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Feature Story:

KMFRRI showcases research excellence at the 11th Our Ocean Conference in Mombasa, Kenya

Highlights



FAO global fisheries and aquaculture report offers hope, unveiled during 11th Our Ocean Conference



KMFRRI's mangrove studies key to climate action agenda as the globe marks World Environment Day 2026



KMFRRI and Key Partners Commemorate the World Oceans Day 2026 at Diani, Kwale County

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By: Brian Isoe | Edits: Jane Kiguta | Layout: Faith Mboka

KMFRI showcases research excellence at the 11th Our Ocean Conference in Mombasa, Kenya



Participants of the 11th Our Ocean Conference

The much-anticipated 11th Our Ocean Conference finally came to African soil for the first time, marking a major milestone for the continent. Riding on the "Our Ocean, Our Heritage, Our Future" theme, the conference highlighted the continent's increasing leadership in sustainable ocean development and global ocean governance.

The conference highlighted the significance of science in advancing sustainable ocean governance and the blue economy as the coastal city of Mombasa, Kenya,

welcomed over 6,000 delegates to its shores and pristine city for the Ocean Conference for three days.



KMFRI Board Chair Ambassador Dr Wenwa Akinyi Oranga giving keynote remarks during 11th OOC

The Our Ocean Conference is a leading global platform meant to mobilize commitments from various groups whose goal is to protect the ocean and its biodiversity. In addition to serving as a vital forum for discussion on how to expedite significant action on investment for a healthy and productive ocean, it provides room for candid discussion and solutions to challenges the ocean is facing due to climate change.

As momentum build toward the 11th Our Ocean Conference, the Kenya Marine and Fisheries Research Institute (KMFRI) was prepared adequately to be part of this dialogue. We convened a three-day Pre-Symposium preceding the 11th Our Ocean Conference, bringing together researchers, academia, policymakers, and emerging scientists for dialogue on this critical ecosystem.

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The conference served as a critical venue for showcasing innovative marine and fisheries research, encouraging inter-institutional cooperation, and producing evidence-based suggestions that will steer dialogue on ocean conservation and the development of the blue economy.

Speaking at the conference, our Director General, Dr Paul Orina, highlighted that as KMFRI, we will continue to strengthen open access to ocean and fisheries data, ensuring that policymakers, resource managers, coastal communities, and investors have access to reliable, science-based evidence to guide informed decisions.



KMFRI Director General Dr. Paul Orina giving his remarks during the 11th Our Ocean Conference held at Pridelnn Paradise

"We will deepen regional and international partnerships to advance coordinated, ecosystem-based research and management across the Western Indian Ocean and our shared inland waters."

He added that mentoring young career scientists will grow the next generation of scientists, with particular attention to women in science, as well as keep building

the bridge between the laboratory and the landing site, so that research translates into healthier ecosystems and better livelihoods for the people depending on the ocean to sustain their livelihoods.

The variety of side events that took place concurrently with the plenary sessions made this clear. Throughout the conference, youth engagement was evident. The Youth Leadership Summit brought together young scientists, entrepreneurs, activists, and innovators from all over Kenya and beyond to present ideas and solutions for sustainable development and ocean conservation.

Together, Global Leaders announced a \$6.4 billion commitment for Ocean Action in support of ocean conservation to Africa's blue economy development agenda and address the perennial climate challenge issues. These funds will go into marine conservation, blue carbon projects, and sustainable fisheries, including electronic monitoring, technology, and innovation, and the fight against illicit, unreported, and unregulated (IUU) fishing, which has been a thorn in the flesh for the longest period.

Oceans have not received much attention in international climate negotiations and discussions; instead, they are frequently viewed as a conservation concern rather than a crucial aspect of climate action that requires immediate attention and inclusivity. The 11OOC discussions on the ocean proved to be a game-changer in shaping and changing this narrative by including all actors at the decision-making table to advance the blue economy.

These sentiments were echoed by our DG, who noted that for long, promising ideas rarely reach the tables where they could be scaled and actioned upon, and the communities who know their waters best are too often absent from the rooms where their futures are decided. "If this conference is to mean something, it must help close these existing gaps by expanding access to ocean data, by investing in African research capacity,

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and by placing local and youth leadership at the centre of ocean action”

As the conference now heads to Canada, the deliberations from OOC11 do not stop here; the message travels onward. The evidence and the partnerships forged here now move to the main stage of action, where dialogue must become commitment and commitment must become actionable.



Participants of the 11th Our Ocean Conference pose for a group photo

The conference came to a close on the 18th with KMFRI committing to continued strengthening of access to accurate, timely data, to influence policy and bridge the gap between science and communities. We deepen our partnerships across the region to deliver coordinated, ecosystem-based science for the Western Indian Ocean and our shared inland waters as outlined in our mandate, in order to support the sustainable development, management, and exploitation of Kenya's Blue Economy.

