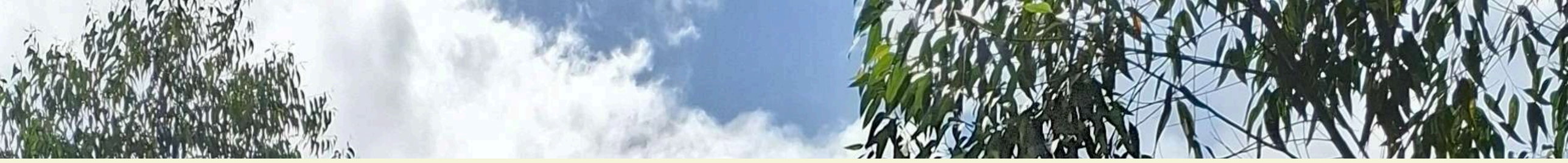


INVOLVING LOCAL COMMUNITIES

HORIZONTAL LEARNING & COMMUNITY COMPETENCIES

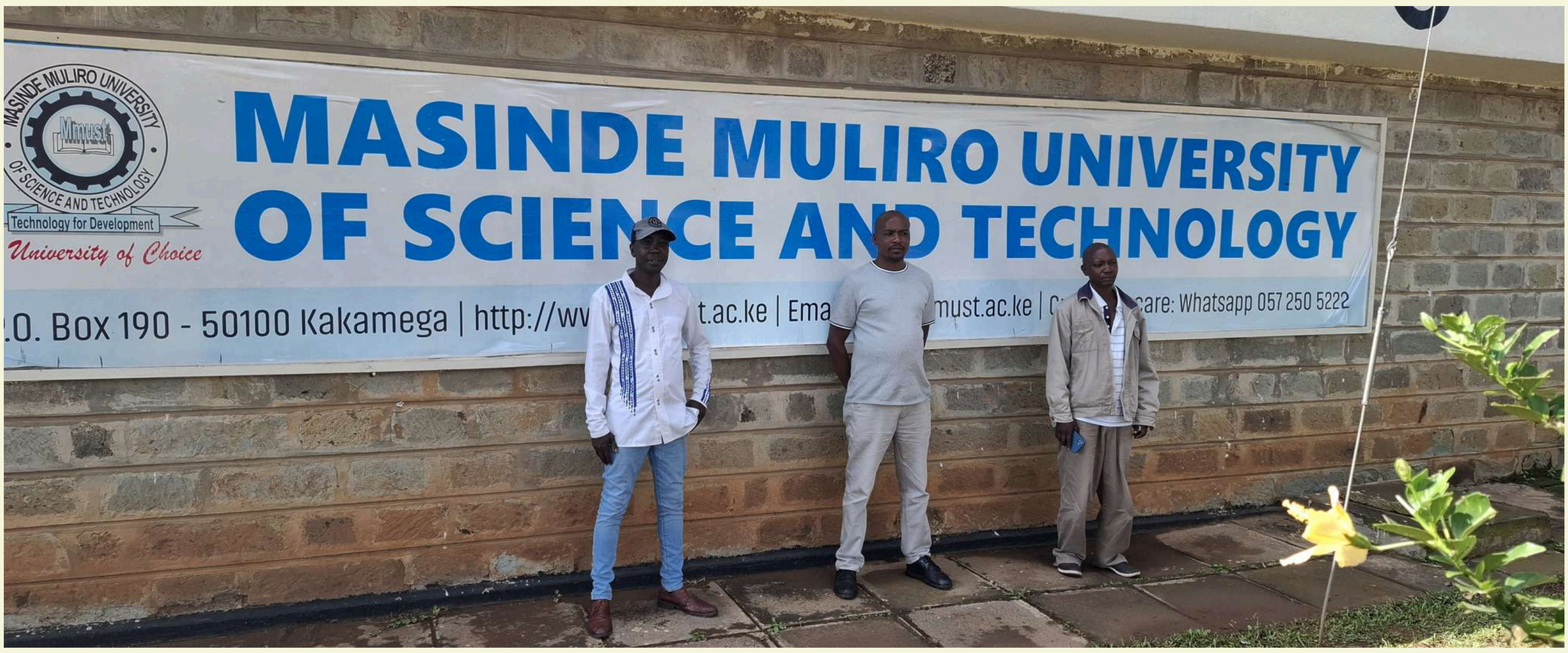
7th June 2025

Horizontal Learning

Horizontal learning, where local communities and scientist co-design research, remains a key pillar of Project MOSAIC (Multi site Application of Open Science in the Creation of Healthy Environments Involving Local Communities), spanning work packages 1, 2, and 5. The East African MOSAIC team, led by the African Conservation Centre and the Amboseli Conservation Program, organized a horizontal learning workshop under the theme "Open Science Involving Local Communities" and titled "Weather and Climate Extreme Events Preparedness."

