



KMFRRI

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Feature Story:

Ahead of Coastal Clean Up Day, what can we do better?

Highlights



Why you need to take deeper interest in KMFRRI's mandate



KMFRRI researcher appointed to high-level panel of experts on food security



KMFRRI study seeks to strengthen sustainable blue food systems in Shimoni-Vanga

By: Eugene Praise / Edits: Jane Kiguta / Photos: Maliki Fumbwe

KMFRI study seeks to strengthen sustainable blue food systems in Shimoni–Vanga



KMFRI researchers and members of BMU conduct survey at shimoni-kwale County.

‘Research expedition seeks to generate evidence for healthier marine ecosystems, sustainable blue food production and improved coastal livelihoods’

From the surface, the waters of the Shimoni–Vanga seascape appeared calm. Beneath the surface,

however, the Kenya Marine and Fisheries Research Institute (KMFRI) researchers spent several days collecting information that will contribute to a better understanding of the marine environment and its potential to support sustainable food and livelihoods.

How can Kenya sustainably harness its ocean resources to improve food and nutrition security, create jobs, increase household incomes and reduce poverty- while ensuring that marine ecosystems remain healthy for generations to come?

This is the question at the heart of the new research effort by KMFRI and the Institute of Marine Research (IMR), Norway, under the NORAD-funded Strengthening Sustainable Blue Food Systems in Coastal Kenya (SBFS Kenya) project.

The multidisciplinary fieldwork brought together researchers working across different areas of marine science. During the exercise, teams collected water and sediment samples, gathered samples of phytoplankton and zooplankton, examined coral reef and seagrass habitats, recorded information on fish and invertebrates, and deployed equipment to generate information on the seafloor. Although each team focused on a different component of the marine environment, the activities formed part of a shared effort to understand the health, productivity and ecological characteristics of the Shimoni–Vanga seascape.

The fieldwork formed part of the Strengthening Sustainable Blue Food Systems in Coastal Kenya (SBFS–Kenya) project, a 2025–2028 collaboration between the Kenya Marine and Fisheries Research Institute (KMFRI) and the Institute of Marine Research (IMR), Norway, funded by the Norwegian Agency for Development Cooperation (NORAD). The project focuses on the Shimoni–Vanga seascape in Kwale County and brings together marine research, technology

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transfer, community participation and policy to strengthen sustainable blue food systems along Kenya's coastline.



KMFRI team at Shimoni- Vanga seascape, Kwale County, assess the status of corals .

The concept of blue food is central to the fieldwork. Coastal communities depend on marine resources for food and livelihoods through activities such as fishing, aquaculture and seaweed farming. Maintaining the ecosystems that support these activities is therefore important for both environmental sustainability and community wellbeing. At Mwarembo, the researchers collected information on seagrass habitats to investigate their ecological condition and understand their role in supporting the wider marine ecosystem. The team also examined fish abundance and associated invertebrates to generate information on the ecological richness of the area. The seagrass work will contribute to understanding how these habitats support fisheries and how information on their condition can inform future fisheries and mariculture interventions.

The researchers also undertook an environmental audit to generate information on the health of the ecosystem and provide an opportunity to compare current observations with previous work. Particular attention was given to the role of seagrass ecosystems as habitats for fish and their relationship with activities such as seaweed farming. The information will help provide a basis for considering how these ecosystems can be conserved and protected while continuing to support the livelihoods of coastal communities.

Further information was collected from some of the smallest organisms in the marine environment. Researchers collected phytoplankton and zooplankton samples to generate information on primary productivity in the area. The teams also examined coral reef ecosystems and the fish associated with them, with the aim of improving understanding of their potential contribution to food security. Water and sediment samples were also collected, while specialized equipment was deployed into the ocean to generate information about the seafloor. These activities formed another component of the broader environmental investigation and will provide additional information for understanding the marine environment.



KMFRI researchers assessing the status and health of seagrass ecosystem.

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The different areas of research were closely connected. Information generated from one component of the fieldwork can provide context for findings from another, allowing researchers to develop a more integrated understanding of the seascape. For example, information on seagrass condition can be considered alongside observations of fish and invertebrates, while data on plankton can provide information on productivity that contributes to understanding the wider marine ecosystem. Similarly, information from coral reefs, water, sediments and the seafloor can contribute to interpreting the environmental conditions within the study area. The approach reflects the interdisciplinary nature of the SBFS–Kenya project, which seeks to combine scientific knowledge and innovation with community participation and policy to support sustainable production and biodiversity conservation.