By: Ruth Ommala | Edits: Jane Kiguta | Layout: Faith Mboka

FAO global fisheries and aquaculture report offers hope, unveiled during 11th Our Ocean Conference

Mombasa, Kenya, June 2026 – Kenya Marine & Fisheries Research Institute (KMFRI) was among key government agencies that witnessed the launch of the Food and Agriculture Organization's (FAO) State of World Fisheries and Aquaculture (SOFIA) 2026 report at the 11th Our Ocean Conference in Mombasa, Kenya that ran from 16-18 June 2026. Global fisheries and aquaculture production has reached a record 235 million tonnes, according to the launched report. The milestone underscores the growing role of aquatic food systems in feeding millions of people worldwide while supporting livelihoods, economies and food security. KMFRI's research role is critical in harnessing the fisheries sector and boosting livelihoods through innovative solutions that promote fisheries resources.

The conference, themed *"Our Ocean, Our Heritage, Our Future,"* marked the first time the global event was hosted in Africa and brought together world leaders, scientists, policymakers and ocean stakeholders to advance sustainable ocean governance and the Blue Economy. Kenyan President His Excellency Dr William Ruto called for accelerated action to protect ocean resources while harnessing the Blue onomy as a driver of sustainable development and job creation.

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Experts from government, research institutions, international organizations, and development partners participate in the FAO forum during the 11th Our Ocean Conference.

In his remarks, Cabinet Secretary for Mining, Blue Economy and Maritime Affairs Hon Hassan Joho emphasized the need for stronger partnerships and investments to unlock Africa's ocean potential. Commenting on the report, KMFRI Director General Dr. Paul Orina described the launch of the SOFIA report on African soil as a historic milestone, noting that Africa is ready to drive global conversations and solutions for the sustainable use of aquatic resources.

“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.

According to the report, the record production achieved in 2024 reflects the remarkable growth of the fisheries and aquaculture sector, while also highlighting the need to ensure that future expansion remains sustainable and inclusive.



KMFRI Director General, Dr. Paul Orina, contributes to a high-level panel discussion during the FAO forum at the 11th Our Ocean Conference.

Behind the impressive figures is a story that affects everyday lives. From coastal fishing communities and fish farmers to consumers seeking affordable and nutritious food, aquatic food systems continue to provide livelihoods, support economies and contribute significantly to global food security.

Aquaculture, commonly known as fish farming, has emerged as the driving force behind this growth. As wild fish stocks face increasing pressure from climate change, pollution and overfishing in some regions, aquaculture is helping bridge the gap between supply and the rising demand for aquatic foods. The report notes that farmed aquatic animals now account for more than half of global aquatic animal production, demonstrating the sector's increasing importance in feeding a growing population.

The report also underscores the nutritional value of aquatic foods. Rich in high-quality protein, essential fatty acids and vital micronutrients, fish and other aquatic products remain a critical component of

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healthy diets worldwide. In many low-income countries, they are among the most accessible and affordable sources of animal protein, making them indispensable in the fight against hunger and malnutrition.



Delegates from across the globe attend the FAO forum during the 11th Our Ocean Conference, where the State of World Fisheries and Aquaculture (SOFIA) 2026 report was unveiled, presenting evidence of progress and renewed hope for sustainable fisheries, aquaculture, and ocean stewardship.

Despite this progress, challenges remain. FAO warns that the sustainability of marine fish stocks continues to be a concern, with some regions facing persistent pressure from overfishing, environmental degradation and limited management capacity. The organization stresses that stronger governance, science-based management and investment in sustainable practices are essential to safeguarding aquatic resources for future generations.

The report identifies Africa as a region with enormous untapped potential. Although the continent possesses vast aquatic resources and relies heavily on fish for nutrition, its contribution to global production remains relatively low. FAO believes that targeted investments,

improved technology and supportive policies could unlock significant opportunities for growth, creating jobs while improving food security for millions of people.

The report's findings are particularly relevant to Kenya, where fisheries and aquaculture continue to support food security, livelihoods and economic development. As the country advances its Blue Economy agenda, KMFRI remains at the forefront of research and innovation, generating scientific knowledge that informs sustainable fisheries management and aquaculture development. Through evidence-based research, capacity building and partnerships, KMFRI continues to support efforts aimed at enhancing aquatic food production while safeguarding aquatic ecosystems for future generations.

Looking ahead, FAO projects continued growth in aquatic food production over the next decade, with aquaculture expected to remain the primary source of expansion. However, the organization emphasizes that success should not be measured by production alone. The real challenge lies in ensuring that growth translates into healthier communities, stronger economies and healthier aquatic ecosystems.

As the world moves closer to the 2030 Sustainable Development Goals, the message from the report is clear: sustainable fisheries and aquaculture are not only about producing more food, they are about creating a future where people, livelihoods and aquatic ecosystems can thrive together.

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By: Brian Isoe, Nancy Mwiti, Eugene Kasuku, Caleb Korir | Edits: Phionalorna Nzikwa | Layout: Faith Mboka

KMFRI and key partners commemorate the World Oceans Day 2026 at Diani, Kwale County

KMFRI, led by the Director General, Dr. Paul Orina, led key partners in commemorating World Oceans Day in Diani, Kwale County, under the theme 'Reimagine Beyond the World We Know, A New Relationship with Our Ocean'. The celebrations brought together diverse government parastatals, NGOs, and community-based organizations to take meaningful action and raise awareness about marine conservation, ending plastic pollution, and the role the ocean plays in supporting biodiversity.

