



KMFRI

Kenya Marine and Fisheries Research Institute

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BY DR NYAMWEYA, DR AURA, DR ODOLI, DR
OSORE, JANE KIGUTA, JANE FONDA, BRIAN ISOE
& JOSEPHINE MARIGU

#ARBEC II 2024

Leaders call for stewardship of Blue Economy wealth as KMFRI hosts regional ARBEC II

Cabinet Secretary for Mining and Blue Economy Hon Salim Mvurya has hailed the Second Aquatic and Blue Economy Resources Conference (ARBEC II 2024) as a perfect platform to disseminate findings of research activities undertaken by Kenya Marine and Fisheries Research Institute (KMFRI), the sole state corporation mandated to conduct surveys in Kenya's marine and fresh water resources.

He spoke while delivering his remarks at the major regional scientific event held in Kisumu, Kenya, that ran from 17th to 21st June, 2024.

ARBEC II attracted around 500 participants from across Africa. It featured parallel tracks, panel discussions, individual presentations, plenary sessions, poster sessions, exhibitions,



Kisumu County Governor Prof Anyang' Nyong'o (C), KMFRI Board Chair Hon John Mumba (L) and immediate former CEO Prof James Njiru (R)

networking events and field excursions. The conference brought together key delegates including government officials, researchers, private sector, financial institutions, industry experts, and community representatives who deliberated on strategies for sustainable utilization of aquatic resources.

In his speech read on his behalf by the Secretary, State Department of Fisheries and Blue Economy Mr Rodrick Kundu, the CS said the conference themed **"Science-Driven Stewardship for a Sustainable Blue Economy"** met its objectives effectively, and promised



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SDF & BE Secretary Mr Rodrick Kundu

that his ministry will implement the recommendations and resolutions made. Hon Mvurya noted that Kenya is a champion in the Blue Economy and ARBEC is key in understanding the dynamics of the Blue Economy.

“Let’s be guided by the principles of science-driven stewardship,” the CS said. This is the second time KMFRI was hosting ARBEC conference, the first one having been held two years ago in the same city and venue. He added that the ministry is committed to developing more landing sites and building capacity of fishers.

While delivering her remarks, Nyanza Regional



Nyanza Regional Commissioner Madam Flora Mworora

Commissioner Madam Flora Mworora highlighted the numerous challenges facing Kenyan water bodies, including habitat destruction, and called for conservation and protection of Marine Protected Areas (MPAs). She said science can pave the way for sustainable

management of fisheries resources by providing data that inform proper decision-making. The regional commissioner expressed concern over depleting fish stocks, and emphasized the need to track illegal fishing activities, by developing and implementing relevant blue economy policies in a collaborative approach. She said this will go a



Kisumu Governor HE Prof Anyang' Nyong'o

long way in reducing plastic pollution, adding that KMFRI is key in providing lasting solutions grounded on scientific research and innovations.

Kisumu County Governor Hon Anyang' Nyong'o thanked KMFRI for choosing Kisumu as the host, and commended the national government for investing Sh1.5 billion in the Blue Economy. He said the gesture underscores the government's commitment in revitalizing the sector.



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Speaking at the same event, KMFR I's Board Chair Hon John Safari Mumba said the Institute will continue to support research and innovation for sustainable Blue Economy.

"KMFR I will continue to build on its existing expertise through international collaborations," said the Chair, adding that KMFR I is also keen on supporting inclusion of women and communities in service delivery.



ARBEC II Coordinator and KMFR I's AD
Limnology Dr Crispine Nyamweya

Hon Mumba congratulated KMFR I sponsors, regional and local organizers for hosting the successful conference.

Acknowledging the importance of water bodies in safeguarding livelihoods, the Chair extended gratitude to Governor Nyong'o for the immense support he accorded to KMFR I ahead of the historic conference.

He urged stakeholders to recognize their unique roles in the blue space to harness the Blue Economy.

KMFR I's immediate former CEO delivers keynote presentation



Immediate former KMFR I CEO
Prof James Njiru

On the second day of the ARBEC II conference, the immediate former Kenya Marine and Fisheries Research Institute (KMFR I) CEO Prof James Njiru delivered a keynote presentation titled *"Is Blue Economy the solution in turning around the Kenyan economy?"*

He demonstrated the immense potential of the Kenyan Blue Economy in harnessing the country's economy, highlighting key subsectors namely aquaculture, fisheries, oil and mining; and aquarium contribution to the overall growth of the economy. Prof. Njiru emphasized the blue economy space's critical role in bridging the unemployment gap in the country and in improving communities' livelihoods.



