

DRAFT Management Plan for the Farquhar Archipelago Sustainable Use (Zone 2) Area

Third South West Indian Ocean Fisheries Governance and
Shared Growth Project (SWIOFish3)



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DRAFT Management Plan for the Farquhar Archipelago Sustainable Use (Zone 2) Area

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Table of Contents

List of Figures	iv
List of Tables	iv
Executive Summary	v
Acknowledgements	vii
1. Introduction	1
1.1 Management Plan purpose	1
1.2 Management Plan scope	2
1.2.1 Management Goal	3
To enhance resilient marine ecosystems through protection of biodiversity and sustainable equitable management of economic activities.	3
1.2.2 Management Objectives	3
1.3 Planning process	3
1.4 How to use this Management Plan	5
2. Management Context	5
2.1 Management body	5
2.2 Protected Area governance	6
2.3 Legal and policy framework	7
2.4 Protected Area designation	7
2.5 Tenure	8
2.6 Other management instruments	8
3. Management Area Pressures and Issues	9
3.1 Key principles	9
3.2 Priority issues	12
3.3 Pressures and threats	13
4. Management Strategies	14
4.1 Sustainable use allowable activities	15
4.2 Management strategies and actions	16
4.3 Enabling policy and regulations	22
5. History and Values of the Area	22
5.1 History of the site	22
5.2 Surrounding features	23
5.3 Values	24

5.3.1 Ecological.....	24
5.3.2 Species of conservation interest.....	24
5.3.3 Social and cultural (including recreation).....	25
5.3.4 Economic.....	26
5.3.5 Research and education.....	27
6. Current Uses.....	27
6.1 Commercial Fisheries.....	27
6.2 Maritime Infrastructure (and use).....	29
6.3 Tourism & Recreation.....	29
6.4 Non-renewable/resource extraction.....	30
6.5 Research and education.....	30
7. Implementation and Governance.....	30
7.1 Implementation barriers.....	31
7.2 Implementation and governance considerations.....	32
7.3 Reporting requirements.....	32
8. Performance Measurement Framework.....	33
8.1 Developing the Performance Measurement Framework.....	33
8.2 Key indicators and reporting frameworks.....	34
9. Compliance and Enforcement.....	35
9.1 Monitoring and surveillance.....	36
10. Management Plan Review Process.....	37
11. References.....	38
Appendix A: International obligations.....	40
Appendix B: Draft Allowable Activities, codes and definitions.....	41
Appendix C: Management actions explanatory text.....	49
Appendix D: Mandate of the Seychelles Oceans Authority.....	60
Appendix E: Farquhar Archipelago Sustainable Use Area PMF Indicators – DRAFT.....	61
Annexes.....	64
i. IMPLEMENTATION & GOVERNANCE PLAN.....	64
ii. FINANCING PLAN.....	64
iii. REGULATIONS & MCS PLAN.....	64
iv. STAKEHOLDER ANALYSIS.....	64

List of Figures

Figure 1.	Map showing the boundaries of the Farquhar Archipelago Sustainable Use Area with inserts showing the location within the Seychelles EEZ (top right) and the details of Farquhar Atoll (top left).	2
Figure 2.	Overview of the process for developing the Farquhar Archipelago Sustainable Use Area Management Plan consistent with the principles of participatory planning and international best-practice.	4
Figure 3.	Process and information used to develop the strategies and actions in this Management Plan.....	15
Figure 4.	Map of designated safe anchorage areas to be used year-round with sites for different weather conditions. <i>Draft to be refined with further input.</i>	17
Figure 5.	Map of known shipwreck sites as important cultural sites. <i>Draft to be refined with further input.</i>	19
Figure 6.	Process for developing the Farquhar Archipelago Sustainable Use Area PMF and applying the system.	34
Figure 7.	Compliance pyramid showing the range of potential user attitudes towards rules and regulations, the recommended management response, and the range of regulatory enforcement responses to drive compliance. Source: Australian Government Department of Climate Change, the Environment and Water (2023).	36

List of Tables

Table 1.	Chronology of key Seychelles MSP foundational activities (shaded in green) and consultation and process steps in the development of the Farquhar Archipelago Sustainable Use Area Management Plan.....	4
Table 2.	Key principles identified by stakeholders to guide the development and implementation of the Farquhar Archipelago Sustainable Use Area.	10
Table 3.	Priority issues identified and ranked by stakeholders in four thematic areas for the Farquhar Archipelago Sustainable Use Area. Issues in blue are those that this Management Plan could address.....	13
Table 4.	Allowable activities in Sustainable Use (Zone 2) Areas and provisional schedule of conditions that relate to management actions for permits, codes of conduct, environmental and social impact assessments (ESIA), and security bonds. Note this is proposed as part of this draft Management Plan and not officially endorsed. <i>Legend: A allowable (no conditions); C allowed with conditions; X prohibited; ✓ required; - not required.</i>	20

Executive Summary

Seychelles is a small island nation of about 115 tropical islands (both granitic and coralline) with a population of approximately 98,000 people (United Nations 2022¹), mostly living on the Inner Islands. Located in the western Indian Ocean northeast of Madagascar, the country is widely known as a large ocean state with an Exclusive Economic Zone (EEZ) of 1.4 million km² and small land area of 459 km².

Environmental protection is a continuing flagship for Seychelles as the island nation's ocean resources are considered vital for the development of its fisheries and tourism industries, as well as for facilitating trade. To bolster environmental sustainability, the Seychelles government has embraced a blue economy agenda as an organising principle to drive growth further, while preserving and building the country's natural assets. A national Blue Economy Roadmap has been developed and is in line with the UN Sustainable Development Goal (SDG) 14: *Conserve and sustainably use the oceans, seas and marine resources for sustainable development*.

The Government of Seychelles (GoS) is developing a Seychelles Marine Spatial Plan (SMSP) and in 2020 designated thirteen areas based on protection of biodiversity values and sustainable uses (Zone 1 and Zone 2), reaching the milestone of 30% marine protection gazetted (March 2020).

The **Farquhar Archipelago Sustainable Use Area (Zone 2)**² is in the south of the Seychelles EEZ near the border with Madagascar, covering 14,482 km² and representing 1.07% of the total EEZ area. The 2019 SMSP nomination file states that the Area contains 47 biodiversity features, 19 of 44 national habitat conservation features, 42% of atoll sea level rim, and 23% of atoll sea-level lagoon in the Seychelles. It is an area with important biodiversity values, multiple commercial and recreational uses and aspirations to increase eco-friendly activities in the future.

The management goal for this Sustainable Use Area is ***to maintain and enhance biodiversity and ecological values for resilient marine ecosystems***. There are four management objectives to meet this goal under each of four thematic categories:

1. To maintain and enhance **biodiversity and ecological values** for resilient marine ecosystems (ecological and biodiversity).
2. To ensure **management processes are transparent, equitable and participatory**, and deliver effective monitoring, control and surveillance (governance).
3. To facilitate equitable access and opportunities for Seychellois to maintain and enhance **social benefits and cultural values** (social and cultural).
4. To optimise and sustain economic benefits for **sustainable industries** (economic).

This document provides a sustainable use management plan for the Farquhar Archipelago Sustainable Use Area under the Seychelles MSP, and it has been developed through stakeholder consultation (from September 2022 to July 2023). The Management Plan comprises 10 sections:

- Section 1 is the **Introduction** and contains the purpose and scope of the Management Plan (including the management goal and objectives), a description of how the planning

¹ <https://population.un.org/wpp/>

² Officially, still classified as 'Area of Outstanding Natural Beauty (AONB) under the National Parks and Nature Conservancy Act (NPNCA). To be reclassified as 'Sustainable Use Area' once new legislation is enacted.

process was undertaken, and instructions on how to use this Management Plan for managers, stakeholders and other users.

- Section 2 provides the **Management Context**. It describes the management body, overall governance and designation for sustainable use area protection in the Seychelles, the legal and policy framework, tenure and other management instruments in the Area.
- Section 3 describes the **Management Area Pressures and Issues** identified by stakeholders and in the literature, the scope of the Management Plan to address these issues, and presents a set of key principles (biophysical, socioeconomic and cultural) to guide the development of the Farquhar Archipelago Management Plan.
- Section 4 covers the **Management Strategies** defined for the Area, including a description of the sustainable use allowable activities, the strategies and actions to address the identified priority issues while delivering improved sustainable use of the Area, and a description of the enabling policy and regulations in place.
- Section 5 defines the **Farquhar Archipelago Sustainable Use Area**, including the history of the site, surrounding features and its values (ecological, social, cultural, economic and others).
- Section 6 summarises the **Current Uses** in the Area, including fisheries, maritime infrastructure, tourism and recreation, non-renewable and resource extraction activities, and other activities related to research and education in the Area.
- Section 7 provides an overview of **Implementation and Governance** under this sustainable use management plan.
- Section 8 identifies the **Performance Measurement Framework**, including a list of indicators to be monitored and reported on to track the implementation and effectiveness of this sustainable use management plan.
- Section 9 covers **Compliance and Enforcement**, including the **monitoring and surveillance** needed to ensure successful implementation of the strategies in the Management Plan.
- Finally, Section 10 contains an overview of the **Plan review process**.

These sections are supplemented by Annexes that provide further detail around implementation and governance, financing, regulations and enforcement, and the stakeholders involved in the Management Plan development process. It is intended that this sustainable use management plan is a 5-year document (2024–2028), that will be reviewed mid-way (2026) and updated every 5 years throughout implementation.

Acknowledgements

We would like to acknowledge the Government of Seychelles for recognising the need for a national marine spatial plan (MSP) and their world-leading initiative in this field. The Ministry of Agriculture, Climate Change and Environment (MACCE) provided welcome guidance and support throughout the sustainable use management planning process, particularly PS Denis Matatiken, Ashley Dias and Sophie Morel from the Department of Environment, and Justin Prosper from the Climate Change Department. We also thank the Seychelles Fishing Authority for their support and engagement in the process, in particular Vincent Lucas and Rodney Govinden. The funding for this sustainable use management planning process was made available through the Third South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish3) and the Project Coordination Unit, particularly Jan Robinson, provided valuable guidance and support throughout. Helena Sims, Joanna Smith, and Elke Talma from the Seychelles MSP team and SeyCCAT also provided valuable feedback and guidance on consultations with stakeholders. We also wish to thank the individuals and stakeholder groups of the Farquhar Archipelago who contributed their valuable time to develop this sustainable use management plan under the Seychelles MSP.

DRAFT

1. Introduction

1.1 Management Plan purpose

This document represents the first management plan developed to guide the environmental management of the Farquhar Archipelago Area designated under the Seychelles Marine Spatial Plan initiative. The Farquhar Archipelago Management Plan has a focus on protecting marine habitats and species, while allowing opportunities for economic activities and sustainable long-term use of resources to ensure that current and future activities do not cause environmental harm.

The Government of Seychelles (GoS) is developing a Seychelles Marine Spatial Plan (SMSP) and in 2020 designated thirteen areas based on protection of biodiversity values and sustainable uses (Zone 1 and Zone 2), reaching the milestone of 30% marine protection gazetted (March 2020). The Farquhar Archipelago Sustainable Use Area is one of eight Zone 2 (sustainable use) areas³. The Department of Environment within the Ministry of Agriculture, Climate Change and Environment (MACCE) will oversee implementation of the Farquhar Archipelago Sustainable Use Area Management Plan (the Management Plan) undertaken by delegated authorities. This Management Plan provides a resource for managers and stakeholders to know what activities are allowed, how compliance and enforcement will be conducted, and understand their responsibilities as users of the Area and within the broader SMSP.

The preparation and implementation of this Management Plan forms part of the SMSP initiative. Article 38 of the Seychelles Constitution and the guiding principles of the Seychelles Sustainable Development Strategy provide an overall goal for the MSP Initiative: *develop and implement an integrated marine plan to optimise the sustainable use and effective management of the Seychelles marine environment while ensuring and improving the social, cultural and economic wellbeing of its people*. Under the SMSP initiative, an MSP Policy has been drafted and was endorsed by Cabinet in Sept 2020. The MSP Policy has multiple objectives, in particular to: *address comprehensive marine environmental management of Seychelles EEZ and Territorial Sea, take on-board the Seychelles' international commitments while taking into consideration modern developments in Protected Area management, blue economy and sustainable development, meet and surpass the Convention on Biological Diversity (CBD) Aichi target of 10% marine protection by 2020, facilitate integrated governance between Ministries, and meet and surpass the United Nations Sustainable Development Goals (SDG) of 10% marine protect by 2020*.

The SMSP initiative and this Management Plan form part of the Seychelles international commitment to:

- **Convention on Biological Diversity Aichi Target 11:** 10% of coastal and marine areas are effectively conserved by 2020.
- **Sustainable Development Goal Target 14.5:** By 2020, conserve at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

³ Officially, still classified as 'Area of Outstanding Natural Beauty (AONB) under the National parks and Nature Conservancy Act (NPNCA). To be reclassified as 'Sustainable Use Area' once new legislation is enacted.

1.2 Management Plan scope

This Management Plan serves as a blueprint for the administration and operation of the Farquhar Archipelago Sustainable Use Area, with a focus on biodiversity conservation, sustainable use, equitable access, transparent decision-making, and addressing current and future challenges.

The Farquhar Archipelago Sustainable Use Area is over 700 km from the inner islands in the south of the Seychelles EEZ near the border with Madagascar, covering 14,482 km² and representing 1.07% of the total EEZ area. This Management Plan covers the marine waters around and between the atolls in the Farquhar Group (Providence, Farquhar and St. Pierre, and Wizard Reef). It applies to the area defined by S.I. 44 of 2020 pertaining to the Area of Outstanding Natural Beauty (Marine) Order, 2020 designated under the National Parks and Nature Conservancy Act (1991 amendment), to mean high-water mark (Figure 1).

Farquhar Atoll is a separate management unit with an elapsed management plan (2018–2022) (ICS & IDC 2018), and key marine elements of the Farquhar Atoll Management Plan have been incorporated into this Management Plan. In addition, under the Fisheries Act Under, foreign fishing vessels cannot conduct industrial longline, purse seine fishing in the Area, and drifting FADs are not allowed. The distinct maritime boundaries designated for Farquhar Atoll, Farquhar Archipelago and under the Fisheries Act are gazetted.

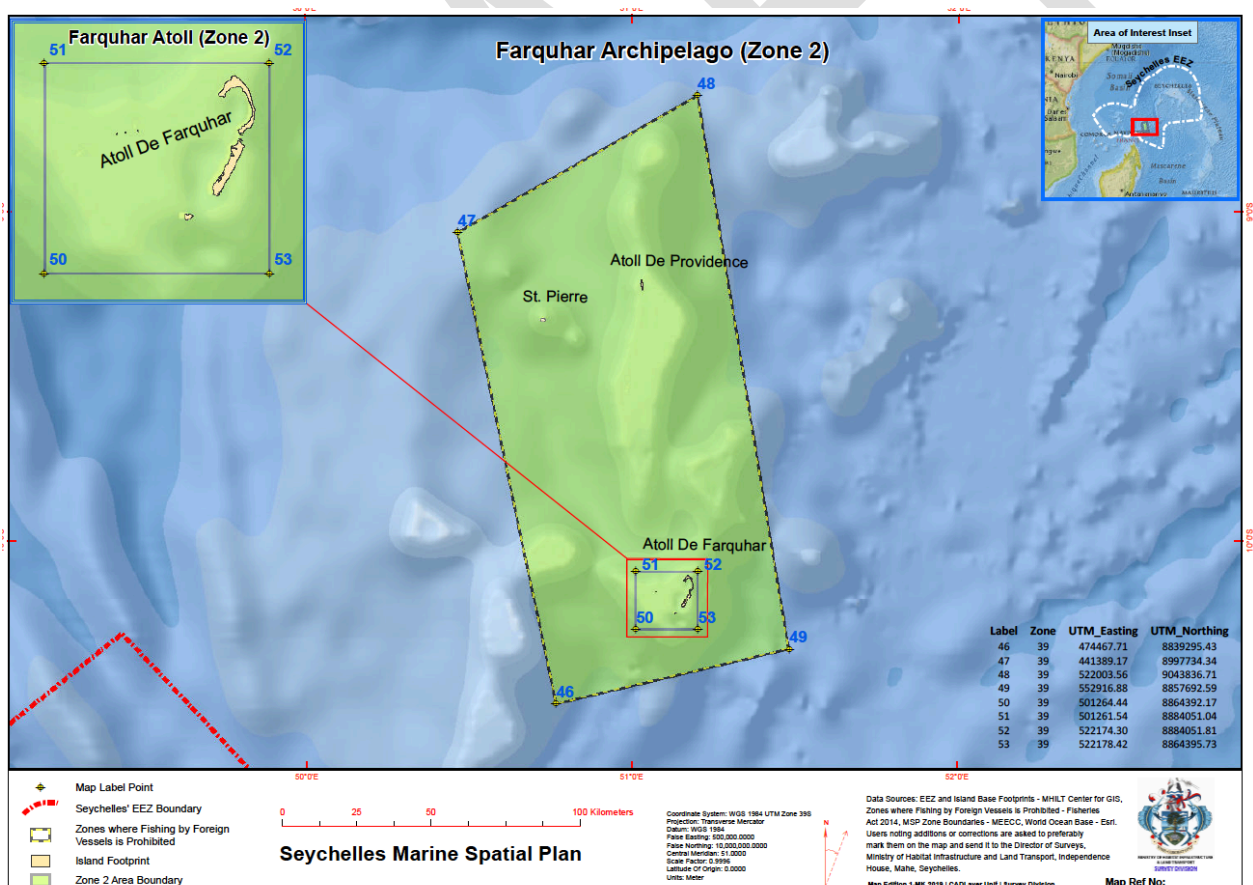


Figure 1. Map showing the boundaries of the Farquhar Archipelago Sustainable Use Area with inserts showing the location within the Seychelles EEZ (top right) and the details of Farquhar Atoll (top left).

1.2.1 Management Goal

To enhance resilient marine ecosystems through protection of biodiversity and sustainable equitable management of economic activities.

1.2.2 Management Objectives

To support the management goal, there are four management objectives:

Ecological & Biodiversity: To maintain and enhance biodiversity and ecological values for resilient marine ecosystems.

Governance: To ensure management processes are transparent, equitable and participatory, and deliver effective monitoring, control and surveillance.

Social & Cultural: To facilitate equitable access and opportunities for Seychellois to maintain and enhance social benefits and cultural values.

Economic: To optimise and sustain the economic benefits for sustainable industries.

1.3 Planning process

The development of this Management Plan built on the extensive consultative processes and networks developed during the SMSP processes since 2014 (Table 1). A consultative process involving multiple and diverse stakeholders was conducted from September 2022 to June 2023⁴. The consultation process was conducted in conjunction with processes to develop management plans for the Comsmoledo and Astove Archipelago and Amirantes to Fortune Banks Sustainable Use Areas.

The process for developing this Management Plan was consistent with the principles of participatory management planning and international best-practice in this field (IUCN 2003, Green et al. 2020) and followed a systematic and structured four-step approach (Figure 2). It included a **scoping step** to collect information through a desk-top review and consultation with stakeholders via email and direct discussions in Seychelles during September 2022. Participatory discussions about the goal and objectives, main issues and management strategies for the Area during workshops and virtual meetings from November 2022 to January 2023 (**plan development step**). Collectively, this information was used to draft the Management Plan, which was circulated for further input in April 2023 (**plan review step**), before a second public consultation phase during June-July 2023 and finalising the Management Plan (**finalise plan step**).

⁴ Project led by C₂O Fisheries under the guidance of the Seychelles Department of Environment and funded by SWIOFish3.



Figure 2. Overview of the process for developing the Farquhar Archipelago Sustainable Use Area Management Plan consistent with the principles of participatory planning and international best-practice.

The Management Plan was developed through a consultative process involving diverse stakeholders, and is an extension of the consultative processes conducted under the overarching SMSP process. The chronology for development of the Management Plan within the national SMSP process is detailed in Table 1.

Table 1. Chronology of key Seychelles MSP foundational activities (shaded in green) and consultation and process steps in the development of the Farquhar Archipelago Sustainable Use Area Management Plan.

Year	Key Event
2012	Seychelles commits to protect 30% of the EEZ and 50% of terrestrial area
January 2014	Seychelles signs Abu Dhabi Blue Economy Declaration
February 2014	Seychelles initiates the Seychelles MSP initiative
November 2015	Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) Act enacted
February 2016	Debt Swap agreement finalised
September 2017	MSP Policy drafted
February 2018	MSP Milestone 1 completed – 15% marine protected gazetted
July 2018	Cabinet approval to develop governance framework to implement MSP Ocean Authority
November 2018	Cabinet approval for preparation nomination file MSP Phase 2, Milestone 2 areas
April 2019	MSP Milestone 2 completed – 26% marine protection gazetted
November 2019	Cabinet approval for preparation nomination file MSP Phase 2, Milestone 3 areas
March 2020	MSP milestone – 30% marine protected gazetted
April 2020 – 2022	Planning process slowed during COVID-19 Global Pandemic
September 2022	Process commences for developing Farquhar Archipelago and other Sustainable Use (Zone 2) Area Management Plans – Scoping Step
Nov 2022 – March 2023	Broad stakeholder engagement – Plan Development Step
Mar-Apr 2023	Public review of draft management plans – Plan Review Step
May-July 2023	Public review period for final management plans – Finalise Plan Step

A total of 38 meetings, 10 participatory workshops, 3 public information sessions, and over 26 stakeholder groups or representatives were consulted and provided input to the development of this Management Plan over a 10-month period from September 2022 to June 2023. A full list of all stakeholders involved in the process is provided as part of the Stakeholder Analysis Annex.

1.4 How to use this Management Plan

This Management Plan is a guide for managers, stakeholders and users of the Farquhar Archipelago Sustainable Use Area on the issues (Section 3), allowable activities, management strategies and actions (Section 4). It includes a summary of the history and values of the area (Section 5) and current uses (Section 6), as well as implementation and governance (Section 7). Managers can refer to Section 4 for management strategies and specific management actions that need to be translated into regulations under the relevant legislation. Managers and stakeholders should also refer to the Area performance management framework (Section 8), monitoring, control and surveillance (Section 9) and plan review overview (Section 10).

Note that this Management Plan is to be implemented in conjunction with other legislative instruments, including international conventions. This Management Plan neither negates or replaces these other legal management arrangements, but should be implemented alongside and in coordination with these legal instruments (see Sections 2.3 and 2.6).

2. Management Context

As a signatory to various international conventions, the Seychelles is committed to protecting 30% of their marine EEZ, under the guidance of the Seychelles Marine Spatial Plan (SMSP) Initiative (see Section 1.3). The SMSP Zoning Framework contains three zone categories: Zone 1: high protection of marine biodiversity; Zone 2: medium protection of biodiversity and sustainable uses; and Zone 3 multiple uses. The Farquhar Archipelago, identified as a sustainable use (Zone 2) area, aligns with the objective for medium biodiversity protection and sustainable uses. Allowable activities in the Area are intended to be compatible with this objective and include some extraction, commercial harvest, seabed disturbance, and economic development.