KMFRI researchers collect water samples as part of ongoing environmental monitoring

Community participation also formed part of the field activities. Local community members assisted the researchers during diving activities, while a Beach

Management Unit (BMU) chairperson accompanied the team during the deployment of equipment. The BMU representative also helped communicate with fishers regarding areas where fishing would temporarily be restricted during the research activities. This involvement provided a link between the scientific work and the communities that depend directly on marine resources. It also reflects the project's emphasis on participatory approaches to ocean governance and sustainable resource use. The project includes the development of a sustainable ocean plan for the Shimoni–Vanga seascape, with stakeholder engagement forming part of the process.

The field exercise lasted seven days, although individual research teams spent different periods in the field depending on their activities. The samples and information collected will undergo further processing and laboratory analysis. The resulting data will provide additional information on the condition, productivity and ecological characteristics of the marine environment. The fieldwork is part of a wider project that addresses several aspects of sustainable blue food systems. These include fisheries stock assessment, sustainable ocean planning, coastal and marine aquaculture, post-harvest loss reduction and value addition, food quality and safety, as well as blue carbon and climate resilience.

The broader objective is to generate the evidence needed to support sustainable use of marine resources while strengthening food security, livelihoods and resilience among coastal communities. The project recognizes resource depletion, food insecurity and environmental degradation as key challenges affecting coastal populations and seeks to strengthen data systems, scientific capacity and evidence-based approaches to ocean management.

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For the Shimoni–Vanga seascape, the exercise represents an important step in building that evidence. The samples collected from the water, sediment and marine organisms, together with information gathered from seagrass, coral reefs, fish and the seafloor, will contribute to a more comprehensive understanding of the ecosystem. Ultimately, the research seeks to answer a broader question: **how can marine ecosystems continue to provide food and livelihoods for coastal communities while remaining healthy and productive?**

By bringing together different areas of marine research, community knowledge and scientific evidence, KMFRI and its partners are working towards a sustainable blue food system in which the ocean can continue to support both people and the ecosystems on which they depend.



KMFRI staff measuring the standard weight and total weight of fish as part of ongoing fisheries research

A promotional banner for ARBEC III (Sustainable Blue Economy). The banner features the ARBEC III logo at the top, followed by the text "ARBEC III SCIENCE, INNOVATION AND PARTNERSHIPS FOR RESILIENT BLUE ECONOMIES". Below this, there is a large "REGISTER NOW" button. To the left of the button, a calendar icon indicates the dates "23rd–27th November 2026". To the right, a location pin icon indicates "Nairobi, Kenya". At the bottom, the text "Be part of the Blue Economy Conversation! Register Here" is displayed above a QR code. The background of the banner shows a vibrant underwater scene with coral and fish.

By: Brian Isoe / Edits: Jane Kiguta / Photos: Maliki Fumbwe

KMFRI researcher appointed to high-level panel of experts on food security



Chief research scientist Dr David Mirera demonstrates to community members how to safely hold a Mud crab.

The Kenya Marine and Fisheries Research Institute (KMFR) is proud to announce the appointment of Chief Scientist Dr. David Mirera to the international drafting team of the High Level Panel of Experts on Food Security and Nutrition (HLPE-FSN) of the Committee on World Food Security (CFS).

Dr. Mirera has been selected to contribute to the development of the forthcoming HLPE-FSN report titled "Sustainable Fisheries and Aquaculture for Food Security and Nutrition," which is expected to be presented at the 55th Plenary Session of the Committee on World Food Security in October 2027.

The appointment places Dr. Mirera among a multidisciplinary team of experts drawn from different regions and diverse areas of expertise. Advancing the role of aquatic foods in food security, Dr Mirera's experience and contributions in the aquatic food system space have been major, spanning several years working as a researcher at KMFR.

Climate change, declining fish stocks, post-harvest losses, market limits, and rising demand for nutrient-dense food are just a few of the issues facing Africa's aquatic food systems, and without proper policies in place to mitigate these challenges, the situation will become dire.

His involvement in global policy development aligns perfectly with the Sustainable Development Goals (SDGs), notably SDG 1 (No Poverty), SDG 2 (Zero Hunger), and SDG 14 (Life Below Water). By helping craft, a comprehensive report on sustainable fisheries and aquaculture, Dr. Mirera aims to influence policies that foster resilient, inclusive, and environmentally sound

aquatic food systems worldwide and offer practical solutions to challenges being faced.

This appointment is a testament to Dr. Mirera's extensive expertise and pioneering work in the aquatic food sector. Over the years, he has championed innovative initiatives ranging from small-scale mariculture and seaweed farming to mud crab aquaculture and Nile tilapia acclimatization, impacting communities across the Western Indian Ocean region and beyond. His efforts have not only advanced scientific understanding but also directly improved livelihoods through community engagement and sustainable resource management.

