

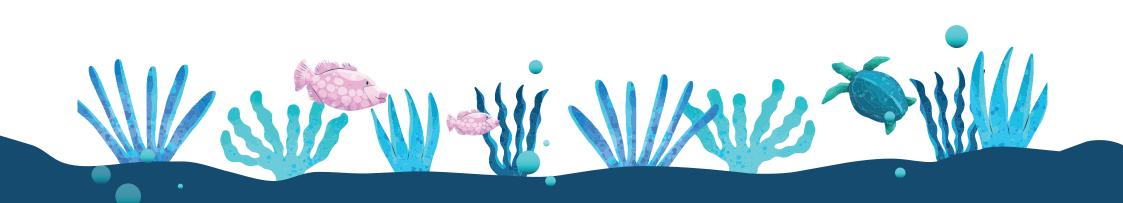
"Development and Food Security Through Blue Economy"

# **OVERVIEW**



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## **FOREWARD**

## Dear Friends and Supporters of Aqua-Farms Organization (AFO),

As we reflect on the accomplishments of 2023 and look forward to the opportunities ahead, I am filled with a deep sense of gratitude for the unwavering support and dedication that have propelled AFO towards its mission of ocean conservation and community empowerment.

At AFO, we believe in a conservation approach that not only safeguards the environment but also uplifts the livelihoods and well-being of the communities we serve. Our work is guided by the fundamental principle that conservation should benefit people, recognizing the intrinsic connection between healthy ecosystems and human prosperity. Whether it's supporting seaweed farmers in Zanzibar and Kilwa on implementing sustainable aquaculture practices, our initiatives are designed to foster resilience and prosperity in coastal communities while safeguarding precious marine resources.

Looking ahead, I am excited to share with you our new strategy for 2024-2027, which represents a bold and innovative approach to ocean conservation. This strategy, developed with input from our dedicated team and partners, aims to streamline our efforts, leverage evidence-based practices, and maximize our impact on both environmental and socio-economic fronts. With a focus on enhanced collaboration, data-driven decision-making, and adaptive management, we are poised to achieve even greater outcomes in the years to come.

I must also take a moment to express my heartfelt appreciation for the passion and enthusiasm of the AFO founders, staff, and volunteers who tirelessly work towards our shared vision. Their dedication and commitment serve as the driving force behind our success, inspiring us to push the boundaries of what is possible in ocean conservation.

Lastly, I want to extend my sincere gratitude to all our friends and supporters who have contributed to AFO's journey in any way. Whether through financial contributions, technical expertise, or moral support, your generosity has been instrumental in helping us reach our goals and make a meaningful difference in the lives of coastal communities.

As we embark on this exciting new chapter, I invite you to join us in our continued efforts to protect our oceans, empower communities, and build a sustainable future for generations to come.

With warm regards,

Jerry Mang'ena

Executive Director-Aqua-Farms Organization



AFO is working strategically to expand our reach and improve our approach as we innovate and learn everyday, For the year 2023, it has been very successful and I am so excited in the upcoming years

# 2023 AT-A-GLANCE



400 Hectares of Ocean showing improved biophysical conditions (mangroves, seagrasses and coral reefs)



8568
People reach with awareness

with knowledge of benefits of the ocean and value conservation.



15
Hectares of Ocean restored

by the community for the improved fisheries (400 square-meters of corals and 14 hectares of mangroves)



143
People with transformed income

increase income to support their livelihood



**40,000**Mangroves planted

with over **90**% survival rate



**30,000**USD Loans

issued through innovative financing models.



1073 Coral fragments planted

to restore and rebuild climate resilient reefs



376
People trained

on improved livelihood, climate-resilient solutions



2554
People trained

on sustainable natural resources or ocean biodiversity conservation



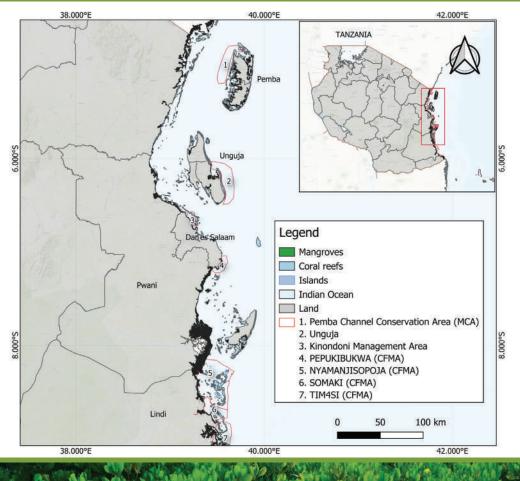
15 Groups received support from AFO on governance, effective management and improved livelihood

