



SEYCHELLES' CONSERVATION
AND CLIMATE ADAPTATION
TRUST

SeyCCAT



GLOBAL FUND FOR
CORAL REEFS

PRIORITY SITE CORAL REEF ECOLOGICAL AND SOCIO-ECONOMIC BASELINE ASSESSMENT



DELIVERABLE 3– FINAL BASELINE ASSESSMENT REPORT

Prepared for: SEYCHELLES' CONSERVATION AND CLIMATE ADAPTATION
TRUST (SeyCCAT)

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CONTENTS

List of Figures.....	ii
List of Tables.....	ii
List of Acronym.....	iii
Socio-Economic Baseline Assessment.....	4
Introduction.....	1
Material And Method.....	2
Data Collection Framework.....	2
Data Sources and Validation.....	3
Data Analysis.....	3
Result and Discussion.....	5
Study Area.....	5
Governance.....	6
Demographic characteristics and gender dynamics of reef-dependent communities.....	9
Economic Activities and Livelihoods.....	13
Income Levels and Sources.....	16
Use Patterns and Dependency on Reef Resources,.....	21
Perceptions and Awareness of Conservation.....	29
Ecological Baseline Assessment.....	31
Introduction.....	32
Material and Method.....	33
Priority Area and Site Selection.....	33
Benthic community composition.....	34
Reef Structural Complexity.....	35
Fish Community composition and biomass.....	35
Macroinvertebrate Community.....	35
Data Analysis and Accessibility.....	35
Results and Discussion.....	36
Benthic Community Composition.....	36
Reef Structural Complexity.....	38
Fish Community composition and biomass.....	40
Macroinvertebrate Community.....	42
Conclusion and Recommendation.....	43
Recommendations.....	43
Annexes.....	45
Annex 1 – Review log.....	45
Annex 2 – Data acquisition methods and data source.....	46

LIST OF FIGURES

Figure 1: Workflow for undertaking socioeconomic assessment as per the SocMon guideline.....	2
Figure 2: Map of priority area for the study.....	5
Figure 3. SAMNP zoning framework as per the Ste Anne Marine National Park Management Plan 2021-2025.....	8
Figure 4: Age class of the population in North-East Mahe by sex	12
Figure 5. Spatial distribution of illegal fishing activities recorded by the Seychelles Parks and Gardens Authority (SPGA) within the Sainte Anne Marine National Park.....	21
Figure 6. Aerial imagery comparison of the East Coast of Mahe between 1999 (top) and 2011 (bottom). The 2011 image shows the completion of several artificial islands, Ile du Port, Ile Perseverance I & II, and Eden Island, as part of the East Coast Reclamation Project Phase III (1998–2003).....	23
Figure 7. Spatial distribution of visitor density from boat excursion activity within the Sainte Anne Marine National Park.....	26
Figure 8. Spatial distribution of Mooring density within the Sainte Anne Marine National Park.....	28
Figure 9. : Percentage of respondent (n=40) who are aware of the existence of the Ste Anne MPA Management Plan	30
Figure 10. Location of Coral Reef Monitoring Sites in North-East Mahe, Seychelles.....	33
Figure 11. Benthic community composition across six monitored sites in the North-East Mahe Priority Area. Bars represent mean percentage cover of major benthic categories.....	37
Figure 12. Relative composition (%) of hard coral genera across six monitored sites in the North-East Mahe Priority Area. Bars represent the proportional abundance of each genus within each site	39
Figure 13. Average fish biomass (kg/ha) across all monitored sites by trophic group in the North-East Mahe Priority Area	40
Figure 14. Average fish biomass (kg/ha) across all monitored sites by family in the North-East Mahe Priority Area.	41
Figure 15. Mean density (individuals·m ⁻²) of benthic invertebrates by class across six sites in the North-East Mahe Priority Area.....	42

LIST OF TABLES

Table 1: SocMon variables selected to respond to ToR requirement and objectives of the assessment	4
Table 2: Stakeholder list develop according to activities identified in activities (K18)	9
Table 3: Total population in the study area by district and gender (2022)	10
Table 4: Summary of Value of Goods, Services and Revenue Generations for identified reef-related activities in North-East Mahe.....	18
Table 5: Percentage of visitors to Seychelles in 2024 by geographical region of residence.....	29
Table 6 Monitored Sites in North-East Mahe.....	34
Table 7. Summary of key ecological indicators across the six monitored sites in the North-East Mahe Priority Area	36
Table 8: Summary of methods used and sources of data for the selected SocMon variables.....	46

LIST OF ACRONYM

Acronym	
AOI	Area of Interest
BGF	Blue Grants Fund
BIF	Blue Investment Fund
DBS	Development Bank of Seychelles
ECP4	East Coast Project Phase 4 (2025 reclamation proposal)
EIA	Environmental Impact Assessment
EPA	Environmental Protection Act
EPBC Act	Environment Protection and Biodiversity Conservation Act (Australia)
FIMS	Fisheries Information Management System
GFCR	Global Fund for Coral Reefs
GCRMN	Global Coral Reef Monitoring Network
GIS	Geographic Information System
Ha	Hectare
IMET	Integrated Management Effectiveness Tool
IOT	Indian Ocean Tuna (processing factory workers referenced in household definitions)
K-series Codes	SocMon Socio-economic Variable Codes (K1-K29)
KI	Key Informant Interview
MACCE	Ministry of Agriculture, Climate Change and Environment
MCSS	Marine Conservation Society Seychelles
MERMAID	Monitoring & Evaluation of Reef Managers, Analysis, and Data Integration platform
MPA	Marine Protected Area
MRAG	Marine Resources Assessment Group (MRAG Ltd.)
MSP / SMSP	Seychelles Marine Spatial Plan (also appears as SMSP)
NE Mahe	North-East Mahé
NBS	National Bureau of Statistics
NGO	Non-Governmental Organisation
SAMNP	Sainte Anne Marine National Park
SFA	Seychelles Fisheries Authority
SMA	Seychelles Maritime Academy
SPGA	Seychelles Parks and Gardens Authority
SS	Secondary Sources (SocMon category)
SWIOFish3	Third South West Indian Ocean Fisheries Governance and Shared Growth Project
ToR	Terms of Reference
UNEP	United Nations Environment Programme
UniSey	University of Seychelles
WIO	Western Indian Ocean

SOCIO-ECONOMIC BASELINE ASSESSMENT



INTRODUCTION

Coral reef ecosystems are a significant nature capital for the economy of Seychelles: sustaining livelihoods, food security, and economic development through fisheries, tourism, and ecosystem services. Yet, these same reefs are increasingly exposed to pressures arising from climate change, coastal development, and resource exploitation. Understanding the human dimensions of reef use, how people interact with, depend on, and manage coral reef resources is therefore fundamental to designing effective conservation and adaptation strategies. The socio-economic baseline presented in this report was developed to characterize these interactions within the North-East Mahé Priority Site, including the Sainte Anne Marine National Park (SAMNP), under the framework of the SeyCCAT/Global Fund for Coral Reefs (GFCR) Ocean's Resolve Programme.

The North-East Mahé region represents the primary economic and demographic hub of Seychelles, encompassing twelve coastal districts and hosting the nation's capital, port infrastructure, and major tourism facilities. The area also includes the Sainte Anne Marine National Park, the first marine park established in the Western Indian Ocean. This association of protected and open-access areas makes the region an ideal socio-ecological system for examining the complex interdependencies between reef health, economic activity, and human wellbeing. Reef-related livelihoods in this area are diverse, ranging from artisanal and semi-industrial fisheries to tourism, conservation, and restoration initiatives and together form the basis for household income, employment, and cultural identity.

To ensure methodological consistency with the ecological assessment, the socio-economic component adopted the Socio-Economic Monitoring Guidelines for Coastal Managers of the Western Indian Ocean. This indicator-based and participatory framework is regionally recognized for its ability to capture the dynamic relationships between coastal communities and marine resources. It provides a structured approach for the collection, validation, and analysis of data related to governance, demographics, livelihoods, income, and perceptions of resource use and conservation. The selected SocMon variables (K1–K29; S19–S23) were tailored to address the Terms of Reference (ToR) objectives.

The assessment relied primarily on secondary data sources complemented by key informant interviews with institutional representatives, park managers, and sectoral experts. These datasets provided robust coverage of demographic patterns, economic activity, governance structures, and community attitudes within the study area.

This baseline provides quantitative and qualitative indicators to assess the status and trends of reef-dependent livelihoods, institutional governance, and community engagement. It serves as the initial reference point for future GFCR Monitoring and Evaluation cycles.

MATERIAL AND METHOD

To ensure methodological consistency with the ecological component, which followed the Global Coral Reef Monitoring Network (GCRMN) guidelines, the socio-economic component applied the Socio-Economic Monitoring Guidelines for Coastal Managers of the Western Indian Ocean¹. This participatory and indicator-based framework is regionally recognized for assessing coastal community interactions with marine resources, governance structures, and management effectiveness.

The SocMon workflow (Figure 1) was adopted to guide the data collection and analysis process, beginning with advance preparation, as defined in the SocMon manual. This preparatory phase included:

- Selection of key SocMon variables responding directly to the Terms of Reference (ToR) objectives;
- Review of existing secondary datasets; and
- Stakeholder and institutional consultations.

An inception meeting was held with SeyCCAT on 14 May 2025 to validate the study design and agree on data collection modalities. It was jointly determined that secondary data sources and key informant interviews would provide adequate information to meet ToR requirements, hence no household surveys were conducted.

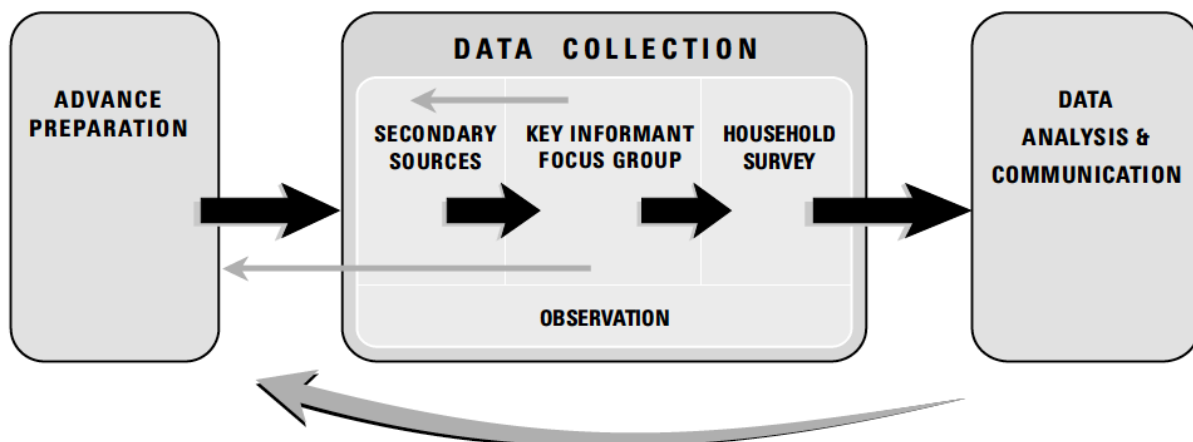


Figure 1: Workflow for undertaking socioeconomic assessment as per the SocMon guideline

Data Collection Framework

The assessment followed the standard SocMon categories and variable codes (K1–K29; S19–S23) as outlined in the SocMon–WIO manual, with adaptations for the Seychelles context. Variables were selected to align with the six ToR requirements: (i) project site definition, (ii) governance, (iii) demographics, (iv) livelihoods, (v) income and reef dependency, and (vi) community perceptions and awareness of conservation.

¹ Malleret-King, D., Glass, A., Wanyonyi, I., Bunce, L., & Pomeroy, B. (2006). Socio-economic Monitoring guidelines for coastal managers of the Western Indian Ocean, SocMon WIO. CORDIO East Africa publication.(Version 1).

Table 1 summarizes the selected variables including their SocMon codes, and corresponding ToR objectives.

Data were collected under two main acquisition categories:

1. Secondary Sources (SS): Compilation of published statistics, management plans, and institutional reports from national databases and agencies.
2. Key Informant Interviews (KI): Targeted consultations with agency representatives, park managers, and sector experts to validate and complement existing data.

It is to be noted that while no direct household surveys were undertaken. Datasets from recent perception surveys was obtained and used to access the stakeholder's perception.

Data Sources and Validation

Secondary data were primarily sourced from the following institutions:

- National Bureau of Statistics (NBS): Population and Housing Census data 2022, employment statistics, and tourism indicators;
- Seychelles Parks and Gardens Authority (SPGA): Management plans, EarthRanger platform, Integrated Management Effectiveness Tool (IMET) portal, and audited financial reports;
- Seychelles Fisheries Authority (SFA): Fisheries Information Management System (FIMS), artisanal fisheries employment data, and co-management plans;
- Ministry of Agriculture, Climate Change and Environment (MACCE): Policy and planning frameworks including the Seychelles Marine Spatial Plan (2025);
- University of Seychelles (UniSey): Ocean Governance and Blue Economy perception survey datasets (SWIOFISH3, 2022);
- SeyCCAT and Blue Grants Fund (BGF): Financial instruments and small grant schemes relevant to blue entrepreneurship and reef-positive livelihoods.

All datasets were cross-checked for temporal consistency, source reliability, and spatial relevance to the North-East Mahe region. Key informant interviews were used to validate interpretations of institutional data, particularly regarding governance frameworks, community engagement, and compliance with park regulations. Annex 3 provide an exhaustive list of methods used to collect data and sources of data for each of the selected SocMon variables.

Data Analysis

All quantitative data were collated and analysed in Microsoft Excel. Where possible data was disaggregated to represent the 12 districts which fall within the study area. Additionally, where relevant data was further disaggregated to represent the SAMNP. The resulting dataset provides a consistent baseline of reef-dependent socio-economic conditions within the North-East Mahe Priority Site, to be used as the initial reference for future GFCR Monitoring and Evaluation reporting.

Table 1: SocMon variables selected to respond to ToR requirement and objectives of the assessment

ToR Requirement	Socioeconomic Assessment Objectives	Codes*	Variables
Project Priority Site	North-East Mahe	K1	Study area
Governance	To examine existing governance frameworks related to coral reef management	K28	Management body
		K29	Management plan
Demographic characteristics and gender dynamics of reef-dependent communities	Determine the demographic profile of reef-dependent communities and identify age, gender and education structure influencing vulnerability and adaptive capacity	K2	Stakeholders
		K4	Population
		K5	Number of households
		K8	Age
		K9	Gender
		K12	Education
Economic Activities and Livelihoods	To estimate the number of individuals whose primary source of income is directly dependent on coral reef-related activities	K7	Occupation
		K17	Source of and access to credit
		K18	Activities
		K19	Goods and services
Income Levels and Sources	To assess sources of income among reef-dependent communities, with a focus on the contribution of coral reef-related activities to overall livelihoods	K20	Methods
		K21	Value of goods and services
Use Patterns and Dependency on Reef Resources	To document the patterns of resource use and evaluate the degree of community dependence on coral reef ecosystems for subsistence, income, and cultural practices	K23	Use patterns
		K25	Levels and Types of Impact
		K27	Tourist profile
Perceptions Awareness and Conservation	To assess community perceptions of coral reef health, threats to reef ecosystems, and levels of awareness, compliance, and support for existing conservation measures and regulations	S19	Perceptions of resource conditions
		S22	Compliance
		S23	Enforcement

*Code as presented in the SocMon Manual

RESULT AND DISCUSSION

Study Area

The North-East Mahe (NE Mahe) Priority Area includes a total of 12 coastal districts, namely Anse Etoile, Bel Air, Cascade, English River, Glacis, Ile Perseverance, Les Mamelles, Mont Fleuri, Plaisance, Pointe Larue, Roche Caiman, and Saint Louis. It also encompasses the Sainte-Anne Marine National Park (SAMNP) a 965 Ha area established in 1973 which lies 5 Km East of Victoria (Figure 2). The MPA is made up of 6 Islands Ste Anne, Moyenne, Longue, Round, Ille Cache and Cerf.

The NE Mahe encompasses a total of 10,812 Ha of oceanic area on the Northeast coast of Mahe of which around 9% is a no take Marine Protected Area. The NE Mahe encompass an extent of 2660 Ha of Reef as defined by the Allen Coral Atlas².