Dr. Mirera's appointment is particularly significant for Kenya and the wider African region. His extensive experience in aquaculture, small-scale fisheries, sustainable aquatic food systems, community livelihoods, environmental conservation, and blue economy development provides an important perspective on the global discourse on how aquatic resources can sustainably contribute to food and nutrition security.

Dr. Mirera's role offers a unique platform to incorporate African perspectives and innovations into international policy frameworks. The insights gained from Kenya's fisheries and aquaculture sectors will contribute to practical solutions that benefit both communities and ecosystems globally.

As the report charts a course for sustainable development, it bridges the gap between science and policy, thus guiding governments, actors and stakeholders to harness the full potential of fisheries and aquaculture responsibly. It also affirms KMFRI's position as a world-class research hub, exemplified recently by Kenya hosting the 11th Our Ocean Conference, the first

on African soil, an event that highlighted Africa's role in ocean conservation and blue economy initiatives.

His appointment is a proud moment for KMFRI, Kenya, and Africa at large. It underscores the importance of African scientific expertise in shaping global dialogues on sustainable food systems, fisheries, aquaculture, and the blue economy. It is a testament to the Institute's mission of advancing research for sustainable management and development of our vital aquatic resources.



Dr. Mirera oversees the fabrication of cages for mud crab fattening at Mokowe Lamu County.

This milestone not only elevates KMFRI's reputation but also reinforces Africa's voice in the quest for sustainable, nutritious, and resilient aquatic food systems worldwide and positions KMFRI as a world-class center in innovative research.

By: Dr Amina Hamza, Dr James Kairo, Amy Mumo and Rose Kirigo / Edits: Jacque Wanjiru / Photos: Maliki Fumbwe

KMFRI advances Africa's Blue Carbon agenda during Our Ocean Conference 11



KMFRI team led by KMFRI Chief Research Scientist Dr. James Kairo and a few stakeholders at the 11th Our Ocean Conference side event at Pride Inn Paradise, Mombasa, Kenya.

The conversation around Africa's coastal ecosystems took a definitive step forward at the recent 11th Our Ocean Conference (OOC11) in Mombasa, Kenya. Bringing together a diverse coalition of policymakers, scientists, conservationists, and local community leaders, the Africa Blue Carbon Side Event, hosted by Kenya Marine and Fisheries Research Institute (KMFR) served as a dynamic hub for

collaboration. This critical gathering focused on moving from dialogue to action, exploring innovative financing, strengthening local governance, and mapping out scalable restoration pathways to firmly integrate blue carbon into the continent's climate and development agendas.

Africa's coastal ecosystems are under immense pressure. While mangroves, seagrasses, and salt marshes trap 1.5 billion tonnes of carbon annually and support 50 million people, they face a staggering 2 per cent to 3 per cent annual decline from natural and human stressors.

To reverse this trend, the side event rallied partners around driving recognition of how blue carbon protects shorelines and supports coastal economies, uniting regional stakeholders to build unified, continent-wide action plans, as well as exchanging best practices to manage marine habitats and secure high-integrity carbon markets.

Speakers also aimed to increase the visibility of policy and financing pathways to scale up restoration and accelerate the adoption of modern Monitoring, Reporting, and Verification (MRV) tools to guarantee transparent tracking.

Dr. James Kairo, Chief Scientist at the Kenya Marine and Fisheries Research Institute (KMFR) and event convener, highlighted the critical role of Africa's blue carbon ecosystems as natural carbon sinks and frontline defenses for millions of coastal communities against climate impacts. He emphasized that protecting and restoring these ecosystems is essential for climate action and sustainable blue growth.

“The side event is a vital platform for cross-regional learning and sharing global best practices on Blue Carbon and the Blue Economy,” said Dr. James Kairo.



KMFRI Chief Research Scientist Dr. James Kairo delivering the introductory remarks during the OOC11 Africa Blue Carbon side event.

Africa's blue carbon ecosystem are vital climate assets valued globally at US\$90-130 billion. Africa contains 20 per cent of the world's mangroves (estimated at 3.1 million ha), extensive seagrass meadows (7.5 million ha), and 4 per cent of salt marshes (~223,000 ha), storing huge stocks of organic carbon.” added Dr. Amina.

Experts at the event dove into what it takes to truly advance blue carbon across Africa. They pointed out that success rests on five pillars: working together on governance, building credible carbon markets, unlocking fresh funding, leveraging technology, and learning from global peers. By looking at successful examples from the grassroots level up to the global stage, the sessions proved that the best results happen when science, policy, and local communities work hand in hand.

