



Ministry of Ocean Economy, Marine Resources, Fisheries & Shipping



Third Project Steering Committee (PSC) meeting
for the project on 'Implementing the Strategic
Action Programme for the protection of the
Western Indian Ocean from land-based sources
and activities' (WIOSAP)

Assessment of Blue Carbon Ecosystem (Seagrass) around the island of Mauritius

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Durban , 25-27 June 2019



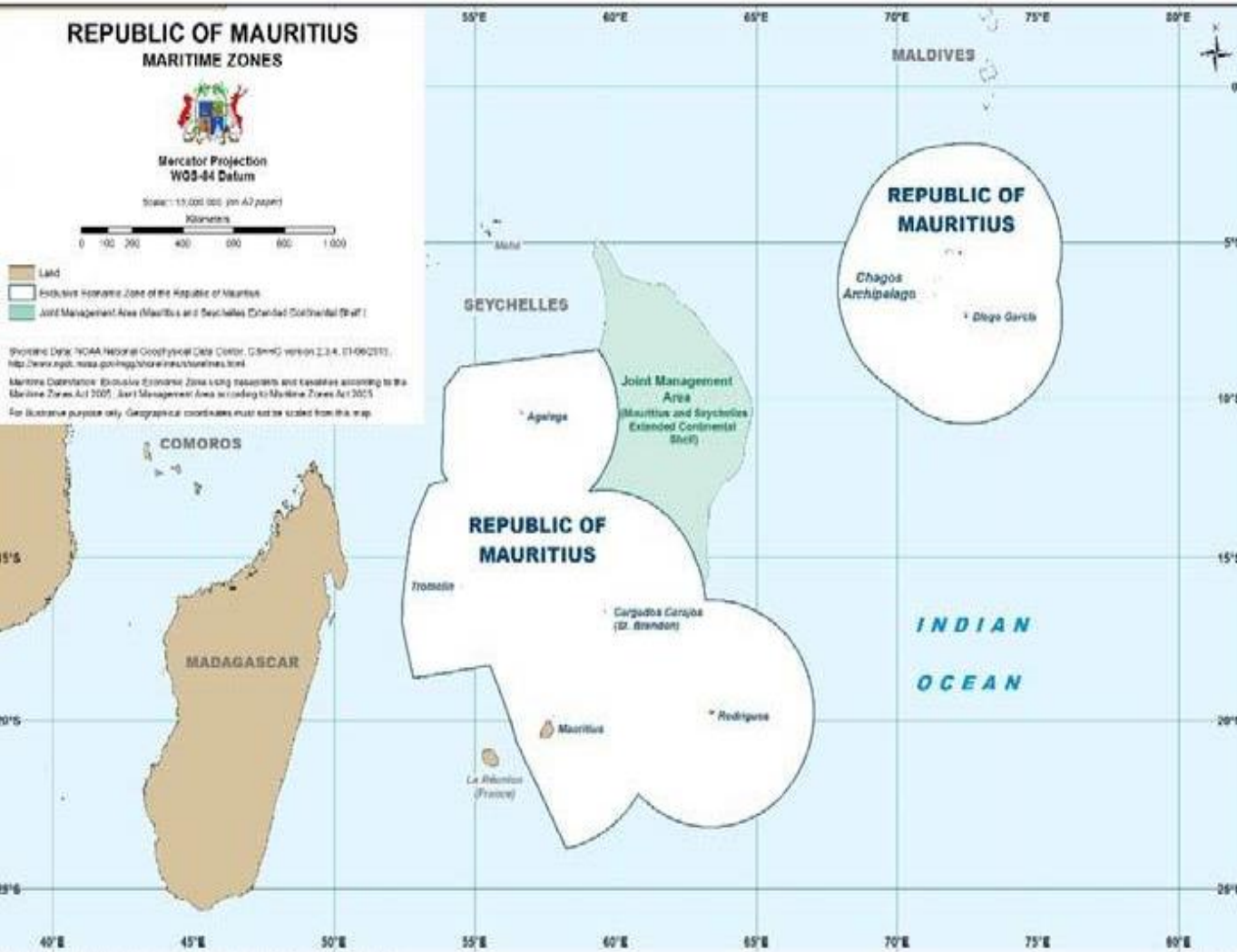
**ALBION FISHERIES
RESEARCH CENTRE**



Statistics On Coastal Zone

EEZ of the Republic of Mauritius:	2.3 million km ²
Land area:	1864 km ²
Coastline of Mauritius:	322 km
Lagoon area:	243 km ²
Length of Coral reefs:	150 km
Area of coral reefs:	300 km ²
Length of coastline occupied by Hotels:	41.9 km
Length of coastline occupied by Public Beaches:	26.6 km
Number of Rivers and Rivulets accessing to lagoons:	50

EEZ of Mauritius



EEZ of:
2.3 million km²

Land Area of:
1864 km²

Surrounded by:
150 km of fringing
coral reef enclosing
lagoons with a
total area of 243
km²

Ministry of Ocean Economy, Marine Resources, Fisheries & Shipping

Vision

- To be an economic pillar with due regard to sustainability of aquatic resources and social development for the benefit of all stakeholders.

