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# HARVEST STRATEGY POLICY AND MANAGEMENT STANDARDS FOR SEYCHELLES' FISHERIES

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August 2023

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### Executive Summary

Fisheries are a main pillar in the economic and cultural nature of the Seychelles. From industrial fishing for highly migratory species such as tuna, to artisanal and subsistence fishing for reef fish, seafood caught in the Seychelles Exclusive Economic Zone (EEZ) have the potential to provide secure livelihoods, improved food security and provides foreign exchange income to the country.

The 2019 *Seychelles Fisheries Sector Policy and Strategy* provides an over-arching framework for the long-term management of sustainable fisheries and aquaculture development. This includes objectives such as managing fisheries through an ecosystem-based approach, fostering the optimum utilisation of fisheries resources to ensure ecological and socio-economic sustainability, and maximising the net economic benefits from resource use in all waters under national jurisdiction.

This fisheries *Harvest Strategy Policy* will underpin these objectives by ensuring that individual fisheries are able to be best managed according to their particular biological characteristics and the associated socio-economic objectives of the fishery. A core part of this will be establishing a formal harvest strategy as part of the fishery management plan and the wider marine spatial planning framework.

**The vision for this harvest Strategy Policy** is that: *The harvesting of fish resources is managed to ensure a proactive response to natural and man-made change so that the biological and socio-economic objectives of different fisheries in the Seychelles are not compromised over the long-term.*

**The focus of this Harvest Strategy Policy** is:

- The **provision of common fisheries harvest strategy principles and standards** for defining a sustainable yield, the use of reference points and designating acceptable target and bycatch depletion levels;
- Reflecting both scientific evidence and national fisheries development drivers to **establish the overall harvest levels across different fisheries**;
- Consider management considerations and practical socio-economic drivers to **formulate approaches to harvest management options**; and
- Consider how fish stocks, and therefore harvest levels should be made **to ensure marine fish stocks are more resilient and where necessary, adaptation to climate change.**

The **scope of this Harvest Strategy Policy** is all vertebrate and invertebrate species that are harvested within the Seychelles EEZ, either as (i) a nationally-managed component of regionally-governed stocks or as (ii) domestic stocks fully managed by the Seychelles.

The **objectives of this Harvest Strategy Policy** are encapsulated in the following Policy Statements:

1. Common fishery management standards are used across all Seychelles fisheries.
2. Fishery management units across the Seychelles are identified and clearly defined.
3. Harvest Strategies developed for individual fishery management units, including the identification of harvest control rules and other decision-making mechanisms.
4. Precautionary approach applied where appropriate.
5. Overfished and depleted stocks managed and rebuilt where necessary.
6. New and emerging fisheries managed in a proactive manner.
7. Highly migratory species that do not yet have a regional management strategy are included in a national fishery management plan.
8. Equitable access, rights-based management and other considerations are included in fishery management plans.
9. The capacity for the preparation and implementation of robust fishery management plans is enabled.

## Acronyms used

<b>AMSSI</b>	Association of Members of Seychelles Sea Cucumber Industry
<b>AONB</b>	Area of Outstanding Natural Beauty
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>D</b>	Deliverable
<b>EEZ</b>	Exclusive Economic Zone
<b>ETP</b>	Endangered, Threatened or Protected
<b>EU</b>	European Union
<b>FAO</b>	Food and Agriculture Organization
<b>FBOA</b>	Fishing Boat Owners Association
<b>FMG</b>	Fisheries Management Group
<b>FMP</b>	Fishery management plan
<b>FMU</b>	Fisheries Management Unit
<b>GOP</b>	Gainful Occupation Permit
<b>HCR</b>	Harvest Control Rule
<b>HMS</b>	Highly Migratory Species
<b>IKI</b>	International Climate Initiative
<b>IOTC</b>	Indian Ocean Tuna Commission
<b>ITC</b>	Instructions to consultants
<b>KE</b>	Key Expert
<b>MFBE</b>	Ministry of Fisheries and the Blue Economy
<b>MPA</b>	Marine Protected Area
<b>MSC</b>	Marine Stewardship Council
<b>MSP</b>	Marine Spatial Planning
<b>MSY</b>	Maximum sustainable yield
<b>MT</b>	metric tonne
<b>NGO</b>	Non-Governmental Organization
<b>NOAA</b>	National Oceanic and Atmospheric Administration (USA)
<b>NPNCA</b>	National Parks and Nature Conservancy Act
<b>RFMO</b>	Regional Fisheries Management Organization
<b>SCR</b>	Seychelles Rupee
<b>SFA</b>	Seychelles Fishing Authority
<b>SMSP</b>	Seychelles Marine Spatial Plan
<b>TNC</b>	The Nature Conservancy
<b>ToR</b>	Terms of Reference
<b>TTA</b>	Taiwan Deepsea Tuna Association
<b>UK</b>	United Kingdom
<b>USD</b>	United States Dollar
<b>WBG</b>	World Bank Group ("the Bank")

## Glossary and Definitions

**Adaptive management.** Adaptive management reduces uncertainties over time in a structured process of 'learning by doing'. Management actions may be used or interpreted as experiments to learn more about the resource system at the same time as it is being managed. New knowledge is generated by the deliberate use of learning processes instead of adhering to rigid technical solutions that may be sub-optimal. In an adaptive approach, some areas could be deliberately heavily exploited to determine the response of the stock, for example, while other areas are kept as reserves or only lightly exploited to reduce the risk of overfishing on the overall stock.

**Allocation.** Distribution of the opportunity to harvest fisheries resources, within and between fishing sectors.

**Assessment.** A process that connects knowledge and action regarding a problem. Review and analysis of information derived from research for the purpose of informing the decision-making process. It may not require new research and involves assembling, organising, summarising, interpreting and reconciling knowledge, and communicating it to the policymaker or other actors concerned by the problem. See also '**Stock assessment**' below.

**Benthic.** Describes animals that live on, in or near the substrate.

**Biomass.** The total weight or volume of individuals in a fish stock.

**By-catch.** At a broad level, fisheries by-catch includes all material, living and non-living, other than targeted species caught while fishing. It often refers to discards (that part of the catch returned to the water) and may include unrecorded mortality resulting from interaction with fishing gear.

**By-product.** Non-targeted catch that is commercially valuable and retained by fishers.

**Catch.** The total amount (weight or number) of a species captured from a specified area over a given period of time. The catch includes any animals that are released or returned to the water, whether alive or dead.

**Catch assessment survey.** Catch assessment surveys (CAS) are surveys over successive occasions aiming at collecting current information on total catch and fishing effort exerted by the operating fisheries. CASs are the prime source of catch and CPUE information in artisanal fisheries and small-scale fisheries.

**Co-management.** Arrangements between governments and stakeholder groups to allow joint responsibility for managing fisheries resources on a cooperative basis.