This Management Plan provides the guidance for managing the Farquhar Archipelago Sustainable Use Area in line with the MSP allowable activities and is intended to reflect and align with the intent and strategies of existing management instruments in place in the Area.

2.1 Management body

Implementation of the management plans developed through the SMSP process requires an empowered coordinating agency to enable effective monitoring and evaluation, adaptive management, and the realisation of the SMSP strategic objectives. After extensive consultation including government agencies and stakeholders, the Seychelles Oceans Authority Bill was drafted in preparation for the transition of the SMSP to implementation. Once established, the Seychelles Oceans Authority (SOA) will have the mandate for the SMSP and to provide coordination and oversight of implementing agencies to progress the goals and objectives of the various management plans including this Management Plan. More information on these governance arrangements is detailed in Section 7.

While governance arrangements are yet to be finalized and the SOA is yet to be established, the Seychelles Oceans Agency has been nominated as an interim governing body that if approved, will work with implementing agencies to provide planning and coordination for implementing the Farquhar Archipelago Sustainable Use Area Management Plan. The delegated authorities responsible for overseeing the implementation of this Management Plan are yet to be officially

designated by the Government. It is expected that a multi-stakeholder co-management approach will be adopted, and a management committee will be established with representation from at least the following government entities:

- Ministry of Agriculture, Climate Change and Environment (MACCE)
- Ministry of Fisheries and the Blue Economy (MOFBE)
- Ministry of Transport (MOT)
- Islands Development Company (IDC)
- Seychelles Fishing Authority (SFA)
- Seychelles Maritime Safety Authority (SMSA)
- Seychelles Defense Forces (SDF)
- National Information Sharing and Coordination Centre (NISCC)

The delegated authorities will report to MACCE and will work cooperatively to implement the strategies in this Management Plan, and conduct monitoring, control and surveillance (MCS) to ensure the goal and objectives for the Farquhar Archipelago Sustainable Use Area are achieved.

2.2 Protected Area governance

In the 1960–1990s, Seychelles was one of the first countries in the Western Indian Ocean to establish a network of marine protected areas (MPA), at the time covering less than 1% of the EEZ. The selection criteria for these early MPA were based primarily on aesthetic objectives for tourism values and were designated with limited stakeholder consultation. The Government of Seychelles has various international and national commitments to conservation and management that guide the ongoing processes and governance for these MPA (details in Appendix A).

The SMSP is being developed as a regulatory plan, where zones will be legally designated and enforced. The SMSP Zoning Framework is an objective-based framework that contains three zone categories: Zone 1: high protection of marine biodiversity; Zone 2: medium protection of biodiversity and sustainable uses; and Zone 3 multiple uses (pending approval). The zoning categories correspond to the MSP objectives for 30% marine protection goal (Zones 1 and 2), sustainable economic development (Zones 2 and 3), climate change adaptation (all zones), and advancing the Blue Economy roadmap (all zones).

While management arrangements are yet to be finalized, it is proposed that implementation of this Management Plan will be coordinated and overseen by the Seychelles Oceans Agency with implementation delivered through line agencies. Under this arrangement, management of specific activities will be delivered through the relevant implementing line agencies. For example, management arrangements related to fishing activities will be delivered through the SFA; compliance and enforcement through coordinated efforts of the Seychelles Coastguard, SFA, SDF and NISCC; and management of vessel related issues delivered through the SMSA. Meanwhile, the governance arrangements for this Management Plan will also include a multi-sectoral management committee, a multi-sectoral scientific committee, and an independent Complaints and Resolution body to address complaints (see Section 4).

All legal activities within Zones 1 and 2 are allowable under existing management regimes until this Management Plan is endorsed by Cabinet, relevant legislation is enacted, and management systems have been established and are legally enforceable (e.g. national permit system). This Management Plan also includes actions to develop further management arrangements, for example, establishing a coordinated permits system (see Section 4). Until those arrangements commence, existing management arrangements will continue to apply. Furthermore, this

Management Plan does not replace or extinguish other legally binding management arrangements currently in force, for example the provisions of the Seychelles Fisheries Act and Regulations (see Section 2.6).

2.3 Legal and policy framework

The Government of Seychelles has enacted laws that call for the protection of biodiversity and land and seascapes through several legal and policy instruments.

The policy framework for the designation of Protected Areas in the Seychelles is outlined in the Seychelles' Protected Area Policy (2013). The Policy defines five categories of protected areas. Each of the category aligns with a particular IUCN Protected Area category. They are the:

- Strict Nature Reserve (IUCN Ia)
- Ecological Reserve (IUCN IV)
- National Park (IUCN II)
- Protected landscape/seascape (IUCN V)
- Sustainable Use Area (IUCN VI)

The Seychelles' Protected Area Policy also provide details of the procedures for designation and declassification of Protected Areas.

The legal and policy framework is derived from Article 38 of the Constitution, which establishes the principle of environmental rights and declares that: *“the State recognizes the right of every person to live in and enjoy a clean, healthy and ecologically balanced environment and with a view to ensuring the effective realization of this right the State undertakesto ensure a sustainable socio-economic development of Seychelles by a judicious use and management of the resources of the Seychelles”*. The specific legal framework for the designation of different types of Protected Areas is provided by the National Parks and Nature Conservancy Act (amendment 1991).

The Government of Seychelles has ratified and/or is a voluntary signatory on several international treaties and agreements. Activities in the Farquhar Area must be done in accordance with the terms of these agreements, including the Convention on International Trade on Endangered Species (CITES); Port State Measures Agreement (PSMA); UN Convention on Biological Diversity (UN CBD); Convention on the Conservation of Migratory Species of Wild Animals (CMS); UN Convention for the Law of the Sea (UNCLOS); UN Sustainable Development Goals.

The Management Plan for this Area will be a regulatory plan that is legally designated and enforced. Specific legislation for designating and implementing this Management Plan has been finalised but the regulations are currently being developed. In the interim the Seychelles National Parks and Nature Conservation Act (amendment 1991) (NPNC Act) is used for designating the SMSP zones. The Zone 1 areas are in the category of '(Marine) National Park'. Sustainable Use 'Zone 2' areas, including the Farquhar Archipelago, are gazetted using the '(Marine) Area of Outstanding Natural Beauty' (AONB) category in the NPNC Act. Both Zone 1 and Zone 2 areas will be re-designated when the new legislation is approved, as (Marine) National Park and (Marine) Sustainable Use Areas, respectively.

2.4 Protected Area designation

All areas in the 2019 SMSP nomination file were proposed during extensive consultations with stakeholders between 2017–2019, with scientific analyses of best available data, and reaching agreement for support with all marine sectors. The 30% marine protection is half “no take” areas to protect marine biodiversity resources and half sustainable use and biodiversity conservation.

The SMSP Zone 2 areas are designated in a protected area category that aligns with an objective for medium biodiversity protection and sustainable uses. Allowable activities are intended to be compatible with this objective and include some extraction, commercial harvest, seabed disturbance and economic development. The draft list of allowable activities is included in Section 4, and definitions of these activities are included in Appendix B.

The Farquhar Archipelago was identified as a sustainable use area in 2017–2018 and gazetted in April 2019. The sustainable use status aims to improve management and protection of lagoons, shallow waters and coral reef habitats within the Area, and support the advancement of the Seychelles' Blue Economy for local food security and sustainable livelihoods.

2.5 Tenure

The Farquhar Archipelago Area is owned by the Government of Seychelles. The waters within the Seychelles' Exclusive Economic Zone (EEZ) are managed through several different Acts and delegated authorities.

The marine waters and islands in the Farquhar Archipelago Sustainable Use Area belong to the Government of Seychelles and are publicly owned. The Islands Development Company (IDC) leases all islands and atolls in the Area (Farquhar, St Pierre, Cerf, Providence), which it manages for conservation and tourism and is responsible for implementation of the Farquhar Atoll Management Plan (now expired; see below).

2.6 Other management instruments

The Farquhar Archipelago Sustainable Use Area overlaps and is surrounded by existing maritime zones and boundaries managed by a range of agencies for different management purposes. This Management Plan provides information related to integration and alignment with these other maritime boundaries and the relevant policies, regulations and management plans. It is intended to reflect and align with the intent and strategies in these other management instruments.

The Farquhar Archipelago Sustainable Use Area encompasses the Farquhar Atoll (Zone 2) management area (see Figure 1) that has an island management plan (ICS & IDC 2018). The Farquhar Foundation (comprised of IDC, ICS, and investors) oversees and finances the conservation and management of the terrestrial environment. The Farquhar Atoll Management Plan (2018–2022) has a primary objective to manage Farquhar Atoll, surrounding lagoons, reefs and waters for the protection and conservation of habitats and biodiversity, and to provide economic opportunities for their sustainable use. The Farquhar Atoll management area is 415 km² and extends at least 1 km from the outer edge of the reef at the closest point, including all areas below the mean high-water mark. The boundary includes Farquhar Atoll and Sand Cay, and is approximately 90 km south of Providence, Cerf, and St Pierre islands.

- Under the *Seychelles Fisheries Act (2014)*, the use of spearguns, explosives, poisons, and noxious substances is prohibited across all fisheries in Seychelles, including the recreational fishery. The Fisheries Act also bans the use of unauthorised fish aggregating devices. While [large] net fishing is a licensable activity, the use of large nets is not allowed as part of recreational fishing. The use of demersal trawl nets is also prohibited under the Fisheries Regulations (1987), which aims to protect species of conservation interest, such as cetaceans.
- Foreign vessels cannot conduct industrial longline, purse seine and drifting FAD fishing targeting tuna, as the Farquhar Archipelago is in the Providence, Farquhar and St. Pierre, and Wizard Reef Foreign Fishing Prohibited Area (*Fisheries Act 2014, Part IV Fisheries Management, Reg. 5, First Schedule*). There is a proposal from the Seychelles Fishing

Authority that all industrial fishing vessels (including local vessels) will be excluded from Foreign Fishing Vessels Prohibited Areas under a future amendment to the Fisheries Act.

- The *Environment Protection Act (2016)* has provisions that regulate pollution including marine litter, sewage and wastewater discharge, coastal zone management, and environmental impacts assessment.
- The *Petroleum Mining Act (1976)* controls exploration, prospection and mining of petroleum.
- The *Wild Animal and Birds Protection Act (1966)* which includes protections for turtles, seabirds, and the whale shark. This Act may soon be updated to provide protections for additional marine species (e.g. sharks and rays listed on Appendix I of the Convention on the Conservation of Migratory Species of Wild Animals).
- The *Maritime Safety Authority Act (2019)* which regulates shipping and navigation, ship groundings and oil spills.
- *National Fish Aggregating Devices (FAD) Management Plan* describes the requirements for the use of FAD by the tuna fishery, including the number of FADS that can be deployed, FAD markings and identification, and the deployment and retrieval of drifting FAD.

3. Management Area Pressures and Issues

The focus of the Farquhar Archipelago Sustainable Use Area Management Plan is to provide overarching guidance for how the Area is managed within the broader SMSP initiative, balancing nature conservation with a range of allowable activities that include fisheries, marine infrastructure, non-renewables and prospecting, tourism and recreation, and research. The scope of management strategies covers ecological and biodiversity, governance, social and cultural, and economic themes.

This Management Plan has been developed with consideration of the key issues and threats identified during stakeholder workshops in 2022, and is aligned with the principles agreed by stakeholders (Section 3.1) and with the guiding principles of the SMSP initiative⁵.

3.1 Key principles

The Key Principles used to guide the development of this Management Plan were derived from stakeholder consultation workshops held in 2022, and consider the guiding principles of the SMSP initiative. Table 2 summarises input by stakeholders and is specific for the Farquhar Archipelago Sustainable Use Area. These are based on global principles (Green et al. 2020) and two types of principles were identified:

- **Biophysical** aimed at achieving ecological objectives by taking key biological and physical processes into account.
- **Socioeconomic and cultural** aimed at maximising benefits, minimising conflicts and minimising costs to local communities and industries.

⁵ <https://seymsp.com/the-initiative/guiding-principles/#:~:text=Transparency%2C%20inclusivity%20and%20participation%20are,to%20improve%20ecological%20sustainable%20development.>

Table 2. Key principles identified by stakeholders to guide the development and implementation of the Farquhar Archipelago Sustainable Use Area.

Biophysical Principles	Farquhar context
Manage Critical, Special and Unique Areas	<p>Manage critical areas or habitats for:</p> <ul style="list-style-type: none"> - seasonal and spatial protection of fish spawning aggregations (key species), including around Providence Island - spatial protection of important seabird feeding areas, and seasonal protection during breeding periods - maintain areas of high coral reef and seagrass biodiversity (CERF bank) (e.g., by using designated anchorages) - seasonal protection of whale migratory corridors
Incorporate Connectivity	<p>Consider: whale migratory corridors (speed limits for vessels)</p> <ul style="list-style-type: none"> - FADs drifting into Area and mitigating their impacts - upwelling systems (cooler areas possible future refugia)
Support Larval Dispersal	<ul style="list-style-type: none"> - Site-specific management for spawning and larval movement pathways - Identify source and sink habitats and manage for both
Promote Recovery	<ul style="list-style-type: none"> - Use short-term (<5 years) or periodically harvested strategies for species with fast recovery rates in sector management plans to be responsive to ecosystem change - Take a precautionary and analytical approach to the need for and methods used for habitat restoration
Manage Healthy Areas from Local Threats	<ul style="list-style-type: none"> - Manage healthy habitats from local threats, such as vessel anchoring e.g. identify and designate areas for safe anchorage to provide sheltered locations in different conditions but not on coral reefs or seagrass - In areas where populations of important species are under pressure due to local threats, protect fish populations through permitted rod numbers
Adapt to Changes in Climate and Ocean	<ul style="list-style-type: none"> - Manage sites that are likely to be more resilient to global environmental change e.g. southern reefs experience cooler conditions and may be future refugia to climate change thermal bleaching - Promote catch and release for sport fisheries, particularly of species that play an important functional role in ecosystem resilience
Socio-economic Principles	Farquhar context
Involve Stakeholders in Planning and Establishing Sustainable Use Area	<ul style="list-style-type: none"> - Involve all stakeholders in each step of the process - Consider opportunities for collaborative management and implementation among all stakeholders - Implement balanced and fair governance and management
Ensure Fair and Equal Access and Use	<ul style="list-style-type: none"> - Ensure local communities have fair and equal access to, and use of, marine and fisheries resources - Ensure no one sector has increased access and avoid exclusive use of marine and fisheries resources
Support Multiple, Environmentally Friendly Uses	<ul style="list-style-type: none"> - Allow for multiple sustainable uses (including sustainable fishing, tourism, aquaculture, education and research, exploration) in line with government policy - Resolve conflicting uses through negotiation and compromise between stakeholders

Support Local Livelihoods	<ul style="list-style-type: none">- Support management actions that maintain or increase ecosystem goods and services for local communities- Support sustainable livelihoods, including artisanal fisheries, aquaculture, sport fishing, and marine eco-tourism- Support local jobs through sustainable artisanal and industrial fisheries and commercial tourism
Support Local Customs and Practices	<ul style="list-style-type: none">- Protect local knowledge, traditional law, and culture that support sustainable resource management- Protect areas that have important traditional cultural values for local people (e.g. fishing grounds, shipwreck sites)

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3.2 Priority issues

There are several *pressures* that pose risks to the social, cultural, economic, ecological and biodiversity values of the Farquhar Archipelago. Understanding drivers and pressures for the Farquhar Archipelago Sustainable Use Area can inform conservation priorities to mitigate the impacts of current and future change on the marine ecosystem. The following definitions are offered (Oosterwind et al. 2016):

Drivers are a complex phenomena governing the direction of ecosystem change, which could be of human and/or nature origin. Drivers are considered beyond the direct control of management, for example anthropogenic drivers are based on economic, social and political fundamental needs (demands) for food, clean water, employment, transport and energy. While natural drivers are independent from anthropogenic causes (also referred to as “force majeure”), such as earthquakes, volcanic eruptions or tectonic drift.

Pressures are the result of a driver-initiated mechanism (human activity or natural process) causing an effect on any part of an ecosystem that may alter the environmental state. Management can have a direct influence on the intensity, direction and occurrence of pressures, which include climate change, extractive fishing and shipping, as examples.

In combination, these drivers and pressures create issues that occur in a specific area, and understanding these relationships can help identify the most effective and appropriate management response. For example, illegal fishing by foreign fishing vessels may be identified as a high priority issue. Understanding the nature and resulting impact of this pressure can aid managing authorities to prioritise their response, and design the most effective countermeasures. Meanwhile, understanding the drivers behind this pressure may highlight additional steps that can be taken through other means, for example, diplomatic efforts or regional measures that may help to address the underlying causes driving illegal fishing.

A global assessment of the overlap in the distributions of different pressures has important implications for biodiversity change attribution and the potential for interactive effects and found combinations of anthropogenic pressures explain patterns of biodiversity and ecosystem change (Bowler et al. 2020). At a regional scale, in the Indian Ocean, the primary drivers and pressures on biodiversity and ecosystem condition were climate change followed by human use (extraction), with human population, pollution and biosecurity risks (invasive potential) negligible and well below the global median.

At a national scale, pressures that have been identified include climate change, small land area (thus requiring reclamation that has impacted coastal environments), high dependence on a few industries including tourism, fisheries, ICT and shipping (most of which occur in the marine environment), concentration of the population in the coastal zone, remoteness, limited capacity and lack of resources (Government of Seychelles 2019b, 2020). These are important considerations for this Management Plan.

At a local scale, the pressures and issues they cause were identified and ranked by stakeholders for the Farquhar Archipelago Sustainable Use Area, and fall into four themes: ecological and biodiversity, governance, social and cultural, and economic (Table 3). There are priority issues that were ranked highly by stakeholders and/or appeared under multiple themes (highlighted in blue in Table 3). While these priority issues are the focus of the management strategies in Section 4, all issues raised were considered during the action development stage.

Table 3. Priority issues identified and ranked by stakeholders in four thematic areas for the Farquhar Archipelago Sustainable Use Area. Issues in blue are those that this Management Plan could address.

<p>Ecological & Biodiversity:</p> <ol style="list-style-type: none"> 1. Degradation of habitats due to climate change 2. Poaching of threatened and endangered species 3. Ineffective FAD management 4. Illegal, unreported, and unregulated fishing 5. Overfishing 6. Marine litter (international origin) 7. Coastal development 8. Lack of management of oil and gas 9. Insufficient research (or local involvement in research) 10. Limited conservation work 11. Vessel groundings and pollution 12. Lack of biosecurity measures 	<p>Governance:</p> <ol style="list-style-type: none"> 1. Lack of capacity and resources for MCS 2. Lack of capacity for effective and equitable management 3. Lack of equity and transparency in decision making for the Area 4. No political will to develop laws to address illegal activities (e.g. IUU, poaching) 5. Inadequate knowledge about Farquhar Archipelago 6. Remoteness – for management and MCS 7. Lack of education on laws of the sea 8. Lack of biosecurity measures 9. Lack of access
<p>Social & Cultural:</p> <ol style="list-style-type: none"> 1. Lack of access for Seychellois citizens 2. Lack of transparency and accountability 3. Lack of equitable sharing of benefits 4. Lack of knowledge and awareness 5. Illegal activities by locals 6. High standards of EIA without capacity to monitor/check 	<p>Economic:</p> <ol style="list-style-type: none"> 1. Oil and gas exploration risks 2. Lack of funding for management, research and monitoring 3. High cost of MCS 4. Unsustainable industrial fishing (threat to local and artisanal fisheries) 5. Lack of biosecurity measures 6. Threat of oil spill due to shipping and exploration 7. Infrastructure development on islands

3.3 Pressures and threats

The Farquhar Archipelago Area has several key pressures, both natural and anthropogenic, that are causing many of the issues of concern:

- **Unregulated fishing:** Most fishing activities in the Area are currently not controlled under any fisheries management plans, with the exception of industrial fishing (that is prohibited) and sea cucumber harvest. As a result, there is no indication of the level of fishing pressure that habitats and fisheries populations can support. Harvest of sea cucumber within the Area is controlled by requiring fishers to apply for a special dispensation to fish in the Area. There is no national-level management of fly fishing or sport fishing. In addition, the remoteness of the Area means MCS has been largely ineffective to date, making detection of any infringements limited.
- **Climate change:** Increasing ocean temperatures have been recorded in the Area along with periods of marine heatwaves that drive mass coral bleaching events. Higher ocean temperatures are also linked to increasing incidents of hard coral disease, particularly in coastal areas with land-based inputs (e.g. lagoons). Ocean acidification has also been linked

to impacts in marine organisms with calcium carbonate skeletons such as corals (Hill and Hoogenboom 2022, Kaniewska et al. 2012), echinoderms (Dupont et al. 2010), and gastropods (Bibby et al. 2007, Melatunan et al. 2013).

- **Marine debris:** Accumulation of marine-borne waste on island and atoll beaches within the Area is a common site. Dispersal simulations indicate that most of the marine debris that reaches the beaches of the Seychelles southern islands originates from terrestrial sources in Southeast Asia (Duhec et al. 2015, Vogt-Vincent et al. 2023) and from the tuna purse seining industry in the form of drifting Fish Aggregating Devices (Balderson and Martin 2015, Duhec et al. 2015, Zudaire et al. 2018).
- **Wildlife poaching:** The poaching of protected wildlife is a critical pressure for biodiversity in the Area. Poaching of marine turtles, particularly IUCN classified “Endangered” green turtles for meat, sooty tern (*Sterna fuscata*) eggs, brown noddies (*Anous stolidus*), tropical shearwater (*Puffinus bailloni*) and wedge tail shearwater (*Ardenna pacifica*) for food are all of concern. The IUCN classified “Vulnerable” coconut crab (*Birgus latro*) is not protected nationally but is threatened by human consumption and numbers have dwindled dramatically on most islands in the Area.
- **Indiscriminate anchoring:** Indiscriminate anchoring in shallow areas within the Area causes damage to sensitive habitats, such as coral reefs and seagrass meadows, through physical destruction.
- **Petroleum exploration:** To date there has been no documented negative impacts of oil exploration in the Seychelles. However, interest is growing and as risk is the product of vulnerability and exposure, the high vulnerability from possible impacts of oil exploration makes it an important pressure to be considered.

4. Management Strategies

This section describes the activities that are permitted to occur within Farquhar Archipelago Sustainable Use Area and provides strategies and actions identified to address the priority issues, goal and objectives for the Area (Figure 3). The Allowable Activities for this Area have been drafted under the Seychelles Marine Spatial Plan process and yet to be finalised. The Allowable Activities that may occur within the Farquhar Archipelago Sustainable Use Area with provisional conditions from the management strategies and actions are detailed in Table 4.

