

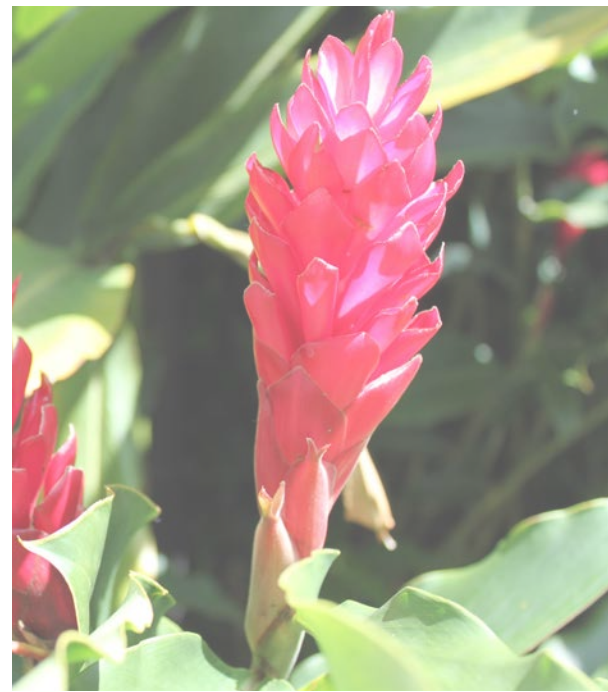


# The Republic of Seychelles Country Profile





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# The Republic of Seychelles

## Key country indicators

### Location

The Republic of Seychelles is an archipelago consisting of 115 tropical islands consisting of mainly granitic islands and coralline islands (ASCLME, 2012). Approximately 98,000 people live in Seychelles, making it the least populated country in Africa (DESA, 2019). The country has a total land mass area of about 460 square kilometres and a GDP of \$ 1.4 billion (World Bank Group, 2017).

### Marine resources

Seychelles has a series of continental shelves covering almost 50,000 square kilometres (ASCLME, 2012). The country significantly depends on fisheries and tourism. The fisheries sector provides direct and indirect employment contributing about 7.7 per cent of GDP. Similarly, tourism offers employment opportunities and contributes more than 25% to the GDP (ASCLME, 2012).

Seychelles' coastal habitat consists of fisheries, mangroves, coral reefs, salt marshes and sea grass beds.

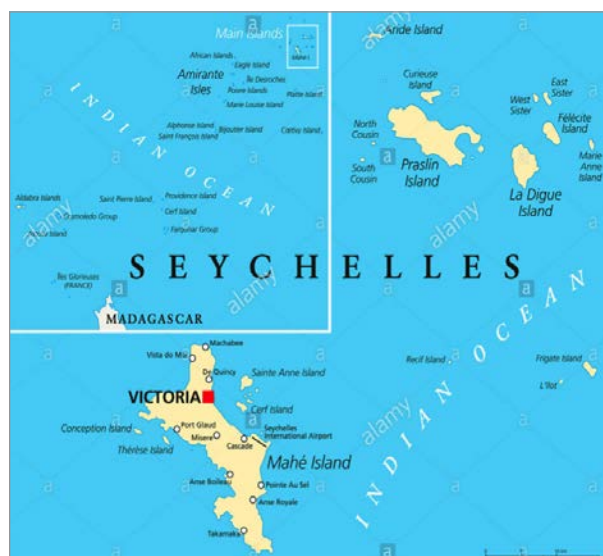
## Ecosystem management and conservation

### The challenge

The on-going coastal development and climate change pose the greatest risk to sustainable ecosystem management and conservation. For instance, an increase in sea level as result of climate change has resulted into flooding of the mangrove areas; and coastal development has witnessed the degradation of the mangrove ecosystem. Other challenges include: population pressure and the conversion of mangrove for aquaculture and tourism infrastructure.