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ARBEC II 2024 focus areas



KMFRRI's Fresh Waters Systems
Director Dr Christopher Aura

The inaugural ARBEC I conference laid the groundwork for science-driven stewardship and inclusive governance in aquatic resource management.

It catalyzed ground-breaking research, informed policy interventions, and emphasized the role of local communities as custodians of aquatic ecosystems.

Building on the success of the inaugural (ARBEC I) conference, ARBEC II focus was to address the pressing environmental challenges through science-driven solutions.



Sagana Centre Director Dr Domitila Kyule

Aligning to our commitment to environmental stewardship, ARBEC II 2024 adopted various sustainable practices including a paperless approach, eco-friendly materials, carbon emission offset, a mobile app and, or, online platform, media coverage, and post-conference knowledge dissemination.

"Science-Driven Stewardship for a Sustainable Blue Economy" epitomized ARBEC II's commitment to informed decision-making and collective action.

Researchers, policymakers, and practitioners delivered



KMFRRI's Dr Safina Musa

128 content-rich presentations aligned with the conference theme, with 154 being oral and poster presentations made by delegates from 20 countries. This is in addition to several stakeholders, including financial institutions, showcasing their products and services at the exhibition stands.

Speakers at the conference explored cutting-edge interdisciplinary research in marine biology, oceanography, environmental science, and economics. The event created an environment likely to foster collaborations that better address complex challenges facing aquatic ecosystems and the blue economy.



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KMFRI's Aquaculture Director Dr Jonathan Munguti with fellow Directors attending ARBEC II

Researchers involved in diverse Blue Economy sub-themes showcased innovative technologies and solutions that leverage scientific advancements, aimed



KMFRI researchers attending ARBEC II

at sustainably managing fisheries, aquaculture, and maritime activities.

Discussions centred on the role of data analytics, remote sensing, and emerging technologies helped to enhance understanding of aquatic environments and development; and implementation of science-informed policies that promote responsible resource utilization and conservation.



KMFRI BOM receives awards

The speakers also highlighted initiatives for capacity building, education, and training programs to empower individuals and communities with the knowledge and skills necessary for sustainable practices.

The harsh effects of climate change have wreaked havoc on the marine and freshwater ecosystems, and this requires urgent solution to prevent further environmental degradation.



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It is against this background that speakers delivered presentations focused on the impacts of climate change on aquatic ecosystems and the blue economy. They examined cross-cutting issues that require integrated solutions and explored strategies to adopt to mitigate the effects.

At the close of the conference, significant outcomes and resolutions aimed at advancing sustainable blue economy practices were shared.

Strategic Interventions

Some of the strategic interventions highlighted at the event include the need to strengthen fish regulations to maximize the potential of fisheries and enforce existing laws to better sustain the fisheries management system to boost production.

Dr Happy from Tanzania Fisheries Research Institute (TAFIRI) pointed out that participation by fishers and Beach Management Units (BMUs) representatives is fundamental in creating awareness about emerging fishing technologies to promote uptake.

For instance, she pointed out that building the capacity of fishers is of utmost importance because training equips them with proper knowledge on the adoption of

right fishing gears which is key in preventing ghost fishing.

Researchers have come up with scientific innovations such as aquaculture technologies which farmers are encouraged to



KMFRRI's Dr Mary Opiyo

implement to boost their fishing ventures. And for stakeholders to embrace this, it will require solid

collaborations and partnerships from relevant stakeholders.



TAFIRI's Dr Happy



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KMFRI launches her Strategic Plan 2023-2027



KMFRI's Strategic Plan launch

It was pomp and colour as Kenya Marine and Fisheries Research Institute (KMFR) launched her Strategic Plan for 2023-2027 period.



KMFRI's Ag Director General Dr James Mwaluma flanked by Strategic Plan committee delivers his remarks during the launch.



KMFR Board Chair Hon John Mumba delivers his speech

The brief but elaborate ceremony was presided over by Kisumu County Governor Prof Anyang' Nyong'o shortly before he officially closed the conference. The strategy embodies the Institute's five-year journey for harnessing Blue Economy through aquatic research.

