



USAID
FROM THE AMERICAN PEOPLE

A Dive Into Blue Carbon and Coastal Resilience at USAID

March 30, 2023

Welcome!

Blue Carbon and USAID

1. Overview of Blue Carbon & Opportunities
2. State of Science & Methodologies
3. Mission Examples: USAID Madagascar & Mozambique
4. Q&A
5. Coastal Resilience, Carbon, and Conservation Finance (C3F) Activity Overview & Discussion

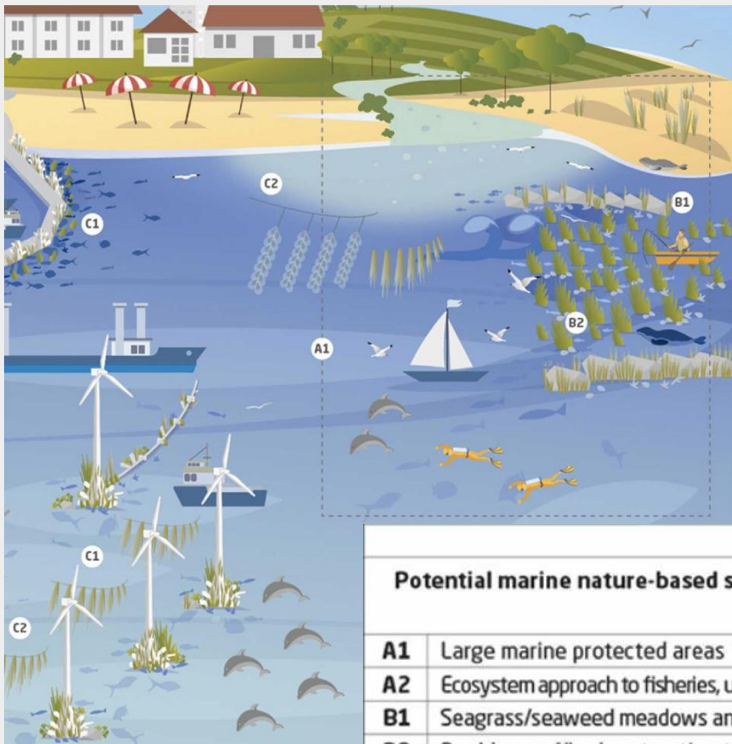


Speakers & Participants

- **Kelvin Gorospe**, USAID/Washington
- **Lucas Isakowitz**, USAID/Washington
- **Ramy Razafindralambo**, USAID/Madagascar
- **Ravaka Ranaivoson**, WCS Madagascar
- **Moffat Ngugi**, USAID/Mozambique



Marine and Freshwater Nature-based Solutions (NbS)



- NbS activities protect, sustainably manage, and restore natural and modified ecosystems that address **societal challenges** and simultaneously benefit **people and nature**
- USAID activities with NbS are funded by specific pots of money (SL, AD, FTF, EG, BD) with specific objectives

Potential marine nature-based solutions		IUCN's societal challenges					
		Climate change mitigation and adaption	Disaster risk	Economic and social development	Human health	Food security	Water security
A1	Large marine protected areas	●		●	●	●	●
A2	Ecosystem approach to fisheries, using selective gear	●		●		●	●
B1	Seagrass/seaweed meadows and shellfish reef restoration	●	●	●		●	●
B2	Boulder reef/bed restoration to protect shoreline	●	●				●
C1	Greening of hard infrastructure, multipurpose artificial reefs and habitats	●	●	●		●	●
C2	Extractive aquaculture	●		●		●	●

Embedded Principles



Locally Led Development



Equity and Inclusion



Private-Sector Engagement



Nature-Based Solutions



Evidence and Innovation

CLIMATE STRATEGY TARGETS 2022-2030

Mitigation:
CO₂e reduced

6
Billion metric
tons

**Natural & Managed
Ecosystems:**

Hectares protected,
restored, or managed

100
Million
hectares

Adaptation:

People supported to be
climate resilient

500
Million people

Finance:

Public and private funds
mobilized

150
Billion dollars

Country Support:

NDCs/NAPs supported

80
Countries
supported

Critical Populations:

Increase equitable
engagement

40
Country
partnerships
strengthened

What is Blue Carbon?