Population	980,000
GDP (US \$)	1.4 billion
GNI (US \$)	
Total land area	460 km <sup>2</sup>
Length of coastline	2,470 km
Exclusive Economic Zone	1.3
Continental shelf	50,000 km <sup>2</sup>
Mangrove	
Coral reef	
Marine protected area	

Source: (World Bank, 2017)





## **The situation**

### ***Mangrove ecosystem***

The mangrove ecosystem is an essential coastal vegetation to the Seychelles' coastal line. Mangrove ecosystem offers coastal defence by reducing coastal erosion through dissipation of wave energy. A 100 metre-wide mangrove belt can reduce a wave height by 13 per cent. The mangrove forests occupy about 32.3 km<sup>2</sup>. The ecosystem consists of a total of eight species, all of which are found at Port Launay in Mahe, a designated RAMSAR site. These include: *Rhizophora mucronate*, *Sonneratia alba*, *Xylocarpus granatum*, *Xylocarpus mulouensis*, *Avecenia marina*, *Cerriops tagal*, *Bruigiera gymnorrhiza* and *Lumnitzera racemosa*.

### ***Coral reefs***

Coral reef surround the majority of the Seychelles' islands. The total coral coverage is estimate at 1,690 square kilometers. The cover has been on the decline over the years. The 1998 and the 2016 bleaching reduce Seychelles' coral cover by over 90%. The physical destruction of coral reefs through anthropogenic activities such as channels dredging and beach enrichment has had a toll on coral reef. Coral reefs play both an economic and geological role in the Seychelles. As regards the former coral reefs are a vital tourist attraction sites. Their tourism value is about \$ 0.3-0.9 million per square kilometres. As regards the latter, coral reefs protect Seychelles' coastline from exposure to storms and erosion. Coral reefs prevent erosion by acting as breakwaters that dissipate more than 90% of the ocean energy.

## **The constraints**

### ***Climate change***

Thermal stress triggered by climate change causes rising sea level, which has heavily affected on the life of coral reefs. The consequent effect has been the loss of coastline stability and livelihoods of artisanal fishers.

Bleaching cause by change in global warming, population and flooding, is perhaps the greatest threat to the coral ecosystem. Almost 90% of the coral cover was bleached following the 2016 and the 1998 bleaching incidents.

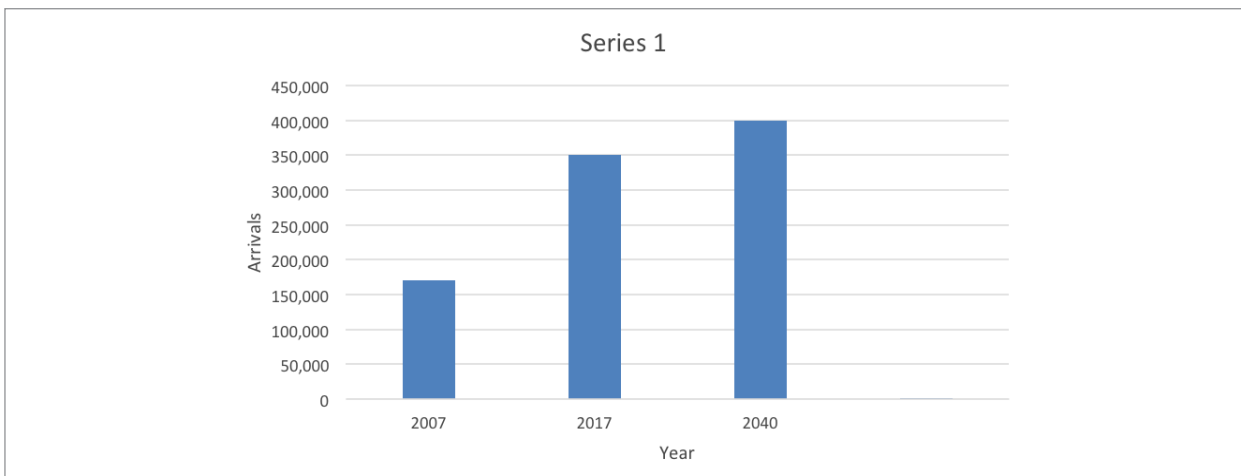
### ***Excessive fishing***

Increase in population along the coastal plateau has exacerbated overfishing, which is the main source of livelihood for Seychellois. The use of destructive methods of fishing such as trawling and purse seining drag along the breadth of the sea erode the coral reef stagnating their development.



### **Tourism and coral degradation**

In addition to fishing, tourism is another main economic activity in Seychelles. The iconic beaches of Seychelles have seen a rapid increase in the number of tourists over the years as depicted below.