“Structured collaborative platforms serve as essential mechanisms to unite diverse stakeholders, harmonize objectives, and dismantle historic silos.”

This sentiment from Mr. Francis Okalo (IUCN) stated that across Africa and globally, structured governance is transforming how marine habitats are managed.

Nationally, Ghana leverages its Blue Carbon Platform to align public departments and civil society efforts, avoiding overlapping work, while Mozambique counts on its centralized Mangrove Council to sync policy decisions among diverse interest groups. Kenya stands out for its nested Mangrove Management Committees, which perfectly balance country-level administration with local county participation.

On the international front, the Global Mangrove Alliance (GMA) uses data platforms like the Global Mangrove Watch to translate global scientific insights into local country strategies through its expanding national chapters. In his closing remarks, Mr. Okalo reminded attendees that authentic restoration and reliable management depend entirely on establishing mutual trust, sharing technical capability, and embracing collaborative leadership.

Emily Pidgeon of Conservation International highlights integrating blue carbon into NDCs for policy support, citing Kenya's Mikoko Pamoja as a model for community-led, verified carbon projects.

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Principal Research Scientist Dr Amina Hamza presenting on Africa's Blue Carbon Ecosystems, current status and Data

She emphasizes that High-Quality Blue Carbon Principles and Guidance, adopted by over 400 projects, are crucial for standardizing best practices, managing natural risks, and addressing the "premium pricing paradox" where high-quality credits require fair valuation for market sustainability.

"Integrating drones and high-resolution satellite imagery for mangrove monitoring addresses the limitations of manual, labor-intensive methods, offering more precise and cost-effective data collection. These technologies increase verification frequency and enhance transparency by providing objective, visual evidence necessary to scale blue carbon projects for global carbon markets," Derrick Omollo (RMIT University, Australia) added.



Mr. Francis Okalo {second left} discussing the importance of collaborative Blue Carbon platforms during the panel session.

The Africa Blue Carbon Side Event at OOC11 established a clear roadmap for scaling community-led conservation, highlighting the need to address data, standardization, and market valuation bottlenecks. Future success depends on implementing high-integrity, full-cost accounting frameworks, leveraging digital MRV technology, and ensuring equitable financial returns for local coastal communities.



Derrick Omollo {far right} discussing on emerging Technologies for Monitoring, Reporting and Verification (MRV).

By: Pauline Nyaribo (KMFR I Intern) / Photos: Maliki Fumbwe

Ahead of Coastal Clean Up Day, what can we do better?



KMFRI Director General participating in a Beach Cleanup activity in Kwale county during the World Ocean Day.

As the world gears up for International Coastal Cleanup Day, one term that increasingly comes to mind is the “**plastisphere**.” The term refers to the diverse communities of microorganisms and other organisms that colonize plastic debris in marine and other aquatic environments. Plastic waste in these ecosystems can alter habitats and affect marine life, behavior and ecological processes.

So, what is so special about the second Saturday of every September?

At the Kenya Marine and Fisheries Research Institute (KMFR I), the day is marked through cleanup activities aimed at removing waste from the ocean and other water bodies. KMFR I joins the global community to commemorate International Coastal Cleanup Day by organising cleanups, sorting and weighing collected waste, and recording data on the types and quantities of litter recovered.

According to scientists, International Coastal Cleanup Day has been observed for more than 35 years, providing an important platform for raising awareness about marine litter and encouraging communities to take action to protect aquatic ecosystems.

At KMFR I, several research programmes are dedicated to ensuring that ocean ecosystems remain healthy and productive for the marine life and communities that depend on them.

KMFR I Director General, Dr Paul Orina, underscored the need to safeguard the health and integrity of marine ecosystems, noting their critical role in supporting coastal livelihoods and advancing the Blue Economy.

“The ocean provides livelihoods for thousands of coastal communities. When fish ingest plastics that find their way into the ocean, these plastics can ultimately enter our food chain, exposing people to potential health risks. Maintaining healthy marine ecosystems is therefore a key agenda of the Blue Economy.”

Dr Orina emphasised the importance of concerted efforts to address marine pollution and protect ocean ecosystems for the benefit of both present and future generations.

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KMFRI Centre Director, Dr. Eric Okuku, a Chief Research Scientist and marine pollution expert, has been championing efforts to address marine pollution. Among his recent areas of work is the introduction of biodegradable fishing nets as an alternative to conventional synthetic nets. Unlike synthetic nets, which can persist in the marine environment for long periods, biodegradable alternatives have the potential to reduce the impacts of lost or abandoned fishing gear, commonly referred to as ghost fishing, on marine life.