Mission

- To provide an enabling environment for the promotion of sustainable development of the fisheries sector and to ensure continued economic growth and social development within the framework of good governance.

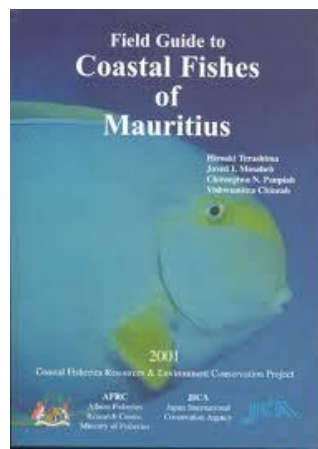
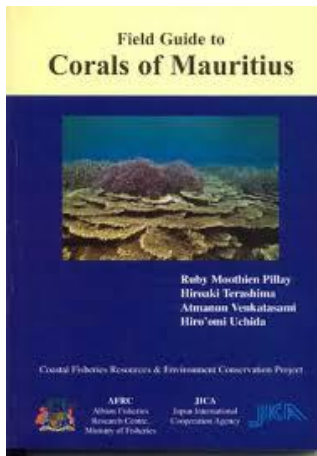


Albion Fisheries Research Centre (AFRC)

Technical Arm of the Ministry: Since 1982

Carries out applied research, fisheries development and management activities

- Marine Science Division
- Marine Conservation Division
- Laboratories Division
- Aquaculture Division
- Marine Resources Division



Project Background

- Main pressure on seagrass: tourism development
- Seagrass beds are cleared out for a more appealing lagoon to the tourists (ESA report, 2009; Daby, 2003).
- Seagrass meadows distribution has been receding since the advent of coastal development.
- Overfishing and anthropogenic activities also affect the seagrass beds via mechanical destruction and pollutant inputs.
- In 2000, the AFRC conducted a study on seagrass distribution and species composition at two sites around Mauritius; Albion and Pointe aux Canoniers (Paupiah *et al.*, 2000)

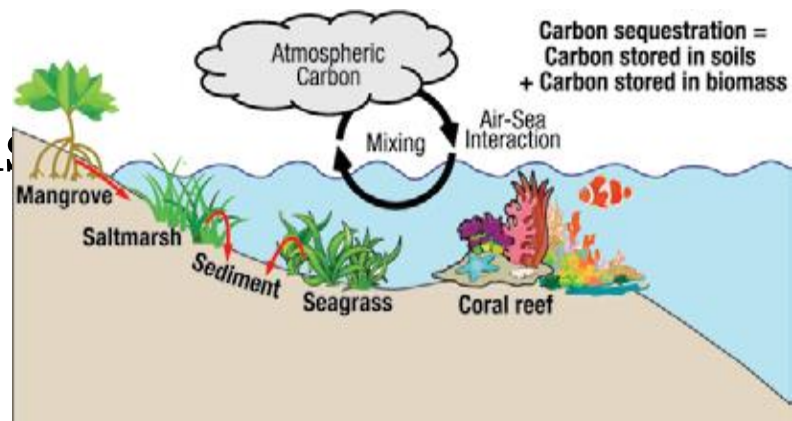


Blue Carbon Concept

- **Blue Carbon** – The carbon stored in mangroves, tidal salt marshes, and seagrass meadows within the soil, the living biomass above ground (leaves, branches, stems), the living biomass below ground (roots), and the non-living biomass (litter and dead wood).
- **The Blue Carbon Initiative**
- Despite their benefits and services, ***coastal blue carbon ecosystems*** are some of the most threatened ecosystems on earth, with an estimated 340,000 to 980,000 hectares being destroyed each year (Murray et al. 2011).
- **Carbon Stock** – A carbon stock is the total amount of organic carbon stored in a blue carbon ecosystem of a known size. A carbon stock is the sum of one or more carbon pools

Scientific Data Gap

- Current lack of knowledge on seagrass density & distribution.
- Knowledge gap on the efficiency of seagrass beds to act a natural carbon sink in Mauritius.
- No baseline data on carbon storage capacity of seagrass beds.