Source: (Seychelles Coastal Management Plan 2019-2024)

The number of tourist arrivals has been on the rise in Seychelles. It is projected that by 2040 the number will clock 400,000. While tourism contributes about 58% of the Gross Domestic Product (GDP) with Seychelles' coral reefs having a tourism value of about \$0.3-0.9 million per km<sup>2</sup>, rapid increase in arrivals has significantly contributed towards the degradation of the coastal ecosystem. For instance:

- tourist ships running into coral reefs cause great damage to the reef development.
- The dredging of reefs for beach nourishment and channel elongation and maintenance has increased coral reefs mortality.
- Throwing debris, including plastic products, into the ocean interferes and lower the marine life quality.
- Increased development at the coastal region.





## The opportunity

### Coral reef management

In pursuit of coral restoration, Seychelles has employed several techniques to improve and strengthen the natural status of coral reef. The techniques capture natural and artificial measures such as coral gardening. They include: removing loose debris from the reef; and the constructing of three-dimensional structure on the coral reefs to strengthen their ability to dissipate wave energy.



### Establishing Marine Protection Areas

The Republic of Seychelles has 19 Marine Protected Areas and 3 marine managed areas. About 1 per cent of the Seychelles' territorial water is marine protected areas while over 45 per cent of the total land area is categorized as protected land. Various institutions are responsible for the management and conservation of the protected areas including Non-Governmental Organizations. Seychelles has committed about 30% of its EEZ to marine conservation reserve. This is in pursuit of Seychelles being a global leader in marine ecosystem conservation (Seychelles Vision 2033).

### Target 14.2: Protect and restore ecosystems

UN definition: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

Status: The proportion of the national exclusive economic zones managed using ecosystem-based approaches is 0.03 per cent. The protected marine area in the EEZ is 484 km<sup>2</sup>

Source: (UN Stats 2019)

#### Marine Protected Areas

- African Banks Protected Area
- Etoile Nature Reserve
- Aldabra Atoll Special Reserve
- Outer Seychelles
- Aride Island Special Reserve
- Baie Ternay Marine National Park
- Boudeuse Nature Reserve
- Ile aux Vache Marine Nature Reserve
- La Digue Veuve Special Marine Reserve
- Ile Cocos, ile La Fouche, Ilot Platte Marine National Park
- Aldabra Group and Fortune Bank Area of Outstanding Natural Beauty

- Port Launay Marine National Park
- Seychelles Marine Protected Area
- Seychelles Promised Protection
- Silhouette Marine National Park
- Ste. Anne Marine National Park
- Aldra Group Marine National Park
- Cousin Island Special Reserve
- Curieuse Marine National Park

#### Marine Managed Areas

- Aldabra Atoll Ramsar Site, Wetlands of International Importance
- Aldabra Atoll World Heritage Site
- Port Launay Coastal Wetlands Ramsar Site



## Reducing pollution

Pollution of the coastal zone originates from both offshore and inland sources. This ranges from the dumping of plastics at the beach to large spillage of oil in the sea by oil tankers. Other forms consist of the wash down of sediment from construction sites and farms into the water. Seychelles has endeavoured to reduce marine pollution through its Environment Protection Act 2016. The Act addresses the issue of coastal pollution by introducing fines imposed on polluters. The money collected as fines is deposited in the Environment Trust Fund (ETF) to be used for paying for cleaning cost.

## Establishing marine protected areas

Seychelles is on the right path to ensure sustainable management and protection of the marine ecosystem. Seychelles has proposed designate almost 30% of its Exclusive Economic Zone (EEZ) as marine protected areas. The Marine Spatial Planning (MSP) is spearheading this proposal, which will establish Seychelles as a frontrunner in ensuring marine conservation. Seychelles projects to establish effective governance and institutional structure necessary for the implementation of the Marine Spatial Planning (MSP). Currently, about 1% of Seychelles' territorial water is categorized as marine protected area.

## Improving marine governance

Marine governance in Seychelles has come a long way. As early as 1990 Seychelles had already began working on its Integrated Coastal Zone Management (ICZM) planning. Recent development such as participation in the Nairobi Convention has seen the revision of Seychelles Environment Protection Act in 2016.

