



Tukuze
AFRIKA

Impact Report

STEM EDUCATION

**INNOVATORS
BOOTACAMP
EXHIBITION
& AWARDS**

**20
25**

**POST INNOVATORS
BOOTCAMP, EXHIBITION AND AWARDS
REPORT**

A Compiled report from the Monitoring, Evaluation and Impact Assessment Committee



Legacy Quote

“As we Navigate the Fourth Revolution, It is Imperative that we empower the Young Minds with tools that go beyond Textbooks, tools that allow them to solve Problems, create Value and Drive Economic Growth.”

- H.E Dr. Joyce G. N. Kithure,

THE SECOND LADY OF
THE REPUBLIC OF KENYA



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MESSAGE FROM THE FOUNDER

It is with immense pride and gratitude that I present the 2025 Impact Report for the Tukuze Afrika Innovators Bootcamp, Exhibition & Awards, held in Meru County under the theme "**From Ideas to Impact.**" This year's program not only demonstrated the creativity and innovation of our young students, but it also reaffirmed our unwavering belief: **every child**, regardless of their background, deserves **access to quality, inclusive STEM education.**

We were honoured by the presence of **H.E. Dr. Joyce G. N. Kithure**, Second Lady of the Republic of Kenya, whose inspiring keynote and direct support empowered both the students and the broader community. Her leadership underscored the national importance of nurturing innovation in our youth.

At Tukuze Afrika Foundation, our goal is simple yet powerful: to **increase interest** and participation in STEM education among students and the community at large. This goal is driven by the realisation that innovation thrives when access is widened especially for students from day secondary schools, rural areas, and economically disadvantaged backgrounds. We have witnessed firsthand the transformative power of inclusion, students once overlooked are now designing robots, purifying water, creating Agri-tech solutions, and stepping into leadership roles with confidence.

Throughout the year, we stay engaged with learners through weekly STEM Club activities across several Day schools and currently expanded to other schools. These regular sessions ranging from coding, design thinking, electronics, to science projects keep the fire of innovation burning. As we look forward, we are committed to expanding these programs into more schools and counties, reaching more learners, and building stronger partnerships that align with our shared mission.

We deeply appreciate the teachers and Administrators, who are the unsung heroes of this transformation. Their commitment to embracing new methods, guiding students through inquiry-based learning, and giving them room to experiment and lead, has been nothing short of inspiring.

Our theme, "From Ideas to Impact," is more than a slogan it is a commitment. We are not just sparking ideas; we are building pathways to solutions that address real-world challenges, and align with the **United Nation's Sustainable Development Goals**, especially SDG 4: Quality Education.

To all our partners, facilitators, volunteers, students, and teachers, thank you. Your contribution is building a future where innovation is not a privilege but a right.

As we analyze our progress and shape the future, I ask:

- How might we continue to build local incubators that take ideas **beyond** exhibitions into **entrepreneurship**?
- How can we equip more teachers and schools with the tools to support long-term STEM growth?
- How do we ensure girls and rural learners remain at the center of this STEM transformation?
- how can we keep making **STEM accessible**, fun, and meaningful for every child?
- And most importantly: What does real, **lasting impact** look like and how do we measure it year after year?

Let's continue asking bold questions because **questions spark discovery.**

Tukuze Afrika is not just an initiative. It's a movement.

Together, we're not just running events. We're reimagining what STEM education, Innovation and future of work in Africa can look like.....



Boniface Munene
Civil Engineering Technician
Founder and Team Lead,
Tukuze Afrika Foundation



Overview of Innovators Bootcamp and Exhibition Proceedings

The Tukuze Afrika Innovators Bootcamp, Exhibition & Awards 2025 was a high-impact, week-long program designed to nurture creativity, foster innovation, and amplify the voices of young STEM champions from secondary schools in Meru and Tharaka-Nithi Counties. Hosted in Meru County under the theme “From Ideas to Impact,” the initiative brought together over 250 Junior Secondary and high school Innovators, teachers, and stakeholders committed to advancing inclusive STEM education.