Carbon that is sequestered and stored in oceanic and coastal systems, including mangrove, seagrass, kelp forests and other marine/coastal systems.

What is the opportunity?

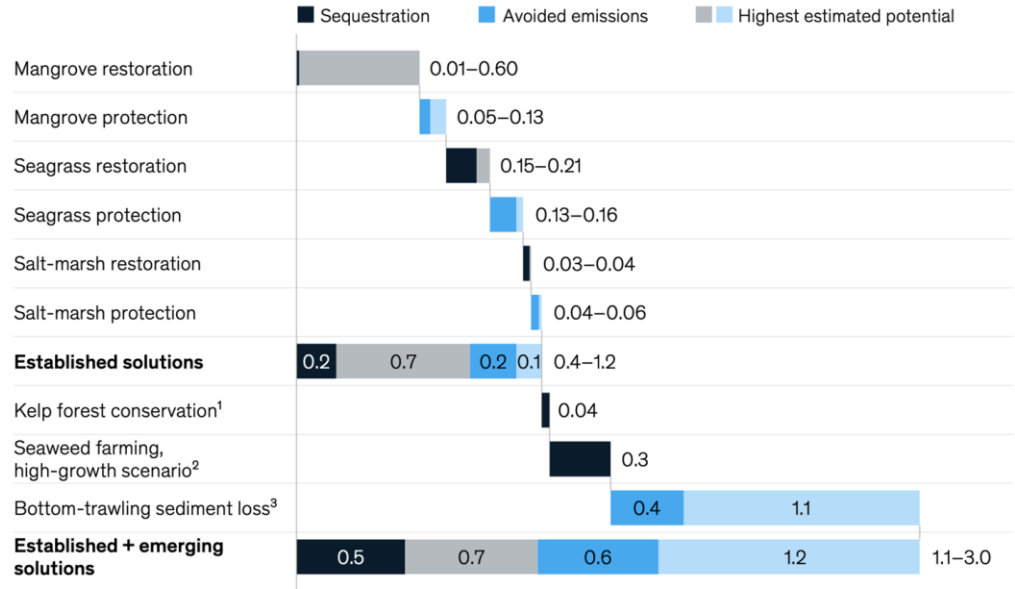
- Huge mitigation potential
- Intrinsic ecosystem service benefits
- High country demand for assistance, and buyer demand for credits
- USAID has 50+ mangrove projects

Financing Gap and Opportunity: Most coastal wetland interventions to-date have relied on grant capital but innovative financing opportunities exist.

