



SAPHIRE PROJECT/SWIOFC-NC PP1 - PECCA  
Pilot Integrated & Local Marine Spatial Planning -  
Zanzibar Journey Towards Local Marine Spatial Planning,  
Marumaru Zanzibar Workshop

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23<sup>rd</sup> October, 2024

# Contents

1. Approach/Concept
2. Context – Blue Economy
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4. Pemba Island and PECCA
5. Collaborative Management for Sustainable Development
6. Integrated Planning - Local Marine Spatial Planning (LMSP)
7. Findings & Implications



**Legend**

- Population
- 1877 - 2677
- 2677 - 3691
- 3691 - 4439
- 4439 - 5138
- 5138 - 5684
- Sand Bank
- Reef/Coral (Mwamba)
- Coral/rock and shallow water
- Islands
- Beaches
- Sand Deposits and Reef
- Shelia Area 3
- Pemba shoreline
- Districts
- Pemba Island Area
- Pemba Channel Conservation Areas
- Water Bodies

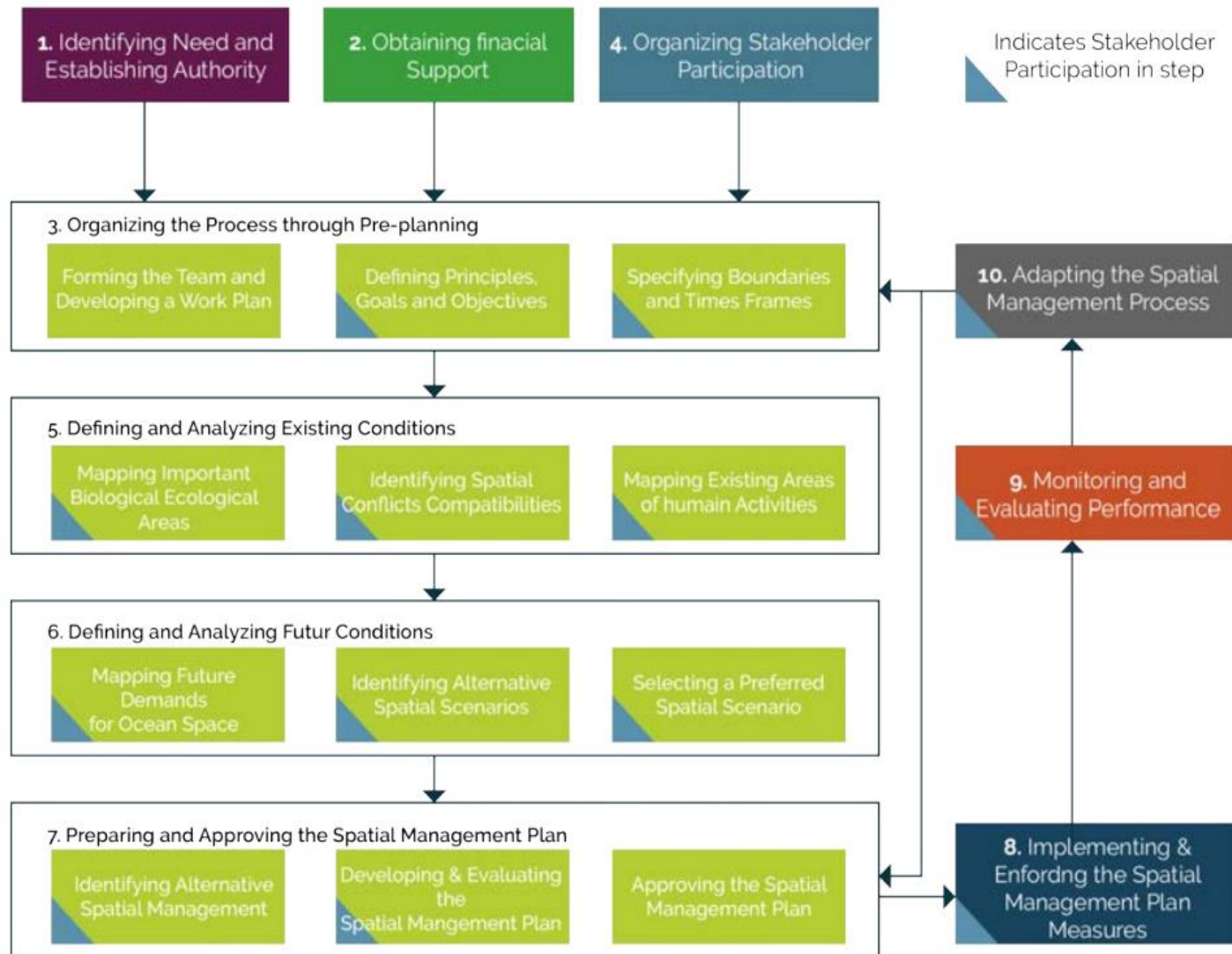
Coordinate System: Arc 1980 UTM Zone 37S  
 Projection: Transverse Mercator  
 Datum: Arc 1960  
 False Easting: 500 000 000  
 False Northing: 10 000 000 000  
 Central Meridian: 39 0000  
 Scale Factor: 0.9996  
 Latitude Of Origin: 0.0000  
 Units: Meter

Author: NCS  
 Date: 22/04/2024

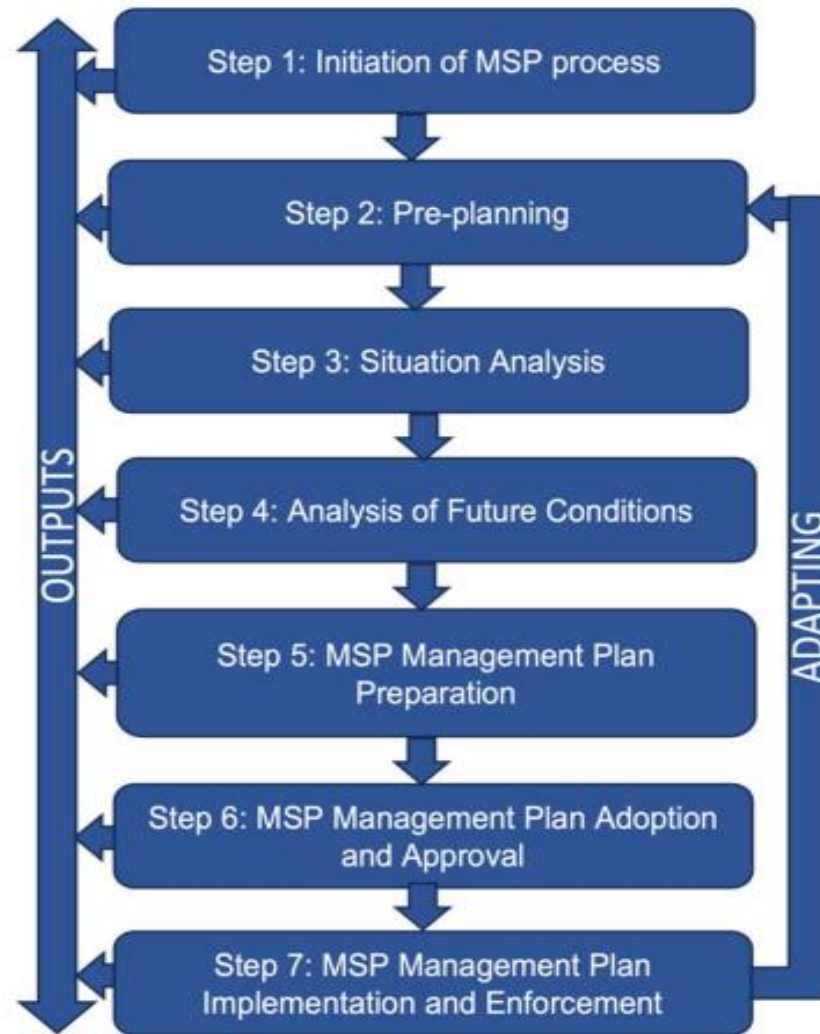
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0 1 2.5 5 7 10.5 14 Kilometers

