



# Climate-Smart Design for Diani-Chale Marine Ecosystem management and Improved Livelihoods for Coastal Communities

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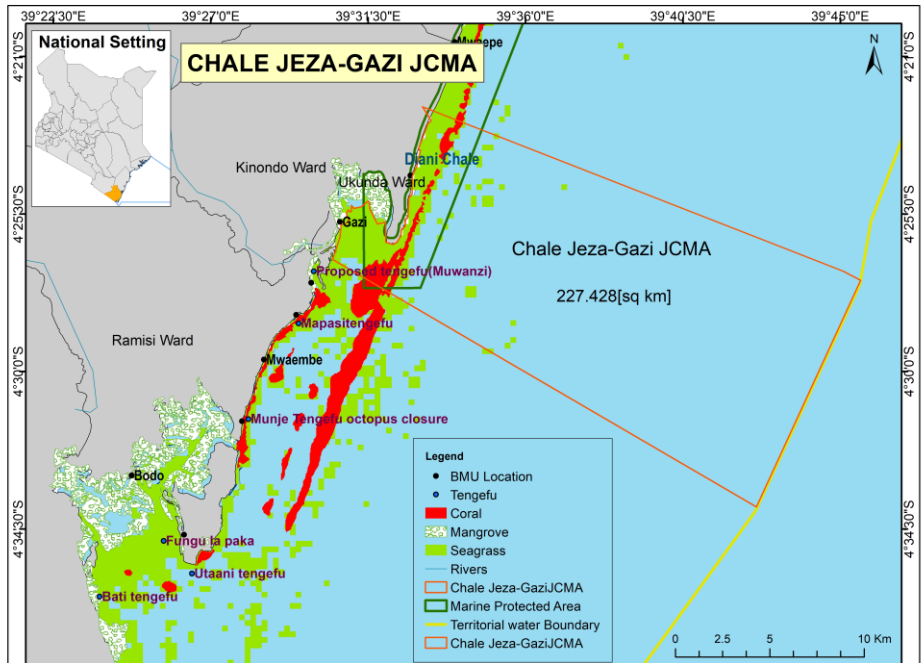
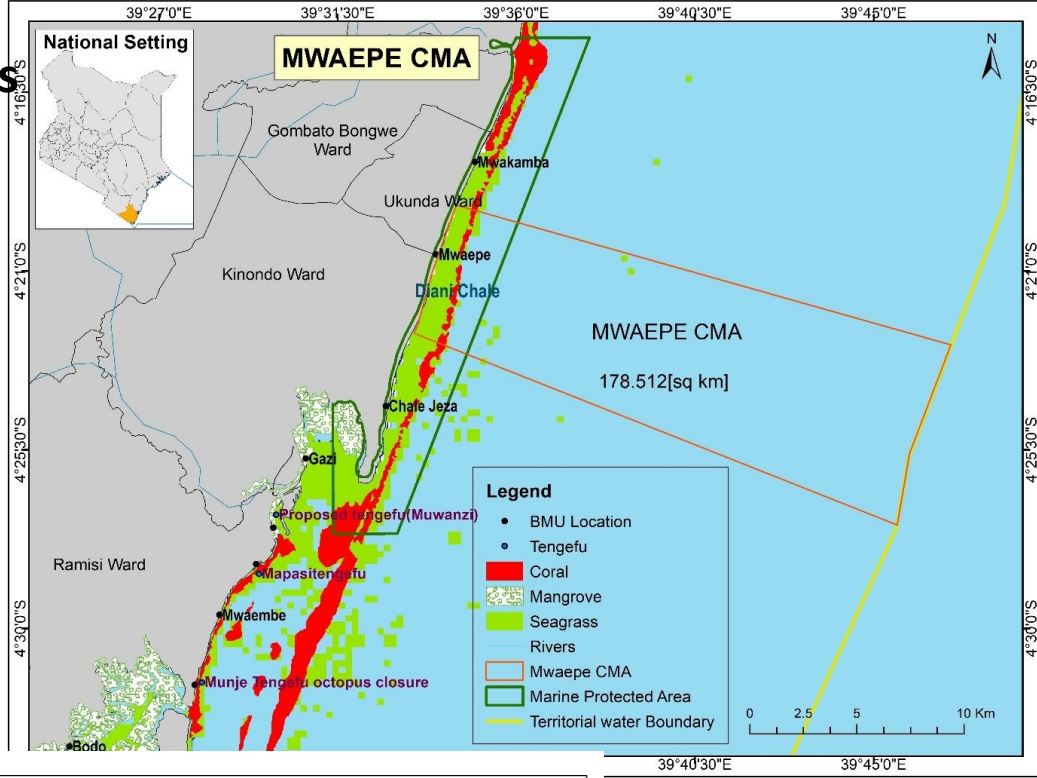
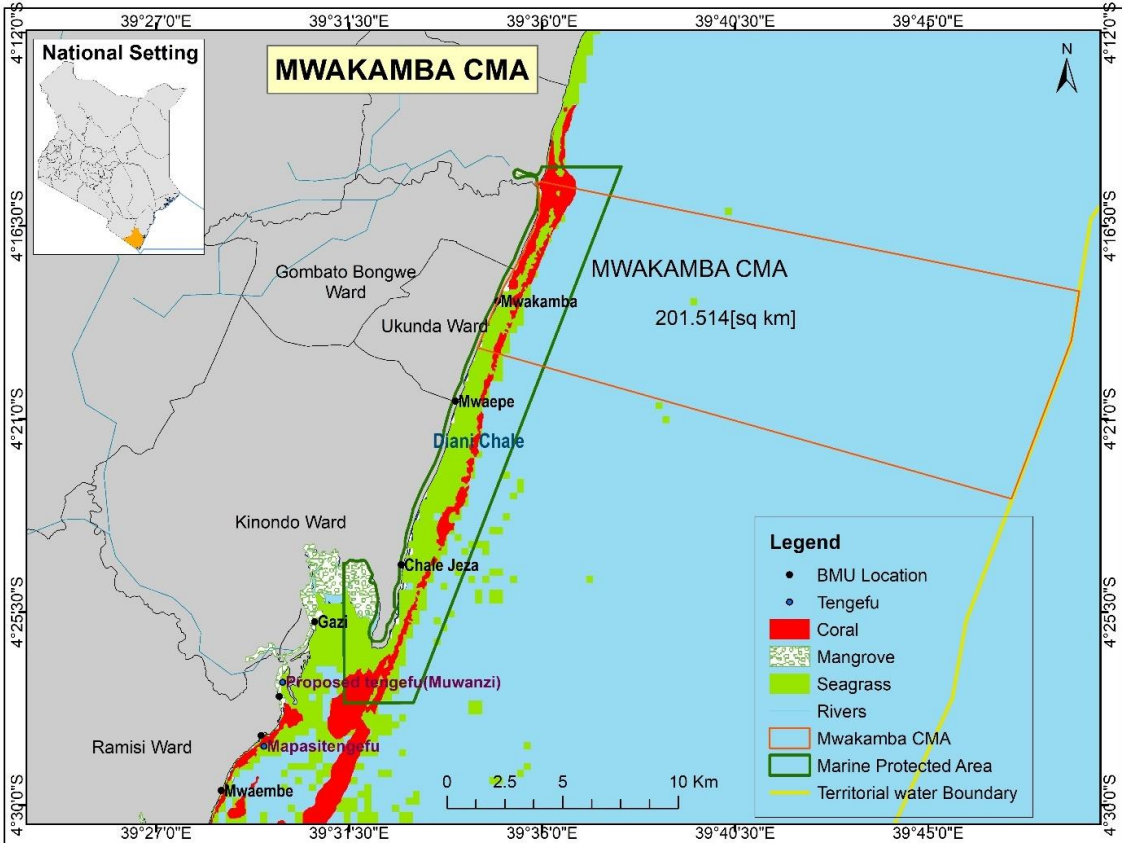
*Discover Beyond*



