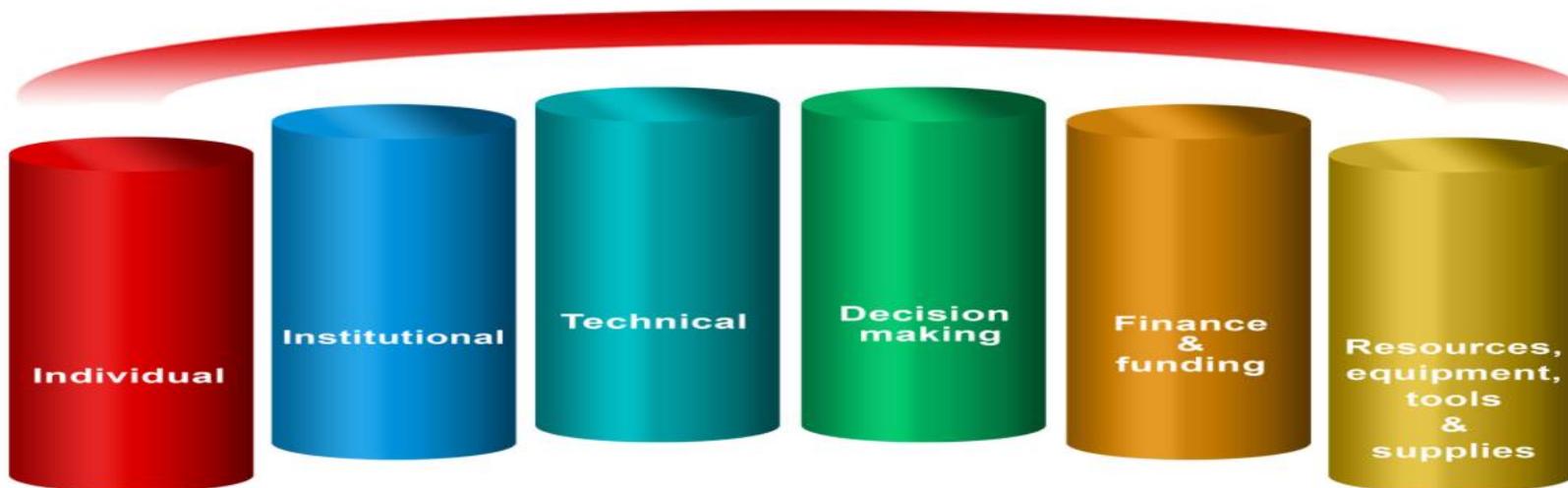
# KEY PROJECTS

- **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

# WORLD CAPACITY BUILDING IN ENGINEERING CONFERENCE 2022



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

- KEY PARTNERS: WFEO, IEA, OTHER WFEO STCs, FAEO, SAFEO, FEIAP, and Africa Asia Pacific Accord.
- Proposed Dates are : 22-27 August 2022 (TBC)

# 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.**

# 7th Edition of Africa Engineering Week



WFEO / FMOI

*Engineering  
the Future*



# UNESCO AFRICA ENGINEERING WEEK







# 2021 AEW

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





# IMPACT - WFEO CECB AT THE AFRICA UNION





# CONCLUSION

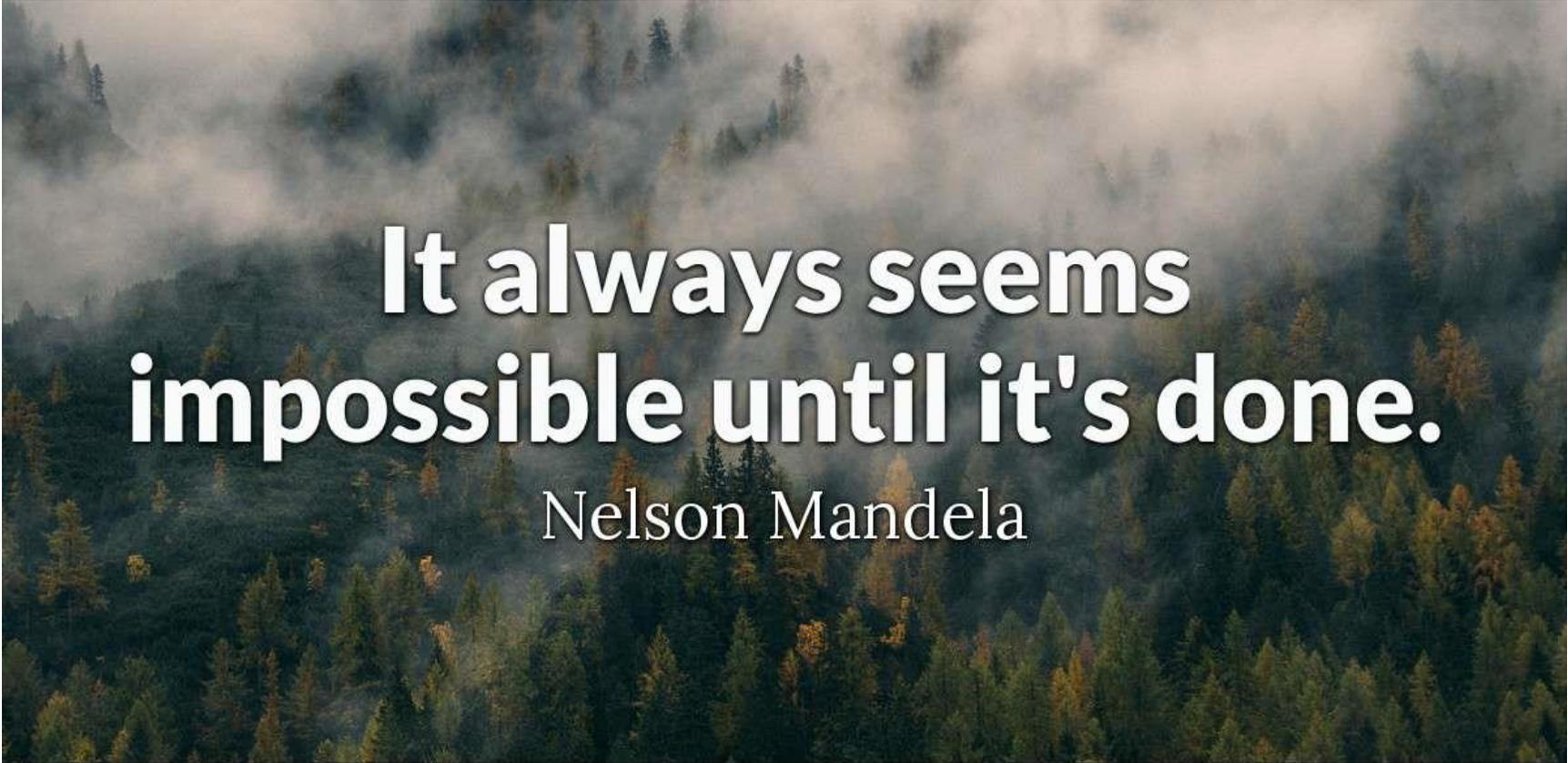
**Our Committee will work with International and National Members of WFEO by CECB and our partners across different Cultures, Nations, Ideologies, and Leadership Styles.**



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

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

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



It always seems  
impossible until it's done.

Nelson Mandela

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