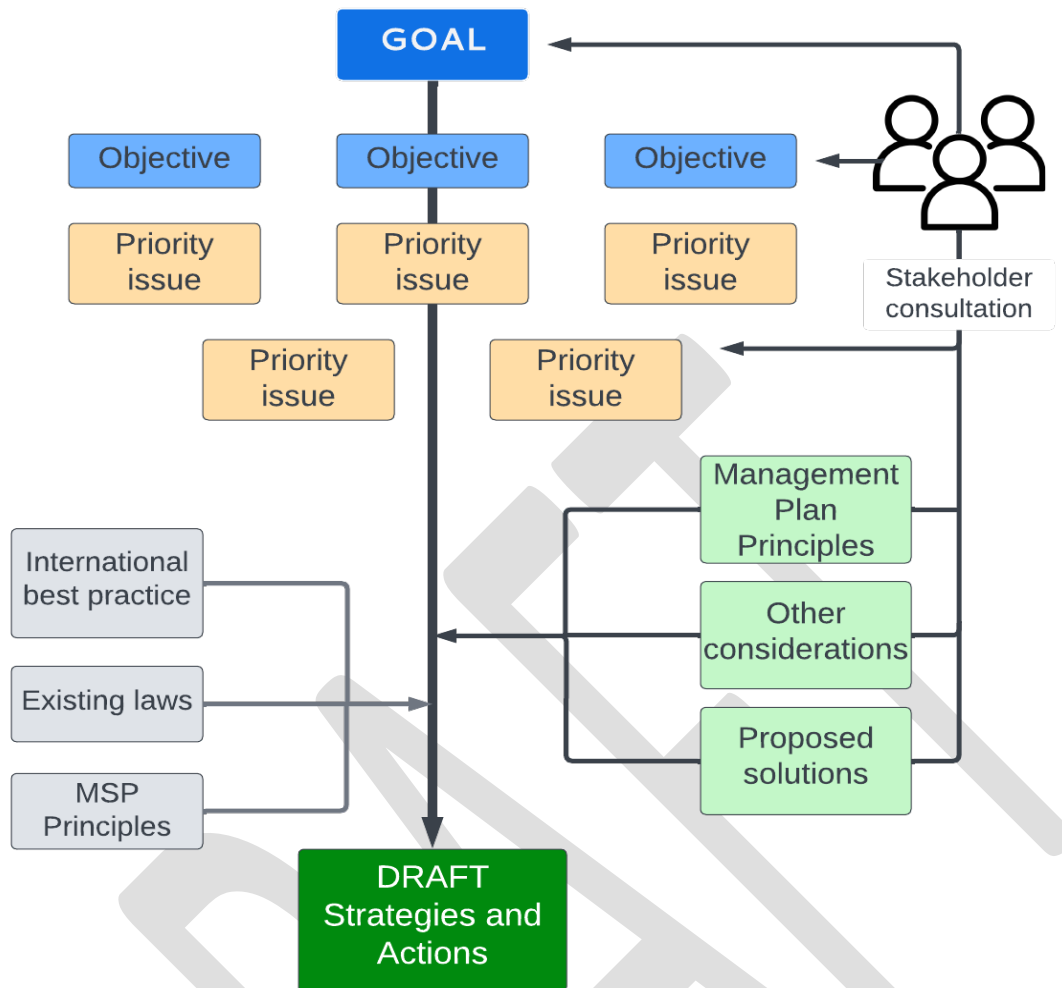


Figure 3. Process and information used to develop the strategies and actions in this Management Plan.

4.1 Sustainable use allowable activities

The list of allowable activities for Sustainable Use Areas that includes a provisional schedule of conditions to support the management actions are detailed in Section 4.2 and Table 4. The draft Allowable Activities table, zoning codes for activities, and definitions of each activity are provided in Appendix B. All activities and uses will be conducted in accordance with applicable national laws, regulations, and policies, as well as applicable international laws, treaties, and agreements.

All existing national laws, regulations, and policies, as well as applicable international laws, treaties, and agreements apply and must be complied with. These include the Fisheries Act and Regulations (2014), FAD Management Plan, Sea Cucumber Management Plan, Environment Protection Act (2016), Maritime Safety Authority Act (2019), Wildlife Bill (draft 2023), and Petroleum Mining Act (1976). The rules of these legislation are not replicated in the strategies below, but their intent is reflected in all actions.

Furthermore, until such time as operational elements of this Management Plan, such as the national permit system commence, existing management arrangements will continue to apply.

4.2 Management strategies and actions

This section identifies the management strategies and actions to be implemented to address the identified priority issues, to deliver improved sustainable use of the Farquhar Archipelago. These management strategies were developed through a consultative stakeholder participation and review process during which management actions were drafted based on the allowable activities for the SMSP Sustainable Use Areas (Zone 2). Each of the management strategies is mapped against the Management Plan objective it supports and detailed actions identified.

Seven management strategies have been identified for the Farquhar Archipelago Sustainable Use Area. Each strategy is comprised of specific actions. Where an action requires further consultation, e.g. setting capacity limits, such consultation must be done in accordance with one of the Guiding Principle of the SMSP: *Transparency, inclusivity and participation are cornerstones of the engagement, consultation and communication with stakeholders and civil society*. Further explanation of the rationale for each management action is provided at Appendix C.

Ecological & Biodiversity objective: To maintain and enhance biodiversity and ecological values for resilient marine ecosystems.

Strategy 1: Minimise human impacts to maintain ecological values

- 1.1 **Designate anchorage areas** (and if feasible provide moorings) to reduce damage to coral reef and seagrass habitats (see Figure 4)
- 1.2 Identify and implement **fishing limits for high-risk species or during vulnerable life history stages** for key species (e.g. during spawning aggregation and nursing periods).
- 1.3 Establish **no discharge zones for wastewater and ballast water** within 2 km of islands and atolls by vessels more than 15 m in length
- 1.4 Implement **programs to reduce impacts of marine litter and pollution** on marine wildlife, e.g. beach clean-ups, awareness campaigns

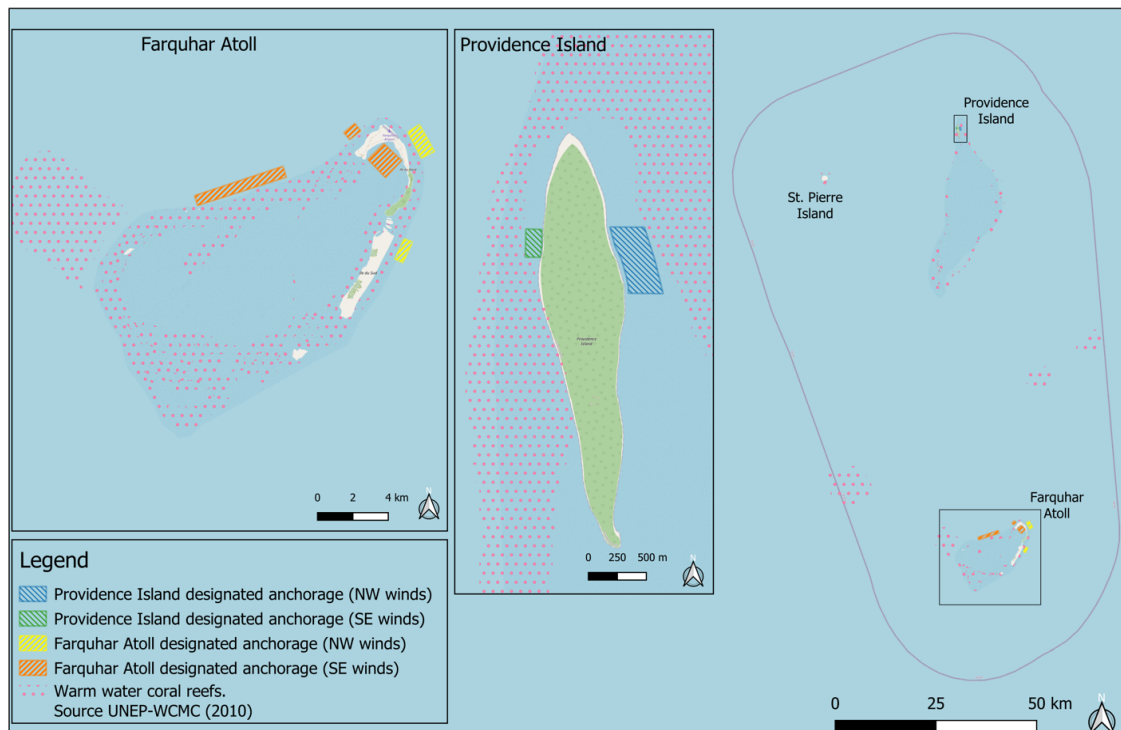


Figure 4. Map of designated safe anchorage areas to be used year-round with sites for different weather conditions. *Draft to be refined with further input.*

Strategy 2: Minimise anthropogenic pressures on threatened and endangered species

- 2.1 Investigate options for management of **aggregation sites and ecological corridors** for megafauna, threatened and endangered species
- 2.2 Retrieve **drifting FADs** of high risk to habitats and species
- 2.3 Remove **stranded FADs** of high risk to habitats and species

Strategy 3: Minimise impacts of fishing on marine resources to maintain sustainable fisheries (Interim)

This Strategy relates to sustainable fishing and acknowledges that fisheries management is primarily the responsibility of the Seychelles Fishing Authority (SFA) which sets conditions such as licenses, quotas, protected species, and technical rules about how fishing is to be conducted. These arrangements are implemented through Fisheries Regulations and Fisheries Management Plans. However, currently there are no fisheries management plans that apply to the Farquhar Archipelago. To address the issues raised and solutions proposed by stakeholders during the consultative process, this interim Strategy includes actions focused on fishing in the Area as interim measures until such time as fisheries management arrangements are finalised.

3.1	Promote and contribute to the update of the national FAD management plan to ensure that it addresses national priorities
3.2	Require the use of best practice guidelines for catch and release fishing , including fish with signs of barotrauma
3.3	All lagoon fly fishing shall be catch and release only
3.4	All catch and release fly fishing (lagoon) must use single barbless hooks only
3.5	Establish a national training and accreditation scheme for fly fishing (lagoon) guides , with only accredited guides able to lead fishing charters
3.6	Establish and implement appropriate catch limits and gear restrictions for sport and recreational fishing
3.7	Prohibit all fishing in reef passes leading into lagoons between 1st November and 1st March

Governance objective: To ensure management processes are transparent, equitable and participatory, and deliver effective monitoring, control and surveillance.

Strategy 4: Establish governance arrangements that are participatory and transparent, and that enhance equitable and effective management

4.1	Establish a single multi-sectoral representative management committee to provide strategic decision making and oversee implementation
4.2	Establish a complaints and resolution framework that involves an independent body
4.3	Establish and implement a transparent and equitable permit system
4.4	Determine capacity limits for allowable activities that may impact marine habitats and species
4.5	Develop new or review existing Codes of Conduct for allowable activities.
4.6	Design and implement a system for allocating permits that is equitable for all stakeholders
4.7	Establish a financial framework to ensure permit application fees and commercial levies support management and implementation
4.8	Develop and implement a risk-based Compliance and Enforcement Plan to support implementation and inform co-management agreements
4.9	Optimise use of surveillance and detection technologies for monitoring and management of illegal activities
4.10	Develop and implement a financial framework to support management that includes sustainable funding mechanisms

Strategy 5: Enhance and facilitate research and monitoring to provide the information needed to support evidence-based decision making

- 5.1 Establish a **scientific committee** to provide technical advice, coordinate and facilitate research and monitoring activities, and oversee the research permitting processes
- 5.2 Develop and implement a **Research & Monitoring Strategy** for marine Sustainable Use Areas

Social & Cultural objective: To facilitate equitable access and opportunities for Seychellois to maintain and enhance social benefits and cultural values.

Strategy 6: Improve equity of access to improve social benefits for all stakeholders

- 6.1 Implement **education and awareness programs** to raise awareness of the values of the Area and management measures to protect them
- 6.2 Protect marine sites that have important **cultural, archaeological or historic value**, and manage them for their potential to support tourism (see Figure 5)
- 6.3 Increase **opportunities for locals** to visit the area

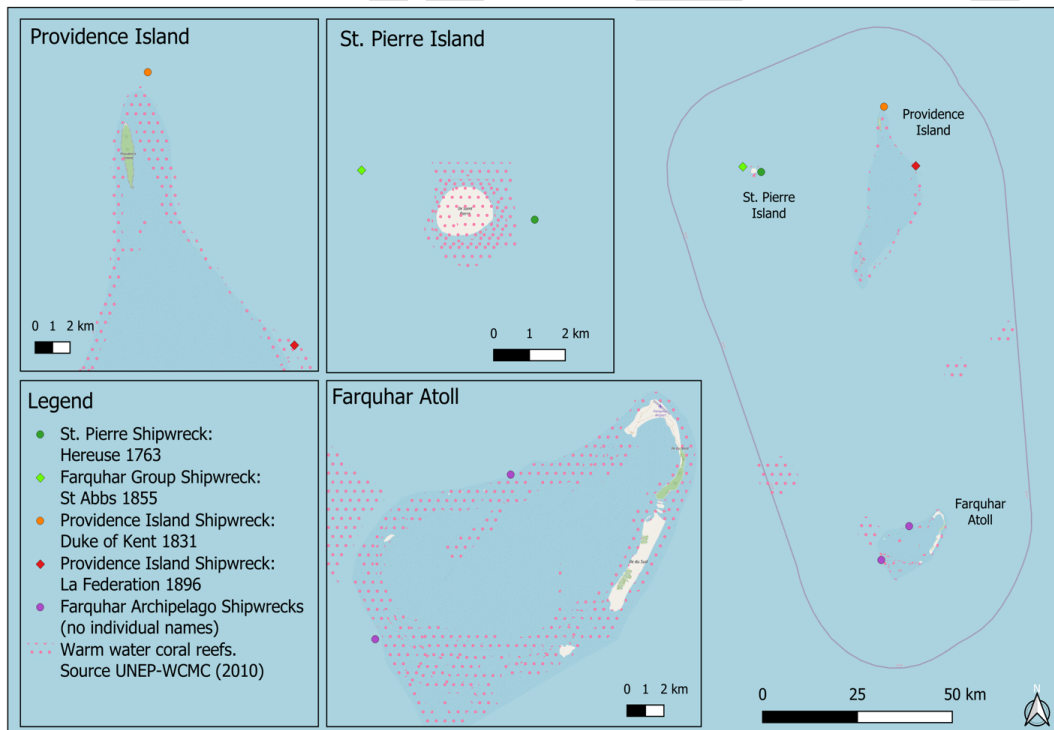


Figure 5. Map of known shipwreck sites as important cultural sites. *Draft to be refined with further input.*

Economic objective: To optimise and sustain economic benefits for sustainable industries.

Strategy 7: Promote sustainability of existing industries and future opportunities for a range of eco-friendly local businesses and livelihoods

- 7.1 Undertake a **baseline social and economic valuation** to inform capacity limits, potential development or expansion of sustainable local businesses, and management decisions

Table 4. Allowable activities in Sustainable Use (Zone 2) Areas and provisional schedule of conditions that relate to management actions for permits, codes of conduct, environmental and social impact assessments (ESIA), and security bonds. Note this is proposed as part of this draft Management Plan and not officially endorsed. Legend: A allowable (no conditions); C allowed with conditions; X prohibited; √ required; - not required.

Sectors	Marine Activity	Allowable activity	Permit (or license)	Area / site capacity limits	ESIA	Security bond	Code of Conduct	Fee or levy	Responsible Agency
Fisheries	Aquaculture	C	√	√	√	√	√	√	Seychelle Fishing Authority (SFA)
	Aquaculture, coral farming	C	√	√	√	√	√	√	SFA
	Artisanal Fishing (multiple gear types)	C	√	-	-	√	-	√	SFA
	Fly Fishing, blue water	C	√	-	-	-	√	√	SFA
	Fly Fishing, lagoon	C	√	√	-	-	√	√	SFA
	Industrial Pelagic Longline	AFB only	√	-	-	-	-	-	SFA
	Industrial Purse Seine (free school)	AFB only	√	-	-	-	-	-	SFA
	Industrial Purse Seine (floating objects, dFAD)	AFB only	√	-	-	-	-	-	SFA
	Industrial Purse Seine (supply vessel)	AFB only	√	-	-	-	-	-	SFA
	Recreational Fishing	C	-	-	-	-	-	-	SFA
	Semi-industrial Hand Gathering	C	√	-	-	-	√	√	SFA
	Semi-industrial Hook & Line	C	√	-	-	-	√	√	SFA
	Semi-industrial Longline	C	√	-	-	-	√	√	SFA
Sport Fishing (multiple activities)	C	√	-	-	-	√	√	SFA	
Subsistence Fishing	C	-	-	-	-	-	-	SFA	
Maritime Infrastructure	Ballast and Bilge Dumping	X	-	-	-	-	-	-	
	Bunkering at sea	C	√	-	-	-	-	-	Seychelles Maritime Safety Authority (SMSA)
	Bunkering at sea, Fishing vessel	X	-	-	-	-	-	-	
	Commercial shipping	C	-	-	-	-	-	-	SMSA
	Desalination, boat-based	A	-	-	-	-	-	-	SMSA
	Desalination, land-based	C	√	√	√	√	-	-	Seychelles Planning Authority (SPA) & MACCE
	Disposal, dumping, dredge spoils	X	-	-	-	-	-	-	
	Dredging, coastal	C	√	√	√	√	√	√	MACCE/SPA
Ferries and Transportation	C	√	-	-	-	-	-	SMSA/Tourism Department	

Sectors	Marine Activity	Allowable activity	Permit (or license)	Area / site capacity limits	ESIA	Security bond	Code of Conduct	Fee or levy	Responsible Agency
	Patrols and Surveillance	A	-	-	-	-	-	-	NISCC
	Ports, Marinas, Wharves, Jetties	C	√	√	√	√	-	√	MACCE/SPA
	Reclamation	X							
	Renewable Energy, deep water thermal	X							
	Renewable Energy, solar (marine)	X							
	Renewable Energy, tidal	C	√	√	√	√	-	√	MACCE
	Renewable Energy, wind (offshore)	C	√	√	√	√	-	√	MACCE
	Renewable Energy, wave	C	√	√	√	√	-	√	MACCE
	Underwater Cables	C	√	√	√	√	-	√	MACCE
Non-renewable & prospecting	Bioprospecting Development	C	√	√	√	√	-	-	PetroSeychelles
	Deep-sea Mining	X							
	Petroleum Geophysical Surveys, Exploration	C	√	√	√	√	-	√	PetroSeychelles
	Petroleum Exploration, Drilling	C	√	√	√	√	-	√	PetroSeychelles
	Petroleum Development, Production, Extraction	C	√	√	√	√	-	√	PetroSeychelles
Sand Mining	X								
Tourism & Recreation	Anchorage and Mooring Buoys	C	-	-	-	-	√	-	MACCE
	Floating structures	C	√	√	√	√	√	-	MACCE
	Hire craft	C	√	√	-	-	√	√	Tourism Department
	Motorised Activities (Watercraft, Ship)	C	√	√	-	-	√	√	Tourism Department
	Non-Motorised Activities	C	-	-	-	-	√	√	Tourism Department
	Passenger ships	C	√	√	√	-	√	√	SMSA/ Tourism Department
	Tourism Accommodation, marine	C	√	√	√	√	-	√	MACCE
	Tourism Accommodation, terrestrial	C	-	√	√	√	-	√	MACCE
Research	Bioprospecting Research	C	√	√	√	-	-	-	SPS
	Scientific Geophysical Surveys, Research	C	√	√	√	-	-	-	SPS
	Scientific Research and Monitoring	C	√	-	-	-	√	-	SPS
	Hydrographic Surveys	C	√	√	√	-	-	-	SPS

4.3 Enabling policy and regulations

The available existing legislation has been examined and the Nature Reserves and Nature Conservancy Act (2022) (NRNC Act) has been identified as the appropriate legal instrument currently for designation of protected areas. The NRNC Act has objectives to provide for the protection and conservation of landscapes, seascapes, ecological diversity and the sustainable use of biological diversity by achieving an effective and multi-use protected area system that is representative, comprehensive and balanced, thereby maintaining the highest quality examples of ecosystems within the country by engaging all stakeholders.

Once the Nature Reserves and Nature Conservancy Act (2022) comes into force, the Zone 2 medium biodiversity conservation and sustainable use areas will be gazetted as (Marine) Sustainable Use Areas. Until this legislation comes into force, the Zone 2 areas are gazetted using the '(Marine) Area of Outstanding Natural Beauty' category. When enacted, this legislation will provide the principal legislative framework under which sustainable use areas will be managed.

Legal implications

Legislation is needed to gazette SMSP Zone 2 areas in a "sustainable use area" (IUCN VI) category of "protected areas", for a conservation and sustainable uses objective. For Milestone 1, 2 and 3, the SMSP Executive Committee applied the Nature Reserves and Nature Conservancy Act (NRNC Act) for designation. The amended NRNC Act will be used to designate the "sustainable use area" category for "protected areas" with the objective for conservation and sustainable uses.

Regulatory implications

For implementation of the SMSP, the concept of an independent Seychelles Ocean Authority is being explored as per agreement by Cabinet in July 2018 and a final report that was submitted December 2018. A new Seychelles MSP Policy was drafted and approved in 2020.

Draft Allowable Activity tables and management considerations for all areas have been developed through stakeholder consultations and public workshops. With assistance from SWIOFish3, management plans will be developed, including alignment with regulations.

Monitoring, control and surveillance (MCS) is being explored with the Regional Coordination Operations Centre (RCOC), Seychelles Coast Guard, and National Information Sharing Coordination Centre (NISCC).

5. History and Values of the Area

The Seychelles is a small island nation of about 115 tropical islands (both granitic and coralline) with a population of approximately 98,000 people (United Nations 2022⁶), mostly living on the Inner Islands. Located in the western Indian Ocean northeast of Madagascar, the country is widely known as a large ocean state with an Exclusive Economic Zone (EEZ) of 1.4 million km² and a land area of 459 km². The Farquhar Archipelago is in the south of the Seychelles EEZ near the border with Madagascar, covering 14,482 km² and representing 1.07% of the total EEZ area.

5.1 History of the site

While there is little information on the pre-settlement environment of Farquhar Archipelago, more recent history is of resource exploitation for agriculture, fisheries and military development. From 1814, Farquhar was ruled by Britain as part of the Colony of Mauritius, and was transferred to the Colony of Seychelles in 1921. From 1924 to 1965, Farquhar Atoll was leased by various

⁶ <https://population.un.org/wpp/>

entities before it again became detached from Seychelles as part of the British Indian Ocean Territory (BIOT) in 1965 along with Desroches, Aldabra and Chagos. On independence in 1976, Farquhar Atoll was returned to Seychelles jurisdiction for a nominal fee of 30 rupees.

The islands of the Farquhar Archipelago were historically managed for agriculture and coconut plantation, and traditional harvest of fish and marine turtles. Seabird colonies were exploited to extinction and export of their guano for potash became the main industry in the early 20th century. Copra then became the main export as farming continued, but cyclone damage and the distance from Mahé limited progress in competing with plantations in the Amirantes and Coëtivy. The Area has never had a large human population, and towards the end of the 19th century, there were 100 people living on Farquhar Atoll (the only populated island).