KMFRI Board Chair Hon John Safari Mumba congratulated the Institute's staff and management, Strategic Plan committee led by Socio-economics Director Dr Jacob Ochiewo for delivering the all-important document that will guide the Institute's activities for five years.

Grounded on the country's Medium Term Plan-Four and the government's Bottom-Up Economic Transformation Agenda (BETA), the Strategic Plan lays a firm foundation for fulfilling the mandate of KMFR anchored on Blue Economy research and innovation.



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Its key result areas include research and innovation, knowledge management and dissemination, resource mobilization and institutional capacity building, enhanced community and private sector engagement.

The focus areas seek to enhance promotion of quality service delivery, efficiency and effectiveness of operations, development of alternative financing options, development of human capacity and enhancement of her capacity, support systems and good governance. The strategy is the basis for the formulation of KMFR's annual work plans, resource bidding and performance contract targets; improved collaborations and partnerships.



KMFRI's SocioEconomics Director Dr Jacob Ochiewo hands Kisumu Governor the launched document

WIOMSA's presentation on Ocean Finance

Western Indian Ocean Marine Science Association's (WIOMSA) Executive Director Dr Arthur Tuda delivered an insightful presentation themed "*Blue Economy Financing Mechanisms to Support Emerging Thematic Associations: Lessons Learnt from WIOMSA*". He provided a nexus between ocean finance and sustainable ocean use, highlighting WIOMSA's contribution to governance.

The regional science organization supports ocean science and has been funding research for 30 years, with KMFR being a major beneficiary of WIOMSA's research grants.

Dr Tuda noted that ocean economy receives the least amount of money comprising a meagre 1.6 per cent of the total funding. He, however, attributed this to poor quality of research proposals, and urged researchers to capture impacts of their work and provide narratives that show how their activities have benefited communities, saying this is the surest way of securing funding for research activities.

He said the funding landscape is changing and funds have been chopped off by almost 60 per cent, noting a significant drop in financing for four years.

"Researchers should note the shift in ocean economy funding from capture fisheries to mariculture, and tailor their proposals accordingly," he advised.



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Kenya Aquatica makes waves again with launch of Volume 9 during ARBEC II in Kisumu

The scientific space was filled with excitement as the Kenya Aquatica editorial team launched another volume of the latest publication Volume 9, Issue 1 of the scientific journal Kenya Aquatica at the Second Aquatic Resource Blue Economy Conference (ARBEC II) in Kisumu, Kenya.

Kenya Aquatica is a peer-reviewed, open-access scientific journal published at the Kenya Marine and Fisheries Research Institute (KMFRRI). The journal has been in the limelight since its inception in 2018. The year is historic considering its conception happened during the International Sustainable Blue Economy Conference (SBEC) held in Nairobi in November 2018.



Displays of Aquatica Journal at the ARBEC conference

The Journal aims to provide an avenue for KMFRRI researchers and partners to disseminate knowledge

generated from research conducted in the aquatic environment of Kenya and the resources therein and adjacent to it. This aligns with KMFRRI's mandate to undertake research in "marine and freshwater fisheries, aquaculture, environmental and ecological studies, and marine research including chemical and physical oceanography", to provide scientific data and information for the development of the Blue Economy (BE).

The Chief Editor Dr Melckzedek Osore during the launch in Kisumu noted that the journal has made numerous strides since its inception and the range of topics covered has been diverse featuring wider research themes including fisheries, aquatic pollution, mariculture, aquatic value chains, oceanography, mangroves, seagrass, integrated coastal zone management, impacts of Covid-19 on the BE, climate-smart post-harvest technologies, socio-economics, nutrients, climate change, aquaculture, remote sensing, and artisanal fishing.

H.E. Prof. Peter Anyang' Nyong'o, the chief guest of the conference, and H.E. Dr. Mathew Ochieng Owili, the Kisumu County Governor and Deputy, respectively, were among the high level participants



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who were attracted by the Journal's exhibition booth.



KMFR I's Brian Isoe with Kisumu Governor Prof Anyang Nyong'o, KMFR I Board Chair Hon Safari Mumba and immediate former CEO Prof James Njiru

Aquatica Journal plays a critical role in disseminating research findings by scientists from various fields, partners, and stakeholders who have researched in different aquatic ecosystems and developments made in the blue economy space.

