

Revolutionising Capacity Building in Engineering for SDGs

Prof. Francis Davis

**TCC International Centre for Innovation, Manufacturing, Technology
Transfer and Entrepreneurship - "TCC-CIMET"**

Outline



Background - TCC

World Challenges - Africa's Perspective

Capacity Building - Targets Groups and Areas

Areas of Possible Collaboration

About TCC-CIMET

Established in 1972 as the Technology Consultancy Centre (TCC) at KNUST, Ghana

TCC, served as the interface between R&D activities in the university and entrepreneurial aspirations

The centre was established to strategically approach industrialization from the grassroots level

The Intermediate Technology Transfer Model was used to gradually upskill local artisans.

About TCC-CIMET Cont'd

The Suame Magazine industrial cluster then was having a population of about 80,000 artisans

Suame Magazine became the first ground for grass root industrialization

In 1980, the Suame Intermediate Technology Transfer Unit (ITTU), was established

Major Achievements Over the Years

Transfer of food processing, agriculture, and constructional technologies that created industries

Introduction and training on the use of machining tools for manufacturing.

Establishment of the Ghana Regional Appropriate Technology Industrial Service (GRATIS) Project

Parallel small scale industries development and transfer programme

Major Achievements Over the Years Cont'd



Strong decentralized industries in agriculture, manufacturing, construction and artistry serving small communities and serving the local economies

Expanding the programme across sub-saharan Africa, and working within the African continent

Focused research on meeting SDG goals, especially in the space of clean energy and circular economy

TCC to TCC-CIMET Under UNESCO



VISION

To be the pre-eminent hub for innovation, manufacturing, technology transfer, and entrepreneurship in Africa, driving economic growth and social transformation through cutting-edge research, empowering entrepreneurs, and fostering industrial excellence

MISSION

To pioneer and deliver transformative engineering solutions that empower Sub-Saharan Africa and beyond to harness cutting-edge technologies for sustainable socioeconomic development.

OBJECTIVES

To undertake collaborative research to develop and transfer innovative engineering solutions and manufacturing technology for the sustainable development of the West African Sub-region and beyond.

To provide technical assistance to improve competencies and promote standards in manufacturing and technology.

To promote modernisation and automation of indigenous manufacturing and industrial practices, using modern digital and smart technologies