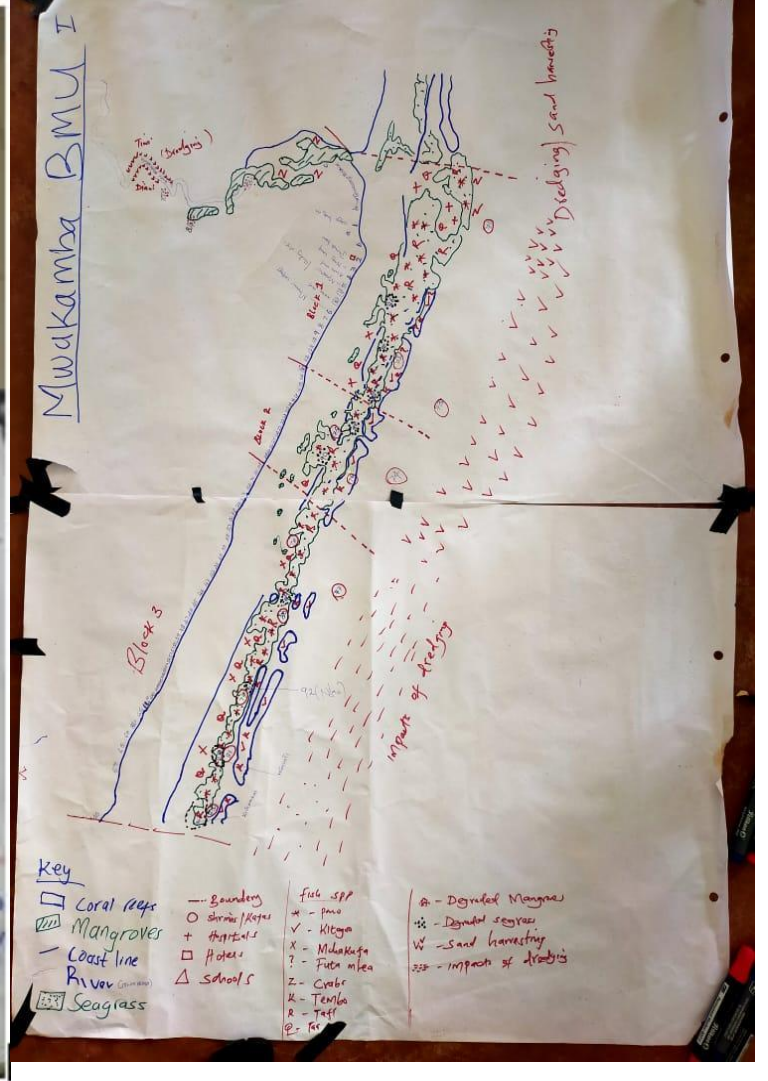
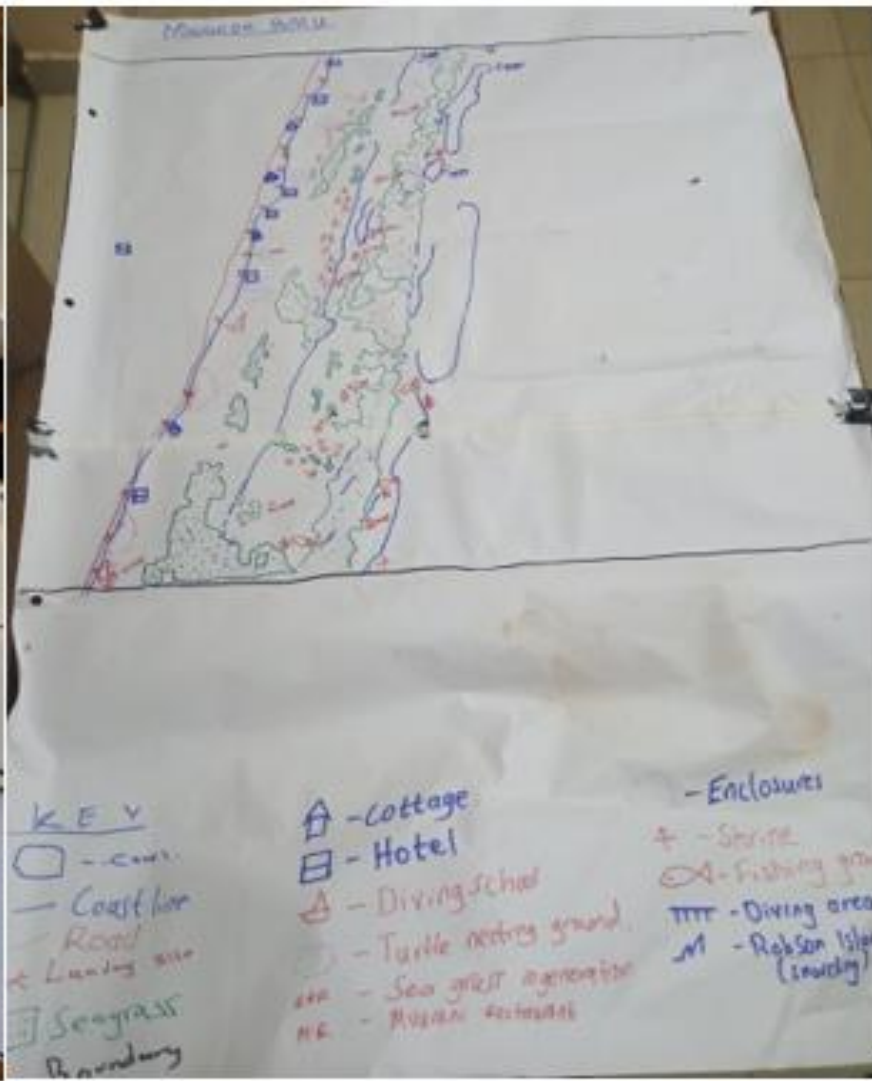
## Output 1: By 2023, Diani- Chale integrated marine ecosystem and fisheries management plan developed