# Example: UNESCO step-by-step approach to marine spatial planning (Ehler and Douvère 2009)



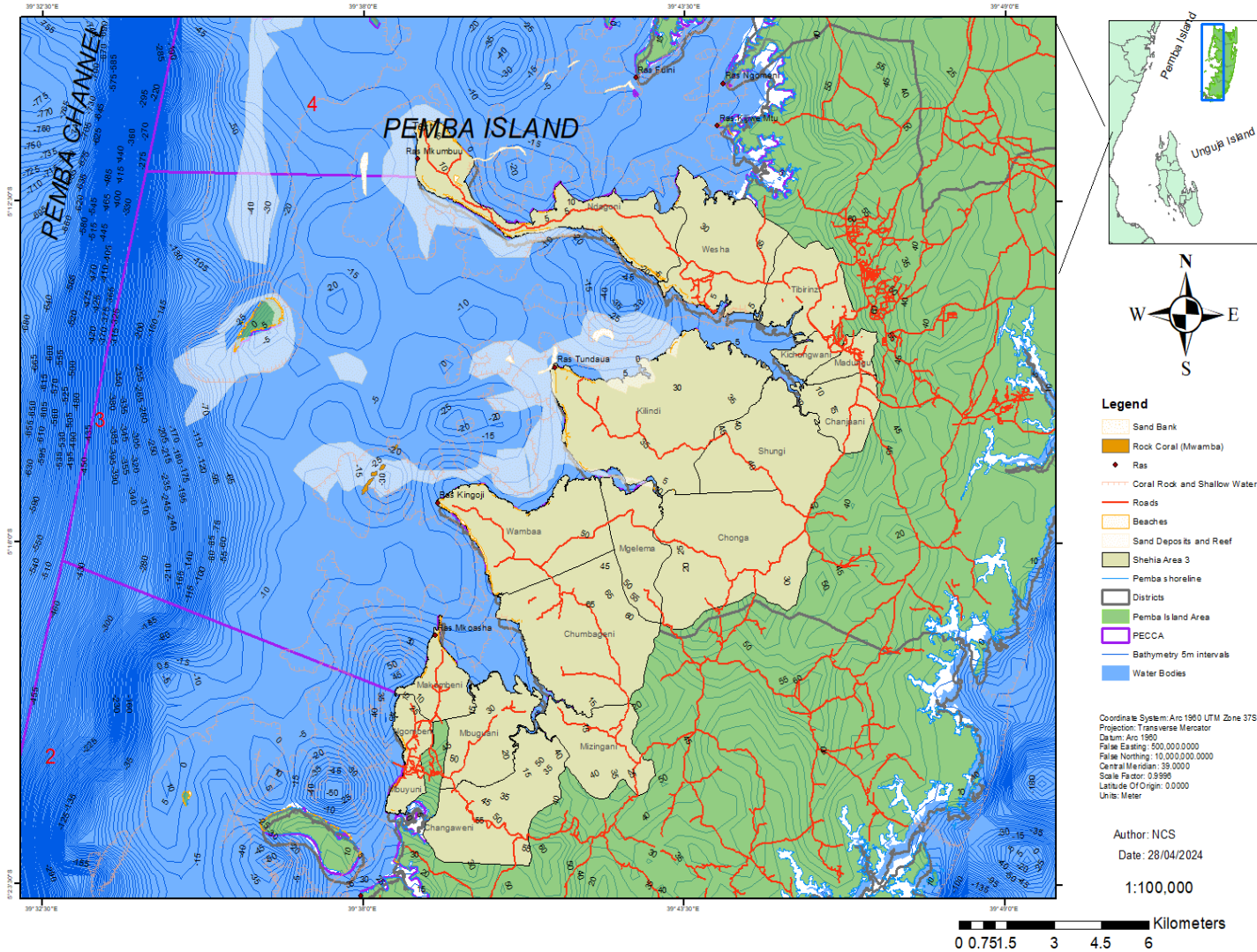
# MSP Guideline for URT



*Figure 1. Summary of steps.*

# What we did and what we learn from MMSP PECCA Area No. 3?

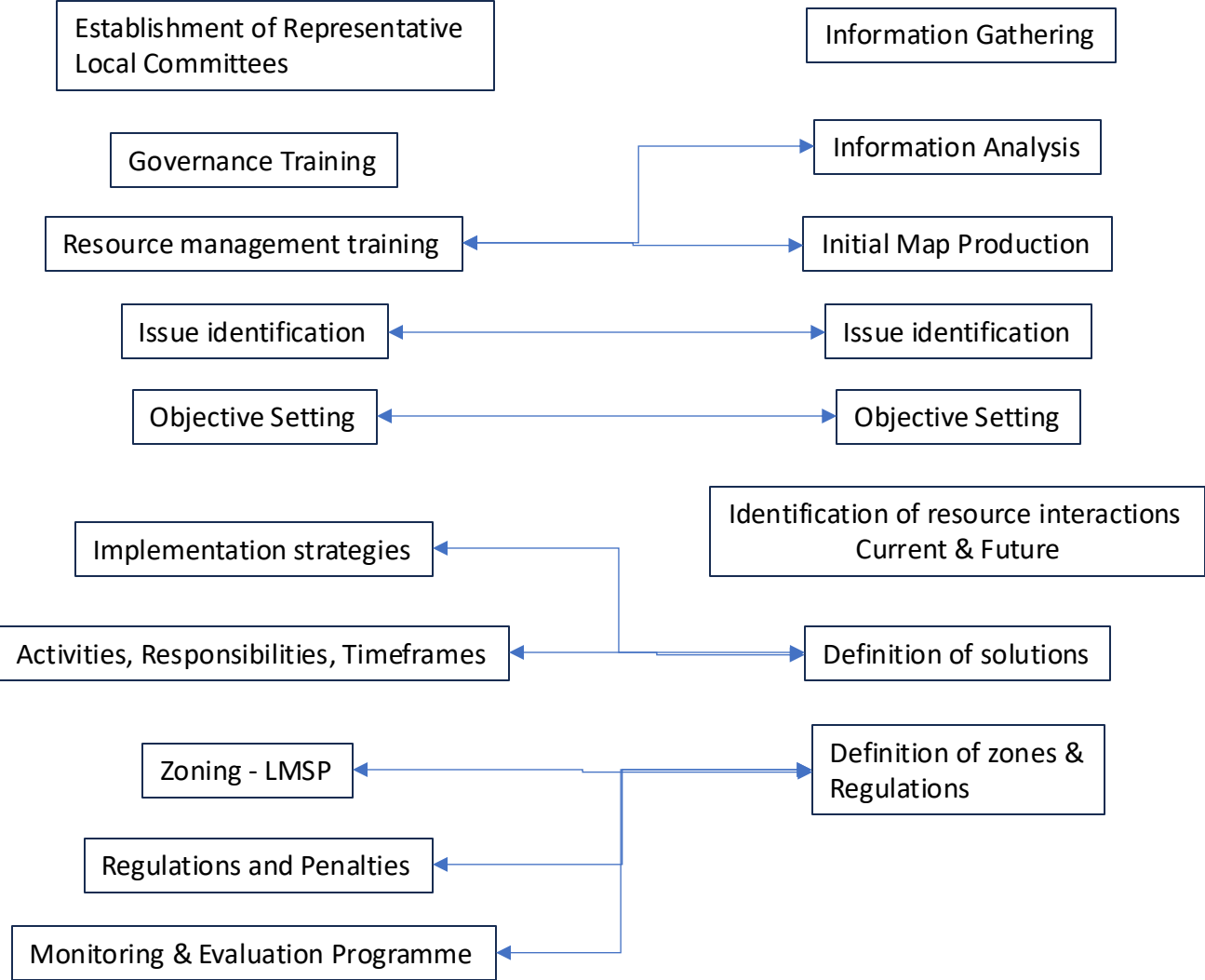
PEMBA CHANNEL CONSERVATION AREA 3 MANAGEMENT AREAS BATHYMETRY



# Collaborative Integrated Management Plan and MSP – The Process

## INTEGRATED MANAGEMENT

## LOCAL MSP



# Planning

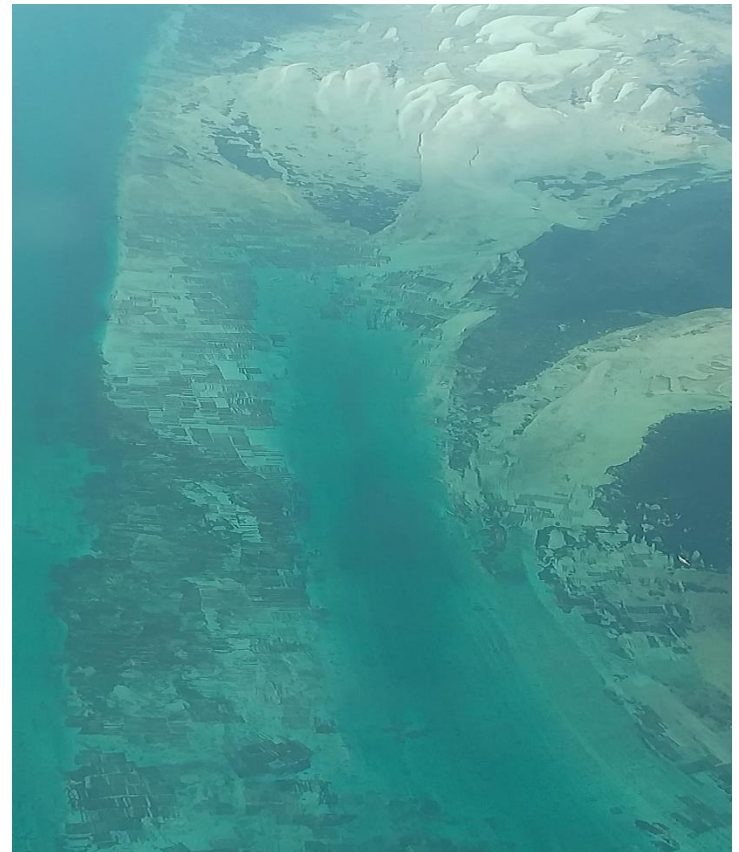
Task	Location	Who With who	By when
<b>Inception Work meeting key players (Pre-area of work identification)</b>	<b>Unguja &amp; Pemba</b>		
Agree workplan with VP-DoE, MBEF, NCS	Unguja		
Monthly/Biweekly meetings with MSP-WG	Unguja		
<b>Data collation and Map Production</b>			
Agree map data format(s) and data portal with MBEF MSP working group			
Identify & obtain available physical data for detailed mapping of the Pemba Channel Conservation Area ( <b>Identify and pick point area of work (simple survey in Area 3)</b> )	Unguja & Pemba		
Identify & obtain available biological data for mapping of PECCA	Unguja		
Identify & obtain available use, management and socio-economic data for mapping of PECCA	Unguja/Pemba		
Obtain appropriate satellite imagery of PECCA	Unguja		
Development of initial maps for community participatory mapping	Unguja		
Participatory resource mapping with 11 SFCs in Pemba	Pemba		
Preparation of digital maps of community perceptions	Unguja		
Preparation of maps of comparing community perception v data for resource health and use	Unguja		
<b>Verification and agreed of prepared map with inclusion of community perceptions</b>	<b>Pemba</b>		
Preparation of digital maps showing hotspots of overfishing, habitat degradation, physical alteration, decline in fish stocks, land based pollution (wastewater, sedimentation, marine litter and plastics, resource use conflicts, climate change trends	Unguja		
Imagery analysis to detect change to support inspections, compliance, damage assessment and evaluating the environmental impact of planned projects and connectivity between areas such as MPAs.	Unguja		
Maps depicting variability such as differences in terrain, elevation, land cover, and visibility to inform the best sites for property development, wildlife habitats, conservation areas, utility corridors etc.	Unguja		
Atlas production	Unguja		
<b>Verification of Atlas by Community and key Institutions 11 SFCs in Area 3</b>	<b>Pemba/Unguja</b>		
<b>Participatory MSP</b>			
Preparation of digital maps for participatory MSP with communities in Area 3 of PECCA	Unguja		
Participatory Marine Spatial Planning with 11 SFCs in Area 3 of PECCA utilising digital maps with appropriate information	Pemba		
Review of community Marine Spatial Planning with Pemba Team	Pemba		
Production of draft MSP for verification	Unguja		
Verification workshop for MSP for Misali Island Area 3	Pemba		
<b>Production of Collaborative Management Plan</b>			
Review of plan's objectives and preliminary activity identification	Unguja & Pemba		
Participatory development and agreement of activities to achieve agreed objectives and responsibilities with 11 SFCs	Pemba		
Participatory development and agreement of indicators and monitoring programme to assess realisation of agreed objectives and responsibilities with 11 SFCs	Pemba		
Workshop for verification of collaborative management (integrated environmental management) plan	Pemba		
Participatory development of annual workplan	Pemba		

# Mapping process

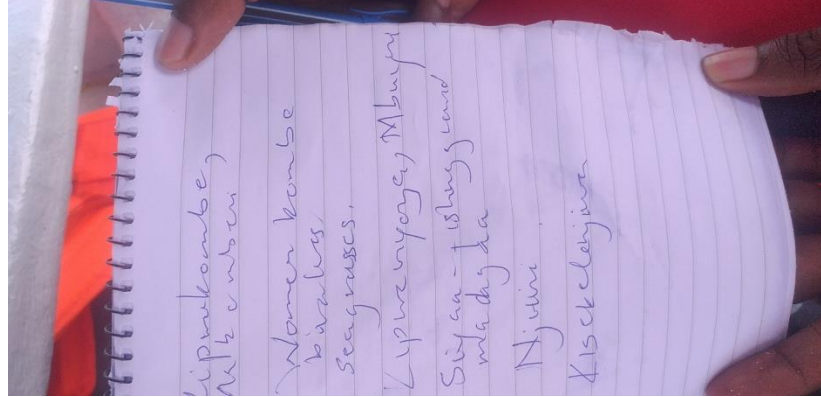
## Resource Mapping - Planning

- Raster
- Vector
- Plans
- Physical data
  - Ecological
  - Climate data
  - Marine and terrestrials etc.
- Social and economic data
  - Population
  - Industry

## Type of data we want

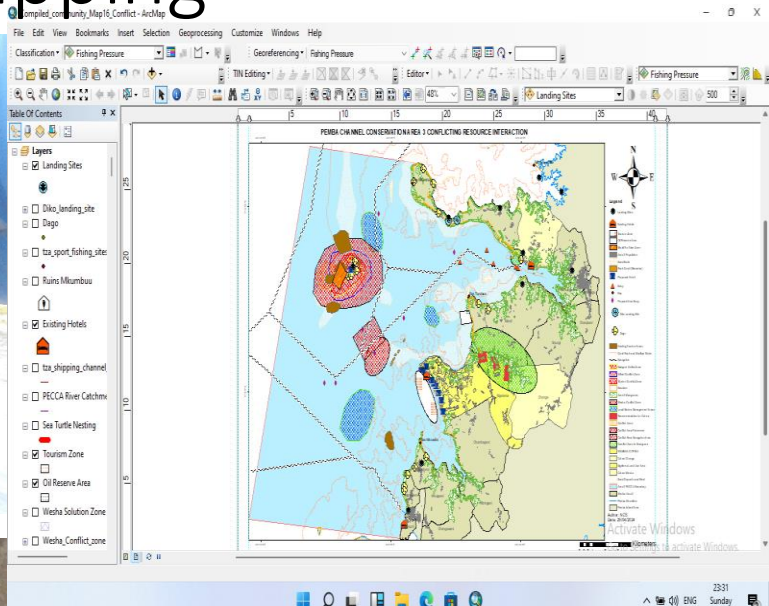






Si puukoambe  
niko vibaoni  
Wamen komba  
biakus,  
Seagruces,  
Lipwinyogey, Mbuifu  
Siwaa - Ishug'and  
michig da  
Njwii  
Kisakelajira

# Field and Resource Mapping



# Meeting and Stakeholders



# Stakeholders

<p><u>Communities within the Shehias of:</u></p> <p>Ndagoni, Weshia, Tibirinzi, Kichungwani, Madungu, Chanjaani, Shungii Kilindi, Chonga, Mgelema, Wambaa, Chumbageni, Mizingani,</p>	<p><u>Revolutionary Government of Zanzibar</u></p> <p>FVP-DoE; MBEF - DMC, DFDMR, DC; MNRL - DFO; Mtourism - Commission Tourism; Commission of Lands, Energy, Minerals, Ports and Harbours, Commerce-Investments</p>
<p><u>Local Government</u></p> <p>Chake Chake District</p> <p>Mkoani District</p>	<p><u>Private Sector (Tourism)</u></p> <p>Fundo Lagoon</p> <p>Misali Beach Hotel</p> <p>Misali Island Investor</p>
<p><u>Community Organisations within above Shehia</u></p> <p>Shehia Fishers Committees</p> <p>Collaborative Forest Management Area Committees</p> <p>Village Environmental Groups</p> <p>Development (Hihadhi) Committee</p>	<p><u>Private Sector (Other)</u></p> <p>Oil Developer (tbc)</p> <p>Seacucumber farming (tbc)</p>
<p><u>Non-Government Organisations</u></p> <p>Wildlife Conservation Society</p> <p>MCCC Ltd</p>	

## **FUNDS UNDER - SAPPHIRE PROJECT – Nairobi Convention**

- The Strategic Action Programme Policy Harmonization and Institutional Reforms (SAPPHIRE)/SWIOFC-NC PP1 - PECCA is collective term for the project implemented by UNEP that cut across Western Indian Ocean region, aimed to achieve sustainable management of marine ecosystem
- Duration 2022- 2024
- In Zanzibar the Project titled “Strengthening community-based EBM approaches in Subsistence and Small Scale Artisanal Fisheries for Sustainable livelihoods and Management of Pemba Channel Conservation Area (PECCA), Zanzibar, Tanzania”

# SAPPHIRE Project

- The project had 3 main outcomes
- Outcome 1: Enhanced fisheries and resources management mechanism
  - Integrate Fisheries Management Plan
  - Critical Habitat restoration guideline
- Outcome 2: Marine and coastal ecosystem conserved, and MCAs sustainably protected
  - Developing PECCA MSP
- Outcome 3: Local community livelihoods improved through introduction of alternative income generating activities

## Context - National Development Vision 2050 - Blue Economy

The National Development Vision 2050 of the Revolutionary Government of Zanzibar (RGoZ) has the Blue Economy as a key component of Pillar 1 – Economic Transformation with a Strategic Direction of “Effectively coordinating and managing the development of the ocean and its endowments for significant contribution to economic prosperity”. RGoZ (2020)

## Context

### Zanzibar Strategy for Growth and Reduction of Poverty III (ZSGRP III).

The RGoZ's intention of alleviating poverty and extreme poverty among its people through the sea-based economy has also been reflected in the key result areas in ZSGRP III that focus on environmental sustainability, including special emphasis on BE in

D2: “marine and terrestrial ecosystems protected and restored, with enhanced biodiversity”.