The event featured:

- 1.5 Days of Hands-on Learning through workshops, design sprints, team challenges, and field research.
- 2.6 Expert-Led STEM Masterclasses, covering areas like robotics, Artificial Intelligence, Product Development and Commercialization, Intellectual Property Rights and Patenting, Financial Literacy and entrepreneurship, Investor Pitching, Education Technology and STEM Strategies in Classroom.
- 3.22 Innovative Student Projects showcased at the public exhibition.
- 4.120 Schools Represented, during the exhibition at Agricultural Society of Kenya Show from Meru and surrounding counties.
5. Presence and keynote address by H.E. Dr. Joyce G. N. Kithure, the Second Lady of the Republic of Kenya, a strong advocate for youth and education.
6. Mentorship and Judging Panels composed of engineers, scientists, innovators, and educators.
7. Award Ceremony recognizing the most outstanding student-led innovations and teachers supporting STEM.

Throughout the week, students collaborated in diverse teams to solve real-life community problems using science, technology, engineering, and math. From designing water purification systems and smart dustbins to creating apps for education access and sustainable agriculture, the projects demonstrated not only technical skills but also leadership, creativity, and a deep sense of social responsibility.

This year’s program reinforced Tukuze Afrika’s commitment to bridging the education gap by making STEM education accessible, inclusive, and transformative. We remain focused on scaling up the program, supporting weekly STEM club activities, and ensuring no student is left behind regardless of their background or school type.



Event Highlights

INNOVATORS BOOTCAMP



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY



24 MAY 2025

The Innovators Bootcamp, held at Meru University, kickstarted the journey of creativity and problem-solving. Students from Meru and Tharaka-Nithi Counties engaged in a one-day immersive experience designed to spark innovation and equip them with skills in prototyping, product development teamwork, Intellectual property Rights, and pitching.

The Bootcamp emphasized alignment with the Sustainable Development Goals (SDGs) and the Competency-Based Curriculum (CBC). For the first time, Junior Secondary School learners participated alongside senior students, proving that age is no barrier to innovation when opportunity meets mentorship.

Mentors from academia and industry walked teams through hands-on challenges, guiding them to transform ideas into tangible prototypes addressing local issues like water scarcity, food security, and climate change.

INNOVATORS BOOTCAMP EXHIBITION



**AGRICULTURAL SOCIETY OF KENYA SHOW GROUNDS,
GITIRO-MERU**



28 - 30 MAY 2025

The ASK Showgrounds in Gitoro, Meru, recently hosted a dynamic three-day Exhibition from May 28–30, 2025, showcasing over 120 groundbreaking youth-led innovations. This public event attracted a diverse audience, including educators, parents, university staff, entrepreneurs, and county officials. Student teams effectively demonstrated their projects, which ranged from AI-driven smart waste sorters and solar-powered poultry incubators to mobile apps for water conservation and DIY health kits. The exhibition significantly boosted students' confidence, public speaking abilities, and resilience as they engaged with guests and expert judges.

INNOVATORS BOOTCAMP AWARDS



MWITHUMWIRU MIXED DAY SECONDARY SCHOOL



31 MAY 2025

The week culminated in an inspiring Awards Ceremony on May 31, 2025 at the same venue. The event was honored by the presence of H.E. Dr. Joyce G. N. Kithure, the Second Lady of the Republic of Kenya, who lauded the youth for their pivotal role in shaping Kenya's innovation landscape. Twelve categories of awards were presented, including "Best Overall Innovation," "Climate Action Champion," and "Most Promising Female Team." Winners received not only trophies and certificates but also invaluable mentorship opportunities from leading partners. The ceremony also featured strong commitments from Safaricom, GIZ, and Tukuze Afrika Foundation to continue empowering the next generation of changemakers.





