

# STEM EDUCATION IN AFRICA:

PAVING THE WAY FOR  
INNOVATION AND GROWTH



**United Nations**  
Office of the Special Adviser  
on Africa

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# THE AFRICAN UNION'S SCIENCE, TECHNOLOGY AND INNOVATION STRATEGY FOR AFRICA (STISA) 2024: BLUEPRINT FOR AFRICA'S STEM RENAISSANCE



CATALYZING UNIFIED STEM STRATEGIES ACROSS AFRICAN NATIONS, ALIGNING WITH CONTINENTAL GOALS



ELEVATING RESEARCH AND DEVELOPMENT (R&D) TO DRIVE SUSTAINABLE DEVELOPMENT AND POSITION AFRICA AS A GLOBAL INNOVATION HUB

**BUT**

## CHALLENGES IN STEM EDUCATION IN AFRICA

AFRICA'S SHARE IN GLOBAL PATENTS

**0.1%**



IMPACTING SKILL DEVELOPMENT

THE GAP BETWEEN POLICY DESIGN AND IMPLEMENTATION

DIGITAL DIVIDE AND LOW INTERNET PENETRATION

RESOURCE AND CAPACITY CONSTRAINTS

WEAK PHYSICAL INFRASTRUCTURE



LOW PUBLIC SPENDING ON RESEARCH AND DEVELOPMENT (0.54% OF GDP) BY 2020 WHICH IS BELOW THE 1% NATIONAL GROSS EXPENDITURE ON RESEARCH AND DEVELOPMENT (GERD) OF GROSS DOMESTIC PRODUCT (GDP) TARGET BY THE AFRICAN UNION

# STEM OUTCOME - REGIONAL COMPARISON

## LOWER NUMBER OF STEM GRADUATES

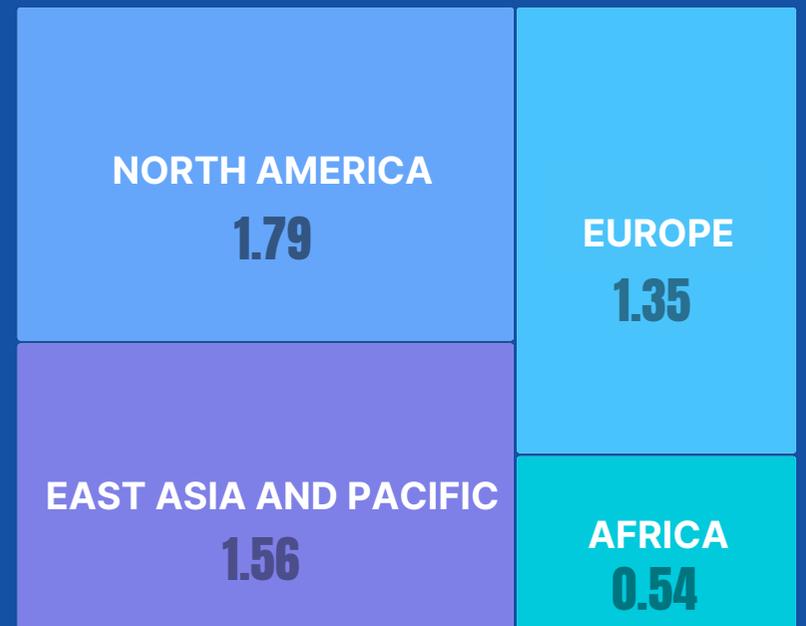
Percentage of graduates from STEM programmes in tertiary education, both sexes



UNESCO Institute of Statistics School closure data (This calculation is based on 25 African countries, 47 FAC countries and 14 ECA countries) Average % of STEM graduates (2015-20)

## SMALLER R&D INVESTMENT

R&D Expenditure as per cent of GDP by region



SDG9.5.1. <https://unstats.un.org/sdgs/dataportals/database>

## PATHWAYS TO PROGRESS

IMPROVED PUBLIC SPENDING  
COULD RAISE PRIMARY  
SCHOOL COMPLETION,  
INCLUDING STEM STUDENTS.

DID YOU KNOW?

79%



98%

African Development Bank, 2020, African Economic

# UNLEASHING STEM POTENTIAL



**FULL IMPLEMENTATION OF STISA AS A DRIVER TO IMPROVE STEM EDUCATION**



**AFRICAN COUNTRIES TO ALLOCATE AN INCREASING SHARE OF PUBLIC FUNDING TO STEM EDUCATION AND RESEARCH AND DEVELOPMENT**



**ENHANCE GOVERNANCE AND ACCOUNTABILITY IN SERVICE DELIVERY**



**INVEST IN ICT INFRASTRUCTURE INCLUDING ACCESS TO THE INTERNET**



**ACHIEVE UNIVERSAL QUALITY BASIC EDUCATION THROUGH: CURRICULA REFORMS, STEM TEACHER TRAINING, MORE INCLUSIVITY INCLUDING GENDER, AND PEER LEARNING**



**STRENGTHEN EXISTING STEM CENTRES OF EXCELLENCE TO BOOST THEIR CAPACITY AND IMPACT**



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