KMFRI Principal Research Scientist Dr. Charles Mitto, an expert in microplastics, has also conducted studies demonstrating the presence and ingestion of microplastics by fish along the Kenyan coast. Such research highlights the need for continued efforts to reduce plastic pollution and keep our beaches, oceans and other aquatic ecosystems free from plastic waste.

International Coastal Cleanup Day therefore goes beyond simply collecting litter. It is an opportunity to generate data, raise awareness and remind communities that keeping our water bodies clean is a shared responsibility. Through research, innovation and public engagement, KMFRI continues to contribute to efforts to protect Kenya's aquatic ecosystems for present and future generations.

Why the plastics?

Plastics are very harmful since they are non-biodegradable. The weather and Ultra Violet breaks them down and the particles spread through the food chain relationship which could lead to cancerous diseases if ingested.



How plastic ends in the ocean?

Studies show that everyday millions of people struggle with infections caused by environmental pollution. While it often feels overwhelming, the solution is much more straightforward than most realise. That bottle, plastic bag, food wrappers, hair extensions and pen that was thrown without considering the repercussions. It's not any different from the ocean, which is a home to many species from animals, insects to sea plants. It could be that cigarette butt, plastic straw, plastic bottle cap, plastic beverage bottles, fishing nets, ropes, needles or sharp shreds of plastics. It could be that clothing you threw in the river or lake.

Impact of plastics

Studies show that a massive build up like that of the Great Pacific Garbage Patch caused plastic floats. This could lead to death of marine life through entanglement, injury, ingestion, gut inflammation, habitat destruction. It also attracts certain bacteria that can create low-oxygen "dead zones" or produce toxic by-products that could lead to suffocation, starvation, drowning and infection. Bio-magnification, human health, coastal tourism and food safety are greatly affected by careless disposal of plastic wastes into water bodies.

Marine adaptation to plastic pollution*

Marine life is disrupted by continuous plastic pollution that could lead to artificial shell adaptation, nest construction, entanglement and camouflage and shelter destruction.



KMFRI Director Ocean and coastal systems participating in picking up plastics and litter

How to clean oceans

Making the ocean clean is a collective responsibility which could be done through calling for partners, communities, stakeholders, leaders and the younger generation of students through creating awareness on the consequences of polluted water bodies.

Importance of cleaning oceans

Clean oceans mean a better living condition for marine life, making the ecosystem sustainable for every living thing. We have a mutual relationship with marine life hence the better their living standards the better our livelihoods.

How to stop plastics from oceans?

Before we get to cleaning the oceans, it's important to look at this pollution problem from its origin - that is manufacturing of plastics that are non-biodegradable.

How about making and replacing plastics using eco-friendly materials?

Organising clean ups once in a while could really shift the narrative, reducing waste could mean reduced pollution and its impacts. Learning more about the impacts and educating more people on how a piece of waste could completely affect the life of a number of marine lives. Sponsoring initiatives such as clean ups by offering cleaning equipment could go a long way in improving the marine environment. Reusing and recycling could really reduce excessive disposal of waste items into the oceans.

Creating awareness about preserving and protecting the world's ocean and waterways could have a positive outcome on sustainable marine life.

As the momentum builds ahead of the International Coastal Clean Up Day, KMFRI calls upon all stakeholders, communities, leaders, and environmental conservation advocates to join hands in saving our ocean, they will in turn save us.

By: Pauline Nyaribo - Intern / Edits: Jane Kiguta
Photos: Maliki Fumbwe

Why you need to take deeper interest in KMFRI's mandate



KMFRI Mombasa Headquarters

The Kenya Marine and Fisheries Research Institute (KMFRI) has played a pivotal role in advancing marine, freshwater and aquaculture sciences in Kenya and across East Africa since its establishment in 1979. Over the years, the Institute has generated scientific knowledge, technologies and innovations that have contributed to the sustainable management and utilisation of aquatic resources.

Among KMFRI's notable contributions is its pioneering role, alongside other partners, in the development of the world's first community-based mangrove carbon credit project in Gazi Bay. The initiative demonstrated how mangrove conservation can generate tangible benefits

for local communities while contributing to climate action. It also helped inform global approaches to blue carbon accounting and earned international recognition for its innovative integration of ecosystem conservation, climate finance and community livelihoods.

This is just one of the many stories that demonstrate how scientific research can translate into real-world benefits. From supporting sustainable fisheries and aquaculture to strengthening the understanding and conservation of marine and freshwater ecosystems, KMFRI's work touches sectors that are critical to Kenya's food security, livelihoods, climate resilience and economic development.