Our Impact



12,000+

Total Students Reached through the full program (across Bootcamp, Exhibition, School Tours, & Clubs)



15

Winning Innovations



197

Students trained through the Innovators Bootcamp



42

Teachers

Trained on 21st Century Skills, Artificial Intelligence, Virtual Reality and Education Technology



8

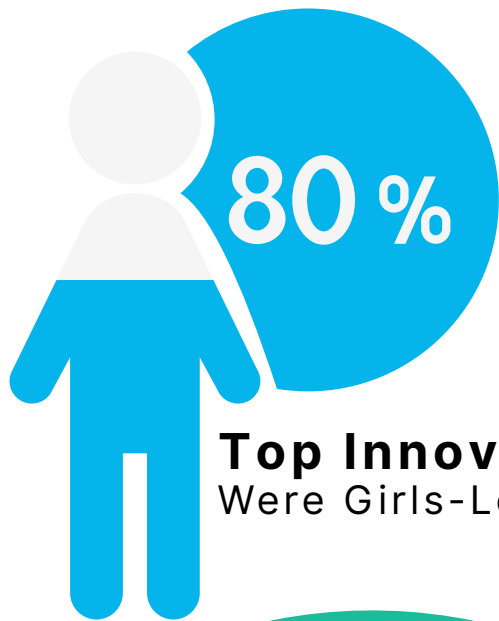
Facilitators



100+

Schools Represented

in Numbers



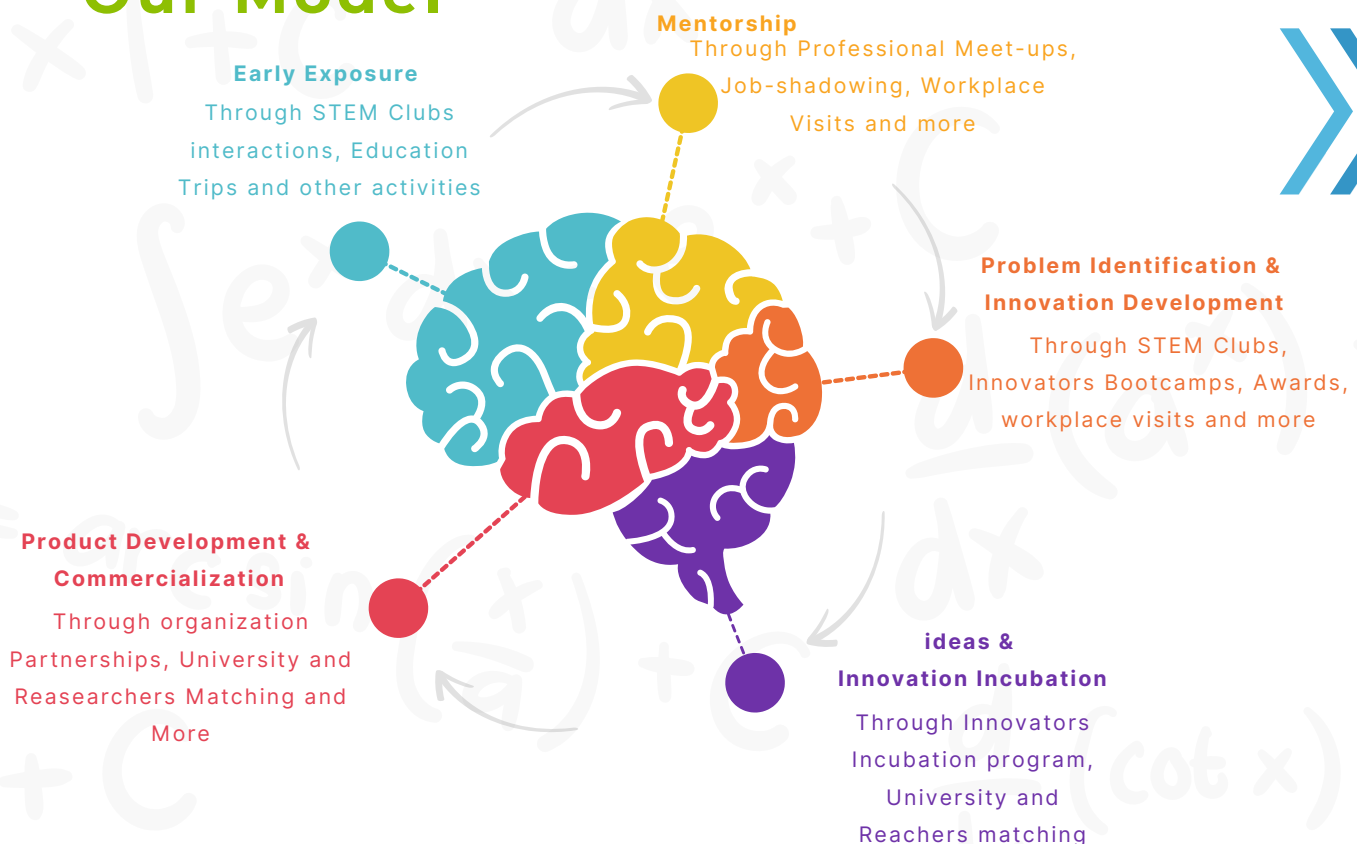
Our Why: The Need for Tukuze

Across Kenya, millions of young people face limited access to quality, practical STEM education, especially in rural and underserved communities. With youth unemployment, climate change, and economic uncertainty on the rise, equipping the next generation with tools to innovate is no longer optional, it's essential.

Today's learners need more than textbooks. They need access to the technologies of tomorrow, Artificial Intelligence, 3D Printing Technology, Virtual Reality, and Drone Technology, delivered through immersive, hands-on learning experiences. Yet for many students in Kenya, especially girls and those in rural schools, such opportunities are rare or nonexistent.

Tukuze Afrika is changing this. We are creating access to the future through a powerful model that connects:

Our Model



We don't just teach STEM, we activate it. From classroom to community, students are learning to solve real-world problems with local relevance and global potential.