DELIVERABLES	PROGRESS
Assessment of the Diani – Chale integrated marine ecosystem including management effectiveness, socio-ecological and biodiversity assessment as well as climate change impacts and local community vulnerability	<b>Conducted Resource Base Inventories</b> which involved conducting a range of assessments, including ecological assessments (status of mangroves, seagrass, coral reefs), fisheries situation and fishing patterns surveys. Additionally, climate vulnerability assessment was conducted to gather crucial data about the potential impact of climate change on the marine resource.
Participatory boundary mapping and resource use zonation in Diani-Chale marine ecosystem	<b>Participatory mapping</b> with local communities was done to gather information on the spatial scope & distribution of crucial marine resources.
Workshops on participatory development of integrated ecosystem and fisheries management plan	<b>Preparation of Draft Co-Management Area Plans</b> was developed through 2 expert working group writeshops for consolidation, synthesis, analysis, and developing the integrated ecosystem based fisheries management plans for Mwakamba, Mwaepe & Chale -Gazi
Draft management plan for the Diani- Chale integrated marine ecosystem and fisheries	Draft CMA plans for different BMUs within Diani- Chale marine ecosystem are in place. Due to different fisheries resource use patterns it was not possible to have a joint co-management plan for all the 4 BMUs found in Diani-Chale

# Diani- Chale marine ecosystem (Proposed ecosystem and fisheries Co-management areas = 607.454 km<sup>2</sup>)







Maps developed through community participation

**Output 2: By 2023, capacity is built to support long-term community engagement in sustainable management (conservation, protection, restoration and sustainable utilization) of Diani-Chale marine ecosystem, consisting of 4 Beach Management Units (BMUs) and 1 Community Forest Association (CFA)**

<b>DELIVERABLES</b>	<b>PROGRESS</b>
Community sensitization and awareness on sustainable marine resource management for socio-economic development	Trained 30 local community members (20 Male +10 females. Objective of the training was To enhance awareness of the value of marine resources (blue carbon ecosystems) and the need to conserve them. To highlight threats facing blue carbon ecosystem To identify degraded mangrove and seagrass ecosystems and prioritize sites for restoration To build local capacity for blue carbon restoration and conservation
Capacity building for local community scouts to support community based monitoring, control and surveillance (MCS) of the co-managed Diani-Chale marine ecosystem	Minimal progress. Currently in the process of identifying those to be trained
Draft monitoring control and surveillance (MSC) and financial sustainability plan	Minimal progress. This is outside the funding scope of this demo project. Was initially to be supported by WCS. Will be supported under other upcoming conservation projects.