**Commercial fishing.** Fishing undertaken for the purpose of trade or business.

**Ecologically sustainable development.** Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.

**Economic overfishing:** This is fishing beyond the economic optimal point, where the value of the catch falls while fishing costs continue to increase. In the worst case, this can move to a point where any benefits are close to the operational costs of fishing, so the effective economic contribution from the fishery is reduced to zero.

**Ecosystem.** A dynamic complex of plant, animal, fungal and microorganism communities and the associated non-living environment interacting as an ecological unit.

**Ecosystem overfishing:** This is where fishing becomes unsustainable at the ecosystem level. This is less well defined than in the single species case but includes the primary effect of individual species being overfished and secondary effects in the change in species composition towards less vulnerable (and often lower value) species even if the catch volume does not change. Importantly, ecosystem overfishing includes changes in species catch composition due to changes in interactions between

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species; when for example a predator or prey is depleted, the corresponding prey or predator are also affected and catches change not only due to direct fishing, but to this indirect effect.

**Effort.** Amount of fishing taking place, usually described in terms of gear type, quantity of gear and frequency or period during which the gear is in use; for example, numbers of longline hooks set and their soak time.

**Fishery.** A unit determined by an authority or other entity that is engaged in harvesting fish. Typically, the unit is defined in terms of one, some or all of the following: people involved, species or type of fish, area of water or seabed, method of fishing, class of boats and purpose of the activities.

**Fishery management group.** A group of stakeholder representatives that will lead development of a fishery management plan for a fishery management unit, and subsequently implement the plan including applying the decision-making mechanism.

**Fishery management plan.** A written plan setting out how a fishery management unit will be managed. The plan would include the harvest strategy, harvest control rules and other relevant information that can be shared with stakeholders and others.

**Fishery management unit.** One or more stocks and one or more fisheries that are managed as a separate unit. Each fishery management unit will have a fishery management plan.

**Fishery dependent data.** Information collected about a fishery or fish stock based on the fishing operations and catches; for example, catch and effort information from fishery log sheets.

**Fishery independent data.** Information collected about a fishery or fish stock independent of the fishing operations, for example, scientific surveys and remote observation data.

**Gear restriction.** A type of input control used as a management tool to restrict the amount and/or type of fishing gear that can be used by fishers in a particular fishery.

**Growth overfishing:** This is where the numbers of fish being caught may not be unsustainable, but they are being caught below the optimum size, so the overall catch weight is reduced below what it could be. This problem is less severe than recruitment overfishing but is sub-optimal in terms of the catch that could be taken. However, in some cases, the value of the catch falls below some optimum weight (of the right size, for example, for a single serving in a restaurant), so overall weight may not be the main objective in managing the fishery.

**Habitat.** The place or type of site in which an organism naturally occurs.

**Harvest Control Rule (HCR).** An HCR is a pre-agreed rule used for determining management actions in response to changes in indicators of stock status where these arise from, stock assessment with respect to defined 'trigger' reference points. HCRs are sometimes described as a set of 'if-then' rules, defining the circumstances that will lead to different management actions (i.e., **if** the stock falls to  $x$ , **then** the management will respond by  $y$ ).

**Harvest rate.** Ratio of catch divided by harvestable biomass.

**Harvest Strategy.** A harvest strategy is the combination of monitoring, stock assessment, harvest control rules (HCRs) and management actions that are that are applied to attain the fishery objectives. For instance, a harvest strategy will decide how monitoring takes place, whether input controls (e.g. methods to limit fishing effort) or output controls (e.g. methods to limit fishing mortality) are used and prescribes, via harvest control rules, how the values of these are to be adjusted in response to the outcomes of a stock assessment.

**Harvest.** The retained catch of fish from an area over a period of time.

**Input controls.** Limitations on the type or amount of fishing effort; restrictions on the number, type and size of fishing vessels or fishing gear or on the fishing areas or fishing times in a fishery.

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**Limited entry.** Where fishing effort is controlled by restricting the number of operators, usually by limiting the number of licences and licence types in a fishery.

**Logbook.** An official record or declaration of catch, effort and other data made by commercial fishers.

**Maximum Sustainable Yield.** The largest average catch or yield that can continuously be taken from a stock under existing environmental conditions. For species with fluctuating recruitment, the maximum might be obtained by taking fewer fish in some years than in others. This can be viewed as a theoretical construct assuming a stock that will equilibrate in the absence of fishing

**Mesh size.** The size of mesh permitted in nets and traps, typically as the distance between each strand.

**Monitoring, control and surveillance (MCS).** Activities undertaken by the fishery enforcement system to ensure compliance with fishery regulations

**Mortality.** The death of fish from any source.

**Non-retained species.** Species that are taken as part of the catch but are subsequently discarded, usually because they have low market value or because regulations preclude them being retained.

**Non-target species.** Any part of the catch except the target species, which are the main species that the fishers are trying to catch, including by-catch & by-product. This catch may or may not be retained.

**Objective.** An objective is an explicitly stated goal that is to be achieved over the short or long term. Such objectives are usually policy-driven and should be achievable and where necessary precautionary in nature.

**Overfished:** A stock is considered "overfished" when exploited beyond an explicit limit beyond which its abundance is considered "too low" to ensure safe reproduction. The term is usually used when biomass has been estimated to be below a limit biological reference point that is used as the signpost defining an "overfished condition". This signpost is often taken as being  $B_{MSY}$  but the usage of the term may not always be consistent. A stock may remain overfished (i.e., with a biomass well below the agreed limit) for some time even though fishing pressure might be reduced or suppressed so that **overfishing** is not occurring.

**Overfishing:** A generic term used to refer to the state of a stock subject to a level of fishing effort or fishing mortality such that a reduction of effort would, in the medium term, lead to an increase in the total catch. Often also referred to as overexploitation and equated to biological overfishing.

**Output controls.** Management instruments aimed at controlling the characteristics of the catch and landings. This is achieved by: (i) limiting catch or landings through Total Allowable Catch (TAC) and quotas; (ii) prohibiting the landing of: protected species, certain sizes, a given sex, or animals in a particular stage of the breeding cycle; (iii) regulating discards; (iv) establishing limits for the daily bag and possession, and others.

**Precautionary approach.** One that recognises the uncertainties in our knowledge of the system (e.g., the natural productivity of the stocks, the true values of reference points, the current size of the stock and the effect of future management actions) and adjusts management actions accordingly. The precautionary approach is defined as part of the FAO Code of Conduct for Responsible Fisheries.

**Recruitment overfishing:** This is where the spawning stock size (usually mature females by weight) falls below that required to provide sufficient eggs and larvae for future recruitment to replenish the stock. This is defined in practice as the limit reference point. Recruitment overfishing in practice is highly undesirable as it disrupts the species population dynamics potentially in unknown ways and can lead to very slow recovery. Limit reference points are therefore often set at slightly higher levels where the **risk** of reduced recruitment becomes unacceptable.



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**Reference point.** A particular value of a monitoring indicator, such as the target value, against which the current value of the indicator can be compared to determine fishery performance. Such reference points may provide a trigger for a harvest control rule or other actions, such as a review.