**Table 1: Overview of the legal framework**

<b>Environment Protection Act:</b> This Act was adopted in 1992 and revised in 2016.	<b>Objectives:</b> It is the principal law on environmental protection, including overseeing the sustainable management and conservation of the coastal zones.
<b>Beach Control Act:</b> The Act was adopted in 1971	<b>Objectives:</b> It is responsible for the preservation of the seashores. It also mandates the minister the powers to make regulations that prevent danger to any seashore user.
<b>Removal of Sand and Gravel Act:</b> The Act was adopted in 1991	<b>Objectives:</b> The Act prohibits the illegal abstraction of sand and gravel. It provides license for permission to abstract sand and gravel.
<b>Land Reclamation Act</b>	<b>Objectives</b> The Act control land reclamation through issuing licenses and permission for necessary for land reclamation projects.
<b>Seychelles Coastal Management Plan:</b> The Plan was adopted in 2019 in conjunction with the World Bank and the Ministry of Environment, Energy and Climate Change of Seychelles.	<b>The Plan aims at:</b> <ul style="list-style-type: none"> <li>• Reducing effects of coastal hazards</li> <li>• Preventing coastal risk by monitoring coastal development</li> <li>• Harnessing the coastal ecosystem</li> <li>• Promoting awareness</li> <li>• Promoting capacity building in institutions.</li> </ul>
<b>Blue Economy Road Map:</b> The Road Map was approved in 2018	<b>Objectives:</b> Seeks to develop the blue economy through innovation and conservation of the marine ecosystem. Further the objective national and international legal frameworks on marine ecosystem



**Wetland Policy:** The Policy, currently under review, was adopted in 2005 and reviewed in 2017.

**Objectives:** The Policy aims at protecting and conserving wetland areas for the value addition and functionality.

**Climate Change Strategy:** The Strategy was adopted in 2009.

**Objectives:** The Strategy consolidates climate change related policies, projects and plans.

### ***Strengthening the institutional framework***

The implementation, monitoring and enforcement of coastal policies, plans and policies is dependent on the commitment and willingness of relevant institutions. With weak institutions in places the implementation and execution of marine conservation projects is a mirage. The strengthening of these institutions for better results is achievable through training, capacity building and technology transfer. Among the reasons why the coastal laws and plans fail to yield results is lack of commitment and weak institutions which lack in financial empowerment and skill.

There is an appropriate institutional framework to manage the marine and coastal resources. The Seychelles Fishing Authority is responsible for the development of the fishing industry and safeguarding the sustainable development of the fisheries ecosystem. This responsibility is achievable through: Promoting economy integration, ensuring safety at sea, maximizing employment opportunity, promoting revenue generation from the fisheries sectors and other connected activities, and promoting management and conservation of the marine resources.

The Seychelles National Parks Authority is responsible for the management and conservation of the marine and land national parks of Seychelles. The Authority acts as the custodian of the flora and fauna of all the protected areas, and achieves this through partnership collaboration in:

- Conducting research and trainings on the impacts to marine life
- Implementing projects on the restoration of coral reefs, mangrove and sea grasses, for instance the implementation of the Coral Reef Degradation in the South Western Indian Ocean Islands (CORDIO) Projects.
- Emphasis on education and awareness



## **Fisheries**

### **The challenge**

Overfishing as a result, of unsustainable methods of fishing such as purse seining and trawling pose a significant threat to food security and nutrition in Seychelles. The bulk of fish consumption in Seychelles is dependent on local fisheries production, which is declining due to overfishing and threats such as climate change.



## The situation

### The fishing sector

Fish capture in Seychelles has been fluctuating over the years. While the effort in improving fishing technique is conspicuously evident, the same is not reflected in the capture.