# **OUR APPROACH**



toward Adaptations and Resilience

# **OUR SCOPE**







## CONSERVATION

### 1. MANGROVE AND BLUE CARBON

Our blue carbon project aims to establish a Voluntary Carbon Credit Market for the purpose of supporting the poor coastal communities' efforts to continue to build resilience of Tanzania coastline through restoration of the degraded Mangroves, safeguard biodiversity conservation for climate mitigation and human well-being. The project will restore over 20,000 seedlings of mangroves on over 3 hectares of coastal land in cooperation with the local community. Mangrove forest will help to protect the coast, provide a nursery and breeding area for fish, and add the carbon credits and revenue to the coastal communities

Since 2016 Aqua-Farms organization has been in the front line to enhance community benefits of mangrove restoration where over 30,000 mangroves were restored across 6 hectares of land. This is an opportunity for the community to benefit from the carbon trading schemes. The small proportion of the income generated from the carbon trading will be used to improve education (for children) in the area with high priority support to girls, and water services. Additionally, we will enhance leadership skills of women by enrolling a high proportion of women to take lead in carbon monitoring and overall community awareness activities. In this project, the voluntary community blue carbon credits will be established, verified by plan vivo and put in a voluntary carbon market to support the local communities' efforts of mangrove restoration and livelihood empowerment.

To achieve this the project is conducting research to quantify the amount of carbon sequestered by the restored forests, understand emission scenario with and without the project and on social-economic drivers for sustained mangrove protection in the areas. The information that will help in registration to the Plan Vivo standard and establishment of blue carbon credit scheme.





### • Impact:

Over 33,000 mangrove seedlings have been successfully replanted across four hectares of mangroves both at Mbweni and Kunduchi sites. In parallel, AFO is providing beehives, tools, and training to over 40 women in Mbweni and Kunduchi, empowering them to earn an independent and sustainable alternative source of income through beekeeping and the sale of honey and derived products. The project also has empowered local communities to take an active role in mangrove conservation and sustainable management. By involving communities in decision-making processes and providing training and capacity-building opportunities, we have strengthened social cohesion and local governance structures. Community members in Kunduchi , Mbweni and Buyuni now have the knowledge and skills to advocate for mangrove conservation and sustainable development, ensuring the long-term success of our efforts.

#### Lesson learnt

One crucial lesson learned concerns the significance of community engagement and ownership in the mangrove restoration project. It has become evident that involving local communities at every stage not only contributes to the project's success but also nurtures a sense of ownership, thus ensuring long-term sustainability.

# 2. AQUATIC RESOURCES EDUCATION PROGRAM (AREP) AND VIRTUAL REALITY INTEGRATION

Despite the critical importance of aquatic ecosystems to our planet's health and biodiversity, there exists a significant lack of awareness and understanding among primary and secondary school students in Tanzania regarding the value and fragility of these environments. The current educational curriculum predominantly focuses on terrestrial ecosystems, leaving a gap in knowledge about ocean, lakes and rivers resources conservation. As a result, students are not adequately equipped with the knowledge and skills necessary to appreciate, protect, and sustainably manage our oceans. This deficiency in education perpetuates destructive behaviors such as pollution, overfishing, and habitat destruction, further exacerbating the degradation of marine ecosystems. Urgent action is needed to address this educational gap and empower students to become informed stewards of our oceans for future generations.

The Aquatic Resources Education Program (AREP) continued its mission to raise awareness about the importance of aquatic ecosystems and marine conservation among primary and secondary school students. In FY 2023, we integrated Virtual Reality (VR) technology and field visits to mangrove and intertidal areas into our educational efforts to enhance engagement and provide immersive learning experiences.

The AREP expanded its reach, engaging a total of 1500 school students across Dar es Salaam. Interactive sessions and educational materials introduced students to the importance of aquatic resources and their role in ecosystem health. Achieving a balanced representation, with 53% male and 47% female participation, ensured equal opportunities for both genders to learn about marine conservation and contribute to environmental stewardship.

In addition to classroom-based learning, students were provided with the opportunity to participate in field visits to mangrove and intertidal areas. These visits allowed students to observe firsthand the diverse ecosystems and unique biodiversity present in coastal environments. Through guided tours and interactive activities, students gained a deeper appreciation for the importance of preserving these fragile ecosystems.