In 1980, the Islands Development Company (IDC) took over management of Farquhar Atoll on behalf of the government. Traditional agriculture, fish and marine turtle harvest were becoming economically unviable, and attempts at diversification, such as the live reef fishery that exported live groupers to Hong Kong (1998-1999), was eventually discontinued as unsustainable. Tourism has steadily become the major use and source of income for the Area, and an airstrip and accommodation were constructed on Farquhar Atoll in the 1990s. Farquhar Atoll was managed under a Protected Area Management Plan from 2018–2022 and key elements have been incorporated into this Management Plan.

The rationale for proposing the Farquhar Archipelago Sustainable Use Area for biodiversity and sustainable use is based on the moderate to high marine biodiversity values and importance of the Area for sustainable uses and activities that support the Seychelles' economy and culture. The Area is important for the sustainable economic development of fishing, tourism, and other sectors as well as research activities.

5.2 Surrounding features

The Farquhar Archipelago Sustainable Use Area lies ~770 km southwest of Seychelle's capital Victoria on Mahé Island. It comprises the most southerly islands (~270 km northeast of Madagascar) in the country, and along with the Aldabra group of atolls to the west and the Amirantes to the northeast, these three groups comprise the Outer Islands of Seychelles.

The Area is included within the Madagascar and Indian Ocean Islands (MADIO) Hotspot, which covers four countries (the Comoros, Madagascar, Mauritius, and Seychelles) and is characterised by very high biodiversity with high rates of terrestrial and marine endemism. The MADIO Hotspot covers a set of extremely varied habitats, resulting from climatic variability and geological differences (CEPF 2022).

Seychelles' ocean ecosystem is impacted by the Indian Ocean Gyre, and mostly influenced by the eastward flowing Equatorial Counter Current and the two westward flowing currents, which are the North Equatorial Current and South Equatorial Current during the Northwest trade wind. During the Southeast monsoon, the Equatorial Counter Current and North Equatorial Current disappear and major currents that drive the circulation within Seychelles region are the South Equatorial Current and the Somali Current (ASCLME 2012a).

To the southwest of the Farquhar Archipelago, the nearby island of Madagascar extends over 1,500 km from north to south and is separated from the African continent by the Mozambique Channel (by ~400 km at its narrowest point) (CEPF 2022). The South Equatorial Current influences the northern regions of the island, adjacent to Farquhar Archipelago (ASCLME 2012b).

To the west, the Comoros Archipelago is located at the northern entrance to the Mozambique Channel, between east Africa and north-western Madagascar. The three islands that make up the Union of the Comoros are isolated from each other by deep sea trenches (CEPF 2022).

The rest of the Seychelles extends north-northeast of the Farquhar Archipelago, and includes Amirantes to Fortune Bank to the north and Cosmoledo and Astove Archipelago to the west. Forty two granite islands rise from the Seychelles Bank, forming the northern arc of the Mascarene Ridge, and over 113 coralline islands (sand cays, islands and atolls), scattered across the inner island group. Soft bottom habitats are the most extensive habitat type found around the coast of Seychelles, including the Outer Islands. These soft bottom habitats provide feeding grounds for seabirds (including migratory species), and habitat for most of the demersal fish caught in Seychelles (ASCLME 2022a).

5.3 Values

The Area contains 47 biodiversity features, 19 of 44 national habitat conservation features, 42% of atoll sea level rim, and 23% of atoll sea-level lagoons in the Seychelles (2019 SMSP nomination file, Government of Seychelles 2019a). It is an area with important biodiversity values, multiple commercial and recreational uses and aspirations to increase eco-friendly activities in the future. The deep-water areas surrounding the Farquhar atolls are important for marine charters, domestic fishing, recreation and tourism (ASCLME 2012a).

5.3.1 Ecological

The Seychelles archipelago is a globally recognised biodiversity hotspot including 2,489 km² of coral reefs across its 1.35 million km² EEZ (Government of Seychelles 2014). The Farquhar Archipelago contains 160 km² of coral reefs, seagrass meadows and a mosaic of shallow water habitats that provide critical habitat for many marine species, and are important nursery grounds for reef fish, invertebrates, marine turtles, and manatees. Fishing grounds are abundant and home to a wide variety of species. Marine and coastal biodiversity has been fundamental to the socio-economic development of the Area (Government of Seychelles 2014).

The Farquhar Archipelago contains six shallow water habitat types and atolls with healthy populations of lagoon and reef fish. In deep waters, it includes canyons, seamount and mountains and includes Bulldog Bank, Wizard Reef, and part of the Anton Bruun Rise. A westward, equatorial current flows along the bottom portion of the Seychelles EEZ (Government of Seychelles 2019a).

Farquhar lagoon is considered one of the most topographically complex in the world. The only entrance is a narrow channel near the northern tip, so water flows in and out over the reef during tidal cycles. At low tide, reef flats form a network of shallow pools, channels, sandbars and banks, where extensive seagrass beds and shallow-water coral stands support high densities of crustaceans, molluscs, other invertebrates and fish. The slow-growing massive and encrusting corals *Porites* and *Montipora* predominate at Farquhar, which have demonstrated considerable resilience to thermal bleaching events in 1998 and 2016 (ICS & IDC 2018).

5.3.2 Species of conservation interest

The Farquhar Archipelago contains 28 of 38 species conservation features: 8 bird species, 13 cetacean species, 9 deep water habitats, 6 shallow water habitats, one BirdLife Important Bird and Biodiversity Area (IBA), seagrass beds, turtle nesting and foraging habitats, and one WIOMER⁷

⁷ Western Indian Ocean Islands Marine Ecoregion

site (WWF 2016). All cetacean species use the same habitat area, except sei whales and Risso's dolphin that use a smaller percentage of the Area (Government of Seychelles 2019a).

Pelagic fish species found in the Area include flying fish, tuna and billfish, large sharks, marine mammals and foraging seabirds found in offshore waters. The main channel and west of the atoll are spawning aggregation sites for three species of grouper and two species of triggerfish (Robinson et al. 2004, Bijoux et al. 2013, Government of Seychelles 2019a). The size and number of groupers, snappers and trevallies are among the highest in the Indian Ocean. For example, the numbers of Napoleon wrasse (*Cheilinus undulatus*) and bumphead parrotfish (*Bolbometopon muricatum*), both listed as threatened on the IUCN Red List (Russell 2004 and Chan et al. 2012, respectively), are particularly numerous, and the density of Napoleon wrasse may be the highest in the world (Friedlander et al. 2014).

Aggregations of mobulid rays are known from some sites within the Area. Reef manta rays (*Mobula alfredi*) are found in higher numbers in the Amirantes Island group but do venture down to the Farquhar group (Peel et al. 2020), and stingrays are present in good numbers, and spinner dolphins (*Stenella longirostris*) are regularly seen (ICS & IDC 2018, Government of Seychelles 2019a). Whale sharks (*Rhincodon typus*) also occur seasonally within the Area, and reef associated species such as the Scalloped hammerhead (*Sphyrna lewini*) and Great hammerhead (*Sphyrna mokarran*) are more permanent.

Within Farquhar Atoll, the northern bay of Ile du Sud is a nursery for lemon and blacktip reef sharks, neither of which are common in the Farquhar Archipelago. Larger sharks have been uncommon or rare in the Area, but their numbers may be increasing slowly. Species of oceanic sharks such as silky shark (*Carcharhinus falciformis*), blue shark (*Prionace glauca*), oceanic white tip (*Carcharhinus longimanus*) and thresher sharks (Alopiidae) are also found in the Area.

Endangered green turtles (*Chelonia mydas*) and critically endangered hawksbill turtles (*Eretmochelys imbricata*) nest on the islands within the Area, with higher numbers of green turtles nesting compared to hawksbill turtles. The area also has regular sightings of several whale species including sperm whale (*Physeter macrocephalus*), humpback whale (*Megaptera novaeangliae*), orcas (*Orcinus orca*), short-finned pilot whales (*Globicephala macrorhynchus*), and melon headed whales (*Peponocephala electra*). Blue whales and other large whales have also been documented transiting through the Area, but little is known about their ecology and migration.

Hérons, seabirds and shorebirds are also attracted to the rich food resources in the lagoon, which is an important foraging ground for seabirds and adult and juvenile marine turtles. The lagoon is an important foraging area for black-naped terns (*Sterna sumatrana*), with Farquhar Atoll having the largest known colony (c.140 pairs) in the African region. The atoll is recognised as an Important Bird and Biodiversity Area (IBA) (ICS & IDC 2018, BirdLife International 2019).

5.3.3 Social and cultural (including recreation)

The Farquhar Archipelago Sustainable Use Area is generally recognised as a distant Outer Islands destination of the Seychelles with high aesthetic, social and cultural values. Recreational uses of the Area for pleasure include sailing, SCUBA diving and fishing by Seychellois and international visitors. There are also some historic shipwrecks⁸ in the Area that present diving opportunities, such as 'L'Heureuse', a 400 tonne French barque that sank south of Providence Island in 1769, and the 'St. Abbs' which wrecked on the reefs of Juan de Nova in 1860 (ICS & IDC 2018, Government of Seychelles 2019a).

⁸ <https://nation.sc/archive/241396/our-treasure-at-the-bottom-of-the-sea?>

Sooty tern eggs have been a seasonal component of the island diet for residents of Farquhar Atoll for many decades, with important cultural and social values for subsistence use.

The islands and atolls in the Farquhar Archipelago Sustainable Use Area also provide important “safe harbour” anchoring for artisanal fishing and charter vessels visiting the Outer Islands (ICS & IDC 2018, Government of Seychelles 2019a).

5.3.4 Economic

Seychelles has a high-income economy with one of the highest GDP per capita in Africa (World Bank⁹), founded on two marine sectors – fishing and tourism – both of which are important in the Outer Islands, including in the Farquhar Archipelago.

Tourism contributed 39.2% of total GDP in the Seychelles in 2019 and 21.9% in 2020 despite the global pandemic (WTTC 2021¹⁰), and is expected to be a key driver of post-pandemic recovery and to contribute 48% to GDP by 2028. These national trends are expected to be reflected in the Outer Islands and atolls that support nature-based tourism and recreation including marine charters, SCUBA diving, snorkelling, sport fishing, wildlife watching, cruise passenger ships, and other forms of recreation, which are important economic activities.

The Farquhar Archipelago Area is important economically. Marine-based tourism is by far the most common economic activity taking place in the area. Tourism in the Area focuses around the islands and atolls, particularly Farquhar, Providence and Cerf islands (ICS & IDC 2018, Government of Seychelles 2019a). In 2021, the Seychelles fisheries sector generated SCR 5.28 billion from the export of fish and fisheries products, that came mostly from the industrial fisheries sector. Expenses by the industrial fisheries sector amounted to SCR 2.46 billion. Even though, industrial fisheries are not allowable activities in the Farquhar Archipelago Sustainable Use Area, the site does support semi-industrial, artisanal, sports and recreational fisheries, as well as subsistence fishing.

Farquhar is an internationally recognised destination for saltwater fly-fishing with up to 12 fly-fishing guests per week during the peak season from September-May. Species targeted in the Farquhar Atoll reef flats include bonefish (*Albula vulpes*), giant trevally (*Caranx ignobilis*), milkfish (*Chanos chanos*), triggerfish (*Balistoides spp.*) and permit (*Trachinotus blochii*). It has been reported that guests pay as high as USD 14,000 per week to flyfish in the area due to its exclusivity, pristineness, and high population of some of the most sought-after fly-fishing target species. A recent assessment of the economic and social importance of the Seychelles’ sport and recreational fishery indicated that an average of USD 9.6 million is spent annually in the outer islands’ recreational fishery, for which the Farquhar Archipelago is one of the key sites.

Despite of its remoteness, semi-industrial and artisanal fishing vessels occasionally fish within the Farquhar Archipelago Sustainable Use Area. Artisanal fishing vessels going this far south are schooners that targets snappers, emperors, and groupers. Semi-industrial vessels target tuna and tuna-like species using pelagic longlines, and those operating in the sea cucumber fishery target sea cucumbers on reefs and shallow banks.

There is limited mariculture in the Area, with Seychelles Fisheries Authority (SFA) removing 6-8 brood groupers per season from spawning aggregations for private-enterprise fin-fish farming in the Inner Islands (ICS & IDC 2018, Government of Seychelles 2019a).

⁹ <https://www.worldbank.org/en/country/seychelles/overview>

¹⁰ <https://www.statista.com/statistics/1256977/contribution-of-travel-and-tourism-to-gdp-in-seychelles/>

The Area also supports some petroleum exploration and development, and although there are limited seismic surveys in the Area, there is interest in future geological research, surveys and exploration by PetroSeychelles in collaboration with Madagascar (ICS & IDC 2018, Government of Seychelles 2019a).

5.3.5 Research and education

Research provides key information on the values of the Farquhar Archipelago, an improved understanding of what is 'natural' as a benchmark for monitoring programs, and facilitates a better understanding of the short and long-term impacts of human activities.

The value of research and education is that it can improve understanding of and appreciation of the Farquhar Archipelago Sustainable Use Area, and therefore respect for the management strategies and actions. In addition, as a remote Outer Islands location, the Farquhar Archipelago can provide a natural laboratory to study the response of species and ecosystems to global threats. Friedlander et al. (2014) reported a reef ecosystem where corals may have lost their role as major reef engineering species, but fish biomass and assemblage structure is comparable to unfished reefs elsewhere around the world. Coral cover and overall benthic community condition at Farquhar Atoll was poor, likely due to a combination of limited habitat, localised upwelling, past coral bleaching, and cyclones. Farquhar Atoll harbors a relatively intact reef fish assemblage with very large biomass (3.2 tonne per ha) reflecting natural ecological processes that are not influenced by fishing or other local anthropogenic factors. The most striking feature of the reef fish assemblage is the dominance by large groupers, snappers, and jacks. The high abundance and large sizes of parrotfishes at Farquhar Atoll also appears to regulate macroalgal abundance and enhance the dominance of crustose coralline algae, which are a necessary condition for maintenance of healthy reef communities. Remote islands like Farquhar Atoll, with low human populations and limited fishing pressure, offer ideal opportunities for understanding whether reefs can be resilient from global threats if local threats are minimised.

6. Current Uses

The Farquhar Archipelago Sustainable Use Area is being used for multiple economic activities such semi-industrial, artisanal, and recreational fishing that makes use of different types of fishing gears including pelagic longlines, droplines, hand gathering, handlines, and rods which use a variety of tackles and lures. The area is an internationally recognised destination for saltwater catch and release fly-fishing, blue-water fishing, snorkelling, SCUBA diving, and wildlife watching (Government of Seychelles 2019a). The different current uses of the area are provided below.

6.1 Commercial Fisheries

Industrial fishing (vessels over 24 meters length) does not occur in the Farquhar Archipelago Sustainable Use Area as all industrial fishing vessels are excluded from this area as per Regulation 5a of the Fisheries Regulations (2012; Cap 82). However, semi-industrial and artisanal fisheries are allowed.

Three types of **semi-industrial fisheries** operate in the Farquhar Archipelago Sustainable Use Area. These include the semi-industrial longline fishery, dropline fishery and sea cucumber fishery. Vessels operating in these fisheries are owned by Seychellois, but the work force is mainly foreigners (from Sri Lanka longline fishery and from Madagascar for sea cucumber fishery). Due to the long distance from the Inner islands, much lower level of semi-industrial fishing activities take place in this Area compared to the Amirantes to Fortune Bank Sustainable Use Area.

The **semi-industrial longline fishery**, targets tuna and tuna-like species. Increasingly, vessels in the fishery are making use of the southern part of the Seychelles EEZ in search of better catch. In 2021, there were 41 licensed semi-industrial vessels in operations, which took a catch of 1,758 Mt within the Seychelles EEZ that was mainly dominated by yellowfin tuna (89%) and swordfish (6%). It is currently not known what percentage of semi-industrial longline fishing trips come to the Area and the contribution of the Area to the total catch. The semi-industrial longline fishery continues to expand in terms of the number of vessels and the area that is fished. Most of the catch from this fishery is exported as fresh tuna on ice.

The **dropline fishery**, targets deepwater fishes along the edge of plateaux and banks. They target species such as the Crimson jobfish (*Pristipomoides filamentosus*), Deep-water red snapper (*Etelis carbunculus*), other snappers and groupers. Though permissible in the Area, it is unclear how often such type of fishery is undertaken and what contribution they make to total catch. Catch from the dropline fishery supplies both local and export markets.

The **sea cucumber fishery** is a closed fishery with 25 non-transferable fishing licenses. The fishery is open annually between 15th September and 15th June. Effort restrictions apply with each vessel allowed up to four divers and one apprentice. Licensed vessels collect sea cucumbers on reefs and shallow banks throughout the Seychelles EEZ including in the Farquhar Archipelago. According to management measures in place, fishers must request permission from the SFA to collect sea cucumbers in areas south of the Amirantes. The total catch in 2021 was 334,904 pieces from the three species allowed to be retained. It is unclear what percentage of the annual catch usually comes from the Farquhar Archipelago Sustainable Use Area. Most of the catch from this fishery is dried and exported to Southeast Asia. In 2021, SCR 92 million of dried sea cucumbers were exported.

Artisanal fishing in this area is undertaken by schooners from the Inner islands. The fishery targets mostly demersal species. Not a lot of artisanal fishing trips are made to the area due to long distance and associated costs and reported loss in quality and value of fish kept on ice for extended periods. Vessels that fish in this area are often attracted by large numbers and size of the various groupers, snappers and emperors that are caught.

Subsistence fishing continues as a means to support inhabitants (workers and guests) on the islands.

The Farquhar Archipelago Sustainable Use Area supports a range of commercial fisheries, including semi-industrial fishing for tuna and demersal finfish species, and limited mariculture for grouper brood stock. Species caught around the Outer Islands (including this Area) are not considered top quality and are mostly sold to factories for processing.

Brood-stocks of three mariculture species (*Epinephelus polyphekadion*, *E. fuscoguttatus* and *Plectropomus punctatus*) are sometimes extracted from a spawning aggregation site in the area. The level of harvesting is low and has thus far only been used for trials in the SFA hatchery on Mahé. No further mariculture activities are envisaged in this Area by the SFA.

Illegal fishing takes place for reef fish and sea cucumbers, largely by foreign vessels. Although successful prosecutions and confiscations have taken place, the scale of the problem is unclear due to the remoteness of the Area, with most reports of illegal fishing coming from the Seychelles fishing fleet. The Outer Islands have long been subjected to poaching of seabird eggs, marine turtles, and dolphins. Despite being illegal, Seychellois and foreign fishing vessels still take marine turtles to supplement diet and income (ICS & IDC 2018).

6.2 Maritime Infrastructure (and use)

There is a small settlement on Île du Nord of Farquhar Atoll (~20 inhabitants), with a guest house dedicated to the fly-fishing sector (for ~12 guest at a time), staff facilities, generator, desalination plant, small slipway, radar station, jetty, and an airstrip. The settlement had to be rebuilt after Cyclone Fantala destroyed all infrastructure on the island in 2016. There are also abandoned villages on Île du Sud, and an abandoned jetty and ruined settlement on St Pierre Island.

Additional infrastructure under development on Île du Nord includes a new radar system, managed by the Seychelles Coast Guard, a new 'Grann kaz' or colonial house (a historic monument that will be used as a museum), and a new Conservation Centre for research, which may include laboratories to support ICS research programs¹¹.

The IDC constructed an airstrip on Providence Island in 2019, and is in the process of constructing additional infrastructure on the island, including a small guesthouse for fly-fishing and 2 bungalows specifically designed for Seychellois to encourage local tourism¹². None of the islands within this area have a jetty. Merchandise to the islands within the area are delivered using shallow hull beach crafts that are beached on the islands.

6.3 Tourism & Recreation

The Outer Islands support nature-based tourism and recreation including motorised activities (bare boats, skippered marine charters, super yachts, private yachts and power boats), non-motorised activities (SCUBA diving, snorkelling, kayaking, surfing), recreational fishing either through a paid charter service or privately (sport fishing that includes fly fishing and game fishing), wildlife watching (for whales, dolphins, reef sharks, manta rays and seabirds), and cruise ships. These are all important economic activities, many with a focus on ecotourism that depends on sustainable marine ecosystems. Tourism in the Area focuses around the islands and atolls, including Farquhar, Providence, St Pierre and Cerf islands. Although tourism to the Farquhar Archipelago is increasing, the Outer Islands remain largely unexplored.

Farquhar Archipelago supports sportfishing (primarily fly fishing for bonefish, giant trevally, milkfish, triggerfish and permit) and Farquhar Atoll is an internationally recognised lagoon fly fishing destination. Up to 12 fly fishing guests can stay per week during the peak season from September-May. Lagoon fly fishing (mostly catch and release), has been the mainstay of Farquhar Atoll's tourist operation for many years, with visitors hosted in a guest house in the Île du Nord (Farquhar Atoll) (ICS & IDC 2018). New villas, facilities and a wind farm are planned on the island, although the intent is to keep visitor numbers low and the activity sustainable. In addition, charter companies (live-aboard boats) visit the Area for fly fishing, including to the other islands of Providence and St. Pierre. The Farquhar Atoll Management Plan had limited visitation by charter fishing boats to a maximum of 10–15 visits per year and 8–14 people maximum at any time. Private yachts also visit by arrangement with IDC. Fly fishing is very popular with international visitors, and has maintained profitability over the years.

Other tourists (non-anglers) to the Area are generally low, although the lagoon at Farquhar Atoll is a popular anchorage for transiting yachts and schooners.

¹¹

<http://www.seychellesnewsagency.com/articles/10800/+years+after+devastating+storm%2C+major+infrastructures+on+Seychelles%27+island+of+Farquhar+have+been+rebuilt>

¹² <http://www.idcseychelles.com/news/providence-boasts-new-airstrip>

6.4 Non-renewable/resource extraction

Oil and gas seismic surveys on the Outer Islands have been limited to date, however, geological and geophysical surveys have been undertaken since the 1970s to explore and define the limits of the continental shelf, and for energy resources. Petro Seychelles is currently working with various private companies to conduct exploratory drilling in various parts of the Seychelles EEZ. The deep-water areas near Farquhar Archipelago Sustainable Use Area are of interest to PetroSeychelles as a potential source of oil (ICS & IDC 2018, Government of Seychelles 2019a).

Several statutory mechanisms are in place to minimise impacts from oil and gas surveys or extraction, including vessels not operating within 5 km of the coast, protocols to minimise disturbance to marine species (e.g. marine mammals), full Environmental and Social Impact Assessments (ESIA) before an exploration permit will be granted, and an oil spill contingency plan approved by government (UNDP 2012).