## Output 3: Recover fisheries habitat and nursery areas by establishing temporary fishing closure areas (targeting high value octopus) and enhance fisheries replenishment to nearby fishing grounds in the marine reserve by 2023

DELIVERABLES	PROGRESS
<p>Training of beach management units on marine resource governance, sustainable fishing practices, business development, financial management, fish post-harvest technology and marketing</p>	<p>Training materials were developed and Training of Trainers (TOT) targeting the Beach Management Unit executives in Kwale County was conducted under the Kenya Marine Fisheries &amp; Socioeconomic Development project. This SAPPHIRE demo project will assess the outcome of the training and identify opportunities for scaling up.</p>
<p>Capacity building of the local fishers to undertake fishing area closures through peer-to-peer exchanges and experiential learning</p>	<p>10 selected local community representatives from the fisheries sector were taken for experiential learning in Pate Marine Community Conservancy, Lamu County. Focused on learning sustainable community based natural resource management governance, and setting up fisheries closures/octopus closures to enhanced fisheries and income from high value octopus. Outcome - Mwakamba BMU identified potential site for establishing fisheries closure. The area is shared with Tiwi BMU. A consultative meeting was held between the leaders of the 2 BMUs to agree on establishing the site.</p>
<p>Demarcation of selected fisheries/octopus closure area</p>	<p>Potential fisheries closure area has been identified in Mwakamba but not demarcated.</p>





**Output 4: At least two high value fisheries based livelihood enterprises established (e.g. within the octopus fisheries market value chain) for improved livelihood and well-being of fisher communities (target 250 fishers) relying on marine resources in the project site by 2023**

