



## Contents

### 01 KMFRI celebrates International Youth Day

#YouthsInBlueEconomy# @KmfriResearch

## KMFRI budding youth in marine careers celebrate UN International Youth Day

The International Youth Day (IYD) designated by the United Nations is observed on 12<sup>th</sup> August of every year. On this day, the UN encourages member countries to draw public attention to youth issues and how young citizens are using their skills and knowledge to accelerate growth and development of their countries.

This year's theme ***Transforming Food Systems: Youth Innovation for Human and Planetary Health*** resonated well with the State Department for Fisheries, Aquaculture and the Blue Economy under which Kenya Marine and Fisheries Research Institute (KMFRI) falls.

KMFRI commemorated the day in style by highlighting key accomplishments of her early career marine research scientists, lab technologists and interns based at the Institute.

We caught up with Ms. Josephine Marigu Njeru, a budding research scientist currently in Belgium pursuing a Master of Science degree in Marine and Lacustrine Science & Management.

In her own words, Ms. Njeru's journey in marine research has been quite a fulfilling, eye-opening adventure. Coming from a background in microbiology, Josephine literally dived into the deep end of marine science when her career as an Assistant Research Scientist at KMFRI commenced in 2017.



*Josephine, a microbiologist, during a working group session onboard RV Mtafiti where she was a team leader.*

Since then, she has grown in leaps and bounds from her exposure to different aspects of this field at KMFRI and beyond.

Within the Fisheries Department, she has worked mainly in the Natural Products and Post-Harvest Technologies Programme under the supervision and mentorship of Dr. Peter Odote, a Principal Research Scientist in KMFRI and accomplished innovator.



*Participating in a phytoplankton biomass quantification laboratory experiment at Ghent University in Belgium*

At KMFRI, she has had firsthand experiences illustrating the value of the ocean, particularly in the sustenance of local coastal communities in Kenya.



She has learnt how important scientific research is in informing the design of climate-smart solutions to curb post-harvest fish losses. Adverse effects of climate change are a major threat to food security and cripple the sustainable exploitation of all the resources that the ocean freely provides us.

Within KMFRI's research programme, Ms. Njeru continues to contribute towards the improvement, scaling-up and monitoring community uptake of technologies such as the Hybrid Windmill Solar Tunnel Dryer in Kipini, the Improved Fish Display Box ("Mama Karanga" box) and the Lightweight Insulated Cold-Chain Container. She has also made significant contribution in fish value addition for product diversification.

Ms. Njeru is also quite excited about participating in KMFRI's marine bioprospecting research, an emerging field of marine research in Kenya which focuses on the discovery of novel biomolecules with the potential to revolutionize industries worldwide.

On the national scene, Ms. Njeru represented KMFRI in the second phase of the multi-agency Agricultural Sector Development Support Programme where she was as a key focal point, providing technical knowhow on the status of the fish value chain in Mombasa, and collaboratively developing ideas towards its improvement.

She has also added value to and gained vast experience from a variety of multidisciplinary research-related activities hosted in KMFRI including research cruises in the Kenyan territorial and offshore waters aboard RV *Mtafiti*; catch assessment surveys at different fish landing sites; mangrove restoration and coordination of science dissemination fora.



*Josephine prepares fish samples during a study to assess the efficiency of the Hybrid Windmill Solar Tunnel Dryer in Kipini, Kenya - an innovation developed by KMFRI to reduce post-harvest fish losses.*

This diverse technical exposure, she says, has been very instrumental in moulding her into an informed, all-rounded researcher capable of providing innovative solutions towards the sustainable exploitation of the Blue Economy in Kenya and the WIO region at large.



*Josephine operates the ZooScan, a zooplankton imaging equipment at the Biological Lab located in Flanders Marine Institute (VLIZ), Belgium, where she is on a month-long internship under her ongoing MSC.*





Sediment sub-sampling during a training cruise along the South Western Indian Ridge (SWIR) aboard RV Dayang Yihao

From her interaction with seasoned researchers in KMFRI and participation in international traineeships such as the IIOE-2 Oceanographic Training aboard SA Aghullas and the Exploratory Cruise of the SWIR aboard the Chinese RV Dayang Yihao; her skill set continues to develop.

Through a VLIRIOUS scholarship award, Ms. Njeru is currently pursuing a Master of Science degree in Marine and Lacustrine Science and Management in Belgium. She appreciates and acknowledges the critical role played by the State, through KMFRI, in capacity building Kenya's early career marine researchers to ensure the development of a skilled workforce that will work towards the realization of national, regional and global "Blue" goals.

Her ever-growing exposure to the international community not only serves to enable her build strong global networks, but also presents her an opportunity to learn from a variety of renowned global marine scientists.

Ms. Marigu believes that the ocean is the very lifeline of the earth. It determines the rhythm of our climatic systems, and thus is the very backbone by which life is sustained. "The planet we call home is covered by more than 70 per cent of water, and it is rather obvious it would be more appropriate to call our planet Oceania," she comments, echoing this popular sentiment within the marine scientific community, "We are, because the ocean is.

"Indeed, *Mother Ocean* sustains us!" she quips with a contagious conviction. Cognizant of the immense

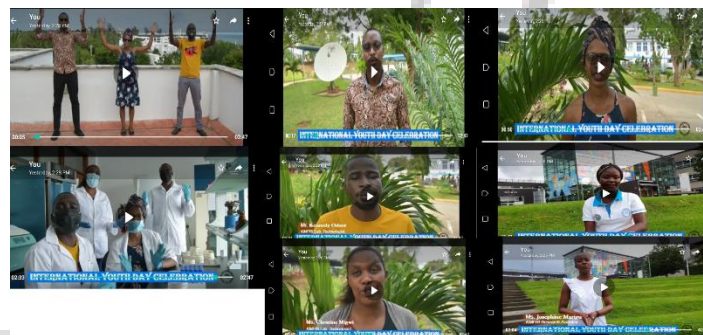
changes that are currently being observed in ocean ecosystems and the resultant repercussions of these anthropogenically-induced dynamics on planetary health; Ms. Njeru believes that she has a responsibility to make a tangible contribution towards efforts to reverse these unfortunate scenarios.

In her parting shot, she urges the youth to take up the challenge and unite towards the restoration of our only home, "Innovation calls for transformative thinking. It demands looking at our planet from a completely new, inquisitive perspective so we can develop lasting solutions for current and upcoming challenges," she says.

This new-age way of creating research-based solutions must be collaborative and must engage the youth if it is to contribute towards the achievement of UNESCO's rallying call to develop tangible science-based innovations for the realization of *The Ocean We Need for the Future We Want.*"

### Celebrating International Youth Day on Camera

We also spoke with five more KMFRI early career researchers and lab technologists about their involvement in Blue Economy activities and how they contribute to food systems and planetary health.



For more details please visit KMFRI Facebook page 'Kenya Marine and Fisheries Research Institute' and watch early career biotechnologist Mr Samuel Mwakisha, KMFRI intern working on a masters project in genetics Ms Diana Karani, lab technologist Mr Kennedy Oduor, former KMFRI intern pursuing a Master of Science degree in Oceans and Lakes in Belgium Ms Joy Ruguru, lab technologist Ms Christine Migwi and Ms Josephine Marigu, and hear what they had to say.