



Ushirika wa Maendeleo ya Elimu Barani Afrika  
الرابطة لأجل تطوير التربية في إفريقيا  
Association for the Development of Education in Africa  
Association pour le développement de l'éducation en Afrique  
Associação para o Desenvolvimento da Educação em África



## CALL FOR APPLICATIONS

# DEVELOPMENT OF SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM) TOOLKIT (Short term Consultancy)

**Applications (Technical and Financial Proposal) must be sent to [adea-applications@afdb.org](mailto:adea-applications@afdb.org) no later than 14<sup>th</sup> July 2023, at midnight GMT. The subject of the e-mail should be “Short Term Consultant – STEM TOOLKIT”.**

## Introduction

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Hosted as a project under the African Development Bank, the Association for the Development of Education in Africa (ADEA) is a voice for education reform in Africa. ADEA's vision is to create “high-quality African education and training geared towards the promotion of critical skills for accelerated and sustainable development in Africa”. As the key network of Education Ministries in Africa, ADEA plays a significant role in the education space as a convener, knowledge creator, and forum for policy dialogue. ADEA also serves as a pan-African knowledge hub for peer-to-peer learning while elevating the voice of Africa on education priorities through organizing or participating in high-level policy dialogue forums at regional, continental, and global levels. By bringing together countries facing similar challenges with strategic partners who have expertise in a specific field, ADEA promotes collective learning and space for collaborative action. Through its Advisory and Execution Support Services, ADEA has an opportunity to serve the needs of African governments to deliver inclusive, relevant, and equitable quality education by providing a comprehensive package of services to countries to support the diagnosis of country-level needs, implementation, and monitoring of policies and programs. ADEA aligns its strategic focus to the African Union's Continental Education Strategy for Africa 2016-2025 (CESA 16-25) and the Sustainable Development Goal No. 4 on Education (SDG4).

## The Consultancy

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The United Nations Educational, Scientific, and Cultural Organization (UNESCO) recommends teaching Science, Technology, Engineering, and Mathematics (STEM)-related subjects in the 21<sup>st</sup> century for sustainable development. ADEA thought it's Inter-Country Quality Node for Science Mathematics (ICQN-SME) mobilises member countries to promote use of intervention and innovation that advance STEM education. The need for a STEM toolkit was recommended by the Ministerial forum organised by ICQN-MSE in February 2022 to guide the implementation of countries' STEM policies. Skills such as critical thinking, communication and collaboration are acquired through STEM learning activities, the very skills that make students effective workers in the 21<sup>st</sup> century. The



interdisciplinary nature of STEM education is an area of interest at basic learning levels because it is the foundation for progressing to STEM-based careers.

Researchers and stakeholders are interested in advancing students' problem-solving skills and knowledge in STEM through effective approaches and teacher engagement. Curriculum implementers at all levels in Africa experience challenges of incapacity in effectively delivering STEM lessons, including the emerging role of play in STEM learning.

A STEM toolkit will therefore harmonize understanding and the practice of play-based STEM learning approaches and act as a form of formative assessment in line with the current trend of using competence-based curriculum to facilitate teaching and learning in Africa. A consultative process of designing the play-based STEM toolkit for reference by curriculum implementers will serve to transform and develop STEM education in African countries.

The purpose of this assignment is therefore to design a toolkit that will guide countries to implement play based pedagogical approaches in STEM and to integrate learning through play with technology. It will also include a guide for teacher training and continuing professional development on play-based STEM pedagogy, learning through play with technology and play as a form of formative assessment. The guide will have a section on play-based approaches and as formative assessment in competence-based curriculum. Following the example of Kenya, the guideline will also incorporate a section for Ministries of Education on how to design a national STEM policy that incorporates play based learning.

To develop the play-based STEM toolkit for Africa, the consultant will refer to the ADEA reports on Status of STEM education in secondary school level, the situational analysis survey on play-based STEM education at the basic learning level, the developed Monitoring and Evaluation System for tracking quality of STEM Education at Basic Learning Levels in Africa and compiled case studies of play-based STEM education in Africa, among others.

ADEA seeks the services of a short-term consultant to develop the STEM toolkit. Reporting to the ICQN-MSE Coordinator at the programmatic level and the Senior Projects Officer at the level of the ADEA Secretariat, the short-term consultant will undertake the scope of work below.

### **Scope of work:**

1. Analyze the two studies on status of STEM education in secondary schools and status of Play-Based STEM education in Africa and the MEL system. Use the findings to develop an inception report outlining the expected STEM toolkit content.
2. Prepare a draft STEM toolkit.
3. Support the organization of, and facilitate, the drafting workshop for senior Ministry of Education officials and other stakeholders to make inputs in the draft STEM toolkit.
4. Support the organization of a technical meeting to validate the revised draft STEM toolkit.
5. Refine and submit the validated STEM toolkit.



In undertaking the tasks above, the consultant will maintain regular communication with the Senior Projects Officer and the ICQN-MSE Coordinator through updates and sharing of periodical progress reports.

### Deliverables:

- Inception report outlining the key project activities, timelines, methodology, and budget.
- The STEM toolkit outline detailing the expected content.
- Draft STEM toolkit.
- Report of stakeholder drafting workshop for the STEM toolkit
- Final validated STEM toolkit

### Draft Timeline for the assignment

The selected consultant is expected to commence the work in July 2023 and complete the assignment by September 2023.

#### Timelines for the Assignment: July-September 2023

No.	Activity	July	August	September
1.	Deadline for submission of Expression of Interest with detailed technical and financial proposal	14 <sup>th</sup>		
2.	Final selection of the Consultant	18 <sup>th</sup>		
3.	Contract signature	25 <sup>th</sup>		
4.	Submission of inception report with literature review summary, clear methodology, required data, steps, and work plan for the development of STEM toolkit		5 <sup>th</sup>	
5.	Submission of the draft STEM toolkit to the ICQN-MSE and ADEA Secretariat detailing the expected content		18 <sup>st</sup>	
6.	Feedback from ADEA Secretariat and ICQN-MSE		22 <sup>nd</sup>	
7.	Facilitate the face-to-face drafting workshop of STEM tool kit with senior MOE officials		26 <sup>th</sup> - 30 <sup>th</sup>	
8.	Submission of co-created draft STEM toolkit for review by ICQN-MSE and ADEA Secretariat			4 <sup>th</sup>
9.	Online validation workshop with senior ministry staff officials, key stakeholders, ICQN-MSE and ADEA Secretariat			14 <sup>th</sup>
10.	Submission of final validated STEM Tool kit			17 <sup>th</sup>



## Profile of Candidate

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- At least a master's degree in education, sciences, STEM education, or related fields and a minimum of 10 years relevant working experience.
- Proven experience of international consultancy experience working with multiple countries and/or international organizations.
- Experience working in African countries with a solid track record of developing STEM toolkits.
- Prior experience of working in STEM policy development and competence-based curriculum development or review would be an added advantage.
- Fluency in either English or French language (written and oral) and a working knowledge of the other language.
- Excellent skills in working with computers and using applications such as MS Office (Word, Excel, PowerPoint), email, internet, communication, and social media.
- Ability to thrive under pressure in a fast-paced, deadline-driven, multi-project environment.
- Demonstrated track record of engagement with African governments and diverse partners in STEM education.

## Submission of Applications

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*Due to the high volume of applications, only selected candidates will be contacted through formal correspondence via e-mail. Candidates are strongly advised not to contact ADEA or staff members to inquire about the status of their application.*

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**Duty Station:** Remote work for drafting and draft revision. Face to face for stakeholder input workshop.