

Agulhas and Somali Current Large Marine Ecosystem Project

Seychelles National Level Policy and Governance Assessment for Marine And Coastal Resources

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PART I

A. GENERAL: COUNTRY PROFILE

Overview

The Seychelles is an archipelago consisting of 115 granite and coral islands that occupy a land area of 445 sq. km within an Exclusive Economic Zone (EEZ) of 1.3 million sq. km in the South Western Indian Ocean between 4 and 9 degrees south of the equator.

The country's population is currently estimated at around 87,300 (2010).¹ Approximately 90% of the population and infrastructure is located on the main island of Mahe. The country has a per capita income of around US\$ 7,000. Tourism, fisheries and a growing industrial sector dominate the economy of the country.

The Seychelles economy has undergone major structural changes since gaining independence in 1976. As recently as the early 1970's, agriculture accounted for around 9% of total GDP, with cinnamon and copra the major exports. Today, agriculture accounts for a mere 3% of GDP, and employs less than 6% of the labour force.

The opening of the international airport in 1971 transformed the economy by laying the foundations for the development of the tourism industry, which is now the principal industry in Seychelles accounting for more than 12% of GDP and around 17% of the labour force. The sector is also the main foreign exchange earner, accounting for around SR 750 million in 1999 (US\$137 million). The fisheries sector is now the second most important, both in terms of foreign exchange earnings and employment. The artisanal fisheries sector based, which has traditionally provided the major source of protein for the Seychellois population, has in recent years expanded to meet the demand of the tourism industry. There is also an increasingly lucrative export market for high quality fish products. In addition, the development of the industrial fisheries sector is now an important foreign exchange earner, where exports of canned tuna to the European Union generated a record SR 531.9 million (approx. US\$ 96 million) in export earnings in 1999.

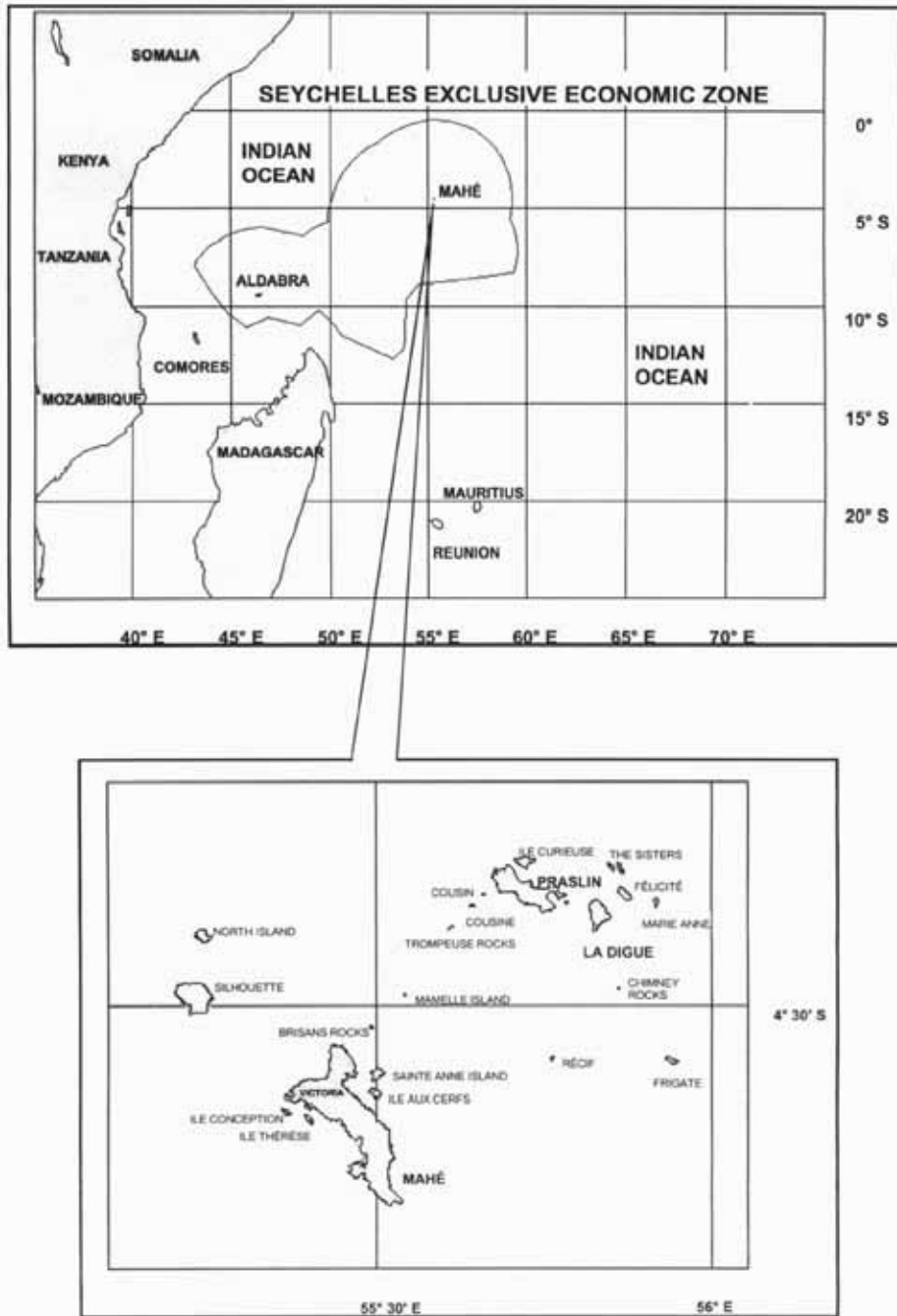
Paralleled with the relative decline in agriculture has been the boom in the construction industry, as significant areas of land previously given to agriculture have been developed. The boom in the construction industry is partly linked to the need for development of infrastructure (including an ambitious housing programme) and the needs of the tourism industry which has invariably concentrated on the coastal zones and has thus raised a user conflict with other stakeholders. Currently, the construction sector accounts for just over 10% of total GDP.

The transformation of the Seychelles economy has been matched in the social sector, and the country has progressed rapidly. This is illustrated by Seychelles ranking as a middle-income country in the UNDP Human Development Index, where it was placed in 53rd position in 2000,

This commitment to social development is reflected in the increasing life expectancy of the Seychellois people, which at 67.6 years for males and 75.7 years for females is comparable to the highest standards in the most developed countries. Other impressive social indicators include the low infant mortality rate (10.3 per '000), school enrolment figures of nearly 100%, a pupil/teacher ratio of 1 to 13.8, and the high ratio of medical officers to population (1 to 750).

¹ Seychelles in Figures 2010

Figure 1: Map showing Seychelles EEZ with detail of the islands: Mahé, Praslin and La Digue (Source: Nageon, 2005)



B. STRUCTURE OF THE GOVERNMENT OF SEYCHELLES²

1. The State's structure is divided into three branches:

- The Executive
- The Legislative
- The Judiciary

Their respective structure, functions and responsibilities are defined by the Constitution.

1.1 The Executive

The Executive Authority of the Republic is vested in the President and is exercised in accordance with the Constitution and Laws of the Republic of Seychelles.³

The Constitution of the Republic of Seychelles, under Article 50, provides for a President of Seychelles who shall be Head of State, Head of Government and Commander-in-Chief of the Defence Forces of Seychelles. The powers and functions of the President are conferred by the Constitution and include the power to: Establish and abolish offices for the Republic and appoint to office⁴; Execute or cause to be executed treaties, agreements or conventions in the name of the Republic⁵; and Grant to any person convicted of any offence a pardon⁶.

Subject to the Constitution, the President may exercise the executive authority either directly or through persons holding office in the service of the Republic.

The Constitution provides for a Vice-President of Seychelles who shall perform functions assigned by the Constitution, an Act or the President.⁷ The Vice-President may be assigned the political responsibility of one or more Ministries by the President.⁸

Ministers are appointed by the President, with the approval of a majority of the members of the National Assembly. Ministers have such title, portfolio and responsibility as may be determined by the President and shall perform these functions under the direction of the President

The President holds the political responsibility for departments that are not specifically allocated to the Vice-President or a Minister.

Cabinet

The Constitution makes provision for the establishment of a Cabinet consisting of the Vice-President and Ministers. The President presides at meetings of the Cabinet. The Cabinet is responsible for advising the President with respect to the policy of the Government and with respect to such other matters as may be referred to it by the President.⁹ The Cabinet Secretariat is headed by a Cabinet Secretary and is responsible to

² Constitution of the Republic of Seychelles CAP 42; Department of Public Administration Manual

³ Art 66

⁴ Art 62

⁵ Art 64(3) Constitution of Seychelles

⁶ Art 60

⁷ Art 66A

⁸ Arts 69 & 70

⁹ Arts 67 7 68

the President for the management and coordination of all procedural operational and logistical services supporting formal Cabinet activities in scheduling of Cabinet business.

1.2 The Legislative

Article 77 of the Constitution provides for the establishment of a National Assembly vested with the legislative power of Seychelles which is exercised subject to and in accordance with the Constitution. The National Assembly consists of 25 directly elected members from the electoral areas and 9 members elected on the basis of proportional representation.

The legislative power of the National Assembly is exercised by Bills passed by the Assembly and assented to, or deemed to have been assented to by the President.¹⁰

1.3 The Judiciary

The judicial power of Seychelles is vested in the Judiciary which consisting of: the Court of Appeal of Seychelles; the Supreme Court of Seychelles; and such other subordinate courts or tribunals established pursuant to Article 137¹¹ of the Constitution.

The Judiciary is an independent body subject only to the Constitution and the other laws of Seychelles.¹²

The Supreme Court

The Supreme Court established under Art 125 of the Constitution, consists of the Chief Justice, Puisne Judges and the Masters of the Supreme Court. The jurisdiction and powers of the Supreme Court are: Original jurisdiction in matters relating to the application, contravention, enforcement or interpretation of the Constitution; Original jurisdiction in civil and criminal matters; Supervisory jurisdiction over subordinate courts, tribunals and adjudicating authority and, in this connection, have power to issue injunctions, directions, orders or writs including writs or order in the nature of habeas corpus, certiorari, mandamus, prohibition and quo warrant as may be appropriate for the purpose of enforcing or securing the enforcement of its supervisory jurisdiction; and Such other original, appellate and other jurisdiction as may be conferred on it by or under an Act.

Seychelles Court Of Appeal

Article 121 of the Constitution establishes a Court of Appeal which shall consist of a President of the Court of Appeal and two or more other Justices of Appeal; and the Judges who shall be ex-officio members of the court.

The Court of Appeal which shall have the jurisdiction to hear and determine appeals from a judgment, direction, decision, declaration, decree, writ or order of the Supreme Court and such other appellate jurisdiction as may be conferred upon the Court of Appeal by the Constitution and by or under an Act. The Constitution provides for a right of appeal to the Court of Appeal from a judgment, direction, decision, declaration, decree, writ or order of the Supreme Court. Subject to the Constitution and any other law, the authority,

¹⁰ Art 86

¹¹ Rent Board: Hears and determines complaints and applications under the "Control of Rent and Tenancy Agreement Ordinance" - Cap 166 of the Laws of Seychelles ; Employment Tribunal under the Employment Act; Family Tribunal Under the ...

¹² Art 119

jurisdiction and power of the Court of Appeal may be exercised as provided in the Rules of the Court of Appeal.¹³

Magistrate's Court

The jurisdiction of the Magistrate's Court is applied throughout Seychelles, with sittings held in Victoria daily and Anse Royale and Praslin one week per month and La Digue once a month. Magistrates exercise jurisdiction in suits for goods seized in execution of judgment of the Magistrates Court or of the Supreme Court, provided the value of such goods does not exceed twenty five thousand rupees. They also try traffic offences.

In Original Jurisdiction, Magistrates hear and determine Civil suits in which the amount claimed or the value of the subject matter does not exceed twenty five thousand rupees; this includes actions relating to cancellation of lease and recovery of possession of immovable property from tenant or occupier.

Under Criminal Jurisdiction, Magistrates try offences under the Penal Code specified in the third schedule thereto.

2. CONSTITUTIONAL APPOINTMENTS

2.1 Constitutional Appointments Authority

Article 139(1) of the Constitution provides for a Constitutional Appointments Authority, which shall perform the functions conferred upon it by the constitution and any other law, including proposing candidates to the President for the following appointments:

2.1.1 Office of the Attorney General

An Attorney General is appointed by the President and is the principal legal adviser to the Government and, has the power, in any case in which the Attorney General considers it desirable so to: (a) Institute and undertake criminal proceedings against any person before any court in respect of any offence alleged to have been committed by that person; (b) Take over and continue any such criminal proceedings that have been instituted or undertaken by any other person or authority; and (c) Discontinue at any stage before judgment is delivered any criminal proceedings instituted or undertaken under sub clause (a) or by any other person or authority. These powers may be exercised by the Attorney General in person or by subordinate officers acting in accordance with the general or special instructions of the Attorney General.¹⁴

2.1.2 Office of the Ombudsman

Article 143 of the Constitution provides for an Ombudsman to be appointed by the President. The functions of the Ombudsman are to: Investigate an action taken by a public authority or the President, Minister, officer or member of the public authority, being action taken in the exercise of the administrative functions of the public authority; Investigate an allegation of fraud or corruption in connection with the exercise by a person of a function of a public authority; Assist an individual complainant in respect of legal proceeding in relation to a contravention of the provisions of the charter; With leave of the court hearing proceedings relating to a contravention of the provisions of the charter, become a party to the proceedings; Initiate proceedings relating to the constitutionality of a law or the provisions of a law.