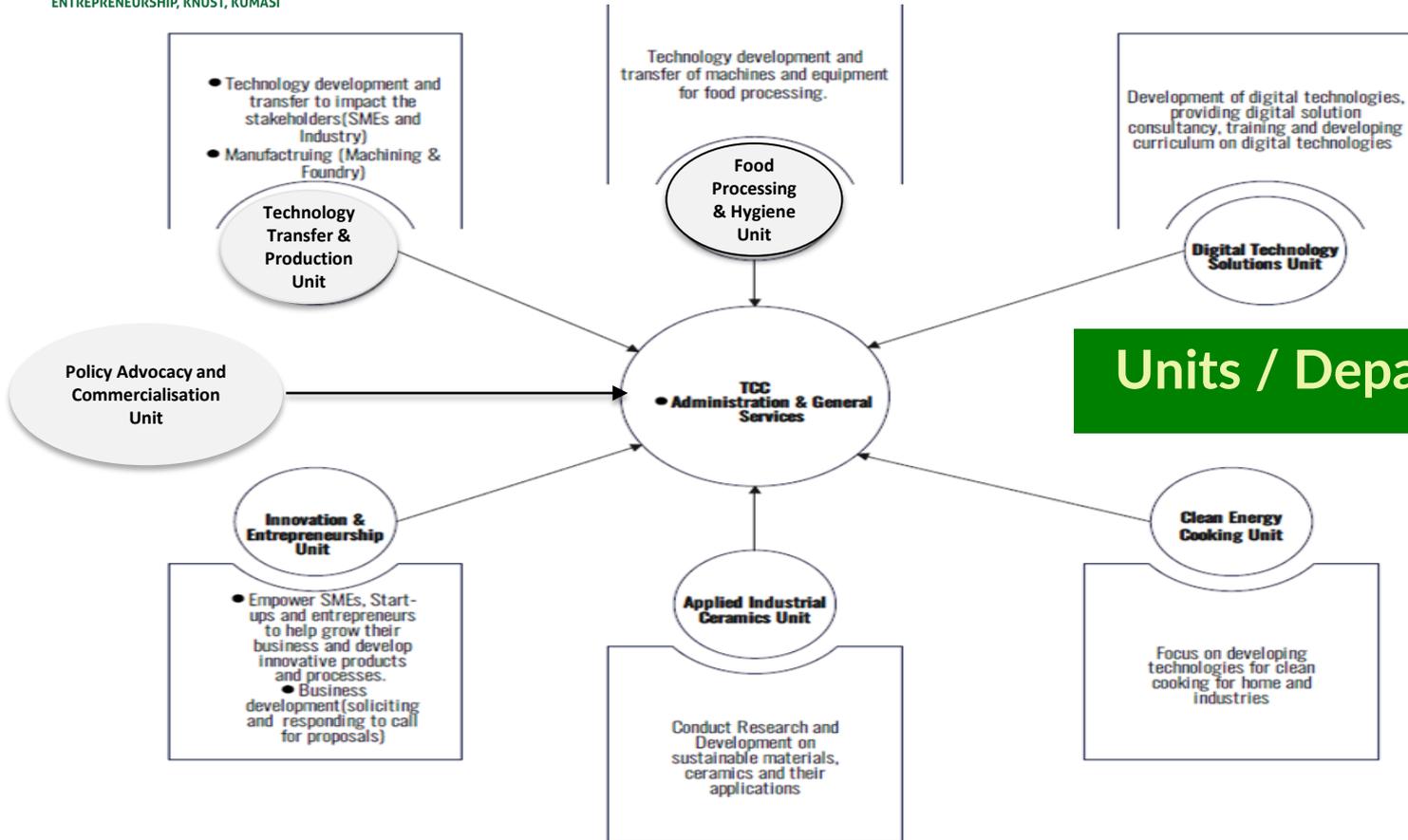
OBJECTIVES Cont'd

To provide space for product development, dissemination and knowledge uptake, and facilitate continuous professional development in relevant areas of engineering and technology within the West Africa Sub-region and beyond.

To develop policy briefs to inform (and influence) national and sub-regional policy direction on engineering innovation, manufacturing and technology transfer

