

Background of the Calestous Juma Executive Dialogue (CJED)

History of CJED

In recognition of the fact that Science, Technology and Innovation (STI) remains the bedrock for progressive and sustainable development and inclusive growth, AUDA-NEPAD through APET and in collaboration with the African Union Commission (AUC), established the Calestous Juma Executive Dialogue on Innovation and Emerging Technologies (CJED) to build a cadre of policy and decision-makers who would champion STI and emerging technologies. CJED was launched during the South African Science Forum in December 2018.

The CJED aims at contributing to the effort of African countries in addressing the challenges of harnessing innovation and emerging technologies for the continent's socio-economic development. CJED further seeks to create a culture of science and increase employment opportunities for youth across the continent by increasing knowledge and skills, access, and promoting efficient and effective programme coordination.

The executive dialogue strengthens the knowledge and capacity of African executives, senior officials, decision and policymakers to enable them to provide technical advice to governments concerning emerging technologies appropriate for their respective countries. The executive dialogue is relevant in addressing the challenges and opportunities that confront African countries by providing participants with a deeper understanding of the complexities of assessing and harnessing emerging technologies in Africa within a global context.

To address the shortage of STEM skills, the African Union Agenda 2063 has set out an ambitious vision for an African Renaissance with STEM at its core. The problems, however, begin much earlier with low performance in STEM subjects at the school level. In considering the need for STEM professionals in the sustainable development of the continent, it is essential to understand the inhibiting factors that preclude students from reaching a level where they can enrol in STEM subjects at the university level.

In recognition of the wide gap in STEM competency and skills across the continent, the AUDA-NEPAD STEM Education Project was established in 2019 to contribute to the effort of African countries in addressing the challenges of STEM education delivery and learning outcomes across the continent. The project focuses on exploring the

challenges of each country and developing context-specific interventions directed at strengthening the capacity of pre-service, in-service and tertiary institutions that train teachers for deployment to basic and secondary schools.

Objectives of CJED

CJED provides a good opportunity for learning and exchange of knowledge and national experiences, networking, experiencing diversity and building mutually beneficial relationships with a focus on emerging technologies in the 21st century. Hence institutional strengthening is an added benefit as institutions and organizations gain a critical mass of inspired and knowledgeable professionals who have a broad and holistic perspective on innovation and emerging technologies. It further facilitates knowledge building and technical support to Member States to appropriately put in place robust planning and build evidence-based analytical capacity through increased investment and budget allocation to research and development, STI and the social sector.

Operational Modalities

The CJED consists of a 3-day regional and national convenings that focus on knowledge and experience sharing and capacity strengthening of policymakers and decision-makers. The CJED also comprises of webinars and virtual meetings. Thus the executive dialogues strengthens the knowledge and capacity of African executives, senior officials, decision, and policymakers to enable them to provide technical advice to governments concerning innovation and emerging technologies appropriate for their respective countries.

Expected Deliverables

The expected deliverables of the CJED, include the following:

- a. Gaining on emerging technologies and innovation to influence research, development, and innovation across all economic sectors.
- b. Discussing and deliberating the necessary investments in emerging technologies and innovation at national, sub-regional, and continental levels.

- c. Identifying, assessing, and evaluating new and emerging technologies that are relevant to their country's socio-economic frameworks and demonstrating proficiency in engaging in public conversations.
- d. Providing technical advice on harnessing emerging technologies and mainstreaming science, technology and innovation into national policies and programmes relevant to AU's Agenda 2063 and Science, Technology, Innovation Strategy for Africa (STISA-2024).

Participants

The participants for the regional CJED are drawn from experienced senior policymakers and decision-makers, and senior executives with significant responsibility for strategic decision-making. This includes selected experts, and relevant stakeholders from all over Africa and beyond. As such, participants included Chief Directors, Permanent Secretaries, Directors-General and Directors of government ministries, parliamentarians, Chief Executive Officers (CEOs), Senior Researchers, Regulators, Academics, and Emerging Technology Scientists and Innovators, as well as Senior Members of relevant organisations and agencies within the continent and across the globe. For the national CJED, on top of the above-mentioned national participants, but also policy implementers.

Implementation and Achievements

APET conducted a survey to ascertain emerging technologies of potential economic importance, and the panel identified and prioritized ten emerging technologies as priority areas of relevance for Africa's socio-economic development. These are: 1. Gene drives; 2. Microgrids; 3. Drones for precision agriculture; 4. Next-generation medicine; 5. Artificial intelligence; 6. Urban agriculture 7. Synthetic Biology (Gene Editing); 8. 3D printing; 9. Next-generation batteries; and 10. Water purification.

Of the ten technologies, the Panel has analysed the first set of three technologies viz; (i) Gene drives for control and elimination of malaria; (ii) Drones for increasing agricultural productivity; and (iii) Micro-grids for alleviating Africa energy insufficiency. The outcomes of the analyses have been published into reports where recommendations

contained therein were endorsed by the African Union Heads of State and Government at the January 2018 AU Summit. The reports were launched in Kigali on June 8, 2018, at the Africa Innovation Summit under the auspices of the African Union Chair, Rwanda. Additionally, the Panel is analysing four more technologies which are Artificial Intelligence, Blockchain and Next-generation Batteries and Gene Editing. Members of the Panel are also being called upon to present their findings and recommendations at several fora on the continent.

Additionally, APET aims to strengthen the knowledge and capacity of African executives, senior officials, decision and policymakers, researchers and academia on innovation and emerging technologies. This is undertaken through the Calestous Juma Executive Dialogues (CJED), which consists of both a regional-based and national platforms for knowledge and experience sharing. CJED aims at strengthening the capacity of senior policy and decision-makers to provide technical advice to governments in assessing and harnessing emerging technologies in their respective institutions and organisations. The Executive Dialogue further enables these senior policy and decision-makers to provide evidence-based policy choices for African leaders in making informed decisions in harnessing innovation and emerging technologies.