

**Concept note**

**CTJB-27/10/23**

**Cooperation with CORDAP**

**Expanding the pilot trial of co-managed area management to other BMUs in Kilifi county.**

**INTRODUCTION:**

The marine ecosystem off the coast of Kenya is a valuable resource, supporting both local fishing communities livelihoods and biodiversity. However, unsustainable fishing practices, habitat degradation, and climate change are significant threats to this fragile inshore ecosystem including coral reefs. At Oceans Alive, we aim to address these challenges by engaging local communities and BMUs to develop co-managed areas (CMAs). This concept empowers local communities to implement sustainable practices within their area backed by gazetted legal framework. Learning from the success of Kuruwitu initiating the first CMA in Kenya, our objective is to facilitate the replication of this concept to the other 16 BMUs within the Kilifi county. Among other activities reef fishery restoration through coral gardening has been a main component of restoring Kuruwitu’s ecosystem as well as providing revenue to commonities from this area. Two main techniques have been used to restore coral reefs within the Kuruwitu BMU. The first techniques has been the development of a Community Conservation Area (CCA). These areas are now called ‘Tengefu’s’ in Swahili which means ‘to set aside’. The Kuruwitu Tengefu is the first and oldest reef fishery based community managed marine area in Kenya. Since its creation in 2006 the area has experienced a 400% recovery in fish biomass, 30% coral restoration and 17% seagrass regrowth. The resultant spectacle has created the tengefu as a valuable tourism destination, contributing to revenue for community welfare investments. This success has started a movement to establish similar CCAs and has been the inspiration to fishing communities up and down the Kenyan coast.

Oceans Alive has initiated a monitoring programme to document the success of the KCW-CBO tengefu. Through this cooperation with Pelorus, we aim to empower and train community members to actively participate in the collection of valuable data, fostering a sense of ownership and collaboration in the conservation efforts. This partnership is to initiate phase 1 of a larger study.

**Phase 1 Objectives:**

1. Assessment of the ecology to enhance the Kuruwitu community's understanding of the current status of the tengefu.
2. Building  capacity of the Kuruwitu community in the use of citizen science for improved management of the marine resources in the Tengefu.
3. Application of the data to make recommendations on an improved aquatic safari tourism package.

**Phase 2 Objectives:**

1. To build capacity in other communities in the use of the methodology to inspire the importance of citizen science in decision making for management of community protected areas.
2. Roll-out of the aquatic safari tourism packages to Kuruwitu and other community managed areas.

**Activities and Outputs**

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| Activities | Outputs |
| Conduct workshop to develop and standardize methodology, approach and site for surveys within and outside the Kuruwitu tengefu | Coral reef monitoring guide for monitoring of the Kuruwitu tengefu and nearby fished areas |
| Conduct trainings for local community representatives data collectors on the methodology and approach for the proposed surveys | Trained local community representatives |
| Conduct field data collection on benthic status, fish abundance and macro-invertabrates | Data on fish abundance, benthic status and macro-invertebrates |
| Data analysis, compilation and Report writing | Draft report on the current status of the Kuruwitu tengefu and nearby fished areas |
| Conduct workshop/meeting to share survey findings | Final report on the status of the Kuruwitu tengefu and nearby fished areas |

**Expected Outcomes:**

1. Improved understanding of the current status of the Kuruwitu tengefu and nearby fished areas
2. Enhanced knowledge and understanding of local community representatives on scientific based coral reef monitoring and research methods and approaches
3. Recommendations and strategies on establishing an aquatic safari tourism package developed

**Methodology**

**SITE**

Three categories of sites shall be studied:

* Outside the tengefu (possibly Kuruwitu or Kinuni) as a control
* Ecological sites within the tengefu
* Actively restored sites within the tengefu e.g. coral tables, artificial reefs

Map

**Data Collection**

1. **Survey Methods:** The trained community members will work alongside Oceans Alive to follow the standardized survey protocol for assessing fish data (e.g. fish biomass, biodiversity) and benthic data (e.g. coral cover, invertebrate density). The survey will use established methodologies and sampling techniques, such as belt transects and point intercept methods and photogrammetry.
2. **Data Collection:** The community members, along with Oceans Alive will conduct  surveys at predetermined locations inside and outside the tengefu. Data collection will involve underwater visual surveys, transect measurements, and species identification. The surveys will capture variations in time of day, tidal depth and seasonal changes.
3. **Community-Led Data Collection**: Oceans Alivewill establish a system whereby community members contribute data on an ongoing basis and provide a venue as a living classroom for peer to peer training of other interested groups. This will involve providing the necessary tools, equipment, and support to empower them to collect data independently. Regular feedback sessions and data-sharing platforms will be established to ensure their continued engagement and motivation.