¹³ Art 20

¹⁴ Art 76

2.1.3 Office of the Auditor General

Appointed under Article 158 of the Constitution, the Auditor General shall, in the performance of the functions of the office of Auditor General, not be subject to the direction or control of any other person or authority, but the President or the National Assembly may request the Auditor General in the public interest, to audit at any particular time, the accounts of persons or public bodies. The accounts of the Cabinet Office, the National Assembly, all government departments and offices, all courts and those related to moneys withdrawn from the Consolidated Fund, all the accounts of any statutory corporation or such other body as may be specified by or under an Act shall be audited and reported on by the Auditor General to the National Assembly and for that purpose the Auditor General or any person authorised or appointed in that behalf by the Auditor General shall have access to all books, records, returns, information and other documents relating or relevant to those accounts.

2.1.4 Office of the Electoral Commissioner

Article 115 of the Constitution provides for the appointment of an Electoral Commissioner by the President. The Electoral Commissioner is responsible for the conduct and supervision of the registration of voters and of elections and referenda under the Constitution.

2.2 The Public Service Appeal Board

The Public Service Appeal Board appointed under Article 145 of the hears complaints by persons aggrieved by: an appointment made to an office; a promotion to an office; disciplinary proceedings taken in respect of an officer; the termination of appointment of a person who was holding an office; and any decision relating to the qualification of a person who has applied for an office or is serving in an office, in the public service. The Board has investigative powers for the purposes of discharging these functions.¹⁵

3. The Public Service is organised into the Civil Service and non-ministerial government entities – parastatal agencies. The country's national objectives, as determined by Cabinet, are fulfilled by the Public Service through established structures, allocation of functions and funds thus setting the direction of government policy and regulations.

3.1 The Civil Service

The Civil Service is organised into Ministries and Departments and all are the political responsibility of a Minister. The President and Vice-President are politically responsible for any Ministry or Department that have not been specifically allocated to a Minister. Ministries and Departments receive their funding from the Ministry of Finance, approved by the National Assembly. The head of a Ministry or Department in the Public Service, other than the political head being the Minister, is the Principal Secretary, whose primary role is to implement government policy and advise Ministers. The role of the Public Service is to carry out the practical and administrative work of government through its public service employees.

¹⁵ Arts 146 & 147

The Department of Public Administration is responsible for setting of policies for the management and development of the public sector.

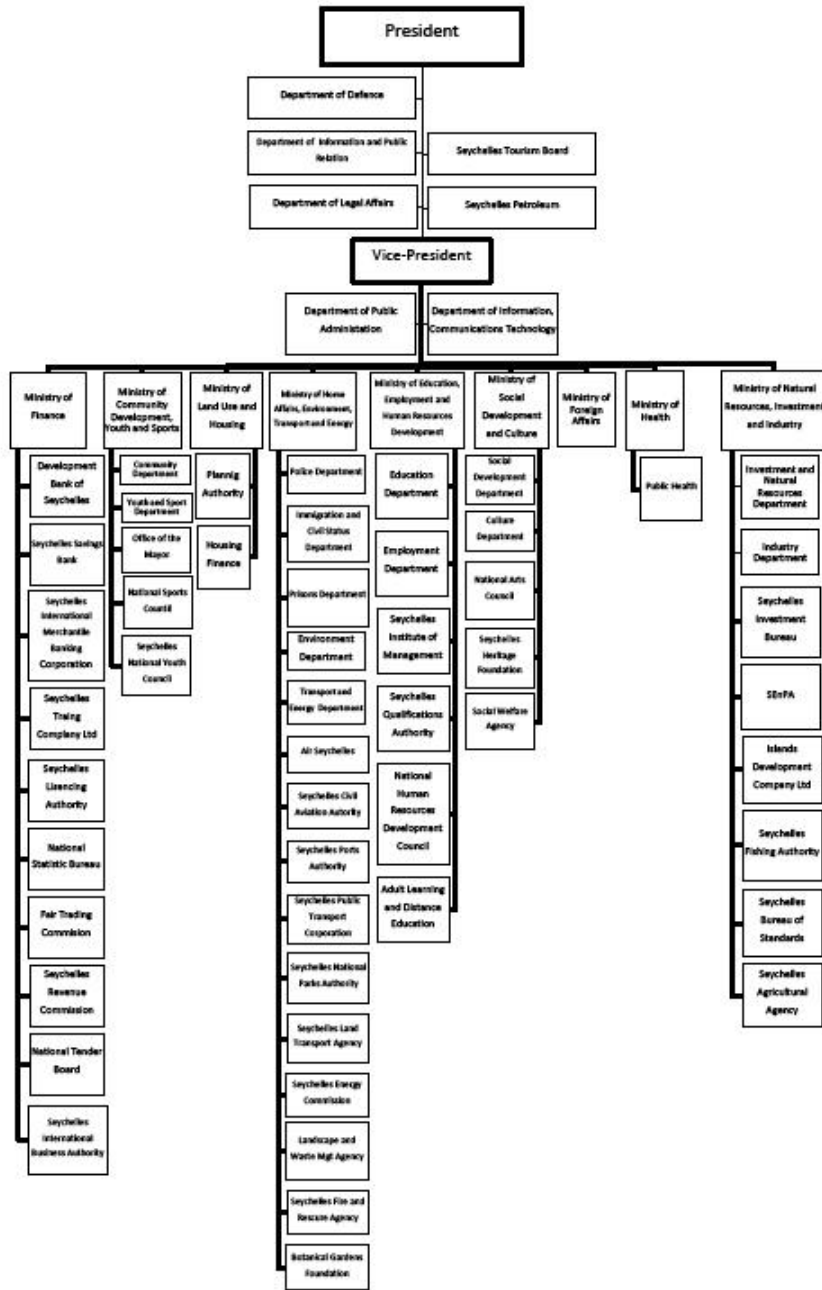
3.2 Other Agencies

Government is also composed of non-ministerial government entities that work independently of Ministers to whom they are nevertheless accountable. These include Parastatal organisations, State Companies, Councils, Boards, Authorities and Corporations. These organisations carry out set functions within a government framework with a varying degree of operational independence and are managed by the Chief Executive. These bodies exercise executive, administrative, commercial or regulatory functions. They are public institutions that deliver services for the Government of Seychelles, but they do not set the policy required to carry out their functions, as these are determined by the Ministry or Department that oversees the agency. Their assets are the general property of the state and their employees are public service employees.

An organigram of the various Ministries and Departments is found in Figure 2 below. Figure 3 illustrates the different divisions within the Department of Environment. The respective roles and functions of these institutions in relation to the management of coastal and marine resources are elaborated upon in Part II of this document.

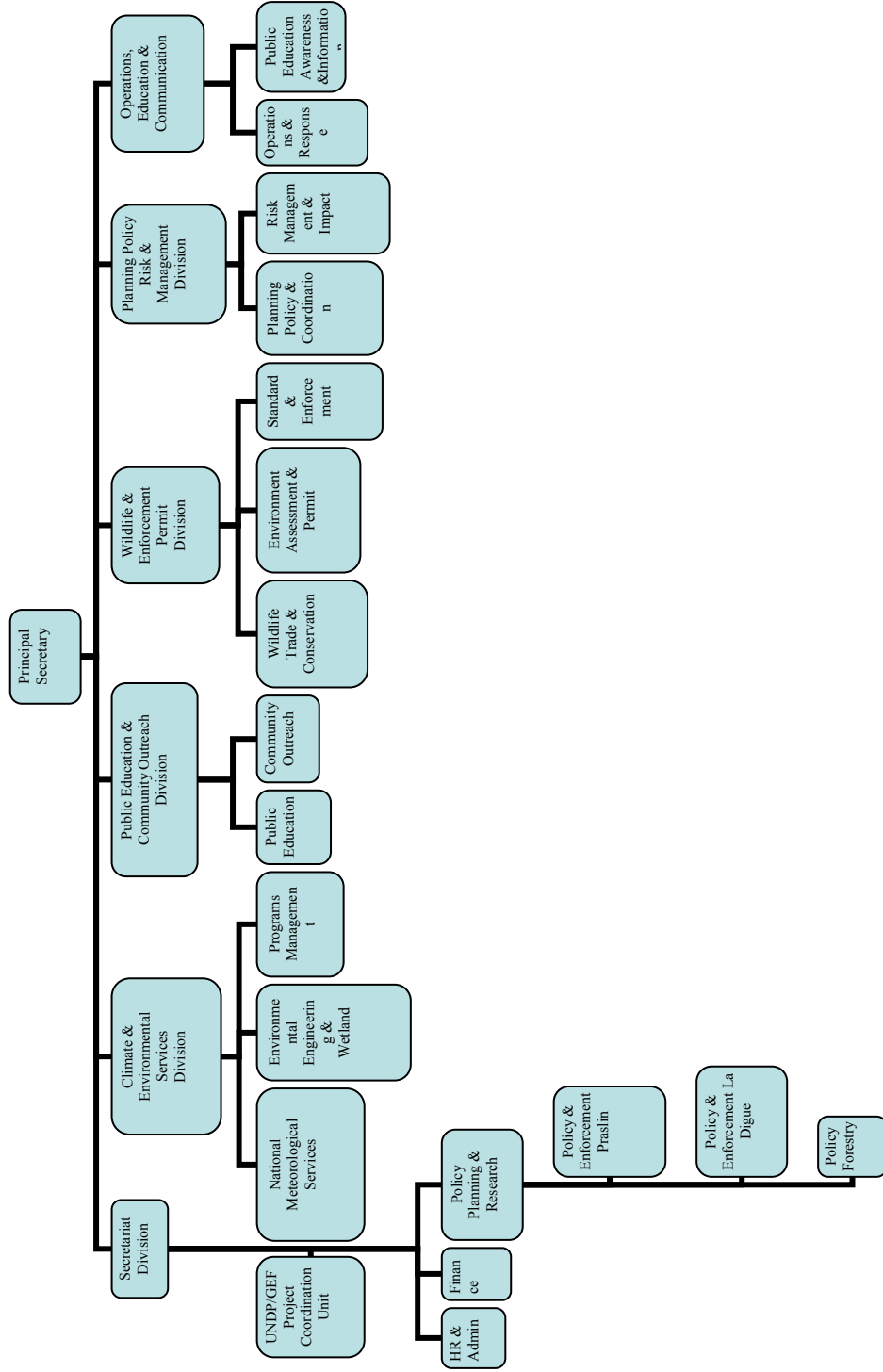
Figure 2: Government structure with Ministries and their Departments

THE EXECUTIVE



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Figure 3: Department of Environment (2011)



C. Role Civil Society, Private sector, research/education institutions¹⁶

Non-governmental organizations (NGOS and the private sector) are increasingly involved in the environmental management, in particular the management of protected areas, and in conducting education and awareness activities.

Environmental NGOs and foundations include the following:

- **Nature Seychelles** whose focus has been on restoring island ecosystem, management of seabird population and the management of wetlands. Nature Seychelles is also responsible for the management of the Cousin Island Special.
- **Island Conservation Society (ICS)** is responsible for managing the Aride Island Special Nature Reserve.
- The **Marine Conservation Society, Seychelles (MCSS)** promotes the conservation of the marine environment through education, research and through the implementation of a number of research programmes. Current projects include whale shark monitoring and tagging, turtle and coral reef monitoring and an environmentally protective mooring programme.
- The **Wildlife Clubs of Seychelles (WCS)** an NGO for youth is dedicated to promoting conservation action through environmental education. WCS is made up of 40 Wildlife Clubs, with a membership of about 800 children throughout Seychelles. Wildlife Clubs of Seychelles is run by volunteers. Most of the clubs are led by teachers and staff, as well as some parents and community volunteers.
- The **Plant Conservation Action Group (PCA)** seeks to advance the mission of the IUCN by serving as the principal source of advice and information on the technical aspect of the plant conservation in Seychelles. It seeks to mobilize action by conservationists and other interested parties for species conservation, in particular for those species threatened with extinction and those of importance for human welfare.
- **Sustainability for Seychelles (S4S)** seeks to promote sustainable living in Seychelles in collaboration with citizens, the government, other NGOs and the private sector. Its objectives includes creating partnerships with government, parastatals, the private sector & NGO's to promote sustainable practices; developing education & training programmes for more sustainable lifestyles particularly relating to climate change, as well as engaging in research that promotes social & ecological sustainability.
- **Seychelles Islands Foundation (SIF)** manages and protects the World Heritage Sites of Aldabra and Vallée de Mai. The foundation was established as a public trust in 1979, with the President of Seychelles as patron. The Board of trustees, appointed by the President, has 14 members, including not less than five representing organizations concerned with the conservation of wildlife and natural history or national academics of science.