As Kenya increasingly looks to the Blue Economy as a driver of inclusive economic growth, there is a need for the public to take a deeper interest in the science, innovations and institutions underpinning this ambition. Behind every policy, conservation intervention, new aquaculture technology or sustainable fisheries practice is a body of scientific evidence that helps inform decisions and unlock opportunities.

Through a series of KMFRI success stories, we highlight some of the Institute's accomplishments and demonstrate how research is moving beyond laboratories and field stations to create impact for communities, industry, policymakers and the wider economy.

'These are not merely stories about research; they are stories about how science is helping to shape Kenya's Blue Economy and secure the future of our aquatic resources'.



KMFRI Director General Dr. Paul S. Orina during an engagement with world fish team in his office.

"Kenya is a leading hub for blue economy development, backed by the establishment of a dedicated Ministry of Mining, Blue Economy and Maritime Affairs and the country's strong commitment to sustainable ocean governance," said the KMFRI Director General Dr Paul Orina.

Seaweed farming in Kibuyuni traces its roots to pioneering research and experimental trials undertaken by KMFRI scientists. Following successful trials, seaweed farming was scaled up in 2008 after demonstrating strong potential as a viable income-generating activity for coastal communities.

According to the Kibuyuni Beach Management Unit (BMU), the community currently has over 212 women and 75 men actively engaged in seaweed farming, with increasing participation from youth aged between 20 and 35 years.

A key driver of the success has been capacity building and continuous technical support provided by KMFRI.

Through community mobilization initiatives spearheaded by KMFRI's seaweed extension staff, including Ms. Norah Magangi, farmers have received extensive training on seaweed production techniques. Through Training of Trainers (ToT) programmes, farmers have acquired skills in water quality monitoring, farm layout design, seaweed propagation, and farm management practices.

A key driver of the success has been capacity building and continuous technical support provided by KMFRI.

"In the seaweed business, the real value lies in value-added products," says Mama Fatuma.



Community members from Kibuyuni Seaweed farmers at their farms.

More than 140 farmers have joined mangrove conservation initiatives and established nurseries containing over 200,000 mangrove seedlings. The community is actively restoring degraded shoreline

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areas to reduce coastal erosion and protect seaweed farms.

Healthy mangroves create opportunities for people. Gazi Bay is home to Mikoko Pamoja, the world's first community-based blue carbon project. Through the protection and restoration of mangrove forests, the initiative has generated carbon credit revenue that has supported local development, including classrooms, clean water provision and other community improvements. KMFRI continues to contribute scientific research that supports mangrove conservation and sustainable management, helping ensure these ecosystems continue to provide benefits for biodiversity, fisheries and coastal communities.

Kegati Aquaculture Research Centre plays a vital role in advancing aquaculture through implementation of priority initiatives including crayfish culture experiment and an integrated aquaculture model supporting wetland conservation.

KMFRI labs have been officially designated as analytical and reference labs by the Director General of the National Environment Management Authority (NEMA) through a Gazette notice dated 31st July 2026.

KMFRI's Baringo Research Station convened one of its first stakeholder meetings to share research findings on Lake Baringo which helped resolve a long-standing conflict between the fishing community and law enforcement agencies, fostering dialogue, mutual understanding, and peaceful coexistence among fisheries stakeholders.

KMFRI RV Mtafiti Museum is a symbol of Kenya's rich journey in Marine science, tells the story of preserving

decades of ocean exploration, innovation and knowledge.

As KMFRI continues to showcase its research milestones and the real-world impact of science, our exhibition stands offer an opportunity to discover the work behind the research.

We invite students, scientists, farmers, fishing communities and other stakeholders to visit us and experience, firsthand, our oceanographic equipment, laboratory facilities, museum and other exciting offerings.

Come and discover how science is shaping the sustainable use of our aquatic resources and contributing to Kenya's Blue Economy.

By: Ruth Ommala / Edits: Jane Kiguta / Photos: Maliki Fumbwe

Creating pathways for the next generation of Blue Economy leaders

For a young person beginning a career, an opportunity can mean much more than a line on a résumé. It can be the chance to meet a mentor, participate in meaningful research, gain practical experience, build a professional network or simply discover that there is a place for their skills and aspirations in the future they want to help create.



KMFRI senior research Scientist with Research Associate during a field work.

This is at the heart of the 2026 International Youth Day, observed on 12 August under the theme “Different

Contexts, Common Aspirations.” The theme recognizes that although young people live in different social, economic and geographical realities, many share the same hopes: access to quality education, decent work, dignity, meaningful participation and the opportunity to build a better and more sustainable future.