## Context

### Blue Economy - Approach

“Blue Economy should be built with **social, economic and environmental** factors taken into account in decision-making. Blue Economy intends to **integrate** the need for sea-based economic development that leads to the improvement of human well-being and social equity while simultaneously **reducing environmental risks and ecological scarcities.**”

## Context

### Blue Economy Policy - Aim

To promote sustainable economic growth, environmental stewardship and improved livelihoods through the sustainable utilisation of the sea and other blue resources.

# Context

## Blue Economy Policy - Objectives

Specifically, the BE policy seeks to:

- promote and improve **sustainable economic inclusion** within the BE priority areas and **communities**.
- strengthen **coordination between multiple economic sectors** within the BE framework.
- improve food and nutritional security through the **sustainable management of blue resources**.
- **empower local communities**, especially women and youth involved in BE activities.
- ensure the safety and security of Tanzania's maritime domain in coordination with the national maritime security agencies; and
- enhance financing and revenue collection through **sustainable BE activities**.

# Implementing the Blue Economy Policy

sustainable economic growth, environmental stewardship and improved livelihoods

improvement of human well-being and social equity

marine and terrestrial ecosystems protected and restored, with enhanced biodiversity

social, economic and environmental factors taken into account

sustainable management of blue resources.

integrate the need for sea-based economic development

simultaneously reducing environmental risks and ecological scarcities

coordination between multiple economic sectors

sustainable utilization of BE Resources

# Environment Policy

- To prevent and control pollution and degradation of terrestrial, air, **marine and other aquatic environment**
- To **integrate environmental concerns into development policies, plans**, programs and projects so as to sustain the ecological biodiversity and natural resources base of the country.
- To raise public awareness and understanding of the sound environmental management so as to **increase individual and community participation in environmental actions**

# Implementing policy

- Promote and implement **Integrated Coastal Zone Management** system
- **Promote participatory** eco-tourism planning and implementation
- Promote interventions that support livelihoods.
- Promote **biodiversity restoration** in the ecological degraded areas
- Develop and implement national biodiversity **strategy and action plans**.
- Promote **public awareness** on the **conservation and protection of biodiversity**

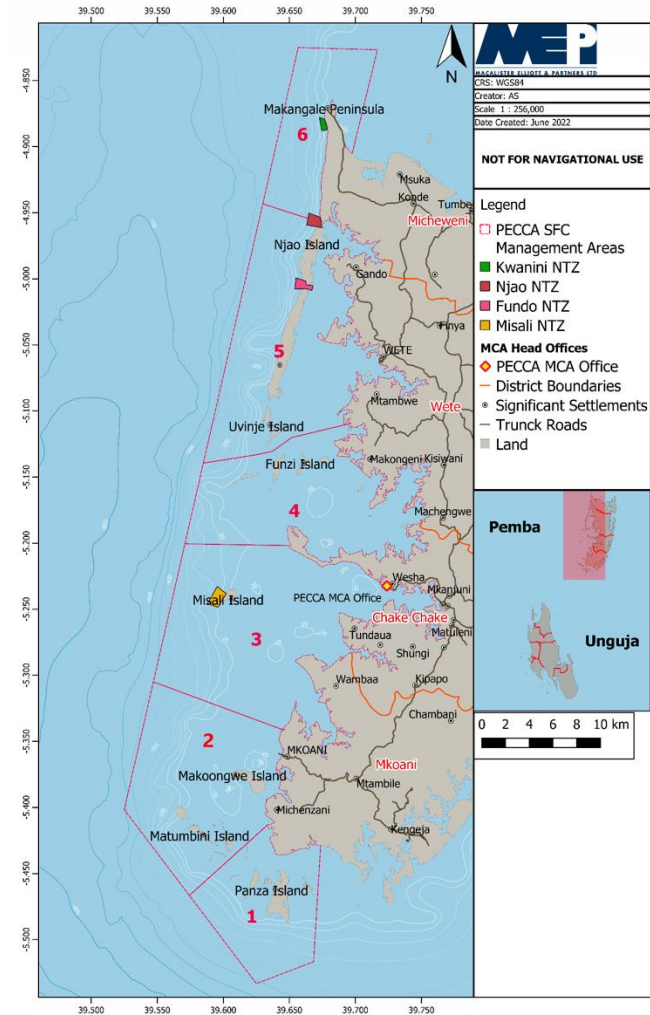
## Pemba Island & PECCA

- East Africa's only true oceanic island
- Scientifically recognized as a site of global significance
- High amount of coastal and marine habitat diversity
- Quality of its resources directly or indirectly support Pemba's approx. 700,000 population
- Identified as a climate refuge with cold water upwellings
- In recognition of its importance the western side was designated a Marine Conservation Area in 2005
- Large potential for sustainable BE development



# PECCA Collaborative Management Areas

- Six Collaborative Management Areas were identified for the better management of marine resources.
- Technical workshop with researchers, managers, NGOs identified six collaborative management areas using following criteria:
  1. Area is used by neighbouring SFCs and/or those with close cultural and social ties.
  2. Area is fished by SFCs that use the same fishing techniques
  3. The area encompasses a habitat type (e.g. fringing reef) or range of similar habitat types (patch reefs, seagrass and/or mangroves)
  4. Do the areas fall within District boundaries?
  5. Boundaries of management areas should not, where possible, cut through conflict hotspots.
  6. Area should be of a size that is practical to sustainably manage.
- Areas were presented, discussed and agreed with the 31 SFCs
- Adopted in the General Management Plan for PECCA





# Collaborative Integrated and Local MSP

## Identified Issues

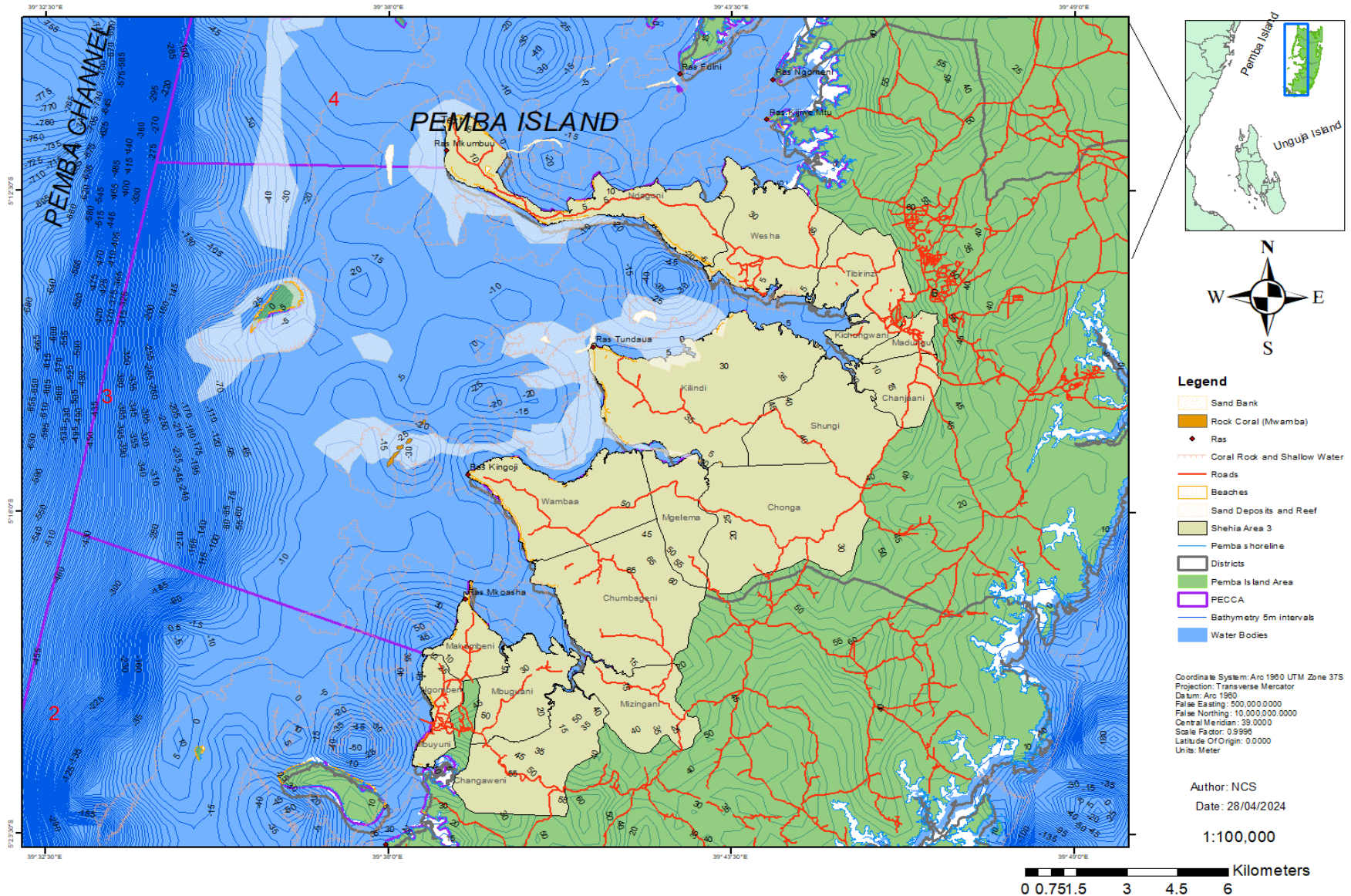
1. Fishing Pressure
2. Shipping - Fisheries
3. Tourism - Fisheries
4. Seaweed farming – Aquaculture –  
Tourism- Mangroves
5. ETP & Tourism – Fisheries
6. Fisheries Protection, Restoration &  
Tourism – Fisheries