Aim of Project

To investigate the current status of seagrass around the coast of Mauritius and to determine their carbon sink potential to further enabling the develop of management strategies, to formulate policies gearing towards conservation, rehabilitation of seagrass ecosystems and to generate blue carbon credit in Mauritius.



Specific Objectives

- Conduct surveys on the density and distribution of seagrass around Mauritius Island
- Establish permanent seagrass monitoring stations at specific sites around the island
- Carry out sediment coring at specific seagrass sites around the island in view of determining carbon storage
- Analysis and determination of blue carbon content in sediment
- Calculation /generation of blue carbon credit



Methodology

1. Using Ecologically Sensitive Area (ESA) Maps of 2009 to and carry out density and distribution of seagrass bed around Mauritius ([Ground Truthing](#))
2. Establish Permanent stations/transects at 4 identified sites to carry out monitoring ([WIO Seagrass Network Protocol](#))
3. Carry out three sediment corings at each of the 4 sites: Sediment coring will be species targeted: Site selected according to species (Targeted species: *T. ciliatum*, *H. uninervis*, *S. isoetifolium* and *H. ovalis*/*H. stipulacea*)
4. Preliminary analysis of sediment will be carried out at the AFRC ([protocol from CSIRO](#))
5. Analysis of samples will be carried out in collaboration with CSIRO – Australia

Next Step (External expertise required)

6. Determination of blue carbon content and Generation of Carbon Credit
7. Restoration of degraded seagrass areas

Initial Project Time Frame (2 years)

Year 1:

- Component 1: Seagrass Assessment around the island
- Component 2: Seagrass Monitoring
- Component 3: Blue Carbon Storage Capacity in Seagrass (Sampling)

Year 2:

- Component 2: Seagrass Monitoring (Continued)
- Component 3: Blue Carbon Storage Capacity in Seagrass (Analysis)



Outcome

Island-wide assessment and continuous monitoring:

- ✓ A map depicting the distribution and diversity of seagrass species in the lagoons of Mauritius
- ✓ Acquisition of continuous long term monitoring data on seagrass and its health status
- ✓ Yearly report on Seagrass through long term monitoring

Sediment coring for the determination of carbon storage:

- ✓ Carbon storage capacity of the different species of seagrass around Mauritius.
- ✓ Potential for generating blue carbon credit



Budget

A total budget of 200, 000 USD

Includes:

- Buying of equipments
- Working day on field including boats and scientists
- Analysis of samples
- Travelling to Australia to carry out carbon analysis
- National & Regional Workshop to train other scientists



This Ministry's Commitment at the 5th Ocean Conference in Bali (October 2018):

Initiate long-term monitoring and mapping of sea grass beds in the coastal areas of Mauritius and propagation of sea grass beds to conserve and protect this very important ecosystem.

Budget from the Govt. of Mauritius: 500, 000 MUR for 2019/2020

Linkages and Beneficiaries

Linkages

- Ministry of Environment
ICZM - national coral reef network
- University of Mauritius
- Mauritius Oceanography Institute
- Local coastal/marine NGOs
- National Coast Guard

Beneficiaries

- Fishermen and coastal community, in general

Expertise for the success of the project

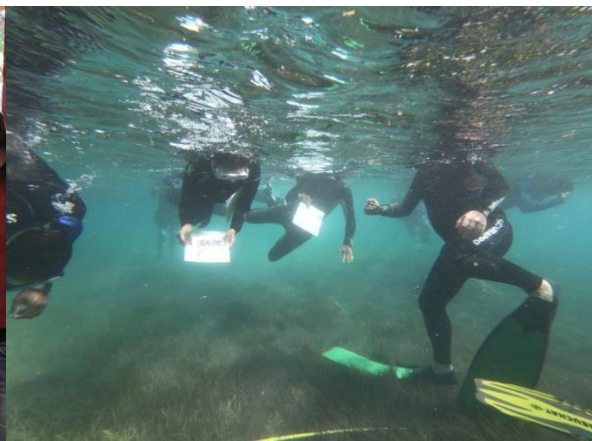
Seagrass Monitoring

Training Workshop on seagrass monitoring carried out in July 2018 by Creocean (Experts from Reunion Is.)

Output:

12 Scientists (from different Institutions & NGOs) trained on: establishing monitoring sites, carry out ground truthing, monitoring protocol, data gathering and generation of Maps using QGIS.

WIO Regional Protocol Established



Expertise for the success of the project (Contd)

Blue Carbon

Training through an Australia Award Fellowship on blue carbon by the CSIRO in Oct-Nov 2017 (Australia)

Output:

1 Scientist trained on:

Methods for sediment coring, initial preparation of sediment samples, established protocol & data collection.

Analysis of sediments will be carried out in Australia





Thank you..

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