## 3. CORAL REEF MONITORING, RESTORATION AND DIVING

The coral reefs of Buyuni, situated on the southern coast of Dar es Salaam city in Tanzania, represent a critical marine ecosystem often referred to as the "rainforests of the sea." Despite covering less than 1% of the seafloor, these reefs support a staggering quarter of marine life and play a pivotal role in sustaining fisheries, tourism, and coastal livelihoods. However, like many coral reefs worldwide, those in Buyuni have been severely impacted by human activities such as blast fishing, compounded by the adverse effects of climate change, including massive bleaching events like that of 1998. These challenges have resulted in a depletion of coral recruits and hindered natural regeneration processes, leaving the reefs in a degraded state.In response to these pressing issues, the project embarked on a comprehensive initiative aimed at monitoring biophysical conditions and restoring the coral reef ecosystems in the Buyuni area.

The objectives encompassed not only ecological restoration but also the support of sustainable fishing livelihoods and the promotion of marine ecotourism. Central to the project's strategy was the active engagement of local stakeholders, recognizing their pivotal role in achieving long-term environmental and socio-economic benefits for the community.

The project commenced with an inception meeting in April 2023, which served as a platform to gather 40 enthusiastic community members from PEPOKIBUKWA Collaborative Fisheries Management Area. The resounding acceptance and support expressed during this meeting underscored the local commitment to coral monitoring and restoration efforts. Subsequently, the project undertook a series of capacity-building activities, including the extensive training of two local fishermen in advanced open-water scuba diving. This initiative exceeded expectations, certifying six locals as scuba divers, significantly enhancing the project's expertise and capacity. A critical component of the project was the dissemination of best practices in coral restoration techniques for local communities, achieved through a comprehensive workshop conducted in June 2023. This workshop provided participants with valuable insights into coral table and disc creation methodologies, laying the groundwork for effective restoration activities. With preparations underway, nursery establishment and coral planting activities commenced in August 2023, albeit delayed by weather conditions.





The project successfully restored 1073 coral fragments within a designated damaged area by October 2023, covering a 400-meter square site. To ensure the long-term viability of the restoration efforts, the project implemented rigorous monitoring and evaluation protocols. Regular monitoring and cleaning of the coral fragments planted were conducted throughout the period from June to November 2023, culminating in a commendable 90% survival rate for five different coral species. Post-project monitoring activities to be continued into 2024, focusing on assessing the ongoing health and vitality of the restored reefs.

#### Lessons Learned:

Integral to the project's sustainability approach was the active involvement of the local community, with efforts to empower local rangers as citizen scientists playing a pivotal role. By fostering a sense of ownership and stewardship among local stakeholders, the project aimed to ensure the continued protection and preservation of the restored reef ecosystems. While the project encountered challenges, particularly with regards to unpredictable weather conditions, valuable lessons were gleaned regarding the importance of flexibility and adaptability in project planning. Strong community engagement, capacity building, and strategic partnerships were identified as key factors underpinning the project's success. Moreover, the unexpected outcomes, such as the training of six locals in scuba diving and the creation of direct and indirect employment opportunities, underscored the broader socio-economic benefits generated by the project.

#### • What Next:

Looking ahead, the project remains committed to fostering sustainable outcomes through continued community engagement, capacity building, and partnership development. Efforts will be focused on promoting innovative financing mechanisms and forging collaborations with marine conservation organizations to ensure the lasting positive impact of the project on both the marine ecosystem and local communities. Through ongoing monitoring and adaptive management strategies, the project seeks to navigate the dynamic challenges of coral reef conservation, striving towards a future where the reefs of Buyuni thrive once more, serving as vibrant hubs of biodiversity and sources of livelihood for generations to come. And use peer learning between CFMA to train other communities on local driven coral reef restoration initiatives.

IMPACT REPOR

# **LIVELIHOOD**

## 1.DESIGNING ELECTRONIC TRACEBILITY FOR KILWA OCTOPUS FISHERY

In 2023, Aqua-Farms Organization (AFO) initiated a pivotal effort to improve transparency and sustainability in Kilwa District's octopus fishery in Tanzania. AFO led the creation of a robust traceability stratergy. The initiative aims to tackles illegal fishing, meets market standards, and empower local communities by establishing incentivized fisheries. To achieve this FO in collaboration with Fishewise and USAID Funded project SALT aimed to design a robust and practical electronic traceability strategy that will inform the traceability program that fosters sustainable octopus fisheries management while uplifting the livelihoods of coastal communities, particularly youth and women.

Our journey commenced with extensive stakeholder engagement, featuring informative webinars, interactive sessions with community and co-designing workshops to map the octopus value chain intricacies. Through meticulous gap analysis of catch documentation, we obtained crucial insights into existing challenges and opportunities. This led to the establishment of stakeholder networks, comprehensive strategy development, and ongoing capacity-building efforts. These initiatives laid the groundwork for a transparent and inclusive strategy, guiding the development of an electronic traceability program aligned with international standards and local realities of small-scale fisheries.