# Participatory MMSp

## Area 3 – 11 SFCs

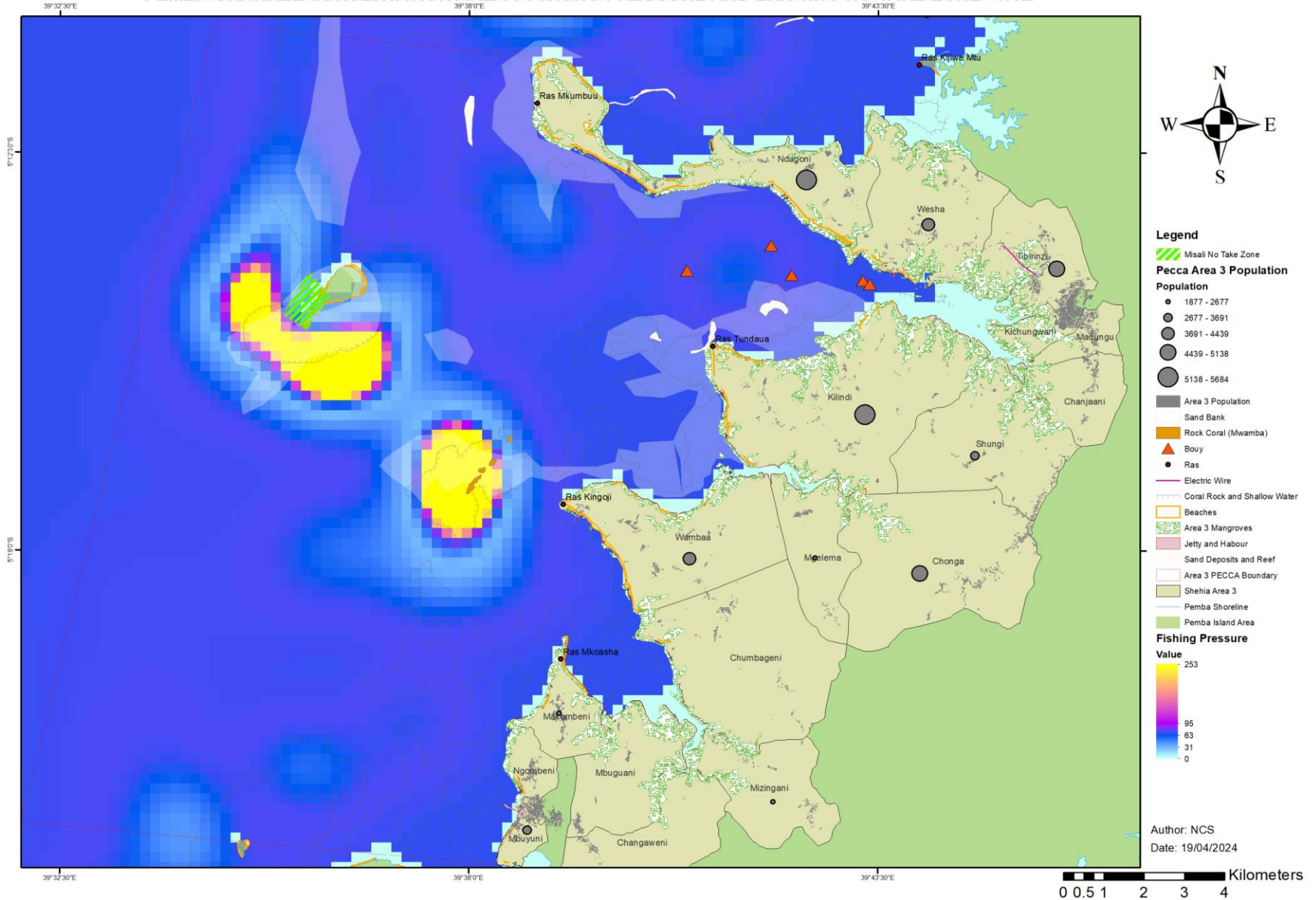
### PEMBA CHANNEL CONSERVATION AREA 3 MANAGEMENT AREAS BATHYMETRY



# Participatory MMSp

## Matumizi Uvuvi

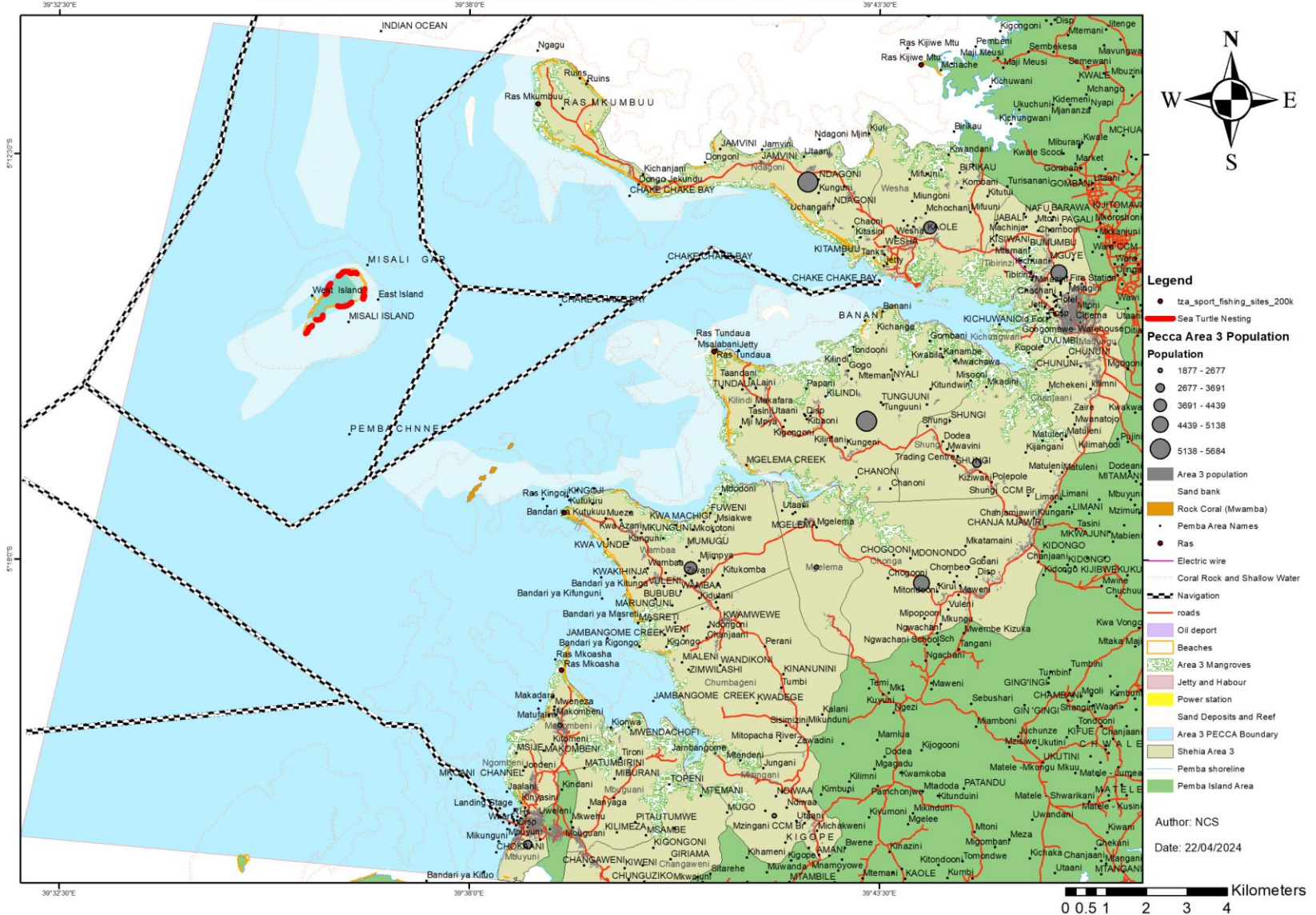
### PEMBA CHANNEL CONSERVATION AREA 3 FISHING PRESSURE AND EXISTING NO TAKE ZONE - NTZ