"I've never seen my students this inspired by science. They now believe they can change their future."

— Mrs. Irene Miriti, Principal, Kirindine Day

We're building a movement where learners explore cutting-edge tools, express creativity, and grow into confident leaders, entrepreneurs, and change makers. Because when we give young people access to the future, they start creating it.



What they Said



"This Bootcamp gave us a whole new lens for teaching STEM. It's no longer just about passing exams, it's about creating thinkers and makers."

Teacher, John



"I never thought I'd speak in front of so many people about my idea, but when they clapped and asked questions, I knew my voice mattered."

Student, Doreen Kinya



"Seeing the students' confidence grow in just one day was incredible. Tukuze gave them space to shine."

Volunteer, Karemba



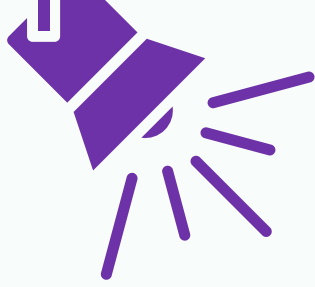
"These students are tackling real-world problems with creativity and courage. Their ideas are not just impressive, they're necessary."

Judge, Zawadi



"We are not just sponsors, we're co-builders of Kenya's future through education and innovation."

Sponsor, Iksense Construction



Innovation Spotlights

Dryspell Detector – Gikumene Girls

A real-time, sensor-based weather alert system for flood and drought warnings to improve climate preparedness and agriculture resilience.



Smart Poultry Feeder – Ntugi mixed Day

Automated feed dispenser reducing labor and wastage, empowering smallholder farmers with precision agriculture.