## • Impact:

Our initiative has sparked dialogue among stakeholders, fostering understanding of electronic traceability in fisheries management. We reached and educated 3000 stakeholders across 29 BMUs in Kilwa, promoting sustainable octopus traceability. Capacity-building empowers local communities for active participation, enhancing resilience and economic prospects while inspiring biodiversity conservation for future generations.







## 2. SUSBLUE SHOP

Susblue Shop has been designed to address market and value addition challenges that women seaweed farmers and processors have. The project works to link seaweed farmers to markets and access skills on creating competitive products in the market

The objective of the project was to bolster the capabilities of seaweed farmers in Tanzania, particularly focusing on empowering women, by tackling key hurdles in market access and value addition.

Led by Aqua Farms Organization (AFO), the initiative centered around the establishment of the Sustainable Blue Shop (Susblue Shop), a platform designed to provide essential training and capacity-building programs. Fundamental activities encompassed training sessions in branding, marketing strategies, and optimizing seaweed processing techniques. Moreover, AFO spearheaded comprehensive market research endeavors to pinpoint opportunities for value addition within the seaweed sector.

## • Impact:

Starting with 58 women in Zanzibar, the project expanded to engage 80 women across the seaweed value chain by fiscal year 2023. Tailored training programs significantly enhanced farmers' capabilities in branding, marketing, and product processing. This empowerment led to improved market access, enabling farmers to navigate market dynamics and promote their products effectively. As a result, the project notably improved the income and livelihoods of seaweed farmers, particularly benefiting women. These outcomes fostered economic empowerment and contributed to broader goals of poverty alleviation and social inclusion within coastal communities.

#### • Lessons Learned:

The project highlights the importance of thorough market research, continuous support, and capacity building for future initiatives. Collaboration with diverse stakeholders is crucial for sustainable change, emphasizing the value of collective action in addressing evolving market demands effectively.

#### • What Next:

Moving forward, enhancing monitoring and evaluation mechanisms, fostering knowledge exchange, and scaling successful models to new regions represent key strategies for maximizing impact and fostering the continued growth and resilience of the seaweed farming sector in Tanzania.





Seaweed farming in Tanzania, faces multifaceted challenges exacerbated by climate change, outdated farming methods, and inadequate financial resources. Traditional "wooden peg" tools and techniques, passed down through generations, are labor-intensive and unsuitable for the increasingly erratic weather patterns and rising temperatures associated with climate change. Additionally, the predominantly Muslim population's adherence to Islamic Sharia laws, which prohibit interest-based financial transactions, presents a unique constraint in accessing appropriate financial support. Despite the critical need for modernization and financial assistance, existing interventions have been insufficient in addressing these complex challenges. As a result, there was an urgent need for a socio-culturally appropriate and comprehensive solution to empower Zanzibar and Kilwa seaweed farming communities, improve their resilience to climate change, and ensure their sustainable livelihoods.

The goal of the project was to support and empower seaweed farming communities, particularly women, in Tanzania by providing them with appropriate financial and technical assistance to adapt to the challenges posed by climate change and market dynamics.

### • Description:

The Seaweed microcredit project was embedded through a rent-to-own equipment microcredit model. Under this model, 2 seaweed farming groups were formed to rent deepwater seaweed farming equipment (Boat, Outboard engine, planting lines), receive technical training, and access financial services.

## • Impact:

For the FY2023 AFO has deployed a total loan of 30,000 USD direct to communities in Kilwa and Pemba. The project increased the average monthly income of farmers, like Fatuma Makame and Tatu Mchape, from US\$ 30 to US\$ 80 while the goal is to reach US\$ 140 by 2026. The project also resulted in improved harvests by 1.5x, increased negotiating power with buyers, and the creation of value-added seaweed products. Furthermore, the project facilitated the formation of village community banks and plans to scale up the intervention to benefit more farmers and hectares of seaweed farms.



## **OUR COMMUNITIES**



"The deepwater seaweed farming has been significant to our lives as we have seen first-hand the increase of our harvests compared to the previous method, the availability of seeds is now more certain rather than seasonal dependent, we have indeed ventured into more profitable and reliable seaweed farming."

Fatuma Makame, A pioneer seaweed farmer, Pemba.

"The 'Matumbawe Hai' coral reef project has been immensely valuable to me. It equipped me with essential diving skills, enhancing my understanding of coral reef restoration and its significance in fish spawning. This program has significantly contributed to uplifting fishermen's income, including mine".

Mussa Kayanda Ngoy, Marine Ranger and a local fisherman, Buyuni.



# **OUR PARTNERS**



































# **APPRECIATION**

Special thanks to our AFO colleagues for their generous support in donations and fundraising efforts, Including:-

**Tania Hamilton and Goshen University Students** 





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