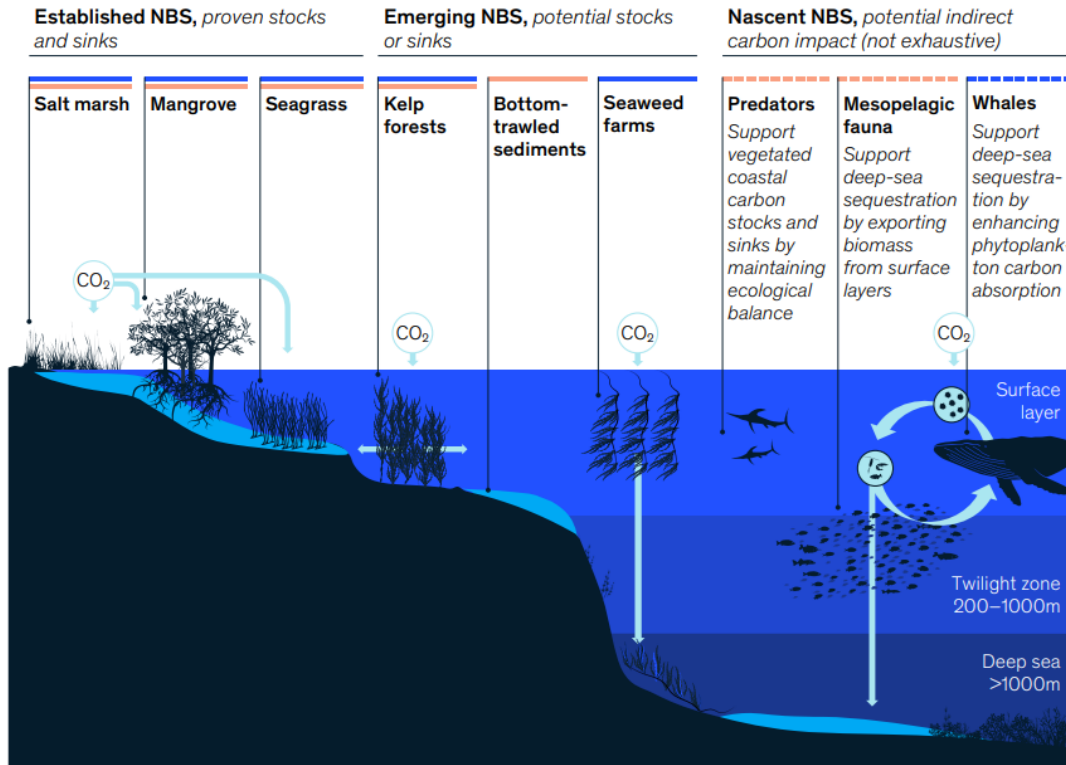
Exhibit 2

Established blue-carbon solutions offer abatement of 0.4 to 1.2 metric gigatons of carbon dioxide (GtCO₂) per year; emerging solutions could add up to about 1.8 GtCO₂ per year for a total of approximately 3 GtCO₂ per year.

Abatement potential from established and emerging blue-carbon solutions by 2050, GtCO₂ equivalent per year



Overview of Blue Carbon Systems



(Claes et al. 2022, McKinsey & Company)

Finance often requires third-party Monitoring, Reporting, and Verification

Established

- Solutions are widely understood
- Scientifically verifiable CO₂ sequestration

Emerging

- Initial peer-reviewed research to quantify their CO₂ sequestration
- Scientific uncertainty still needs to be addressed

Nascent

- Several challenges related to quantifying impact, establishing permanence, preventing leakage, and proving additionality

Mangrove Systems

Mangrove forests make up nearly **all of existing blue carbon credit sales.**

Deals in existence today, varying degrees of success:

- Indus Blue Carbon project (Pakistan)
- Danone, Hermès and Michelin funded work (Senegal)
- Apple funded work (Colombia)

2021: protection of ~20 percent of the world's mangrove forests can be funded through carbon financing **(with price of ~\$10-20 per ton)**