Within the SAMNP Tourism establishments are present or is presently being developed on all the Islands apart from Moyenne, considered a terrestrial national Park. The only local community in the MPA is based on Cerf Island.

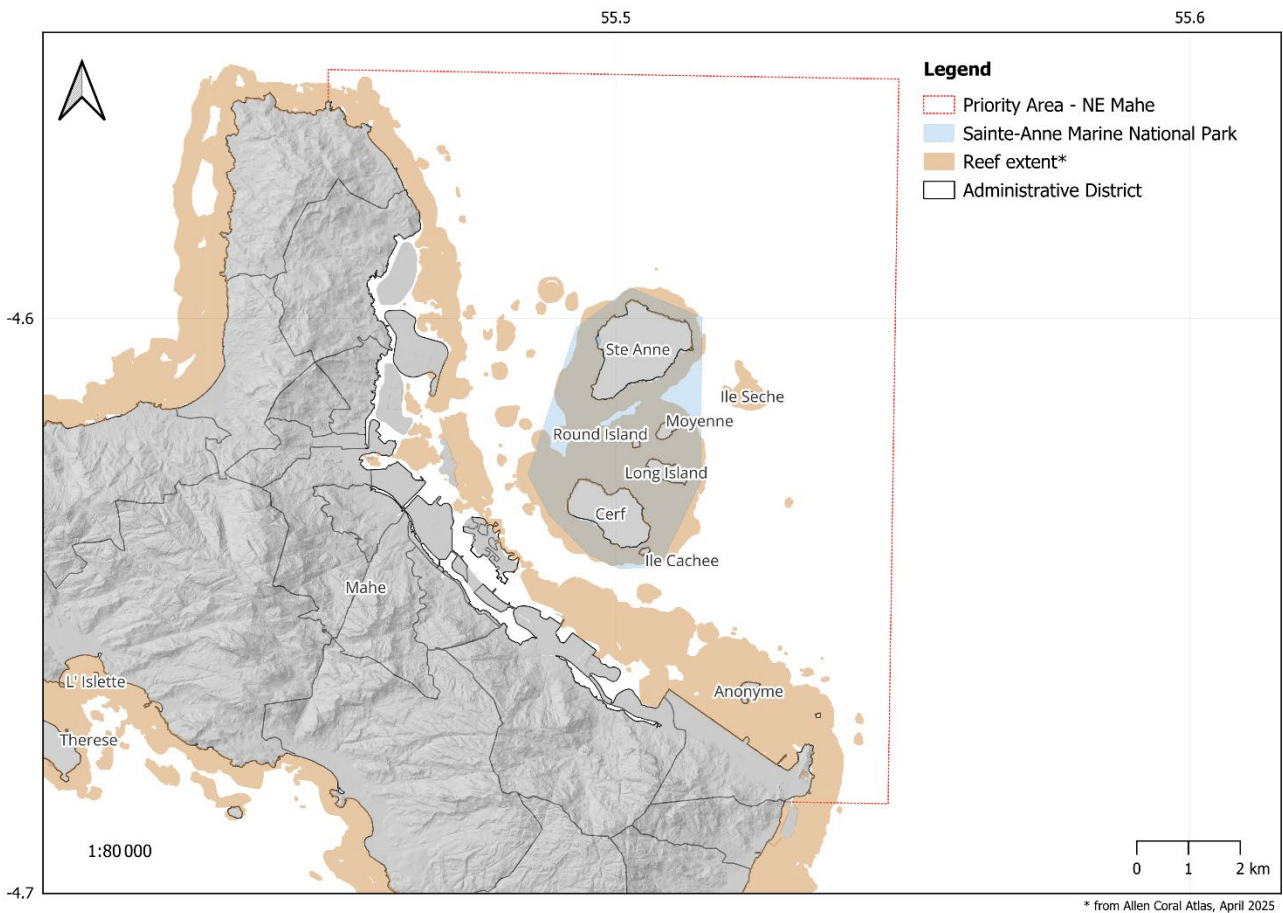


Figure 2: Map of priority area for the study

² Allen Coral Atlas (2022). Imagery, maps and monitoring of the world's tropical coral reefs. doi.org/10.5281/zenodo.3833242

Governance

Management body (K28) and Management plan (K29)

Seychelles recently enacted its Marine Spatial Plan (MSP)³ and the study area falls within the SMSMP Multiple Use Area (Zone 3), with an existing Marine National Park, the SAMNP, designated in 1973. The SAMNP is managed by the Seychelles Parks and Gardens Authority (SPGA) which is a parastatal entity. Outside the SAMNP, the Priority Area is governed by multiple laws and policies. These are administered primarily by the Department of Environment, under instruments such as the Environmental Protection Act (2016). The Seychelles Fisheries Authority (SFA) manages the fisheries sector under the Fisheries and Aquaculture Act (2025)⁴. This authority oversees the management of fisheries and aquaculture, ensuring transparency in the planning, formulation, and enforcement of management rules and regulations.

The Government of Seychelles and existing authorities are responsible to implement the existing management plans which includes:

The Seychelles Coastal Management Plan (2019-2024): which falls under the responsibility of the Ministry of Agriculture, Climate Change and Environment (MACCE), aim is to help maintain and protect the coastal zone to reduce coastal risk, support healthy ecosystems, and enable sustainable coastal economic development. The plan identifies North-East point which fall within the scope of this study as one of the Coastal Zone Management Units (CZMU-01) whereby actions including Coral reef management and/or Restoration has been proposed.

Mahe Plateau Trap and Line Fishery Co-management Plan (2019): enacted through the Fisheries (Mahe Plateau Trap and Line Fishery) Regulations, 2021. The main measures being implemented through this plan includes: (1) Minimum size limits of 32 cm for two fish species namely Emperor Red Snapper (*Lutjanus sebae*) and Green Jobfish (*Aprion virescens*); (2) Bag limits for recreational fishing as well as sport fishing and catch of demersal species by semi-industrial fishing vessels; (3) Trap limits whereby commercial fishing vessel can have a maximum of 25 traps and recreational fishing vessel 2 traps; and (4) regulated fishing withing Rabbitfish (*Siganus sp.*) spawning aggregation sites. This is the only plan whereby a co-management committee has been established and fishers are also represented. The Implementation Committee of the Mahe Plateau trap and line fishery co-management plan (ICPP) is responsible to oversee the phased implementation of the plan and ensure appropriate communication with all stakeholders.

Ste Anne Marine National Park Management Plan 2021-2025: SPGA is responsible for the implementation of this plan which aims to ensure it achieves its purposes of 'protecting and maintaining the natural resources of the park in their natural state for the benefit and enjoyment of the people of Seychelles and visitors alike, while providing opportunities to make sustainable use of the area for stakeholder income generation, tourism, education, recreation, scientific purposes and financing of the park's management'. In the Management Plan the Value of Coral Reefs within the MPA is presented as follows:

3 Nature Reserves and Conservancy (Seychelles Marine Spatial Plan) Regulations, 2025 (<https://www.gazette.sc/sites/default/files/2025-03/SI%2018%202025%20-%20Nature%20Reserves%20and%20Conservancy%20%28Seychelles%20Marine%20Spatial%20Plan%29%20Regulations%202025.pdf>)

4 Fisheries and Aquaculture Act (2025) (<https://www.gazette.sc/sites/default/files/2025-06/Act%203%20-%202025%20-%20Fisheries%20and%20Aquaculture%20Act%202025.pdf>)

The coral reefs of the Sainte Anne Marine National Park (SAMNP) though historically degraded⁵ remain ecologically and economically significant. They provide key ecosystem services, including:

Tourism Value: A major attraction for snorkelling, diving, and glass-bottom boat tours, supporting Seychelles' marine tourism economy.

Coastal Protection: Functioning as natural breakwaters that reduce wave energy, storm surge, and beach erosion

Fisheries Support: Serving as spawning and nursery grounds for commercially valuable reef fish such as snappers and groupers.

The plan also acknowledged that despite their importance, the reefs face chronic stress from bleaching events (1998, 2016), urban runoff and dredging from nearby Victoria, illegal fishing, and anchor and trampling damage due to lack of moorings⁶. In this regard the plan identifies the following activities as a priority for reef management:

- (1) Reducing human impacts through visitor education, mooring buoy installation, and stricter enforcement;
- (2) Restoration via partnerships with MCSS and WiseOceans;
- (3) Long-term monitoring using standardized reef protocols;
- (4) Reducing human impacts through visitor education, mooring buoy installation, and stricter enforcement;
- (5) Restoration via partnerships with MCSS and WiseOceans;
- (6) Long-term monitoring using standardized reef protocols.

Overall, SAMNP's reefs retain high ecological and socio-economic value and are central to biodiversity conservation, tourism, and coastal resilience in Seychelles. The plan provides a zoning framework to ensure usage conflict management (Figure 3).

This plan is scheduled for review by the end of 2025. During consultations with SPGA park rangers and officers, it was confirmed that approximately 70% of the activities defined in the plan have been implemented. The main limitations identified are the absence of 24-hour operational coverage and the lack of installed mooring infrastructure, which remains nonexistent within the park. At present, park revenues are derived primarily from fees collected from boats anchoring overnight.

⁵ Proctor, J. (1973) National Parks in the Seychelles. *Biological Conservation* 5(2): 153-155.

⁶ Graham NAJ, Wilson SK, Jennings S, Polunin NVC, Bijoux JP, Robinson J. (2006) Dynamic fragility of oceanic coral reef ecosystems. *PNAS* 103, 8425- 8429 <https://doi.org/10.1073/pnas.0600693103>

Robinson, JPW, Wilson SK and Graham NAJ. (2019) Abiotic and biotic controls recovery 16 years after mass bleaching. *Coral Reefs* 38:1255–1265.

Clifton J, Etienne M, Barnes DK, Barnes RS, Suggett DJ, Smith DJ. (2012) Marine conservation policy in Seychelles: Current constraints and prospects for improvement. *Marine Policy* 36: 823- 831.

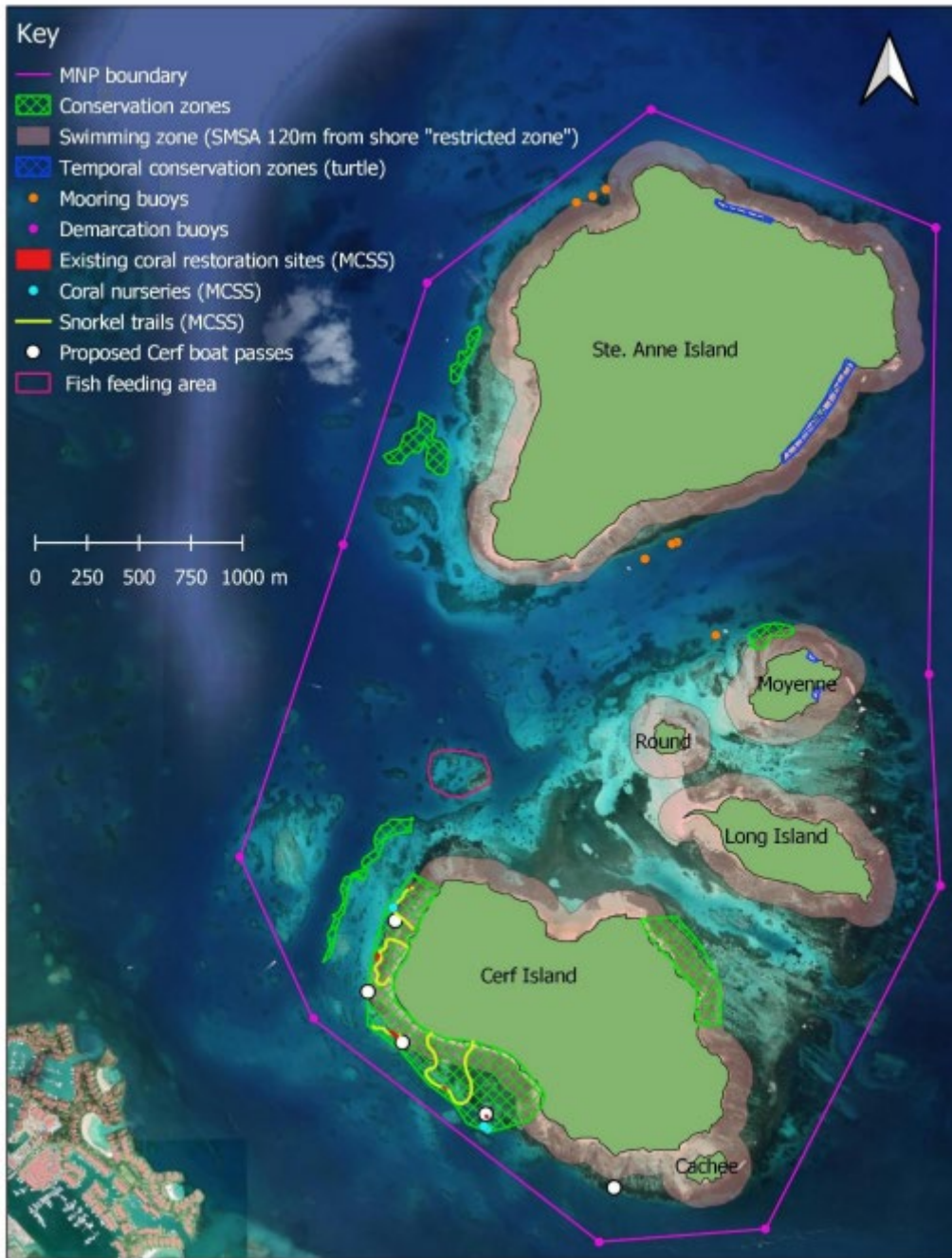


Figure 3. SAMNP zoning framework as per the Ste Anne Marine National Park Management Plan 2021-2025

Demographic characteristics and gender dynamics of reef-dependent communities Stakeholders (K2)

The key reef dependent stakeholders identified in the priority area includes those working in the marine sector such as fisherman, tourism sector such as dive operators, hire craft operators, hotel establishments and employers of the MPA including NGOs working within the park (Table 2).

Table 2: Stakeholder list develop according to activities identified in activities (K18)

Coastal Activity*	Beneficiary	Stakeholders	n	Indices
Fishing	Direct	Artisanal fishers from districts within the AOI	153	n of registered Artisanal fisher NE Mahe
Tourism		Hire Craft Operators	190	n of boat in SAMNP (Jul/Aug 2025)
Conservation Restoration and Research		Staff working in Ste Anne MPA (SPGA)	6	n of employees
		NGOs (MCSS, WiseOceans)	2	n of organisation
Fishing	Indirect	Artisanal fishers from Mahé	339	n of registered Artisanal fisher nationally
Tourism		Hotel and associated services	53	n or tourism establishments
Conservation Restoration and Research		Seychelles Population	102,612	n of individual

Population (K4)

The total population of Seychelles is 102,612 individuals⁷. In view that Seychellois in general has a high fish consumption it can be deduced that the whole population is reef dependent when it comes to resource use. In a study undertaken by J. Bijoux (2024) to assess the Socio-economic impact assessment of the Mahé Plateau trap and line fishery co-management plan, 71% of respondent confirmed eating fish at least 4 times a week and 89% consider fish as a healthier food option compared to meat⁸.

The total population within the 12 districts of the NE Mahe represents 45.4% (n=46,573) of the country's population, comprising of 54.5% male (n=25,397) and 45.5% female (n=21,176). Cascade has the highest number of individuals representing 14.3% (n=6,659) of the population and Les Mamelles the smallest representing only 4.8% (n=2,215) of the population within the study area (Table 3).

⁷ Republic of Seychelles. Seychelles Population and Housing Census, 2022. National Bureau of Standards.

⁸ Bijoux, J. (2024). Socio-economic impact assessment of the Mahé Plateau trap and line fishery co-management plan. Seychelles Fisheries Authority (<https://mofbe.gov.sc/wp-content/uploads/2024/08/SEIA-of-the-Mahe-Plateau-trap-line-fishery-co-management-Plan.pdf>).