The workshop was hosted by Masinde Muliro University of Science and Technology (MMUST) through its School of Disaster Management and Humanitarian Assistance (SDMHA). It brought together local Maasai herders, who also serve as resource assessors in the MOSAIC project, from their familiar savanna environment to the forest ecosystem of western Kenya. This four day event, held from May 27 to 30, 2025, aimed to strengthen the university's research and practical capacity to address climate related disasters by involving local communities in the design of preparedness and mitigation strategies.

The workshop provided a strong foundation for the exchange of knowledge between university researchers and the Maasai herders. Participants engaged with open science tools to track weather patterns in real time and to model predictions of climate extremes for use in local settings. The discussions also explored the development of short courses designed for community members without technical backgrounds, in order to recognize and integrate local knowledge and skills into organized climate disaster preparedness and response efforts. The event emphasized the importance of research that includes communities and urged participants to promote research initiatives that reflect the real needs of the people on the ground.



Local Maasai herders from Amboseli who also double up as MOSAIC resource accessors at the university during the workshop. They are from left: Sunte Kimiti, Paul Kasaine and Samuel Lekanaiya.

Community Competencies

Prof. Peter Bukhala addressing the workshop.

During the horizontal learning workshop, Prof. Peter Bukhala, Deputy Vice Chancellor (Planning, Research and Innovation) was delighted to reunite with members of the Maasai community from Amboseli. He fondly recalled his first job posting in Loitoktok, within the Amboseli Ecosystem.

He emphasized the importance of equipping communities with integrated knowledge—combining traditional ways of understanding the landscape with modern scientific approaches, especially in preparing for climate extremes such as droughts and floods. He also acknowledged ongoing efforts to address local health challenges, such as trachoma, through the One Health approach.

“Our university has the capacity and is committed to working with partners to jointly organize health and well-being fairs to support local communities,” he said.

“Learning about satellite tools like Google Earth Engine and their ability to visualize pasture greenness will help me and other herders track areas of green vegetation during periods of extreme shortage caused by droughts" Paul Kasaine.

Paul Kasaine-MOSAIC Resource Assessor during the workshop .

Sunte Kimiti making his presentation.

“We have now moved from manual data collection to using open science tools tailored for vegetation and animal sampling. These tools allow us to collect and transmit data for analysis. We also take photos to complement satellite data on vegetation greenness,” Sunte Kimiti.

“We've noticed a rise in livestock predation during periods of extreme rainfall, when wild prey often migrates out of the ecosystem. Interestingly, hyenas take advantage of the dark, rainy nights—raiding our small stock while herders are fast asleep and unable to hear the commotion to respond in time.”
Samuel Lekanaiya.

Samuel Lekanaiya during the workshop in Kakamega.

Research and Collaboration

Dr. Veronica Kiluva, Chairperson of the Department of Disaster Preparedness and Engineering Management (DPEM) at MMUST, emphasized the value of participatory, community-driven research and highlighted collaborations with projects like MOSAIC and the Amboseli Conservation Program at the African Conservation Centre.

Dr. Veroninca Kiluva at the horizontal learning workshop.

Dr. Ferdinand Nabiswa, Dean of SDMHA, applauded the partnership with the African Conservation Centre, noting that MMUST is the only African university offering a full spectrum of Disaster Management programs, from Certificate to PhD. He underscored the importance of such collaborations in advancing Competency-Based Education and addressing both global and local challenges.

Dr. Victor Mose explaining the ONE Health approach to participants.

Dr. Victor Mose, Co-Leader of the MOSAIC Project and Co-Director of the Amboseli Conservation Program at the African Conservation Centre, explained how co-designed data products, built on open science and horizontal learning, where communities and researchers learn from each other—play a vital role in helping local communities prepare for extreme events. These tools also enable communities to carry out their own monitoring and reporting, using approaches that support the One Health framework.