¹⁶ Bijoux, J.P et al. (2007) "Status of the Marine Environment Report Seychelles"

Several Community based organisations (CBOs) have been created in order to implement UNDP-GEF funded projects in the Seychelles i.e. the Port Glaud and Roche Caiman Community Action Group under the Mangrove for the Future project.

Private sector involvement

The **Seychelles Chamber of Commerce & Industry (SCCI)** represents the Seychelles business community with a membership of almost two hundred businesses representing all economic sectors and all sizes of activities. Professional organisation and associations such as the Seychelles Hospitality & Tourism Association, the Seychelles Association of Offshore Practitioners & Registered Agents, the Seychelles Car Hire Operators Association, the Taxi Operators Association and the Marine Charter Association are represented in SCCI. It also acts as a consultative body with nominees sitting on a number of national policy making committees.

Several privately owned islands with tourism developments such as Cousine Island, North Island and Fregate undertake environmental management activities. Cousine is in close proximity to the Cousin Special Nature Reserve and also has a long term turtle nesting monitoring programme. Both North and Fregate have conservation programmes which have allowed the islands to be rehabilitated with local species. Both islands, as well as Denis, have had deratisation programmes and hence are suitable for the introduction of native species of birds.

Various other private sector companies are supportive of environment causes in the Seychelles and regularly support environmental programmes. These include companies such as Cable and Wireless, Airtel, Seychelles Breweries, Barclays Bank, Mason's Travel. They play an important role in raising public awareness and getting the community directly involved in marine conservation and environmentally related projects.

Stakeholder involvement in environmental management is facilitated by the **Environment Management Plan of Seychelles (EMPS) Steering Committee**¹⁷. The Steering Committee, set up by Government, comprises senior representatives of key Government Ministries, parastatals, the private sector and civil society, to provide advice and guidance and act as an arbitration mechanism in cases of conflicts and disagreements regarding programme formulation, funding or implementation. The Principal Secretary of Environment chairs the Committee. The Steering Committee also serves as an oversight agency for the ERMPS Coordinating Unit.

A clearer mandate, accountability, and reporting relationships for the Steering Committee has been recommended by focusing on developing the enabling framework by the public, private sector and NGO communities.¹⁸

C. Outline of national legislative process

¹⁷ Republic of Seychelles, EMPS 2000-2010; MENR (2004), Functions and Responsibilities Manual

¹⁸ Ferguson and Carolus (2005) "Institutional and Policy Review - Mainstreaming Biodiversity in Seychelles"; NCSA Capacity Assessment Report, April 2005

1. Ratification of treaties: procedure as detailed in the document entitled “Seychelles’ procedure for execution of treaties”¹⁹ prepared by the Ministry of Foreign Affairs (MFA).

- The relevant institution will seek views from relevant parties and prepare and present a memorandum to the Cabinet of Ministers for their approval. The memorandum must detail why Seychelles should ratify the Convention and the obligations associated with the ratification as well as the possible ways and means of implementing it.
- Upon approval Cabinet informs the relevant institution and MFA accordingly and instructs MFA to prepare a Brief on the convention to the Leader of Government Business in the National Assembly.
- MFA prepares three originals of the Instrument of ratification which is sent to the Secretary of the Cabinet for onward transmission to the President.
- The Secretary to the Cabinet recommends to the National Assembly for the Treaty to be brought to the attention of the National Assembly under Article 64.4 of the Constitution.
- The convention is presented to the National Assembly as a Motion which is debated and voted upon. A resolution is passed by votes of a majority of the members of the National Assembly.²⁰
- Following a favourable resolution of the National Assembly, the President executes the convention through the signature of the three originals of the Instrument of ratification, which is then forwarded to MFA.
- MFA forwards the documents to the Attorney General’s Office to affix the Seal of the Republic to two of the originals and embosses the third one returning them to MFA.
- MFA prepares and sends a Note Verbale presenting the Instrument of ratification to the organisation or State depositary of the convention, through the relevant embassy.
- The MFA must receive a letter from the depositary acknowledging receipt of the Instrument.

2. National legislative process

- The relevant Ministry prepares and presents a Cabinet memorandum outlining the need for the new law as well as its main provisions.
- Upon approval of the Cabinet memorandum, both the relevant Ministry and the Attorney General’s Chambers are advised of the outcome of the request.
- Further amendments may be proposed which should be resubmitted to the Cabinet.
- The relevant Ministry liaises with the AGs Chambers providing drafting instructions.
- The AGs Chambers prepares the Bill which is debated and approved by the National Assembly.

¹⁹ Govt. of Seychelles, Circular 1 of 2005

²⁰ Art 64.4 of the Constitution of Seychelles

Once approved the new law is signed by the President or relevant Minister and published in the Official Gazette.

D. Funding sources and level

Most of the funding available to organizations for coastal and marine resources management is allocated from their budget from government.

Other sources of funding are obtained from ongoing projects funded by international organizations in particular under the GEF/UNDP Programme as detailed in the respective chapters.

PART II

1. MARITIME ZONES (including maritime boundaries)

1.1 Historical and Current Institutional structure

The Ports Authority oversees the administration on the harbour and port area whilst the Seychelles Maritime Safety Administration is responsible for maritime safety.

The Seychelles Coastguards undertake enforcement activities within the territorial waters of the Seychelles.

1.2 Legislative and Policy Framework

The following pieces of legislation regulate coastal zones within the Seychelles:

Maritime Zones Act, 1999

The Act seeks to provide for the determination of the Maritime Zones of Seychelles in accordance with the United Nations Law of the Sea Convention, 1982

Maritime Zones (Marine Pollution) Regulations, 1981

These Regulations enacted, under the previous Act, provide for the protection and the preservation of the marine environment and the prevention and control of marine pollution. The Regulations prohibit the discharge of any oil or oily mixture into the territorial waters of the Seychelles from any vessel, from any place on land and from any apparatus used for transferring oil from or to a vessel. The Regulations impose a duty to report discharges to the Harbour Master. Pollution control officers may be appointed by the Minister and are given extensive powers to carry out their duties in pursuance of the Regulations.

Harbour Act, 1932 & Harbour Regulations, 1933

The Harbour Act and Regulations seek to regulate shipping activities and to exercise a degree of control over vessels in Victoria Harbour. The Regulations establish rules of safety to prevent spillage and pollution from vessels having on board petroleum as cargo, particularly when unloading petroleum.

Merchant Shipping Act 1992: The Act provides for the Minister to make Regulations for the protection of marine environment.²¹ **Merchant Shipping (Oil Pollution Preparedness and Response) Regulations, 2001**

The Regulations seek to give effect to the International Convention on Oil Pollution Preparedness and Response (OPRC), the International Convention on Civil Liability for Oil Pollution Damage (CLC), 1992 and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution (FUNDS), 1992.

1.3 Membership of relevant international treaties

Table 1: Membership of Maritime Zones Related International Treaties

United Nations Convention on the Law of the Sea(UNCLOS), 1982

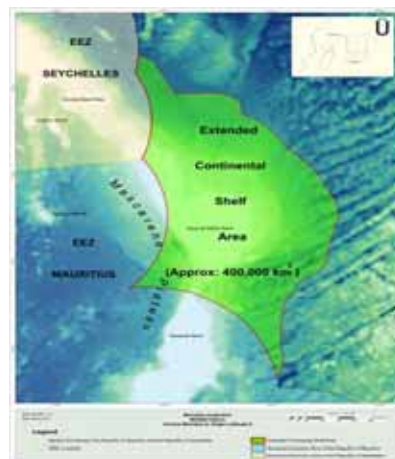
Agreement relating to the implementation of Part XI of the UNCLOS, 1982
Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, Nairobi, 1985
Protocol Concerning Cooperation in Combating Marine Pollution in cases of Emergency in the Eastern African Region, Nairobi, 1985
International Convention on Oil Pollution Preparedness and Response, 1992
the International Convention on Civil Liability for Oil Pollution Damage, 1992
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution, 1992

1.5 Gaps and need for harmonization

Seychelles is presently in the process of negotiating the delimitation of its EEZ boundaries with neighboring states namely: Mauritius, Tanzania, Comoros, Madagascar and France.

- Concerning **Mauritius** the outstanding issue of the management of the Saya de Malha banks claimed jointly by Mauritius and Seychelles was settled in May 2011. Seychelles and Mauritius have successfully settled a joint claim to the United Nation for an extended continental shelf on the Mascarene Plateau for 360,000sq. Km. Please refer to Figure 4 below. The two countries now have sovereign rights for the purpose of exploring or exploiting of the sea-bed and sub-soil in the Mascarene Plateau. The natural resources consist of mineral and sea-bed with non-living resources of the sea-bed and the sub-soil with living organism belonging to the sedentary species. The two countries are presently discussing the legal framework to put in place the management structure to manage and administer the zone (MLUH, personal communication).

Figure 4
Delimitation of Saya de Malha between Seychelles/Mauritius



- Concerning **Tanzania** the main negotiations have now been completed except for a minor agreement concerning the tri-points where the three neighboring States (Seychelles-Comoros-Tanzania) meet, which needs to be settled.
- As for the **Comoros** negotiations are still on-going concerning the median line but should be completed by the end of this year
- Negotiations to delimitate the EEZ boundaries with **Madagascar** have not progressed as the latter cannot confirm it's availability.
- Negotiation with France and/or Mauritius concerning the island of **Tromlin** is still pending whilst sovereignty over this island is being sorted out between these two countries (France and Mauritius).²²

²² MLUH, personal communication

2. FISHERIES AND MARICULTURE

2.1 Overview of the Fisheries Sector

Fishing has traditionally played an important part in the life of Seychellois people and the fisheries sector has a major role in the socio-economic development of the country. It provides important revenue from export and foreign exchange earnings as well as an invaluable source of animal protein. With the emergence of Port Victoria as the principal tuna transshipment port (in the mid 1980s) and, the tuna canning factory (IOT) as the largest national employer (in the late 1990s), the fisheries sector has established itself as one of the key sectors in the Seychelles economy.

Employment is another area where the fisheries sector plays a significant contribution. It is estimated that the fisheries and related sectors employ about 6,000 people and contributes to around 17% of the total formal employment of the country. It is estimated that there are between 1,700 and 1,800 full and part-time fishers in the fisheries sector. (Nageon, 2005).

The fisheries sector is also one of the main sources of foreign currency into the country. Overall, the total gross inflow of foreign currency generated by the fisheries sector and ancillary activities and services amounted to SR 1.802 billion in 2005. Of the gross total current account receipts of SR 3.451 billion (which includes receipts from trade in goods and services, income receipts and current transfer inwards), the total inflow from the fisheries sector accounted for 52.2% in 2005 (SFA, 2006). Official figures from the Central Bank of Seychelles indicate that earnings from tourism trade (earnings from tourism and ticket sales to non residents) for the year 2005 stood at SR 1.475 billion or 43% of current account receipts. This implies that the fisheries sector remains the main foreign currency earner in the economy and retains its importance as the major contributor to the socio-economic development of the country.

The fisheries sector is comprised of three sub-sectors: the artisanal, semi-industrial and industrial sub sectors:

The artisanal sub-sector is solely a domestic fishery that uses different types of small boats ranging from 5-16m in length. Different types of fishing gear (hand-lines, traps, nets) are used to catch different species of demersal and pelagic fish. Diving gear (snorkel, scuba) are also used to catch lobsters and sea cucumbers.

The semi-industrial fishery is also a local fishery, where medium-size long-liners (14-23m in length) are used to catch swordfish, sharks and tuna, using a monofilament long-line system. There has been a maximum of 12 vessels involved in this fishery.

The industrial fishery is composed of purse seiners and long-liners that target mainly tuna in Seychelles' and in the high seas in the western Indian Ocean. All of these vessels are foreign-owned, even if some are registered in Seychelles and fly the Seychelles flag. In terms of production, the output from artisanal fisheries is small compared to the total output of fish and fish product. In 2006, output from artisanal fisheries (4,475 t) represented about 10% of total fisheries output (46,637 t). The estimated ex-vessel value of this output was between US\$ 12.7 and 15.1 million.