Table 3: Total population in the study area by district and gender (2022)⁹

Region (AOI)	Male	% Male	Female	% Female	Both Sexes	% Both Sexes
Anse Etoile	2918	11.5	2559	12.1	5477	11.8
Bel Air	1348	5.3	1271	6.0	2619	5.6
Cascade	4751	18.7	1908	9.0	6659	14.3
English River	1751	6.9	1757	8.3	3508	7.5
Glacis	1988	7.8	1815	8.6	3803	8.2
Ile Perseverance	2482	9.8	2928	13.8	5410	11.6
Les Mamelles	1158	4.6	1057	5.0	2215	4.8
Mont Fleuri	1912	7.5	1594	7.5	3506	7.5
Plaisance	1926	7.6	1759	8.3	3685	7.9
Pointe Larue	1747	6.9	1520	7.2	3267	7.0
Roche Caiman	1693	6.7	1464	6.9	3157	6.8
Saint Louis	1723	6.8	1544	7.3	3267	7.0
Total	25397	54.5	21176	45.5	46573	100

Number of households (K5)

The total number of conventional households in Seychelles is 28, 558. Under NBS definition scheme, “Conventional household” represents a group of people who live together in the same dwelling unit, and share living arrangements, such as eating meals together or pooling resources (e.g., for food, utilities) and excluded “Institutional household”, a group of people who live together in an institution and are usually not related, and who are provided with housing and/or care as part of the institution’s services, e.g., orphanages, convent, large groups of construction or IOT workers. 44.9% representing 12,812 conventional household is found within the North-East Mahe priority site.

Age (K8) and Gender (K9)

The total recorded population for Seychelles is 56,226 males and 46,386 females. The median age is 35.05 years for males, 36.18 years for females, and 35.6 years overall. The largest population cohorts are observed between 25–44 years, with male counts ranging from 5,272 (25–29) to 6,023 (35–39), and female counts from 3,474 (25–29) to 3,597 (30–34) (Figure 4).

In NE Mahe the total recorded population is 25,397 males and 21,176 females, for a combined total of 46,573 individuals. The median age is 29.86 years for males, 29.80 years for females, and 31.08 years overall. The largest cohorts occur between 25–39 years, with male counts of

⁹ Republic of Seychelles. Seychelles Population and Housing Census, 2022. National Bureau of Standards.

2,423 (25–29), 2,794 (30–34), and 2,789 (35–39); corresponding female counts are 1,593 (25–29), 1,661 (30–34), and 1,600 (35–39) (Figure 11).

Within the SAMNP local community, the total population is 241 males and 61 females, amounting to 302 individuals. The median age is 23.51 years for males, 29.08 years for females, and 32.66 years overall. The highest male counts are recorded in the 20–39 year range with 38 males (20–24), 43 (25–29), 52 (30–34), and 39 (35–39). Female counts are lower across all age classes, with 13 (20–24), 19 (25–29), 10 (30–34), and 5 (35–39) representing the main working-age groups.

The gender composition of the population shows a male-to-female ratio of 1.21 at the national level, 1.19 in North-East Mahe, and 3.95 within the Sainte Anne Marine National Park (SAMNP) area.

This indicates that for every female, there are approximately 1.2 males nationally, 1.19 males in North-East Mahe, and nearly four males for every female in the SAMNP community.

In terms of SAMNP management a total of 6 staff works full time with SPGA of which only 1 is a female.

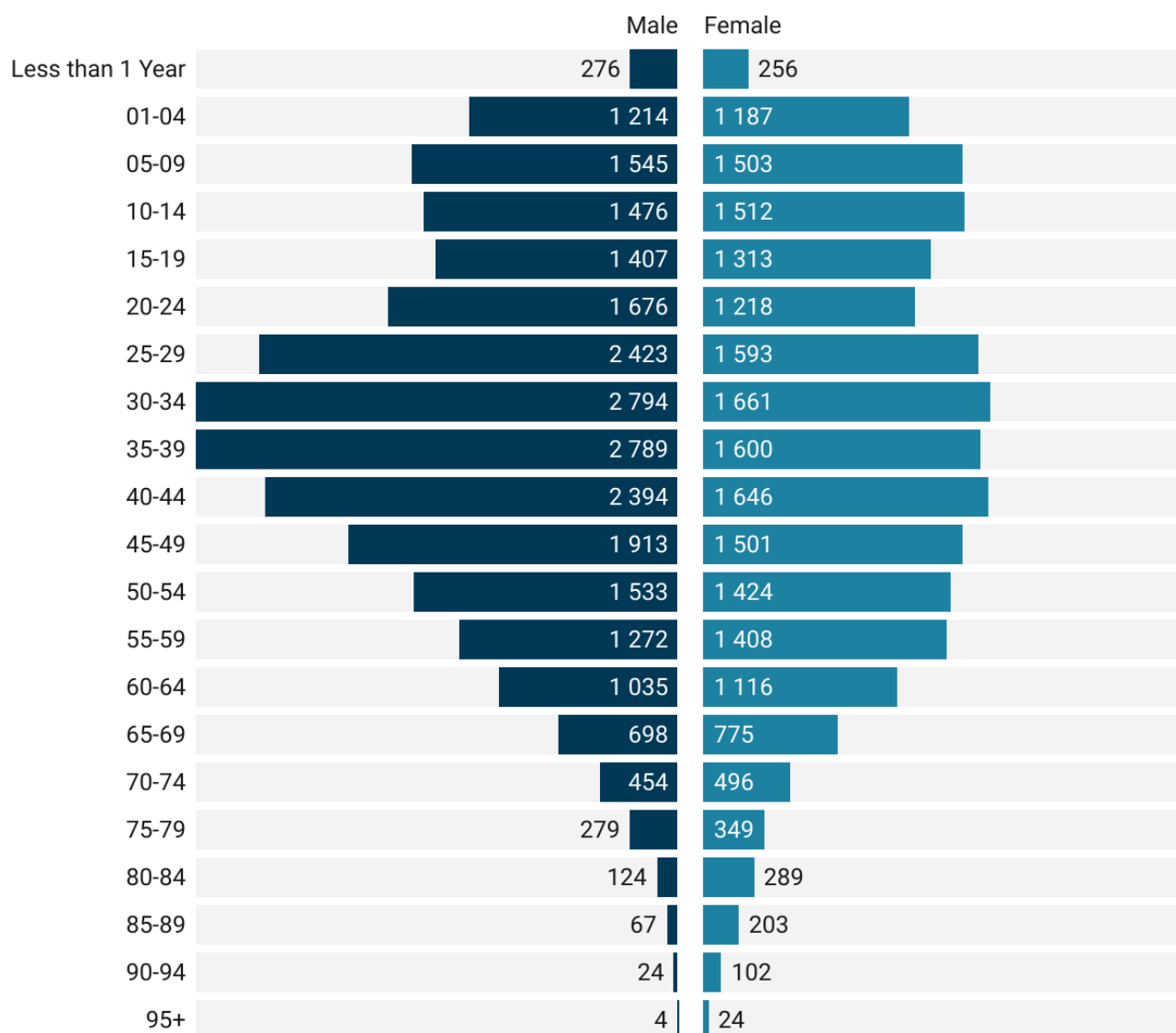


Figure 4: Age class of the population in North-East Mahe by sex¹⁰

Education (K12)

At the national level, 37.47% of the Seychelles population aged 15 years and above have attained a post-secondary diploma (equivalent to 13 or more years of schooling). Among these, 32.54% are males and 43.70% are females. In addition, 4.05% of the national population aged 15 years or more hold a university degree or equivalent qualification (16 or more years of schooling), comprising 3.48% males and 4.77% females.

Within NE Mahe, the share of the population aged 15 years and above holding a post-secondary diploma is 37.70%, with 32.75% for males and 43.89% for females. Similarly, 4.05% of the population aged 15 years and above possess a university degree, including 3.64% males and 4.56% females.

¹⁰ Republic of Seychelles. Seychelles Population and Housing Census, 2022. National Bureau of Standards.

These results indicate a comparable educational attainment between Priority Area and the national average, with a consistent gender pattern showing higher representation of females across both post-secondary and university education levels.

Within the SAMNP the SPGA employees are all educated to higher secondary level or more, with 3 qualified in post-secondary maritime studies from the Seychelles Maritime Academy (SMA), 1 BSc university degree, and 1 staff presently enrolled part-time to undertake BSc university degree.

Economic Activities and Livelihoods

Occupation (K7), Activities (k18), Goods & Services (K19), Methods (K20)

National employment data from the National Bureau of Statistics (2022) indicate that approximately 1,787 Seychellois derive their primary income from reef-related occupations. When disaggregated to the 12 districts of the AOI, within this total, an estimated 33% (n=600 individuals) are concentrated in the North-East Mahe region.

Nationally, the leading reef-related occupations are Hotel Managers (530), Ships' Deck Crews and Related Workers (424), and Deep-Sea Fishery Workers (218). These are followed by Inland and Coastal Waters Fishery Workers (166), Fishery and Aquaculture Labourers (131), and Tour Guides (142). Smaller occupational categories include Aquaculture and Fisheries Production Managers (76), Subsistence Fishers, Hunters, Trappers, and Gatherers (42), Farming, Forestry and Fisheries Advisers (26), Aquaculture Workers (19), and Underwater Divers (13).

In North-East Mahe, the structure of reef-related employment mirrors the national trend but with a greater local focus on small-scale and operational roles. The largest groups include Ships' Deck Crews and Related Workers (186), Fishery and Aquaculture Labourers (85), Inland and Coastal Waters Fishery Workers (74), and Hotel Managers (79). Additional employment categories consist of Deep-Sea Fishery Workers (59), Tour Guides (42), and smaller numbers of Aquaculture Managers (28), Subsistence Fishers (18), Advisers (12), Aquaculture Workers (13), and Underwater Divers (4). These figures demonstrate that livelihoods in the North-East of Mahe are highly interlinked with the condition and productivity of coral reef ecosystems through both fisheries and tourism.

Tourism Sector

Tourism is the dominant economic sector associated with reef ecosystems, both nationally and within the North-East Mahe area, which includes the Sainte Anne Marine National Park (SAMNP) and multiple nearshore recreational sites. In the fourth quarter of 2023, 12,797 persons were employed in tourism-related industries within the private sector, representing 35.7% of all private sector employment. A further 693 individuals were employed in parastatal or government roles within tourism. At the national level, tourism-related activities accounted for 24.6% of total employment, with 19.8% (10,873 persons) specifically engaged in "Accommodation and Food Service Activities."

In the NE Mahe, the tourism economy is diversified across 53 accommodation establishments, ranging from large hotels to guesthouses and self-catering units, as well as boat excursion operators providing snorkelling and diving trips within the SAMNP. Data from the Seychelles Parks and Gardens Authority (SPGA) for July and August 2025 recorded approximately 1,802 visitors (tourist only, excluding Seychelles residents) per month to the SAMNP and an average of

188 organised excursion trips monthly. These activities generated an estimated US\$349,588 in excursion-related expenditure and an additional US\$31,395 in monthly park entrance fees. Overnight mooring activities averaged 61 boats per month, contributing approximately US\$1,056 in monthly revenue to park management.

Tourism therefore represents a consistent and substantial income stream for coastal households in North-East Mahe, supporting a wide range of secondary livelihoods such as boat crew, dive guides, restaurant staff, and craft sellers. The close interdependence between healthy reef ecosystems and the tourism economy underscores the importance of maintaining reef integrity for sustaining employment and income security in the region.

Fisheries and Marine Resource Use.

Fishing remains a central livelihood for coastal households in North-East Mahe, complementing tourism-based employment and sustaining both local consumption and small-scale commerce. According to MRAG Ltd. (2022)¹¹, the national fisheries workforce totals 3,925 persons, of which 84.9% are full-time employees. Within this, the fisher sub-sector comprises 1,380 workers (76.1% full-time) and the non-fisher sub-sector 1,582 workers (80.9% full-time).

Artisanal fishing in Seychelles employs methods suited to nearshore reef, lagoon environments. And deep fishing. Common techniques include: 1) Fish traps (“kazyé”) made of wire mesh or traditional materials, set on seagrass bed or near reef edges to target reef-associated species such as parrotfish (Scaridae), 2) Handlines and drop lines, used from fiberglass boats (Mini Mahe), to catch pelagic and semi-pelagic fish such as jobfish (*Pristipomoides* spp.) and trevally (*Carangidae*) or deep demersal species such as snappers (*Lutjanidae*), emperors (*Lethrinidae*), and groupers (*Serranidae*). 3) Octopus gleaning on reef flats, typically conducted on spring low tides.

Licensing records from the Seychelles Fisheries Authority (SFA) indicate approximately 188 active artisanal licences, with additional smaller segments targeting small pelagic using nets (7 licences) and lobster via hand gathering (9 licences). Monthly revenues for artisanal fishers are estimated at around US\$592, based on the MRAG sectoral income assessment (2022). Octopus fishers and gatherers earn slightly less, averaging US\$575 per month.

Landing sites, known as “bazar”, remain key points of trade and community interaction. A total of 12 fish landing sites were identified across the North-East Mahe coast through OceanWealth mapping. These sites serve as focal nodes for fish sale, storage, and transport, often supporting informal market networks that sustain household economies.

Previous socio-economic assessments from Etongo, Vel and Port-Louis, 2020¹² estimated that fishing is the main livelihood activity for roughly 31% of coastal households, with the remainder engaged in tourism, public sector employment, or small-scale trade. Around 30% of the national population depends directly on small-scale fisheries, while another 10% benefits indirectly through supply chains and related services. Given Seychelles’ limited land area (455 km²) and the

¹¹ MRAG Ltd. (2022). Employment study and capacity needs assessment for the fisheries sector in Seychelles (Final Report, RFP07). Seychelles Fishing Authority (SFA).

¹² Etongo, D., Vel, T., & Port-Louis, A. (2020). Community perceptions of climate-change vulnerability in Seychelles and some considerations on data and methodological gaps. *Seychelles Research Journal*, 2(2), 94-120.

predominance of marine-based economic activity, fisheries remain a vital source of income, food security, and cultural identity for many households in North-East Mahe.

SAMNP Management

For the management of the SAMNP the total salary paid by SPGA to park employees for the year 2024 amounts to US\$ 76,341, with each staff earning an average of US\$1,060 per month. This amount represents the main income for all the six employers.

Source of and access to credit (K17)

Access to financial resources remains limited among small-scale fishers and tourism operators. Formal credit channels are available through commercial banks and government-backed programmes such as the Development Bank of Seychelles; however, most small operators rely on informal loans or family savings for gear, fuel, and boat maintenance. Survey results presented in Etongo & Arrisol (2021)¹³ show that 70% of fishing households on Mahé had not approached a bank or financial institution for assistance during the 12 months preceding the survey. This indicator highlights limited engagement of small-scale fishers with formal financial systems. Financial institutions often have limited understanding of the fisheries sector and perceive small-scale fishers as high-risk clients. Constraints to credit provision commonly include the absence of physical or livelihood assets that can serve as collateral, low education and literacy levels, weak savings and organizational structures, lack of credit history, limited financial discipline or capacity to save, and the absence of formal banking account¹⁴.

Three national level grant/loan funding mechanism for the blue economy sector have been identified this includes the:

(1) Blue Investment Fund¹⁵:

The Blue Investment Fund (BIF) is a loan scheme developed specifically to support the expansion of sustainable fisheries' value chains in Seychelles. It offers loans from US\$10,000 to US\$ 3 million (in SCR equivalent) at a fixed interest rate of 4% ensuring stability and predictability for borrowers. The loan repayment period is up to 15 years, and it can finance up to 90% of the total project cost.

(2) Blue Grants Fund (BGF)¹⁶ of SeyCCAT

BGF provides funding to innovative Seychellois-led projects that advance marine conservation, sustainable fisheries, and other key areas within the blue economy sector. Citizens of Seychelles, Government department/ agencies, parastatal organisation; locally registered NGOs and businesses with majority Seychellois ownership are eligible to apply. It offers grants in three tiers: small grants up to SCR 100,000, medium grants up to SCR 1 million, and large grants up to SCR 2 million. Small grants are for projects with a maximum duration of one year, while large grants can have a project duration of up to two years.

¹³ Etongo, D., & Arrisol, L. (2021). Vulnerability of fishery-based livelihoods to climate variability and change in a tropical island: insights from small-scale fishers in Seychelles. *Discover Sustainability*, 2(48).

¹⁴ Pomeroy, R., Arango, C., Lomboy, C. G., & Box, S. (2020). Financial inclusion to build economic resilience in small-scale fisheries. *Marine policy*, 118, 103982.