Felista Ndunge, MOSAIC Project Coordinator at the African Conservation Centre, introduced the project to stakeholders, highlighting its multi-site nature spanning cross-border communities in East Africa and the Amazon region in South America, with active participation and coordination from European partners in France, Portugal, and Poland. She welcomed the university as a valued partner in the MOSAIC project.

Ms. Felista Ndunge presenting the MOSAIC project during the workshop.

Beyond the Savanna Landscape

Participants visited the university's semi-automated weather station, which supports early warning and disaster risk reduction training. They were impressed by the live demonstration showing how weather predictions and timely information are communicated to the public.

The Maasai Resource Assessors' visit to Kakamega Forest offered a unique experience far from the open savannas they are familiar with. As one of the last remaining equatorial forests in the region, Kakamega is home to a rich variety of tree, bird, mammal, and reptile species. Guided by local community members, the visitors explored forest trails while learning about the area's history, including past mining activities and ongoing community-led restoration efforts. The visit highlighted the ecological diversity of Kenya and the importance of conserving different types of landscapes.

Gold mining and looking ahead

As part of the horizontal learning exchange, pastoralist herders were taken to the gold mining fields of Rosterman in Kakamega County-a stark contrast to the open rangelands of Amboseli. Here, local women and young men engage in small-scale, open-cast mining using basic tools, without machinery or protective gear. The work is grueling, with miners laboring long hours under the sun, often with no certainty of a reward.

One herder, observing the back-breaking process, remarked half-jokingly that he'd gladly stick to herding cattle in Amboseli-where at least the outcome feels more predictable than the elusive promise of gold. Still, the local miners press on, driven by resilience, necessity, and a steadfast hope that their next handful of earth might strike fortune.

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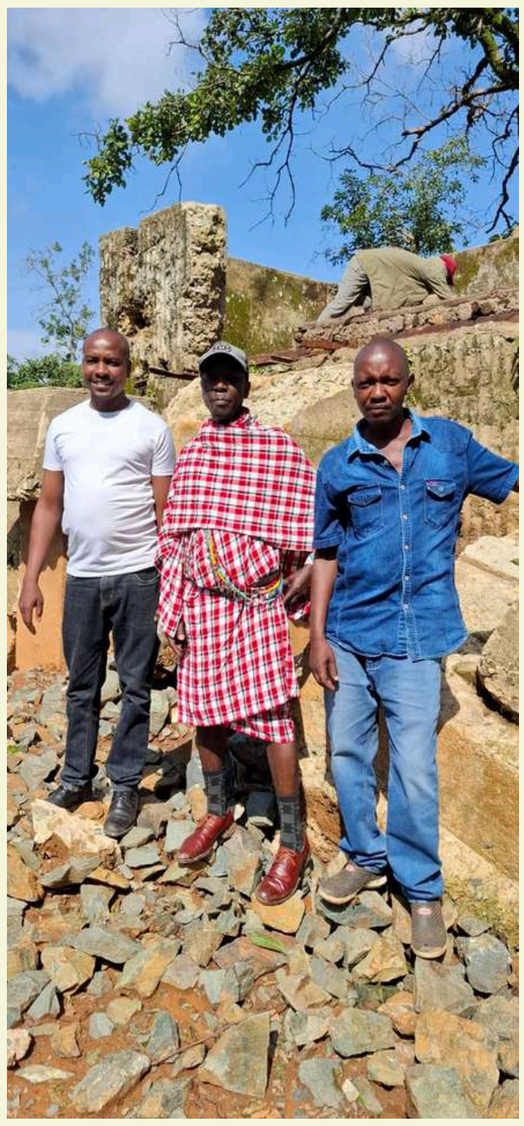
Local women at the mining fields in Kakamega.



Maasai herders at Rosterman mining fields in western Kenya.

Scaling Up...

With a structured Memorandum of Understanding between partners, the local network of resource assessors is well-positioned to expand its impact regionally, and even globally, through the multi-site reach of the MOSAIC project.

When communities are actively involved in co-designing research tools, the results are not only more relevant and easily adopted at the local level, but they also carry the potential to shape national and international policy.