The Journal's relation with the BE is notable because it has captured a wide range of topics since its inception with seven volumes published to date, and disseminated research findings through 95 papers and posters, collectively authored by more than 100 researchers representing approximately twenty-five different institutions in Kenya and partner counties".

The Journal is the only one of its kind in the East African coastal region among member states of the Western Indian Ocean Marine Science Association (WIOMSA). It covers aquatic issues in various fronts encompassing

the waterbodies that include Kenya's region of the Indian Ocean, lakes, rivers, and dams including aquatic ecosystems such as aquaculture. The Kenya Aquatica also produces special editions, such as conference proceedings, to provide a platform for disseminating research presented at events related to project outcomes from Aquatic research.

The diversity of the editorial and review team has also improved beyond KMFR I over the years, with editors drawn from other research and academic institutions such as Pwani University, Technical University of Mombasa, University of Dar-es Salaam, Alupe Institute of Marine Sciences in Zanzibar etc. This showcases the Journal's commitment for collaboration, partnership and inclusivity.

"Members of the current editorial team extend a welcoming hand and wish to mentor upcoming research associates on the art of writing scientific papers", says Dr Osore. He encourages upcoming scientists not to shy away from writing and submitting their manuscripts to the editorial team for consideration.

The Editorial Board is working on indexing journal to increase its coverage to reach a broader audience while growing its impact factor in the scientific community and the general public as well. The Journal has enhanced the visibility and credibility of scholarly and research work outputs by conveying research findings, latest discoveries, innovations, and future research prospects



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to the public.



KMFRI's Principal Research Scientist and Aquatica Chief Editor Dr Osore (3rd right) with Aquatica editorial team pose for a photo.

These articles are peer-reviewed and approved by experts in the field and are therefore reliable resources that can be referred to by researchers, policymakers, and the general public.

The Chief Editor reiterated that Aquatica offers a wide collection of scholarly articles essential for understanding the progress of knowledge build-up in the aquatic research field and the development of ideas for further research.

This journal further enables communication among scholars, forming the basis for the development of

further ideas, and tracking emerging knowledge in the field of aquatic science.

The journal in its quest to become a leading platform in Aquatic Sciences is engaging institutions such as WIOMSA, AJOL, Crossref, etc in enhancing its research output through provisions of Digital Object Identifiers, Journal indexing platforms to increase outreach and visibility for not only actual research output but also data archiving purposes for future



Nyanza Regional Commissioner Madam Flora Mworora, Kisumu Deputy Governor Dr Mathew Owili, KMFRRI Board Chair Hon Safari Mumba and immediate former CEO James Njiru at Aquatica exhibition stand.

reference.



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The Chief Editor took the opportunity to invite the more than 700 attendees of the Conference to make it a habit to submit manuscripts to the Kenya Aquatica Journal.

“ARBEC II has brought together more than 500 participants representing 38 institutions presenting findings on aquatic research undertaken in several countries including Kenya, Uganda, Tanzania, Malawi, Burundi, Nigeria, DRC, Liberia, Netherlands, and Norway. This is research that when channeled to the Kenya Aquatica editorial team, we can publish some for dissemination,” he added.



Participants follow proceedings during the launch of the Aquatica Journal

Dr. Osore emphasized the journal's dedication to publishing top-notch research in aquatic sciences and its role in furthering the BE agenda in Kenya and globally as he wrapped up his talk with a clear call to action to the researchers to “maintain the wave” by writing and submitting their manuscripts for review to the Kenya Aquatica through [aquatica @kmfri.go.ke](mailto:aquatica@kmfri.go.ke).



Participants during Aquatica launch



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Pictorial Segment



Kisumu Deputy Governor Dr Mathew Owili in a jig with traditional dancers at ARBEC II



Immediate former KMFR CEO Prof James Njiru presenting the institute's strategic plan 2023-2027 to Kisumu Governor Prof Anyang' Nyong'o



KMFR staff attending the conference



KMFR BOM team led by Chairman Hon John Safari Mumba, during ARBEC II in Kisumu county.



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KMFRI staff donning African attire aligning with the day's ARBEC conference theme.



Participants follow proceedings



KMFRI staff attending ARBEC



KMFRI's Dr Juliet Karisa delivers her presentation.



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Participants at the conference



ARBEC II awardees



KMFRI's Mr Maurice Obiero at ARBEC II