**Retained species.** The species within the catch that are not discarded, including target species and by-product.

**Sample.** A proportion or a segment of a population of units that is observed so that the observations can be used to make inferences about the whole population.

**Spatial.** Of or relating to space or area.

**Species.** A group of organisms capable of interbreeding freely with each other but not with members of other species. This is one of the most important basic units for conservation.

**Stakeholder.** An individual or a group with an interest in the conservation, management and/or use of a resource.

**Stock Assessment.** An integrated analysis of information to estimate the status and trends of a population against benchmarks such as stock status reference points and provide the best possible scientific advice to management.

**Stock.** Strictly speaking, a group of individuals of a species occupying a well-defined spatial range independent of other groups of the same species (i.e., a population), which can be regarded as an entity for management or assessment purposes. Defining and proving separate stocks within this strict definition can be difficult, and therefore this term is used here more pragmatically, referring to an entity to which effective management can be applied.

**Target species.** The species fishers aim to catch.

**Target stock.** In this context, this term is used for a stock of a target species usually under highest fishing pressure to which a harvest control rule is applied.

**Temporal.** Of or relating to time.

**Threatened.** A species or community that is considered in need of protection from anthropogenic activity.

**Traditional fishing.** Fishing for the purposes of satisfying personal, domestic or non-commercial communal needs, including ceremonial, spiritual and educational needs and utilising fish and other natural marine and freshwater products according to relevant Indigenous custom.

**Uncertainty.** The incompleteness of knowledge about the state or process of nature: including the true values of reference points and other population parameters, and the relative importance of internal and external influences on the fishery resource.

# 1. Introduction

## 1.1 Context

The development agenda of Seychelles is now viewed through the lens of a blue economy, focused on the growth of ocean-based economies that are environmentally and socially sustainable.

Fisheries, together with tourism, is a central pillar of the Seychelles blue economy. With an Exclusive Economic Zone (EEZ) area of 1.4 million square kilometres in the Southwestern Indian Ocean, the Seychelles has significant and valuable fish stocks and a strong tradition and culture of fishing. The fisheries sector has grown substantially in the last four decades, driven primarily by the development of the Indian Ocean purse seine tuna fishery that uses Port Victoria as the regional hub for landings and transshipment. In the last few decades, artisanal fisheries and a local semi-industrial longline fishery for tuna and swordfish have also developed. The sector now accounts for a significant portion of gross domestic product but is also of considerable social and cultural importance to the country.

Seychellois have tended to consider fishing as the right for all of its citizens and the country's fisheries have a long history of being predominantly 'open access' with no limits on the number of participants or new entrants to a fishery. As a result there is no control over fishing effort nor the volume of fish being caught. Over the last 20 years, only a few fisheries have been managed with limits on the numbers of licences. Many artisanal fishers and much of the public hold onto a perspective of open access, which precludes some of the options and tools available for the conservation and management of natural marine resources. Nevertheless, across all the sectors of the fishery signs of overexploitation of certain species exist and increasingly fishers and the public are aware of the need for stricter limits and the need for stronger, more robust fishery management. This is captured in the 2019 Seychelles Fisheries Sector Policy and Strategy (hereafter the "Fisheries Policy"):

*"The fisheries resources of the Seychelles, though considerable, are finite. Signs of stress are evident on several demersal fish stocks in the artisanal fishery and there has been a significant increase in fishing capacity. These negative developments will get worse unless firmly addressed. If strong measures are not taken to regulate this sub-sector, cap the fishing effort and address some of the spatial and biological issues that exist, the stocks will continue to decline at a faster rate and to a greater extent in the next ten years compared to the last decade, severely threatening the stable prices of fish, the viability of fishing operations and the livelihoods of fishers."*

The 2019 Fisheries Policy provides an over-arching framework for the long-term management of sustainable fisheries and aquaculture development. This includes relevant objectives such as managing fisheries through an ecosystem-based approach, fostering the optimum utilisation of fisheries resources to ensure ecological and socio-economic sustainability, and maximising the net economic benefits from resource use in all waters under national jurisdiction.

This Harvest Strategy Policy underpins the Fisheries Policy by ensuring that individual fisheries are able to be best managed according to their particular biological characteristics and the associated socio-economic objectives of the fishery. A core part of this will be establishing a formal harvest strategy as part of the fishery management plan. Harvest strategies, or management procedures, are pre-agreed upon frameworks for making fishery management decisions, typically comprising components of management objectives, monitoring, stock assessment, reference points (e.g. target and limit), harvest control rules and management strategy evaluation. National harvest strategy policy frameworks, which have been adopted in a number of jurisdictions, are founded on the precautionary principle and ensure that harvest strategies address risks of overfishing regardless of data availability and the levels of uncertainty regarding the state of stocks.

This harvest strategy approach underpins many international fisheries management standards. For instance Australia's Federal Government has produced a 'Fisheries Harvest Strategy Policy' that has now been applied to most of the Commonwealth commercial fisheries resources<sup>1</sup>. Harvest strategies, including the use of harvest control rules, are also used extensively by third-party sustainable fisheries certification bodies, including the Marine Stewardship Council's responsible fishing standard<sup>2</sup>. This has also catalysed the use of the harvest strategy approach by regional fisheries management bodies, including IOTC.

This national policy for implementing harvest strategies underpins the implementation of the Seychelles Marine Spatial Plan, under which sustainable-use marine protected areas were created, since harvest strategies allow for defining 'sustainability' indicators for ecological, social and economic fisheries objectives, and can be used to examine trade-offs and to define acceptable levels of risk. The national policy provides for minimum standards to be applied as fishery management plans proliferate to cover zones created by the marine spatial planning as well as ensuring coherence in approach across all fishery management areas and plans.

### 1.2 Purpose

The purpose of this Harvest Strategy Policy is to provide management standards and associated guidelines to enable the Seychelles to meet best practice for implementing harvest strategies in fishery management planning. It will also develop the wherewithal to enable managers and co-managers to develop fisheries-specific strategies and accompanying harvest control rules for inclusion in formal fishery management plans.

The focus of this Harvest Strategy Policy is:

- The **provision of common fisheries harvest strategy principles and standards** for defining a sustainable yield, the use of reference points and designating acceptable target and bycatch depletion levels;
- Reflecting both scientific evidence and national fisheries development drivers to **establish the overall harvest levels across different fisheries**;
- Consider management considerations and practical socio-economic drivers to **formulate approaches to harvest management options**; and
- Consider how fish stocks, and therefore harvest levels should be made **to ensure marine fish stocks are more resilient and where necessary, adaptation to climate change**.