## **2. Fishing vs Shipping**

## Shipping Lanes

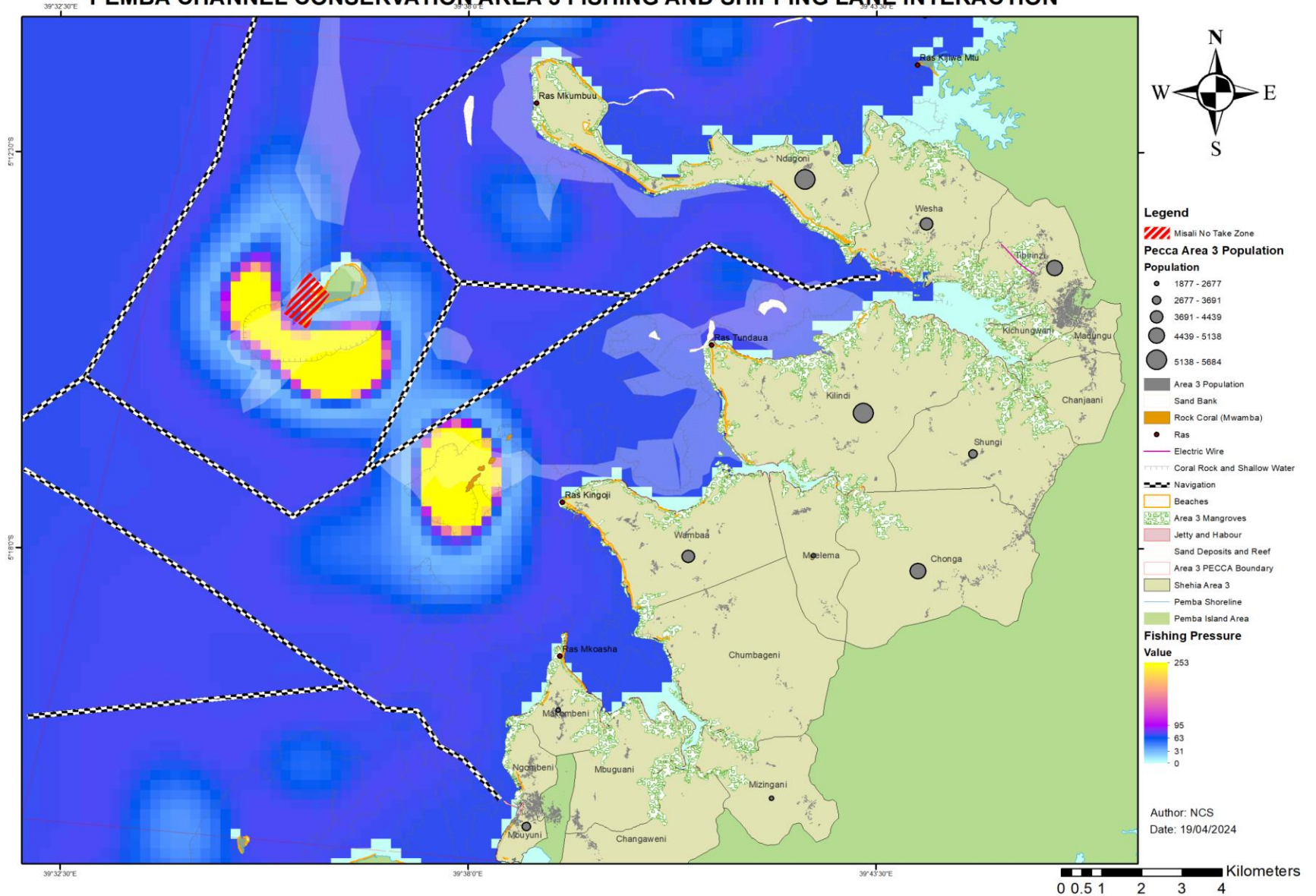
PEMBA CHANNEL CONSERVATION AREA 3 HUMAN USES AND SOCIO-ECONOMIC



# Participatory MMSp

## Matumizi ya Uvuvi – Shipping Lanes

### PEMBA CHANNEL CONSERVATION AREA 3 FISHING AND SHIPPING LANE INTERACTION

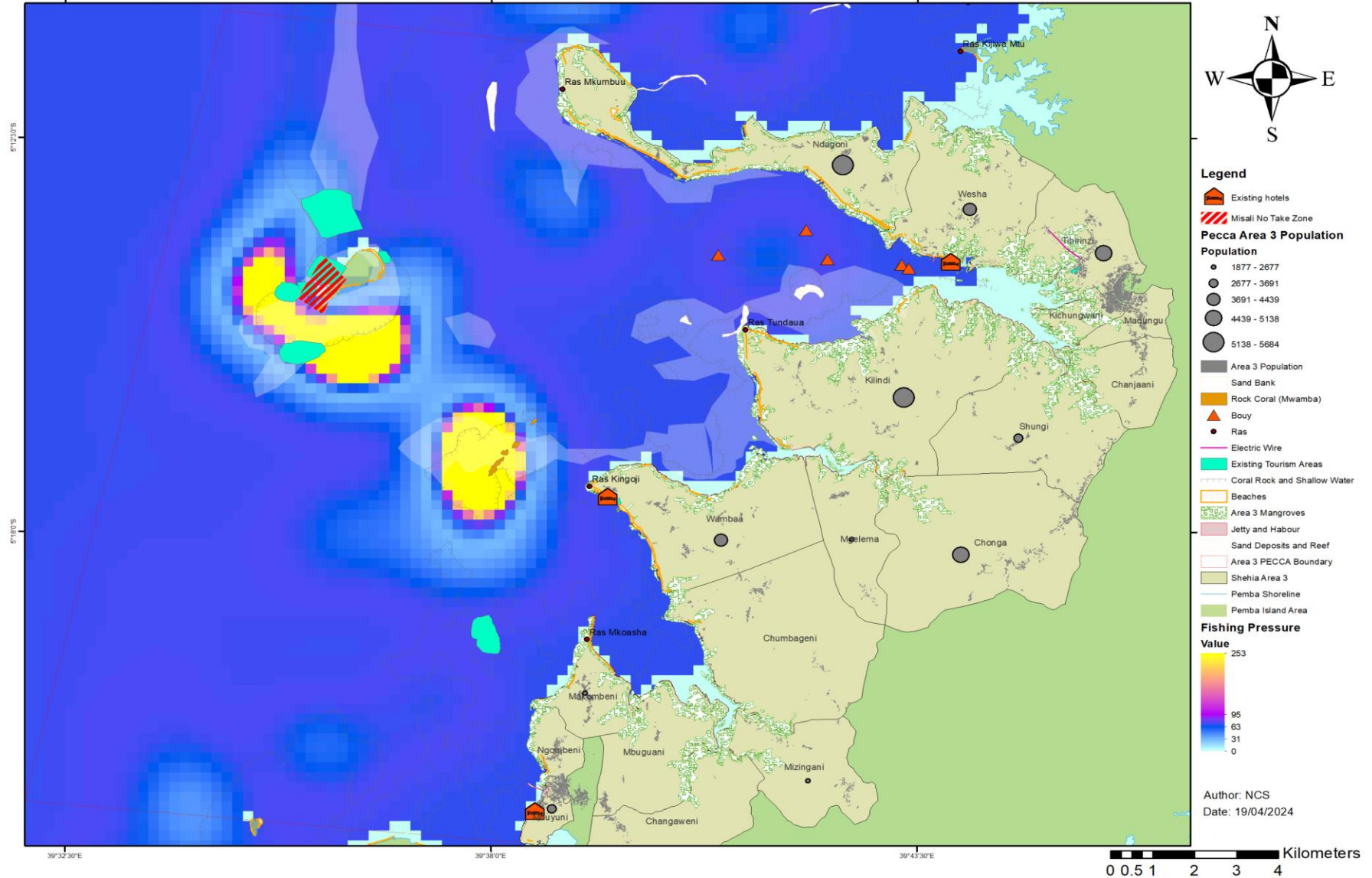


## **3. Fishing vs Tourism**

# Participatory MMSp

## Current Tourism Use

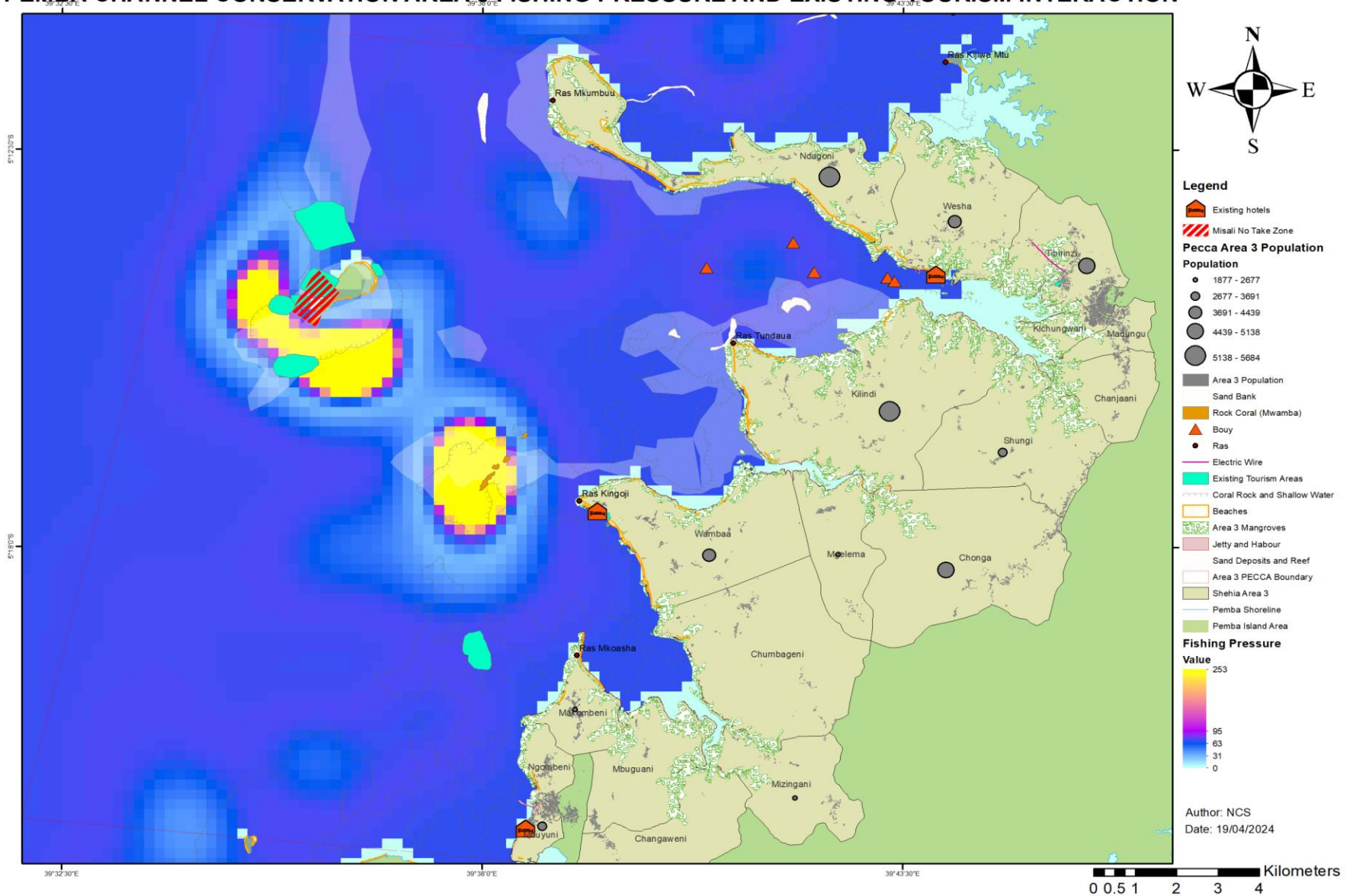
### PEMBA CHANNEL CONSERVATION AREA 3 FISHING PRESSURE AND EXISTING TOURISM INTERACTION





## Future Tourism

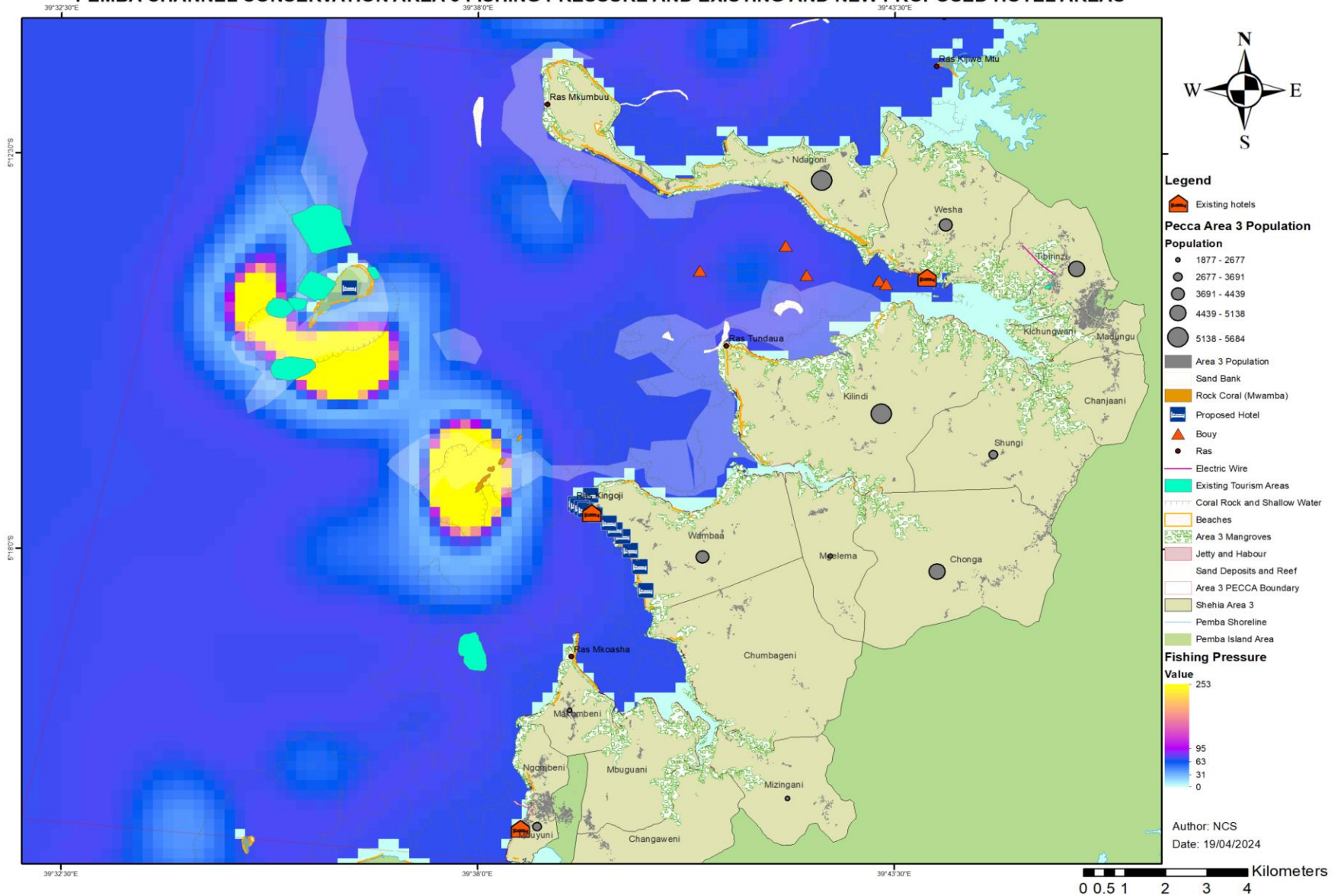
### PEMBA CHANNEL CONSERVATION AREA 3 FISHING PRESSURE AND EXISTING TOURISM INTERACTION