For Kenya and the wider African continent, the Blue Economy presents one of the spaces where these aspirations can be transformed into meaningful opportunities.

Africa's oceans, lakes, rivers and other aquatic resources support food systems, livelihoods, trade, environmental services and economic activity. Yet unlocking their full potential requires more than natural resources. It requires people with the knowledge, skills and creativity to understand aquatic ecosystems, develop sustainable technologies, inform policy and translate scientific knowledge into solutions that improve lives.

This creates a wide horizon for young people.

The Blue Economy extends far beyond traditional fisheries. Young professionals can build careers in fisheries and aquaculture, marine and freshwater science, oceanography, climate research, marine conservation, environmental management, biotechnology, data science, technology, maritime activities, policy, communication, tourism and entrepreneurship.

Emerging technologies are also creating new possibilities in areas such as remote sensing, artificial intelligence, digital monitoring and data-driven resource management.

For a young graduate deciding what direction to take, this means that a passion for aquatic resources does not necessarily lead to one career path. A scientist can contribute through research. A technologist can develop digital solutions. An entrepreneur can create sustainable enterprises. A communicator can make scientific knowledge accessible to communities and decision-makers. A policy professional can help translate evidence into better management decisions.

The opportunities are diverse, but they require one important ingredient: pathways through which young people can develop their potential.

This is where research and training institutions have a critical role to play.

At the Kenya Marine and Fisheries Research Institute (KMFRI), nurturing the next generation of scientists and professionals is closely connected to the Institute's mandate to conduct research, provide training facilities to aquatic scientists and contribute knowledge for the sustainable development of Kenya's aquatic resources and Blue Economy.



KMFRI Sea grass expert mentors a Research Associate

The KMFRI Graduate School (KMFRI-GS) is one of the platforms through which this commitment is taking shape. The Graduate School provides pathways for postgraduate education, scientific innovation and professional advancement in marine and freshwater sciences, with an emphasis on developing the next generation of scientists, innovators and Blue Economy leaders.

Beyond postgraduate education, KMFRI's research environment provides opportunities for young people to gain practical exposure through attachment and internship pathways, alongside interaction with experienced researchers and participation in research activities. Such experiences can help bridge one of the most difficult transitions in a young professional's journey: moving from what they have learned in a classroom to what they can contribute to the real world.

For an early-career scientist, that transition can be transformative.

It is one thing to read about fisheries assessment, aquaculture, ocean processes, ecosystem health or climate change. It is another way to work alongside experienced researchers, collect data, participate in field activities, analyze evidence and begin to understand how scientific knowledge can respond to challenges affecting people and ecosystems.

That experience builds more than technical competence. It builds confidence, professional identity and a sense of purpose.

It also creates an important intergenerational link. The scientists mentoring young professionals today were early-career researchers themselves. By creating opportunities for knowledge exchange and professional development, institutions help ensure that scientific

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knowledge and experience are passed from one generation to the next.

The journey, however, does not stop within the walls of a research institution. Young professionals also need spaces where they can engage with the wider Blue Economy community, share ideas, meet peers and established experts, and understand how their individual areas of expertise connect to the bigger picture.

This is where the Third African Regional Blue Economy Conference (ARBEC III) takes on particular significance.

Scheduled for 23–27 November 2026 in Nairobi, ARBEC III will bring together researchers, policymakers, practitioners, innovators and other stakeholders under the theme “Science, Innovation and Partnerships for Resilient Blue Economies.” Its thematic areas span sustainable fisheries and aquatic food systems, climate-smart aquaculture, blue tourism and nature-based enterprises, governance and finance, technology and digital innovation, climate resilience, ecosystem health, and community engagement and capacity building.

For young professionals, this breadth matters.

A conference is not simply a place to listen to experts. At its best, it is a place where careers begin to take shape.

A young researcher can encounter a new research question. A postgraduate student can meet someone working in a field they hope to enter. An emerging entrepreneur can discover a potential collaborator. A scientist can find an opportunity to share their work with a wider audience. A conversation during a conference break can become a professional relationship that continues long after the conference has ended.

ARBEC III recognizes this need through its focus on youth and early-career engagement. Its planned Youth/Early Career Event creates space for possibilities such as mentorship circles, career panels and skills-building workshops, allowing young people to engage directly with the professional world they aspire to join.



For a young professional still trying to find their place, such spaces can make a significant difference. They provide something that cannot always be taught in a classroom: visibility, connection and belonging.

A young scientist needs to know not only how to conduct research, but also where that research fits, who needs it, how to communicate it and who they can work with to take it further. A young entrepreneur needs more than an idea; they need networks, knowledge and an understanding of the ecosystem in which that idea can grow.