World Ocean Day, a day dedicated to recognizing the vital role the ocean plays in sustaining life on Earth and reminding us of our shared responsibility to protect it. Our oceans cover more than 70% of the planet, regulate the climate, and produce much of the oxygen we breathe, support biodiversity, and provide livelihoods for millions of people worldwide. Yet, despite their importance, oceans are under increasing threat from pollution.

The day marked annually on the 8th of June saw a powerful demonstration of science meeting grassroots

climate action, with Kenya Marine and Fisheries Research Institute (KMFRI) proudly honoring an invitation by Samba Sports Youth to co-sponsor and participate in the 2026 Diani Zero Plastic Pollution Festival, re-emphasizing KMFRI's commitment to protecting and conserving our oceans against plastic pollution.



KMFRI staff and participants during the 'World Oceans' Day event

Flagging off the celebrations, KMFRI Director General, Dr. Paul Orina, delivered a compelling keynote address. He emphasized that the ocean is Kenya's strategic national asset, driving the blue economy through fisheries, tourism, and critical coastal carbon sinks like mangroves. However, he warned that plastic pollution remains a pervasive threat to marine biodiversity and local livelihoods.

He noted that the younger generation is the future of the ocean and that they need to be sensitized to the critical role the ocean plays in supporting mankind. They should be incorporated into activities geared towards ocean protection and conservation at an early stage if we are to protect our oceans.

A 5-kilometre walk and a beach cleanup, in which participants gathered plastic that endangers marine ecosystems, were among the events held to

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commemorate the occasion. The significance of shared

accountability in preserving and re-establishing ocean health was emphasized by this exercise and proved that the younger generation, who were also in attendance, are willing to walk with us in this journey of conserving our oceans.

The four-day event united local youth, county leadership, and environmental conservationists under the vibrant, action-oriented rallying cry: **“Beach ni Sherehe, Taka Usiniletee!”**. The consequences of ocean pollution extend beyond the environment.



KMFRI Director General Dr. Paul Orina and Centre Director Dr. Eric Okuku at the World Oceans' Day

“Protecting our marine ecosystems requires a shared commitment from scientists, communities, and policymakers working toward a sustainable future.” Dr. Eric Okuku

Healthy oceans are the foundation of thriving fisheries, tourism, maritime transport, and other ocean-based industries that contribute significantly to economic growth, and thus the need to keep all kinds of pollutants at bay.

“Among these challenges, plastic pollution remains one of the most visible; discarded bottles, bags, and single-use plastics harm wildlife and threaten tourism. But today proves this challenge is solvable through collective innovation and circular economy solutions,” added Dr Orina.

Dr. Orina lauded Samba Sports for mobilizing coastal youth, noting that their energy is indispensable to shaping a sustainable future. He reaffirmed KMFRI's commitment to providing cutting-edge data on microplastics and ecosystem health to guide marine policy. However, he stressed that science needs strong community partnerships to succeed.

The climax of the celebrations was marked by KMFRI participating in exhibitions where we showcased innovative research outputs, including biodegradable fishing nets designed as a suitable and sustainable alternative to conventional gear, aimed at reducing plastic pollution in marine environments and promoting sustainable fisheries, as well as the Taka collect application, a digital platform to get waste collection services.

By backing the festival, KMFRI reinforced its mandate to bridge scientific research with community-led conservation. The event concluded with a vibrant display of workshops and beautiful Shairi and dance from the participating students and schools from the local community. Not forgetting the games and eventually a glamorous awarding ceremony, setting a

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benchmark for future marine preservation along the Kenyan coast.

By: *Phionalorna Nzikwa & Dr Anthony Nzioka* |
Edits: *Jane Kiguta* | Layout: *Faith Mboka*



KMFRI staff member showcasing KMFRI's biodegradable fishing nets

KMFRI remains committed to advancing marine science, promoting environmental sustainability, and supporting efforts that safeguard ocean ecosystems for present and future generations.

KMFRI Unlocks Human Potential through Science, Knowledge, and Aquaculture



KMFRI team visits aquaculture farms to identify areas of intervention

When people hear the word aquaculture, they often relate it to fish ponds and cages, feeds and fingerlings quality, water quality, cost of production and markets. Scientists, on the other hand, are likely to think about genetics, growth rates,

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stocking densities, and ecosystem dynamics. Farmers may view aquaculture through a different lens altogether, one of income generation, market access, and livelihoods. Yet aquaculture is far more than the science of growing fish. At its core, is a story about people, their aspirations, relationships, resilience, and capacity to transform their circumstances.

Over the past few weeks, the KMFRI Director General, Dr Paul Orina, together with members of the Mariculture department in KMFRI, had the privilege of visiting fish farms and community aquaculture projects across Mombasa, Kilifi, and Kwale counties. The purpose of these visits was to identify existing gaps and explore possible interventions. From commercial ventures in Takaungu to community-driven initiatives in Tsunza and innovative mariculture projects in Jomvu, one recurring lesson became unmistakably clear: successful fish farming is fundamentally about understanding people as much as it is about understanding fish.