The aquaculture (mariculture) sub-sector in Seychelles is fairly recent and is quite small in terms of importance compared to the fisheries sector. The development of the

mariculture sector started in 1989 with the construction of a pilot project to grow black tiger shrimp (*Penaeus monodon*) on Coëtivy Island, situated approximately 130 kms from the main island of Mahé (Aumeeruddy, 1999). It was later expanded into a full-fledged commercial integrated project following several development phases. There were a total of 200 grow-out ponds supplied by two hatcheries and the production was processed directly in a processing factory located also on Coëtivy Island. The shrimp feed was produced at the Animal Feed factory located on Mahé and had to be transported by boat. The brood stock for the hatchery had to be flown in from Madagascar at considerable expense.

On a different scale, giant clam (*Tridacna maxima*) and pearl oyster (*Pinctada margaritifera*) farming started at Praslin (the second most important island in terms of size and population) in 1993 and 1995, respectively. The quality of pearls produced from the black-lipped pearl oyster more than matches the quality of those obtained from the Pacific islands which are the main production centers for that type of pearls. To date, the Seychelles is the only country in the western Indian Ocean region that has a commercial pearl farm and a giant clam farm.

Overall the aquaculture sector employed up to 400 people at its peak, (with more than 80% being expatriate labor) mostly by the shrimp farm and its ancillary services. The giant clam and pearl farms employ only 4-5 people each. The production from the aquaculture sector represents a small proportion of the total production of fish and fish products in the country, which is dominated by tuna. In 2006, out of a total production of 46,737 t, shrimp represented only 772 t (SFA, 2006).

Moreover, the Coëtivy prawn farm ceased all operational activity in December 2008 due mainly to high operating costs and hence lack of economic viability. All personnel have since had their contracts terminated.

2.2 Evolution of the Fisheries Institutional Structure within Government

Traditionally, responsibility for the fisheries sector in Seychelles has always been under the umbrella of a Ministry which set policy and guidelines to be executed by an executive Agency. From 1974 to 1982 this responsibility fell on the Fisheries Division which formed part of the Ministry Of Agriculture. In 1982 this responsibility, in particular for fisheries Research and Development, was transferred to the Fishing Development Company (FIDECO), an independent parastatal organization which also had the responsibility to manage a fleet of approximately 30 state-owned fishing schooners.(see *Case Study* in box below). FIDECO was also entrusted with research and development programmes for the fisheries sector

In 1984, the Ministry responsibility for fisheries was given to the Ministry of National Development and a new semi-autonomous body, the Seychelles Fishing Authority(SFA) was created which became the executive arm of government for all fisheries (including mariculture) related matters

The year 1984, coincided with significant developments in the Seychelles fishing industry with the development of the industrial purse seine tuna fishery. At the same time Port Victoria emerged as the principal port for tuna transshipment in the Western Indian Ocean based on the abundant tuna stocks in the country's extensive EEZ.

Since 1987, when this has also included tuna canning operations, the importance of fisheries has grown still further, firmly establishing its place as one of the key sectors of the Seychelles economy.

Case Study

FIDECO (Fishing Development Company)

FIDECO was a semi-autonomous government parastatal company created in 1982 when government purchased around 30 fishing schooners from three privately-owned fishing companies that in effect had been nationalized. The government had decided to run its own fishing fleet and appointed a Managing Director and administrative staff as well as recruiting around 125 fishermen who had previously been employed by the three private companies. The fishermen received a basic monthly salary as well as a bonus on the catch; they also received free fuel for the fishing boats and all repairs and maintenance on the fleet became the responsibility of FIDECO. In short, the fishermen had considerably less responsibility, compared to when they were fishing for the private companies and, were almost entirely dependent on the state-owned company.

The catch rates and fish landings for each vessel however, dropped dramatically compared to when the vessels were being run by the private companies and in addition there was a sharp increase in fuel consumption per vessel with an excessive number of engine breakdowns. In summary, there was a significant increase in the operating costs for the fleet whilst there was a subsequent decline in revenue from the sale of fish.

After 24 months of fishing operations the venture folded mainly due to poor returns on investments and government decided to cease all fishing operations and sell the vessels (after they had been refurbished with money provided by an ADB loan) to individual fishermen. The vessels were sold on a hire/ purchase basis but out of the approximately 22 vessels sold (at least eight vessels were written off) only one skipper/fisherman owner repaid his loan in its entirety.

This experiment in running a state owned fishing venture was proof that such ventures could never be economically viable and in future it was decided that the state should keep its interference in any fishing business to a minimum and only act as a facilitator in promoting the local fishing industry

Source: Nageon, 1983

2.2 Current Institutional structure

As a general rule, institutional support for fisheries management and research in the Indian Ocean states has not received the priority and support it deserves to allow them to fully develop their national fisheries potential. Seychelles is perhaps an exception, since its main fisheries institution, the Seychelles Fishing Authority (SFA), was from its inception given the autonomy and institutional support to manage and develop the country's fisheries. Table 2 lists the major stakeholders involved in the fishing industry. The major institutions are further discussed below.

Table 2: Main institutions with responsibilities in the Fisheries Sector

Institutions	Key relevance to fisheries
Ministry for Investments, Natural Resources and Industry (MINRT)	Ministry responsible for fisheries, including all aspects of policy specification, and the Seychelles Bureau of Standard (SBS) which is the competent authority. Created in 2010
Seychelles Fishing Authority (SFA)	Agency mandated to promote and develop fisheries. Executive arm of government in all fisheries related matters. Employs over 100 staff. Created in 1984
Seychelles Ports Authority (SPA)	Responsible for port management. Generates 80% of their fees from the fisheries sector, and employs around 100 staff. Created in 2004
Seychelles Maritime Safety Administration	Sets and monitors rules on vessel safety and safety equipment in accordance with international standards. Created in 2004

Seychelles Licensing Authority (SLA)	Responsible for issuing of all fishing licenses, based on recommendations from SFA. Created in 1986
Coastguard, Ministry of Defense	Monitoring Control and Surveillance. Created in 1994
Islands Development Company(IDC)	Has an airplane for hire which is used for aerial surveillance
Ministry of Foreign Affairs	Leads negotiations for the Economic Partnership Agreement with the EU. International relations ,deal with aid donors, International and regional organizations(IOC,COMESA, SADEC, etc)
Maritime Training Centre (MTC), Ministry of Education	Ministry of Education moved from MENR in 2005. Responsible for human capacity development, and focusing primarily on vocational training. Board includes fisheries stakeholders, e.g. MD of SFA.
Development Bank of Seychelles (DBS)	Involved with loans provision to the fisheries sector
Seychelles National Park Authority(SNPA)	Research into marine environmental issues, coral Reefs, marine mammals, etc. Part of the Ministry of Environment, Created in 2009
Central Bank of Seychelles	Fiscal and monetary policy. Repository of EU access agreement funds before reallocation to SFA.
Ministry of Land Use and Housing	Land use planning, and allocation of land e.g. for port development. Also responsible for maritime boundary delimitation. Created in 2010
Air Seychelles	National Airline, important for fresh fish exports
Attorney General's Office	Drafting of fisheries legislation, and prosecution of offences.
Seychelles Investment Bureau (SIB)	Intended to be a "one-stop shop" for foreign and domestic investment promotion. Responsible for approving investment projects. Created in 2005
Seychelles International Business Authority(SIBA)	Responsible for offshore investment, and for granting Seychelles investment trade zone (SITZ status).
Seychelles Marketing Board (SMB) Created in 1987. Since 2007, called Seychelles Trading Company(STC)	Owned and managed the Coetivy prawn farm, (which ceased farming operations in December 2008) and responsible for import of most basic commodities.
Seychelles Institute of Management	Provides regular and tailor made courses for SFA
Management Information System Division (MIDS), Ministry of Information and Technology, National Statistics Bureau	Figures/statistics on fishing sector e.g. export figures
Seychelles Bureau of Standards (SBS)	Sets physio- sanitary norms and other norms for all Seychelles industries/products. Is the Competent Authority for fish quality control

2.2.1 Seychelles Fishing Authority (SFA)

The SFA was created in 1984 at the time of intense development in the fishing industry, in particular in foreign industrial tuna activity. SFA absorbed the staff from the defunct Fisheries Division and Fishing Development Company (FIDECO) and became the executive arm of the government in all fisheries related matters. SFA presently employs a staff of approximately 100 people, which includes scientific and administrative personnel. The main objectives for the creation of SFA are as follows:

- To develop the fishing industry to its fullest potential.
- To safeguard the fisheries resource base of the country for sustainable fisheries development.

The main functions of SFA as defined in Article (5) of the Seychelles Fishing Authority Establishment Act are as follows:

- To promote, organize and develop fishing industries and fisheries resources in Seychelles;
- To assist in the formulation of this policy with respect to fishing development and fisheries resources;
- To conduct negotiations, engage in meetings, seminars or discussions with regard to fishing or fisheries and the establishment or operations of fishing industries, whether at a national or international level, on behalf of the Republic;
- To identify the manpower training requirements of Seychelles with regards to fishing and fishing industries;

SFA is therefore the only regional fisheries organisation, with a mandate to perform Management, planning development, scientific and training functions as well as carrying out a regulatory function by:

- Conducting surveillance in collaboration with the Coast Guard in relation to illegal fishing activities in the Seychelles EEZ.
- Monitoring the catch of all fishing vessels.
- Carrying out scientific and development research.

Since its inception, the SFA has made remarkable advances and to this day it is still a credible fisheries management and research organisation in the Western Indian Ocean. But SFA needs to be strengthened from a marketing, research and development perspectives to allow further development and support to the fishing industry.

2. 2.2. Ministry of Home Affairs, Environment and Transport (MHAET)

The MENR was created in 2004 through an expansion of the previous Ministry of Environment and was previously in charge of the Natural Resource sector (previously under the Ministry of Agriculture and Marine Resources). In May 2010, the Ministry of Home Affairs, Environment and Transport (MHAENV) was created. The Department of Environment within this Ministry has a Principal Secretary dealing with Environment.

The Department of Environment is responsible for issues related to pollution, and this responsibility involves policing of the environment. The Department also has a Marine Unit, which conducts research into corals, biodiversity, etc. The Department is consulted on all projects that have a potential impact on the environment, and environmental issues are of significant political/public importance in the country; legislation specifies that industrial and tourism projects must be accompanied by an environmental impact assessment.

2.2.3 Ministry of Investment Natural resources and Industry (MINRI)

This Ministry which was newly created in May 2010 is also the Ministry responsible for fisheries. It has one Principal Secretary (PS) responsible for Fisheries, Agriculture and Investments

The Ministry is responsible for negotiating fishing agreements, and for the specification of fisheries policy, responsibility is however delegated primarily to the SFA. The SFA works closely with the Ministry on all fisheries matters.

2.2.3. Seychelles National Parks Authority (SNPA)

This Authority created in June 2009, replaced the defunct Seychelles Centre for Marine Research and Technology (SCMRT), and is a management and marine research organisation mandated for the management of marine and terrestrial national parks and for promoting marine research in the Seychelles. The Centre has numerous research projects, such as looking at habitat use by juvenile hawksbill turtles, monitoring of turtle nesting beaches, coral reef monitoring, marine habitat mapping and rehabilitation of mangrove and coral reef habitats. SNPA is a government budget dependent organisation.

2.2.4 Seychelles Coast Guard

The Coastguard is part of the Ministry of Defense. It was set up by the Defense Force Act, 1980, Section 34 of 14 November 1994, taking into account;

a) The extent of the EEZ,

b) The urgent need to stop illegal exploitation of resources within the EEZ and the territorial waters of Seychelles, and to ensure sustainable exploitation of resources, and in the absence of means from the Police, SFA and other civil authorities, it undertake the tasks under item b). In addition to control fisheries, the Coastguard has the responsibility for pollution prevention, surveillance of marine parks, hydrography, search and rescue, and assistance to port authorities (immigration, terrorism, and monitoring of seized vessels).

The Coastguard is staffed by 140 military officers, with 30 to 40 of them having received training in the control of illegal fisheries activities. The major operational means that can be used for control of fisheries on the high-seas include two 42 m patrol vessels (M/V Topaze and M/V Andromanche). The Coastguard also owns a middle range patrol vessel (26 m) and two inshore patrol vessels (12 m). The Coastguard is now attached to the 'Air-wing' with access to three planes for monitoring illegal activities in the Seychelles EEZ, in particular to counter the problem of piracy.

Liaison with SFA is organised through an informal committee meetings monthly. There is no formal planning of control activities per se. In practice, the Coastguard is solicited by SFA only when an infringement is detected through VMS or other indirect control means (including reports from fishermen at sea or based on the outer islands). The SFA has to financially support the mission requested (most importantly with respect to fuel costs).

Patrol for the inshore fisheries is limited due to the resources of the Coast Guard and are more or less carried out by SFA, which are usually shore based enforcement. The capacity of the Coast Guard is more geared towards offshore fisheries patrol.

The role and importance of the coast Guard has increased significantly in the last three years, as in addition to its normal EEZ surveillance, it has been directly involved in protecting vessels operating both inside and outside the Seychelles EEZ (including fishing, cargo and pleasure crafts vessels) from Somali pirates. It has actually been involved in several interventions and rescue operations for both local and foreign vessels and crew, capturing at 46 Somali pirates in the process. These are being kept in detention in Seychelles whilst awaiting judgment.