FUNCTIONS





Units / Departments

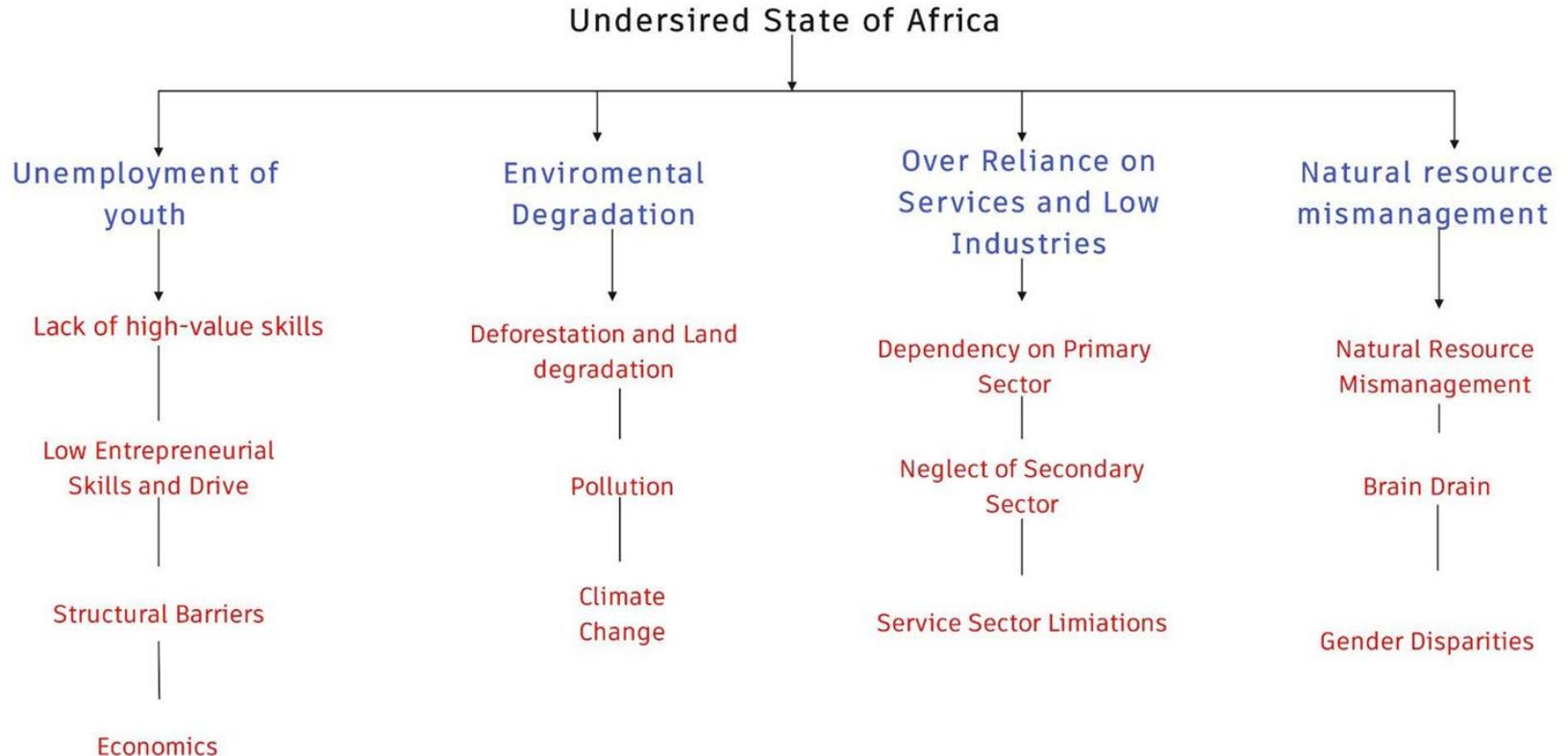
Unprecedented Challenges Facing the World