**Output 5: Mangrove based alternative livelihoods activities identified and initiated**

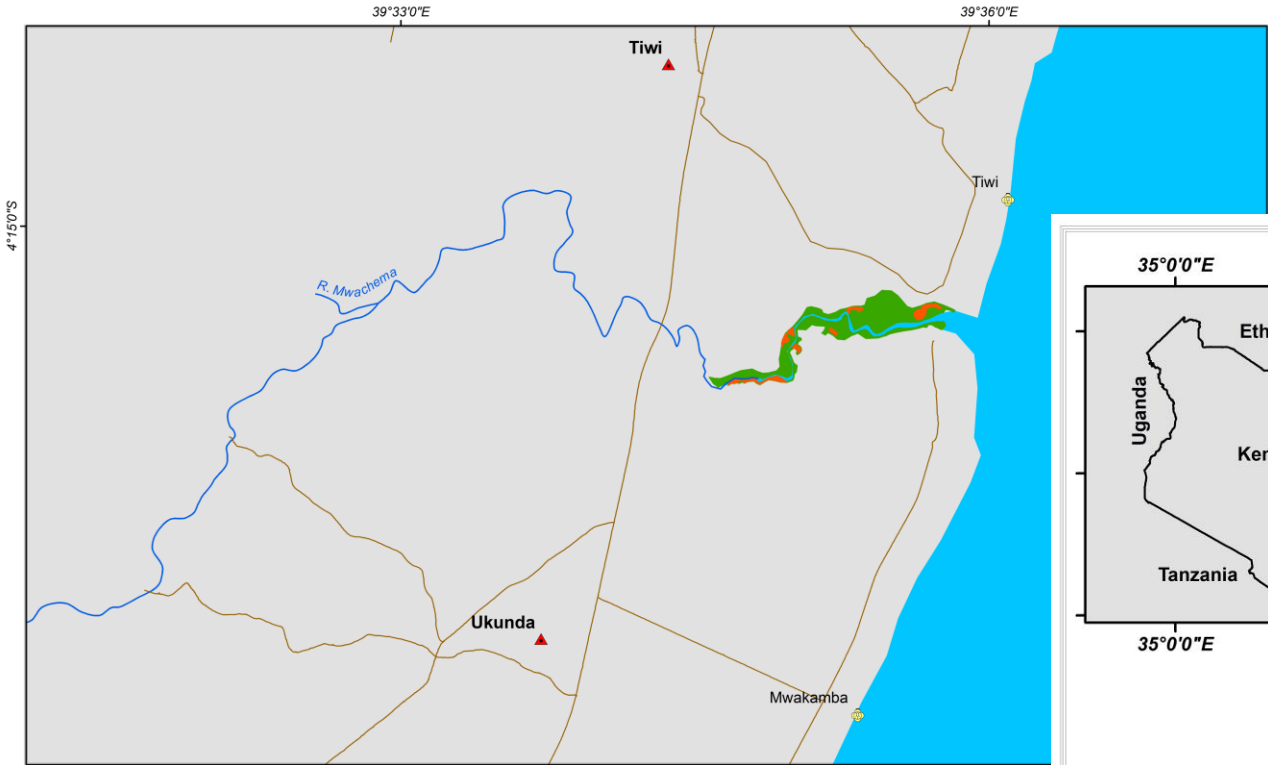
DELIVERABLES	PROGRESS
<p>Draft business plan for identified livelihood options; and facilitate linkages to financial services in order to support establishment of the fisheries and other nature based enterprises as prioritized by communities</p>	<p>Organizational Capacity assessment was conducted for 6 Community Based Organizations (Mwakamba BMU Sisi Ndisi Enye, Chikonophidzu, Pono, Tunusuru Women Group, Mwakamba Silk).</p> <p>OCA involved systematic evaluation of the CBOs critical management areas including <i>governance, administration, human resources, financial and organizational management, program and project performance management</i>. Mwakamba BMU had the highest overall capacity at 40 %, followed by Chikonophidzu CBO with 34%.</p> <p>Next is to support developing business plans for nature based enterprises for these 2 CBOs.</p> <p>Through this SAPPHIRE demo project, we engaged Kenya Ports Authority who have committed to support implementation of the CBOs business plans.</p>
<p>Awareness raising for community fisheries on market linkages and related enterprises</p>	<p>Not done</p>



## Output 6: Degraded mangrove forests of Diani-Chale are rehabilitated through enhanced restoration approaches

DELIVERABLES	PROGRESS
mapping and assessment of the ecological settings of the degraded sites identified requiring restoration	Mapping of degraded mangroves along River Mwachema in Diani was conducted. 3.97 ha along River Mwachema require restoration.
Report on capacity development on ecological mangrove restoration among community and other stakeholders	Trained 6 CBOs on nursery establishment and mangrove restoration in Diani. 2 nurseries established in Diani and Tiwi with over 25000 seedlings
Report on restoration of degraded mangrove areas using participatory approaches	Restored mangrove degraded sites in Diani. Planted 10000 mangrove seedlings during the national tree planting day. Kenya Ports Authority purchased mangrove seedlings worth Ksh 1million from the CBOs.
Draft simple community participatory mangrove monitoring program	KMFRI already developed a community mangrove restoration protocol. This demo project intends to support printing and distribution to local communities engaged in mangrove restoration.