6.5 Research and education

The Farquhar Archipelago Sustainable Use Area has limited current research or education activities. Research at Farquhar Atoll is conducted under Island Conservation Society (ICS) programs, and has mostly focused on long-term projects monitoring sea surface temperature and coral reefs, and a turtle research program (ICS & IDC 2018). There have also been focused expeditions to assess seabird populations, vegetation and soil status, and the geology of the Area. Routine monitoring focuses on nesting marine turtles and seabird colonies, collectively recognised as an IBA¹³.

Geological scientific research has been proposed by PetroSeychelles for regional seismic surveys and exploration, in collaboration with Madagascar.

A Conservation Centre was established by ICS in 2014 on Ile du North (Farquhar Atoll), under the Outer Islands Protected Area Project to assess and monitor biodiversity. However, Cyclone Fantala destroyed all infrastructure in 2016 and the center was not rebuilt. Education briefings are delivered for all visitors when renting yachts, and other environmental interpretation and awareness is provided by charter vessels taking out SCUBA divers and snorkelers, and large passenger cruise ships provide lectures that include some environmental sessions.

7. Implementation and Governance

Effective implementation of this Management Plan will require a single coordinating agency to enable monitoring and evaluation, adaptive management, efficient stakeholder engagement and inter-agency coordination.

The Seychelles Oceans Authority Bill (SOA Bill) sets out the mandate of the Seychelles Ocean Authority (SOA) as an independent, coordinating and strategic management body that is responsible for managing the Areas designated through the SMSP process and to deliver on the overarching SMSP objectives. The key functions of the SOA are review and adaptive management functions, coordination, engagement, and developing relevant policy (see Appendix D). In general, the SOA will have the mandate for the overall SMSP and is empowered to require implementing agencies to report on the implementation on a regular schedule and in a standardised format, for example, agencies such as the Seychelles Coast Guard. The SOA will also provide oversight and expertise in matters of marine governance (e.g. Areas Beyond National Jurisdiction, EEZ boundaries, the Joint Management Area with Madagascar, Port State Measures

¹³ <http://www.islandconservationseychelles.com/farquhar.html>

Agreement, designation of Particularly Sensitive Sea Areas, Oceanographic research and application of the Maritime Zones Act).

The SOA is not an implementing entity and direct 'on ground' implementation of management plans and policy will be undertaken by delegated authorities that manage sectors or areas within the SMSP. Co-management arrangements will enable this function with a range of delegated authorities, for example, the Seychelles Coast Guard, Seychelles National Parks Authority, Seychelles Fishing Authority, Islands Development Company, Seychelles Island Foundation, Island Conservation Society, Nature Seychelles and others, including the private sector, which may assume specific co-management roles.

The SOA will be empowered under the Seychelles Ocean Authority Act to coordinate and oversee adaptive management of the Seychelles Marine Spatial Plan. Presently, the SOA Bill is drafted and needs approval from Cabinet and the National Assembly.

The Seychelles Ocean Agency has been established as an interim agency to progress the SMSP and prepare for the independent SOA.

7.1 Implementation barriers

In addition, there are potential barriers that have been identified as part of the issues prioritisation process with stakeholders that could compromise effective implementation of the Management Plan. These are listed below and linked to priorities issues from Section 5.3.

Accessibility

Farquhar Archipelago is in a remote location, which poses a logistical challenge to effective management. Supplies and equipment need to be transported long distances and access by managers and delegated authorities for monitoring, compliance and enforcement also faces similar challenges.

Stakeholder stewardship

Management experiences in other marine protected areas in the Seychelles have proven the importance of engaged stakeholders familiar with the values of the Area and the role they play in the condition of the ecosystem. The Management Plan strives to develop an engaged public constituency through transparent decision making, equitable access and directly engaging them in issues and concerns involving the Area. However, there are limited opportunity to enable local stakeholders to experience the Area, limiting their appreciation and sense of ownership.

Funding and other resources

Effective implementation requires adequate financial and human resources to maintain management. It is proposed that permit fees paid by commercial users (e.g. tourism operators) will be one of the sources of income to support management of the Area.

Awareness and education

Management experiences in other marine protected areas in the Seychelles have proven the importance of aware stakeholders and users familiar with the values and regulations in the Area and their responsibilities. The Management Plan strives to develop an informed public constituency. However, there are limited opportunity to enable local stakeholders to experience the Area, limiting their appreciation and sense of ownership.

7.2 Implementation and governance considerations

Implementation of this Management Plan and ongoing governance recognizes that there are established systems and frameworks in the Seychelles for many of the functions that will be required. **Existing agreements and instruments** remain in place for Farquhar Archipelago until SMSP regulations, governance structures and committees, and a national permits system is established. These existing agreements and their management strategies have been considered in the development of this Management Plan and the strategies align with the management and conservation intent of these instruments.

A co-management approach is essential to effectively implement this Management Plan, and will include relevant agencies to implement through the delegated authorities group, nominally a **multi-sectoral representative management committee** and an independent Complaints and Resolution body, both assembled by the Seychelles Oceans Authority (SOA). The establishment of the independent SOA is key to implementation and governance of the SMSP.

The management actions outlined in Section 4 identify that all commercial activities should be managed under a **transparent and equitable national permit system**. As such, the protected area permit system will need to consider these activities and align with the line agencies issuing permits for these activities (e.g. SBS, SMSA, PetroSeychelles). For example, there is an established system under the SFA for issuing fishing licenses, and rather than having two permit/license systems that increase the bureaucracy for stakeholders, the intent is to design the protected area permit system to incorporate existing systems. Some adjustments may be required to existing systems to account for Sustainable Use objectives and spatial requirements, however, a streamlined single process for applicants is recommended.

The foundation of the design is based on providing a framework for existing license/permit systems that explicitly considers the Sustainable Use (Zone 2) goals and objectives and the allowable activities conditions through a spatial lens. It aims to avoid duplication and deliver a One-Stop-Shop for applicants. Individual agencies remain responsible for assessing permits for their areas of jurisdiction, however, the initial permit application screening and issuing of permits would be administered by a multi-sectoral representative committee assembled by the Seychelles Oceans Authority (SOA). This would ensure that all permit applications are assessed against Sustainable Use (Zone 2) goals and objectives, any permits issued incorporate allowable activities conditions, and permits have a spatial endorsement for activities.

This Management Plan recognises that sustainable fishing is essential to meet the goal and objectives of sustainable use (Zone 2) areas, but acknowledge that fisheries management is primarily the responsibility of the Seychelles Fishing Authority (SFA), with management implemented through Fisheries Regulations, license conditions and fisheries management plans. However, currently there are no fisheries management plans that apply to the Outer Islands, or management plans to address sport fishing and fly fishing. In order to address the issues raised and solutions proposed by stakeholders during the consultative process, **interim fisheries actions** have been included that are temporary until such time as fisheries management arrangements are finalised. It is intended that these interim strategies will be reviewed, and responsibility transferred to the management committees responsible for overseeing the implementation of specific fisheries management plans as and when these are developed and come into force.

7.3 Reporting requirements

Seychelles Government agencies responsible for environmental management required to produce annual reports of their activities and reporting requirements are included in the draft

legislation for the SOA. This requirement would be met through the reporting framework developed for the Performance Measurement Framework (section 8.2). In addition, it is recommended that every five years implementation progress and effectiveness of this Management Plan be reported for all Sustainable Use Areas that synthesises the management efforts throughout the region, the status and trends in ecological, social, cultural, and economic values, progress towards achieving management objectives, and future challenges and threats.

8. Performance Measurement Framework

The Performance Measurement Framework (PMF) has been designed to measure performance against the Farquhar Archipelago Sustainable Use Area Management Plan objectives. The Performance Measurement Framework (PMF) will provide managers and decision makers with a systematic process to measure and report on Management Plan progress towards achieving the Goal and Objectives. Importantly, the PMF provides transparency by measuring and publicly reporting on the performance of the Management Plan in ensuring the long-term sustainability of Farquhar Archipelago, which is a community owned resource. The PMF includes indicators to measuring progress of both *management actions* and *key results*, and trigger levels and decision rules that provide guidance about limits of acceptable change, and the actions to be taken when changes exceeding these limits are detected. The PMF will provide a measure of protected area management effectiveness.

Indicators

An indicator is a quantifiable measure that is used to track progress toward an intended result. In the case of this Management Plan, the indicators selected followed the principles of SMART indicators (Specific, Measurable, Achievable, Relevant, Timebound) to ensure that they are useful in measuring Management Plan performance, and can detect trends in both implementation (*actions*) and changes in the system (*key results*). Collectively, the indicators create an analytical basis for decision-making and help focus on measures that matter most in meeting the management objectives.

Trigger Levels and decision rules

Trigger level define the value of the performance indicator that relates to some pre-agreed threshold or *limit of acceptable change*. A trigger level represents an undesirable point or state and represents the point at which a management response should occur. The PMF defines trigger levels for each performance indicator selected for the Cosmoledo and Astove Sustainable Use Area Management Plan. Once a trigger level is exceeded, a predefined *Decision Rule* provides guidance about the required management action.

8.1 Developing the Performance Measurement Framework

In development of the PMF, consideration was given to the management objectives, the priority issues identified by stakeholders for the Area, the availability of data, and the resources available to analyse and publicly report outcomes. A Technical Working Group was formed to provide guidance about selecting the best indicators, data availability, and trigger levels. When selecting indicators, key factors considered included data availability, simplicity and practicality, and the resources available to analyse and publicly report outcomes. An extensive list of indicators has been developed (an indicator 'bank'), but not all indicators are intended to be implemented immediately. Some indicators can be adopted and monitored within one year of the Management Plan commencing (Phase 1 indicators). These are mostly 'action' indicators that measure what management has been implemented. Meanwhile, other indicators should be adopted and

implemented within 5 years (Phase 2 indicators), and within ten years (Phase 3 indicators). These Phase 2 and Phase 3 indicators are mostly ‘key results’ indicators, which measure changes in the system that may require longer time scales for results to become apparent. Importantly, these indicators also tend to be more costly and complex, and thus a longer period is required to establish programs to monitor them.

The process used to develop and apply the PMF for the Farquhar Archipelago Sustainable Use Area Management Plan is outlined in Figure 6, and the details of the indicators are provided in Appendix E.

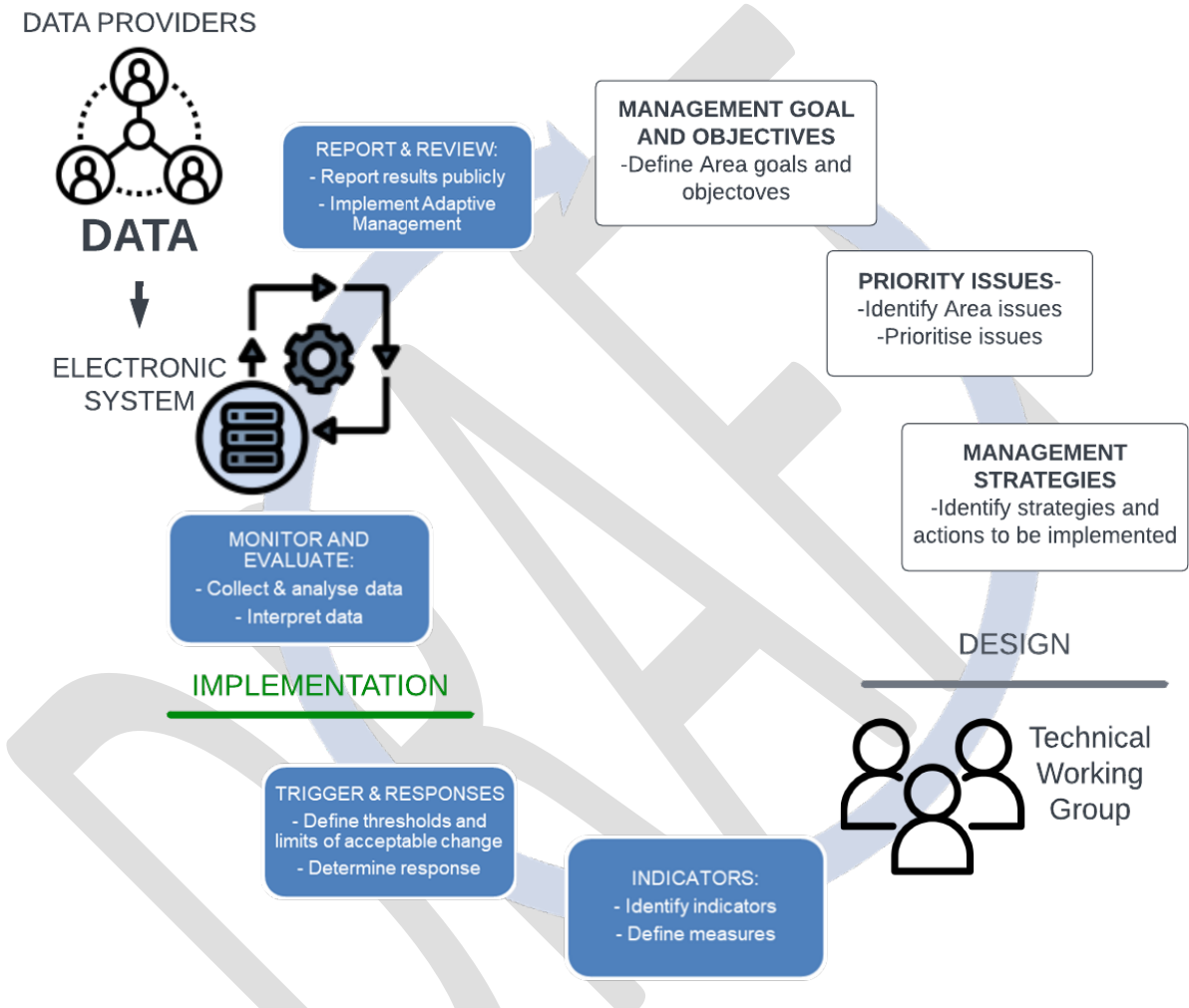


Figure 6. Process for developing the Farquhar Archipelago Sustainable Use Area PMF and applying the system.

8.2 Key indicators and reporting frameworks

Farquhar Archipelago Sustainable Use Area has 28 indicators across the ecological, social and cultural, economic, and governance dimensions of the Management Plan (Appendix E). Indicators are grouped into different Phases, with Phase 1 indicators being those that can be implemented immediately, and Phase 2 and Phase 3 indicators should be activated over the next 5–10 years.

Trends and patterns in relevant indicators will be reported in annual reports by the Seychelles Ocean Authority, and in a five yearly synthesis report about the status and trends across a larger scale (scale to be determined by SOA). Annual reports will focus on the *action* indicators that describe the implementation of management activities, while five-year synthesis reports will

describe trends and patterns of both actions and key results indicators. For both annual and five-yearly reports, any exceedances of trigger levels will be clearly identified and a response to address the exceedance documented.

The annual and five yearly reporting schedule provides transparency about Management Plan implementation by publicly reporting on management actions being implemented and the state of the Area. Additionally, by including clear trigger levels and decision rules, the PMF provides transparency about the expected actions and outcomes that should occur through this Management Plan, and the corrective actions to be taken if these expectations are not achieved.

9. Compliance and Enforcement

Compliance and enforcement are essential components of effective management. These components help to ensure that the agreed upon strategies and actions for managing a shared resource are adhered to by all stakeholders. Without adequate compliance and enforcement, adherence to agreed rules may rapidly deteriorate (Ostrom 2008). Fisheries management plans are often complemented by Monitoring, Control, and Surveillance (MCS) programs to ensure fishers comply with fishing regulations. Spatial management plans, however, tend to include a much broader suite of activities and user groups, and thus commonly have Compliance and Enforcement Plans that accommodate a broader spectrum of user groups, uses, and risks.

To ensure the effective implementation of this Management Plan, there needs to be an adequate compliance and enforcement effort. Compliance and enforcement are two separate processes that work in combination to ensure that resource users follow the rules.

Compliance activities are actions that assist or induce users of a shared resource to comply with the actions for how the shared resource can be accessed and/or used. These actions can include education programs to ensure people know what the rules and requirements are, programs and initiatives that help people follow the rules (e.g. marking special areas on digital charts; creating knowledge networks to share information about rule changes or demonstrate that people breaking the rules have been appropriately penalised), or management systems such as permit systems that provide access privileges that are conditional upon certain standards and behaviours, and where non-compliance can result in the loss of these privileges.

Enforcement activities are actions to detect, apprehend, and sanction users who are breaking the rules. Enforcement activities align with fisheries MCS systems in that they monitor use of the resource, exert control over use by deterring non-compliance, and conduct surveillance to detect illegal activities. However, enforcement is a broader concept than just monitoring, control and surveillance as it needs to cover all the different users of the shared resource and linked systems (e.g. Environmental & Social Impact Assessments for marine infrastructure), and could extend to working with the judiciary in prosecuting offenders.

These two components work together to ensure that users follow the agreed rules as shown in the compliance pyramid (Figure 7), which shows that resource users can have a range of attitudes towards compliance. Typically, most users are willing to comply, indicated by the broad base of the pyramid. To ensure that resource users do the 'right thing', authorities should focus on helping these users to comply with the rules (education, support, and monitoring). Where users are non-compliant, regulatory responses should escalate with prosecution and legal proceedings applied for repeat offenders, high-impact breaches, or where mandated by law. An effective compliance and enforcement plan ensures that all users are aware of the rules and regulations, are supported and even rewarded for complying with the rules, and where non-compliance is quickly detected and acted upon to ensure offenders change their behaviour. Prompt corrective

action also acts as a deterrent for others considering non-compliance. As enforcement efforts and legal prosecutions are very costly, it is preferable to ensure that the majority of users comply with the rules and regulations which further highlights the importance of compliance activities.

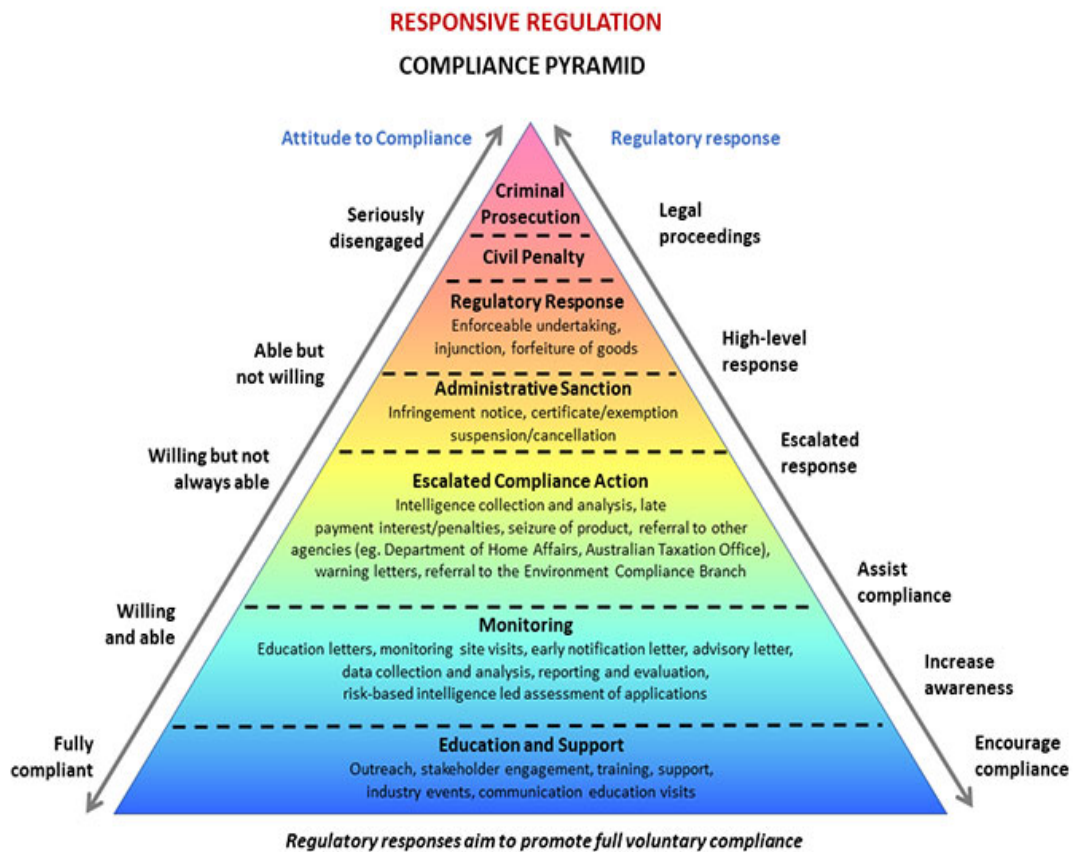


Figure 7. Compliance pyramid showing the range of potential user attitudes towards rules and regulations, the recommended management response, and the range of regulatory enforcement responses to drive compliance. Source: Australian Government Department of Climate Change, the Environment and Water (2023).

Compliance and enforcement are complex tasks that require strategic coordination across all delegated authorities responsible for implementing this Management Plan. This Management Plan includes numerous actions to facilitate an effective compliance and enforcement program, Strategy 4 of the Management Plan includes actions to establish governance arrangements that would support inter-agency and stakeholder coordination, develop and implement a risk-based compliance and enforcement plan, and reporting. Strategy 6 includes an action to raise awareness with users about and values of the Area and the management measures. Implementing the Performance Measurement Framework will document what management actions have been implemented and the results of these actions.

9.1 Monitoring and surveillance

Monitoring and surveillance are crucial elements of enforcement, but can be challenging to implement across large areas of ocean. A scoping study has been completed to explore the options available for monitoring and surveillance of the Sustainable Use (Zone 2) Areas such as the Farquhar Archipelago. These areas are vast open ocean that present significant challenges to traditional monitoring and surveillance platforms such as patrol vessels and aircraft. Alternatively, remote platforms such as satellites provide a more cost-effective means for monitoring and

surveillance over these large areas. Numerous satellites platforms are available (each with unique benefits and drawbacks), but satellites are capable of generating a lot of data on the way an area is being used, and about compliance/non-compliance patterns. Advances in machine learning and artificial intelligence (AI) can significantly improve data processing. For example, analysing vessel movements against known 'signatures' to automatically code a vessels' activity and assess its compliance. Importantly, while satellites can provide non-stop surveillance, they cannot be detected from the surface and thus vessel crews may need to assume they are always under surveillance, providing a potential deterrent effect. Meanwhile, unmanned aerial vehicles and radar systems may also be effective for shorter range, targeted monitoring and surveillance. While detection range remains a limiting factor for these technologies, advances in design warrant further investigation, and these platforms could be effective assets in targeted shorter-range roles (e.g. scouting for a patrol vessel, collecting video evidence to support a prosecution).

Meanwhile, the Seychelles Government already has legislation and systems in place – vessel monitoring system for fishing vessels and the National Information Sharing and Coordination Centre (NISCC) – that provide a firm foundation for developing an effective compliance and enforcement program. The scoping study recommends a dedicated effort to combine and integrate multiple data streams including satellites, sensors, and AI, through the NISCC to monitor usage patterns for a year to conduct a strategic threat analysis and understand current use patterns and signatures. Further exploration of targeted surveillance platforms such as unmanned aerial vehicles is also recommended.