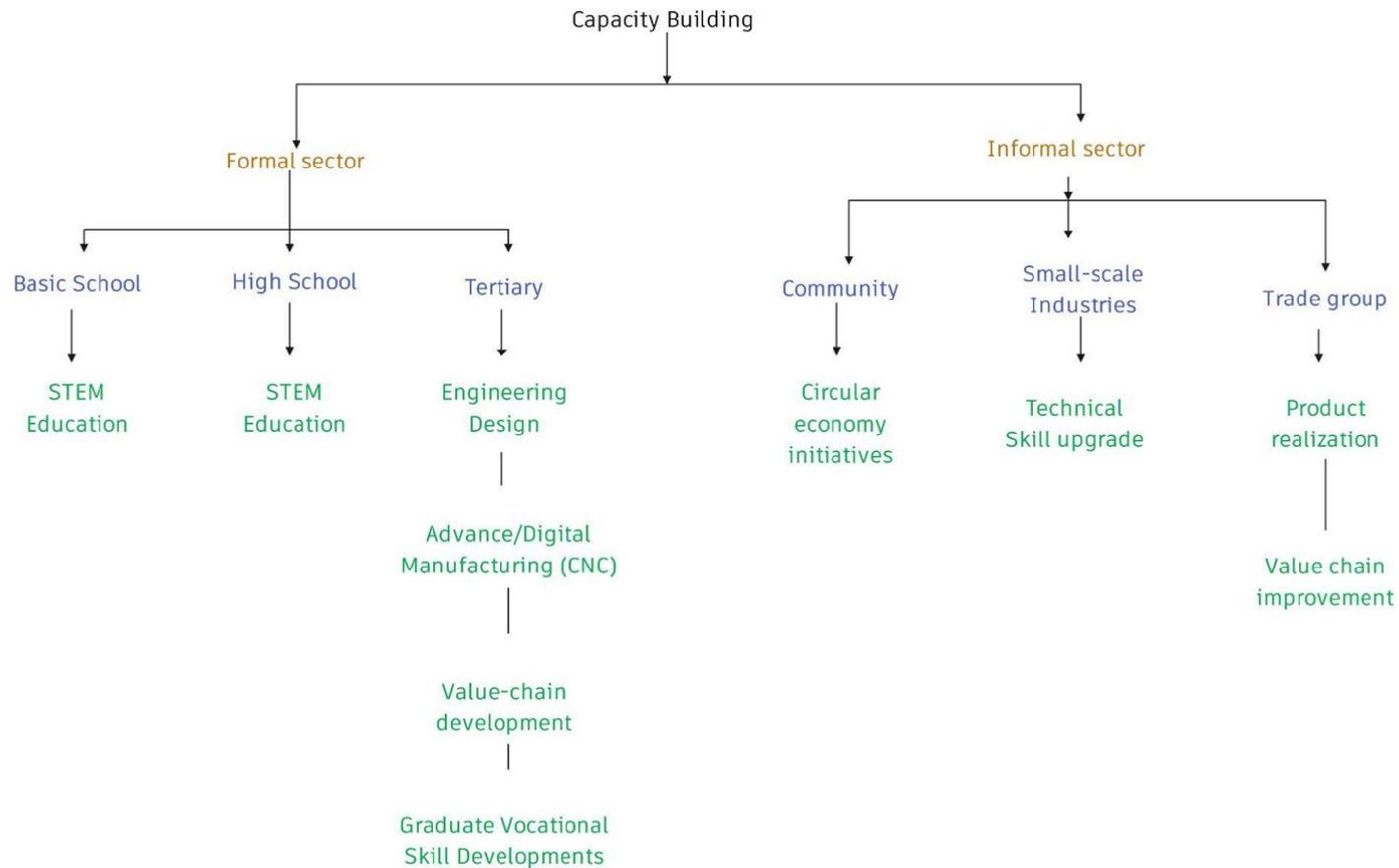
These challenges are complex and interconnected, and they demand innovative solutions.



A perspective on Africa



Capacity Building Approach



Working Towards the SDG's

- **Quality Education (SDG 4):** By providing girls with access to high-quality STEM education.
- **Gender Equality (SDG 5):** By encouraging girls to pursue careers in STEM fields, which are traditionally male-dominated.
- **Decent Work and Economic Growth (SDG 8):** By equipping girls with the skills they need to get jobs in STEM fields.
- **Industry, Innovation and Infrastructure (SDG 9):** By fostering innovation and developing new technologies.
- **Sustainable Cities and Communities (SDG 11):** By promoting sustainable technology solutions.

Working Towards SDGs Cont'd

Simple Pyrolysis System for Conversion of Plastic waste into useful products

Biocharring techniques for Briquette production

Clean Energy Cooking Technologies

Encouraging Females in STEM

Graduate Vocation Education training

Climate Change adoptation Materials

✓ Sustainable Building Materials

✓ Water Filtration



CREATIVE CAPACITY BUILDING AND FABRICATION OF CORN SHELLING AND CORN COB CHARRING FOR CLEAN ENERGY AT AKROFONSO



COMMUNITY CREATIVE ADVOCACY & CAPACITY BUILDING IN BIOCHAR PRODUCTION FOR CLEAN ENERGY AND REGENERATIVE AGRICULTURE AT MFENSI