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<sup>1</sup> [https://www.awe.gov.au/agriculture-land/fisheries/domestic/harvest\\_strategy\\_policy](https://www.awe.gov.au/agriculture-land/fisheries/domestic/harvest_strategy_policy)

<sup>2</sup> <https://www.msc.org/standards-and-certification/fisheries-standard>

### 1.3 Scope

This Harvest Strategy Policy will apply to fish stocks, or components thereof, that can be effectively managed by the Seychelles. This suggests that it will focus on those species that are dependent upon the sea space and habitats within the Seychelles EEZ for the majority of their lives, but will also include national harvest strategies needed to support the regional management of highly migratory stocks, such as tuna. This will include vertebrate and invertebrate fauna as well as flora.

**Regionally managed fisheries:** there is also a recognition that Seychelles domestic fisheries cannot be managed independently of the wider regional management of highly migratory species, such as the large pelagic tunas managed by the Indian Ocean Tuna Commission (IOTC). This Harvest Strategy Policy therefore includes those stocks managed on a regional basis, thus allowing domestic fisheries-specific objectives to be recognised in the harvest strategy and harvest control rules where allowed under the wide regional agreement. For example where a regional harvest strategy for a pelagic tuna fisheries includes a total allowable catch that is allocated to the Seychelles, this policy will guide how this quota is managed nationally and will guide the development of a national fishery management plan (FMP). This FMP would embed the national harvest strategy for this species e.g. national short and long objectives and fishery management procedures that will operate to support implementation of the regional strategy.

**Domestically-managed fisheries:** based on the Seychelles Fisheries Act 2014, Seychelles Fisheries Policy 2019, the Fisheries Comprehensive Plan 2019 and the current Fisheries (Mahé Plateau trap and line fishery) 2021 Regulations, the fisheries of the Seychelles are categorised as (i) *commercial*, (ii) *recreational* or as (iii) *sport fisheries* depending on the purpose of the activity.

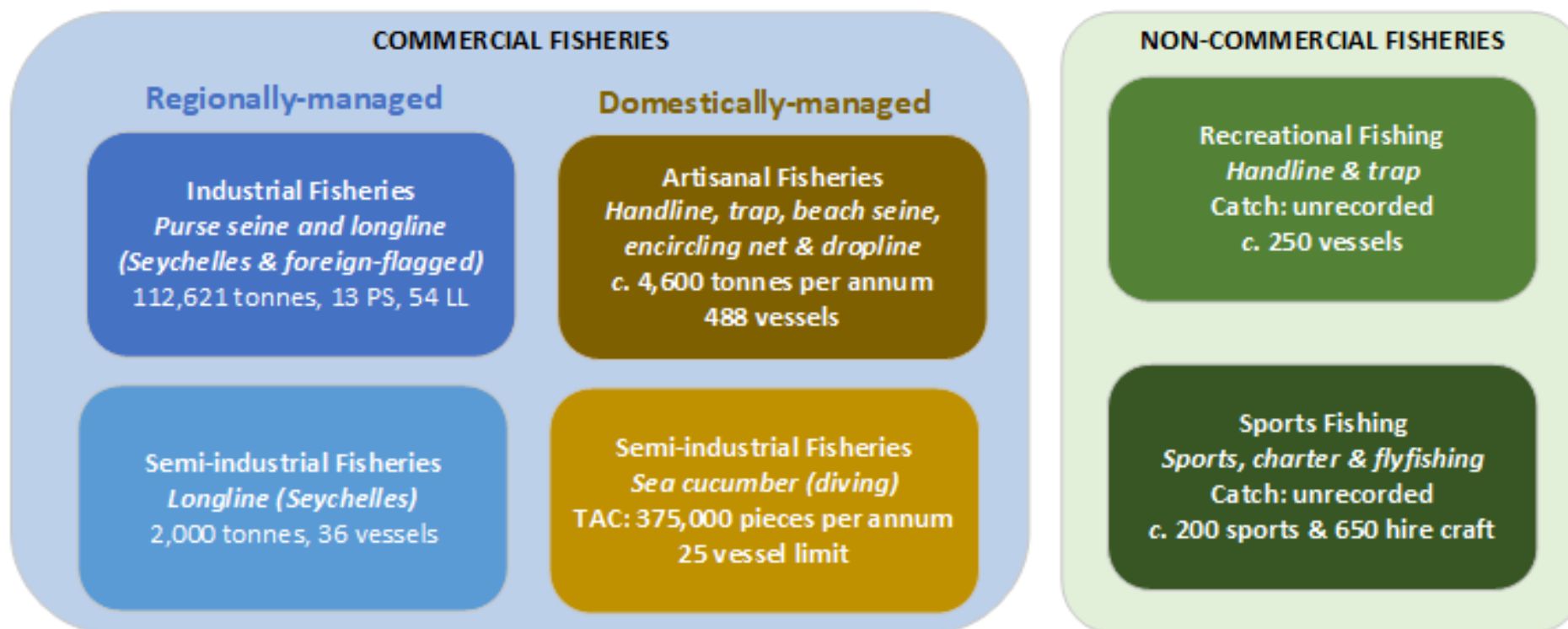
Commercial fisheries are normally categorised into three sub-sectors, (i) artisanal, (ii) semi-industrial and (iii) industrial. Of the commercial fisheries, the focus of this Harvest Strategy Policy will be (i) the *artisanal fisheries* and (ii) *sea cucumber fishery* within the semi-industrial sub-sector. For the *longline semi-industrial fishery* for large tunas and swordfish, and the purse seine *industrial fisheries* targeting species within the auspices of Indian Ocean Tuna Commission (IOTC) or other fishery management bodies, the Harvest Strategy Policy will be applied to ensure that both regionally-agreed management objectives and national policy objectives are both met.

Recreational fishing is undertaken mostly by fishers from small, inshore craft or from shore with the catch used for private and family consumption, but with excess catches also sold. Most recreational fishers do not generate direct catch revenue, but they do contribute significantly to household food security. **Recreational fishing – mainly for reef-associated species – is included within the scope for the Harvest Strategy policy.**

Sports fishing generates fishing enjoyment for tourists coming to Seychelles and consists of two broad groups, (i) 'sports fishers' with sophisticated vessels and gear usually big game fishing for large pelagic fish and 'charter vessel operators' providing fishing experience and expertise on a commercial fee for service basis. **Sport fishing, including competition meets, is also included within the scope for the Harvest Strategy Policy.**

The fisheries within the scope of this Policy are summarised in **Figure 1** overleaf.

Figure 1: Fisheries in scope of the Harvest Strategy Policy



Figures from SFA records, 2021

## 2. Fisheries Harvest Strategy Policy

### 2.1 Vision, Goals and Specific Objectives

#### 2.1.1 Vision

The vision for this Harvest Strategy Policy is that:

***The harvesting of fish resources is managed to ensure a proactive response to natural and man-made change so that the biological and socio-economic objectives of different fisheries in the Seychelles are not compromised over the long-term.***

This compliments the higher level 2019 Seychelles Fisheries Sector Policy and Strategy vision to “Develop fisheries to its full potential whilst safeguarding the marine environment and resource base for sustainability”.