¹⁵ <https://dbs.sc/service/bif-scheme/>

¹⁶ <https://seyccat.org/blue-grants-fund/about-the-bgf/#>

The grant has an overall cross-cutting theme which includes research & development, management & implementation, policy & advocacy education, training & outreach and 5 strategic objective which are as follows:

- 1 - Support new and existing marine and coastal protected areas and sustainable use zones.
- 2 - Empower the fisheries sector with robust sciences and knowhow to improve governance, sustainability, value and market options.
- 3 - Promote the rehabilitation of marine and coastal habitats and ecosystems that have been degraded by local and global impacts.
- 4 - Develop and implement risk reduction and social resilience plans to adapt to the effects of climate change.
- 5 - Trial and nurture business models to secure the sustainable development of Seychelles Blue Economy.

By the end of 2024 a total of 87 projects has been financed and SCR 63.3 million disbursed under the Blue Grants Fund since its first call for proposal in 2017.

(3) National Grant¹⁷:

The National Grants Funding Scheme is an initiative led by the Ministry of Finance, National Planning and Trade to support the work of not-for-profit and non-governmental organisations that contribute to national development through the support a diverse portfolio of projects geared towards the country's National Development Strategies linked to the achievement of the Sustainable Development Goals (SDGs).

Through this scheme, NGOs are invited to submit project proposals that align with the six national Priority Areas under the three dimensions featured in the National Development Strategy 2024-2028. The most relevant Priority area for coral reef related actions is the "Environmental Sustainability & Climate Change Resilience: Promoting a climate resilient nation focused on adopting sustainable practices". Successful applicants may receive grant funding of up to SCR 750,000 to implement projects with a duration ranging from 6 to 12 months.

Income Levels and Sources

Value of goods and services (K21)

The economic baseline demonstrates a strong dual dependence on artisanal fisheries and marine tourism.

Artisanal Fishery: Estimated monthly earnings average US\$592 per fisher, with trap and handline operations representing the majority of activity.

Tourism Excursions: Typical day trips to SAMNP yield an average gross income of US\$1,912 per boat per day, with an average of 9.86 visitors per trip at approximately US\$194 per person.

¹⁷ <https://www.finance.gov.sc/financial-schemes/national-grants/>

Accommodation Sector: Fifty-three establishments contribute substantially to household employment and local purchasing power, directly benefiting from reef-based attractions such as snorkelling, diving, and wildlife viewing.

Protected Area Revenues: SAMNP generates monthly revenues of approximately US\$31,395 from park entrance fees and US\$1,056 from overnight moorings, reflecting the steady demand for reef-based recreation. From these income SPGA expense for the management operation of the parks amounts to US\$3106 per month for the year 2024.

These combined figures (Table 4) highlight the substantial monetary flow derived from healthy reef ecosystems and demonstrate the interdependence of marine resource management, tourism operations, and small-scale fisheries for sustaining the coastal economy of North-East Mahe.

Table 4: Summary of Value of Goods, Services and Revenue Generations for identified reef-related activities in North-East Mahe

		K18 - Activities	K19 - Goods & Services	K20 - Methods	Indices	Result	Revenue Indices	K21 - Value of Goods and Services (USD)	Method of estimation
NE Mahe	Fishery		Fish (Artisanal)	Trap, Hook and Line	Number of licenses accessed from SFA FIMS)	188	Estimate average monthly wage based on Artisanal fishery revenue from MARG Report (2022)	592	Based on data presented in MRAG Ltd. (2022, March). Employment study and capacity needs assessment for the fisheries sector in Seychelles (Final Report, RFP07). Seychelles Fishing Authority (SFA). London: MRAG Ltd. for Artisanal fishery
			Fish (Mackerel, Sardines and Crevice)	Net	Number of licenses accessed from SFA FIMS	7	Estimate average monthly wage based on Artisanal fishery revenue from MARG Report (2022)	592	
			Fish (Lobster)	Hand Gatherer	Number of licenses accessed from SFA FIMS	9	Estimate average monthly wage based on Artisanal fishery revenue from MARG Report (2022)	592	
			Fish (Octopus)	Hand Gatherer	Number of licenses accessed from SFA FIMS	NA	Estimate average monthly wage based on Artisanal fishery revenue from MARG Report (2022)	575	
		Landing Site	Fish selling point (bazar)	Number of Landing Site mapped by OceanWealth (12	-	-	GIS mapping	
		Tourism	Tourism Accommodation	Large Hotels, Small hotels, Self-catering, Guesthouses, Bed and breakfast guesthouses	Number of hotels mapped by OceanWealth	53	-	-	GIS mapping

		K18 - Activities	K19 - Goods & Services	K20 - Methods	Indices	Result	Revenue Indices	K21 - Value of Goods and Services (USD)	Method of estimation
Sainte-Anne Marine National Park	Tourism	Tourism Accommodation		Large Hotels, Small hotels, Self-catering, Guesthouses, Bed and breakfast guesthouses	Number of hotels mapped by OceanWealth	8	-	-	GIS mapping
		Excursions		Snorkelling/diving	Average number of HC visiting Ste Anne MPA per month based on SPGA online payment portal database for July& August 2025	188	Estimate gross income per boat per excursion per day	1,912	Average of 194 USD per adult per trip based on trip advisor and get your guide website. 9.86 pax per boat on average as per SPGA online revenue collection database.
					Number of Tourist visiting Ste Anne MPA per month based on SPGA online payment portal database for July& August 2025	1802	Total expenditure for excursion per month within the SAMNP	349,588	194 USD * 1802 Entry Ticket
		MPA day visit		Park Entrance	-	-	Average revenue for entrance fee paid by visitor in Ste Anne MPA per month for the year 2024 based on SPGA Annual audited Income	31,395	Estimated by converting the total annual income of SPGA for 2024 in USD based on a rate of 14.5 and divided per months.
		MPA Overnight stay		Overnight mooring	Monthly average number of boats moored overnight in the Ste Anne MPA for the year 2024 based on SPGA online payment portal database for July& August 2025	61	-	-	Estimated by dividing the total income of 183750 by coast for one mooring (i.e. 250) and by 12 months
					-	-	SPGA revenue per month for 2024 based on SPGA Annual audited Income	1,056	Total revenue collected from mooring in 2024 divide by month and average number of boat mooring in the MPA per month

K18 - Activities	K19 - Goods & Services	K20 - Methods	Indices	Result	Revenue Indices	K21 - Value of Goods and Services (USD)	Method estimation	of
	Coral Reef Restoration	<i>In situ</i> Coral Nursery			<p>Until 2021: Small Scale project financed via Corporate Social Responsibility Tax from businesses with a turnover of SRC 1 million or more (~69,730 USD)</p> <p>Project/Grant based financing</p> <p>No Revenue Scheme developed</p>			
Conservation, Restoration and Research	MPA management	Active Enforcement	Number of Park Officers/Rangers	6	Average monthly salary	1060	Estimated in USD based on a rate of 14.5 for the total salary 1106948.42SCR paid for the 6 staff in 2024 divide by number of staff and by 12 months	
		Operating cost	Total cost for management of the SAMNP including, fuel, boat maintenance, consumables etc...		SPGA expenditure per month for 2024 based on SPGA Annual audited expenditure	3106	Estimated in USD based on a rate of 14.5 for the total expenditure for 2024 540,416.47 divide by 12 months	

Fishing Activity and Illegal Fishing within the Sainte Anne Marine National Park

Artisanal fishing methods are generally selective and sustainable when practiced outside protected areas. However, when traps or handlines are deployed inside the no-take zones of SAMNP, they constitute illegal activity and directly undermine conservation objectives.

Figure 5 present the spatial distribution of illegal fishing activity within the no-take zones of the SAMNP as recorded by SPGA over 2 months (July & August 2025). Most recorded or reported incidents are concentrated along the northern and northwestern park boundaries, particularly between Sainte Anne and Cerf Islands and near Anse Etoile. These areas are easily accessed by small artisanal vessels departing from the nearby fishing communities of Roche Caïman, Anse Etoile, and Glacis. Infractions typically occur during low-surveillance periods, such as early morning or evening hours, when enforcement presence is limited.

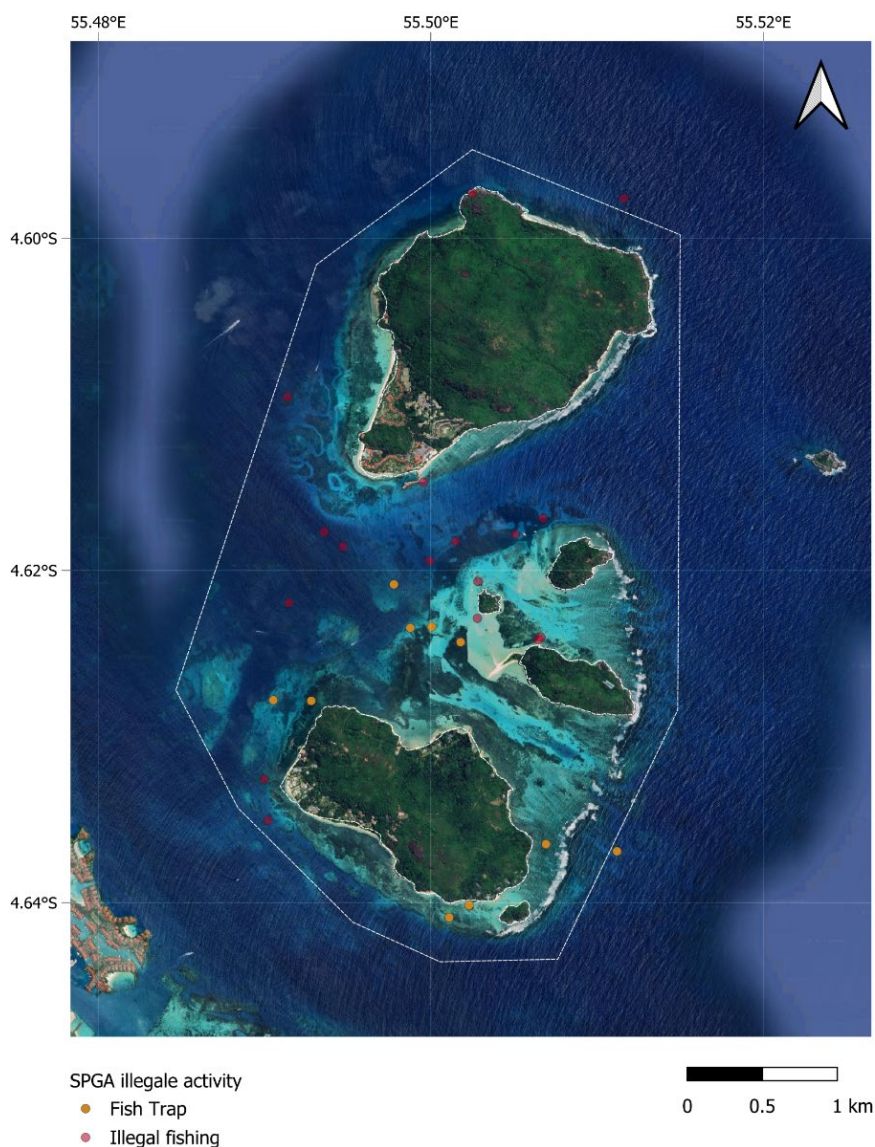


Figure 5. Spatial distribution of illegal fishing activities recorded by the Seychelles Parks and Gardens Authority (SPGA) within the Sainte Anne Marine National Park

Impact

Fishing within no-take zones has both direct physical and indirect ecological impacts. The deployment of wire traps causes abrasion and breakage of corals, particularly branching and massive colonies, and can leave long-lasting scars on the substrate. Lost traps may continue to entangle fish and invertebrates, contributing to ghost fishing and habitat damage.

Ecologically, the removal of herbivorous species such as parrotfish (Scaridae) and surgeonfish (Acanthuridae) reduces algal grazing pressure, allowing macroalgae to proliferate and outcompete coral recruits. This shift impedes coral recovery and can lead to phase shifts from coral- to algae-dominated reef states.

Land Reclamation in Northeast Mahe

The scarcity of flat land has long constrained Seychelles' economic and urban development. To address this limitation, successive land reclamation projects were undertaken on the reef flats along Mahe's eastern and northeastern coasts, especially around Victoria. These projects, spanning five decades, progressively transformed shallow coral reef and lagoon habitats into urban and industrial land¹⁸ (Figure 6).

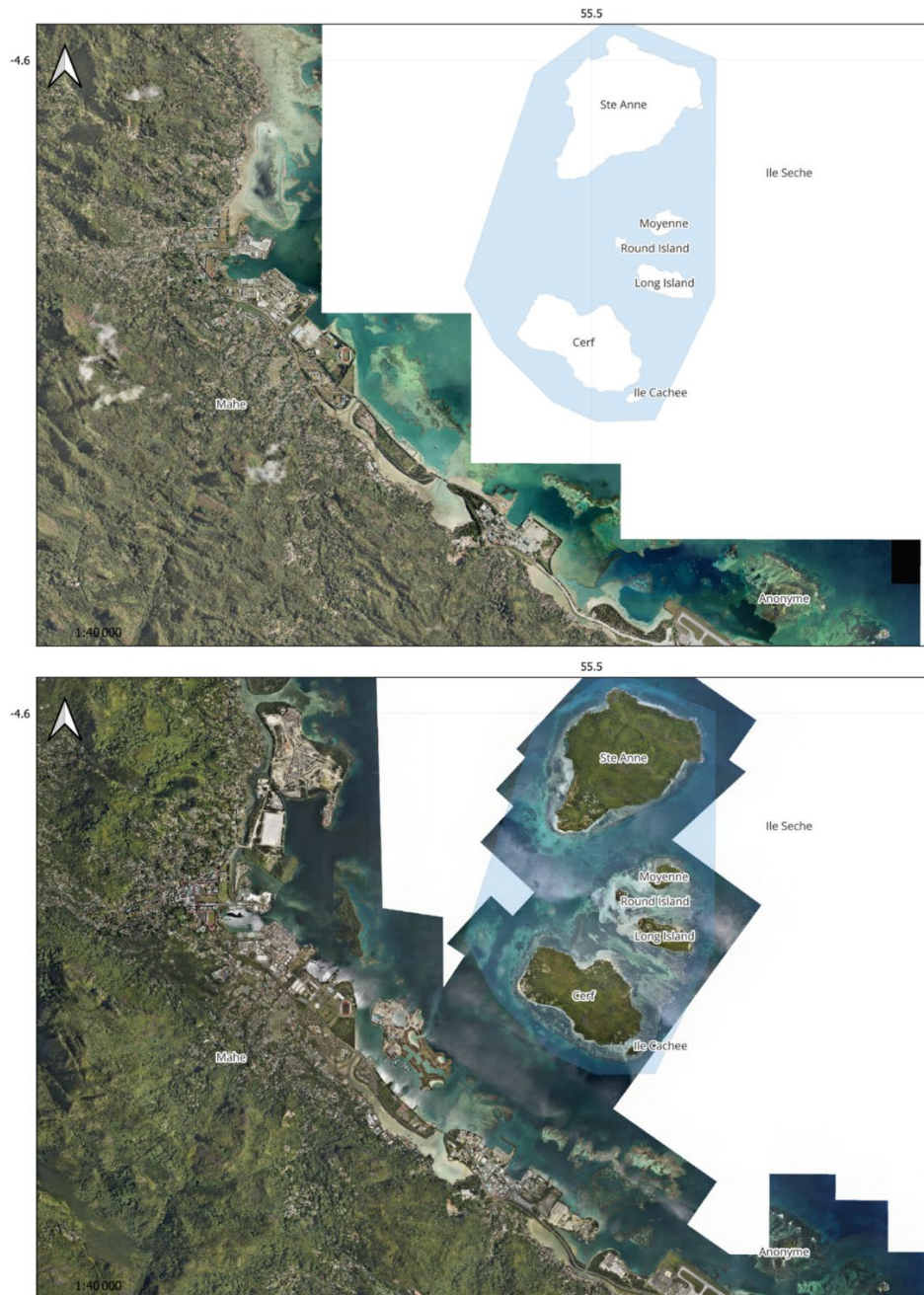


Figure 6. Aerial imagery comparison of the East Coast of Mahe between 1999 (top) and 2011 (bottom). The 2011 image shows the completion of several artificial islands, Ile du Port, Ile Perseverance I & II, and Eden Island, as part of the East Coast Reclamation Project Phase III (1998–2003).