# Participatory MMSp

## Future Tourism - Fishing

### PEMBA CHANNEL CONSERVATION AREA 3 FISHING PRESSURE AND EXISTING AND NEW PROPOSED HOTEL AREAS

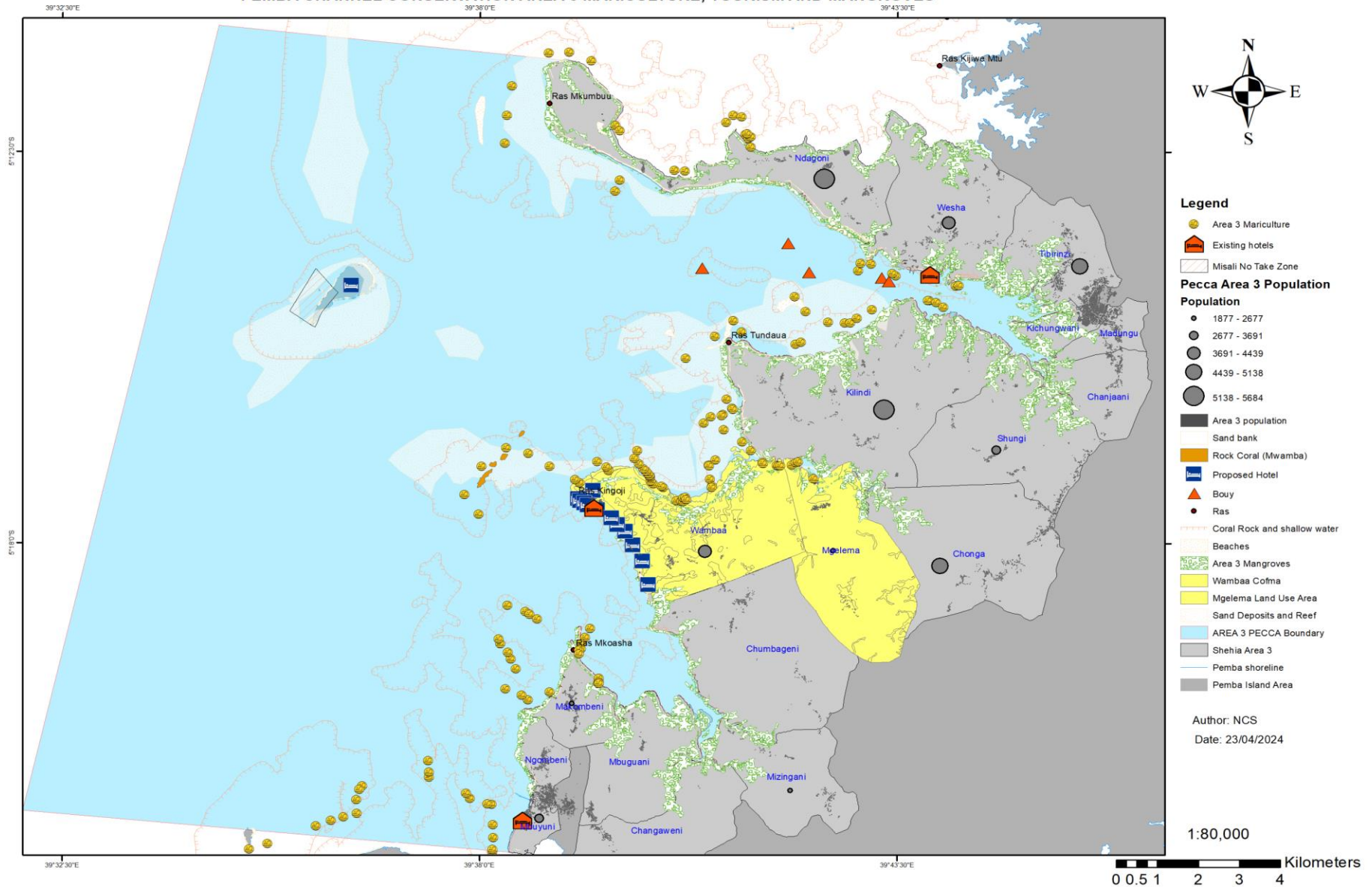


## 4. Sea weed, Aquaculture, Tourism and Mangroves

# Participatory MMSPP

## Mwani – Ufugaji – Utalii - Mikoko

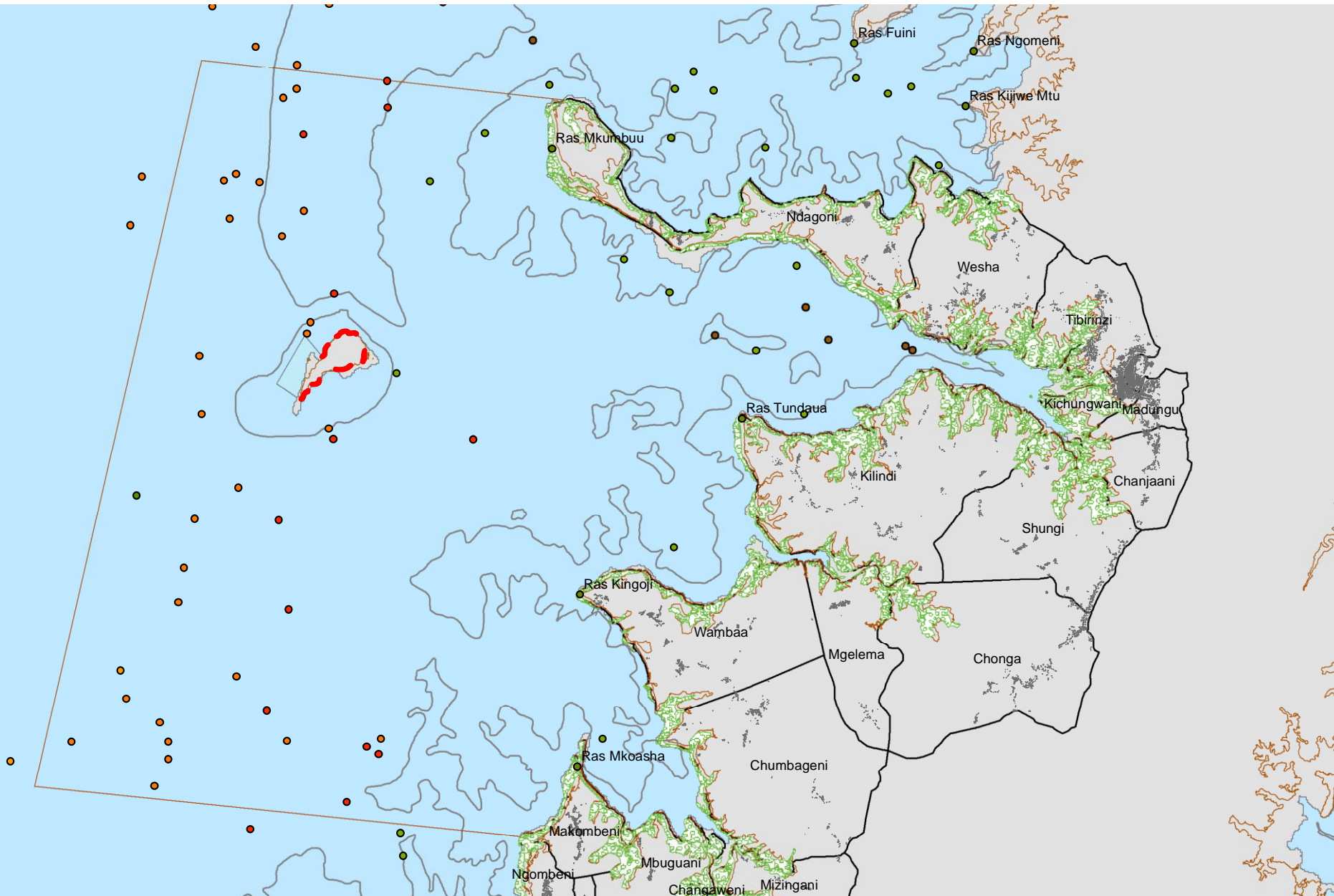
### PEMBA CHANNEL CONSERVATION AREA 3 MARICULTURE, TOURISM AND MANGROVES



# 5. Endangered Threatened & Protected Species And Fisheries

# Participatory MMSp

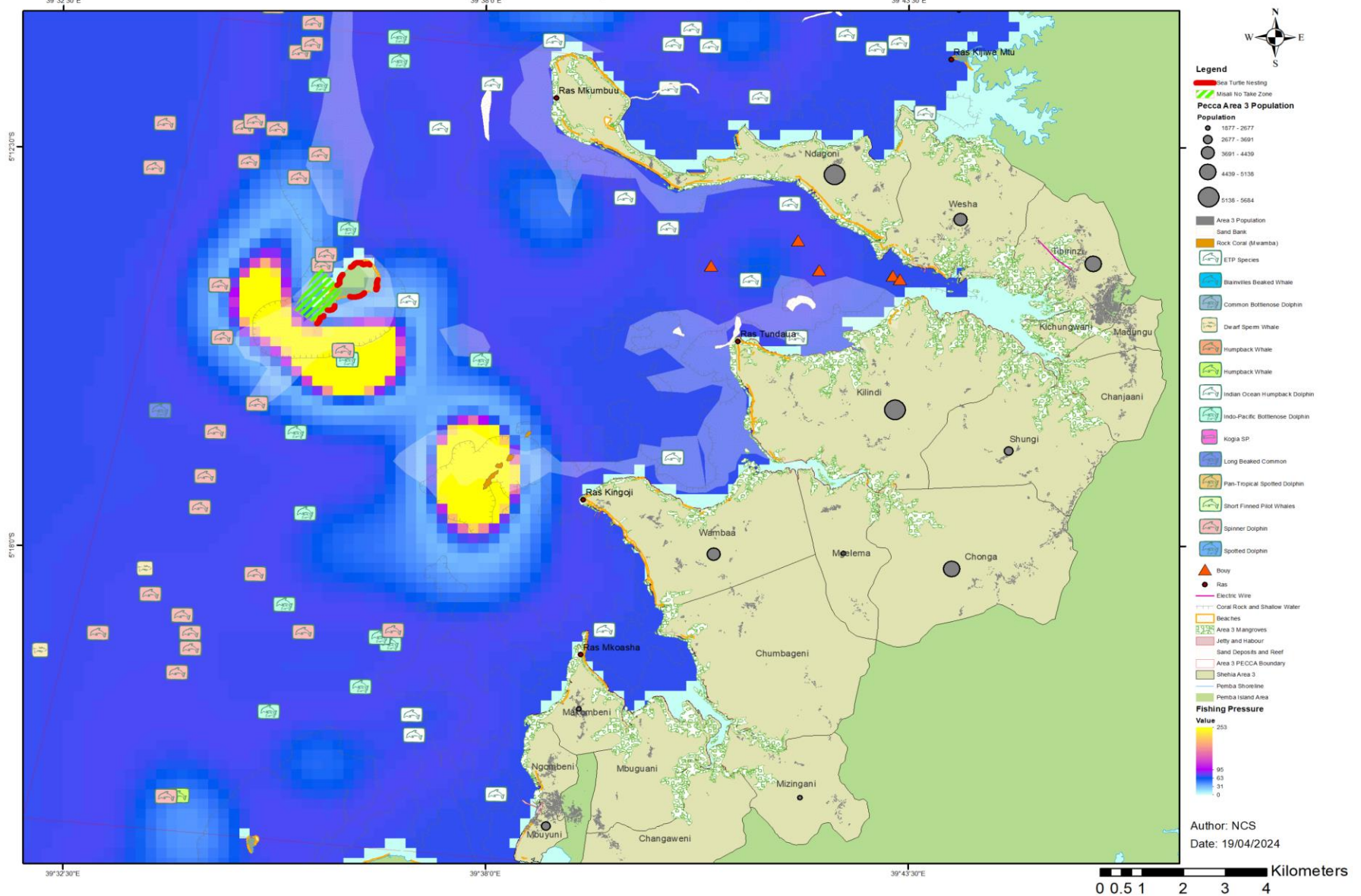
## Endangered, Threatened and Protected Species



# Participatory MMSp

## Endangered. Threatened and Protected Species - Fishing

PEMBA CHANNEL CONSERVATION AREA 3 FISHING PRESSURE, ENDANGERED, THREATENED AND PROTECTED SPECIES - ETP

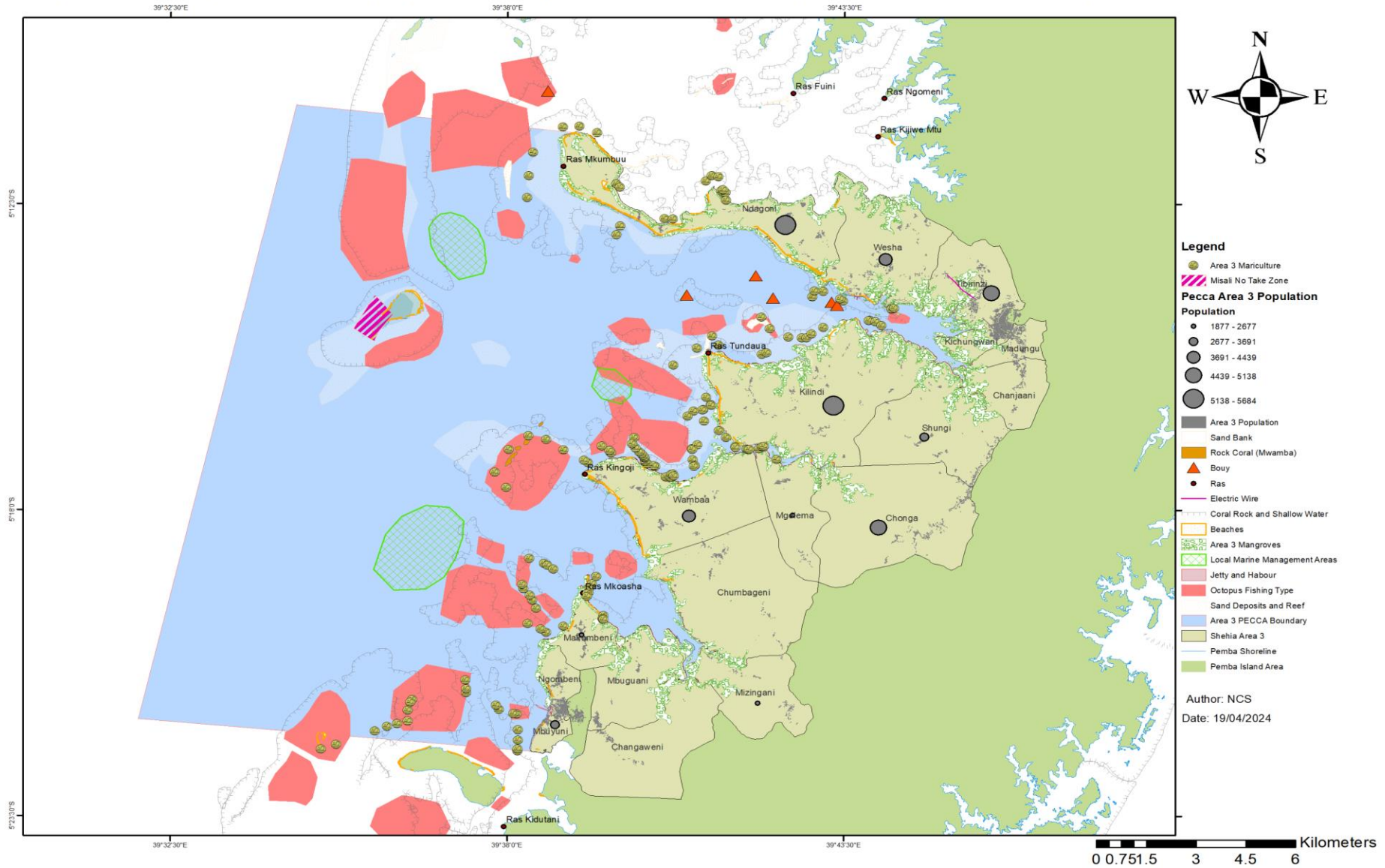


## **6. Fisheries Restoration**



## Restoring Fisheries

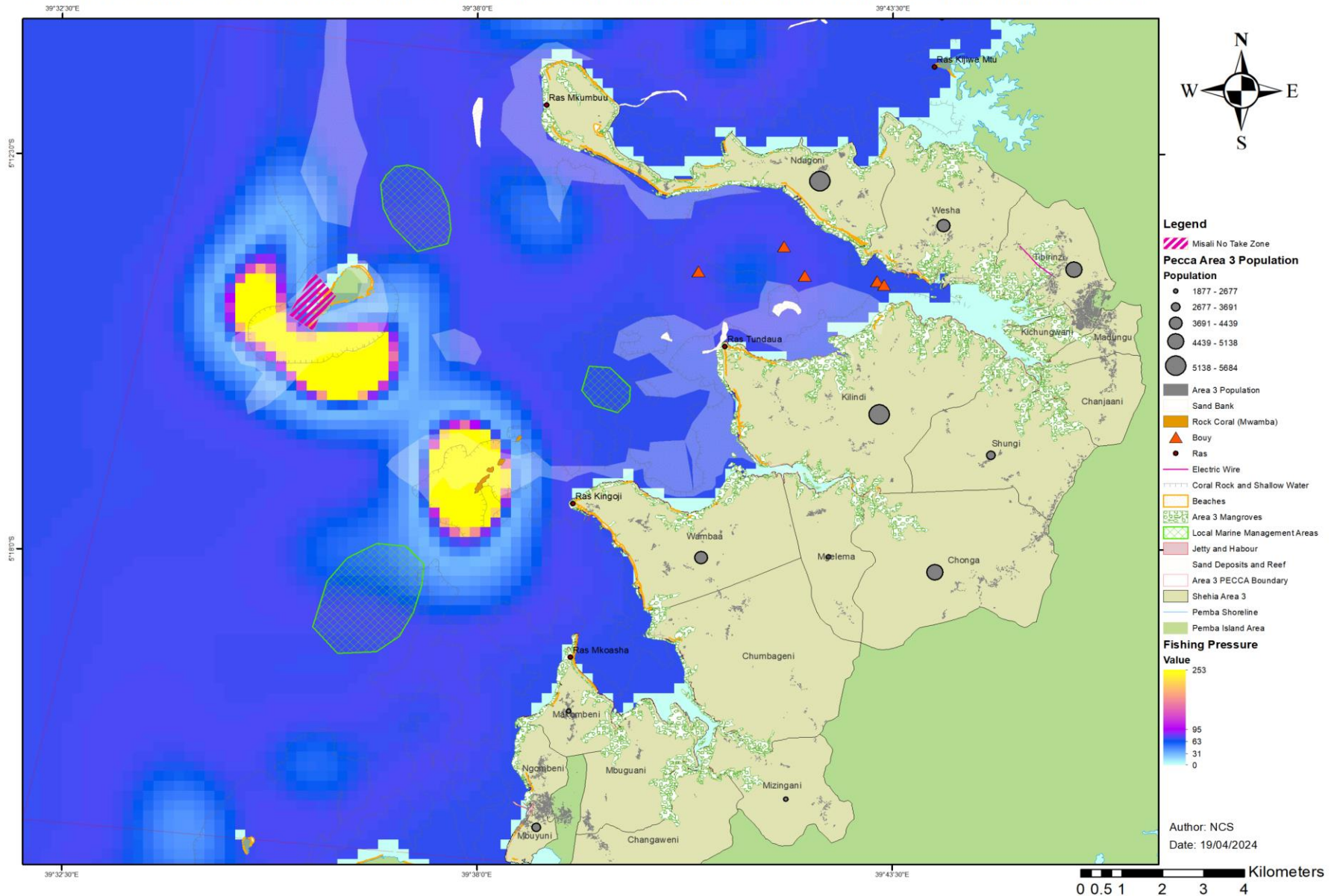
### PEMBA CHANNEL CONSERVATION AREA 3 OCTOPUS, MARICULTURE AND COMMUNITY FISHING REPLENISHMENT ZONES