**DATA ANALYSIS**

**Data Analysis:** Collected data will be compiled, verified, and analyzed using appropriate statistical methods. The analysis will provide insights into the status of fish populations, biodiversity, seagrass cover, and coral cover, enabling the community to make informed decision-making for conservation planning and management.

**h. Scoping for tourism potential:** A survey of potential Kenyan tour operators and dialogue with those willing to invest in an aquatic tourism package

**COMMUNITY ENGAGEMENT AND COLLABORATION**

a. Community Workshops: Oceans Alive will organise a community workshop to raise awareness among the local community about the importance of citizen science to  marine conservation.

**WORKPLAN**

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| Activity | Particulars |
| **Literature review** | The Oceans Alive team will source data from original studies by WCS, CORDIO, KEMFRI etc. and develop a baseline and to use it as an indicator to refine the methodology |
| **Develop training material**: | The Oceans Alive team, learning from the above study will prepare training materials as to the methodology and approach that will be used |
| **Training citizen scientists**: | Oceans Alive, in consultation with the KCWCBO and the KBMU, will identify and select individuals from the local community who show a keen interest in |
| **Site selection** | Three categories of sites shall be studied:   * Outside the tengefu (possibly Kuruwitu or Kinuni) as a control * Ecological sites within the tengefu * Actively restored sites within the tengefu e.g. coral tables, artificial reefs |
| **Survey Methods** | The trained community members will work alongside Oceans Alive to follow the standardized survey protocol for assessing fish data (e.g. fish biomass, biodiversity) and benthic data (e.g. coral cover, invertebrate density). The survey will use established methodologies and sampling techniques, such as point intersect transects and quadrat sampling and photogrammetry. |
| **Data Collection** | The community members, along with Oceans Alive will conduct  surveys at predetermined locations inside and outside the tengefu. Data collection will involve underwater visual surveys, transect measurements, and species identification. The surveys will capture variations in time of day, tidal depth and seasonal changes. |
| **Data Analysis** | Collected data will be compiled, verified, and analyzed using appropriate statistical methods. The analysis will provide insights into the status of fish populations, biodiversity, seagrass cover, and coral cover, enabling the community to make informed decision-making for conservation planning and management. |
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**Sustainability and Long-term Impact:**

Oceans Alive will build sustainability of the local communities by encouraging local community leaders, stakeholders, and relevant government agencies to work together to use community-collected data in co-management plans and policies. This will empower the community to play an active role in conservation decision-making processes. Additionally, we will explore avenues for leveraging the data collected by the trained community members to secure further funding.

**Budget and Resources:**

a. Training: The cost of training materials, trainers' fees, and logistics for the training sessions.

b. Equipment: Provision of necessary survey equipment, including underwater cameras, measuring tapes, snorkeling gear, and species identification guides.

c. Data collection: Provision of resources for the surveys and boat hire and fuel.

d. Data Analysis: Expenses related to data processing (e.g. laptop and appropriate software).

e. Community Workshops: Costs associated with organizing workshops, including venue rental, facilitators' fees, and materials.

f. Community Engagement: Provision of tools, equipment, and ongoing support for community members to contribute data independently (e.g. fins, snorkelling gear, reef shoes measuring tapes, slates, data books etc.).

g. Project Management: Salaries for Oceans Alive technical support, administrative costs, and overhead expenses.

h. Monitoring and Evaluation: Additional support will be required for follow-up seasonal surveys, impact assessment (possible phase 2)

i. Budget to develop an aquatic safari package: Mapping of a nature trail and dialogue with local tour operators to establish the tengefu as an international snorkelling venue.

**Conclusion:**

By involving local community members in the citizen science assessment, we aim to create a sense of ownership and collaboration among the community members in application of marine conservation efforts. This will make the community stronger as stewards of their local marine ecosystem and provide a living classroom venue for replication elsewhere.