The Intersection of Aquaculture and Human Development

The parallels between aquaculture and human development are striking. Just as fish cannot thrive in poor water conditions, communities cannot flourish in environments characterized by limited opportunities, weak support systems, and restricted access to resources. In both cases, growth depends on the quality of the environment. Before a fish is stocked into a pond, farmers must ensure that the seed is of superior quality, water quality is optimal, sufficient, and quality feed is available, as well as the growth performance systems. Human development follows a similar pattern. Children require nurturing environments, entrepreneurs need access to opportunities, and communities thrive when they are

equipped with knowledge, networks, and markets. Like a farmer carefully managing a pond to maximize productivity, society must intentionally create conditions that enable people to realize their full potential.



Image of Prawns being cultured

This understanding shapes KMFRI's work as a world-class center of excellence. Our role extends beyond conducting scientific research in laboratories and in the field. Research achieves its true value only when it propagates transformation. When KMFRI researchers engage with individual aquaculture farmers and community groups, the objective is not merely to inspect ponds or collect data, but rather to understand people's aspirations, identify barriers to progress, and work collaboratively to unlock opportunities.

One of the most fascinating discussions during our community engagements revolved around fish genetics, particularly the concept of inbreeding. At first glance, genetics may appear to be a highly technical subject reserved for scientists. However, the

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underlying principle is remarkably simple and highly relatable. When the same genetic lines are repeatedly crossed over generations, fish performance declines, unless it is infused with new genetic material to enhance its vigor. Lack of genetic vigor may result in slowed growth rates, lower survival and disease resistance, reduced fertility and deformities, key impediments to viable aquaculture investment.



Harvesting of Prawns for Monitoring at the Tsunza Community

The lesson extends far beyond aquaculture. Progress in communities, businesses, and societies often depends on diversity, innovation, and continuous renewal. New ideas, fresh partnerships, and exposure to different experiences strengthen communities in much the same way that genetic diversity strengthens fish populations. Communities that remain isolated often struggle to advance, while those connected to researchers and extension, markets, financial institutions, strong group formations, and development partners create new pathways for growth and prosperity.



KMFRI Team Inspecting a Fish Pond

The transformative potential of aquaculture became particularly evident during our visit to Majestic Fish Ponds. While the project directly engages approximately 150 individuals, its impact extends to more than 600 people. This demonstrates an important reality often overlooked in discussions about aquaculture. A fish pond is not merely a production unit; it is an economic ecosystem. The farmer purchases feed from suppliers, labourers earn wages, transporters move products to markets, traders generate income, and families gain access to nutritious food. Financial institutions acquire new clients, while surrounding businesses benefit from increased economic activity. The fish harvested from the pond is simply the visible outcome. The true harvest lies in the opportunities and livelihoods created throughout the value chain.

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Aquaculture: A Powerful Driver of Community Transformation

This is why KMFR I increasingly views aquaculture not just as a production activity but as a powerful driver of community transformation. During our visits, we encountered inspiring examples of innovation and entrepreneurship. At one farm, waste was being used to mass produce Black Soldier Fly larvae (BSF), providing a sustainable and cost-effective source of protein for poultry and fish production. Elsewhere, communities had integrated fish farming with mangrove restoration, beekeeping, beach clean-up initiatives, ecotourism ventures, and table banking schemes. These initiatives demonstrate that the future of aquaculture lies not in isolated activities but in integrated business ecosystems where multiple enterprises reinforce and support one another.



Close-Up Image of BSF Larvae in a container

This is where science, policy, and enterprise converge to improve livelihoods and drive sustainable development. The future farmer must be more than a producer. They must become entrepreneurs, capable of managing an interconnected ecosystem of production, marketing, value addition, and investment.

KMFR I's Strategy for Simplifying Scientific Information

An equally important aspect of KMFR I's work involves translating scientific findings into language that communities can easily understand and apply. During several engagements, discussions around all male tilapia fish production generated considerable interest. Scientists understand the biological processes involved in producing predominantly male tilapia populations, which grow faster and more uniformly than mixed-sex populations. Yet for many community members, technical explanations involving hormones, genetics, and reproduction can be difficult to grasp.

The solution is not to simplify the science itself but to communicate it differently. By drawing parallels with familiar concepts such as family relationships, inheritance patterns, and growth characteristics, scientific knowledge becomes accessible, relatable, and practical. Science should never remain confined to journals, theses, and books, but rather speak the language of the communities it is intended to serve; in other words, research must be demand-driven.

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KMFRI DG, Dr Orina, engaging with community official from Tsunza Community

The stories emerging from these communities are, ultimately, stories of resilience and innovativeness. In Tsunza, community members proudly recounted their journey from a small group established in 2018 into a thriving organization involved in fish farming, mangrove conservation, environmental stewardship, savings schemes, and income-generating activities. Their success story is not simply about aquaculture; it is about determination and collective action. In Bamba, what initially appeared to be a setback became an opportunity. Water that was considered unsuitable for conventional agriculture was transformed into a valuable aquaculture resource following technical guidance from KMFRI researchers. This is not merely a story about water quality; it is a story about innovation and adaptability. Similarly, groups in Digirikani are exploring shrimp and crab farming alongside ecotourism opportunities, demonstrating how vision and creativity can unlock entirely new sources of income.