#### 2.1.2 Goals and Objectives

The **goals** of the Harvest Strategy Policy are to:

- To encourage clear and transparent decision-making in fishery management, resulting in a stable harvesting system that rewards long-term stewardship and encourages steady investment.
- To agree on critical stock management action trigger points in advance of their being needed.
- To allow fisheries to be managed in different ways that reflects their specific objectives and distinctive characteristics.
- To ensure that fishery management is adaptive to changing circumstances, both man-made and natural.
- To define and agree acceptable levels of biomass depletion, and to ensure that depleted or otherwise damaged fish stocks are re-built to their required levels.

The policy has the following **specific objectives**:

- Fishery management standards are met through evidence-based harvest strategies, including operational goals, management objectives, indicators, reference points, bycatch and discards levels, and other relevant standards.
- Fishery management plans (FMPs) exist for all the main fisheries in the Seychelles.
- To identify and agree the roles and responsibilities of different institutions to ensure the sustainable harvesting of marine resources in the Seychelles.
- To put in place an objective monitoring and assessment system that ensures that harvest strategies remain relevant, effective and efficient.

## 2.2 Guiding Principles

- This Harvest Strategy Policy supports and enhances higher level national policy in fisheries and marine spatial planning, development and conservation, thus meeting multiple societal goals and objectives.
- This Harvest Strategy Policy supports the implementation of regionally agreed fisheries harvest strategies in the Seychelles.
- The strategy will facilitate the co-management of highly migratory species with regional partners where harvest strategies are yet to be agreed.
- Participatory development of management strategies and harvest control rules to support a co-managed implementation process.
- Harvest strategies and control rules will reflect best practice and will ensure that Seychelles fisheries meet the high expectations of domestic and international markets alike.
- The management objectives and resultant fisheries management plans are regularly reviewed and periodically updated as necessary.
- To fully embrace the principle of ecosystem management of fisheries that contributes to the wider healthy, biodiverse and productive marine environment of the Seychelles coastal and archipelagic waters.
- The precautionary approach is taken where appropriate, especially where the evidence-base guiding management is weak, such as in data-poor fisheries.

## 2.3 Policy Statements

The details of this policy are provided through a series of 'Policy Statements. These are listed below and provided in more detail in the following pages.

### 2.3.1 Policy 1: Common fishery management standards used across all Seychelles fisheries

The Seychelles Government will adopt principles and standards to define the harvest strategy objectives on the basis of international standards, such as defined by FAO Code of Conduct for Responsible Fisheries. Standards will require that fishery performance is monitored and address management objectives in terms of required sustainable harvest levels, acceptable risk, and acceptable ecosystem change.

It will be necessary to show that harvest strategies and fishery management plans being proposed meet common agreed standards. These will address the general design of the strategy, how it is implemented, and basic criteria such as the acceptable risk.

Harvest strategies will incorporate an adaptative system that guarantees fisheries will meet their objectives in the longer term as information accumulates. As a result, the Government will undertake regular reviews of the harvest policy and harvest strategies, including external reviews where necessary to ensure that they continue to improve.

Every fishery management unit (see Policy Statement 2) will have at least one quantitative performance indicator that can be used to evaluate the fishery against the management objectives and the data requirements need to match those objectives.

Two types of harvest reference points should be set for each indicator to evaluate fishery performance:

- *target reference points* correspond to the state of a fishery that is considered desirable. For harvest levels, this will be the optimal yield, which will be chosen from a small set of common operational objectives and be set at a level that at least achieves maximum sustainable yield or is more precautionary.
- *limit reference points* will be defined more widely to identify specific undesirable outcomes, notably identifying when stocks are overfished or overfishing is occurring.

The harvest strategy will need to be able to demonstrate that it does not exceed levels of acceptable risk or cause unacceptable ecosystem change. Common criteria defining acceptable risk will include a mathematical probability of poor outcomes, such as a stock falling below its limit reference point, and more heuristic criteria around expert judgement. Unacceptable ecosystem change may be defined in the near-term using ecological risk assessments.

To account for different levels of information available, different standards will be set for different categories of fisheries. Three categories will be defined from data-rich (category 1) to data poor (category 3). The longer-term goal will be to allocate all fisheries to category 1, but pragmatic standards will be set for other categories that will allow management to proceed without delay. Whether or not data-limited approaches are applied, such as the use of proxies for reference points, the intent will always be to achieve outcomes consistent with the overall standards and management objectives.

The management will be inclusive of all stakeholders (including the people of the Seychelles), recognise stakeholder rights, apply the precautionary approach and be transparent. The harvest strategy policy needs to be consistent with Seychelles' current fisheries policy (Seychelles Fisheries Sector Policy and Strategy 2019), the [Marine Spatial Plan](#) and policies on other areas such as climate change.



### 2.3.2 Policy 2: Fishery management units identified and clearly defined

Fishery management units define the scope of each management plan and associated harvest strategy. A management unit may be defined based on the target stocks, the fleet or gear, biological stock boundaries, other geographical boundary related to the fishery or gear, or a combination of these.

The Government will define fishery management units (FMU) that are sufficiently distinct so that they can be managed separately to meet management objectives. An FMU will have one or more stocks to manage, and at least one target stock. A separate fishery management plan (FMP) will be developed for each FMU and set out how the stocks and fleets within the FMU will be managed.

The main criteria for defining FMUs are the species/stocks being targeted, the vessels and gear type, and the area of operations. These can form a complex set with significant linkages, especially in multispecies tropical fisheries with diverse gears. Units broadly divide into fish stocks, which need to meet conservation objectives, and the fisheries which will need to meet socio-economic objectives and can be associated with specific sets of stakeholders who have a legitimate interest. Fishing can be controlled based on licence conditions which are standard clauses using FMU criteria and defining what fishing activities the licence holder is allowed to conduct.

### 2.3.3 Policy 3: Harvest Strategies developed for individual fishery management units

The Government will lead development of harvest strategies for each fishery management unit that will seek to achieve the management objectives and be documented in a fishery management plan and implemented by fishery management groups. Harvest strategies will be adaptive, consultative, transparent, and respond to information gathered from the fisheries being managed in a timely manner.

Harvest strategy is a broad term for the management approach to maintaining the fishery in a good state, based on well-defined management objectives. An effective harvest strategy consists of:

1. A data collection & analysis system providing sufficient information to evaluate the performance of the current strategy and individual management actions against management objectives.
2. A consultative, transparent decision-making process that includes one or more harvest control rules that limit harvest to sustainable levels and mechanisms to resolve conflicting use and disputes (see **Policy 4**).
3. A series of management tools that can control fishing and intervene in the fishery as required through application of the decision-making process including the harvest control rule.
4. Periodic Management Strategy Evaluation (MSEs) to ensure that harvest strategies remain relevant, effective and robust.

