

THE REVOLUTIONARY GOVERNMENT OF ZANZIBAR MINISTRY OF EDUCATION AND VOCATIONAL TRAINING



PROMOTING STEM EDUCATION FOR SUSTAINABLE DEVELOPMENT AND INNOVATION IN ZANZIBAR

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INTRODUCTION TO STEM



STEM, an acronym for Science, Technology, Engineering, and Mathematics, represents an interdisciplinary approach to education that integrates these four distinct but interconnected fields.



It emphasizes hands-on, problem-based learning that enables students to apply rigorous academic concepts to real-world challenges.



This holistic approach fosters critical thinking, creativity, innovation, and problemsolving skills, which are paramount for navigating the complexities of the 21st century.



THE IMPORTANCE OF STEM IN 21ST-CENTURY EDUCATION





Driving Innovation and

Economic Growth.



Fostering Critical Thinking
and Problem-Solving

Preparing for Future Careers.



Enhancing Digital Literacy and Computational Thinking.



Encouraging Collaboration and Teamwork.



Addressing Societal Challenges

	Enhance	Enhance national capacity in innovation and technology.
GIC	Integrate	Integrate STEM across all levels of education.
	Align	Align STEM with vocational and workforce demands.
	Gender	Gender Inclusion – Encouraging girls in STEM.

MINISTRY'S STRATEGIC VISION

IMPLEMENTATION FOCUS AREAS

- Curriculum development with STEM emphasis.
- Teacher training and professional development.
- Investment in labs, ICT tools, and learning infrastructure.
- Competitions & innovation challenges.
- Scholarships for STEM students, especially girls.





PARTNERSHIPS AND COLLABORATION

- Collaboration with industries and higher education.
- Support from international organizations and NGOs (UNICEF, WB, UNESCO, KOICA, MZF)
- STEM programs aligned with labor market needs.

OUTCOMES AND IMPACT

Skilled, adaptable workforce

Increased innovation and problem-solving capacity

Contributions to sustainable economic growth

Increased STEM enrolment & retention



SUCCESSES OF STEM IN ZANZIBAR SECONDARY SCHOOLS

Government & Policy Support

- The Zanzibar Ministry of Education and Vocational Training has prioritized STEM in its Education Development Plans.
- ICT integration in schools is improving, with some institutions introducing computer labs and digital learning tools.

Increased Enrollment in STEM Subjects

- More students (especially girls) are encouraged to take science and mathematics due to awareness campaigns.
- Scholarships and incentives for STEM students

Introduction of Practical Learning

- Some schools now have science labs and STEM clubs.
- Partnerships with NGOs and international organizations (e.g., UNESCO, UNICEF) provide STEM workshops.

Competitions & Exposure

- Participation in national and regional STEM competitions (e.g., Tanzania Science & Engineering Fair).
- Some schools have won awards in innovation challenges, showcasing Zanzibar's potential.

Focus on Girls in STEM

CHALLENGES FACING STEM IN ZANZIBAR SECONDARY SCHOOLS

Limited Resources & Infrastructure

- Many schools lack proper labs, computers, and STEM equipment.
- Rural schools struggle with internet access, hindering digital learning.

Shortage of Qualified STEM Teachers

- Few teachers specialize in advanced mathematics, physics, and computer science.
- Some educators rely on theoretical teaching rather than hands-on experiments.

Gender Disparities

- Cultural biases still discourage girls from pursuing engineering and tech fields.
- Few female role models in STEM careers.

Curriculum & Teaching Methods

- Over-reliance on rote memorization rather than critical thinking and problem-solving.
- Limited practical applications of STEM in real-life Zanzibar contexts (e.g., marine science, renewable energy).

Limited Industry & University Linkages

- Few partnerships between schools, universities, and tech industries for mentorship and internships.
- STEM graduates often struggle to find local job opportunities, leading to brain drain.



Continued commitment to STEM advancement



Inclusive policies for nationwide impact



Preparing learners for a digital, globalized future



Increase funding for STEM infrastructure

برانی National awareness campaigns on STEM opportunities

CONCLUSION



THANKS FOR LISTEN