These experiences have reinforced an important lesson about the evolving role of research institutions. Traditionally, research organizations generated knowledge and waited for others to apply it. Today's realities demand a different approach. Researchers must walk alongside communities throughout their development journeys. They must help farmers understand aquaculture economics, maintain proper records, access quality seed and feed, adopt emerging technologies, connect with markets, and attract investment. The success of research should not be measured by the number of scientific reports produced but by the number of lives improved, jobs, and incomes created.

When Fish Thrive, Communities Thrive, and When Communities Thrive, Nations Prosper

Kenya, particularly the Coast, possesses enormous aquaculture potential. We are blessed with favorable climatic conditions, vibrant entrepreneurial communities, growing domestic and regional markets, and a wealth of scientific expertise. The challenge before us is to connect these strengths into a cohesive ecosystem capable of driving sustainable growth. This requires strong partnerships among researchers, farmers, financial institutions, private investors, development organizations, and government agencies. It requires transforming scientific knowledge into economic opportunity.

Above all, it requires us to recognize a simple but profound truth: aquaculture is not fundamentally about fish. It is about people. Every fingerling stocked into a pond represents hope. Every pond represents possibility. Every quality harvest and premier market signifies progress toward economic security and a better quality of life. To this end, KMFRI continues

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working with communities across Kenya with unwavering commitment to ensuring that scientific knowledge translates to practical and transformative application among Kenyan aquaculture value chain actors.

By: Faith Mboka | Edits: Jane Kiguta | Layout: Faith Mboka

World Seaweed Day: How KMFRI helped transform Kibuyuni through seaweed farming

The **World Seaweed Day** was observed on 4th June, and the **Kenya Marine and Fisheries Research Institute (KMFRI)** continues to celebrate the transformative impact of seaweed farming on coastal communities and reaffirming its commitment to advancing sustainable blue economy initiatives.

Along Kenya's South Coast, few communities tell the seaweed success story better than Kibuyuni in Kwale County, where a venture introduced through KMFRI research has evolved into a lifeline for hundreds of households.

From Research to Community Transformation

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.



A seaweed farmer planting seaweed

Today, the venture has grown into a thriving economic activity that supports hundreds of families while contributing to environmental conservation and sustainable livelihoods.

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.

What began as a small-scale experiment has since become a catalyst for social and economic transformation.

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Dried seaweed at Kibuyuni Seaweed farm

Empowering Communities Through Knowledge

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.

The training has enhanced productivity and enabled farmers to adopt more sustainable farming practices. Farmers acknowledge that although they were initially hesitant to embrace seaweed farming, they are now among the strongest advocates of the venture.

"Seaweed farming is not a joke. This is our cash crop. It is our coffee. It has boosted our livelihoods in a big

way. The community has been transformed. Thanks to seaweed," says a member of the Kibuyuni Beach Management Unit.

Improving Livelihoods and Education

The economic benefits of seaweed farming are visible throughout Kibuyuni.

According to community members, the venture has enabled households to construct permanent homes, diversify income sources, and pay school fees for their children.



A seaweed farmer harvesting seaweed

Before seaweed farming was introduced, many families struggled to educate their children beyond primary school. Today, more young people in the area

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are completing secondary education and pursuing further opportunities.

"Before the venture, educating children up to Form Four level was unheard of. Today, many families can afford to pay fees for their children's secondary education," notes a seaweed farmer.

Seaweed farming has also provided an alternative livelihood option for communities traditionally dependent on fishing, helping to reduce pressure on marine fisheries resources.

Adding Value, Creating Opportunities

Beyond farming, community members have embraced value addition to increase earnings from seaweed products.

With support from government agencies and development partners, farmers have acquired equipment that enables them to produce seaweed-based products such as soap, shampoo, lotions, and hair food.

These products have opened new income streams and demonstrated the vast potential of seaweed beyond raw material production.

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

Seaweed and Environmental Conservation

Seaweed farming has also inspired broader environmental stewardship within the community.

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 areas to reduce coastal erosion and protect seaweed farms.

Healthy mangrove ecosystems also support fisheries productivity, providing additional benefits to local communities.

This integration of livelihood improvement and ecosystem restoration highlights the role of seaweed farming as a nature-based solution that supports both people and the environment.



Products made from seaweed

Challenges and the Way Forward

Despite the progress, challenges remain. Farmers cite limited market access for dried seaweed, inadequate

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transport facilities, and losses caused by strong ocean currents.

Nevertheless, the community remains optimistic about the future of the industry and continues to call for increased investment in value addition, market development, and infrastructure.

KMFRI's Commitment to the Blue Economy

As Kenya celebrates World Seaweed Day, the success story of Kibuyuni demonstrates the power of research-driven innovation in transforming lives and building resilient coastal economies.

Through research, technology transfer, capacity building, and partnerships, KMFRI continues to support the growth of Kenya's seaweed sector as part of broader efforts to advance the Blue Economy.

The experience from Kibuyuni serves as a reminder that sustainable marine resources can provide solutions to poverty, food insecurity, unemployment, and environmental degradation when backed by science and community participation.

This World Seaweed Day, KMFRI celebrates not only seaweed as a valuable marine resource, but also the communities whose lives have been transformed through its cultivation.