Monitoring and surveillance need to be integrated into the Farquhar Archipelago compliance and enforcement plan to detect any illegal activity and facilitate an enforcement response to intercept and cease the illegal activity. And sufficient sanctions and penalties need to be imposed by the judicial system to provide a deterrent to subsequent non-compliance.

10. Management Plan Review Process

This Management Plan identifies strategies and actions over a five-year period from 2024–2028. This is a living Management Plan with proposed annual progress reviews of the implementation of strategies and actions coinciding with budgeting the following year. The annual review will identify issues affecting implementation, resourcing and expenditure, and emerging threats and issues of concern and exceedance of trigger levels arising from the PMF indicators (see Section 8). This will inform adaptive and responsive management. Annual work and monitoring plans will be prepared by the delegated authorities and budgeted as noted above.

This 5-year Management Plan will be reviewed at the halfway point (late 2026) and evaluated and updated at the end of the 5-year period (2028). This 2028 five-year review will include feedback to stakeholders and consultation with stakeholders regarding implementation. Status of the key performance measurement indicators for the Area and efficacy of management strategies will be reviewed and assessed as part of the 5-year evaluation.

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Appendix A: International obligations

International obligations to relevant management and conservation of ocean resources

As a signatory to various international conventions, the Seychelles is committed to sustainably managing their marine and coastal ecosystems, including protecting 30% of their marine EEZ. The most relevant international obligations include:

- The 1994 **UN Convention on the Law of the Sea** (UNCLOS) which aims to regulate all marine activities in any area of the sea and “provides legal basis upon which to pursue the protection and sustainable development of the marine environment and its coastal resources”. Signatories to the convention are obligated to conserve and manage the living marine resources under their jurisdiction.
- Convention of Wetlands of International Importance, Especially as Waterfowl Habitat (**Ramsar Convention**) of 1971 aims to stem the loss of wetlands worldwide especially those that are important for migratory waterfowl. It defines wetlands as fresh, brackish, and saltwater marshes, including marine waters up to 6 meters in depth at low tide and any deeper marine waters contained within the wetland area. The Seychelles became a signatory to the Convention on Wetlands (RAMSAR) in March 2005. The first Ramsar site to be designated in Seychelles was the Port Launay Mangrove on Mahé in November 2004, and there are two other Ramsar site – Aldabra and Mare Aux Cochons on Mahé.
- Seychelles was the second country to sign the **Convention on Biological Diversity** (CBD) in June 1992 and became a party that same year. One of the CBD Aichi targets is “10% of coastal and marine areas are effectively conserved by 2020” (Strategic Goal C, target 11). It provides for the establishment of protected areas where special measures are to be taken to conserve biological diversity and the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings.
- Seychelles is a signatory to the **United Nations 2030 Agenda for Sustainable Development** founded on 17 Sustainable Development Goals (SDGs). The SDGs (or Global Goals for Sustainable Development) are a collection of 17 goals set by the United Nations in 2015. The goals are broad and interdependent, yet each has a separate list of 169 targets to achieve. The SDGs of relevance include SDG12 Responsible Consumption and Production, SDG13 Climate Action, and SDG14 Life Below Water. SDG14 has a target of 10% marine and coastal protection by 2020.
- Seychelles was the first country in the Western Indian Ocean to declare commitment to a Blue Economy with the signing of the **Abu Dhabi Declaration** (January 2014).
- FAO Agreement on Port State Measures (PSMA) (2016), first binding international agreement to specifically target illegal, unreported and unregulated (IUU) fishing. Its objective is to prevent, deter and eliminate IUU fishing by preventing vessels engaged in IUU fishing from using ports and landing their catches.

Appendix B: Draft Allowable Activities, codes and definitions

The ‘Master List of Uses and Activities’ is a list of uses, activities and terms with their descriptions in support of the Seychelles Marine Spatial Plan as it pertains to Allowable Activities tables, Management Considerations, and other outputs of the SMSP. The list and definitions began in 2014 with the launch of the SMSP and have been updated on an on-going basis as other SMSP outputs were developed and revised. The list of definitions has been developed with all stakeholders including SMSP committees, technical working groups and topic experts. The descriptions are not intended to define thresholds or acceptable intensity of use because this varies from place to place and is, or may be, determined by management plans and/or regulations. Wherever possible, a published or authoritative description or definition is used; those without a source are a local or general description of the use or activity.

Table A1. SMSP Zoning Design DRAFT Allowable Activities Table: Sustainable Use (Zone 2) areas. Legend: A – Allowable; C – Conditional; X – Prohibited. See Code Table A2 for superscript numbers.

Sectors	Marine Activity	Zone 2 Nov 2022	Notes
Fisheries	<i>Aquaculture</i>	C ^{1,5}	
	<i>Aquaculture Coral Farming</i>	C ^{1,5}	
	<i>Artisanal Fishing (multiple gear types)</i>	C ^{1,5}	
	<i>Fly Fishing, blue water</i>	C ^{1,5,7,12}	
	<i>Fly Fishing, lagoon</i>	C ^{1,5,7,12}	
	<i>Industrial Pelagic Longline</i>	C ^{1,5,13,17}	
	<i>Industrial Purse Seine (free school)</i>	C ^{1,5,13,17}	
	<i>Industrial Purse Seine (floating objects, DFAD)</i>	C ^{1,5,13,17}	
	<i>Industrial Purse Seine (supply vessel)</i>	C ^{1,5,13,14,17}	
	<i>Recreational Fishing</i>	C ^{1,5}	
	<i>Semi-industrial Hand Gathering</i>	C ^{1,5,17}	
	<i>Semi-industrial Hook & Line</i>	C ^{1,5,17}	
	<i>Semi-industrial Longline</i>	C ^{1,5,17}	
	<i>Sport Fishing (multiple activities)</i>	C ^{1,5,7,12}	
	<i>Subsistence Fishing</i>	C ^{1,2,5}	
Maritime Infrastructure	<i>Ballast and Bilge Dumping</i>	X	
	<i>Bunkering at sea</i>	C	
	<i>Bunkering at sea, Fishing vessel</i>	X	
	<i>Commercial shipping</i>	C ^{5,8}	
	<i>Desalination, boat-based</i>	A	
	<i>Desalination, land-based</i>	C ^{1,3,5}	
	<i>Disposal, dumping, dredge spoils</i>	X	
	<i>Dredging, coastal</i>	C ^{1,3,5,19}	
	<i>Ferries and Transportation</i>	C ^{2,19}	
	<i>Patrols and Surveillance</i>	A ¹⁵	
	<i>Ports, Marinas, Wharves, Jetties</i>	C ^{1,3,5,19}	
	<i>Reclamation</i>	X	
	<i>Renewable Energy, deep water thermal</i>	X	
	<i>Renewable Energy, solar (marine)</i>	X	
	<i>Renewable Energy, tidal</i>	C ^{1,3,5,19}	
	<i>Renewable Energy, wind (offshore)</i>	C ^{1,3,5,19}	
	<i>Renewable Energy, wave</i>	C ^{1,3,5,19}	
<i>Underwater Cables</i>	C ^{1,3,5}		
Non-renewable & prospecting	<i>Bioprospecting Development</i>	C ^{1,3,5}	
	<i>Deep-sea Mining</i>	X	
	<i>Petroleum Geophysical Surveys, Exploration</i>	C ^{1,3,5,8,10}	
	<i>Petroleum Exploration, Drilling</i>	C ^{1,3,5,8,10}	
	<i>Petroleum Development, Production, Extraction</i>	C ^{1,3,5,8,10}	
<i>Sand Mining</i>	X		
T o t a l	<i>Anchorage and Mooring Buoys</i>	C ^{1,2,4,5,19}	

Sectors	Marine Activity	Zone 2 Nov 2022	Notes
	<i>Floating structures</i>	C 1,3,4,5	
	<i>Hire craft</i>	C 1,5,16,20	
	<i>Motorised Activities (Watercraft, Ship)</i>	C 1,5,11,16,20	OIP jet skis - X
	<i>Non-Motorised Activities</i>	C 1,5,19	
	<i>Passenger ships</i>	C 1,3,4,5,20	
	<i>Tourism Accommodation, marine</i>	C 1,3,5	
	<i>Tourism Accommodation, terrestrial</i>	C 1,3,5	
Research	<i>Bioprospecting Research</i>	C 5,6	
	<i>Scientific Geophysical Surveys, Research</i>	C 1,3,5,6,8	
	<i>Scientific Research and Monitoring</i>	C 5,6,8,9,20	
	<i>Hydrographic Surveys</i>	C 1,3,5,6,8,9	

Table A2. SMSZ Zoning codes for allowable activities (updated 22 November 2022 with comments from SC23 and TWG16). The codes in this table apply to the numbers in the Allowable Activities in Table 4 for the SMSZ Zone 2 areas. Coding comes from regulations, scientific studies, government reports, unpublished studies, expert advice and/or best available information. Stakeholders have been involved in the development and refinement of the restrictions and codes since 2015.

Code #	Codes for Allowable Activities
1	See General Management Considerations. Approved management plans needed including Environment Impact Assessment (EIA)/Environmental and Social Impact Assessment (ESIA), where applicable.
2	See definition of Subsistence Fishing. Subsistence fishing is intended to serve staff at facilities or with essential infrastructure for the zone, including enforcement. Need quotas and monitoring of any species harvesting. Subsistence is intended to apply only to island residents and non-commercial activities, and does not apply to hotel guests, commercial activities including fishing vessels, paying guests. Needs management plans in some cases. In Zone 1, if there is a private residence or research and commercial, subsistence fishing is not allowable.
3	Development proposals require a transparent and participatory process with all stakeholders. May or may not require an environmental impact assessment (EIA)/ Environmental and Social Impact Assessment (ESIA). See #1.
4	Permanent mooring buoys recommended, where practical. Anchor in designated areas.
5	Restrictions may apply to avoid or minimise disturbance on key species and ecological functions.
6	Government approved permit required for research and monitoring activities.
7	Restrictions or prohibitions on gear or technique may apply. Catch and release may be required, depending on species targeted. Some techniques may be prohibited, such as popping.
8	All vessels conducting seismic surveys must have necessary functioning acoustic equipment and adequately trained operators to detect the presence of cetaceans to avoid and minimise detrimental effects at all times during operation in accordance with strict, international published scientific guidelines for minimising disturbance to cetaceans (e.g. JNCC Guidelines for Marine Mammals 2017).
9	Allowable in Zone 1 only for scientific surveys (e.g., data collection and bathymetry, not extraction).
10	Exploration and development phases must adhere to strict standards for the sector incl. health, safety and environment
11	Jet skis are prohibited in Marine National Parks (Zone 1) and in Desroches, Poivre, Alphonse and Farquhar Archipelago Zone 2 (see Outer Islands Project).
12	In accordance with bag limits, catch limits, rod limits and other gear, catch or fishing effort restrictions found in regulations, policies, management plans, or international conventions and agreements. Reporting requirements and catch & release best practices (e.g. NOAA catch & release).
13	Foreign-owned fishing vessels must adhere to Seychelles Fisheries Act, Part IV Fisheries Management, Reg. 5, First Schedule: <i>Zones where Fishing by Foreign Vessels is prohibited</i> . The area of the zones described in this Schedule are shown in red lines on charts ML/ADN/73B deposited in the office of the Director of Surveys. These zones are indicated on the MSP maps as double blue lines.
14	No setting or deployment of drifting Fish Aggregating Devices (dFAD). To pick up DFADs so as to avoid or prevent them grounding or landing on islands, atolls, offshore rocks. To recover grounded dFAD.
15	Maritime safety and security in accordance with Seychelles Maritime Safety Authority (SMSA), Seychelles Defense Forces (SDF) and other relevant delegated authorities.
16	The number of activities offered by hire craft may be limited, depending on the area's objectives.
17	Fisheries observers, electronic monitoring systems (EMS), vessel monitoring systems (VMS), and FAD management required; no FAD deployment for purse seine or longline in Zone 1. <u>Note</u> : A FAD management plan (2022) includes impacts and FAD vs free school sets (SFA)

18	Automatic Identification System (AIS) needed for navigation. Note: Direction to use or not use AIS may change in relation to piracy or other security and safety threats in Seychelles.
19	To provide essential access and/or infrastructure for the zone, including enforcement. In consideration when the impacts to marine environment may be less than the impacts to the terrestrial environment. Includes jet skis and other watercraft.
20	Jet skis and other motorised devices such as underwater scooters and motorised paddleboards are prohibited except where authorised for research or essential services (see #19)

Table A3. Seychelles MSP Initiative (2022) Master List of Definitions for Allowable Activities Tables – Uses and Activities. DRAFT. Seychelles Marine Spatial Plan.

Marine Activity	Description of the Use or Activity in Allowable Activities Tables <i>(with source, where noted)</i>
Part A. Fisheries	
Aquaculture	The cultivation, propagation, or farming of fish, and includes cultivation, propagation or farming from eggs, spawn, spat or seed, or by rearing fish taken from the wild or imported into Seychelles, or by similar process, and the collecting and holding of live fish, and includes both inland aquaculture & mariculture in the marine environment. (draft revision Fisheries Act 2022)
Aquaculture, coral planting	
Artisanal Fishing (multiple gear types)	These fisheries use small, motorised boats. Targets fish on the sea floor (demersal), semi-pelagic species and numerous invertebrates at different times of the year using a variety of gear and vessel types: handline, trap, harpoon and net for lobster, mackerel, octopus, shark, demersal fish, and semi-demersal fish.
Fly fishing	A sport fishing method in which artificial fly is cast by use of a fly rod, a reel, and a relatively heavy oiled or treated line. (SFA common fisheries terms). The weight of the line is used to cast a very lightweight fly that would not be heavy enough to be cast with a conventional spinning or casting rod.
Fly fishing, blue water	Fly fishing that occurs in blue water or open sea, also called offshore fly fishing. Fishers generally target big game or pelagic species using special teasing technics to land fish similar to the conventional fishermen’s landing while Big Game Fishing (M. Cosson).
Fly Fishing, lagoon	Fly fishing in a shallow body of water separated from the ocean by sandbars, barrier island, or coral reefs (National Geographic). Fly fishing on the beach, lagoon, and ocean flats, reef flats, inner flats, pancake, finger flats. It is done on foot or from a boat with or without the use of an engine or a push pole. This method is highly dependent on the depth of the water and species being targeted (M. Cosson).
Industrial Pelagic Longline	The use of fishing gear in which short lines (branch lines or droppers) carrying hooks are attached to a longer main line at regular intervals. Pelagic longlines are suspended horizontally at a predetermined depth with the help of surface floats. The main lines can be as long as 100 km and have several thousand hooks. Droppers on demersal longlines (set at the seabed with weights) are usually more closely spaced (IOTC). Pelagic longline refers to a drifting longline consisting of a mainline kept near the surface or at a certain depth by means of regularly spaced floats with relatively long snoods with baited hooks evenly spaced on it (SFA common fisheries terms).
Industrial Purse Seine (free school)	Industrial purse seining is a method of fishing targeting tuna schools using purse seine nets. Purse seine nets are a long wall of netting framed with a lead line and a float line. A purse line threaded through purse rings spaced along the bottom of the net is drawn tight (pursed) to stop the school of fish escaping downwards under the net. Usually undertaken by fleets from foreign origin. (SFA common fisheries terms). Free school means fishing on a free-swimming school of tuna without the use or association with FADs (atuna.com)
Industrial Purse Seine (floating objects, drifting FAD)	An industrial purse seine fishery using floating objects or FADs (fish aggregating devices) fishes on anchored, drifting, floating, swimming or submerged objects or group of objects, of any size, that has or has not been deployed, that is living or non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, logs, whales and whale sharks that fish may associate with (IOTC).

Marine Activity	Description of the Use or Activity in Allowable Activities Tables <i>(with source, where noted)</i>
Industrial Purse Seine Supply Vessel	Also known as support vessels or auxiliary vessels, these vessels are not equipped with any fishing gear but assist one or several purse seiners in the detection of tuna schools and the management of the stock of artificial fish aggregating devices (FADs) and buoys used to locate both natural floating objects (LOGs) and FADs. Activities of support vessels related to fishing include the building and deployment of FADs, the visit of LOGs and FADs, the transfer of buoys, and the retrieval of FADs and buoys. In addition, support vessels also contribute to increasing the fishing time of the purse seiners they assist through the transport of persons and materials and repairing operations (Assan et al. 2015)
Recreational Fishing	Fishing of aquatic animals that does not constitute an individual's primary resource to meet basic nutritional needs and are not generally sold or otherwise traded on export, domestic or black markets (FAO 2012 Technical Guidelines for Responsible Fisheries No. 13). Catching fish as a sport (UK sports fishing definitions). In the Seychelles, the recreational fishery sub-sector is active mostly on weekends and in the evenings. These recreational fishers utilize mostly handline fishing techniques, targeting demersal species such as groupers, snappers and lethrinids, and semi-demersal species such as carangids and sphyraenids (FAO fishery Country Profile).
Semi-industrial fishing (hand gathering, hook & line, longline)	The semi-industrial longline is a local fishery targeting tunas, swordfish and other pelagic fish using monofilament longline (SFA). Semi-industrial longline vessels in Seychelles voluntarily fish off the Mahé Plateau. The fishery extends to the Outer Islands as far as the Aldabra Group.
Sport fishing (multiple activities)	<p>Any fishery undertaken for sport or recreation which involves the hiring, chartering or leasing of a vessel not exceeding 40 metres in length overall but which does not result in the trading, offering for sale or selling of fish (SFA common fisheries terms).</p> <p>A form of fishing practiced inshore, offshore and onshore. This fishing activity may be practiced as either part of a tournament for prizes or for recreational purposes. When part of a competition the fishery might have an array of rules such as catch and release stipulations or type of bait (Matthieu Cosson).</p>
Subsistence Fishing	<p>Fishing where the fish caught are shared and consumed directly by the community, families and kin of the fishers but which does not result in the trading, offering for sale or selling of fish (SFA common fisheries terms; approved July 2022 by MSP).</p> <p>Subsistence fishing occurs throughout Seychelles. Subsistence fishing is fishing for personal consumption or traditional/ceremonial purposes (Source: OECD 2001).</p> <p>Subsistence fishing refers to fishing, other than sport fishing, that is carried out primarily to feed the family and relatives of the person doing the fishing. Generally it also implies the use of low tech or artisanal fishing techniques and is carried out by people who are very poor. Subsistence fishing can catch a large variety of species but generally only those relatively close to shore or in fresh water. Issues with subsistence fishing include problems of contamination in the food and struggles to access the resource. Very rarely is there a problem of a subsistence fishery threatening a fish stock. In some parts of the world, there are a variety of issues related to the definition and competition between different resource users (World Fisheries Trust 2008).</p> <p>A study on Perception of Subsistence and Informal Fishers in South Africa Regarding the Management of Living Marine Resources had these key elements of subsistence: dependence on fishing to survive, not relying on other sources of income, living close to the resource, and harvesting fish to eat or sell in order to meet basic food requirements, using low technology gear (as part of a cultural or traditional practice) and relying on the harvest to meet nutritional needs (Source: Rudman and Nieman, Duke University 2022).</p>
Part B. Maritime Infrastructure	
Ballast and Bilge Dumping	Ballast water is used to improve ship's stability, and the sea water is exchanged while at sea, and sometimes at port. Ballast water transport micro-organisms, including viruses and bacteria, and may contain invasive and non-native species such as tunicates and sponges. Bilge dumping occurs when the contents of a ship's bilge are emptied or flushed into the sea. Bilge water may contain oil and other toxins, as well as invasive species depending on the origins of the bilge's contents.

Marine Activity	Description of the Use or Activity in Allowable Activities Tables <i>(with source, where noted)</i>
Bunkering at Sea	Supplying fuel to ships for their own use. Involves the transfer of fuel from one vessel to another. Bunkering may be needed for Petroleum activities and Scientific Geophysical surveys. Bunkering is not allowable within Seychelles EEZ for commercial fishing vessels (Fisheries Act 2014; not in Revised Draft Fisheries Act 2022).
Bunkering at Sea (fishing vessel)	
Commercial Shipping	The use of maritime vessels to carry goods (The Mary Conlin Company). The International Maritime Organisation (IMO) specifies traffic regulations. In the Seychelles, there are no traffic separation schemes but there are dedicated North and South Approaches as laid down by the IMO and clearly marked on British Admiralty charts No. 740 and 742. Also, there are North and South Reporting Points, Areas to Be Avoided, and Designated Anchorages both inside and outside the Port Limit that have been adopted by the IMO (Seychelles Port Authority). Includes transportation of petroleum during extraction in Seychelles.
Desalination, boat-based	<p>A water purification process that removes salt and other minerals from sea water. Desalination is a common solution to overcome water scarcity that uses different technologies including membrane technology, distillation process (thermal technologies) and chemical approaches. Membrane technologies are the most common and use either pressure driven or electrical driven technology. Pressure driven membrane technologies include reverse osmosis, nanofiltration, ultrafiltration and microfiltration. Reverse osmosis is considered most effective in salt removal. Desalination requires energy and for seawater, pumps may need to generate up to 1200 psi and is a substantial energy use (Source: Journal of Contemporary Water Research and Education 2005).</p> <p>Desalination systems for boats include portable and built in units. Sometimes branded as 'watermakers', desalination systems are used for drinking water, showers, and vessel maintenance like deck washing. The seawater is run through a series of pre-filters and then a high pressure pump moves the water through one or more membrane housing. The brine or wastewater is discharged overboard and the desalinated water is pumped into holding tanks (Cruising World 2019).</p>
Desalination, land-based	Desalination, see above. On land.
Disposal, Dumping, Dredge spoils	Disposal of dredged materials at sea, at designated sites. Or dumping of approved (or not approved) materials into the ocean. Includes dumping of oil, hydrocarbon or plant based.
Dredging, coastal	The removal of mud or sand from the seabed, often done at or near a port to increase the depth of water or to restore it to its previous depth. Dredging is used in Seychelles to improve access to atolls in the Outer Islands through lagoons. Dredging may be necessary or essential in marine protected areas to secure access for research, management, monitoring and enforcement. Dredging may occur for an activity or use in consideration when the impacts to the marine environment may be less than the impacts to the terrestrial environment.
Ferries and Transportation	Passenger carrying vessels that operate between two points of land. In the Seychelles, there are ferries between Mahé, Praslin and La Digue islands. Private ferries also operate within the Inner Islands.
Patrols and Surveillance	In Seychelles this refers to the government fisheries patrol vessels for monitoring, control and surveillance of activities regulated by the Fisheries Act and fisheries management plans.
Ports, Marinas, Wharves, Jetties	Ports and marinas are facilities designed to attract and accommodate commercial vessels or ships, industrial vessels, community, public or private vessels and uses. Includes docks, wharves, piers, ramps, breakwaters, and related structures in harbours, marinas and ferry terminals, and associated marine services (e.g., ways, repairs, food services, pump-out sites, fuel). Structures may be affixed to the foreshore and seabed by pilings or floats, or involve foreshore fill. Includes commercial ports. Includes the marine area that defines a port boundary and also marine transportation areas. Wharves are places that boats tie up to unload and load cargo or people. The wharf typically has front and rear loading docks (aprons) (Global Marina Institute). Jetty is a structure projecting out from the shore; a jetty may protect a harbour entrance (Global Marina Institute). In Seychelles, harbour is Port of Victoria and any bay, roadstead or place within three nautical miles from any coast within the Republic of Seychelles (Seychelles Harbour Act and Seychelles Fisheries Bill).