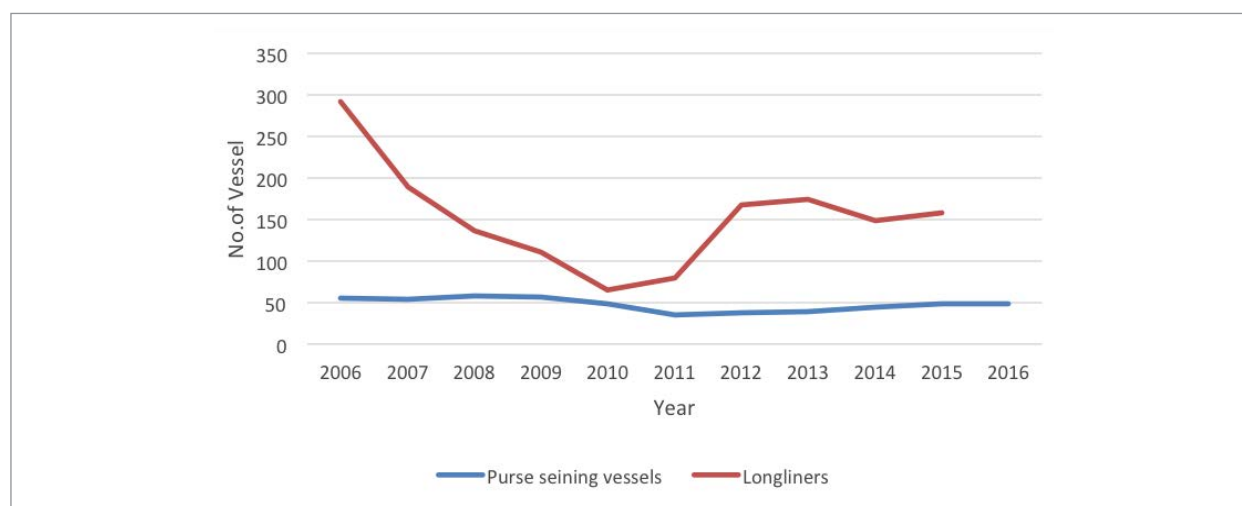
The industrial fisheries is a prime income earner in Seychelles alongside tourism. The three main segments composing the sector are artisanal fishery, semi-industrial fisheries and industrial fisheries. Foreign owned long-liners and purse seiners mostly conduct the latter while locals are engaged in artisanal and semi-industrial fisheries.

Artisanal fishery	Semi-industrial fisheries	Industrial fisheries
Species Lutjanidae serranidae Carangidae Lethrinidae	Species Xiphias gladius (swordfish) Thunnus obesus (big eye tuna) Thunnus albacares (yellowfin tuna)	Specie Tuna and tuna like species.
Technique		
Traditional wooden pirogues	Monofilament longline	Purse seine Long liners

Source: (Seychelles Fishing Authority, 2019)

Fishing by purse seiners has been fluctuating over the years. Between 2006 and 2009, the average licensed vessels in the Seychelles' EEZ was 57 vessels per year. The number of licensed vessel dropped by 11 and further by 30% in 2010 and 2011 respectively. In 2015 the figure increased by 13%, from 44 to 49 vessels, and remained the same in 2016 (Seychelles Fishing Authority, 2016).

The average industrial long liners licensed in 2006 was about 292. The number hit rock bottom in 2010 at 65. In 2013 the average was recorded at 174 and decreased to 148 in 2014 (Seychelles Fishing Authority, 2016).





Much of the fisheries potential value in Seychelles is transferred abroad, particularly the tuna fisheries. This phenomenon is attributable to the poor value chains development. Other gaps in the sector include climate change which has long-term in also all the sectors in the economy, particularly vulnerable sectors such as fisheries. However, the rigorous campaign waged in Seychelles regarding climate change has seen great improvement in the sector. It has also contributed towards the fight against climate change, marking an improvement in the resilience of the fisheries sector to climate change effect (Seychelles, Vision 2033).

## The constraints

### **Population growth**

Along the along the coastal plateau there is much pressure from the growing population for natural resources for settlements and livelihood. Economic development is also adding more pressure on land use along the coastal zones.

### **Land reclamation**

Land suitable for development is a scarce resource and thus is in high demand. Large areas of land have been reclaimed along the east coast of Mahé since the 1980s for industrial and urban development. The international airport was also built on reclaimed land. The reclaimed land is protected by revetments with a height of 2–4 metres above mean sea level.

### **Illegal and unregulated fishing**

IUU is an emerging global concern that beckons the attention of not only Seychelles but the world at large. IUU threatens the sustainability of fish stocks and their value addition such as income generation and employment creation.