Workforce Robot – Gikurune Girls

An assistive robot prototype designed to handle repetitive institutional tasks, showcasing coding and mechanical design skills.



Improved Jiko – Kithirune Girls

Multipurpose Sieve – Marimanti Girls

Auto Clothline – Burieruri Boys

Incubator – Chogoria Girls

Smart Dustbin – Mwithumwiru Day Secondary

Smart Switch – Mburugiti Day

Automated Mosquito Net – Bidii Junior Secondary

These innovations address critical local challenges in agriculture, home automation, energy efficiency, and public health. Their incubation will not only sharpen the students' creativity and skills but also build a pipeline of future STEM entrepreneurs.

What's Next for the Top Innovations

The top 10 innovations selected at the 2025 Exhibition will advance into an **in-campus incubation program** hosted at **Meru University of Science and Technology**, running from **25 October to 7 November 2025**. This immersive, two-week training is designed to help student teams move their prototypes toward commercialization.

Skills Students Will Gain:

AI Applications – Building intelligent tools and understanding automation

3D Printing & Prototyping – Turning ideas into tangible products

Drone Technology – Using UAVs for innovation and problem-solving

Virtual Reality – Immersive storytelling and simulation design

Entrepreneurship & Business Modeling – Developing sustainable ventures

Product Development & Commercialization – Roadmap from prototype to market

Investor Pitching – Communicating value to partners and funders

Job Shadowing – Learning through immersion at top companies

Global Citizenship Education – Building responsible, ethical innovators

Community Engagement – Activities such as tree planting and visiting children's homes to nurture civic responsibility and compassion

Students will also participate in outdoor learning, site visits, and team-building activities.

We are actively seeking partners to walk with us during this phase through mentorship, funding, training, and product development support. The aim is to support at least three of these innovations to reach market-readiness and commercialization.



SPONSORS & PARTNERS

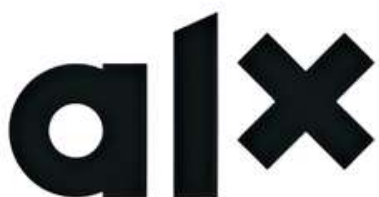
We are deeply grateful to all our sponsors and partners who fueled the success of the 2025 Tukuze Innovators Bootcamp, Exhibition, and Awards. Your support helped us inspire and equip thousands of students and teachers with STEM, innovation, and entrepreneurship skills.

SPONSORS



H.E Dr. Joyce G. N. Kithure

Spouse to the Deputy President
Of the Republic of Kenya



PARTNERS & IN-KIND SUPOPRT



Your partnership is more than a contribution. it's a bold step in shaping a future powered by young innovators. Thank you for believing in the power of youth, education, and community-led change.

MERU UNIVERSITY OF SCIENCE & TECHNOLOGY: STRATEGIC PARTNER IN INNOVATION



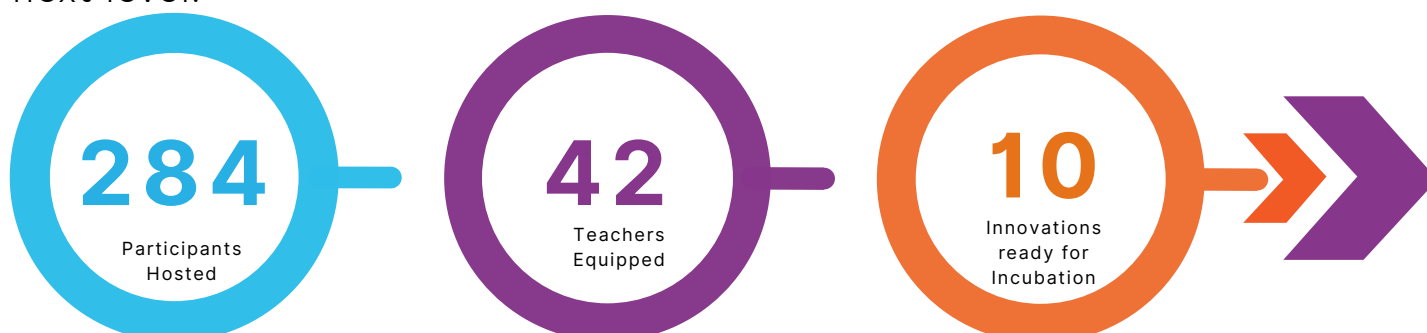
Meru University of Science and Technology (MUST) was a key partner in delivering the 2025 Tukuze Innovators Bootcamp. As host and technical supporter, the University trained 197 students and 42 teachers, and contributed expert mentors and facilitators for workshops on AI, IP, and entrepreneurship.