# Participatory MMSp

## Restoring Fisheries

### PEMBA CHANNEL CONSERVATION AREA 3 NO TAKE ZONE AND COMMUNITY FISHING REPLENISHMENT ZONES

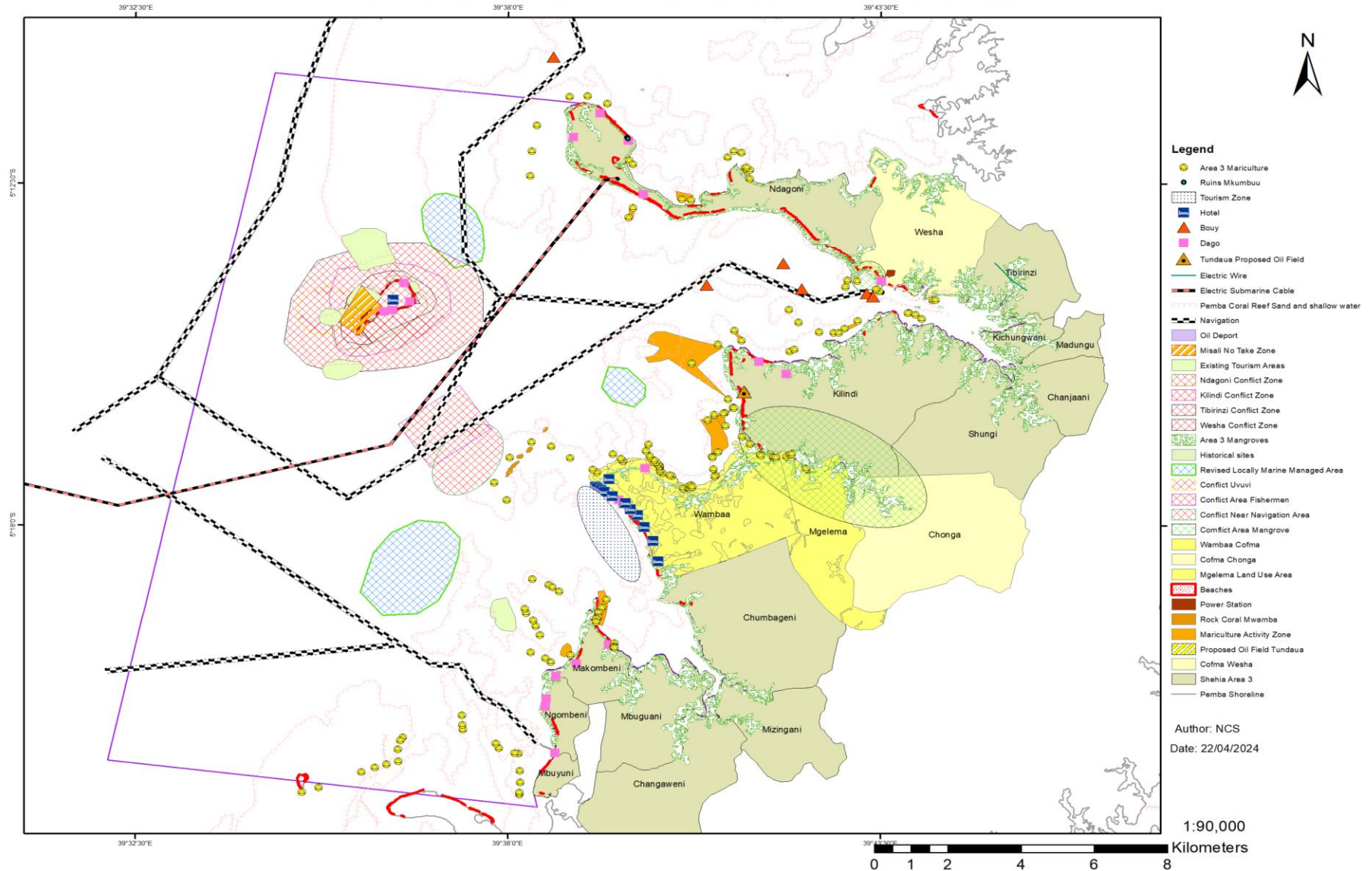


**Local MSP  
Incompatibilities, Conflicts  
& Solutions**

# Micro MSP – Outputs

## Areas of current and future conflicts

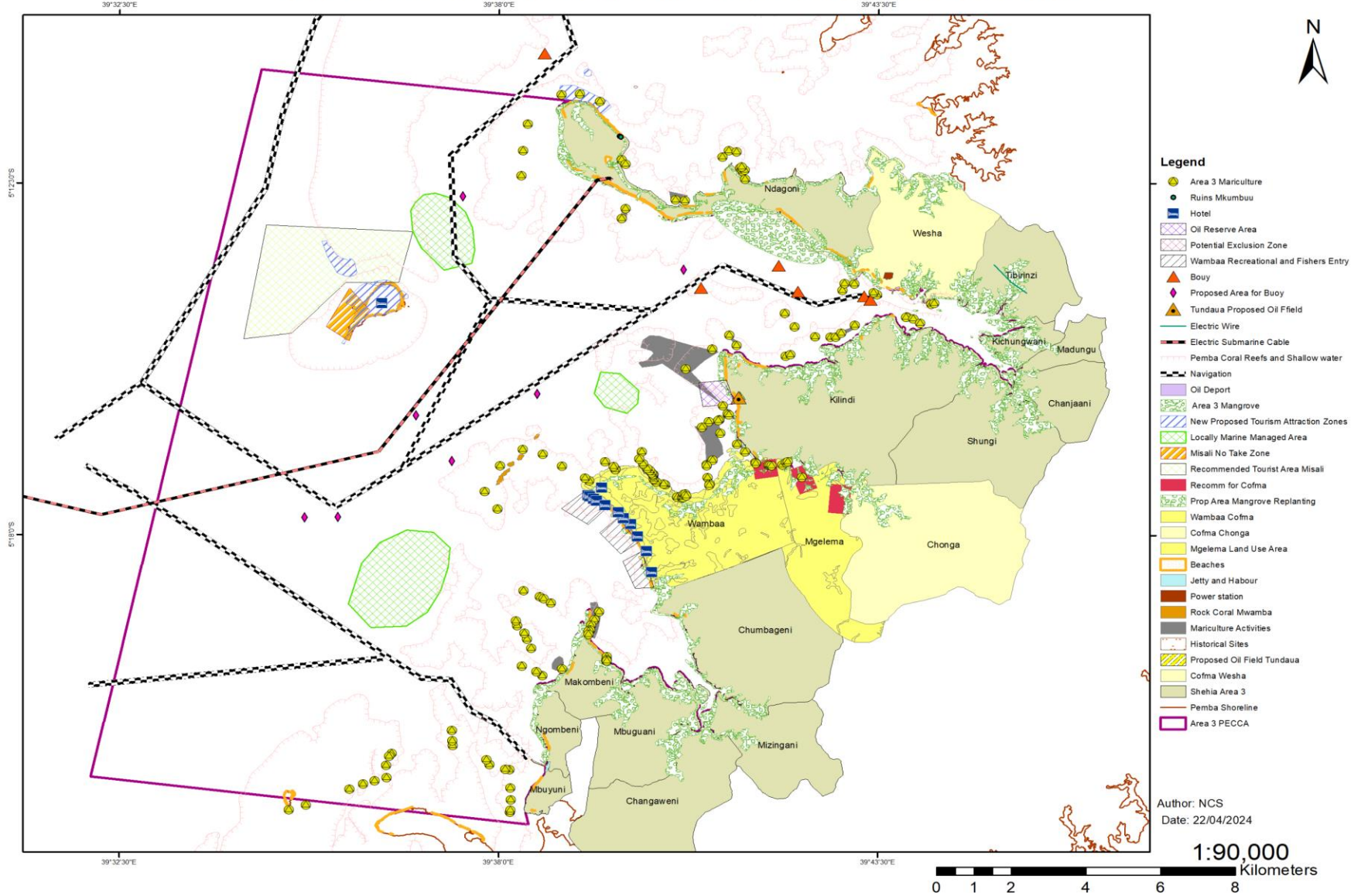
### PECCA AREA 3: CURRENT AND FUTURE CONFLICT ZONES



# Micro MSP – Outputs

## Solution – Scenario 1

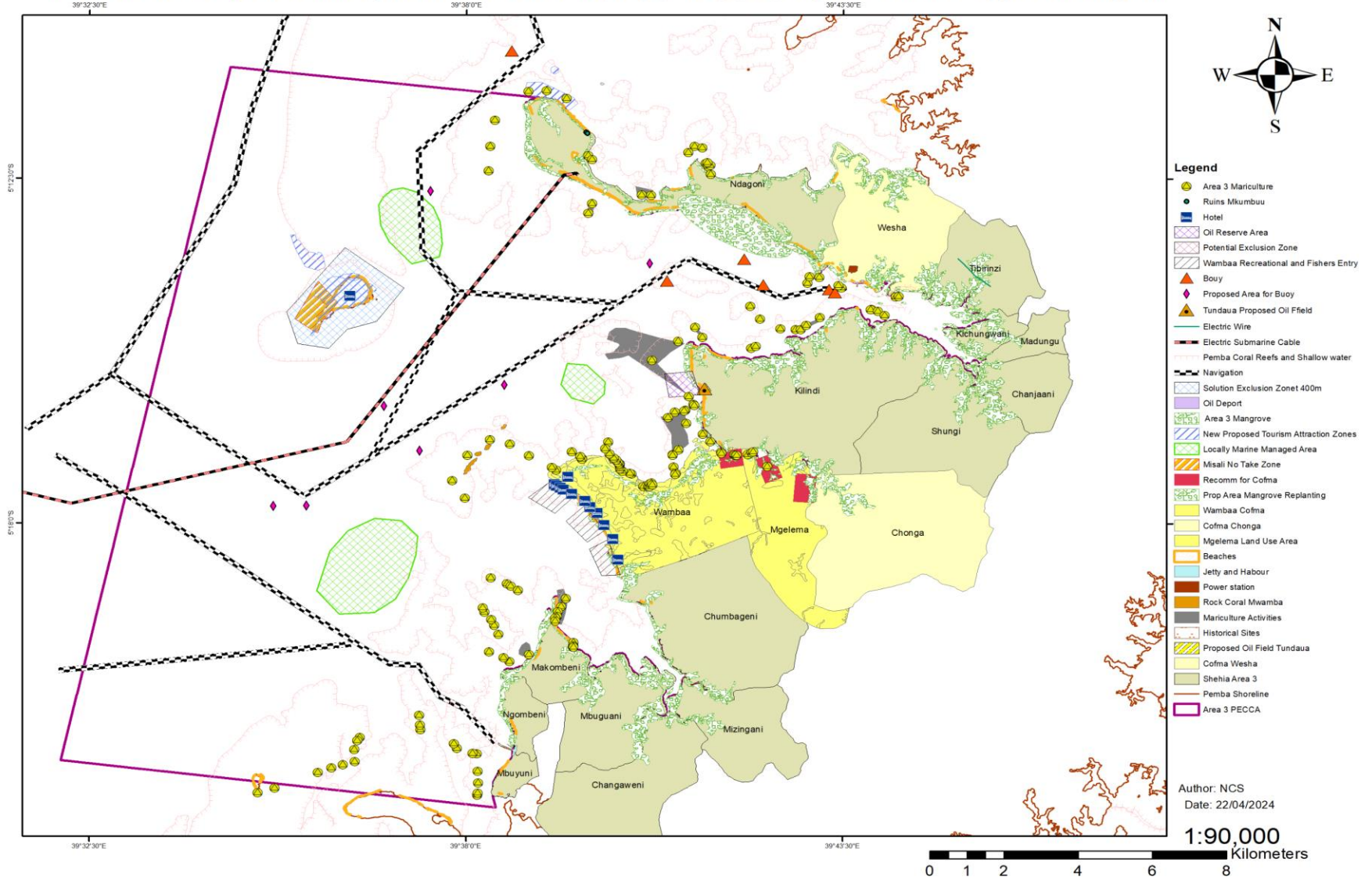
### PECCA AREA 3: MARINE SPATIAL PLAN PROPOSED SOLUTION 1



# Micro MSP – Outputs

## Solution – Scenario 2

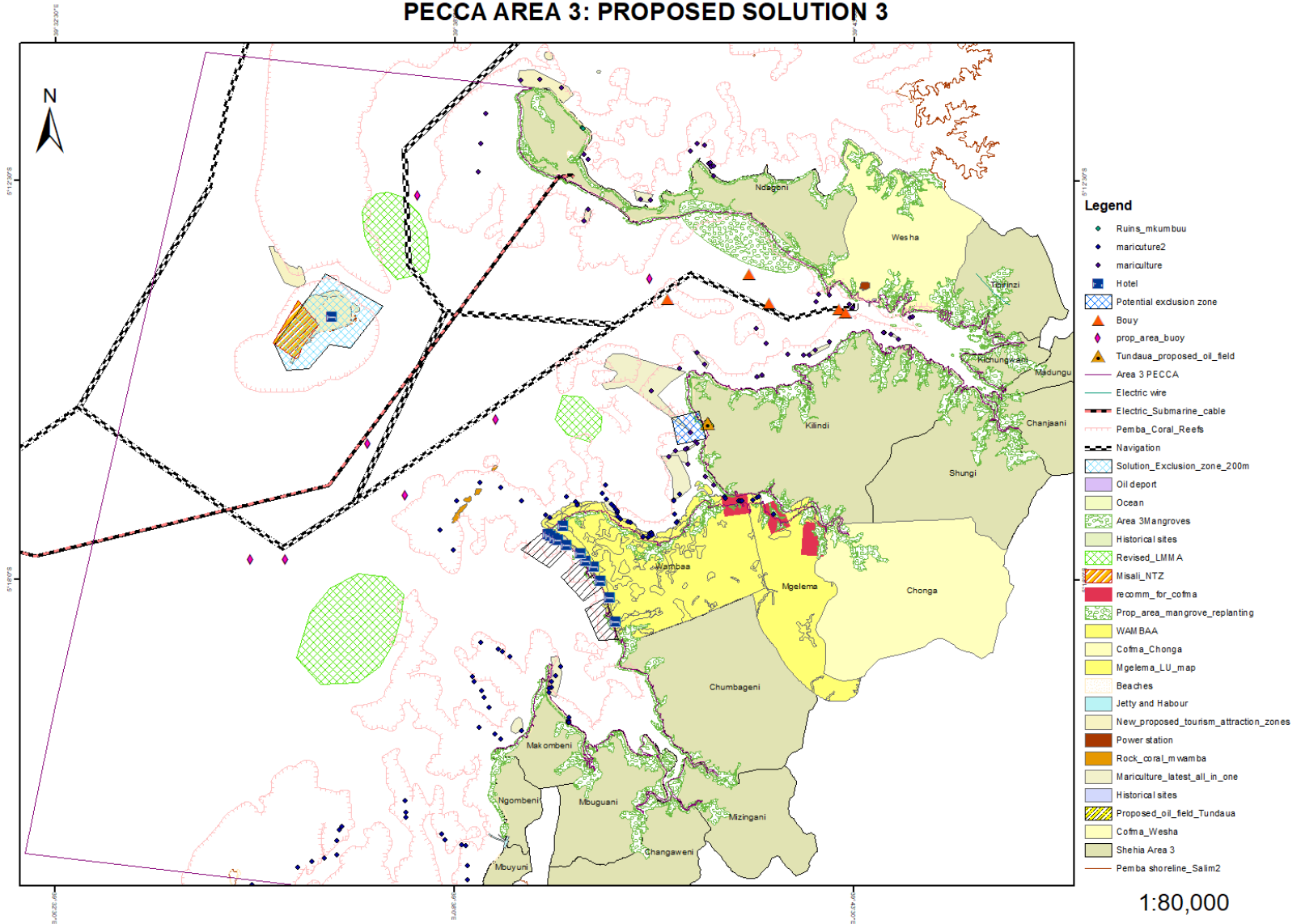
### PECCA AREA 3: MARINE SPATIAL PLAN PROPOSED SOLUTION 2 WITH 400M AT MISALI



# Micro MSP – Outputs

## Solution – Scenario 3

### PECCA AREA 3: PROPOSED SOLUTION 3



1:80,000

# Findings & Implications

## Community Feedback

1. SFCs have engaged with process and have produced viable scenarios for micro-MSP based on the issues raised to date
2. Process involved SFCs, Shehas and fishing communities
3. Supportive of the collaborative integrated plan and the MMSP but have advisories
  - a) Misali: - 400m too big, reduce 100-200. Most at 200m
  - b) Vociferous concerns about tourism development
  - c) Need alternatives for loss of access
  - d) Conflicts with visiting fishers
  - e) Need better communication with their committees



# Zoning

## **1. General Use Zone**

The activities with this area are permitted according to General Management Plan of PECCA.

## **2. Recreation Zone**

## **3. Fisheries Replenishment Zone**

- Fisheries Replenishment Zone is located at Misali Island, the area is extending 200m from the high-water mark around the Island

## **4. Historical and Heritage Zone**

## **5. Local Marine Management Areas (LMMA) Temporary Closed Zone**

- Areas managed by community which are temporarily closed from fishing during 3 to six month. The community setting up their regulation (bylaws) during closing to opening period.

## **6. All use exclusion Zone**

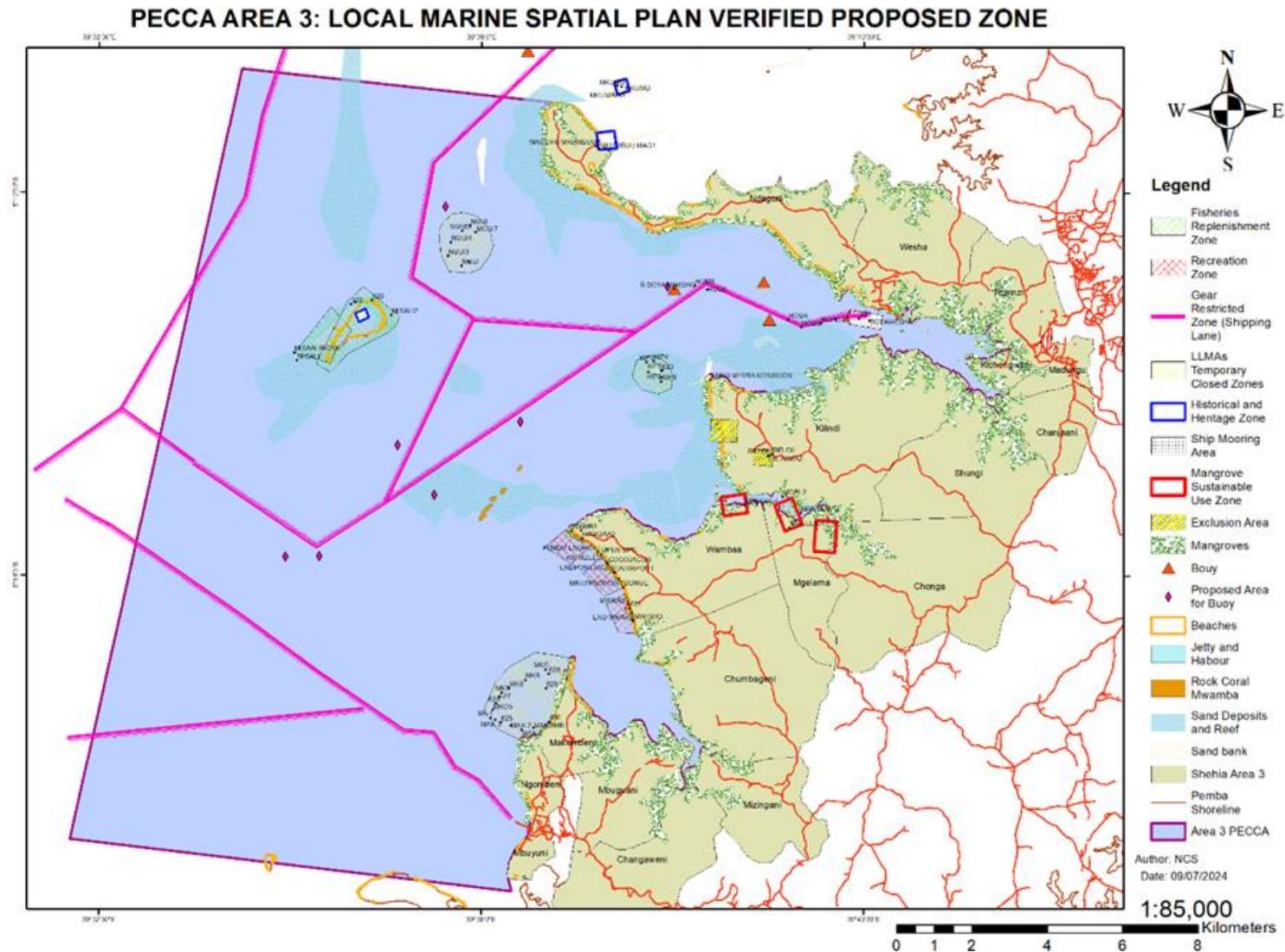
- An oil field where no other activity will be allowed other than oil and gas.

## **7. Mangrove Sustainable Use Zone**

## **8. Gear Restricted Zone (Shipping Lane)**

- These are zones where shipping navigate, they are according to maritime and international navigation, they are existing and future shipping lanes.

# Zoning...



# Findings & Implications

## Management Issues

5. Need to harmonise marine and land based planning