Monitoring will include, but not be limited to, target stock status that can be used to determine the status of the fishery resources, general fishing activity (inputs) and catches (outputs), and information to evaluate management controls (outcomes, implementation effectiveness, compliance). Fisheries that are not data-limited would have a regular full stock assessment cycle, whereas data-limited fisheries would reduce the stock assessments but use simpler indices to monitor fishery performance.

The information available for management decision-making is critical in designing harvest strategies. Development of harvest strategies will need to be tailored to stock and fishery categories but be adaptive. The harvest strategy may cover more than one fleet/gear type and more than one stock or species and will manage conflicting use by and among these interacting units.

### 2.3.4 Policy 4: Harvest control rules and other decision-making mechanisms in place

As part of the harvest strategy, the Government will lead development of a system for making decisions that is timely, transparent and should demonstrably achieve management objectives. Each target stock will have well-defined harvest control rules, the type of rule dependent on the stock category. Harvest control rules will be agreed with stakeholders, tested as appropriate and clearly defined in a fishery management plan. Harvest control rules will be implemented by fishery management groups consisting of stakeholder representatives.

Each Fishery Management Unit (FMU) will have a Fishery Management Group (FMG) including stakeholder representatives that apply the co-management decision-making process. The primary tasks of the FMG will be to agree controls to limit harvest to sustainable levels, resolve conflicts between resource users (e.g., apply zonation), ensure fair allocation and equitable access, and deal with conflicting objectives. This might be achieved through the judicious use of stakeholder consultation and participatory methods to find acceptable resolutions. Each FMG may cover one or more FMUs.

FMGs will need clear terms of reference indicating who the members are and how they are chosen, how observers access the meetings, how they report their activities and their findings, conclusions and recommendations. Final meeting reports and minutes should be made public. FMGs will meet at least annually but may meet more frequently.

Decision-making controlling harvest levels will primarily be conducted through harvest control rules implemented by the FMG as part of the overall harvest strategy. Harvest control rules (HCR) are pre-agreed rules that limit harvest to sustainable levels and have been demonstrated at least in theory, but ideally in practice, to meet management objectives with respect to harvest rate and stock status. An HCR should be well enough defined so that it can be well understood by stakeholders and so that it may be tested with the available data and in due course incorporated in computer simulations.

The decision-making and specifically harvest control rules will recognise the limitations on available information by defining stock categories that apply different rules reflecting the ability to determine and set precise controls to achieve management objectives. Each HCR category will still be expected to achieve management objectives reflected in the reference points or their proxies.

### 2.3.5 Policy 5: Precautionary approach clearly applied where appropriate

The Government will seek to improve sustained use of resources by reducing the risk of inadvertently damaging them. Specifically, in developing management objectives and applying the decision-making processes, managers will seek to safeguard the resources by taking appropriate action even when the data are deficient, or the science is inconclusive. Furthermore, the Government will promote a more equitable balance between the short-term and long-term considerations, including the recognition of the rights of the wider Seychelles community and of future generations.

The objective of applying the precautionary approach<sup>3</sup> is to achieve indefinitely sustainable harvests. To achieve this, decision making must explicitly take into account risks by considering cost-effective actions that are based on prudent foresight, reducing or avoiding risks to the resources, the environment and the people. Decision-making achieves this by explicitly accounting for uncertainty and for the consequences of being wrong. This would imply, among other things, often choosing lower harvest levels to ensure that fish populations are of sufficient size to cope with unknown external factors such as climate change.

International guidance (e.g., FAO Code of Conduct for Responsible Fisheries) will be used to incorporate the precautionary approach into harvest strategy development. The precautionary approach should be explicitly included in the harvest strategy and that it is reported where it is being applied. Implementation should be transparent, to ensure that the approach is applied and that during consultation stakeholders fully understand the implications of its application.

Where prudent action is required to protect the fishery and the resource, the lack of information and uncertainty will not be used as a reason to delay the action. Harvest control rules will help ensure harvest reductions are timely, but decision-making for other issues will also need to apply precaution appropriately. Insurance-like schemes might be used to reduce the social impact of harvest limits, reducing the need to delay difficult decisions. Improved data collection and scientific research can be used to reduce risks in the longer term.

In developing management social and economic objectives, the Government will explicitly take account of stakeholders who may not have a direct voice in current decision-making, such as future users of the resources. This may be used, for example, to justify the choice for lower discount rates when accounting for future costs and benefits from management actions.

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<sup>3</sup> FAO 1996. Precautionary Approach to Capture Fisheries and Species Introductions. FAO Technical Guidelines for Responsible Fisheries. No. 2. Rome, FAO. 1996. 54p.

### 2.3.6 Policy 6: Overfished and depleted stocks rebuilt where necessary

The Government will lead the development of rebuilding plans for each managed stock to implement if the stock is estimated to be below its limit reference point. The rebuilding plan will seek to reduce or even cease harvest levels so that stocks are expected to be rebuilt above the limit reference point as soon as practicable. The rebuilding plan will be in place until the stock has returned to its target level.

Rebuilding should be integrated into the harvest strategy, defining strong management interventions to be applied when the stock is determined as below the limit reference point, i.e., overfished. The HCR should require immediate action to cease overfishing and rebuild overfished stocks to levels that ensure long-term sustainability and productivity. The immediate objective will be to rebuild the stock above the limit reference point as quickly as possible. It should be noted that overfishing will be highly disruptive to livelihoods and should be avoided if at all possible. Where it does occur, plans for rebuilding should include actions that minimise that disruption.

Adequate monitoring must be in place to assess the status of the stock and rebuilding progress. If the monitoring depends upon fishery dependent data, sufficient fishing to meet minimal statistical requirements may need to continue during rebuilding or other provisions such as fishery independent monitoring are made.

Where there is no evidence that a stock is going to rebuild in the required timeframe, the rebuilding strategy must be reviewed by the FMG. If changes to the rebuilding strategy are considered necessary, such changes must be made in a timely manner.

Rebuilding should consider whether a moratorium on fishing is practicable. A moratorium will need to account for any monitoring requirements (apply for a fixed period or include fishery independent monitoring) and may require subsidy for fishers during the rebuilding period. The harvest strategy will need to consider and may need to plan for these additional actions, and pre-agreement on how a moratorium (or other rebuilding action) is managed should be determined as part of the harvest control rule.

Where information is available, rebuilding timeframes should be specified relative to the minimum timeframe for rebuilding in the absence of fishing by the relevant target fisheries, based on the stock dynamics models. In the absence such information, rebuilding timeframes should be based upon the expected generation time for the species. In normal circumstances, "as quickly as possible" would be defined as the minimum timeframe for rebuilding, but if this is impractical, rebuild timeframes may be applied above this, but must be justified. This recognises that fishing is a way of life for many fishers and communities, and these societies and human behaviour are not easily suspended or transformed.

If a stock becomes overfished while being managed under a harvest strategy, that strategy must be reviewed, and if necessary revised, to ensure it delivers on its objectives in future. A harvest strategy would require changing if the stock is depleted below the limit reference more frequently than allowed for under the acceptable risk standard.