¹⁸ Payet, R. (2003). Effectiveness of the Environmental Impact Assessment Process in Managing Tourism Development in the Seychelles. In *International Environmental Law and Policy in Africa* (pp. 327-349). Dordrecht: Springer Netherlands.

The first reclamation phase began in 1973, under British supervision, to construct the Seychelles International Airport, a cruise ship port, a power station, and fuel storage facilities. This initial project reclaimed approximately 102 hectares of reef flat near Victoria Harbor and Anse des Genêts¹⁹.

The second phase, completed in 1986, reclaimed an additional 133 hectares of land stretching from Victoria to Providence to accommodate housing, industrial facilities, and waterfront development including infrastructure to support the emerging international business and trade sector.

A third large-scale dredging project in 1991 added about 85 hectares of reclaimed land and generated a coral fill stockpile of 1.3 million m³, used for construction and to reduce pressure on illegal beach sand extraction. This phase facilitated expansion of the airport, yacht marina, dry-dock, and wastewater treatment plant, establishing the foundation for Victoria's industrial zone.

The most extensive expansion, East Coast Reclamation Phase III (1998–2003), created approximately 343.5 hectares of new land across 15 zones between Victoria and the airport. The project required about 11.6 million m³ of dredged coral material and produced a 3.5 million m³ reserve for future construction. This phase gave rise to new artificial islands, including Ile du Port, Ile Perseverance I & II, and later Eden Island, designed to meet urban development needs for the next 25 years.

By 2023, cumulative reclamation along the northeast coast exceeded 700 hectares, permanently converting most of the former coral reef and lagoon habitats into reclaimed land supporting residential, port, and commercial infrastructure.

The ECP4 Project, proposed by the GoS in 2025, represents a continuation of the East Coast reclamation sequence. It includes three new reclamations within or adjacent to the existing reclaimed coastline: 1) Ile Aurore South Extension (~18 ha), designated for tourism and residential purposes; 2) Providence Laguna (~18 ha after footprint reduction), designated for light industrial and commercial use; and 3) Zone 30 Extension (~16 ha), designated for industrial activities. Together, these areas cover approximately 62 hectares (620,200 m²) and represent an additional 8.3% increase relative to the 7.4 km² previously reclaimed under Phases I–III.

Impacts

These successive reclamations were conducted over former fringing reef flats, resulting in extensive burial of live coral, loss of seagrass meadows, and infilling of lagoons that once supported high biodiversity and served as nursery habitats. The cumulative effect has been the irreversible transformation of the reef-lagoon system into a highly modified, artificial coastline.

Hydrodynamic changes due to causeways and seawalls have restricted water exchange, increased sediment deposition, and degraded water quality in residual reef areas. While the Phase III project introduced environmental safeguards such as silt screens and monitoring programs, long-term reef decline persisted, and surviving reef fragments now remain confined to narrow outer fringes along the new coastline.

Across all phases, land reclamation has resulted in the replacement of shallow coral reef flats and lagoon environments with reclaimed land. These activities have altered local geomorphology and

¹⁹ Payet R. (2002) Physical Alteration and Destruction of Habitats in Seychelles. Nairobi Convention. Report. 69p.

hydrodynamics through the creation of causeways and coastal bunds. Modifications to water flow have affected sediment deposition patterns and reduced exchange between nearshore and offshore waters.

Coral reef habitats that previously occurred along the fringing reef have been reduced and now persist primarily as narrow outer reef bands adjacent to dredged channels. Environmental mitigation measures, including silt screens, turbidity control, and coral transplantation, are recommended to reduce sedimentation and direct habitat loss. Long-term monitoring programs shall be integrated into recent projects to assess turbidity, coral recovery, and sedimentation rates in adjacent reef areas.

Tourism: Boat Excursions in the Sainte-Anne Marine National Park

Figure 7 **Error! Reference source not found.** illustrates the spatial distribution of visitor density derived from boat excursion activity. The highest concentrations of tourism use occur at: 1) the northern side of Moyenne Island, a terrestrial national park managed by the Moyenne Island Foundation, identified as a tourism hotspot; and 2) the northwestern coast of Cerf Island, corresponding to the designated fish-feeding area (Figure 3).

These hotspots are located on shallow lagoonal reefs easily accessible from Victoria’s marina and the Eden Island jetty, the main departure points for daily excursions. Visitor intensity decreases eastward and toward the deeper outer reef slopes near Sainte Anne Island, reflecting both increased exposure to southeast trade winds and limited availability of sheltered anchorage zones.

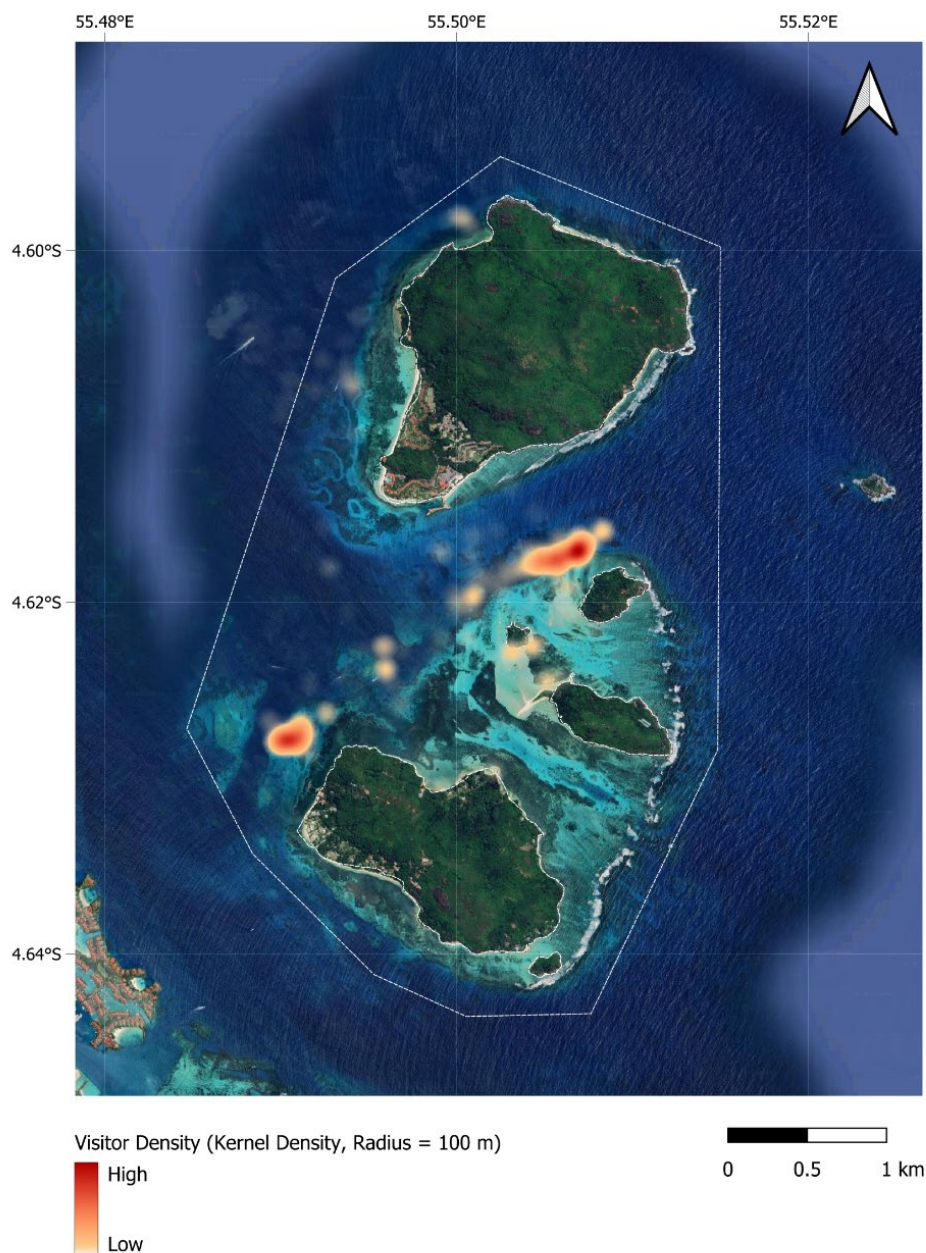


Figure 7. Spatial distribution of visitor density from boat excursion activity within the Sainte Anne Marine National Park

Impact

High visitor density applies pressure on reef ecosystems primarily through physical contact, sediment resuspension, and propeller turbulence. Frequent anchoring and snorkeler trampling lead to breakage of branching corals (e.g., *Acropora spp.* and *Pocillopora spp.*) and localized declines in live coral cover. In SAMNP, these pressures are accentuated at sites lacking designated mooring infrastructure, creating zones of chronic localized degradation within high-use tourism areas.

Anchoring

No operational mooring buoys currently exist within the SAMNP, as confirmed by field observation. Consequently, anchoring is widespread, particularly across the shallow lagoonal platforms west of Sainte Anne and around the reef flats of Cerf and Moyenne Islands (Figure 88).

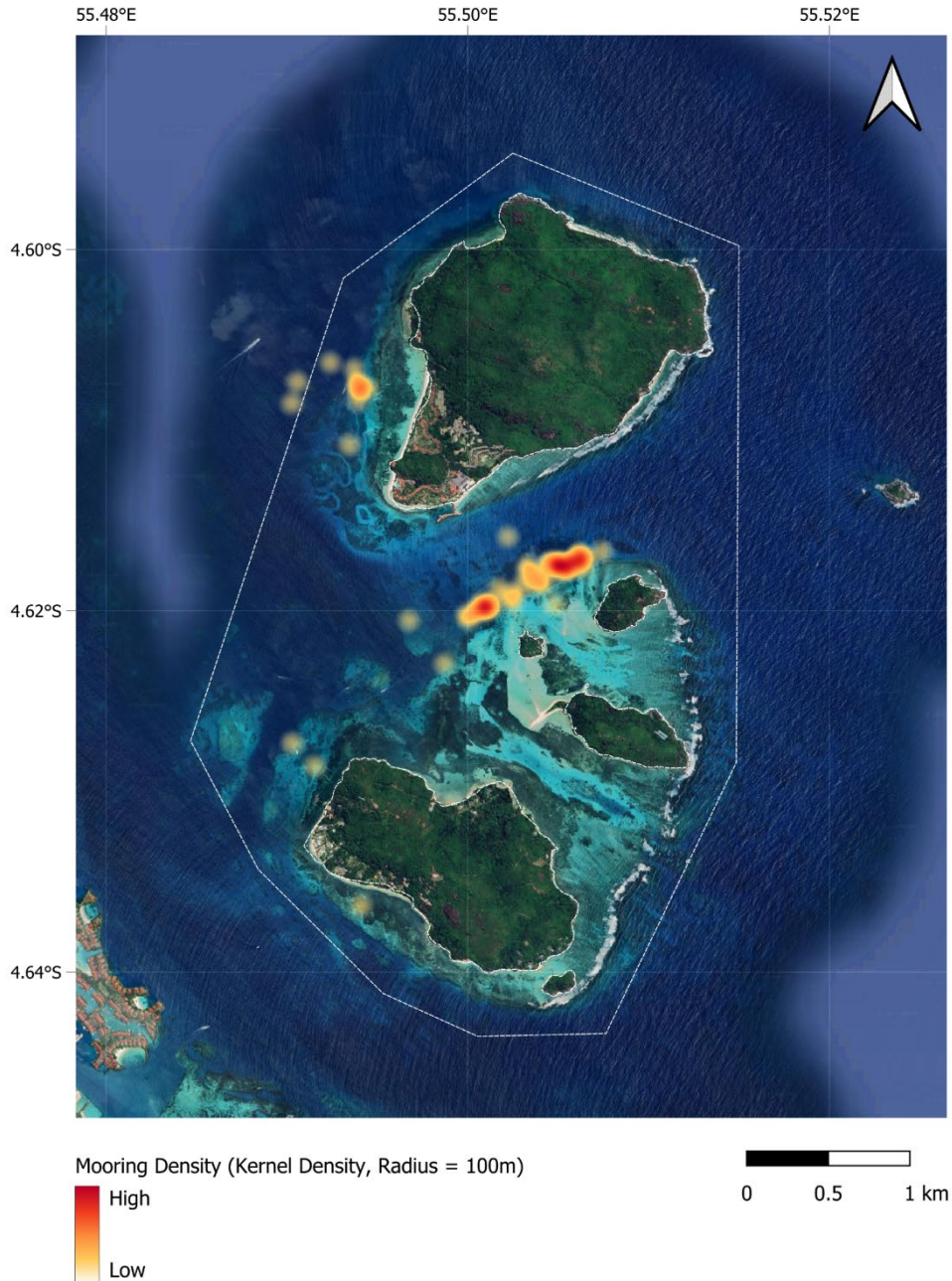


Figure 8. Spatial distribution of Mooring density within the Sainte Anne Marine National Park.

Impact

The absence of permanent moorings has resulted in extensive anchor scarring and substrate fragmentation. Anchors and chains uproot coral colonies and displace rubble, producing low-relief areas dominated by dead coral and algal turf. Repeated anchor damage reduces habitat complexity and disrupts juvenile coral recruitment, leading to long-term shifts from coral-dominated to algal-dominated states. Over time, this mechanical stress diminishes the structural integrity of the reef framework and compromises its ecological resilience to additional stressors such as bleaching or sedimentation. The cluster on anchoring near Moyenne have a direct impact on coral restoration activities leaded by MCSS.

Tourist profile (K27)

A total of 352,762 tourist visited Seychelles in 2024. Europe dominates the Seychelles' tourism market contributing nearly three-quarters of total arrivals with Western Europe (n=128,958) and Eastern Europe (n=62,909) as leading subregions. The 3 countries with most visitor to Seychelles is Germany, France, and Russia. Asia remained the second-largest geographical source region, with Western Asia (mainly the UAE and Israel) contributed the most with 70% of the continents total (n=37,526). From the African continent, Eastern Africa accounted for nearly half of arrivals (n=10,833), followed by Southern Africa (n=10,180), mainly from South Africa and Mauritius. Visitors from America represent 4.4% (n= 15, 507) of the visitors with North America leading with a total of 13,135 visitors. Oceania remains a small market accounting only for 0.5% of the visitors²⁰.

Table 5: Percentage of visitors to Seychelles in 2024 by geographical region of residence

Geographical Region	Total visitor (2024)	% of visitors by region
Europe	257,004	72.9
Africa	24,457	6.9
Asia	53,915	15.3
Oceania	1879	0.5
America	15,507	4.4

Perceptions and Awareness of Conservation

Perceptions of resource conditions (S19)

UNDER DEVELOPMENT

Compliance (S22)

Only 40% of participants to the survey were aware of the Ste Anne MPA Management Plan, indicating limited awareness on the plan's existence among stakeholders (Figure 9)²¹. This entails that they have limited knowledge on the management measures in place such as the zoning which can lead to lack of compliance. This is evident as there are many reports of boat anchoring on the reef and even the coral restoration site. Damages to the coral reef nurseries has also been reported on several occasions.

Lack of compliance to the no take regulation in the park is also observed through the consistent number of illegal fishing cases which are recorded by the park rangers and officers.