Seychelles IUU score is estimated at 2.13 against the world's overall score of 2.29. At such a score, Seychelles ranks 107 and 35 in the world and Africa respectively. Seychelles acknowledges that unsustainable fishing activities poses a great threat to its economy, which is dependent on fishing. As a result, the country is supporting the blue economy strategy through the Third South West Indian Ocean Fisheries Governance and Shared Growth Project. Other challenges include:

- Maritime ecosystem degradation
- Fragmented management
- Public participation
- Climate change



### **Target 14.5: Conserve coastal and marine areas**

UN definition: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

Status: The average proportion of marine key biodiversity areas covered by protected areas was 22.9% in 2018.

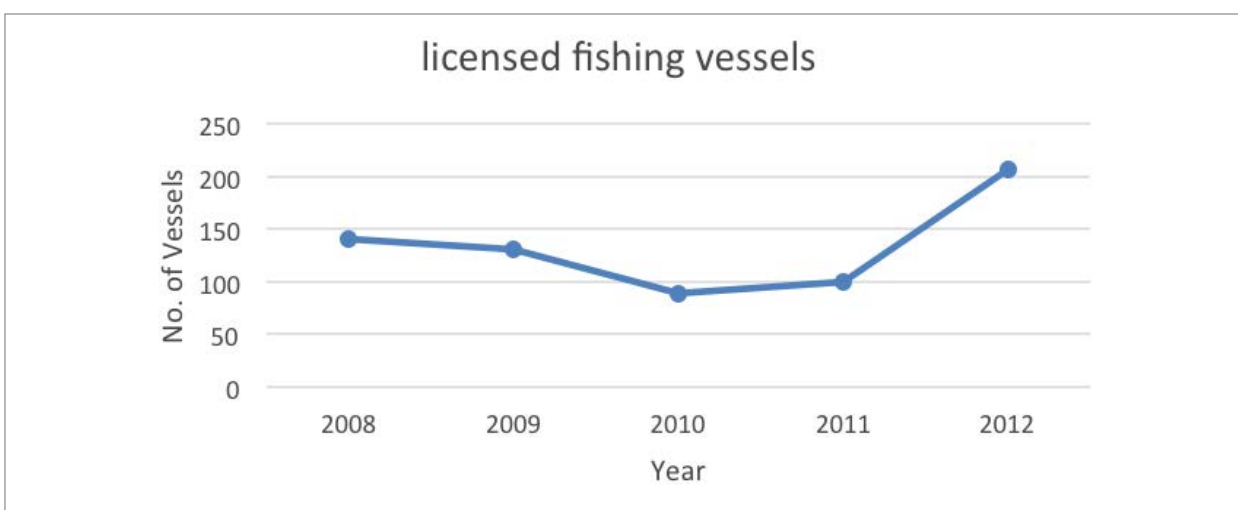
Source: (UN Stats 2019)



- Lack of commitment for the blue economy roadmap
- Deadlocked policies
- Overfishing

### **Piracy**

The resurgence of piracy which threatened the fishing fleet is a reemerging issue. Piracy activities have been on the rise in Seychelles since 2009. The prevalence of piracy on Seychelles' waters has threatened the fisheries and tourism sectors as evident by the drastic reduction in the number of licensed industrial fishing vessels. In 2008 the number was estimated at 140 which dropped to 100 in 2011. Increased state patrol resulted in an increase in the number of registered vessels to 207 in 2012.



### **The opportunity**

#### ***Surveillance and control***

Sanity in the fisheries sectors requires the presence of strong institutions that ensures compliance by fishing vessels. Seychelles' Fisheries Authority has a Monitoring Control and Surveillance Section (MCS) in charge of monitoring and enforcement. The section comprises of the Enforcement Unit and the Monitoring and Control Unit. The MCS is responsible for ensuring compliance with statutes, regulation, international legal framework and provide support to local partners such as the National Drug Enforcement Agency (NDEA).

Seychelles has also intensified its port state control system. Improvements have been in the form of sea patrol, training of inspectors and radio telecommunication. In 2012 Seychelles authorities captured the Sri Lanka flag fishing vessel Lucky Too and fined it SCR 100,000 for violating ports rules.