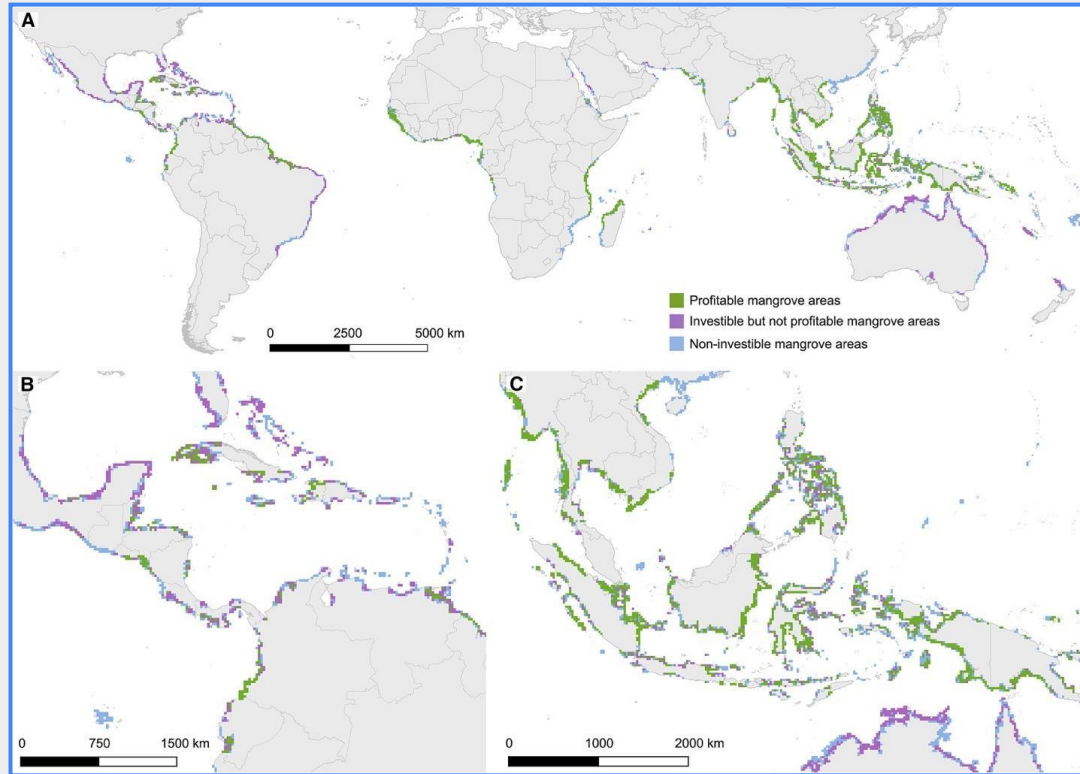


Figure 1. Spatially explicit comparisons of profitable, investible, and total mangrove areas. Zeng et al., “Global Potential and Limits of Mangrove Blue Carbon for Climate Change Mitigation.”

New Methodology: Seagrass Accounting

- Coastal wetlands were disadvantaged by rules that **limited accounting for soil carbon mitigation** (Kyoto Protocol)
- Coastal wetlands have **higher percentages of carbon in their soil**
- Accounting methodologies now exist for seagrasses
 - Verra's Verified Carbon Standard



Proof of Concept for Seagrasses

“First carbon credit program linked to seagrass”

- The Nature Conservancy, the University of Virginia, and the Virginia Institute of Marine Science

“First field validated map of carbon held within seagrass”

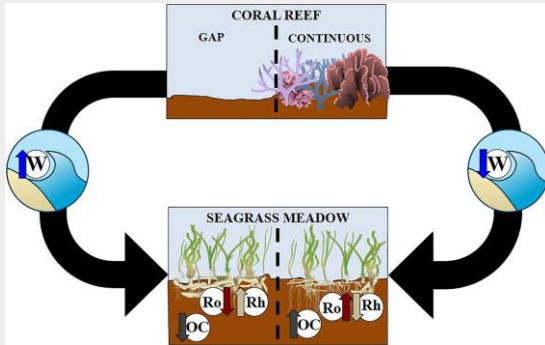
- Pew, University of Oxford, Seychelles Conservation and Climate Adaptation Trust (SeyCCAT), the University of Seychelles, Island Conservation Society, the German Aerospace Agency

“The world's first three projects that incorporate macroalgal beds and macroalgae farming” (Kuwae et al. 2022, Marine Policy)