²⁰ <https://www.nbs.gov.sc/downloads/1688-december-monthly-bulletin-2024/viewdocument/1688>

²¹ Ste Anne MPA Visitors Perception. D. Quatre BSc thesis survey 2022

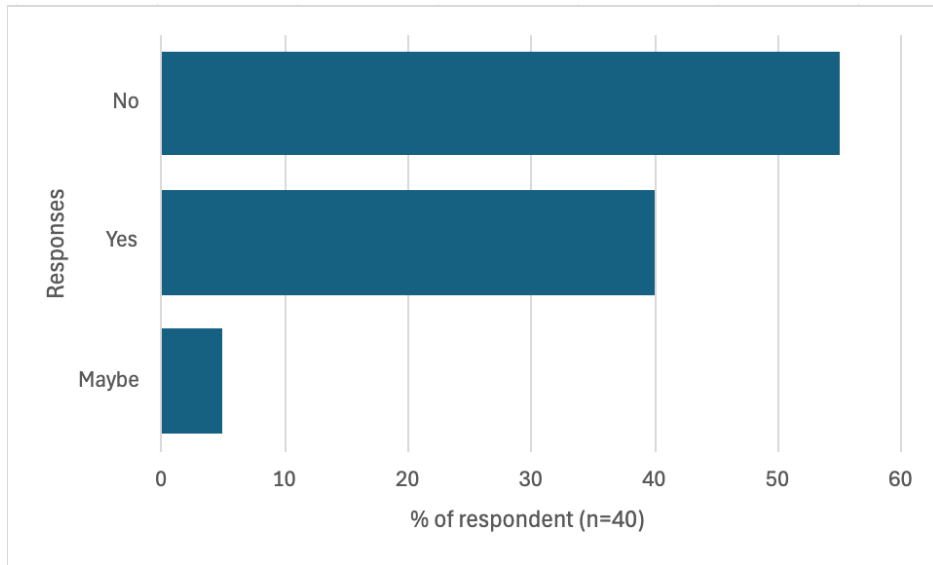


Figure 9. : Percentage of respondent (n=40) who are aware of the existence of the Ste Anne MPA Management Plan Enforcement (S23)

SAMNP Park Officer/ Rangers perceive 24h enforcement as the main limitation as their working hours are set from 7-5 pm. In view of recently installed surveillance cameras in the MPA, they do acknowledge that most illegal activities occur late in the evening or early morning. This includes illegal fishing mainly using traps. Fishers deploy those late evening and collect early morning during the period whereby the MPA employers are not present in the park. Over a ten-month period from November 2024 to September 2025 a total of 47 illegal fishing activity was recorded with 23% (n=11) being fish trap and 77% (n=36) a mix of hook and line targeting various species including Sicklefins Lemon Shark (*Negaprion acutidens*) and hand gathering targeting shellfish. One other breach to the park regulation is in regards to mooring fees. Like the fishers, yacht enters the park after working hours to moor and leave the park early morning before the arrival of the enforcement team which make it impossible for mooring fees to be collected.

ECOLOGICAL BASELINE ASSESSMENT



INTRODUCTION

This ecological baseline assessment was conducted under the SeyCCAT/Global Fund for Coral Reefs (GFCR) Ocean's Resolve Programme, which seeks to catalyse coral reef-positive investments and strengthen the resilience of reef ecosystems and coastal communities in Seychelles. The Ocean's Resolve Programme is part of a global initiative financed through blended public and private capital, designed to conserve, restore, and sustain climate-resilient coral reefs while supporting equitable blue-economy development. Within this framework, the baseline assessment provides essential data to inform GFCR Fund Indicator F4 – Change in Coral Reef Health, encompassing live hard coral cover, macroalgae cover, and reef fish biomass as standardized by the Global Coral Reef Monitoring Network (GCRMN) and the UNEP GFCR Monitoring and Evaluation Framework.

The assessment focused on the North-East Mahe Priority Area, which represents the primary economic hub of Seychelles. This region includes the Sainte Anne Marine National Park established in 1973 as the first marine national park in the Western Indian Ocean and adjacent open-access reefs within the Seychelles Marine Spatial Plan Zone 3. Together, these habitats encompass a gradient of management regimes ranging from strictly protected no-take zones to areas influenced by urban and industrial activities linked to Victoria Port and the Seychelles International Airport.

Six reef sites were surveyed during the 2025 inter-monsoon period to capture ecological composition: Anonyme, Cerf South, Moyenne, Sainte-Anne, Romainville, and North-East Point. Among these, three sites (Moyenne, Cerf South, Sainte-Anne) lie within the SAMNP, while the remaining three fall outside the park's boundaries. Notably, Moyenne serves as a focal site for active coral restoration under the Adaptation Fund Coral Restoration Project implemented by the Marine Conservation Society Seychelles (MCSS), providing an opportunity to evaluate restoration outcomes relative to natural recovery processes.

The baseline assessment applied standardized methods consistent with international monitoring protocols to ensure comparability across time and space. All ecological data were submitted in MERMAID, the global data platform adopted by UNEP and WCS for GFCR ecological reporting, ensuring alignment with international data management and accessibility standards.

By integrating these datasets, the ecological baseline provides the first standardized and spatially explicit characterization of coral reef condition within the North-East Mahe Priority Area. It establishes quantitative reference points for coral cover, macroalgae abundance, reef structural complexity, and fish biomass that will enable the evaluation of future trends under the Ocean's Resolve Programme.

MATERIAL AND METHOD

Priority Area and Site Selection

The ecological baseline assessment focused on the SeyCCAT/GFCR Ocean's Resolve Project Priority Area located in the North-East of Mahe, the main inner granitic island. This region represents the country's main economic hub, encompassing the Port of Victoria and the International Airport. It also includes the Sainte Anne Marine National Park (SAMNP), established in 1973 as the first marine national park in the Western Indian Ocean and managed by the Seychelles Parks and Gardens Authority (SPGA) as a strict no-take zone.

Six sites were monitored during the inter-monsoon in October 2025. Three of these sites, Moyenne, Cerf South, and Sainte Anne, are located within the SAMNP. The remaining sites, Anonyme, Romainville, and North-East Point, fall under the Seychelles Marine Spatial Plan (SMSP) Zone 3, multiple use area which is classified as open-access areas with fisheries management aligning with long-term sustainability of natural resources.

All sites are fringing back-reef habitats situated between semi-exposed and exposed coastal conditions, with average survey depths ranging from 5 to 12 metres. The site selection aimed to capture ecological variability and different management regimes representative of the North-East Mahe coastal system. The Moyenne site also supports ongoing coral reef restoration under the Adaptation Fund Coral Restoration Project implemented by MCSS.

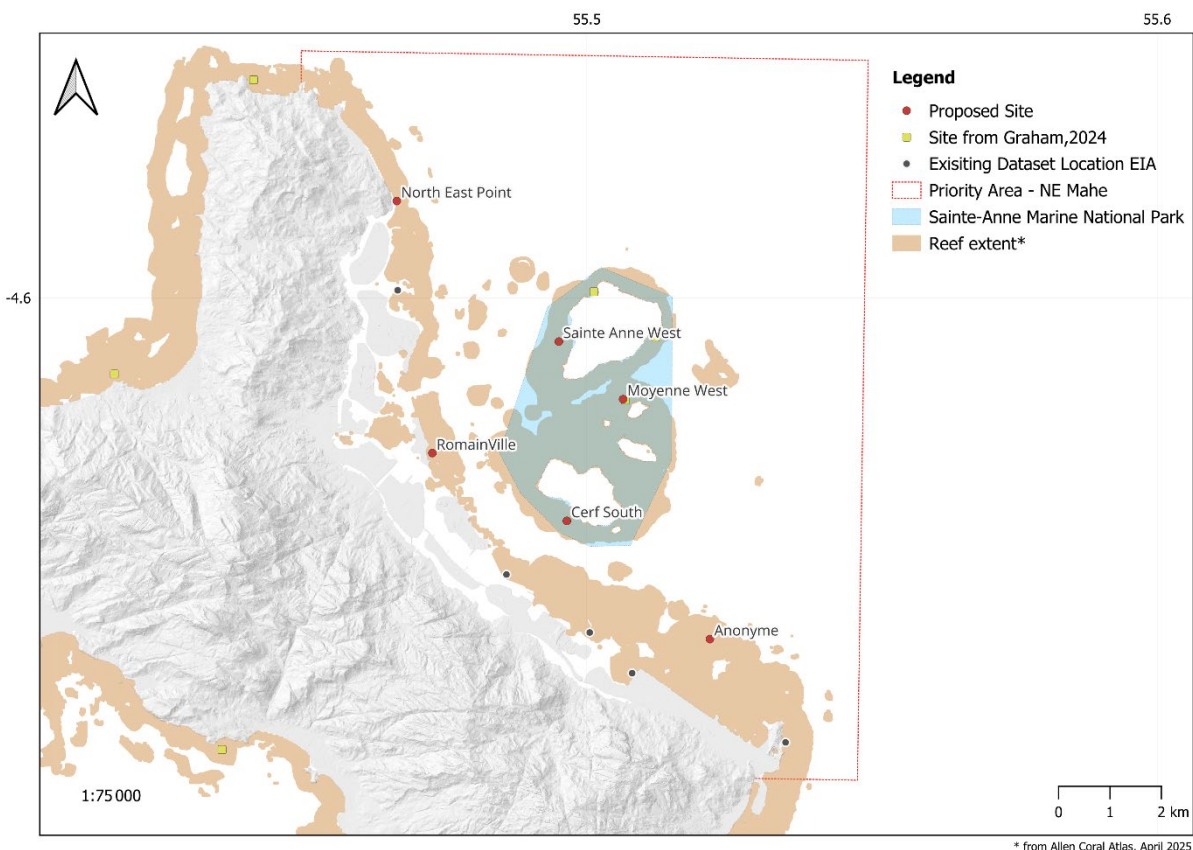


Figure 10. Location of Coral Reef Monitoring Sites in North-East Mahe, Seychelles.

Table 6 Monitored Sites in North-East Mahe.

Site Name	Description	Depth	Management rule
Anonyme	Situated outside the boundaries of SAMNP, this site lacks historical ecological data. Its selection fills a data gap.	12	Multiple Use
Cerf South	This southern boundary site of the SAMNP is a transitional zone between protected and non-protected waters. It is ecologically relevant for understanding gradients in reef condition and use pressure across the park boundary.	8	No Take Zone
Moyenne West	Located within the SAMNP, this site is adjacent to ongoing coral restoration activities. Its inclusion allows for the evaluation of active restoration efforts and the effectiveness of current management interventions within a protected setting.	8	No Take Zone / Coral Restoration Site
North East Point	Located on the northern margin of the North-East Mahe priority area, this site is known for chronic coastal erosion and recurrent flooding events. It has been identified as a priority site for ecosystem-based coastal protection, including coral reef restoration ²² .	12	Multiple Use
Romainville	Used as a donor site for coral restoration in the SAMNP. It present high coral cover and lies adjacent to reclaimed land, placing it under pressure from nearby industrial developments.	5	Multiple Use
Sainte Anne West	Bordering the SAMNP, this site is used by guests of Club Med Seychelles, the largest tourist resorts in the North East Mahe. The area offers important insights into potential tourism impacts and opportunities for reef stewardship within marine parks.	8	No Take Zone

Benthic community composition

Benthic composition was assessed using georeferenced photoquadrat surveys along three 50 m transects at each site. During each dive, a diver captured 1m² images of the reef using an Olympus TG-6 digital camera. A minimum of 50 still imageries were captured along each transect.

1227 reef images were uploaded and analyzed on CoralNet, a cloud-based solution for coral reef monitoring (Beijbom et al., 2015²³). Each image was overlaid with 50 randomly distributed points, and the underlying benthic component at each point was identified to the lowest practicable taxonomic level and assigned to a functional group (e.g., hard coral, macroalgae, seagrass, rubble, sand, or other invertebrates).

Annotations database were using the EasyPQT tool for streamlined ingestion into the MERMAID project “OCEAN’S RESOLVE GFCR.” The processed benthic data were then accessed and analysed via the *mermaidr*²⁴ package using R.

²³ Beijbom, O., Edmunds, P. J., Roelfsema, C., Smith, J., Kline, D. I., Neal, B. P., Dunlap, M. J., Moriarty, V., Fan, T.-Y., Tan, C.-J., Chan, S., Treibitz, T., Gamst, A., Mitchell, B. G., & Kriegman, D. (2015). Towards automated annotation of benthic survey images: Variability of human experts and operational modes of automation. PLoS ONE, 10(7), e0130312. <https://doi.org/10.1371/journal.pone.0130312>

²⁴ Gelfand S (2025). mermaidr: Interface to the 'MERMAID' API. R package version 1.2.6, <https://data-mermaid.github.io/mermaidr>.

Reef Structural Complexity

Habitat complexity was visually scored along 5 m transect using the Polunin & Roberts (1993) six-point scale: 0, no vertical relief; 1, low and sparse relief; 2, low but widespread relief; 3, moderate complexity; 4, high complexity; 5, exceptionally complex with high coral cover, multiple overhangs and numerous cave. This index provides an estimate of structural heterogeneity and reef three-dimensionality. Reef complexity data uploaded and processed in MERMAID through the mermaidr R package.

Fish Community composition and biomass

Reef fish assemblages were surveyed using underwater visual census method along 50 m × 5 m belt transects. All fish observed within this belt were recorded by species or family, and total lengths were visually estimated in 10 cm size classes following Samoilys & Carlos (2000).

Individual biomass (kg ha^{-1}) was calculated using length–weight conversion parameters (a and b) from FishBase, employing the Bayesian length–weight model implemented in MERMAID’s fishbelt workflow. Fish were categorized into trophic functional groups, including planktivores, herbivores (detritivores and macroalgal grazers), invertivores (sessile and mobile), omnivores, and piscivores.

Fish data were uploaded and processed in MERMAID through the mermaidr R package, which supports direct project synchronization, validation, and retrieval of trophic and biomass metrics.

Macroinvertebrate Community

During Dive Survey, Macroinvertebrate abundance and diversity were assessed along 10m belt transects using a 2-meter wide search area. Observers followed a systematic S-shaped swimming pattern along each transect and recorded all visible macroinvertebrate and cryptic species within 1 meter on either side.

Data Analysis and Accessibility

All data analyses and graphical outputs were produced using RStudio and the R statistical environment (R Core Team, 2024). Processed datasets have been uploaded to the MERMAID platform, where they are accessible as public summaries under the SeyCCAT/ Ocean’s Resolve Project workspace.

RESULTS AND DISCUSSION

The table below presents key ecological metrics: habitat complexity, hard coral cover, macroalgae cover, and fish biomass measured across the six reef sites within the North-East Mahe Priority Area, including the Sainte-Anne Marine National Park. These indicators directly respond to the Global Fund for Coral Reefs Fund Indicator F4: Change in Coral Reef Health, via three Fund indicators: F4.1 average live hard coral cover (%), F4.2 average macroalgae cover (%), and F4.3 average reef fish biomass (kg/ha).

As a baseline for the SeyCCAT/Ocean’s Resolve Programme, these data establish reference conditions against which future monitoring will assess progress. The observed site variability, from the high coral cover at Moyenne (45.4 %) and Romainville (41 %) to lower cover at Anonyme (7 %) illustrates the heterogeneity of reef condition within the managed seascape, while fish biomass values (71–382 kg/ha) serve as indicators of ecosystem productivity and fisheries potential. Together, these metrics form the ecological foundation for long-term GFCR reporting and adaptive management of North-East Mahe reefs.

Table 7. Summary of key ecological indicators across the six monitored sites in the North-East Mahe Priority Area.

Site	Habitat Complexity	Hard Coral Cover (%)	Macroalgae Cover (%)	Fish Biomass (Kg/Ha)
Anonyme	1.7	7.0	0.8	382.2
Cerf South	2.3	23.4	3.8	107.25
Moyenne	2.7	45.4	2.7	71.61
Sainte-Anne	4.0	32.8	2.0	145.99
Romainville	3.3	41.0	5.5	82.08
North-East Point	1.7	15.5	2.0	134.17
NE Mahe	2.6	27.5	2.8	153.9

Benthic Community Composition

Coral and Macroalgae Percentage Cover

The mean percentage Macroalgae cover within the NE Mahe is 2.8 (\pm 1.6 SD) %. The mean percentage Coral cover within the priority area of NE Mahe is 27.5 (\pm 14.9 SD) %. The highest values are recorded at Moyenne (45%), followed by Romainville (41%) and Sainte-Anne (33%). These reefs exhibited well-developed coral frameworks, interspersed with patches of turf algae and limited macroalgal development. The elevated coral cover at these sites reflects relatively stable environmental conditions and ongoing recovery processes, particularly at Moyenne, which serves as a coral restoration site. At Cerf South, coral cover averaged 23%, with a benthic assemblage dominated by mixed rubble and sand substrates. In contrast, North-East Point and Anonyme showed the lowest coral cover (16% and 7%, respectively), with benthic communities dominated by bare substrate, rubble, and sand. These sites exhibited limited live coral recruitment and a higher proportion of unconsolidated material, indicative of lower structural complexity and higher exposure to hydrodynamic or sediment stress.