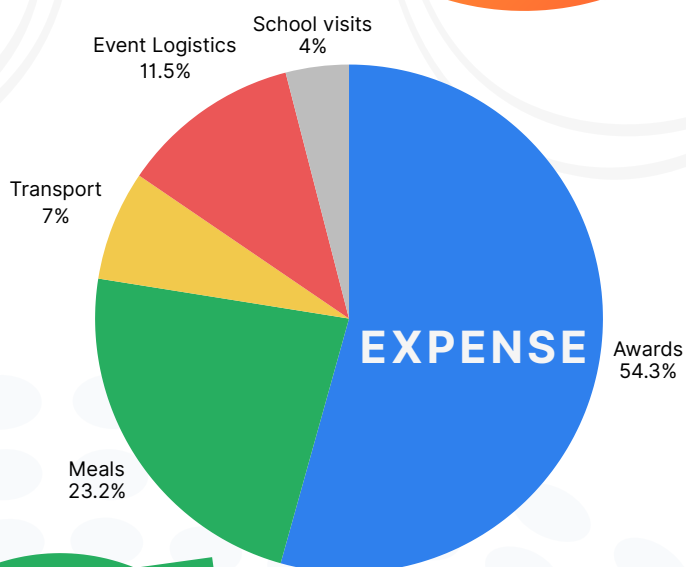
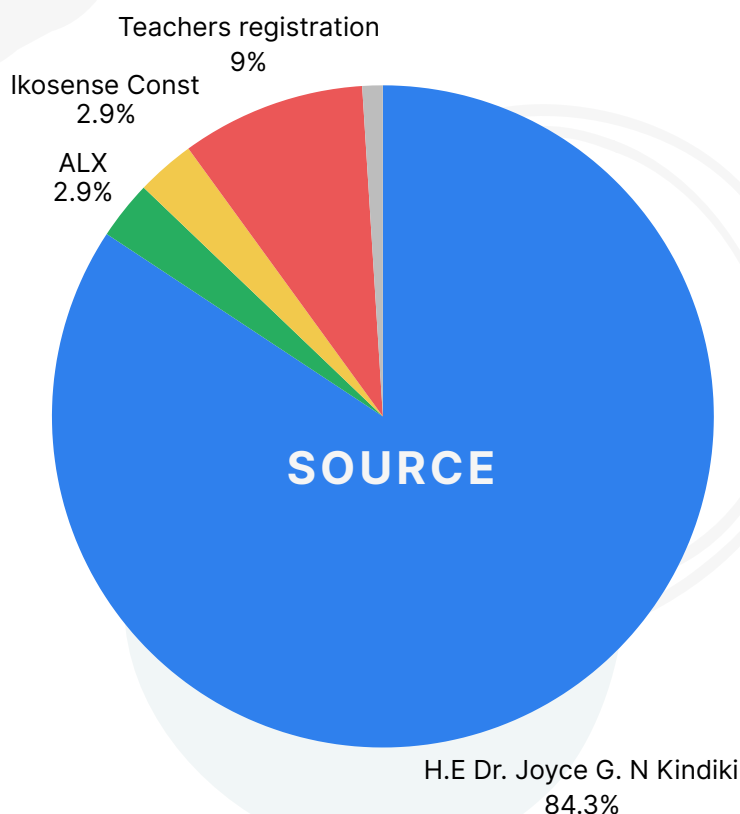
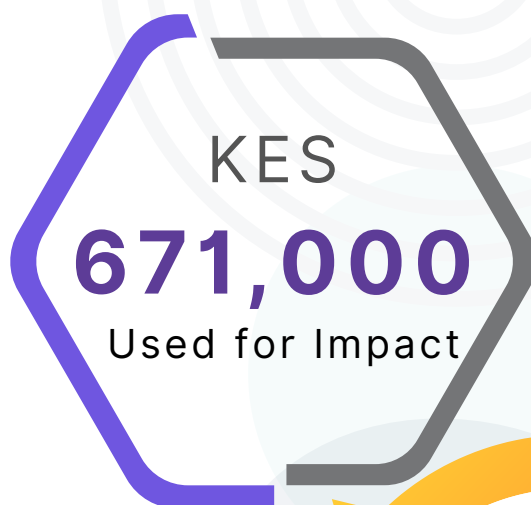
Looking Ahead