- Japanese national governmental demonstration project



Nascent Blue Carbon: Reefs, Fisheries, and Mesopelagic Fish

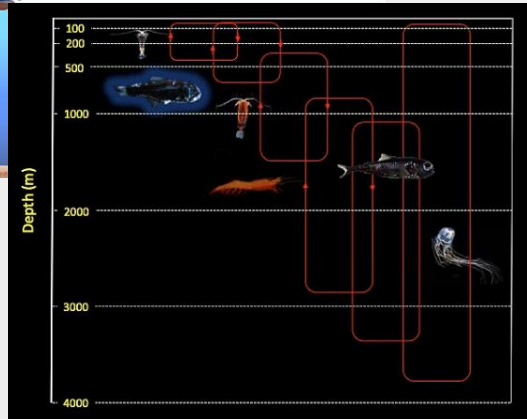
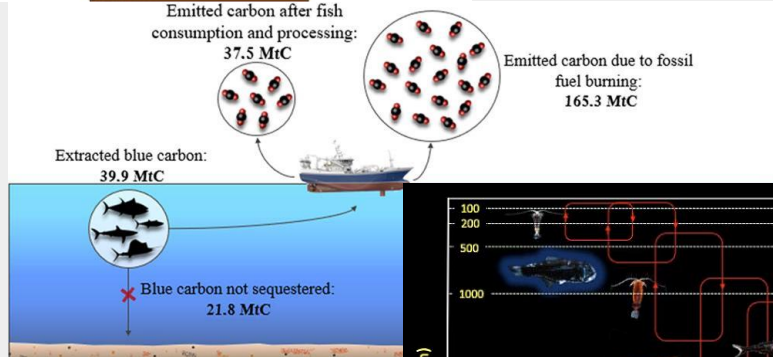


CORAL REEFS

- Calcification releases CO_2
- But reefs and seagrasses are “BETTER TOGETHER”

FISHERIES

- “Let more big fish sink: Fisheries prevent blue carbon sequestration—half in unprofitable areas” (Mariani et al. 2020)



MESOPELAGIC FISH

- Diel vertical migration (DVM) is a major carbon transport to the seafloor

Financing Blue Carbon | Gaps and Opportunities

Most coastal wetland interventions to-date have relied on grant capital

Barriers: Financing Gap

Technical capacity: Limited in-country capacity to include ecosystems in climate mitigation targets.

ROI: Gaps in knowledge on return on investment.

Risk: High risk due to geographic instability and land tenure issues and uncertainty around success of blue carbon projects

Cost: High upfront restoration costs and long-time horizon for returns.

Opportunities

Demand is growing: Private sector coalitions like the Blue Carbon Buyers Alliance are organizing around funding blue carbon projects.

Pilots exist: Mangrove projects are generating carbon credits, and first seagrass projects near market.

Government Support: Continued attention on Natural Climate Solutions by national governments on achieving Nationally Determined Contributions may help include Blue Carbon systems in national accounting.