### 2.3.7 Policy 7: New and emerging fisheries developed sustainably

The Government will seek to manage new and emerging fisheries in a proactive manner, setting precautionary limits and controls, and ensuring adequate monitoring is implemented to evaluate the sustainable development of the fishery.

New and emerging fisheries will be defined as fisheries outside current FMUs that will require a new licence condition allowing a new fishing activity. The fishing activity will be defined by any or all of gear, fishing area, depth or species caught, where a provision does not already exist in current licence conditions.

In developing new resources, provision will be made in defining new exploratory FMUs to develop the resource. In these cases, the Government will support innovation and economic development of the resource, but in all provisions apply the precautionary approach to ensure that the fishery will be sustainable.

Under the precautionary approach, harvest should be limited to a low level, while at the same time monitoring should be relatively intensive. Once sufficient information on the fishery has been acquired, the fishery category would change, with new harvest strategy and well-defined harvest control rule as for other mature fisheries if it is economically successful.

Access to new resources will be limited, and access will require meeting special requirements, including co-operation with necessary scientific research, special reporting requirements and management controls that seek to ensure the fishery can be developed sustainably. Fishers accessing new resources will be expected to co-operate with more intense monitoring as part of licence conditions and help develop the harvest strategy in return for early access.

### 2.3.8 Policy 8: Highly migratory species and regionally shared stocks are included in a national fishery management plan

For the fishery management units within the auspices of Indian Ocean Tuna Commission (IOTC) or other fishery management bodies, the Government will develop a fishery management plan that is consistent with conservation management measures for highly migratory species and shared stocks. In addition, the Government will undertake the direct management of species caught in the offshore pelagic fisheries that are not within the scope of IOTC.

Both regionally managed and shared stocks may require co-operation with entities outside the national jurisdiction. Harvest strategies and management plans should still be proposed for these fisheries and should explicitly address co-operative management and external links, for example the agreed joint management objectives, and how local management will be consistent with these.

Specifically, although Highly Migratory Species (HMS) are managed by the IOTC, bycatch species would fall out of the IOTC scope, and some HMS have not yet been subject to management measures or have a harvest control rule. An appropriate harvest strategy may still be developed for these species that is compatible with IOTC and, where appropriate, anticipates management strategies that IOTC might propose. For stocks that already have a regional management plan and harvest control rule, a national harvest strategy and management plan should be developed that ensures the Seychelles meets its responsibilities within the regional strategy.

### **2.3.9 Policy 9: Equitable access, rights-based management and other considerations have been included in fishery management plans**

The Government will promote equitable access for Seychellois citizens to the nation's marine resources. Access may be granted based on historical rights, costs on existing users, protection of livelihoods dependent on fishing, the required process for new entrants into the fishery, any other legislated rights related to fishing and in accordance with the relevant current Government Fisheries Policy. In granting rights, fishers will agree responsibilities in complying with requirements for the sustainable management of the resource.

Defining rights and responsibility will need to consider efficiency, cultural-sensitivity, transparency, accountability, ethics and welfare. These considerations may help reduce conflicts in resource use and build stakeholder confidence in the management system. The management authority will need to ensure that suitable structures and mechanisms are put into place for effective communication and decision-making with all interested parties.

The principles on which "fair allocation" is defined need to be agreed, but historical use-rights and livelihood dependence will be important considerations. Therefore, establishing past use and defining sufficient harvest levels that support livelihoods will be important in resolving fair allocation.

Stakeholders in Seychelles fisheries include, but are not limited to, fishers who harvest the resources. This may include fishing community historical rights of access, but Seychelles do not have explicit community cultural rights.

Allocation of harvest rights will be through fisher registration and licensing. Licences will be allocated annually and define rights and responsibilities through licence conditions. The type of allocation may also depend upon the type of fishery. Industrial fisheries may apply paid access to increase economic rent for the country, whereas the semi-industrial, artisanal and subsistence fisheries may be run for social, economic and cultural benefits.

### **2.3.10 Policy 10: The capacity for the preparation and implementation of robust fishery management plans is enabled**

The Government will facilitate the development of formal fishery management plans that are consistent with the common management standards with this and previous policy statements and that are proportionate to the scale and nature of the fisheries involved. It will seek to provide the public and private stakeholders involved in preparing and implementing these fisheries management plans the support and as necessary, the capacity to contribute fully to these plans in the areas of effective consultation, understanding of management measures, data ownership and management, scientific research, monitoring, control and surveillance.

The harvest strategies for individual fishery management units will be embedded in formal fishery management plans. These plans will provide a repository of both information on the fishery, as well as a formal description of the agreed harvest strategies, control rules and resulting conservation management measures. The fishery management plan will set out practical arrangements for implementation and address limitations in resources and capacity so that stakeholders can be confident that they will be fully implemented.

It is recognised that expanding and formalising the sustainable harvest strategy concept to all fisheries in the Seychelles, and ensuring these remain relevant and effective, will pose a considerable demand upon both government and private sector participants. It is important that the government assist in building capacity in the fisheries sector for pre-emptive planning and management, focusing both on technical capacity and ensuring that all stakeholders are empowered and enabled to contribute as necessary.

### 2.4 Strategic Priorities

Strategic priorities for the application of harvest strategies and harvest control rules should be based on various considerations, listed below in no particular order:

- Size and value of the fishery;
- Opportunity cost;
- Status of the stocks – stocks requiring urgent rehabilitation or pre-emptive management for lightly-fished, pristine stocks;
- Human and technical resources either existing or through supporting national or international projects;
- Availability of data / stock assessments;
- Utility as model for subsequent application to other fisheries;
- Receptivity and requests by fishers and stakeholders;
- Integration – advancing sustainable management within multiple use areas across the EEZ
- International agreements / obligations; and
- Reasonable likelihood of quick success with existing available resources – low-lying fruit.

#### 2.4.1 Key processes and milestones

A key process that this Harvest Strategy Policy underpins is the implementation of the over-arching 2019 Fisheries Policy. The 2019 Fisheries Policy requires pursuing the implementation of existing management plans, and the development and implementation of new ones such as for the small-scale pelagic fisheries, and outlying island areas of the Seychelles MSP (SMSP) designated for sustainable fishing activity. By 2023, it envisages the Implementation of at least two phases of the Mahe Plateau Co-management Plan; Review of beche-de-mer management plan and the National Plan of Action (NPOA) for Sharks, that several management plans will be under implementation and that all legislated outlying island fishing zones of the SMSP are within a fishery management plan framework and that at least two new management plans are in place (see further details of FMPs in the SMSP's sustainable use areas below).

The 2019 Fisheries Policy and Strategy also advocates a phased adoption of rights-based management and harvest control rules, underpinned by a broad awareness campaign, advocating respect of the Seychellois fishing culture balanced against the need for contemporary adaption to limited or diminishing resources. Key milestones and indicators by 2023 within this higher-level policy include establishment of a communications unit within SFA; inputs into the awareness campaign in numbers of radio interviews; social media site; brochures and leaflets; T-shirts and other communication material; effectiveness of campaign; social media responses (likes and dislikes); feedback in management plan committees; and questionnaires. Some of these milestones are already in progress.