Land patrol in Mahe, Praslin and Digue for the purposes of inspecting licensed boats, landing at authorized sits, inspection of sea cucumber, investigating illegal activities and the routinely beach land sites inspection has also gained momentum.



### ***The institutional framework***

The Project Management Unit is responsible for the development and maintenance of infrastructure in the fishing industry. Such includes the construction of ice plants, quays and support the post-harvest activities. Through the Unit, Seychelles is able to provide quality services needed in the fisheries sector by fishers and fishing vessels. The unit:

- Implement port infrastructure plans
- Services, manages and maintain fishing ports
- Oversee the adoption of new technologies and practices to improve the fishery sector.

Seychelles Fishing Authority, through the Fisheries Act, is mandated the responsibility of ensuring sustainable management of marine resources. The Authority prepares, implements and reviews the management plans needed for long-term sustainable development. It also minimizes compliance to international covenants, regulations and measures concerning fishing activities.

The Fisheries Research Division undertakes research on the scientific information needed to manage the fisheries sector. It also collects useful data necessary for stock assessments and categorization of fish population.

### ***Quota on yellow fin tuna***

In 2016, the Indian Ocean Tuna Commission implemented a quota on yellow fin tuna catch allowance. The aim was to stem overfishing in the Indian Ocean Regions. The 2017 period witnessed a massive reduction of fishing activities in Seychelles particularly tuna canning.

### ***Fisheries Development***

- Ile du Port Zone 14 : This Project, funded by the EU Sectoral Programs, aims at constructing a 120 metres long quay and 9.5 metres draft. The projects is expected to reduce congestion during peak fishing period.
- Bel Ombre Fisheries Project: This projects aims at building a gear store for fishermen and a fuel bunkering facility. The facilities is to be leased out to fishermen to secure their fishing gears and provide fuel and supplies. The Project is projected to rejuvenate semi-industrial and artisanal sub-sectors.
- Providence Fishing Port Zone 6: The Zone 6 facilities is a quay measuring 100 metres and services an overage of 47 boats per week. The Project offers a platform for value addition to fish processors.
- Victoria Quay Facility: The facility measures about 350 metres long with 3.5 metres water draft. It serves about 152 fishing boats (consisting of long-liners, whalers and schooners) weekly by acting as a site for loading ice, mooring and unloading fish.

### ***Fisheries Research***

- EMOTION: This Project focuses on testing the maternal effect on pelagic species specifically the yellowfin tuna, bigeye and skipjack. The study is expected to give information pertaining the reproductive cycle of the tuna species and population.



- Shark Tagging Project: The Project targets the tagging of large tiger shark and bull shark by monitoring their temporal movement on the Mahe plateau.
- Lobster Project: The Project monitors lobster stock by carrying out surveys on their abundance and recovery. The Programme focusses and keep track of their their growth rate, movements and maturity.



## Bibliography

- ASCLME 2012. National Marine Ecosystem Diagnostic Analysis, Seychelles. Contribution to the Agulhas and Somalia Current Large Marine Ecosystems Project (supported by UNDP with GEF grant financing).
- United Nations Department of Economic and Social Affairs/Population Division 2019. *World Population Prospects, Volume I: Comprehensive Tables*.
- World Bank Group, 2017. *The Little Green Data Book: World Development Indicators*, 2017.
- MoFTI&EP, 2019. Department of Economic Planning Ministry of Finance, Trade, Investment and Economic Planning. Seychelles National Development Strategy 2019-2023.
- World Bank and Ministry of Environment, Energy and Climate Change of Seychelles, 2019. Seychelles Coastal Management Plan: 2019-2024. Washington, DC: World Bank; Victoria, Seychelles: Ministry of Environment, Energy and Climate Change of Seychelles.
- Seychelles Fishing Authority, 2016. Fisheries Statistical Report, Semester 1. SFA/FSR/05.
- Seychelles Fishing Authority, 2019. Available at: [sfa.sc/index.php/fisheries/industrial](http://sfa.sc/index.php/fisheries/industrial)
- Seychelles Vision 2033.









Western Indian Ocean Large Marine  
Ecosystems Strategic Action Programme  
Policy Harmonisation and Institutional Reforms  
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