Marine Activity	Description of the Use or Activity in Allowable Activities Tables <i>(with source, where noted)</i>
Reclamation	The process of creating new land from oceans and other aquatic habitats. In the Seychelles, the first reclamation projects began in the 1960s on the east coast of Mahé for the port and airport expansion. Between 1973-1999, four more reclamation projects brought reclaimed land area to 750 ha. A reclamation project completed in 1999 created another 350 ha (East Coast III).
Renewal Energy, deep water thermal	A set of technologies that use the temperature differential between warm seawater at the surface of the ocean and cold seawater at between 800 – 1000 meter depths to produce electricity (IRENA). Ocean Thermal Energy Coupling, or OTEC, development could be located along edge of a plateau or shelf drop (needs a vertical drop of ~1,000 m) and may be suitable for atolls with steep dropoffs. OTEC is expensive to develop and uses a floating platform with transmission lines (up to 200 MW). Another technology is the DOWA – Deep Ocean Water Application. DOWA uses a system to pipe cold deep water located at depth to a shore-based facility. The water passes through a series of heat exchangers to cool down a closed freshwater circuit network that is connected to infrastructure such as air conditioning for target buildings. The DOWA technology is aimed to achieve a net energy savings as compared to creating energy for cooling from electricity. A DOWA Project was prepared for Port Louis in Mauritius in 2013 to bring 0°-5°C seawater from a depth of 1,000 m from a distance of 7.5 km offshore and through 5.5 km of closed freshwater circuit (Source: AFDB 2013).
Renewable Energy, solar (marine)	The harnessing of solar energy and subsequent conversion into electricity (IEA-ETSAP/IRENA). In the marine context, this includes floating or anchored solar panel farms or arrays. This activity is in shallow water; deep water solar panel arrays were not considered a future activity.
Renewable Energy, tidal	The harvesting of energy created by tidal flows due to flood and ebb currents (IRENA). In Seychelles, tidal energy generation is a potential for the larger atolls only as water moves through the channels in and out of the lagoons.
Renewable Energy, wind (offshore)	The use of ocean-based turbines to harness wind energy and turn it into electricity (IRENA). There is an 8-turbine wind farm on two artificial islands off the east coast of Mahé, installed. The marine context includes anchored offshore wind and projects involving reclamation of land or development of artificial islands.
Renewable Energy, wave	Wave energy converters capture the energy contained in ocean waves and use it to generate electricity (IRENA). The marine context includes floating or anchored wave energy farms or arrays.
Underwater Cables	Underwater lines and structures including, but not limited to those used for flow, transit, distribution or broadcast of water, electricity and telecommunication services for public and/or private purposes. Generally on or under the seabed or anchored to the seabed but may also be suspended in the water column. Includes associated infrastructure and rights of way and/or dredging restriction areas or zones; underwater cables are mapped with exclusion buffers. Underwater cables may require dredging and disturbance of the seabed. There is an underwater cable for fibre optics from Tanzania to Beau Vallon on Mahé.
Part C. Non-renewable Resources & Bioprospecting	

Marine Activity	Description of the Use or Activity in Allowable Activities Tables <i>(with source, where noted)</i>
Bioprospecting Development	<p>In relation to activities under the scope of the Fisheries Act (revised, draft Nov 2022) means the systematic search for and development of new sources of chemical compounds, genes, micro-organisms, macro-organisms, and other valuable products from fish and entails the search for economically valuable genetic and biochemical resources from fish. (Fisheries Act, draft revised November 2022).</p> <p>The systematic search for biochemical and genetic information in natural sources that can be developed into commercially valuable products for pharmaceutical, agricultural, and other applications (UNDP).</p> <p>This activity includes the search or exploration phase as well as development. If bioprospecting is for scientific, social or cultural research purposes only, see definition for Bioprospecting Research. It is carried out by a wide range of established industries such as pharmaceuticals, manufacturing and agriculture as well as a wide range of comparatively new ones such as aquaculture, bioremediation, biomining, biomimetic engineering and nanotechnology. The benefits include an unexpected variety of products that include chemicals, genes, metabolic pathways, structures, materials and behaviours. These may provide physical blueprints or inspiration for new designs. Criticism aimed at bioprospecting has been addressed, in part, by international treaties and legal agreements aimed at stopping biopiracy and many activities are now funded by agencies that require capacity-building and economic benefits in host countries. Contemporary bioprospecting has multiple goals including the conservation of biodiversity, the sustainable management of natural resources and economic development.</p> <p>See also Bioprospecting Research, non-commercial uses.</p>
Deep-sea Mining	Marine operations associated with extracting minerals and aggregates (including sand and gravel) from offshore areas, as well as related facilities and infrastructure used during mining operations at-sea. Includes mining for polymetallic nodules (e.g., ferromanganese nodules), rock concretions that lie on the seabed sediment (ISA).
Petroleum Geophysical Surveys, Exploration	The search for oil and gas resources using seismic, electrical, gravity, or magnetic data to evaluate the Earth's subsurface (Schlumberger). In Seychelles, licensed concessions are present on and off the Mahé Plateau. Including Methane.
Petroleum Exploration, Drilling	The creation of wells in the ocean floor to locate subsurface oil and gas deposits (Source: Schlumberger)
Petroleum Development, Production, Extraction	Development refers to the phase of petroleum operations that occurs after exploration has proven successful, and before full-scale production. The newly discovered oil or gas field is assessed during an appraisal phase, a plan to fully and efficiently exploit it is created, and additional wells are usually drilled. Production refers to the volume of petroleum produced (Schlumberger). Includes Petroleum shipping, the movement of hydrocarbons on ships. Including Methane.
Sand Mining	The extraction of sand from the ocean floor, typically used to make building materials and for beach nourishment to protect coastlines (World Ocean Review). Sand mining has taken place off the north and west coasts of Mahé.
Part 5. Tourism & Recreation	
Anchorage and Mooring Buoys	Includes anchoring sites and mooring buoys for recreational and small artisanal fishing vessels. Includes temporary vessel anchoring at designated sites, mooring buoys. Does not include docks, wharves, piers, or related facilities in marinas and harbours. Commercial moorings are large, permanent moorings for large commercial vessels, typically associated with a commercial port. They are used by commercial vessels or ships prior to entering a port's shoreside facility. In Seychelles, commercial moorings are heavily used all year round.
Passenger Ships	Passenger ship that is carrying or capable of carrying more than twelve passenger (Merchant Shipping Act 1994). Passenger ship intended to provide passengers with a full tourist experience. All passengers have cabins. Facilities for entertainment aboard are included (OECD).

Marine Activity	Description of the Use or Activity in Allowable Activities Tables <i>(with source, where noted)</i>
Floating Structures	As different from tourism accomodation, marine. Floating structures to support residential accommodation, commercial, and non-profit uses including the service industry. Includes floating homes, restaurants, visitor centres, and entertainment; temporary or permanent. Future floating structures may include vessels or buildings with pontoons. Floating structures do not include those supporting renewable energy infrastrucutre – see renewable energy.
Hire craft	A boat let out for hire for fishing as a sport or for pleasure purposes only and includes the hiring of any craft (Control of Hirecraft Act). Renting or chartering a sailboat or motor yacht and travelling to various coastal or island destinations, or for other marine recreational activities such as fishing. Refers to marine charters, licensed hire craft.
Motorised Activities (watercraft, ships)	Recreational activities aboard any vessel equipped with an engine. Includes recreational vessels such as motorboats, jetskis and sailboats with motors, hovercraft, and submersibles. If the recreational activity needs support from a motorised vessel for it to take place, example SCUBA diving at an offshore reef, it is a motorised activity. See also Watercraft, Hirecraft. For recreational activities involving Fishing see Fishing activities.
Non-Motorised Activities	Recreational activities that don't use an engine or motor. Includes sailboats without an auxiliary motor (electric or fuel), stand up paddle boards, kayaks, snorkeling. If motorised, see "Motorised Activities"
Passenger ships	Means any boat, ship, hovercraft or other water going craft that takes passengers, and refers to vessels used or intended to be used for fishing or related activities (revised Draft Fisheries Act 2022).
Tourism Accommodation, marine	Undersea resorts and hotels that are accessible only via SCUBA (Luck, Encyclopaedia of Tourism and Recreation in Marine Environments). See also Floating Structures.
Tourism Accommodation, terrestrial	Resorts and hotels located on land for tourism activities are included here for any activity that may affect marine species, habitats or ecosystems. May have a coastal or marine component for guest activities, and the marine component falls under the MSP. The law does not allow building below the high water mark. Activities that need to be managed and monitored include sewage discharge, lighting, generator operations, moving fuel containers or fueling.
Part 6: Research	
Bioprospecting Research	Bioprospecting is the search for product/compounds derived from plants, animals, and microorganisms that exhibit useful properties (e.g., plant-based pharmaceuticals, agriculturally important compounds from fungi, natural products such as latex). Many of these products or compounds are mediated by the organism's stress response. An organism's ability to respond to stress enormously influences its survival. There are several approaches to bioprospecting revolving around collection of samples, sample processing/analysis via extraction of compounds or genetic information, and analysis of products for bioactivity or other applications. When working with plants, bioprospectors are extracting RNA, lipids, proteins, and metabolites to unravel the molecular signatures of a plant's response to stress. Plastics researchers may isolate microbes from various environmental sources and test for the ability of the plants or animals to degrade plastic. A new area of research is the combination of these two topics for the study of plastics in the rhizosphere. (source: University Texas). Bioprospecting includes surveying, collection, characterisation, inventories, taxonomic identification, bioassay and genetic sequencing to identify genetic resources and information. It also includes gathering information on associated Traditional Knowledge for the purpose of discovering its commercial value.
Scientific Geophysical Surveys	The use of seismic, electrical, gravity, or magnetic techniques to evaluate the Earth's subsurface (Schlumberger)
Scientific Research and Monitoring	Activities designed to establish or expand knowledge of the marine environment and undertaken by educational institutions, research institutions, surveyors, research companies or consultants. Also includes citizen science, non-profit activities and locally based research and monitoring activities.
Hydrographic Surveys	Scientific research technique used to measure the depth and bottom configuration of water bodies. Vessels primarily use side scan and multibeam sonar (NOAA)

Appendix C: Management actions explanatory text

Summary table of proposed management actions, and the explanatory text for each action. The explanatory text explains the rationale for the inclusion of the action and the intent behind it.

ECOLOGICAL AND BIODIVERSITY OBJECTIVE

Action no.	Proposed management action	Explanatory notes
1.1	Designate anchorage areas (and if feasible provide moorings) to reduce damage to coral reef and seagrass habitats	Damage to important and sensitive habitats was identified as a priority issue by stakeholders, particularly as climate change pressures accelerate. This action aims to protect coral reef and seagrass habitats that are important habitats for many species and are easily damaged by careless anchoring. The location of designated anchorage areas will avoid sensitive coral reef habitats, will be situated where they provide shelter under different prevailing winds weather conditions, and will be mapped for all users of the Area. Noting that in some area where there is extensive seagrass cover, the designated anchorage may be within ephemeral meadows, e.g. around Providence Island. While not mandatory, it is recommended that all vessels anchor in these designated areas whenever possible. The provision of public moorings will depend on need, available resources, and feasibility. High resolution habitat maps for shallow marine areas around many islands already exist and will inform this action to the extent possible.
1.2	Identify and implement fishing limits for high-risk species or during vulnerable life history stages for key species (e.g. during spawning aggregation and nursing periods)	Overfishing, and illegal, unreported and unregulated fishing were identified as priority issues by stakeholders. This action is intended to prioritise species for management that are likely to need it most. High risk species may include species assessed as being overfished or are experiencing levels of fishing that may compromise populations, or species with life history characteristics that make them more susceptible to over-exploitation (e.g. low productivity species). Populations can also be at risk due to certain characteristics of their life cycle that make them more susceptible to over-exploitation. Examples are when a species aggregates together at the same time and place for spawning; when a species traverses through a known migration route; or a species juvenile stage is concentrated in accessible mangrove or lagoon areas and can be heavily exploited. Uncontrolled fishing of high-risk species, especially during vulnerable life history stages could cause species to become rare and could lead to reproductive collapse, a situation when the stock is no longer able to rebuild itself due to various demographic factors including larval limitation and dispersal. This action aims to identify and protect high risk species and vulnerable life history stages. The action requires the development of criteria and a standardised process for identifying relevant species and/or life-history stages and its implementation. Fishing limits might differ among species and could include size limits, bag limits, boat limit, possession limits, gear restrictions, spatial closures, temporal closures, fishing bans, etc. limits. Incorporated in the process would be the identification of research needs for these species and undertaking of research (through the Scientific Committee). The process should be science-based and include the participation of stakeholders.

1.3	Establish no discharge zones for wastewater and ballast water within 2 km of islands and atolls by vessels more than 15 m in length	Marine pollution and lack of biosecurity measures were identified as priority issues by stakeholders. The impacts of wastewater can be significant at local scales if discharged close to sensitive habitats (e.g. coral reefs) and ballast water can introduce non-native pest species into Seychelles waters. The action aims to minimise incidents of wastewater impacts and introduced species through ballast water around islands and atolls, where shallow water sensitive habitats are found. The distance from islands and atolls follows international best practice, to ensure effective protection of sensitive habitats, and the nominated vessel length means the action only applies to larger vessels with more passengers that have holding tanks and can comply with the rules.
1.4	Implement programs to reduce impacts of marine litter and pollution on marine wildlife, e.g. beach clean-ups, awareness campaigns	Marine litter and pollution were identified as a priority issue by stakeholders, as they have negative impacts on marine species and habitats. Documented impacts include entanglement and death of marine wildlife, physical damage to sensitive habitats such as coral reefs, changing species behaviour, and limiting access to beach habitats for nesting. Dispersal simulations indicate that most of the terrestrial marine debris that reaches the beaches of the Seychelles outer islands originates from Southeast Asia and fishing vessels, particularly industrial fishing. This action will help to reduce the risk of marine litter and pollution to wildlife, including marine turtles and seabirds, through organised clean ups (removing the threat) and raising awareness of measures that can be implemented to reduce local sources of litter and pollution.
2.1	Investigate options for management of aggregation sites and ecological corridors for megafauna, threatened and endangered species	Impacts on threatened and endangered species were identified as a priority issue by stakeholders. Many species of marine mega-fauna gather at specific locations or use specific habitat corridors during certain periods of the year for migration, feeding, breeding, calving, or nursing their offspring (e.g. mobulid rays and whale sharks feeding areas, cetacean nursery areas). These aggregation sites and habitat corridors have unique physical characteristics that create favourable conditions for these species. As such, these sites are extremely important in the life history of these wide-ranging mega-fauna, many of which are ecologically important and in low densities. This action is designed to identify and document important aggregation sites and habitat corridors in sustainable use (Zone 2) areas and, where relevant, develop and implement actions to reduce impacts. Implementing this action would require a process to identify these sites and their timing and assess management options suitable to minimise impacts. The very recent release of tracking research results demonstrating the location of hawksbill turtle foraging areas (e.g. Fortune Banks) represents an excellent local case study, whereby the research outcomes could be assessed under this action (once implemented) to determine appropriate management measures.
2.2	Retrieve drifting FADs of high risk to habitats and species	The stranding of drifting FADs (DFADs) from the industrial tuna fishery onto coral reef habitats, lagoons and beaches of islands have been associated with damage of habitats and the entanglement and death of marine species (e.g. sharks, turtles). This action forms part of a suite of measures to reduce the negative impacts of FADs on marine biodiversity. The action proposes to make use of satellite-based real time data to ensure tracking and accountability for all drifting FADs and to intercept and retrieve FADs considered as a high risk of stranding onto shallow marine habitats and on islands or entangling marine wildlife. Its implementation should help to reduce the number of FADs that are stranded

		and their impact on marine biodiversity. The implementation of this action will require the development and implementation of a program for FAD retrieval or the reorganisation of FAD-watch. The adopted program should consider a range of factors including options to improve surveillance, defining and identifying risk levels to inform retrieval decisions, retrieval options, financing options, and cost-effectiveness of options. For example, definition of a 'High-risk' FAD may be one that is drifting towards a reef and/or located near turtle nesting beaches or feeding sites of ETP species. The program should be delivered through an updated national DFAD management plan.
2.3	Remove stranded FADs of high risk to habitats and species	Numerous FADs are stranded on coral reefs, in lagoons and on beaches throughout the Seychelles outer islands. These stranded FADs continue to have negative impacts through physical alteration and destruction of habitats and entanglement of certain species. This action is targeted at removing already stranded FADs to eliminate their continuing destructive impacts. The implementation of this action will require the development and implementation of a program for FAD retrieval (as part of the updated national DFAD management plan) and should consider a range of factors including mapping the location of stranded FADs, defining and identifying risk levels to inform retrieval decisions, retrieval options, options for re-use or safe disposal, financing options, and cost-effectiveness of options. It is expected to be an integral part of the new proposed program for FAD retrieval or the reorganisation of FAD-watch. Its implementation would require collaboration and cooperation between the purse seine fishing sector, the government of Seychelles and other Seychellois entities.
3.1	Promote and contribute to the update of the national FAD management plan to ensure that it addresses national priorities	The Seychelles FAD management plan (2020 – 2022) has not been updated. Some stakeholders are of the opinion that the 2020 – 2022 FAD management plan only covered the minimal conditions of the IOTC and is not ambitious enough in implementing measures to reduce the impact of drifting and stranded FADs on marine habitats and marine biodiversity. This action promotes and supports the updated of the Seychelles DFAD management plan to address the multiple concerns that were raised by stakeholders on the ecological impacts of DFADs on targeted and non-targeted species as well as on habitats resulting from stranding. As part of Resolution 19/02 Procedures on a Fish Aggregating Devices (FADs) Management Plan, Seychelles is required to on an annual basis, review Management Plans for the use of FADs. The SFA would be responsible for leading the annual update of the DFAD management plan. Stakeholders requested for the processes to update the DFAD management plan to be inclusive and transparent and identified this action as a high priority for implementation.
3.2	Require the use of best practice guidelines for catch and release fishing, including fish with signs of barotrauma	This action aims to promote international best-practices in catch and release fishing and for species with specific catch limits with the purpose of maximising the survival of released fish. The action would feed into the Code of Conduct for the concerned fisheries that provides best practice methods for minimising fish stress and injury during the capture, landing, handling and release process, including recognising the signs of barotrauma and understanding swim bladder correction methods for fish release. The action will draw on relevant local and internationally developed materials. Its implementation will require training of fishing guides, charter fishing operators and local commercial fishermen in techniques for handling fishes that are to be released, including relieving symptoms of stress and barotrauma, release

		<p>methods, and the selection and use of fishing gears that result in less injury during fish catching and handling. This approach recognises that most species are vulnerable to barotrauma under certain conditions and that post-release survival can be maximised through appropriate training and adherence to well-developed Codes of Conduct. The Codes of Conduct should also promote the transition of sport fishing towards a predominantly catch and release fishery. This action encourages managing authorities to work with the relevant fisheries sectors (recreational, charter and commercial fisheries) to promote catch and release fishing in recreational fisheries and the release of high-risk species in commercial fisheries. This action is based on awareness, and compliance does not prevent the fisher keeping caught fish, apart from those that might be controlled in current and future fisheries management plans.</p>
3.3	All lagoon fly fishing shall be catch and release only	<p>Lagoon fishing includes all forms of fly fishing that occurs within the shallow waters of an atoll or island lagoon (see Appendix D of the Management Plan). This is a high value activity of great importance to the Seychelles. Most fly fishers selectively target a few iconic species which are photographed and then released. This action will make this common practice mandatory, so that anyone participating in lagoon fly fishing activities must release all fish that they catch, helping to ensure the sustainability and value of the fishery.</p>
3.4	All catch and release fly fishing (lagoon) must use single barbless hooks only	<p>The type of gears that are used for catching fish are important factors in determining the level of stress and injury that a fish suffers during the catching, landing, handling and release process. Certain gears are known to cause physical injuries to fish that reduces their post release survival. As lagoon fly fishing is a predominantly catch and release recreational fishing activity, that relies on having healthy and diverse fish population, it is important to maintain high biomass of the targeted stocks. High biomass would contribute to higher and more diverse catch per unit effort and could contribute to greater customer satisfaction and higher participation. To ensure that fish are released in good condition and have the best chances of surviving to be 'caught again another day', this action makes it mandatory for all forms of fly fishing in the Sustainable Use Zones to be conducted using only one single barbless hook.</p>
3.5	Establish a national training and accreditation scheme for fly fishing (lagoon) guides, with only accredited guides able to lead fishing charters	<p>The Seychelles is internationally recognised as a high quality and sustainable fly-fishing destination. Lagoon fly fishing is a specialised form of fly fishing that is popular in the Seychelles. It usually takes place in shallow, environmentally sensitive habitats such as seagrass meadows. Many of the fish species targeted occur in low numbers and as such needs to be handled appropriately to ensure their survival and continued contribution to the industry. Fly fishers coming to the Seychelles seek high quality experiences and are generally willing to pay higher prices compared to other well-known fly-fishing destinations. The local fly-fishing industry is focused on having smaller, more sustainable numbers of high value fly fishers visiting the Area. This action aims to safeguard that reputation and contribute to ensuring the sustainability of the industry by making it mandatory for only guides that are properly trained and accredited to lead fly fishing charters and/or groups. This action requires the managing authorities to work with an accredited education provider (e.g. the Seychelles Maritime Academy) and the Seychelles Qualification Authority to establish the training program and an accreditation scheme. The implementation of this action could create education opportunities and</p>

		career pathways for Seychellois and could be instrumental in maintaining the country's high ranking as a lagoon fly fishing destination.
3.6	Establish and implement appropriate catch limits and gear restrictions for sport and recreational fishing	Overfishing, and illegal, unreported and unregulated fishing were identified as priority issues by stakeholders. This action aims to promote sustainable fishing practices through managing how much is caught and what methods and gears are used for fishing to avoid negative impacts. This action is a fisheries management measure and applies to local commercial fishing, sport, fly, and recreational fishing. Therefore, it would be expected that the Seychelles Fishing Authority would play a significant role in the development of specific measures under this proposed action, and that management measures may also be included in relevant fisheries management plans (e.g. the outer islands fisheries management plan). It is also expected that implementing this action would involve stakeholder participation. Once established, specific bag limits and/or equipment restrictions will be permit conditions for local commercial fishers, sport, fly, and recreational fishing. Definitions of sport fishing, fly fishing and recreational fishing are as per the Fisheries Regulations. Implementation of this action will require a process including steps such as: identifying sectors and species that may require specific management; identifying appropriate catch limits and gear restrictions; etc.
3.7	Prohibit all fishing in reef passes leading into lagoons between 1st November and 1st March.	The outer islands have spawning aggregation sites that are used by one or multiple species, particularly groupers, during their reproductive periods. Fishing on spawning aggregation sites can be extremely efficient and can easily wipe out the reproducing population and threaten entire stocks. Most of the known spawning aggregation sites in the outer islands are found along reef passes leading into lagoons. For the main species of aggregating groupers, research has shown that spawning aggregations usually form in the months from November to March. The aim of this action is to protect spawning aggregation sites without having to reveal their specific locations. Implementation of this action would require further work to clearly define and document areas that are considered as a "reef pass", as well as identifying candidate species, with recommendations for research as required to inform implementation.