By: Dr Okuku, Dr Karisa, Dr Okemwa & Jane Kiguta | Edits: Jane Kiguta | Layout: Faith Mboka

From Kenya's coast to global stage: KMFRI scientists shaping science that informs the future of our oceans

Kenya Marine and Fisheries Research Institute (KMFRI) scientists continue to make their mark on the global stage. Ahead of the just concluded 11th **Our Ocean Conference** that took place at the Kenyan Coast from June 16 to 18 June 2026, **KMFRI** is proud to have contributed to the Third World Ocean Assessment (WOA III) report, a global effort that brought together the expertise of over 550 experts from 86 countries to assess the state of the world's oceans and support sustainable ocean governance. The report serves as a key evidence base for governments and policymakers.

WOA III was officially launched on the World Oceans Day - 8th June 2026 - to provide the most comprehensive global scientific assessment of the state of the world's oceans and marine environment.

KMFRI's highly seasoned Chief research scientist, Dr. Eric Okuku, serves as a member of the United Nations Regular Process Group of Experts, which provides scientific and technical guidance for the World Ocean Assessment (WOA), the UN's flagship mechanism for assessing the state of the global marine environment. In this capacity, he contributes expertise on marine pollution, ocean governance, coastal ecosystem

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management, and sustainable Blue Economy development, helping to ensure that the perspectives and priorities of Africa and the Western Indian Ocean region are reflected in global ocean assessments.



KMFRI scientists examine and sort fish specimens collected during an ecosystem survey.

The published working team list for the WOA III also includes KMFRI's Chief Research Scientist Dr Gladys Okemwa and Principal Research Scientist **Dr. Juliet Karisa** among the contributing experts from Kenya, reflecting KMFRI's important role in the global scientific assessment of ocean health. Their contributions also underscore the vital role of international scientific collaboration in addressing pressing ocean challenges, including biodiversity conservation, habitat degradation, climate change, pollution, and sustainable fisheries management.

While congratulating the researchers on achieving the significant milestone, KMFRI CEO Dr Paul Orina said, *"The contribution of our scientists to the Third United Nations World Ocean Assessment is a proud moment for KMFRI and for Kenya. We congratulate Dr. Eric Okuku, Dr. Gladys Okemwa and Dr. Juliet Karisa for sharing their expertise in this landmark global assessment which provides critical scientific evidence for the sustainable management of our oceans."*

"Their participation demonstrates the quality of research undertaken at KMFRI and affirms the institute's growing role in shaping international discourse on ocean health, marine biodiversity and sustainable blue economy development," he added

"As we prepare for the 11th UN Ocean Conference, we celebrate this achievement and remain committed to generating science-based solutions that support healthy oceans and resilient coastal communities."



A KMFRI researcher identifies and records fish species during onboard sample processing.

For KMFRI, the report reinforces the importance of marine and fisheries research grounded in science, monitoring climate and biodiversity changes, addressing marine pollution, including plastics, supporting sustainable fisheries and blue economy initiatives and strengthening regional and international collaboration in ocean management. Dr Okuku, who is also a marine pollution research expert, has been at the forefront in championing major research initiatives at the Kenyan Coast aimed at beating the vice.

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What the report says

WOA III report reveals that the ocean is under severe and accelerating human pressure from climate change, pollution, overfishing and biodiversity loss. Further, ocean warming is intensifying, with approximately 16 per cent of the total increase in ocean heat content since 1955 occurring after 2018. According to the report, sea-level rise is accelerating, increasing from less than 2 mm/year before 2015 to about 4.3 mm/year in 2023.

limiting understanding of deep-sea ecosystems and cumulative impacts.

The report emphasizes that healthy oceans are fundamental to food security, livelihoods, human health and climate regulation, and calls for stronger international cooperation and science-based governance

KMFRI remains committed to contributing to global ocean science and strengthening its position as a centre of excellence in marine and fisheries research.



KMFRI research scientists and technical staff sort and process the night's fish catch aboard the research vessel following a scientific trawl survey.

Plastic pollution remains a critical threat, with an estimated 52.1 million tonnes of plastic waste entering the ocean each year and trillions of micro plastic particles affecting thousands of marine species.

Knowledge gaps remain significant, with only about 27.3 per cent of the seafloor being mapped by 2025,

By: Jacque Wanjiru | Edits: Jane Kiguta | Layout: Faith Mboka

KMFRI's mangrove studies key to climate action agenda as the globe marks World Environment Day 2026

June is a significant month for environmental stewardship, marked by key global observances that remind us of our collective responsibility to protect our planet.

KMFRI joined the world in celebrating World Environment Day and reaffirm our commitment to safeguarding and restoring the environment for present and future generations. As the world marked World Environment Day on 5 June, attention was on the urgent need for environmental stewardship and practical solutions to safeguard ecosystems for future generations.

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KMFRI Team and Community members planting mangroves, to strengthen coastal resilience, enhance biodiversity, and support sustainable livelihoods.

This year's World Environment Day theme, **"Inspired by Nature. For Climate. For our Future"** emphasizes the need to rethink how societies interact with the environment and accelerate efforts toward resilience, sustainability, and ecological restoration. The 2026 campaign highlights that climate action is not only about reducing emissions, but also about repairing ecosystems, protecting biodiversity, and building sustainable economies that work in harmony with nature.