 and **USAID Madagascar**

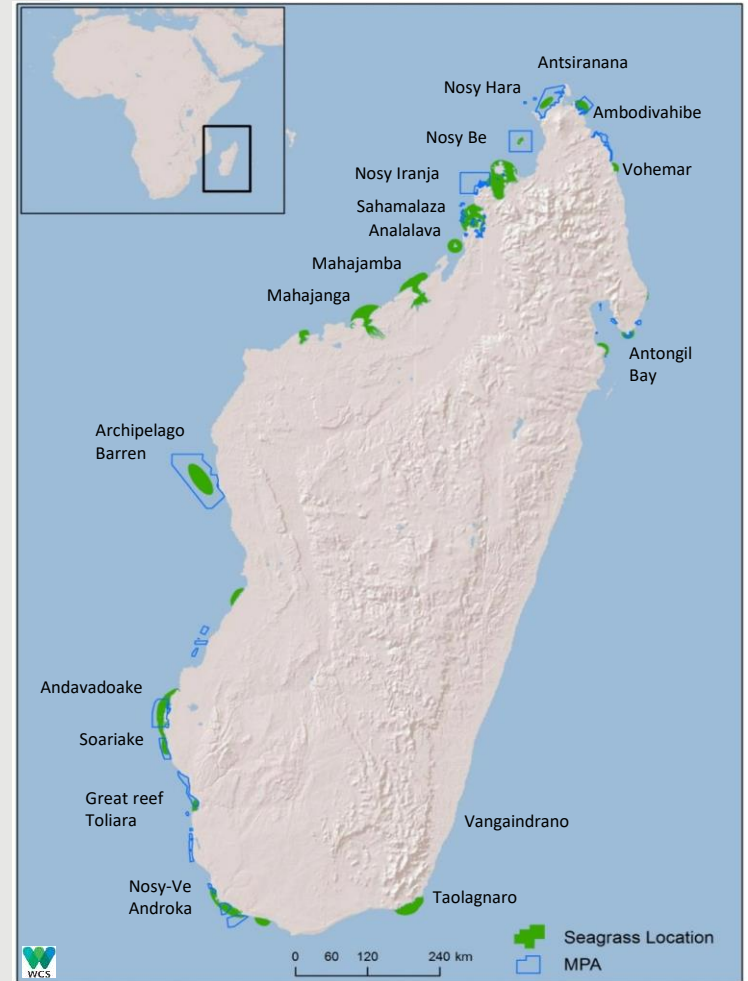
MADAGASCAR SEAGRASS STATUS AND MONITORING

Ravaka Ranaivoson, Marine Conservation Director,
WCS Madagascar

Tantely Tianarisoa, Monitoring, Evaluation and
Learning Coordinator – Marine Unit, WCS
Madagascar

MADAGASCAR SEAGRASS STATUS

- **Located in six main zones**
- Linked to mangrove, coral reef ecosystem, vicinity of islet, with riverine habitats, in coastal areas and deep habitats
- **12 species identified:** *Cymodocea serrulata*, *Cymodocea rotunda*, *Syringodium isotifolium*, *Thalassadendron ciliatum*, *Halophila decipiens*, *Halophila ovalis*, *Halophila stipulacea*, *Thalassia hemprichii*, *Halodule uninervis*, *Halodule wrightii*, *Zostera capensis* and *Enhalus acoroides*
- **Seagrass meadows were predominately monospecific**
- **Threats :**
 - Runoff from upstream deforestation
 - Logging of mangrove
 - Overfishing and destructive fishing practices
 - Coastal development (pollution, infrastructure)
 - Climate change



SEAGRASS MONITORING BY WCS IN MADAGASCAR

- **Mapping seagrass** (2017), impact analysis of mangrove deforestation, Dugong assessment with recorders
- **Seagrass Watch Training** (2018) on biology and taxonomy, seagrass monitoring and mapping
- **Seagrass monitoring in 3 MPAs** (2018-2022):
 - 313,000 ha of which 7% are seagrass (source: remote sensing) and 350 ha are no-take seagrass areas
 - Identified species composition, seagrass cover & canopy, description of macrofauna, sediment composition, algae and epiphyte cover
- **Key next steps and questions:**
 - How to establish MRV protocols?
 - Is there a profitable market that can outweigh the risk of seagrass degradation?
 - How to build local capacity to conduct assessment and monitoring of seagrass blue carbon?
 - How to set up a National Legal Framework on seagrass blue carbon?

USAID NOSY MANGA: MARINE ECOSYSTEMS AND COMMUNITY

Promoting sustainable seaweed and sea cucumber farming to reduce the pressure on marine resources and generate high financial returns : 955 farmers – more than 1,000 ha

CLIMATE CHANGE MITIGATION

- Seagrass **productivity**
- Farms improve carbon **sequestration**
- Farms improve coastal **protection**

HABITAT:

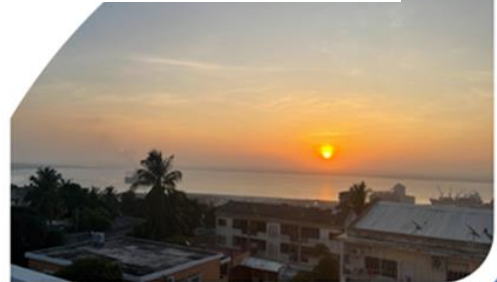
- Protected areas for critical habitat
- Nursery ground





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MOZAMBIQUE





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COASTAL
MOZAMBIQUE

66%

of Mozambicans live in
the coastal zone



POPULATION

20%

rely on fisheries for
their income, with
even more dependent
on the industry for
food security