In order to carry out this anti-piracy work more effectively, the operative capacity of the Coast Guard has also been reinforced recently, with funding and grants of materials (patrol vessels, airplanes and equipment) obtained from several States, the most

important being from the UAE, the EU, China and India. (See Case Study: Piracy in the western Indian Ocean.)

2.2.5 Maritime Training Centre (MTC)

The principal institution providing training to private sector stakeholders involved in fisheries, outside of on the job training provided by fishing companies, is the Maritime Training Centre. The Centre was established in 1979 with financial and human resource assistance from France, and as of January 2005 has come under the responsibility of the Ministry of Education.

The MTC is divided into three divisions: Deck, Engineering and Fisheries and includes several supplementary courses such as diving, first aid, fire fighting, radio and evening classes in navigation. The current Certificate in Maritime Studies comprises 13 modules over a period of two years including one introductory module on the Environment and a three-month attachment within the industry. However, the Certificate course does not have a sufficiently high level of training for graduates to be able to work on foreign going or internationally registered vessels. This course provides the basic training required for employment at entry level or for example inter-islands vessels, semi-industrial and artisanal fishing vessels.

The MTC has an average of 250 applicants every year from which 27 are recruited making a total of 54 students attending the Centre at any one time. On completion of studies, trainees appear to find employment in both the private and public sectors. A notable achievement for the MTC is that at least half of the skippers and marine mechanics on the semi-industrial long line fleet (12 vessels) are former graduates of the MTC, as well as the three skippers on the SFA research vessel “L'AMITIE”.

A new Maritime Training Centre is being planned and land for the development of this new facility has been allocated and funding for the construction has been approved by BADEA (Arab Bank for Economic Development in Africa)). The new building is designed to accommodate 100 students a year with an annual intake of approximately 50 new students and the new training Center should be fully operational by the end of 2011.

2.2.6 Fishermen Associations

The first attempt in recent years to create a fishermen’s association was a worldwide Catholic support movement called “**Apostolat de la Mer**”. The organisation nominated a secretary and held meetings with fishermen at district level to allow them to air their grievances and it also published a newsletter with the aim of transmitting their problems to higher authorities. The organisation did not unfortunately have enough political and financial support from the fisheries authorities...

The “Apostolat de la Mer” opened the door to independent fisheries-related associations, which marked a turning point in fishermen’s perception of such associations.

In November 2003, a new association, The “**Fishing Boat-Owners Association**” (FBOA), was created which has presently 35 members. A Chairman was elected and the association was given an office and secretary. The association has monthly meetings with the Fishing Authorities (MINR) and (SFA) where issues of concern are discussed and in general there is good cooperation between the members and SFA.

In July 2009, a new association was created on the second most populated island of Praslin called the “**Praslin Fishermen Association**” (PFA). The Association which is supported by UNDP has as objective to improve fisheries management practices on the island by promoting fisheries Co-management arrangements.

In 2010, at the initiative of the FAO, a ‘**National Task Group**’ was created on Mahé comprised of important stakeholders in the artisanal fishery. The immediate objective of this task group is to provide fisheries research and management groups with advice and additional knowledge on their ecosystems for use in implementing an Ecosystem Approach to Fisheries (EAF) by 2011. The committee has so far met twice to discuss the implementation of the Project

Hence the main objectives behind the creation of fisheries associations and stakeholder’s discussion groups is to start a proactive dialogue with the authorities, to improve transparency and alleviate many of the existing problems between SFA and the fishing community and to work together towards a common objective of sustainable resource management. This is fundamental to the future of the sustainable development of the fisheries sector.

Case Study

‘Piracy in the Western Indian Ocean-The high cost to the Seychelles Economy’

Piracy in the Western Indian Ocean is getting more lucrative and violent and at the same time it is having a serious impact on the economy of most of the Western Indian Ocean states. In recent years pirates from the Somali coast have expanded their sphere of operation Southwards in the Western Indian Ocean, (WIO) even affecting countries up to the Mozambique channel. The number of attacks on vessels has consequently spiraled and so have the measures taken to counter-act them.

Seychelles, with an EEZ of over 1.4 million square Kilometers, encompassing more than 100 small islands, has had to bear a heavy cost of this emerging piracy threat.

Piracy has not only had a severe impact on the island’s economy but has had a direct bearing on the way the country interacts with the rest of the world. The country is dependent on imports and the increase in insurance costs for freight has led to an increase in the price of imported goods. It is therefore crucial to secure the maritime sea lanes for vessels that crisscross the Western Indian Ocean.

More importantly for the Seychelles, the Port of Victoria is the base for a large foreign tuna fishing fleet but due to the fact that these vessels are prone to piracy attacks, many have had to leave the Indian Ocean or move their bases away from Port Victoria (the purse seining fleet operating in the Western Indian Ocean has consequently been reduced from 40 to less the 30 vessels). The vessels that continue to fish in the WIO have had to invest in expensive security measures and restrict their operation to less risky areas, sometimes outside prime fishing grounds.

In addition, the local artisanal fishing fleet that targets mostly demersal (bottom-dwelling) species on the Mahé Plateau has been instructed to restrict their operations to certain designated areas and to avoid the northern parts of the Plateau which extends to a radius of 60-80 kms from Port Victoria. This has led to a sharp reduction in local fish landings, in particular for high valued species destined for the hotels and export trade. Despite these precautions, in 2010 two local fishing vessels and in 2011 one more fishing vessel were hijacked by Somali pirates. However, due to the prompt action from the Seychelles Coastguard, the crew of all three vessels were liberated safely and brought back to Port Victoria.

Moreover, piracy has also had a direct impact on the tourist yacht charter business that usually

operate between the various island Groups. These are now restricted to the inner islands, within a radius of 30 kilometers from Port Victoria. A considerable number of tourist charter vessels have therefore either cancelled their operations or have opted to stay in port for security reasons

In 2010, conservative estimates place losses to the Seychelles economy due to piracy at over 4 percent of the GDP.

As a result of the hijacking of two Seychellois fishing vessels in 2009, a counter piracy strategy was adopted in 2010 with the two local Coast Guard vessels adopting a 24 hour patrol and surveillance schedule. This strategy has proved to be effective with the Coastguard liberating a Seychellois fishing vessel with a six men crew and an Iranian vessel with a 21 men crew during 2010.

Hence, there are currently 46 Somali pirates awaiting trial in Seychelles, representing 10 % of the prisoners incarcerated in Seychelles.

Indeed, Seychelles is currently one of the two States (the other being Kenya) in the Western Indian Ocean which is taking responsibility to prosecute pirates. It has to be underscored however, that in its fight against piracy the Seychelles government has received the support of a number of partners. The EU Atalanta operation has been a critical factor in ensuring that piracy is being contained. Seychelles has also benefited from bilateral support from a number of partners including **India, China, Russia** and the **United States**, amongst others.

Seychelles has consistently called for an increase in the regional capacity of states to tackle piracy.

The **Indian Ocean Commission (IOC)**, the **Common Market for Eastern and Southern Africa (COMESA)** and the **South African Development Community (SADC)** are leading a regional project to do just that with financial support from the EU. This project is wide-ranging, looking at capacity issues in coastal states as well as in Somalia itself.

Anti-piracy activities have nevertheless cost the Seychelles government over US\$ 4.5 million in 2010, out of a total government budget of US\$ 100 million and, this does not include losses incurred by foreign and local fishing vessels and by yacht operators.

Source: Ministry of Foreign Affairs (Seychelles)

2.3 Legislative and Policy Framework

2.3.1 Legal Framework

The principal legal instruments controlling fishing activities in Seychelles established the national fishing authority and provided control of fishing through the Fisheries Act (1986), the Licensing Acts (1986) and the Fisheries Regulations (1987), and subsequent amendments. The Seychelles Fishing Authority (SFA) was established by an Act in 1984 and its mandate is described in section 2.2.1. of this report:

The Fisheries Act (1986) allows for management plans implemented through the Fisheries Regulations (1987).

The Act requires SFA to collect and analyze statistical and other information on fisheries and to prepare and keep under review plans for the development and management of fisheries including closed seasons, closed areas, gear specifications, fishing methods and gear types, specification of species size or other characteristics of aquatic organisms that are permitted or forbidden to catch, schemes for limited entry into the fishery. In preparing management plans, SFA, as far as possible, must consult with fishers and other relevant stakeholders, and, where practical, with regional fisheries institutions.

The Act gives the Minister power to appoint enforcement officers to ensure compliance with management measures stated in the Act and Regulations. Breach of management measures is an offence under the Act and legal action ranges from fines to forfeiture of vessels and gears.

The basic objective of this policy was to ensure that the fishing fleet (both foreign and local) was being closely monitored and managed, whilst ensuring that the fleet was complying with all environmental regulations (in particular the foreign fishing fleet). Another key priority was to ensure that marine resources were being exploited in a sustainable manner.

Other relevant legislation includes the Maritime Zones Act (1999) which, inter alia, sets out the different limits of Seychelles maritime zones, the territorial sea, archipelagic waters, contiguous zone as well as the exclusive economic zone and the continental shelf. The Environment Protection Act (1994) serves to ensure that all development and activities, including fisheries, are subject to environmental controls. The National Parks and Nature Reserves Act (1969) provided the legal instrument to establish and manage marine protected areas for fisheries, conservation as well as other purposes. The other major legal framework of importance for fisheries includes:

The Maritime Zone Act (1977) which came into force on the 1st of August 1977, and was implemented on the 27th February 1978 by **the Exclusive Economic Zone Order, 1978**. This Act extends the limits of the territorial waters of Seychelles up to a distance of 12 nautical miles from the nearest point of the baseline. The Seychelles extends its sovereignty over these waters and the seabed and subsoil underlying and the air space over. The Act also establishes an Exclusive Economic Zone extending to a distance of 200 nautical miles from the baseline. The Seychelles also claims rights over a continental shelf which is defined as the subsoil of the submarine areas that extends beyond the limits of the territorial waters to a distance of 200 miles.

The implementing agency at the time was the Fisheries Division within the Ministry of Agriculture which presently falls under the Ministry of Natural Resources.

The policy was developed for the following reasons:

- Sovereign rights and jurisdiction for the purpose of exploration, exploitation, conservation and management of all resources;
- Exclusive jurisdiction to authorize regulate and conduct scientific research;
- Exclusive jurisdiction to preserve and protect the marine environment and to prevent and control marine pollution
- Such other rights as are recognized by international law and state practice.

These regulations make provisions for Seychelles to grant fishing licenses to any foreign fishing vessels and to give exploration right for mineral deposits on its seabed within its EEZ. Hence, for the first time Seychelles was able to collect fishing license revenue from mineral prospection and this legislation was directly linked to the United Nation Conference on the Law of the Sea which was first proclaimed in 1973. -although the United Nation Convention on the Law of the Sea (UNCLOS), of which Seychelles is a signatory, was not officially adopted until 1982.

The Maritime Zone Act of 1977 not only gave Seychelles sovereign rights over its EEZ, but it also put responsibility on the state to protect its marine environment and prevent such acts as illegal fishing and pollution of its waters by foreign vessels.

In short, from now on Seychelles had to meet International and regional obligations by maintaining basic ecological integrity of its waters and controlling marine pollution

This Act was therefore important as for the first time it laid down the key principles for conserving and managing the Seychelles marine environment.

2.3.2 Policies

The new **National Fisheries Policy (2002)** and was approved by cabinet in 2005. The policy aims at promoting sustainable and responsible fisheries development and optimizing the benefits from this sector for the present and future generation. The Ministry of Environment and Natural Resources was the Ministry with overall responsibility to implement these regulations, whilst the executing Agency was the SFA.

The policy was developed so as to improve the infrastructure at port Victoria to meet the demand of the rapidly expanding tuna industrial fishery in Seychelles. This was also partly as a response/demand from the industrial fleet to match the building of facilities/infrastructure that was going on in the other countries of the Western Indian Ocean. This was particular the case in Mauritius where new and refurbished port facilities were rapidly being developed.