This year's World Environment Day in Kenya was commemorated under the theme **"A Global Call for Climate Action"** with the slogan **"Climate Crisis and Solutions."**

The national celebrations were held at the Arboretum Grounds in Ol Kalou, Nyandarua County, with a primary focus on ecosystem restoration, drought resilience, and achieving the national goal to grow 15 billion trees by 2030.

"KMFRI is among the Kenyan government agencies implementing the National Landscape and Ecosystem

Restoration Strategy and the Presidential Directive aimed at restoring 10.6 million acres of land through planting 15 billion trees by 2030 to increase Kenya's national tree cover to 17.8 percent," says KMFRI CEO Dr Paul Orina. "By restoring mangroves, we protect our oceans and secure our future," he added.

The theme resonates strongly with the work KMFRI as the country's premier institution mandated to generate scientific information on marine and freshwater fisheries, aquaculture, environmental and ecological studies, and oceanographic research, KMFRI plays a critical role in ensuring aquatic ecosystems are sustainably managed to support Kenya's development aspirations and blue economy agenda.

KMFRI's mandate aligns naturally with the 2026 World Environment Day theme through its work in advancing evidence-based solutions for environmental sustainability. The Institute undertakes scientific research to generate data that informs decision-making on fisheries management, ecosystem conservation, aquaculture development, ocean health monitoring, pollution control, and climate adaptation strategies. Through research and innovation, KMFRI supports sustainable use of aquatic resources while safeguarding ecosystem integrity for future generations.

A key area where KMFRI demonstrates this alignment is in marine and coastal ecosystem conservation. Healthy mangroves, coral reefs, seagrass meadows, and coastal wetlands are natural climate buffers that protect shorelines, support fisheries productivity, store carbon, and preserve marine biodiversity. Scientific studies undertaken by KMFRI provide crucial information for the protection and restoration of these ecosystems, helping policymakers and coastal communities implement sustainable conservation measures that strengthen climate resilience.

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World Environment Day 2026 also underscores the need for innovation and partnerships in responding to environmental challenges. KMFRI contributes to this agenda by collaborating with government agencies, coastal communities, academic institutions, and regional and international partners to strengthen marine research, knowledge sharing, and policy implementation for sustainable blue economy development. Such partnerships enhance Kenya's capacity to respond to emerging environmental pressures and climate-related risks affecting marine ecosystems.

development does not come at the expense of ocean health.

Indeed, protecting our oceans today is an investment in Kenya's environmental sustainability, food security, climate resilience, and economic prosperity tomorrow.

By: Harrison Ong'anda and Dina Mathai | Edits: Jacque Wanjiru | Layout: Faith Mboka

KMFRI partners with Swedish Agency to launch "Symphony Kenya" ocean management tool

The Kenya Marine and Fisheries Research Institute (KMFRI) and the **Swedish Agency for Marine and Water Management (SwAM)** have launched a collaborative data modelling tool called **Symphony Kenya**. The new tool serves as a nationwide cumulative impact assessment platform designed to directly accelerate Kenya's ongoing Marine Spatial Planning (MSP) process.

Symphony Kenya provides an ecosystem-based mapping framework that allows nature experts to calculate how multiple human activities and environmental changes interact over time. The digital model tracks distinct, overlapping pressures currently facing Kenya's coastal waters. This includes mapping marine litter accumulation zones along the coastline, tracking wastewater discharge points threatening nearshore biodiversity and modelling rising sea

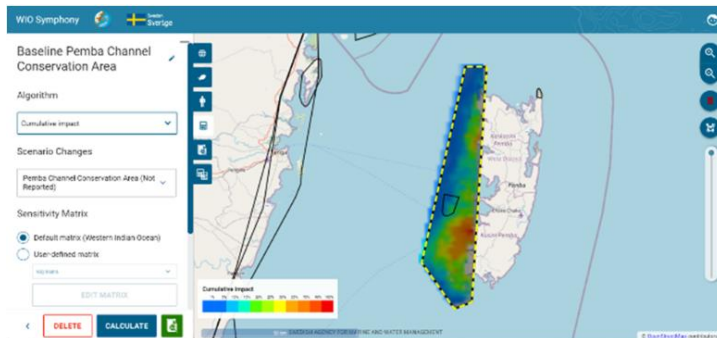


Community members proudly receive mangrove seedlings during a coastal restoration initiative, reinforcing collective action in conserving marine ecosystems and building climate resilience.

Kenya's blue economy agenda seeks to sustainably harness ocean and aquatic resources for economic growth, improved livelihoods, jobs, and environmental sustainability. By generating scientific knowledge to guide marine governance, fisheries management, aquaculture, and ecosystem conservation, KMFRI remains central to ensuring the blue economy grows responsibly and sustainably. Science-driven management helps balance economic opportunities with environmental protection, ensuring that

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surface temperatures and their impacts on local coral and fish stocks.



The Symphony spatial planning tool provides a visual assessment of cumulative environmental impacts in the Pemba Channel Conservation Area, supporting informed decision-making for biodiversity conservation, sustainable resource use, and the blue economy.