Recognizing community expertise and awarding certification through institutions of higher learning will further strengthen these collaborations. It fosters mutual learning, builds trust, and equips communities with the knowledge and credibility needed to better prepare for, and reduce, the risks of climate-related disasters.

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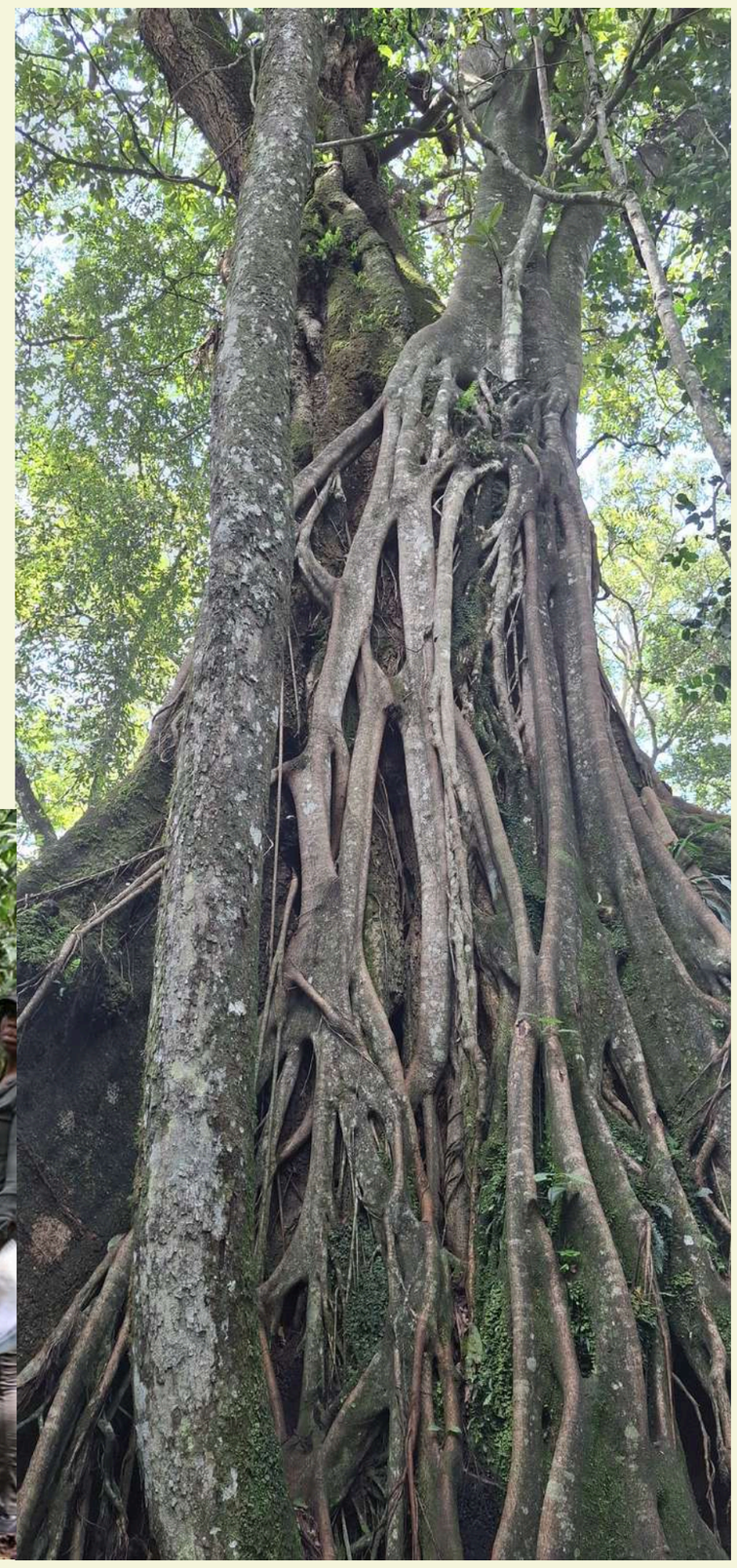

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MOSAIC


MOSAIC
Multi-site application of Open Science in the creation of healthy environments involving local Communities
FIRE EXIT
European Union's "Horizon Europe" framework program for research and innovation (2021-2027)
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