The SMSP recognises that fisheries are one of the most significant activities within the Seychelles and therefore consideration has been given to the development of fisheries management plans within the SMSP's proposed Strategic Management Framework (Howells, 2021<sup>4</sup>). The SMSP integrates with existing plans including the Mahe plateau trap and line FMP. It has also proposed that the following FMPs will be produced:

- Amirantes plateau demersal and reef associated species plan. A line-caught multispecies finfish fishery operating within the Industrial fisheries exclusion zone<sup>5</sup>;
- Outer Islands demersal and reef associated species plan. A line-caught multispecies finfish fishery operating within the industrial fisheries restricted zone around Alphonse, Platte, Coetivy, Fortune, Farquhar and Providence, Cosmoledo and Astove; and
- Amirantes Basin pelagic fishery plan. A purse seine and longline fishery for tuna and swordfish operating in the open ocean) outside of industrial fisheries restricted zones.

In addition to these three potential FMPs, there may also be an FMP for sea cucumber within the Amirantes Plateau and Outer Islands and additional arrangements for sports and recreational fishing. The portfolio and scope of FMPs may be further developed or revised following further consultation and at the stage of preparation. During consultations for this harvest policy some stakeholders suggested that an FMP for the octopus fishery, for example, may have likelihood of quick success with existing available resources.

### 2.4.2 Fisheries and stocks to be prioritised

From the strategic priority considerations above and other key processes and milestones, the implementation of the Harvest Strategy Policy in the fisheries of the Seychelles **should be prioritised along the lines of the M&E framework (Appendix B) in three tranches** by the Seychelles Fishing Authority under the policy direction of the MFBE, in collaboration with the MSP initiative and with the relevant other Agencies and stakeholders. There is a requirement for a human capacity needs analysis and development plan for harvest strategy development to be completed by the end of 2022.

Common fishery management standards and clearly defined fishery management units can be set over the period 2022-2023. The precautionary approach should be clearly applied where appropriate and the start of rebuilding of overfished stocks during the 2022-2023 period. Over the same period, there should be:

- forward scanning of new and emerging fisheries;
- approaches to integrating national harvest strategy components in fisheries for highly migratory species or for regionally shared stocks agreed with RFMOs, and;
- equitable access, rights-based management and other considerations included in existing and new fisheries management plans.

FMPs incorporating harvest strategies and harvest control rules are expected to be rolled out in 2023, by fishery tranches over periods 2023-2025 (Tranche 1), 2025-2027 (Tranche 2) and 2027-2031 (Tranche 3).

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<sup>4</sup> Howells, D (2021). Strategic Management Framework for Marine Protected Areas in the Seychelles. 44 pp.+ annexes.

<sup>5</sup> Foreign owned fishing vessels must adhere to Seychelles Fisheries Act, 1987, Part IV Fisheries Management, Reg. 5, First Schedule: Zones where Fishing by Foreign Vessels is prohibited. 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.



## 3. Implementation Arrangements

### 3.1 Legal Framework

The Seychelles fisheries and aquaculture legal framework constitutes:

- Fisheries Act of 2014;
- Fisheries (Shark Finning) Regulations of 2006;
- Fisheries Regulations of 1987 as amended,
- Licenses (Fisheries) Regulations 1987
- SFA Establishment Act of 1984.

Other key legislations in Seychelles that affects fisheries constitutes of the following:

- Maritime Zones Act (1999), which establishes the boundaries for Seychelles' maritime zones;
- National Park and Nature Conservancy Bill (2021);
- Merchant Shipping Act (Amended) 2014;
- Export of Fishery Products Act 2012;
- Environment Protection Act (1994), which serves to ensure that all development and activities, including fisheries, are subject to environmental controls;
- Environment Protection (Impact Assessment) Regulations 1996, revised 2016; and
- National Parks and Nature Conservancy Act (1969), which provides the legal instrument to establish and manage marine protected areas for fisheries conservation, as well as other purposes.
- Wild Animal and Birds Protection Act

The Fisheries Act of 2014 provides the basic legal framework for the development and management of environmentally responsible and sustainable fisheries and aquaculture including sea-ranching in the exclusive economic zone, the territorial seas, archipelagic waters, internal waters and all other waters subject to the fisheries jurisdiction of Seychelles. The objective of this Act is *“to provide for efficient and effective management and sustainable development of fisheries in accordance with international norms, standards and best practices and an ecosystem approach to fisheries; to provide for the licensing of fishing vessels, to regulate fishing activities including sport fishing, to provide for offences and penalties, and to repeal the Fisheries Act, 1986”*.

### 3.2 Responsible Authorities

The Government of Seychelles has the overall responsibility for policy development and oversight. *Fishery Management Plans* are a stated measure in the Fisheries Act of 2014 under Part II - Management of Fisheries (Sub-Part 1 Management plans and management measures).

Such *Fishery Management Plans* can serve to guide the implementation of the policy by the Seychelles Fishing Authority (SFA) and their co-management partners. The SFA as Government's lead technical executive arm for fisheries and aquaculture will continue to discharge its responsibility and functions as defined by the SFA (Establishment) Act.

The Ministry responsible for fisheries and SFA will work in close collaboration with other Ministries, government departments and agencies, to support the decision-making and policy implementation processes as well as support efficient service delivery.

In order to implement this policy efficiently and effectively, it is important that SFA is provided the expertise, capacity and funding to developing the common management standards described in this policy and to develop, roll out and where appropriate, periodically review and revise FMPs across all Seychelles fisheries, including those also managed on a regional basis.

At the time when this policy was written, there is insufficient technical capacity within SFA to develop and fully implement harvest strategy-based fishery management plans. This implies that a permanent unit developed to fisheries management planning would need to be established in SFA, staffed by fisheries management professionals with access to specialists in stock assessment, fisheries data collection and rights-based management. This unit would be responsible for developing the commons standards and applying these to different fisheries across the Seychelles. The unit would also be the key government liaison body with the fishery management groups (see **Section 2.3.4**).

### 3.3 Monitoring and Evaluation of the Policy

Effective implementation of this Policy hinges on an effective monitoring and evaluation strategy with appropriate performance indicators and an efficient feedback mechanism. This entails carrying out information gathering at national, community, and sectoral levels. The monitoring and evaluation framework will focus on measuring the outputs of each Policy Statement and will provide the information needed to continually determine, assess and recommend the way forward toward the successful implementation of this Policy in achieving its long-term vision. The Ministry responsible for fisheries will have the overall responsibility of the monitoring and evaluation of the Policy.

Further, to remain relevant, the Policy will be reviewed from time to time and revised to take into account changing circumstances and new/emerging fisheries and the status of the natural resource base to ensure the future sustainability of the sector.