For Bilateral Science–Policy Exchange to be enhanced, the analytical tool is being co-developed through an intensive series of onsite and online workshops in Kenya. Technical teams from KMFRI's Mombasa headquarters work directly alongside Swedish scientists to build out the national datasets. The partnership framework encompasses several specialized European and regional entities:

While **SwAM** is providing the core mathematical modelling architecture, the **Nairobi Convention Secretariat (NCS)** will ensure the framework aligns with wider Western Indian Ocean regional policies; and the **Swedish University of Agricultural Sciences** and the **Geological Survey of Sweden** will provide localized geological and ecological benchmarking.

The data produced by Symphony Kenya directly feeds into Kenya's National Marine Spatial Plan, which was formally approved by the Cabinet. By establishing where ecosystems are under the most severe stress, the tool provides government authorities with the precise geospatial data required to enforce fishing

regulations, allocate zones for sustainable aquaculture, and safeguard coastal livelihoods hence strengthening the Blue Economy.

By: Domitila Kyule, Jonathan Munguti, Mary Opiyo, Jacob Abwao, Joslyne Kendi, Purity Woki, Florian Odhiambo & Faith Mboka | Edits: Jane Kiguta | Layout: Faith Mboka

KMFRI researchers highlight fish value addition as a catalyst for Kenya's Blue Economy

A new policy brief by the Kenya Marine and Fisheries Research Institute (KMFRI) has identified fish value addition as a game-changing opportunity that could unlock the full economic potential of Kenya's fisheries sector. While fisheries contribute approximately 0.6 per cent to the country's Gross Domestic Product (GDP), support more than 1.2 million livelihoods and produced 168,424 metric tonnes of fish worth KSh 39.6 billion in 2024, much of this potential remains untapped because the majority of fish is sold fresh or with minimal processing.

According to the policy brief, transforming raw fish into higher-value products including fish fillets, fish fingers, sausages, burgers, smoked fish, dried fish, canned products, fish oil and fish powder offers immense opportunities to reduce post-harvest losses, increase incomes, create employment, boost exports and improve food and nutrition security. However, inadequate infrastructure, limited financing, weak

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enforcement of quality standards and insufficient technology transfer continue to hinder the growth of the value-addition industry.



A variety of value-added fish products including fillets, fish fingers, fish patties, smoked fish, dried fish, fish powder, fish oil, canned fish, and other processed products.

One of the biggest challenges facing Kenya's fisheries sector is the high level of post-harvest losses, with up to 40 per cent of fish lost along the supply chain due to inadequate cold storage facilities, poor handling practices and limited access to modern preservation technologies. Additionally, most fish undergoes only basic processing, such as traditional smoking or sun drying, limiting its market value and competitiveness in both domestic and international markets.

The policy brief highlights a wide range of value-added fish products that have demonstrated strong commercial potential in Kenya. Ready-to-cook products such as fish fillets, fish fingers, nuggets, sausages, burgers, fish balls and fish samosas are experiencing growing demand, particularly among urban consumers. Improved smoked fish, hygienically packaged dried fish and value-added omena products are also creating new market opportunities while

extending shelf life. Beyond food products, innovations such as fish oil, fish powder, collagen and cosmetics derived from fish by-products present additional avenues for industrial growth and increased profitability.



Fish processing technicians prepare high-quality fish products in a modern processing facility.

Despite these opportunities, the policy brief notes that the sector continues to face several structural constraints, including inadequate policy coordination, poor infrastructure, unreliable electricity, weak regulatory enforcement, limited market information systems and low investment in research uptake. Many technologies developed by KMFRI and partner institutions have yet to achieve widespread commercial adoption, reducing their potential impact on the industry.

To address these challenges, the policy brief proposes eight strategic interventions. These include strengthening quality standards and food safety enforcement, investing in cold chain infrastructure, expanding access to affordable financing for small and medium enterprises, scaling up technology transfer

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and capacity building, developing digital market information systems, promoting consumer awareness of value-added fish products, strengthening export market linkages and integrating fish value addition into Kenya's Blue Economy development agenda.

The policy brief concludes that Kenya possesses the resources, research capacity and growing market demand needed to build a vibrant value-added fisheries industry. With coordinated action from government, research institutions, county governments, development partners and the private sector, the country can significantly reduce post-harvest losses, generate more jobs and wealth, strengthen food and nutrition security, and position itself as a competitive supplier of high-quality fish products in regional and international markets.

**KMFRI**
Kenya Marine and Fisheries Research Institute

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Mtafiti Pictorials

By: Faith Mboka



KMFRI General Director Dr Paul Orina, giving a presentation during the 11th Our Ocean Conference(OOC)



Dr Gladys Okemwa, KMFRI Assistant Director Fisheries, giving a presentation during 11th OOC



KMFRI Gazi Station Coordinator and Chief Scientist Dr James Kairo



KMFRI Board Members Participate in the 11th OOC

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Middle: KMFRI Freshwater Systems Dr Christopher Aura at the 11th OOC



KMFRI General Director Dr Paul Orina inspect a mature seaweed crop that is ready for harvesting



KMFRI Director Ocean & Coastal systems, Dr James Mwaluma giving a presentation during the 11th OOC



Healthy mangrove seedlings nurtured in a community nursery, ready for transplantation

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For feedback, inquiries, or further information,
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