The category “bare substrate” encompassed dead coral, recently killed coral, reef matrix, and rock, which together represented the dominant benthic cover type. These surfaces were

frequently colonized by turf algae, which formed extensive overgrowth on dead coral and consolidated substrates across all sites. The widespread presence of turf algae indicates early successional stages and potential limitations in coral recruitment and competitive recovery.

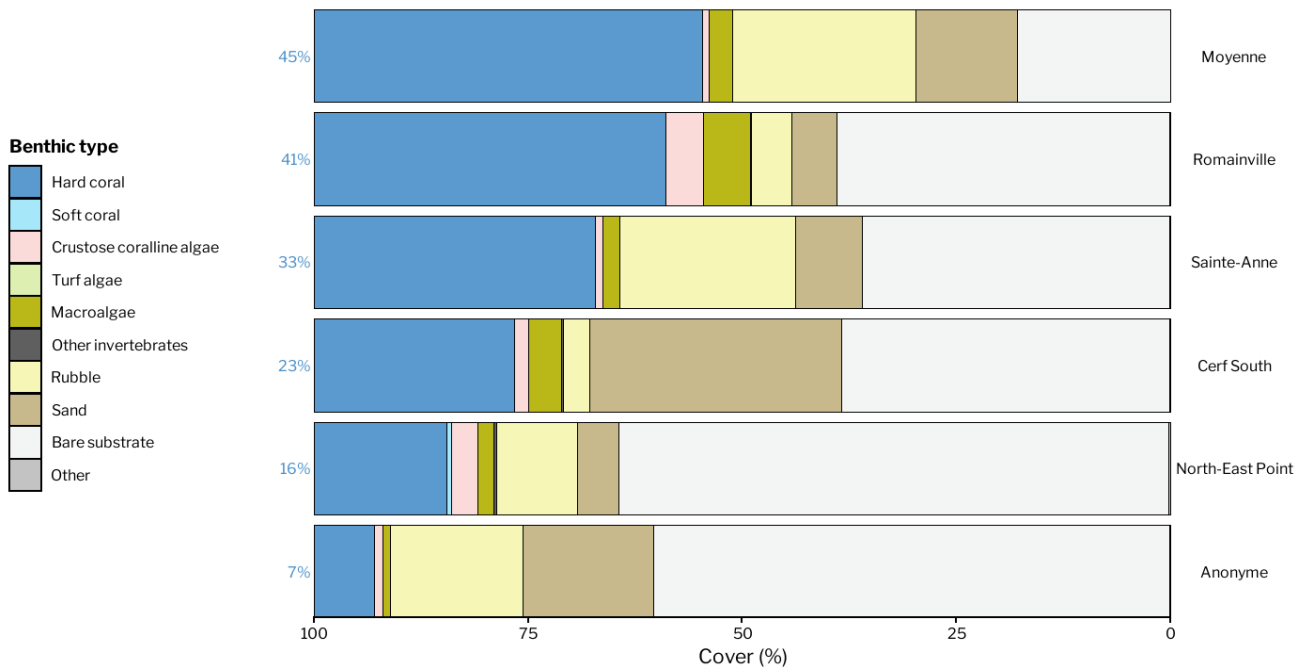


Figure 11. Benthic community composition across six monitored sites in the North-East Mahe Priority Area. Bars represent mean percentage cover of major benthic categories.

Coral community composition

A total of 23 hard coral genera were recorded across the six monitored reef sites in North-East Mahe. Across the region, the most dominant genera were *Porites* (31.8%), *Acropora* (20.1%), and *Goniastrea* (16.6%), together comprising almost 70% of the total hard coral observations.

These were followed by *Platygyra* (6.7%), *Pocillopora* (6.1%), *Echinopora* (5.9%), and *Favia* (4.9%). The prevalence of massive and submassive forms such as *Porites*, *Goniastrea*, and *Platygyra* reflects a reef community dominated by stress-tolerant taxa, which typically persist under elevated thermal and sediment stress. Meanwhile, the presence of branching and fast-growing species (*Acropora*, *Pocillopora*) although less dominant, indicates ongoing recruitment and potential recovery following previous disturbance or bleaching events.

Porites was the leading genus at Sainte-Anne (46.5%), Cerf South (38.1%), and Anonyme (43.2%), representing communities dominated by massive stress-tolerant colonies. *Goniastrea* was particularly dominant at Romainville (26.9%), aligning with the turbid and sediment-influenced reef flat conditions typical of that location, where massive and encrusting morphologies tend to prevail. Moyenne, identified as a restoration site, showed a distinct composition dominated by fast-growing branching taxa, notably *Acropora* (39.7%) and *Pocillopora* (25.9%). This pattern reflects intentional restoration interventions that promote rapid structural recovery through the transplantation of branching corals. These genera are effective at accelerating habitat complexity and short-term visual recovery, although their long-term persistence remains sensitive to temperature stress.

The coral community composition across NE Mahe suggests that reefs are in a post-disturbance stabilization phase, with *Porites* and *Goniastrea* providing structural continuity while *Acropora* and *Pocillopora* indicate localized recruitment and assisted recovery. However, the spatial heterogeneity observed between naturally recovering and active restoration emphasizes the need for site-specific management approaches. In particular, Moyenne's coral restoration efforts have successfully increased the cover of branching species, underscoring the role of active restoration in accelerating benthic recovery when natural recruitment remains limited.

Overall, the NE Mahe reef system remains ecologically functional but compositionally skewed toward stress-tolerant massive corals. Restoration initiatives, such as those at Moyenne, are contributing to enhanced structural complexity and habitat heterogeneity, offering an encouraging model for targeted ecological interventions in Seychelles' marine parks. Continued monitoring will be essential to evaluate the persistence of branching corals and the balance between natural resilience and human-assisted recovery.

Reef Structural Complexity

Across the six monitored sites in the North-East Mahe Priority Area, habitat complexity values ranged from 1.7 to 4.0, indicating a gradient from low-relief to moderately complex reef structures. The highest complexity was recorded at Sainte-Anne (4.0), consistent with the presence of well-developed coral frameworks and diverse growth forms that contribute to greater vertical relief within the Marine National Park. Romainville (3.3) and Moyenne (2.7) also displayed relatively high complexity, reflecting areas with ongoing coral recovery and restoration interventions. In contrast, Anonyme (1.7) and North-East Point (1.7) exhibited flatter topography and reduced coral framework, characteristic of reefs affected by past degradation or limited coral accretion.

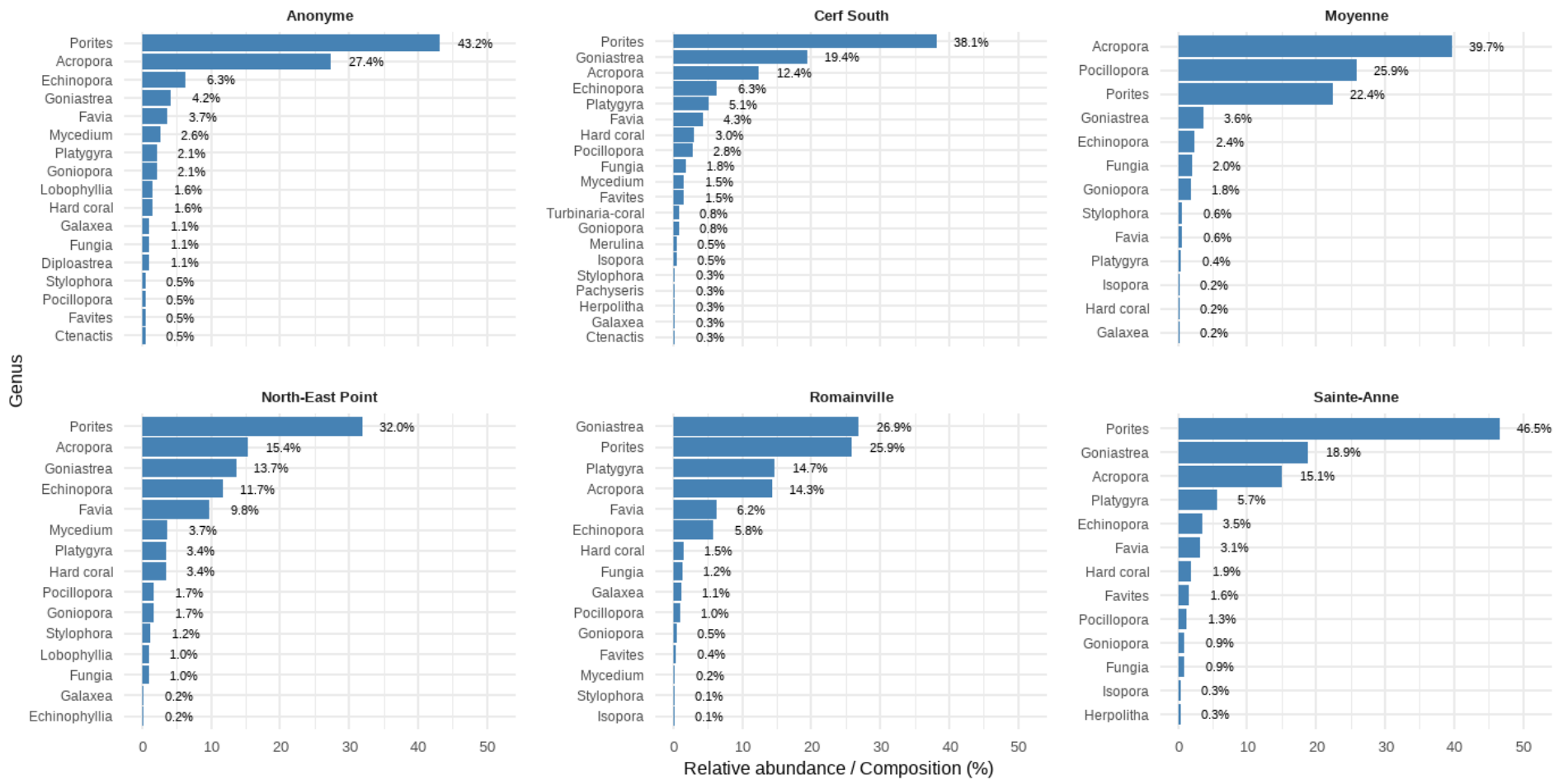


Figure 12. Relative composition (%) of hard coral genera across six monitored sites in the North-East Mahe Priority Area. Bars represent the proportional abundance of each genus within each site

Fish Community composition and biomass

The average total fish biomass across all six monitored sites in the North-East Mahe Priority Area was 154 ± 115 kg/ha.

Across all monitored sites, total fish biomass was dominated by herbivores (48.4 ± 24.4 kg/ha), reflecting the strong presence of grazing and detritivorous species that play a key role in maintaining reef resilience and algal control. Piscivores (37.9 ± 43.6 kg/ha) and planktivores (29.5 ± 55.8 kg/ha) contributed substantially to total biomass, indicating a balanced representation of higher and mid-trophic levels across sites.

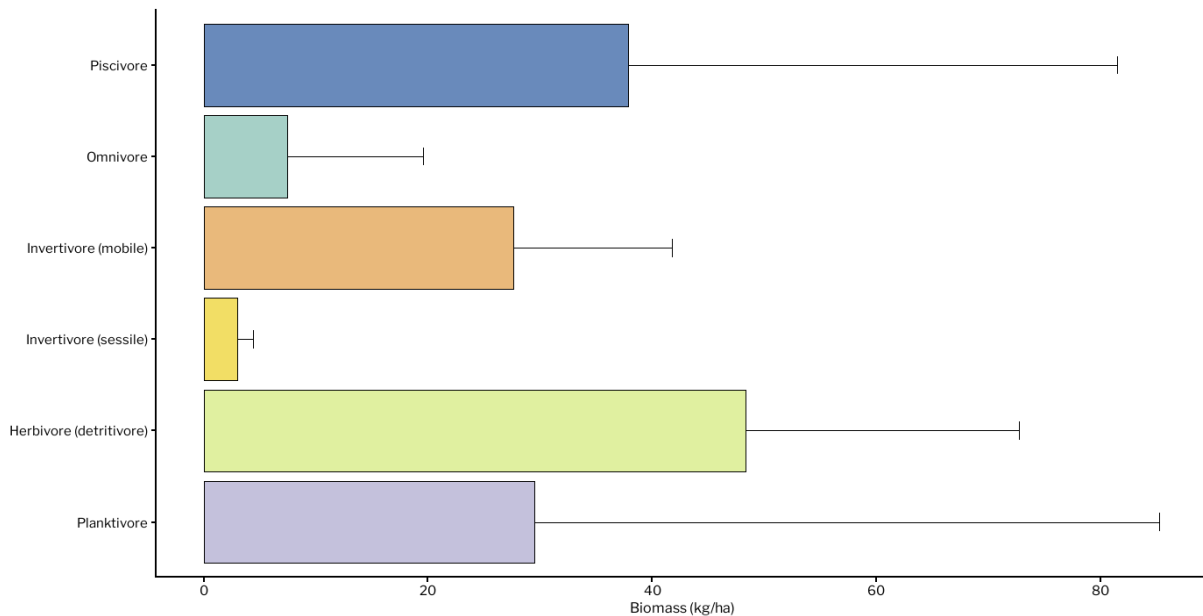


Figure 13. Average fish biomass (kg/ha) across all monitored sites by trophic group in the North-East Mahe Priority Area.

Mobile invertivores (27.7 ± 14.1 kg/ha) formed another important component, while omnivores (7.5 ± 12.1 kg/ha) and sessile invertivores (3.0 ± 1.4 kg/ha) contributed less to total biomass.

Across all sites, total fish biomass was dominated by Scaridae (parrotfishes) with an average of 39.1 ± 17.4 kg/ha, confirming their leading role as key herbivores on North-East Mahe reefs. Caesionidae (fusiliers) followed with 26.2 ± 56.2 kg/ha, and Carangidae (jacks and trevallies) contributed 20.7 ± 42.2 kg/ha, representing dominant mid-trophic planktivores and predators.

Moderate biomass levels were recorded for Epinephelidae (groupers; 11.6 ± 12.2 kg/ha) and Lethrinidae (emperors; 9.4 ± 8.3 kg/ha), typical of reef carnivores subject to moderate fishing pressure. Secondary contributors included Ehippidae (7.4 ± 12.1 kg/ha), Acanthuridae (6.7 ± 10.2 kg/ha), and Labridae (5.8 ± 5.0 kg/ha).

Lower biomasses (< 6 kg/ha) were found for Holocentridae, Lutjanidae, Haemulidae, Mullidae, and Nemipteridae, while families such as Siganidae, Pomacanthidae, and Chaetodontidae showed minor contributions (< 3 kg/ha).

Rare or low-abundance families, including Balistidae, Scorpaenidae, Monacanthidae, and Tetraodontidae, contributed less than 1 kg/ha.

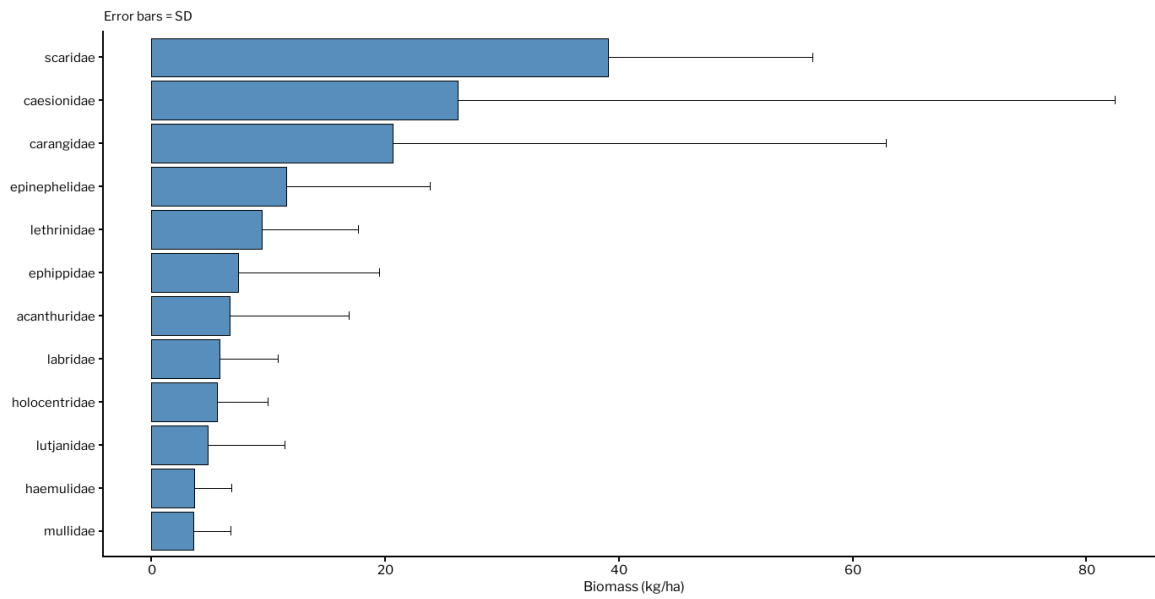


Figure 14. Average fish biomass (kg/ha) across all monitored sites by family in the North-East Mahe Priority Area.