The Fisheries Development Plan 2007-2011(Unpublished)

In his 2006 State of the Nation address, the President announced the creation of a Fisheries Development Committee (FDC) that would have as Terms of Reference the drafting of a Fisheries Development Strategy for Seychelles. The fisheries strategy has as its main objective the implementation of the policies as defined by the Fisheries Policy of Seychelles This Committee comprised members from both the public and private sectors and non-governmental organization (NGO's) underscoring the government's willingness to include all stakeholders in this process. The main implementing agency is the SFA

In defining a Fisheries Development Strategy for the Seychelles it is important that all the issues pertaining to the development of the fisheries sector be carefully considered and taken into consideration. More importantly, this involves the promotion of sustainable exploitation of the marine resources, improving the competitive position of Seychelles and the maximization of the potential benefits of the marine resources. In order to achieve this, government's strategy will be to facilitate local and international participation and investment on the sector and enact measures to enhance its competitiveness. Another important government strategy is to maintain Port Victoria as the most important tuna transshipment port in the region. The ultimate objective however is to turn Seychelles from a mainly fisheries transshipment hub to the primary seafood processing centre in the Western Indian Ocean The Fisheries Strategy of Seychelles will also address other important issues as enshrined in the **National Fisheries policy of Seychelles (2005)**. These include amongst others:

- Research and Development
- Resource Management
- Monitoring, Control and Surveillance
- International Agreements and Co-operation
- Legislative and Institutional Framework
- Investment, Trade and Commerce,
- Infrastructure Development
- Employment, Human Resource Development and Capacity Building

2.3.3 Fisheries Development Policy

From a development perspective the fishing industry needs to become competitive. The launching of the Integrated Fisheries Development plan in 2006 was implemented with the objective of increasing Seychelles competitiveness. The necessary skills and manpower required were identified to allow a progressive growth. The supporting infrastructure must also be at competitive prices to attract investment both local and foreign. There is an urgent need to assess the economic net benefits of the activities that generate the majority of income in the fishing industry, for example the canning factory and port services.

On the domestic side, in particular, the artisanal fisheries, the objective is to continue to provide the basic facilities in the key fishing areas around Mahe, Praslin and La Digue

and ensure a sustainable growth. Focus is being made on promoting value addition activities to increase the revenue being generated from the different fisheries.

In February 2009, an in-depth scoping study of the prospect for aquaculture projects in Seychelles was carried out. After this study was presented to Cabinet in March 2009, a Mariculture Master Plan (MMP) was commissioned by the Seychelles government. This will be carried out by SFA with the assistance of a foreign consultant. The purpose of the Master Plan is to ensure that any development in aquaculture will be environmentally and socially responsible, that choices will be based on economic factors and that its development is effectively integrated into the country's economy. This Master plan is presently on-going and should be completed in 2012.

2.3.4. Measures to Protect and Foster the Development of the Fisheries Sector

The numbers of managed fisheries and measures have increased over the last decade and several fisheries have been closed due to concern over their economic viability and for conservation reasons.

- Closed seasons have been legislated for the lobster fishing and fishing prohibited from the beginning of February to the end of October. In addition a minimum carapace length at capture has been set for each lobster species and the capture of berried females prohibited;
- Restricted fishing periods for the mackerel gill net fishery with no fishing allowed at night;
- There are protected fishing areas along the reef for all three main granitic islands where fishing with nets is prohibited;
- Marine parks have been set mainly around granitic islands where all fishing activity is prohibited.
- Mesh size have been established for fish trap with minimum mesh sizes of 40mm in diameter and restricted zones have been set for foreign fishing vessels prohibiting fishing activities within 3kms from the 200 meter isobaths;
- The number of licenses for sea cucumber and lobster fishing has been capped at 25 and live fish for export has been banned;
- Mother ship ventures (with dories) are prohibited on the Mahe and Amirantes plateau with only restricted to some offshore banks in the southern islands while a numbers of fisheries gears types are prohibited which include demersal trawl fisheries, gill netting for sharks, drift net fisheries and fishing using explosives, poisons and spear-guns.

2.3.4 Quotas

Sea cucumber fishery is based on a shared quota system for the four major species with a total allowance catch (TAC) set for each species at 425MT per annum divided equally between each license holders.

A sea cucumber management plan has recently been drafted with the assistance of the FAO in 2008. This plan (management) had also been discussed and approved in a seminar by other stakeholder in that fishery and has been approved by the Cabinet of Ministers and by the National Assembly.

Restrictions also exist for lobster fishing but it is based on the number of person allowed to have a license. This system is also calculated by the number of days in active fishing on a first come, first serve basis. Shark fishing with gill nets is banned because fishermen target only the fins (due to its high price).

2.4 Membership to relevant international treaties

2.4.1. International commitments to treaties and conventions

Seychelles signed the United Nations Law of the Sea in 1982 and ratified it in 1991, as well as the agreement on conservation and management of straddling stocks and highly migratory species. Seychelles also signed the Agreement to promote compliance with international conservation and management measures by fishing vessels on the high seas (2000).

Seychelles is a signatory to these, and a number of other international legal instruments pertaining to fisheries and marine resources. These are listed in the table below: The bodies most relevant to fisheries are highlighted in the following sections.

Table 3: Membership of international treaties relevant to fisheries

United Nations Convention on the Law of the Sea(UNCLOS), 1982
Agreement relating to the implementation of Part XI of the UNCLOS, 1982
UN Convention relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Species(1996)
UN Framework Convention on Climate Change(UNFCCC), Rio de Janeiro, 1992
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
Convention on Biological Diversity (CBD) and the Cartagena Protocol on Biosafety(1992)
Convention for the Protection, Management, and Development of the Marine and Coastal Environment of the Eastern African Region(1985)

2.4.1.1. IOTC

The management of tuna and tuna-like fish stocks in the Indian Ocean is coordinated by the Indian Ocean Tuna Commission (IOTC), and Seychelles is a contracting party. Established in 1993 under Article XIV of the FAO Constitution, IOTC is an intergovernmental organization whose objective is to "promote cooperation among its members with a view to ensuring, through appropriate management, the conservation and optimum utilization of stocks covered by this Agreement and encouraging sustainable development of fisheries based on such stocks". IOTC's management powers are based upon the following:

Conservation and management measures binding on Members of the Commission must be adopted by a two-thirds majority of Members present and voting. Individual members objecting to a decision are not bound by it. If objections to a measure are made by more than one-third of the Members of the Commission, the other Members are not bound by that measure; but this does not preclude any or all of them from giving effect.

The IOTC has pursued discussions to disassociate itself from the FAO, primarily due to the problems of Taiwan being unable to be a full contracting party under the current management organization. A decision is expected to be taken over the near future.

NGO participation in the affairs of IOTC is rather limited and there is a need to engage them more in the future.

2.4.1.2 SWIOFC

In addition, the South West Indian Ocean Fisheries Commission (SWIOFC) was formally established on November 2004 and covers the sea areas off the shores of East Africa and several island states of the region. Though SWIOFC's mandate focuses primarily on coastal fishing and non-tuna like demersal stocks, a parallel agreement on regional cooperation on high seas fishing of non-tuna resources is being negotiated. The Commission's members include 14 coastal states, including Seychelles, whose territories are situated wholly or partly within the SWIOFC area of competence (SWIOFC, 2005). Other countries may participate as observers. SWIOFC held its first meeting in April 2005, during which it agreed to establish a scientific committee to focus on fisheries data collection and on providing resource managers with information on the status of stocks.

2.4.1.3 Programme for implementing a Regional Fisheries Strategy for the ESA – 10 Regions (Eastern Southern Africa-Seychelles, Mauritius, Comoros, Madagascar, and Zambia)

This is a 4 year programme (2011-2014) funded by the European Union and managed by the Indian Ocean Commission (IOC) with an option to increase the duration of the project for another 3 years. The estimated funds available for implementation of the project 35 million Euros in two portions of Euros 21 millions and Euros 14 millions

The overall objective of the programme is to contribute to an increased level of social economic and environmental development in the ESA -10 regions through the sustainable exploitation of Fisheries Resources. The specific objectives of the project include:

- Identify the fisheries potential of the individual countries. Develop an Action Plan for Fisheries Management and Development in order to assess and exploit the various marine resources in a sustainable manner.
- Develop a Governance framework for sustainable Regional Marine Fisheries and Development.
- Develop an effective MCS network for transboundary fisheries (tuna and tuna-like species) in the region.
- Develop an action plan so that fisheries and the products of the fishing industry will contribute towards food security for the regional countries.
- Develop a Regional Fisheries Trade Strategy to ensure access to fish and fisheries products to domestic, regional and export market.

2.4.1.4. EAF-Nansen Project for the Establishment of a demersal management Plan for artisanal hand line fishery-

The FAO/ EAF-NANSEN project, strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing countries, is a partnership project between NORAD (Norwegian Agency for Development Cooperation), African coastal countries and FAO. The project is funded by NORAD and executed by FAO.

The initial phase of the project is scheduled for 5 years (2006 – 2011) with an estimated budget of USD 46 million. The project will work with countries participating in existing Global Environment Facility (GEF) initiatives in Sub- Saharan Africa as well as with

related EAF projects (notably the South West Indian Ocean Fisheries Project, SWIOFP, and the Agulhas-Somali Current Large Marine ecosystem Programme, ASCLME).

The immediate objective of the EAF-NANSEN project is to provide fisheries research and management administrations in participating countries with additional knowledge on their ecosystems, for use in planning and monitoring in order to honour their commitment towards implementing an ecosystem approach to fisheries by 2010. In the long term the project will strengthen regional and country specific efforts to reduce poverty and create conditions to assist in the achievement of food security through development of sustainable fisheries management regimes.

2.4.2. Regional integration

Seychelles' participation in the Indian Ocean Tuna Commission (IOTC), and South West Indian Ocean Fisheries Commission (SWIOFC) has already been discussed in Section 2.4.1.1 and 2.4.1.2. There are two other regional institutions of relevance with respect to regional integration along with Seychelles's participation in the ESA group of the Cotonou Agreement.

2.4.3.1 COMESA

Seychelles is a member of the Common Market for Eastern and Southern Africa (COMESA), along with Angola, Egypt, Malawi, Sudan, Burundi, Eritrea, Swaziland, Mauritius, Comoros, Ethiopia, Namibia, Uganda, Congo, Kenya, Rwanda, Zambia, Djibouti, Madagascar, and Zimbabwe. Tanzania and Somalia, two important countries in terms of fisheries are not members (Tanzania is a member of SADC, and Somalia does not have a recognized government).

2.4.3.2 Indian Ocean Commission

The Indian Ocean Commission (COI), or the Commission de l'Océan Indien, is an intergovernmental organisation that groups Comoros, Madagascar, Mauritius, Reunion (France) and Seychelles. It was started in January 1984 under the General Victoria Agreement.

The main objectives of the Commission are:

- Diplomatic cooperation;
- Economic and commercial cooperation;
- Cooperation in the field of agriculture, maritime fishing, and the conservation of resources and ecosystems;
- Cooperation in cultural, scientific, technical, educational and judicial fields.

Recent regional projects managed by the COI and funded by the EU include the RECOMAP Project (2006-2011) which is mainly concerned with environmental matters and Integrated Coastal Zone Management (ICZM) and the Project on Fisheries Strategy for Eastern African States (see section 2.1.4.3)

2.4.3.3 Cotonou Agreement and Economic Partnership Agreements (EPAs)

The Cotonou Agreement is an international agreement covering development assistance, trade and political relations between the members of the European Union (EU) and the members of the African Caribbean and Pacific (ACP) Group. Under Article 36, in view of the objectives and principles set out above, the Parties agree to conclude new World Trade Organisation (WTO) compatible trading arrangements, removing progressively

barriers to trade between them and enhancing cooperation in all areas relevant to trade. The Parties further agree that the new trading arrangements shall be introduced gradually and recognizes the need for a preparatory period. Under Article 37, Economic Partnership Agreements (EPAs) is being negotiated and although an interim EPA agreement has been signed and ratified (2010), negotiations to reach a full Agreement are still ongoing with a target date set for the end of 2011.

Seychelles is a member of The Eastern and Southern African (ESA) Group. The Group has "clusters" based around key sectors/issues, with Ministerial Lead Spokespersons, Ministerial Alternate Spokespersons, Ambassadorial Lead Spokespersons, and Ambassadorial Alternate Spokespersons for each cluster. For the fisheries cluster Seychelles serves along with Djibouti as the Ministerial Alternate Spokesperson, and along with Madagascar as the Ambassadorial Alternate Spokesperson.

The potential impact of the removal of preferential tariffs for ACP exporters, which will over time reduce Seychelles' competitive advantage over other countries (e.g. Thailand in exporting canned tuna to Europe), is of particular concern to the fisheries cluster.

The main objectives of the ESA fisheries component of the EPA are:

- To promote effective conservation and management
- Fisheries Management and Conservation Issues
- Financial & Trade Measures
- Vessel Management and Post Harvest Arrangements
- Development Issues
- Establishment of an Implementation Mechanism

2.4.4 Fishing Agreements

2.4.4.1 The European Union

The first fisheries agreement between the Seychelles and the European Community entered into force in 1987. It was renewed every three years until January 2005 when the agreement was renegotiated to cover the period January 2005-January 2011. The new generation of fishing agreement is termed as Fisheries Partnership Agreement, (FPA) and is aimed at promoting sustainable fishing by both the coastal states and the European Union.

A new **Seychelles-EU fishing agreement** therefore came into effect in 2011.