Meru University of Science and Technology (MUST) will continue its pivotal role in nurturing innovation and talent. In September 2025, MUST will host students during the **MUST Innovation and Exhibition Week** (MUSTIEW), offering them a platform to showcase their ideas, network with experts, and engage in hands-on learning.

Following this, in October–November 2025, MUST will host the Tukuze Afrika's Incubation Program for Top Innovations, equipping selected students with advanced skills in emerging technologies, product development, and entrepreneurship to help them take their solutions to the next level.



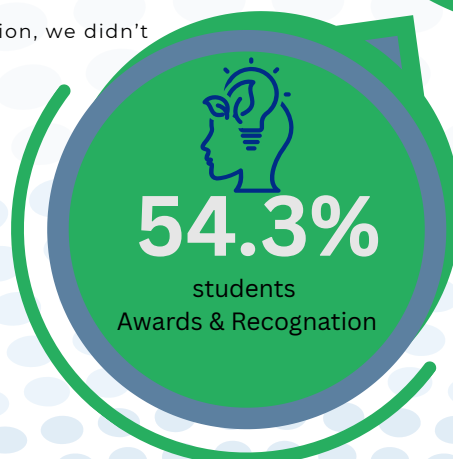
EVERY SHILLING COUNTS: OUR FINANCIAL FOOTPRINT



Recognition is fuel for innovation.

When students are acknowledged and celebrated for their ideas, it boosts their confidence, ignites curiosity, and motivates them to keep solving real-world problems. A simple award can **spark a lifelong journey** in science, engineering, or entrepreneurship.

By investing over half of our funds in recognition, we didn't just hand out prizes, **we inspired futures.**



VOLUNTEERS

BOOTCAMP – MERU UNIVERSITY (24 MAY 2025)

ANYANGO IDAH
SHEILA MUTHONI
GRACE MUTHONI
TRACY WANJIKU
CHERONO SHARON
JANE NTHENYA
IVY KIBET
LONAH MAKENA
JULIET KWAMBOKA
PRUDENCE KENDI
PERPERTUA GATWIRI
COLLINIRIA KANIRU

GETRUDE MWENDWA
KEFA MBUGI
MERCY MUENDO
JULIET KOECH (IEEE)
FRANCIS NGA'NGA (IEEE)
KEVIN OMONDI (IEEE)
BAHATI GARMA (REDCROSS)
FARHAN ABDI (REDCROSS)
BONIFACE MUNENE

EXHIBITION – ASK SHOW GROUNDS (28-30 MAY 2025)