Overall, the biomass structure indicates reefs dominated by herbivorous and mid-trophic fishes, supporting functional resilience despite moderate fishing pressure within the North-East Mahe region.

Macroinvertebrate Community

The density of benthic invertebrates across the six surveyed sites in North-East Mahe was generally low, with strong dominance by sponges (class Demospongiae). Mean sponge density reached $0.097 \text{ individuals}\cdot\text{m}^{-2}$ ($\text{SD} = 0.152$), indicating that sponges were the most abundant and widely distributed invertebrate group across all sites. Sponges occurred consistently in all transects and were observed in both protected and open-access reefs, often attached to consolidated reef substrates and coral rubble.

Echinoids (Echinoidea) represented the second most common group, with a mean density of $0.017 \text{ individuals}\cdot\text{m}^{-2}$ ($\text{SD} = 0.041$), mainly driven by the presence of short-spined sea urchins in Romainville and North-East Point. Bivalves, notably *Tridacna* species, showed a mean density of $0.008 \text{ individuals}\cdot\text{m}^{-2}$, occurring mostly within the Sainte-Anne Marine National Park.

Detritivorous and sediment-associated taxa such as Holothuroidea (sea cucumbers) and Polychaeta (segmented worms) were rare, each with a mean density of $0.006 \text{ individuals}\cdot\text{m}^{-2}$ ($\text{SD} = 0.009$). These groups were sporadically encountered, particularly at Cerf South and Moyenne, where small holothurians were observed.

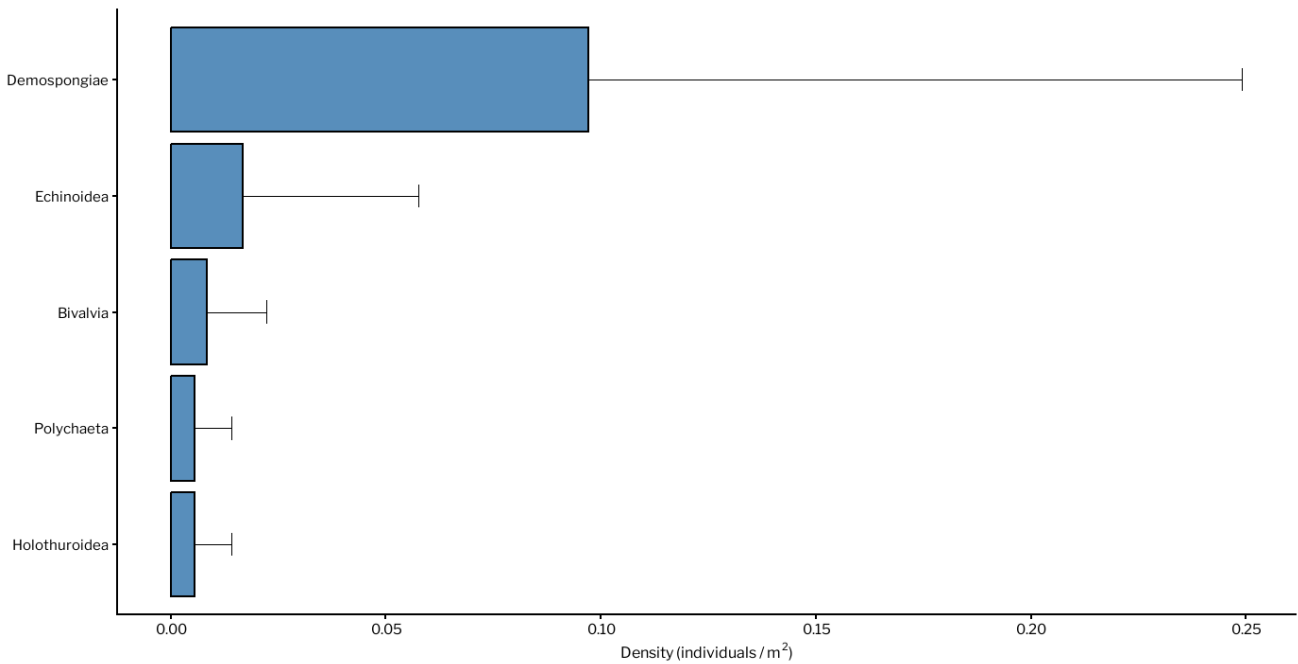


Figure 15. Mean density ($\text{individuals}\cdot\text{m}^{-2}$) of benthic invertebrates by class across six sites in the North-East Mahe Priority Area.

CONCLUSION AND RECOMMENDATION

The North East Mahé Priority Area (including Sainte Anne Marine National Park) exhibits a mixed results, coral reef ecosystems show pockets of resilience but also clear signs of stress from human pressures, and the adjacent communities are highly dependent on these marine resources. Ecologically, live coral cover averages around 27.5% but varies dramatically between sites, from healthy coral communities at Moyenne (45% cover) to severely degraded reefs at Anonyme (7% cover). Reef fish biomass is moderate (153.9 kg/ha on average) and dominated by herbivores. Socio-economically, this area encompasses 12 districts including much of Greater Victoria, accounting for about 45% of the national population. The livelihoods of these communities are intimately linked to the reef: artisanal fisheries, tourism, and associated services employ many residents, and there is a strong cultural connection to the coral reef. However, unsustainable practices (overfishing, runoff and pollution, mass tourism without adequate controls, and limited enforcement capacity) have been undermining reef health, which in turn threatens the very benefits and services that local people derive from the reef.

The recommendations below propose example of locally tailored, GFCR-aligned interventions that address the root causes of reef degradation while also creating economic and social benefits. These interventions are designed to deliver measurable improvements: including higher live coral cover and fish biomass (GFCR Indicator F4) over time, more area of reef under effective protection and restoration (F2 and F3), greater community participation and new jobs in reef-positive enterprises (F5 and F6), and increased financial support flowing into conservation efforts (through tourism or blended finance, F8 and F9).

Recommendations

The baseline findings for North East Mahé, including Sainte Anne Marine National Park, point to several local drivers of reef degradation that need targeted interventions. Each recommendation below is tailored to address a specific driver and is linked to Global Fund for Coral Reefs (GFCR) Fund Indicators F1–F10 to ensure measurable outcomes.

Develop Value-Added Fishery Products and Market Access: Invest in small enterprises that enable fishers (especially women and youth) to earn more from fewer fish. For example, training and microfinance support for producing dried or smoked fish, marine-based condiments, or other value-added products can increase incomes without increasing catch volume. With 12 artisanal fish landing sites identified along the North East Mahé coastline, there is a strong foundation of established community networks and accessible local markets. By elevating the value of sustainably caught fish, these businesses incentivize conservation of fish stocks (contributing to F4 and F6) and can attract impact investment or microgrants (F8). Ensuring women's participation in these enterprises will also advance gender-smart investment goals (F10).

EIA and Coastal Reclamation Policy Through Coral Reef Offset Requirements: To address the long-term ecological losses caused by coastal reclamation, dredging and infrastructure development in North East Mahé, it is recommended that Seychelles' Environmental Impact Assessment and reclamation policy frameworks be updated to

include mandatory Coral Reef Offset mechanisms. Under this approach, any project that results in the disturbance or destruction of coral reef habitat would be legally required to compensate by restoring, rehabilitating, or creating an equivalent or greater area of functional coral reef habitat elsewhere within the same ecological region.

Such offsets should be grounded in scientifically validated methodologies (e.g., coral gardening, micro-fragmentation, artificial reef structures) and monitored over multi-year timeframes to ensure ecological success. This would align development with the “no net loss” principle and encourage developers to avoid and minimise impacts before considering offsets. For example, Australia integrates marine habitat offsets into its national EIA process under the Environment Protection and Biodiversity Conservation (EPBC) Act 1999. In the Great Barrier Reef region, developers whose activities (e.g., dredging, port expansion, reclamation) impact coral reefs are required to implement environmental offsets that deliver ecologically equivalent or greater reef benefits.

Establish Sustainable Tourism Guidelines and Mooring Systems: High visitor density in the marine park, averaging ~1,802 tourist visitors per month via 188 boat excursions is placing significant stress on coral reefs through physical contact, sediment resuspension, and anchoring damage. To manage this, a moorings network should be installed at popular dive and snorkel sites, so tour boats can tie off instead of dropping anchors on reefs. In tandem, enforce a “reef etiquette” code of conduct for tour operators and visitors, covering no-touch guidelines, reef-safe sunscreen use, and limits on group sizes. The SAMNP Management Plan already prioritizes these actions (e.g. visitor education, mooring buoys, and stricter enforcement) and implementation should be accelerated. These measures will reduce direct damage to corals, helping to stabilize or increase live coral cover (F4), while allowing tourism to continue in an eco-friendly manner. Tour operators, boat charter companies, and hotels should be partners in this process, potentially co-financing moorings maintenance or sponsoring reef education programs (a chance to leverage private funds – F8).

Eco-Certification and Training for Marine Tourism Operators: Introduce a certification program (or strengthen existing ones) for tour operators, dive centres, and excursion boats that adopt reef-friendly practices to transform the industry on “coral-positive” businesses. Operators meeting standards (e.g. use of moorings, proper waste disposal, guiding visitors responsibly) can be branded as “Reef-positive” creating a potential marketing advantage. Concurrently, provide training to boat crews and guides on coral ecology and low-impact tourism. An eco-certified network of operators can collaboratively monitor reef conditions and report violations, effectively becoming additional citizen-based science for park management. On the long term maintaining a high-quality reef tourism product also secures sustained revenue for the community. Well-regulated tourism will continue to generate substantial income (the SAMNP excursions currently bring in an estimated US\$350,000 per month in gross revenues), while ensuring the coral reef remains healthy.

ANNEXES

ANNEX 1 – REVIEW LOG

https://docs.google.com/spreadsheets/d/10YeERH670cGB_MJkF1rzKX36uz0_Sk_J/edit?usp=drive_link&oid=104289745121866560374&rtpof=true&sd=true

ANNEX 2 – DATA ACQUISITION METHODS AND DATA SOURCE

Table 8: Summary of methods used and sources of data for the selected SocMon variables

ToR Requirement	Associated SocMon Variables	SocMon data collection category	Data Acquisition Method	Source
Map study area	K1- Study Area	Key Informant; Secondary Source	In person Meeting 14-05-2025; Online; Using QGIS	<ul style="list-style-type: none"> Ocean Resolve Project Doc; https://rris.biopama.org/pa/6934#:~:text=Original%20Name,Coastal; https://seymsp.com/the-initiative/planning-scope/
Examine governance structures	K2 - Stakeholders	Key Informant	In person Meeting 14-05-2025;	NA
	K28 - Management Body	Key Informant; Secondary Source	In person Meeting 14-05-2025; Online	<ul style="list-style-type: none"> Seychelles Parks and Gardens Authority (https://www.spga.gov.sc/parks/st-anne); Ministry of Agriculture, Climate Change and Environment (https://macce.gov.sc/); Seychelles Fisheries Authority (https://www.sfa.sc/)
	K29 - Management Plan	Secondary Source	Online	<ul style="list-style-type: none"> Government of Seychelles. Management Plan for the Sainte Anne Marine National Park (2021-2025). Seychelles Parks and Gardens Authority (https://www.spga.gov.sc/sites/default/files/2022-06/ste.-anne-marine-national-park-management-plan_2021-2025.docx.pdf); World Bank and Ministry of Environment, Energy and Climate Change of Seychelles. 2019. Seychelles Coastal Management Plan: 2019–2024. Washington, DC: World Bank; Victoria, Seychelles: Ministry of Environment, Energy and Climate Change of Seychelles (https://documents1.worldbank.org/curated/en/099626405272235180/pdf/P1660740a8e1480bb0a4eb0e3607ec76c5c.pdf); Seychelles Mahe Plateau Trap and Line Fishery Co-management Plan (2019). Seychelles Fisheries Authority; Government of Seychelles. 2025. Seychelles Marine Spatial Plan. Ministry of Agriculture, Climate Change and Environment, Mahe, Seychelles. (Version 1.1). 142 pages (https://seymsp.com/wp-content/uploads/2025/06/SMSP_PLAN-WEB.pdf)
Document demographic characteristics and gender	K4 - Population K5 - Number of Households K8 - Age	Key Informant; Secondary Source	In person Meeting 12-06-2025	<ul style="list-style-type: none"> Republic of Seychelles. Seychelles Population and Housing Census, 2022. National Bureau of Standards.

dynamics of reef-dependent communities	K9 - Gender K12 - Education			
Identify economic activities and livelihoods	K7 - Occupation	Key Informant; Secondary Source	In person Meeting 12-06-2025	<ul style="list-style-type: none"> • Republic of Seychelles. Seychelles Population and Housing Census, 2022. National Bureau of Standards. • https://seyccat.org/blue-grants-fund/about-the-bgf/#; • https://dbs.sc/service/bif-scheme/; • https://www.finance.gov.sc/financial-schemes/national-grants/ • SPGA online payment portal database 2025; SPGA Annual audited report 2024; SFA FIMS (https://sfa-fims.traseable.com/public); OceanWealth (https://maps.oceanwealth.org/#/portal); MRAG Ltd. (2022, March). Employment study and capacity needs assessment for the fisheries sector in Seychelles (Final Report, RFP07). Seychelles Fishing Authority (SFA). London: MRAG Ltd. for Artisanal fishery
	K17 - Source of and access to credit	Secondary Source	Online	
	K18 - Activities K19 - Goods & Services K20 - Methods	Key Informant; Secondary Source	In person Meeting 01-07-2025 & 23-09-2025; Email exchanges; Online	
Assess income levels and sources	K21 - Value of Goods and Services	Key Informant; Secondary Source	In person Meeting 01-07-2025 & 23-09-2025; Email exchanges; Online	<ul style="list-style-type: none"> • SPGA online payment portal database 2025; SPGA Annual audited report 2024; SFA FIMS (https://sfa-fims.traseable.com/public); OceanWealth (https://maps.oceanwealth.org/#/portal); • MRAG Ltd. (2022, March). Employment study and capacity needs assessment for the fisheries sector in Seychelles (Final Report, RFP07). Seychelles Fishing Authority (SFA). London: MRAG Ltd. for Artisanal fishery
Describe use patterns and dependency on reef resources	K23 - Use Patterns	Key Informant; Secondary Source	In person Meeting 01-07-2025 & 23-09-2025; Email exchanges	<ul style="list-style-type: none"> • SPGA Earth Ranger Platform • National Bureau of Statistics. (2025, January 10). NBS Statistical Bulletin: Quarter 4 2024 (Catalogue Number: Monthly Tourism 2024/12). Government of Seychelles. (https://www.nbs.gov.sc/downloads/1688-december-monthly-bulletin-2024/viewdocument/1688) • Laing, S., Etongo, D., Antha, S, Bristol, U. and Hoareau, K. 2022. Survey of Perceptions on Ocean Governance, Fisheries Management and the Blue Economy. Department of Blue Economy and Third South West Indian Ocean Fisheries Governance and Shared Growth (SWIOFish3) Project. pp 68. (https://www.mofbe.gov.sc/wp-content/uploads/2023/03/20221219_SWIOFish-Perception-Survey-Final-Report-1.pdf)
	K25 - Levels and Types of Impact	Secondary Source	Online	
	K27 - Tourist Profile	Secondary Source	Online	
Assess perceptions and awareness of conservation	S22 - Compliance S23 - Enforcement	Key Informant; Secondary Source	In person Meeting 01-07-2025 & 23-09-2025; Email exchanges	