The protocol to the new Fisheries Partnership Agreement (FPA) between the EU and the Republic of Seychelles has just been renewed for a 3-year period starting in January 2011

The two new Protocol and Annex entered into force after the current Protocol expires on 17th January 2011. The new Protocol covers a period of three years (as against the previous six), and envisages an annual financial contribution of € 5 600 000.

The yearly reference tonnage for tuna caught inside the Seychelles EEZ, is set at 52 000 tonnes, as against the previous 63 000 tonnes, and fishing opportunities for the European tuna fleet will be available for 48 purse seiners and 12 long liners, i.e. a total of 60 vessels instead of the previous 52.

In exchange for the right to access the Seychelles EEZ, the European Union will pay € 3.38 million per year, compared to €4.095million per year previously. This corresponds to a reference tonnage of 52 000 tonnes annually compared to a previous tonnage of 52,000 tonnes.

Moreover, an additional envelope of € 2 22m will be allocated by the EU to support the Seychelles' fisheries and maritime policy, including marine protected areas compared to € 1.26m allocated in the previous agreement

The total EU financial contribution represents €5.6m per year, which is 5% higher than the annual contribution under the previous agreement. In addition to this amount, Seychelles also benefits from the ship owners' license fees that could represent about €1.3 million a year.²³

2.4.4.2 Japan, Taiwan and China

In contrast with the case for the EU vessels, the fishing agreements with Japan, Taiwan Province of China and China are not – formally at least - entered into at government level, but with associations representing the boat-owners instead.

For Japan the counterparts are the “Federation of Japan Tuna Fisheries Co-Operative Associations” and the “National Federation of Fisheries Co-Operative Associations of Japan”. The Taiwanese counterpart is the “Taiwan Deep Sea Tuna Boat-owners and Exporters' Association. The Chinese counterpart is “The Distant Water Fisheries Branch of China Fisheries Association”.

The agreements cover exclusively long-line fishing, i.e. the type of tuna fishing with by far the highest value added and earnings potential. The agreements with Japanese associations are usually for a period of one year and that with the Taiwanese association are for a period of three years. The Agreement with the Chinese association which was first signed in 2006 and has been renewed on an annual basis since.

The fishing agreement between Seychelles and Japan was renewed for another year in March 2011, despite the fact that due to the current security problem posed by piracy in the Western Indian Ocean, no Japanese vessels will be fishing in this zone until the piracy problem has been resolved

As the legal counterparts are associations, the agreements do not stipulate that national contributions are required as well. In addition, neither agreement sets a ceiling for either the amount of tuna caught or the number of vessels operating. The fee is determined per vessel and thus unrelated to the amounts caught except for the Japanese agreement. The Taiwanese and Chinese associations' fee is based on the GRT (Gross Registered Tonnage) of the vessels.

All in all, there seems to be a scope for increasing the funding contributions from Taiwan and Japan for accessing the EEZ. In order to ensure the availability of funding for fisheries purposes, it could be considered to earmark part or all of these contributions, including the license fees, for use in the sector. This would be similar to the present earmarking of the EU financial contribution. If such a link should be established, it would be preferable to make a set amount available, as this would facilitate investment planning.

²³ European Commission Fisheries

2.5 Funding Sources and Level

2.5.1. Institutional Finance

In the fisheries policy that has been adopted, feasible means of financing are also included, as the government pledges to encourage joint ventures between local and foreign investors. In addition, pure private sector initiatives are supported for the provision of shore-based facilities.

Traditionally, the government contributes directly or indirectly to the financing of shore based facilities and port infrastructure. Direct financing comes from the government budget and indirect financing provided through bilateral or multilateral loans. Direct government financing contributions to the implementation of fisheries sector projects have been fairly limited in the recent past. On the other hand government has been a guarantor on the loans taken up abroad by the DBS for lending to the fisheries sector among others.

The various funding options that currently appear available to the fisheries sector are presented in Table 4. The main distinctions made are between sources of funds on the one side and private/public sector projects on the other side. The set up of the table will assume that grant funds will be allocated to “pure” public sector projects only, i.e. projects that typically will not be generating sufficient revenues to be commercially viable.

Table 4: Funding Options Available to the Fisheries Sector.

Source of funds/Sector	Public	Private	Remarks
<i>Domestic:</i>			
Government	x		Budget constraints
DBS(Development Bank of Seychelles)		x	Arrears on foreign borrowings a constraint
Commercial banks	(x)	x	Creditworthiness and project viability, foreign exchange
<i>Foreign:</i>			
Fisheries Agreements			Potential for increased funding - sector earmarking needed Untying of funding - link to fisheries agreements
JICA	x	x	General project support
EU - ACP Partnership	x	x	Loans only - DBS arrears a problem
ADB	x	x	Soft loans (for viable projects) and grants
BADEA	x	x	Private sector window newly opened
OPEC Fund	x	x	BOT type projects in public sector - creditworthiness
Commercial banks	(x)	x	

2.5.2 Insurance

The Tsunami of the 26th December 2004 and heavy rainfall that was experienced during the same week, and the changing weather conditions that remain a constant threat since

some years back, have all prompted for the need to secure a financial risk protection scheme for the Seychelles fishing industry at an affordable price.

Whilst insurance per se is available even at a relatively high price to the fisheries sector, statistics reveals that currently only 42 vessels out of the fleet of 410 licensed fishing vessels are insured with local insurance companies.

It would appear that the wider use of insurance by the fisheries sector has been limited by high premiums (an annual basic rate of between 5 to 12% percent of the insured value plus levy and GST). It is argued, however, that if there is a critical mass, the premium will be significantly reduced and become more affordable. However, most of the commercial fishermen and the small-scale operators do not feel that insurance is necessary and their low incomes impede on their willingness to participate in an insurance programme. As a result the demand for insurance has not increased even after the Tsunami, which indicates a continued reliance on Government for assistance.

Steps therefore need to be taken to ensure that an affordable insurance scheme is set up to cover the fishing industry's risks

Discussions involving the private and state owned insurance companies and SFA are presently ongoing to set up this insurance scheme that most fishermen/boat-owners would be in a position to participate

2.5.3 Development Bank of Seychelles (DBS)

The Development Bank of Seychelles has for a number of years been an important supplier of loans on soft terms to the fisheries sector. This has first and foremost been through its management of the Fisheries Loan Scheme and the Semi-industrial longline Fishery Development Fund. The external funding of the DBS has traditionally been sourced from the 'Caisse Francaise de Développement' (CFD), the African Development Bank (ADB) and the European Investment Bank (EIB).

2.5.4 Local Commercial Banks

Local commercial banks play an important role in the granting of investment funds to the fisheries sector and in 2005 these financial intermediaries provided a total of SR 8.2 million as investment fund to the fisheries sector, which accounted for 78% of total loans granted to the fisheries sector in that year.

2.5.5 Foreign Financing

2.5.5.1 Japanese Grant Aid

The first project financed by Japanese Grant Aid was initiated in 1987. Since then a total of five projects have been financed, the most recent one in 2001. The financial support is made available through a more general "Grant aid for fisheries" scheme that JICA (Japan International Cooperation Agency) administers on behalf of the Japanese government.

The objective of this scheme is two-fold:

- Economic and social development in the fisheries sector of developing countries; and
- Maintain and develop the friendly relationship between Japan and the developing countries in the area of fishing.

Since 1987, the total grant assistance from JICA, in the form of works and supplies, has been valued at SR 110m or around US\$ 20m. Seychelles should continue to seek Japanese assistance in particular for the development of the artisanal fisheries, although

the Japanese Government has advised that Seychelles's high GDP does not warrant development aid.

2.5.5.2 Japanese Grant Aid Counterpart Fund

As part of the project agreement with JICA, a Counterpart Fund is to be set up. In this fund revenues from the sales of equipment are paid in. In the most recent JICA projects, from 2001, counterpart funds are still available. The agreement stipulates that these funds be used for development of coastal fisheries and local communities. For the last Japanese Grant Aid and up to Dec 2005, a total of SR 7.0 million was collected and the proceeds have been used for a number of minor fisheries development projects such as the deepening of the Cascade channel and construction of the Anse Etoile fish market and extension of Tuna quay. In addition a new US\$ 10 million fishing port was built on the Industrial estate at Providence on Mahe and commissioned in July 2010.

2.5.5.3 EC – ACP Partnership

Funding from the EU is available also from the European Development Fund (EDF) and various budget lines of the Commission.

2.5.5.3.1 National and Regional Funding from the European Development Fund

The general modalities for the future co-operation between the EU and the ACP countries are defined in the Cotonou Agreement that came into force on the 1st of April 2003. The funding envelope is slightly smaller than under the previous Lomé IV convention but allows for more flexibility. Funds will be channeled either as grants to support long term development or through a separate investment facility for funding of projects in the private sector.

2.5.5.3.2 Grants

As a starting point each country will be allocated a lump sum from which various measures may be financed. This means that the EDF is moving towards budget/sector assistance instead of support to individual projects, i.e. the SWAP approach discussed above. Funds will thus no longer be earmarked to specific purposes. Furthermore, the amounts allocated will be performance based. As detailed elsewhere the Seychelles government has already assigned the grant assistance available for the programming period 2003-2007. No funds have been allocated to the fisheries sector.

As previously, EDF funds are also reserved for regional programmes. A new element is that the ACP countries themselves are to define the regions eligible for support. For Seychelles such region would be the Western Indian Ocean. SFA could play a role in developing and promoting regional projects in the fisheries sector.

2.5.5.3 EDF Investment Facility

The objective of the new investment facility of the EDF is to develop businesses mainly in the private sector. The general requirement is for financing of commercially and economically viable investments, meaning that publicly owned enterprises may also qualify for funding. Funding may be in the form of equity, quasi-equity and long-term loans. The extension of guarantees is possible as well.

In the Seychelles, the investment facility would be a financing option for fish-processing companies, established as well as green field ones. In view of the need for product diversification, the potential for the financing of new enterprises seems important. No

information is available on the amounts that could be made available to Seychellois companies.

2.5.5.4 Other EU Support

Through its various budget lines, the Commission is able to fund projects in ACP countries including the fisheries sector. By way of example funds are available under the Framework Programmes for Research and Technology e.g. for fisheries research projects. As part of its private sector support strategy, the Commission has set up a number of specific programmes. EBAS is the EU Business Assistance Scheme to strengthen the competitiveness of ACP enterprises. PROINVEST is an EU-ACP partnership programme for the promotion of investment and technology flows to ACP countries. Among others the programme is to help identify potential foreign partners for ACP companies. The Centre for Development of Enterprise (CDE) provides assistance for the establishment, extension and diversification of small businesses. All 3 facilities are funded through the EDF.

2.5.5.6 African Development Bank (ADB)

ADB (African Development Bank) funding would be of interest mainly to finance large-scale infrastructure projects. The bank also has a private sector development arm, which, however, would typically look for larger investments than ordinarily on offer in an economy the size of the Seychelles. Availability of funding will be constrained by arrears on outstanding loans although Seychelles debt with the Bank has been rescheduled.

2.5.5.7 BADEA

The lending of BADEA (Arab Bank for Economic Development of Africa) is predominantly for projects in the public sector and in agriculture. For projects with a total cost of at most US\$ 10m, the BADEA financing share may be as high as 80 per cent. For larger projects this share cannot exceed 50 per cent of total project costs. The maximum loan amount is US\$ 15m. BADEA also provides technical assistance for consultancy services.

2.5.5.8 OPEC Fund for International Development

Since 1976 the OPEC Fund has extended loans on concessionary terms to the governments of developing countries. The Seychelles is currently benefiting from two loans, a loan to the education sector of US\$ 1m and a balance of payments support loan of US\$ 4.3m.

In addition, OPEC provides grants for technical assistance and research activities. More recently, the OPEC Fund has set up a private sector arm for the financing of activities in this sector. This type of lending takes place at market terms. The OPEC Fund may also set up credit lines for local development finance institutions. The bulk of activities are project lending.

2.5.5.9 Commercial Banks

Given the macro-economic imbalances of the Seychelles, it appears less likely that international banks will participate in the financing of (physical) investments unless adequate security is offered.

For public infrastructure projects such security will involve control over cash inflows from tariffs and fees charged. The project finance set up would be of the BOT (Build-Operate-Transfer) type. By implication then, only revenue generating and viable projects

may be funded. However, given that loans are to be in foreign currency and the extent of the foreign exchange scarcity, this may not even be a sufficient prerequisite for attracting funding.

2.5.5.10 Government Incentives

2.5.5.10.1 Sickness Benefit Scheme

The 'Sickness Benefit Scheme' was initiated in 1996 by SFA in collaboration with the Social Security Division to compensate full-time fishermen when they are sick or unable to work. Under this scheme, fishermen receive SR 67 per day for the first 20 days they fall sick during one year and thereafter for each additional day that a claim is made, they receive SR 48.