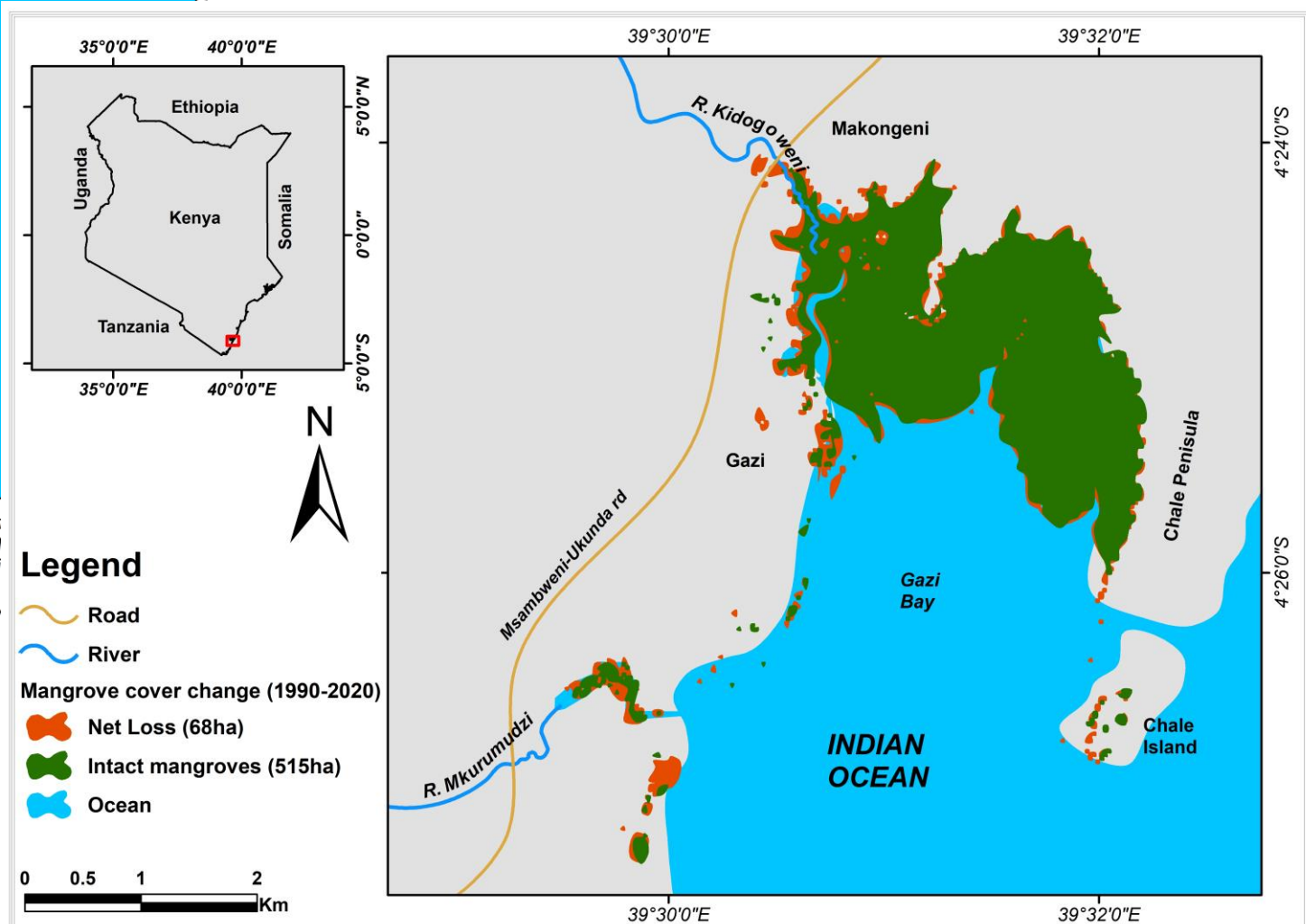
Map showing degraded mangrove areas along River Mwachema in Diani and Gazi Bay.  
 Note the degraded sites = 3.97 ha and 68 ha respectively



- Legend**
- Landing sites
  - Towns/Trading Centre
  - Road
  - River
  - Degraded sites (3.97ha)
  - Intact mangrove (18ha)
  - Ocean