EMPOWERING ARTISANS AND STUDENTS WITH SMART MANUFACTURING TECHNIQUES USING CNC TECHNOLOGIES AT SUAME



STEM EMPOWERMENT & INSPIRING ENGINEERING CURIOUSITY AMONG SHS STUDENTS AT 2024 WORLD ENGINEERING DAY



STEM EMPOWERMENT & INSPIRING ENGINEERING CURIOUSITY AMONG SHS STUDENTS AT 2024 WORLD ENGINEERING DAY CONT.D



AUTO DIAGNOSTIC TRAINING SESSION



SOME ACTIVITIES IN NEWS



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KNUST Technology Consultancy Centre marks Women in Engineering Day with Serwaa Nyarko Girls' SHS

Source: Emmanuel Kwasi Debrah Mon Jun 26 2023 3:59:16 PM

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KNUST Technology Consultancy Centre | UNESCO... @knust... - Jun 23 ...

#WomenInEngineeringDay @knusttcc is grateful to the headmistress, Mrs. Esther Gyasi and the students for opening their doors to be inspired. #knusttcc

KNUST Technology Consultancy Centre | UNESCO... @knust... - Jun 3 ...

This is why we're happy for the establishment of the Suame Auto Diagnostics Centre. #tcctech #autosolutions

With this cutting edge auto diagnostic equipment facility being commissioned today, we are provided with numerous benefits relevant to provide solutions, diagnose complex vehicle systems, analyse big data and deliver precise recommendations to our potential clients.

Prof. Mrs. Rita Akosua Dekson
Vice-Chancellor of KNUST at the commissioning of the Suame Auto Diagnostics Centre.

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KNUST Technology Consultancy Centre | UNESCO C2C @knusttcc

Here is a feature on the #Cookstove Testing and Expertise Lab. Enjoy: <https://tnk.in/d3ypkMyH>

COOKSTOVE TESTING & EXPERTISE LAB (C-LAB)
TCC SPECIAL

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MICHAEL COMIEH
SENIOR RESEARCH FELLOW, TCC-UNESCO

Application of plastic waste in farming | TCC-UNESCO FEATURE
KNUST Technology Consultancy Centre-UNESCO C2C

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TCC WATER FILTER
HOW WE MAKE IT

Voice Of Knust

3:59 PM - Jun 28, 2023 - 172 Views

SOME ACTIVITIES IN NEWS CONT'D.

Other news stories



MIT's Coby Unger leads training of TCC-CIMET staff on smart manufacturing technologies

📅 Published: 18th Mar 2024



World Engineering Day: TCC-CIMET to create hub for digital innovative solutions

📅 Published: 05th Mar 2024



World Engineering Day: TCC-CIMET exposes artisans, students to smart manufacturing technologies

📅 Published: 05th Mar 2024



TCC-CIMET celebrates World Engineering Day with Bosomtwe Girls STEM SHS

📅 Published: 05th Mar 2024



Ing. Yaa Obenewaa Okuzetso, Rep. from the Ghana Institution of Engineers.



KNUST TCC-CIMET trains communities in corn shelling, corn cob charring for clean energy

📅 Published: 01st Mar 2024



The Executive Director of Energy Commission Visits TCC-CIMET

📅 Published: 31st Oct 2023



KNUST Technology Consultancy Centre marks Women in Engineering Day with Serwaa Nyarko Girls' SHS

📅 Published: 26th Jun 2023



German Cooperation and Partners inaugurate Suame Auto Diagnostics Training Centre in Kumasi

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Areas of Collaboration

- Research initiatives focusing on engineering sciences and technology, particularly in areas such as sustainable development, disaster risk reduction, intelligent cities, and artificial intelligence
- Develop training programs and workshops aimed at enhancing the skills and knowledge of engineers, researchers, and technicians, especially in developing countries.
- Exchange expertise and resources for knowledge sharing, engineering solutions, policy advocacy, and joint course creation and teaching
- Connecting innovation centres of C2C - Utilizing Centre's infrastructure to facilitate the development and dissemination of engineering technologies.



TCC INTERNATIONAL CENTRE FOR
INNOVATION, MANUFACTURING,
TECHNOLOGY TRANSFER AND
ENTREPRENEURSHIP, KNUST, KUMASI

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THANK YOU