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This is why opportunities for youth in the Blue Economy should be understood broadly. They are not limited to employment. They include education, mentorship, research experience, innovation, entrepreneurship, professional networks, collaboration and access to platforms where young people can contribute their ideas.

Creating these pathways is an investment in both young people and the Blue Economy itself.

Africa's aquatic and marine sectors face challenges that will require new thinking and sustained scientific capacity. Climate change is affecting ecosystems and livelihoods. Aquatic resources are under increasing pressure. Communities need sustainable economic opportunities. Food systems must become more resilient, while science and technology continue to change how aquatic resources are studied and managed.



International MSc students pursuing Limnology and Wetland Management at Egerton University during their visit to KMfRI Kegati Aquaculture Research Centre.

The generation entering the profession today will be expected to respond to these challenges. They will need to be scientists who can collaborate across disciplines, professionals who can communicate beyond their areas of specialization, innovators who can turn ideas into practical solutions and leaders who understand that sustainability must ultimately serve both people and the ecosystems on which they depend.

That is why investing in young professionals cannot be an afterthought.

Sometimes, the opportunity that changes a career is not a permanent position or a major grant. Sometimes it is a supervisor who takes the time to teach, a research project that gives a young scientist their first real responsibility, an internship that provides practical experience, a postgraduate programme that turns curiosity into expertise, or a conference where a young professional meets someone who opens a door they did not know existed.

These moments matter.

They remind us that talent is everywhere, but opportunity is not always evenly distributed.

The message of International Youth Day 2026 therefore resonates strongly with the Blue Economy. Young people may come from different communities, institutions and circumstances, but their aspirations are remarkably similar. They want the chance to learn, to work, to contribute, to be heard and to build futures they can be proud of.

For Kenya and Africa, the responsibility is to ensure that the Blue Economy becomes a space where those aspirations can find room to grow.

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Institutions such as KMFRI have an important role in creating pathways through research, training, mentorship and professional development. Platforms such as ARBEC III can extend those pathways by bringing emerging professionals into conversations that shape the future of aquatic resources and the wider Blue Economy.

Young people, in turn, must be ready to step forward not only to seek opportunities, but to bring their ideas, skills and solutions to the table.

The future of the Blue Economy will not be built by one generation alone. It will be built when experience meets fresh thinking, when knowledge meets innovation, and when young people are given the opportunity not merely to participate, but to lead.

This International Youth Day, the call is therefore bigger than celebration. It is a call to create pathways, open doors and invest in potential.

Because the young scientist entering a laboratory today may be the researcher who solves tomorrow's aquatic challenge. The young professional attending ARBEC III may become the voice shaping future policy. The student seeking their first opportunity may become the innovator creating jobs for others.

Different contexts may shape where young people begin. But with opportunity, mentorship and space to contribute, their common aspirations can help shape where Africa goes next.

The Blue Economy is not simply a sector of opportunity for young people. It is a future they can help shape, lead and build.



The poster features a blue background with a coral reef and fish. At the top is the ARBEC III logo with the text 'SUSTAINABLE BLUE ECONOMY'. Below it, the text 'ARBEC III' is prominently displayed, followed by 'SCIENCE, INNOVATION AND PARTNERSHIPS FOR RESILIENT BLUE ECONOMIES'. A large blue button with white text says 'REGISTER NOW'. To the left of the button is a calendar icon and the text '23rd-27th November 2026'. To the right is a location pin icon and the text 'Nairobi, Kenya'. At the bottom, it says 'Be part of the Blue Economy Conversation! Register Here' above a QR code.

Mtafiti Pictorials



KMFRI Director General Dr. Paul S. Orina, Samba sports director and Mombasa center Director pose for a photo during World Oceans Day at Kongo Beach.



KMFRI Director General, Dr Paul S. Orina, during a presentation with a delegation from Egerton University



KMFRI seagrass team during Field Activity in Shimoni.



International MSc students pursuing Limnology and Wetland Management (Fisheries and Aquaculture) at Egerton University visited the KMFRI Kegati Aquaculture Research Centre.



KMFRI team during Our Ocean Conference



Dr. Amina Hamza presenting on Africa's Blue Carbon Ecosystems, current status and Data.



Sea weed farmers at Kibuyuni



KMFRI researchers and members of BMU



Emily Pidgeon (middle) discussing matters on Blue Carbon.

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For feedback, inquiries, or further information, please contact the Corporate Communications and Public Relations Department at: communication@kmfri.go.ke.



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Kenya Marine and Fisheries Research Institute