Coord:  
 WGS 1984  
 Project:  
 Datum:  
 Units: Meter

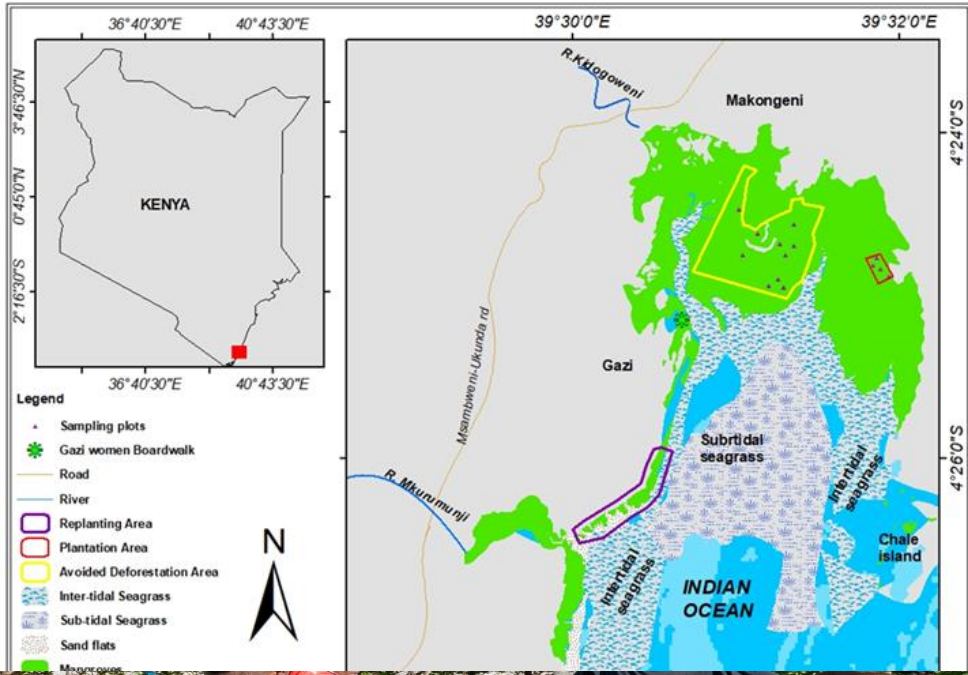


- Legend**
- Road
  - River
  - Net Loss (68ha)
  - Intact mangroves (515ha)
  - Ocean
- Mangrove cover change (1990-2020)**





# Experimental restoration of degraded mangrove areas within Diani-Chale using enhanced restoration techniques (0.99 ha)







A before picture of the eroded mangrove area along River Mwachema in Diani





An after picture of the restoration process after the groups in Diani planted the Mangrove seedlings in the degraded sites.

**The established mangroves survival rate is at 90%**





A picture of the women organising the mangrove seedlings getting ready to plant



## Output 7: Communication and publicity materials developed

DELIVERABLES	PROGRESS
Appropriate information and awareness materials developed to raise awareness and communicate the project interventions	Developed Video and pictorial documentation of key project activities. Next is to develop infographics to be printed and shared with the beneficiary community groups.
Final Diani-Chale integrated marine ecosystem management plan	Ecological and socio-economics data was sufficiently collected, collated and synthesized.  This formed the basis for developing the draft Co-management Area Plans for Mwakamba, Mwaepe and Joint Co-management Area Plan for Chale-Gazi.
Two scientific publications and policy briefs	Scientific data and technical reports generated from the project will be summarized into policy briefs. Research paper is in preparation a) Comparison of bottom –up and top-bottom approaches in community based natural resources management in Kenya

## **Lessons learnt**

1. Assess risks that may cause delay in project implementation.
2. Capacity development should be a continuous process for project implementing partners and the local communities where a project is being implemented
3. Engage other stakeholders in the project site and leverage on resources (human, finance, social) available to have greater conservation impact.
4. Education and awareness and community livelihood are key components in sustainable conservation ventures.

## **Best Practices**

1. Regularly evaluate project risks and mitigation measures and adopt suitable measures as part of adaptive risk management.
2. Conduct organizational capacity assessment before engaging with any CBO during project implementation. Identify gaps and improve on them through capacity development.
3. Identify potential business opportunities and innovations related to the natural resource being managed. This will ensure communities see the benefit of conservation.

# Way forward

1. Build capacity of CBO's based on the capacity gaps identified during the organization capacity assessment.
2. Scale up the livelihood interventions identified in Mwakamba e.g mangrove based honey production, ecotourism ventures- mangrove boat rides, mangrove restaurant and mangrove crab farming.
3. Fast track establishment of fisheries closure area in Mwakamba/Tiwi coastal area
4. Enhance information dissemination.



THANK YOU