6. Plans success will depend on engagement of the different sectors in supporting its implementation particularly for diversification of sustainable income opportunities
7. Multiple use will either increase conflict or reduce access – particularly that of communities – to areas.
8. What future for open access fisheries?
9. Resident and visiting fishers – precedence, rights and compensation?
10. How will other developments e.g. oil be planned & implemented?
11. What are the implications for LMSP?

# Findings & Implications

## Process

1. Communities have engaged with process and have produced viable scenarios for micro-MSP based on the issues raised to date
2. Communities, government team and WCS have produced a draft integrated plan structure that addresses issues raised to date
3. Use of multi-sector & multi organization team was very effective. Good team dynamics
4. Fisheries focus – Mangrove, coastal forest, litter, pollution
5. More community engagement required – not just committees
6. LMSP process integral part of integrated planning – not separate

# Findings & Implications

## Process

6. Need further details from this meeting on tourism, oil and any other developments not in the MSP or integrated plan
7. More information required to define aquaculture areas to optimize productivity of different areas
8. How does MSP link to LMSP?

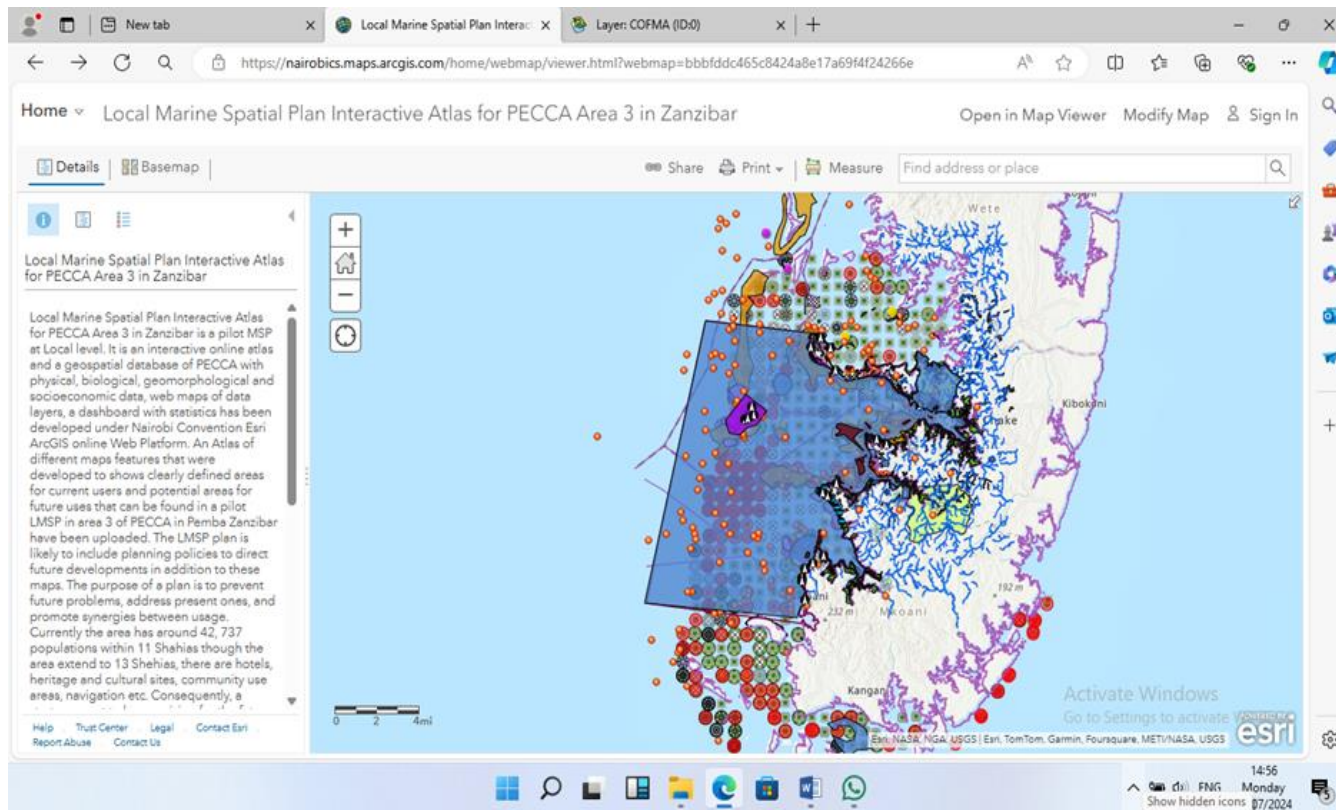
# Findings & Implications

## Data & Mapping

1. The data we use integrated multiple sources of data and working techniques
2. Data collection methods
  1. Literature, Plans, online, world sources and existing map and shape file data (Institutional, land and Environment data, Data from SMOLE, WCS, SWIOFish projects etc)
  2. Field data collection GPS (more than four time) DoE team, MSP working team, Pemba working group with WCS team
  3. Data Verification
3. Data Manipulation (classification, generation and atlas production)
  1. ArcGIS (Arc Map, Arc Pro)
  2. QGIS data layers format with WCS team
  3. Existing QGIS from kmz files to shape files (features), raw to CSV
4. Data verification and Ground truthing
  1. Field verification
  2. Online verification (Google maps, NCS online web)
  3. Community verification (groups and field works)
5. Challenges:
  1. Very short and limited time plan (to accommodate those data)
  2. Availability of data (Eg. Oceanographic data at micro level)

# Online Atlas

- <https://nairobi.maps.arcgis.com/home/webmap/viewer.html?webmap=bbbfddc465c8424a8e17a69f4f24266e>



# Asante