PRUDENCE WENDI
GRACE MUTHONI
TRACY WANJIKU
GETRUDE MWENDWA
YVONNE KAREMBO
KEFA MBUGI
IDAH ANYANGO

FAITH ZAWADI
MERCY MUENDO
FRANCIS NGA'NGA (IEEE)
WAYNE RAY (IEEE)
ISAAC MUTUMA (SCOUTS KENYA - MERU)
BONIFACE MUNENE

AWARDS DAY – MWITHUMWIRU SECONDARY (31 MAY 2025)

GRACE MUTHONI
TRACY WANJIKU
GETRUDE MWENDWA
KEFA MBUGI
IDAH ANYANGO
FAITH ZAWADI
MERCY MUENDO

FRANCIS NGA'NGA (IEEE)
WAYNE RAY (IEEE)
ISAAC MUTUMA - KENYA SCOUTS
JAMES MURIKI
BONIFACE MUNENE
CANDY JELAGAT

SCHOOL VISITS – 12-13 JUNE & 10-12 JULY 2025

FAITH ZAWADI
IDAH ANYANGO
TRACY WANJIKU
YVONNE KAREMBO
ISAAC MUTUMA
MERCY MUENDO
BONIFACE MUNENE

VIRTUAL VOLUNTEERS

MARY ACHIENG
NELLIUS THUKU
CATE WANJOHI
GLADWELL KIRINGO

SCHOOLS

ACK KANWA SECONDARY SCHOOL
AKITHI GIRLS HIGH SCHOOL
BISHOP NJIRU KANGETA GIRLS
BURIERURI BOYS HIGH SCHOOL
CHOGORIA GIRLS HIGH SCHOOL
CHIEF MBOGORI GIRLS SCHOOL
CHIAKARIGA DAY SECONDARY SCHOOL
GIKUMENE GIRLS HIGH SCHOOL
GIKURUNE BOYS SECONDARY SCHOOL
GIKURUNE GIRLS SECONDARY SCHOOL
ITUGURURU SECONDARY SCHOOL
KAJIANDUTHI HIGH SCHOOL
KIBIRICHIA GIRLS HIGH SCHOOL
KIRINDINE SECONDARY SCHOOL

KITHIRUNE GIRLS SCHOOL
MARIMANTI GIRLS
MBURUGITI SECONDARY SCHOOL
MCK BIDII COMPREHENSIVE SCHOOL
MIATHENE BOYS
MUTHAMBI GIRLS
MULATHANKARI MIXED DAY SECONDARY SCHOOL
MWITHUMWIRU MIXED DAY SECONDARY SCHOOL
NGIINE MIXED DAY SECONDARY SCHOOL
NTORONI SECONDARY SCHOOL
NTUGI MIXED DAY SECONDARY SCHOOL
ST. MARYS' GIRLS - IGOJI
TIMAU GIRLS SECONDARY SCHOOL



Upcoming Annual Programs 2026 – Join Us

To ensure year-round engagement and long-term impact, we're launching a structured calendar of STEM and innovation programs across Meru, Tharaka-Nithi, and beyond:

STEM Challenge – School-based problem-solving competitions fostering creativity and teamwork

Kenya Science and Engineering Fair – Regional preparation and national-level participation

PRISMA Awards – Recognizing excellence in STEM Innovation, Mentorship, and Achievement across students, educators, CSOs, companies, and leaders

Innovators Bootcamp & Exhibition – Expanding to more counties to equip students with 21st-century STEM and innovation skills

STEM Week / Open Day – Interactive exhibitions and hands-on learning for schools and communities

STEM Clubs Support – Continuous mentorship and technical support for school-based STEM Clubs

Internship-Based Teacher Support Program – A strategic model addressing STEM teacher shortages, pairing trained interns with schools while nurturing grassroots innovation

We invite new and returning partners to collaborate with us in delivering these high-impact, scalable programs.



Tukuze
AFRIKA



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POST BOOTCAMP EXHIBITION AND AWARDS REPORT

A Compiled report from the Monitoring, Evaluation
and Impact Assessment Committee