ARTISANAL
FISHERS

70%

of fish caught in
Mozambique is by
artisanal fishers for
subsistence or
local markets



PROTEIN

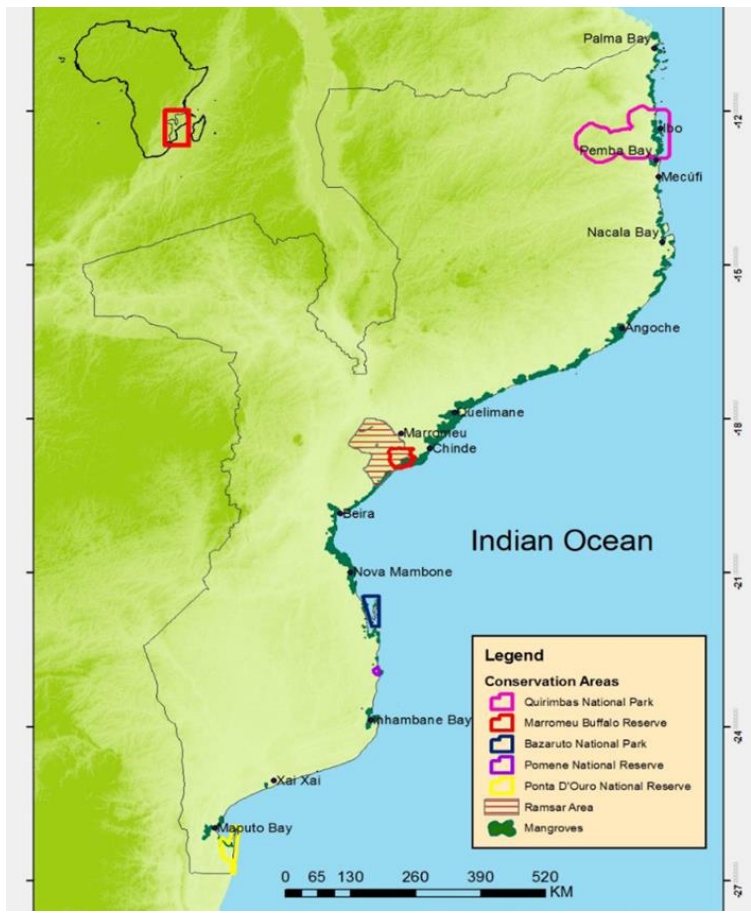
27%

of protein intake in
Mozambique comes
from fish



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Current Activities with relevance to Blue Carbon

- RCC: Resilient Coastal Communities (iDE ~\$25M)
- SPEED: Supporting the Policy Environment for Economic Development Project (Completing an assessment on Carbon for Moz including Blue C, Three grants under contracts to be awarded \$450k)
- MCC ~\$50M?
- CrossBoundary activity (procurement Firm-Fixed Price (FFP) Contract) ~\$2M

Q&A SESSION



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Coastal Resilience, Carbon, and Conservation Finance (C3F) Activity

1. Buy-in activity through the Climate Finance for Development Accelerator (SoW for C3F here)
2. Allows Missions to mobilize different flavors of funds (i.e., AD, SL, FTF, EG, and BD funds) to generate a pipeline of activities spanning coastal resilience, blue carbon, and biodiversity conservation:
 - a. **Guidance/TA:** Providing expert guidance on region-specific blue carbon and coastal resilience opportunities that also provide biodiversity conservation benefits
 - b. **Matchmaking:** Connecting Missions with global blue carbon and coastal resilience finance platforms that can assist in the scaling and development of projects via innovative finance and/or attracting private sector co-financing
 - c. **Standard Setting:** Setting a benchmark for local inclusion, equitable benefit-sharing, and biodiversity conservation in blue carbon and coastal resilience activities.

Ready to Pilot ASAP for interested Missions - reach out to Lisakowitz@usaid.gov with an initial interest.

Q&A SESSION





Thank you for joining us!