GOVERNANCE OBJECTIVE

Action no.	Proposed management action	Explanatory notes
4.1	Establish a single multi-sectoral representative management committee to provide strategic decision making and oversee implementation	Lack of transparency and accountability in decision making as well as a lack of access for Seychellois to outer islands were identified as priority issues by stakeholders. This action provides for a multi-sectoral co-management committee of diverse representatives to be established to provide strategic guidance and advice for decision making regarding management, and empowered to influence and guide policy and management decisions. To maximise coordination and efficiency, a single multi-sectoral committee would be established for all Sustainable Use (Zone 2) Areas. Establishing this committee aligns with the governance structure described in the Draft Seychelles Oceans Authority Bill. The establishment of the co-management committee should take into account lessons learned from the current co-management approach and committee that oversees implementation of the Mahe Plateau trap and line fishery co-management plan 2019.
4.2	Establish a complaints and resolution framework that involves an independent body	Lack of transparency and accountability in decision making and management of Sustainable Use (Zone 2) Areas were identified as priority issues by stakeholders. This action requires the establishment of an independent formal complaints and resolution mechanism (either new or building on an existing framework) for stakeholders to access if they have a grievance related to Sustainable Use Area management or implementation. This mechanism must be administered by an independent body that is not involved in the use or management of Sustainable Use Areas.
4.3	Establish and implement a transparent and equitable permit system	Stakeholders identified a lack of transparency and equity in decision making as priority issues. This action will help to address these issues by establishing a fair, equitable, and transparent permit system. Under these arrangements, any user who wishes to conduct an allowable activity (Table 4) for commercial purposes will need to apply for a permit. The permit system is intended to be implemented through the Seychelles Ocean Authority which will coordinate permits amongst all implementing line agencies (including recognising and integrating existing licencing/permit systems), creating a single 'one-stop shop' for managing those permits relevant to the Sustainable Use Area. Permit applications would be assessed using a standard assessment process that is clear, equitable, and documented for all stakeholders. The development and implementation of the permit system should also include (1) mandatory compliance with relevant codes of conduct; (2) a process to establish capacity limits for allowable activities that may impact marine habitats and species; (3) a fair process for allocating permits amongst stakeholders; (4) the requirement for an Environmental and Social Impact Assessment (ESIA) as part of the application process for commercial sector activities considered 'high risk' to the environment and other users; (5) a fee structure and guidelines for activity permit applications and ESIA's; and (6) payment of a security bond

		for large maritime infrastructure and commercial projects (those requiring a Class I ESIA) that can be used to remove discarded materials or rehabilitate sites if there is non-compliance with ESIA conditions. Relevant components of the permit system and its establishment are provided through several other proposed actions. These types of arrangements have been in place for many years in many marine parks around the world such as the Great Barrier Reef Marine Park, and will also help to address priority issues including damage to habitats, unsustainable fishing practices, and coastal development.
4.4	Determine capacity limits for allowable activities that may impact marine habitats and species	Risks from habitat degradation, overfishing, oil and gas exploration, and a lack of effective and equitable management were identified as priority issues by stakeholders. This action will initiate a process to determine appropriate limits for the number of permits issued for activities where overuse can impact marine habitats and species. These activities may include aquaculture, fly fishing tourism operators, semi-industrial fishers, sport fishing tourism operators, dredging, ferries and transportation, ports/marinas/wharves/jetties, renewable energy, bioprospecting, mining, petroleum, passenger ships, hire craft, floating structures and yacht tourism. Establishing capacity limits will also help to manage potential future increases in use and visitation to minimise conflict and ensure that the experiences and values provided to users and visitors are maximised and maintained. The process to establish capacity limits will be led by MACCE in consultation with key stakeholders and managing authorities.
4.5	Develop new or review existing Codes of Conduct for allowable activities	The Seychelles Marine Spatial Planning Initiative identified a list of Allowable Activities for each of its three defined categories of zone through a participatory consultation process. Numerous stakeholders have also proposed that Codes of Conduct (including existing codes of conduct and best practices) should be considered in the management plans. To help limit the environmental impacts of the Allowable Activities and optimise the effectiveness of existing codes of conduct, a risk-based process will be initiated to identify which activities require Codes of Conduct, whether Codes of Conduct should be voluntary or mandatory for each activity, and to review existing, or develop new Codes of Conduct as required. These Codes of Conduct will set the norms, rules, responsibilities and behaviours while undertaking the different allowable activities, and will help to ensure that there is no ambiguity among operators about expected standards and behaviours. Codes of conduct that are deemed voluntary will be communicated to all users to encourage them to adopt these standards. Codes of Conduct that are deemed mandatory will be included as permit conditions for permit holders.
4.6	Design and implement a system for allocating permits that is equitable for all stakeholders	Stakeholders identified the need for equitable access to opportunities and fair benefit sharing as priority issues. Economic equity is also a core guiding principle of the MSP process. This action will develop a process to determine how the permits issued for an activity will be allocated amongst permit applicants and will include consideration of existing access arrangements, business viability, and equitable sharing benefits. The allocation process will be led by MACCE in consultation with key stakeholders and managing authorities.

4.7	Establish a financial framework to ensure permit application fees and commercial levies support MPA management and implementation	Lack of capacity and resources for management, compliance and enforcement, research and monitoring, and high cost of managing remote areas were identified as priority issues by stakeholders. This action adopts the 'user-pays' approach where all users accessing the Areas through the permit system and those obtaining commercial benefit from using the Areas should contribute to the costs of its management. This action develops a framework that establishes fee and levy structures and guides the allocation of fees and levies for administration and implementation costs (e.g. management, compliance and enforcement, research and monitoring). The framework will also guide the determination and management of ESIA costs, including bonds which will be held in trust as 'insurance' to ensure that sufficient funds are available to clean up or repair any environmental damage resulting from an activity. The framework will maximise the funds collected to be directed to management, and compliance and enforcement of the Area, and to ensure the use of funds is reported transparently. This action requires managing authorities to explore mechanisms to recover costs and fairly distribute the funds raised through this mechanism to the relevant managing agencies, and report on funding and expenditure. This type of cost recovery mechanism is common in marine parks around the world, and has already been implemented for tourists visiting the existing marine parks in the Seychelles.
4.8	Develop and implement a risk-based Compliance and Enforcement Plan to support implementation and inform co-management agreements	High levels of Illegal, Unreported and Unregulated (IUU) fishing and wildlife poaching were identified as priority issues by stakeholders. In addition, lack of capacity and resources for monitoring, control and surveillance (MCS), and the high cost of MCS were also raised as priority issues. This action aims to develop a risk-based plan for compliance and enforcement that addresses these issues, and supports effective implementation of sustainable use area management plans. The challenge is that the outer islands are remote locations that are difficult to monitor and conduct surveillance, and therefore this action requires co-managing authorities to develop a single risk-based compliance and enforcement plan that is coordinated between all relevant agencies to ensure that the rules and requirements of Sustainable Use Areas are adequately enforced. A risk-based approach aligns with global best practice and requires ongoing collection of compliance data to direct enforcement efforts to where it is most likely to reduce the highest risks (including where and when to deploy surveillance). A risk-based approach also serves to ensure limited enforcement capacity is used where its most needed. The compliance and enforcement plan should include a review of options to support the cost-effectiveness of the plan, including: making use of existing surveillance infrastructure and systems, identifying and assessing existing technology, and identify new and emerging technologies to monitor these areas. The plan should also incorporate processes for identifying options for regional coordination and diplomacy to address IUU originating from overseas countries.
4.9	Optimise use of surveillance and detection technologies for monitoring and management of illegal activities	Poaching and Illegal, Unreported and Unregulated (IUU) fishing were identified as high priority issues that urgently need to be addressed in sustainable use (Zone 2) areas. The challenge is that these activities occur in remote locations that are difficult to monitor and conduct effective and timely surveillance. This action directs the managing authorities to examine existing technology and identify new and emerging technologies to monitor

		activities, and optimise the way these technologies are deployed to enhance surveillance and detection of illegal activity. This action will help to optimise the success of the compliance and enforcement plan, and address poaching and IUU fishing.
4.10	Develop and implement a financial framework to support management that includes sustainable funding mechanisms	Lack of capacity and resources, lack of funding, and the high cost of monitoring, control and surveillance were all identified by stakeholders as priority issues in sustainable use (Zone 2) areas. Lack of funding and resources is a key barrier to effective management, and implementation of sustainable use management plans will be ineffective if there are not enough resources to implement effective compliance and enforcement. This action aims to identify and secure funding and resources to ensure that sustainable use area management and compliance and enforcement can be effectively implemented, and will include strategies for obtaining funding and guiding the allocation of funding across the different implementation components.
5.1	Establish a scientific committee to provide technical advice, coordinate and facilitate research and monitoring activities, and oversee the research permitting processes	Lack of knowledge and awareness about sustainable use areas, particularly the outer islands, was identified as a priority issue by stakeholders, which compromises informed and effective management. Management needs to understand the state of the ecosystem, the biological processes that sustain it, and the way sustainable use areas are accessed and used to implement strategies that protect biodiversity and allow for sustainable use. This action requires that a Scientific Committee made up of suitably qualified individuals is established (aligned with existing relevant bodies) to provide strategic guidance and coordination of research efforts, oversight of research access and research permit processes for all Sustainable Use (Zone 2) Areas. To maximise coordination and efficiency, a single Scientific Committee is recommended for all Sustainable Use (Zone 2) Areas. The oversight of coordinated research and integration of findings will ensure that management of sustainable use areas remains adaptive. Establishing this Scientific Committee aligns with the governance structure described in the Draft Seychelles Oceans Authority Bill and is intended to build on existing national scientific advisory groups.
5.2	Develop and implement a Research & Monitoring Strategy for marine Sustainable Use Areas	Lack of knowledge and awareness about sustainable use areas, and limited research and conservation focus were identified as issues by stakeholders. This action aims to develop a National Research and Monitoring Strategy for marine sustainable use (Zone 2) areas to guide activities that ensures management is based on the best available science that addresses key knowledge gaps. The National Research and Monitoring Strategy will be developed through a consultative approach to identify key information needs, the priority research that needs to be undertaken, and the approaches to ensure that research is collaborative, multi-institutional and multi-disciplinary. Research priorities for the sustainable use areas need to form an integral part of a National Research and Monitoring Strategy with site specific as well as national scale priorities and monitoring specific to support the Performance Management Framework for sustainable use areas. Once developed, the Research Strategy will be managed by the Scientific Committee (see related action) that will be responsible for providing technical advice, coordinating, and facilitating research and monitoring activities, and providing oversight of research permitting processes.

SOCIAL AND CULTURAL OBJECTIVE

Action no.	Proposed management action	Explanatory notes
6.1	Implement education and awareness programs to raise awareness of the values of the Area and management measures to protect them	Lack of local awareness about the values and importance of Sustainable Use (Zone 2) Areas was identified as a priority issue by stakeholders. This action aims to develop and implement a strategy and programs to help users and Seychellois understand biodiversity, social and cultural values, threats and the need for management of sustainable use areas, how people are using these areas, and the rules that apply to the sustainable use areas, including educating people of the rationale for rules. This increased awareness and understanding is important for increasing compliance with management plan rules. A critical part of education and awareness is developing programs that are specifically targeted to different stakeholders and user groups, and to provide for easy access to information as it becomes available (e.g. new research findings).
6.2	Protect marine sites that have important cultural, archaeological or historic value, and manage them for their potential to support tourism	Lack of local awareness about the values (including cultural, archaeological or historic) of Sustainable Use (Zone 2) Areas was identified as a priority issue by stakeholders. Such values in sustainable use (Zone 2) areas include ship and airplane wrecks, lighthouses, and other structures. Many artefacts of historic value in sustainable use (Zone 2) areas have not been located or identified and are therefore not being preserved. The appropriate documentation and preservation of these artefacts of historic value, and when possible, identifying opportunities to generate revenue from them will contribute to their preservation.
6.3	Increase opportunities for locals to visit the area	Lack of access for Seychellois to Sustainable Use (Zone 2) Areas, particularly the outer islands was identified a a priority issue by stakeholders. This action aims to develop opportunities for Seychellois citizens to visit and experience their marine environment, particularly the outer islands. Increasing opportunities and visitation will allow Seychellois to experience the area, and increase community appreciation of biodiversity, social and cultural values.

ECONOMIC OBJECTIVE

Action no.	Proposed management action	Explanatory notes
7.1	Undertake a baseline social and economic valuation to inform capacity limits, potential	Lack of information about the economic and social values of each Sustainable Use (Zone 2) Area was identified as a priority issue by stakeholders. This information is important to understand how the sustainable use areas are used, how management can balance biodiversity conservation with sustainable use, the potential for user

	development or expansion of sustainable local businesses, and management decisions	pays, and where economic and social activities can be optimised in a sustainable manner. This action will conduct a study to document the economic and social values of the sustainable use areas in the Seychelles MSP. Implementing this action would require a national approach that could potentially be extended to other marine zones, and a collaborative process involving: identification of new and/or expanded opportunities; an evaluation of these opportunities for their economic feasibility (e.g. profitability, local interest, etc); and the willingness for a user pays approach in sustainable use areas.
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Appendix D: Mandate of the Seychelles Oceans Authority

The mandate of the Seychelles Ocean Authority (SOA) is the administration, coordination, oversight, monitoring and evaluation, review and adaptive management of the Seychelles Marine Spatial Plan. Responsibilities for the SOA include:

- Governance of spatial planning – the Seychelles Ocean Authority Act (SOAA) will explicitly incorporate the power of marine spatial planning to the Authority (i.e. marine protected or management areas up to the high-water mark).
- Monitoring, evaluation, mid-term review and 5-yearly consultative revision of the SMSP.
- Holding regular meetings of the Board to guide the strategic implementation of the SMSP. The SOAA will specify the Board meet at least quarterly.
- Hold regular meetings of the Management and Scientific committees respectively.
- Ensure pertinent international obligations (i.e. MEAs - UNFCCC, CBD, PSMA etc...) are appropriately incorporated into the SMSP management cycle, reported upon as required and provide advice/information to Government (GoS) on pertinent international relations.
- Give guidance to, coordinate the SMSP activities of and promote compliance from MSP implementation agencies – the SOAA will require line agencies to report on SMSP implementation as per the SMSP and its schedules and formats.
- Oversee the practical issues of Zone and Protected Area management in line with their designation, including the establishment of parameters and criteria for SMSP development management – e.g. allowable activities for each zone and their realisation.
- Oversight, coordination and, where appropriate, implementation of:
 - Develop standard formats for Protected Area (PA) management plans and reporting.
 - Develop and review PA draft management plans with clear measures to support area and SMSP objectives.
 - Realisation of efficiencies, synergies and optimal use of capacities.
 - Monitoring of management plan implementation.
- Develop SMSP scientific practices (through the function of the stakeholder Scientific Committee in liaison with NISTI):
 - Identify data requirements to support SMSP and Area management plan objectives.
 - Identify data requirements to support priority, area-specific management objectives.
 - Establish criteria for SMSP datasets to facilitate analysis and utility.
 - Undertake independent peer review of all datasets.
 - Identify strategic, crosscutting and key knowledge and data gaps (including those pertaining to climate change) for SMSP management, and develop and promote the implementation of, a prioritised research agenda.
 - Develop prioritised management-oriented research agenda (incl. Oceanography).
 - Develop and review model data sharing agreement(s).
- Identify, inform stakeholders of and pursue, as appropriate, funding options and mechanisms to support the sustainable implementation of the SMSP.
- Explore and develop in partnership with the GoS means of raising and generating revenue/funds to support SOA operations.
- Public education, stakeholder communication and outreach.

Appendix E: Farquhar Archipelago Sustainable Use Area PMF Indicators – DRAFT

Management objective	Priority issue(s) being addressed	Indicator No.	Ecological and biodiversity indicator	Indicator metric	Trigger level
To maintain healthy marine ecosystems that support sustainable industries.	Degradation of habitats due to climate change (EB1)	EB1	Coral reef status & trends	Benthic cover (%) by category	
	Degradation of habitats due to climate change (EB1)	EB2	Seagrass status & trends	Seagrass area; seagrass community composition	
	Poaching of threatened and endangered species (EB2)	EB4	Marine turtle population status & trends	No. nesting marine turtles	
	Poaching of threatened and endangered species (EB2)	EB5	SOCI status & trends	Sightings of flagship SOCI	
	Poaching of threatened and endangered species (EB2); IUU (EB4); Overfishing (EB5)	EB6	Fish populations status & trends	Fish biomass	
	Not enough research (or local involvement) (EB9)	EB7	Ecological and biodiversity research and monitoring investment	Number of research and monitoring projects; budget allocated to research and monitoring	
	Poaching of threatened and endangered species (EB2); IUU (EB4); Overfishing (EB5); Unsustainable industrial fishing (threat to local and artisanal fisheries) (E4)	EB8	Fisheries catch status & trends	Catch composition; catch per unit effort; length of target species	
	FAD mgt ineffective (EB3)	EB9	FADS (lost) status & trends	Number of deployed FADS; number of retrieved FADS	
	Overfishing (EB5)	EB11	Sport fishing status & trends	CPUE; catch composition; fish size; fate of catch; Number of rod-days fly fishing has occurred per area	
	Marine litter (EB6); Coastal development (EB7); Standards of ESIA without capacity to monitor/check (SC6)	EB12	Water quality status & trends	Water quality metrics - chlorophyll, nitrogen, phosphorous, suspended sediment, litter	
Management objective	Priority issue(s) being addressed	Indicator No.	Social & cultural indicator	Indicator metric	Trigger level

To facilitate equitable access for Seychellois to enhance the social benefits and cultural values of the Area	Lack of access for Seychellois citizens (SC1); Lack of equitable sharing of benefits (SC3)	SC1	Tourism (visitor) status & trends	Number of visitors; nationality of visitors to outer islands	
	Inadequate knowledge about Farquhar Archipelago (G5); Lack of knowledge and awareness about values (SC4)	SC2	Understanding ecological and cultural value of the islands	Survey data on understanding and awareness of values	
	Inadequate knowledge about Farquhar Archipelago (G5); Lack of education on laws of the sea (G7); Lack of transparency and accountability about what is happening (SC2); Lack of knowledge and awareness of values (SC4)	SC4	Education and awareness investment	Number of education and awareness projects; budget allocated to education and awareness	
	Inadequate knowledge about Farquhar Archipelago (G5); Lack of knowledge and awareness about values (SC4)	SC6	Social & cultural research & monitoring investment	Number of research and monitoring projects; budget allocated to research and monitoring	
	Lack of knowledge and awareness about values (SC4)	SC7	Culturally significant sites status & trends	Number of sites mapped; number of sites protected	
Management objective	Priority issue(s) being addressed	Indicator No.	Governance indicator	Indicator metric	Trigger level
To ensure management processes are transparent, equitable and participatory, and deliver effective monitoring, control and surveillance	Lack of capacity and resources for MCS (G1); Lack of funding for management, research and monitoring (E2)	G1	Investment in SU Area management	Annual budget for management authority; allocation for future years	
	Lack of capacity for effective and equitable management (G2)	G2	Capacity for SU Area management	Number of positions filled; Number of positions vacant; annual staff turnover rate	
	Lack of capacity and resources for MCS (G1); Lack of equity and transparency in decision making for the Area (G3)	G5	MCS plan developed and adopted	Has a plan been developed	
	Lack of capacity and resources for MCS (G1); Remoteness - for management and MCS (G6); High cost of MCS (E3)	G6	Active MCS	Number of days in field spent on surveillance by aerial and maritime or island-based patrols (NOT radar)	
	Lack of capacity and resources for MCS (G1); Remoteness - for management and MCS (G6); High cost of MCS (E3)	G7	Effectiveness of MCS	Number of successful intercepts (MCS plan implemented)	

	IUU (EB2); No political will to develop laws to address illegal activities (e.g. IUU, poaching) (G4)	G9	Reports of IUU	Number of IUU fishing incidents reported by source (including a public reporting system if this system is established)	
	Lack of education on laws of the sea (G7); Illegal activities by locals (SC5)	G10	User awareness and respect for mgt plan	Survey data on user awareness of mgt plan rules; data on number of views and download of website, social media engagement	
	Lack of capacity and resources for MCS (G1); Remoteness - for management and MCS (G6); High cost of MCS (E3)	G11	Active MCS	Number of coastal radar stations operational days per year	
	Inadequate knowledge about Farquhar Archipelago (G5); Lack of knowledge and awareness about values (SC4)	G12	Sharing of research knowledge	Percentage of research permittees who provide research outcomes back to management authority	
Management objective	Priority issue(s) being addressed	Indicator No.	Economic indicator	Indicator metric	Trigger level
To optimise and sustain the economic benefits for sustainable industries	Overfishing (EB5); Unsustainable industrial fishing (threat to local and artisanal fisheries) (E4); Lack of equitable sharing of benefits (SC3)	E2	Fishing licence status & trends	Number of <u>active and latent</u> fishing licences in artisanal, semi-industrial, charter, fly fishing, and industrial fisheries	
	Overfishing (EB5); Unsustainable industrial fishing (threat to local and artisanal fisheries) (E4); Lack of equitable sharing of benefits (SC3)	E3	Fisheries activities	Number of active fishing days by semi industrial fishers from VMS data	
	Threat of oil spill due to shipping and exploration (E6)	E5	Shipping status & trends	Number of shipping vessel movements transiting the area	
	Overfishing (EB5); Lack of equitable sharing of benefits (SC3)	E7	Fly-fishing permits	No. of permits allocated per island every year	
	Lack of management of oil and gas (EB8); Oil and gas exploration risks (E1)	E11	Oil & gas exploration status & trends	Number and area of resource exploration licences granted & active during the period	

Annexes

i. IMPLEMENTATION & GOVERNANCE PLAN

To be developed once the Farquhar Sustainable Use management plan is finalised.

ii. FINANCING PLAN

In development

iii. REGULATIONS & MCS PLAN

To be developed once the Farquhar Sustainable Use management plan is finalised.

iv. STAKEHOLDER ANALYSIS

The stakeholders that participated in the Farquhar Archipelago management plan development and have an interest in the future management of the Area have been recorded and the full analysis is pending.

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