2.5.5.10.2 Soft Credit Facilities

The Development Bank of Seychelles (DBS) and the Youth Enterprise Scheme (YES) have both contributed significantly over the years towards the funding of the fisheries sector. In 2004, the total amount of funding pledged by commercial banks, YES and DBS was SR 13.9 million. Despite the increase in number of loans approved the total value of loans granted by YES and DBS (SR 3.74 million) fell by 20.2 %, from SR 4.69 million in 2003 to SR 3.74 million in 2004.

As was the case in 2003, loans granted by the local commercial banks in 2004 (SR 10.18 million) far exceeded those of DBS and YES. But 2004 was the first year since 1997 that the value of loans from the commercial banking sector to the fisheries sector declined. The problem with access to soft credit facilities is creating over-capacity in the fishing industry to a point where there are too many boats chasing too little fish. There is therefore a need to balance development with conservation policies.

2.5.5.10.3 Fuel Incentive Scheme

The SFA and the Ministry of Finance introduced a fuel voucher scheme in 1991 where a rebate is offered on every liter of diesel or petrol purchased for commercial fishing operations. Registered fishermen who qualify receive a rebate of SR 1.49 and SR 1.73 per liter of petrol and diesel purchased under the scheme. In 2004, a total of 2.34 million liters of petrol and diesel were sold at a cost of SR 3.68 million to Government compared to SR 4.01 million the previous year.

To date the scheme has absorbed SR 26.95 million. The quantity of both diesel and petrol sold showed a decrease of 2.27% and 11.42%, respectively.

The new Agriculture and Fisheries Incentives Act, 2005 also entitles boat owners and exporters to certain fuel rebates and to monetary concessions when starting any fishing business venture

6.0 Gaps and the need for harmonization

6.1. Nationally and Regionally

- There is a lack of monitoring and enforcement of the domestic fisheries Regulations. Perpetrators are rarely arrested and on the few occasions when they are, they are very seldom prosecuted or/and convicted. This is mostly due to the numerous loopholes existing in the present legislation which needs to be reinforced. For example, although marine turtles are strictly protected by law and although there has not been several arrests of perpetrators in the past 10 years, there has only been one conviction by the court.

- In this respect there is a need for the local laws to be harmonized and for the local enforcement Agencies-namely SFA, The National Park Authority (NPA), the Coast Guard the Police and the AG's office- to work in closer cooperation so that the perpetrators can be apprehended and convicted. It is necessary to provide further training and build up capacity for key personnel such as inspectors, enforcement officers, rangers and police officers, so as to increase the effectiveness of the enforcement process.
- The Fisheries Act (1986) is now under revision in order to harmonize it with the Fisheries act of other countries of the region. This is being done as a part of the regional Monitoring Control and Surveillance (MCS) project which is implemented by the Indian Ocean Commission. While the project is dealing mostly with the MCS aspects of the Act, the opportunity is being taken to review other aspects of the Act. The new consolidated Bill, drafted since 2009, and legislation prepared in 2006 to improve safety of vessels at sea are yet to be approved by the National Assembly to be enacted into law.
- There is a lack of qualified and experienced law enforcement officers that have both the motivation and the required skills and training to discharge their duties in a professional manner.
- There is a lack of capital investment to equip the relevant institutions with adequate equipment to undertake enforcement and monitoring of fisheries regulations leading to coastal and offshore illegal fishing activity;
- Improving the procedures for monitoring and enforcement and clearly defining the institutional and organizational responsibilities for fisheries management between the various ministries and departments;
- The issue of fishing license application and, the issuance of fishing license in particular, is one that demonstrates a lack of harmonization and coordination between the Licensing Authority (SLA) and SFA. SFA has the mandate to recommend the granting of all fishing license but the license is actually issued by the SLA. This is not a very satisfactory arrangement as it gives rise to delays, misunderstanding and confusion. In short, SFA being the authority with the technical expertise to recommend a license should also have the powers to issuing the license.
- Having sufficient key personnel such as inspectors, enforcement officers, rangers and planning inspectors to increase the effectiveness of the enforcement process. There is therefore a need to develop co-management arrangements so as to have shared responsibility between the enforcement authorities and fishes in order to have an overall improvement in fisheries management capacity
- Lack of adequate and reliable baseline environmental data that is area specific, lack of analytical skills to undertake EIAs and the EIA procedures do not include cross-referencing and reporting is not based on indicators;
- Capacity within the EIA Unit to review, manage and monitor the implementation of EIAs is limited due to lack of manpower and availability of experts;
- There is limited exchange of information within and among Government, NGOs and the private sector.
- Capacity building to equip the relevant institutions with adequate equipment to undertake identification and monitoring of land based pollutants causing coastal and marine pollution;

- Attracting and retaining legal/scientific officers through various means including incentives and packages which would make working with government more appealing than in the private sector. .
- Improving the procedures for monitoring and enforcement and clearly defining the institutional and organizational responsibilities for fisheries management between the various ministries and departments

6.2 International aspects

- The total financial contribution paid by the EU over the period of the previous fishing agreement(2005-2011) amounted to € 24,750,000 of which 36% (€ 8,910,000) should have been used to define and implement a sectoral fisheries policy in Seychelles with a view to promote responsible and sustainable fishing in its waters. This will entail defining annual and multi-annual programmes for the sector by mutual understanding. This however, was only partially implemented
- All in all, there seems to be a scope for increasing the funding contributions from Taiwan and Japan for accessing the EEZ. In order to ensure the availability of funding for fisheries purposes, it could be considered to earmark part or all of these contributions, including the license fees, for use in the sector. This would be similar to the present earmarking of the EU financial contribution. If such a link should be established, it would be preferable to make a set amount available, as this would facilitate investment planning. The agreements with the Far Eastern countries need to be harmonized to ensure that there is no discrimination amongst the parties that Seychelles has signed an agreement with.

3. TOURISM

3.1 Historical and current institutional structure

The following institutions are currently responsible for at the national level:

Department of Tourism

The Department is responsible for tourism policy and certification of tourism establishments. A Policy Planning & International Cooperation Division within the Department is mandated to facilitate the development and adoption of good practices pertaining to sustainable development within the tourism industry.

Seychelles Tourism Board (STB)

The STB established in April 2005 has members from both the public sector and the industry, and aims to strengthen cooperation and partnership for the development of the tourism product and the promotion of Seychelles. STB is expected to address the challenges outlined in Vision 21, the road map for tourism development in Seychelles. A Tourism Advisory Committee has also been appointed with representatives from the public and private sector and it is mandated to advise government and STB on the planning and development of the industry.

Seychelles Hotel and Tourism Association (SHTA)

This association regroups representatives from hotels and tourism related activities. The promotion of the ‘Seychelles Brand’ in the tourism sector implies the need for greater Seychellois participation in the tourism industry, in the ownership of hotels, in employment, as well as the supply of local products for the hospitality industry.²⁴

3.2 Legislative and Policy Framework

It must be noted that there is no specific legislation dealing with coastal tourism and manufacturing industry. Any proposed tourism development, e.g., hotels, or any industrial development have to comply with the existing legislation on EIAs, particularly the EPA 1994 and the EIA Regulations made there under.

Below are the tourism policy documents:

Vision 21 (2001-2010)

The current policy document on tourism development in Seychelles is Vision 21. It advocates coordinated national efforts to maintain and expand the tourism sector’s contribution to the economy, in a manner that is environmentally and socially sustainable. Incentive policies have been established to guide tourism development in the country. These policies are designed to encourage investment in the tourism sector, and to encourage all new developments to incorporate environmental activities into the concept of tourism products. “Integrating Tourism for Environmental Sustainability” is one of the key areas identified in Vision 21. Under this key area, a series of chapters address issues related to the environment using an integrated approach: Management of National Parks and other Protected Areas, Coastal Zone and Marine Resource Management,

²⁴ Seychelles Country Assessment Report 2010

Eco-tourism Strategy 2003 (SETS -21)

SETS-21, 2003 is a strategic document providing for general policy for eco-tourism development, which includes a general outline of goals and objectives and some general guidance to eco-tourism activities related to natural environment and resources. The document forms an integral part of the national tourism policy, as outlined in “Vision 21”.

Environmental concerns are reflected in a specific chapter in the Seychelles Tourism Master Plan, a document that is still in draft form.

3.3 Membership of relevant international treaties

Seychelles is a member of the World Tourism Organisation.

3.4 Gaps and need for harmonization

Protected areas, notably, Ste. Anne Marine Park, the Vallée de Mai and Cousin Special Reserve, receive significant visitor numbers each year. Several island resorts such as Bird Island, that sell a particularly environmentally-centered product, have bed occupancy rates far in excess of the national average (figures).²⁶

Government’s policy for tourism seeks to promote sustainable environmental management through various means e.g. limiting sizes of hotels; developing harmonious architecture and style, encouraging cultural aspects e.g. the Kreol Festival, making use of natural assets such as the SUBIOS underwater festival. Tourism establishments are subject to Environmental Impact Assessments but this process has its limitations. A project developing sustainability criteria for hotel establishments is being prepared under the Mainstreaming Biodiversity project funded by UNDP-GEF.

Negative impacts of tourism developments include inappropriate land use and zoning, destruction of natural habitats, malfunctioning of sewerage plants, continued sale of marine souvenirs and use of large amounts of natural resources such as water and fossil fuels. These weaknesses have mainly occurred due to the lack of an overall detailed master plan for tourism and land use in Seychelles. As a result appropriate policies, practices and monitoring systems have not been developed coupled with a poor understanding by operators and tourism officers of environmental issues.²⁷

²⁵ Dogley (2005) Tourism Sector Report

²⁶ EMPS 200-2010 Review

²⁷ ibid

4.0 OIL AND GAS

4.1 Historical Evolution and Current Institutional Structure

The oil potential of the entire Seychelles region was originally promoted by the Government-owned Seychelles National Oil Company (SNOC) through the Petroleum Mining Act of 1976. Exploration began in 1979, and by to 1994, 23,150 km of seismic profiles and 27,911 km of aeromagnetic lines had been accumulated. However, active exploration through to 1995 had failed to discover any commercial petroleum sources. Tar balls from subsurface seeps have long been known to wash up on the beaches of Coetivy Island, as well as on Mahe and some nearby islands.

In 2005, the Seychelles National Oil Company merged with the Seychelles Petroleum Company Limited (SEYPEC) and currently exploration activities are being handled by the Exploration Department in SEYPEC. In October 2010, Seychelles Petroleum Company (SEYPEC), Fugro and Geomahakarsa (GL) signed a Cooperation Agreement for the acquisition, processing, interpretation and license of geoscientific data within the Seychelles EEZ on a multi client basis.

SEYPEC has determined the Project will improve geophysical data and geological understanding to promote interest in hydrocarbon exploration in the Republic of Seychelles. All the data acquired will be made available for license to oil and gas companies who are keen to explore for hydrocarbons in the EEZ of the Seychelles. The data acquisition is expected to take place during the last quarter of 2010. The data is estimated to be available for license around the middle of 2011.

4.2 Legislative and Policy Framework

Marine pollution risks are a major concern for the Government of Seychelles. Major legal texts relevant to the present guidelines on oil and gas exploration include:

The **Environmental Protection Act 1994**, which provide for the coordination, implementation and enforcement of policies pursuant to the national objectives on environment protection whilst prohibiting the discharge of any effluent, or throwing, depositing or placing any polluting, or hazardous substance or waste in any watercourse or in the territorial waters without authorization.

The **Maritime Zones (Maritime Pollution) Regulations, 1981** are more specific in controlling oil pollution at sea by prohibiting the discharge of oil to the marine environment and thereby preventing marine pollution by oil.

Mineral exploration and exploitation is specifically controlled by the following Acts which seek to control the exploration and exploitation of petroleum products in the Seychelles EEZ as well as require that an effective system for combating oil pollution is in place:

- Minerals Act, 1991
- Petroleum Mining Act, 1976 & Petroleum Mining (Petroleum Drilling) Regulations, 1980
- Petroleum Mining (Pollution and Control) Act, 1980

An Oil Spill Contingency Plan was produced in 1991 as part of the implementation of the Environmental Management Plan for the Seychelles (EMPS-1990-2000).

4.2.1 Oil exploration Policy

A license policy has been developed for the exploration of oil in the Seychelles EEZ and a model Petroleum Agreement has been drawn up for potential investors. The legal system of this model Agreement is largely based on English Common Law. The Economic Exclusive Zone (EEZ) comprises approximately 1.33 million square kilometers of territory, which is largely ocean. Oil exploration licensing is via a model agreement with the government of Seychelles and SEYPEC (Seychelles Petroleum Company). Licenses are extended out over 10 years and company tax is payable at 35%. Profit oil tax is via negotiation. There is a 5% royalty payment on oil production. The Seychelles government is development focused and is considering plans for a gazettal round in late 2000.

4.4 Membership of relevant International Treaties

Seychelles is party to and signatory to the following international Conventions and Treaties concerning oil/gas exploration:

Table 5: Membership of relevant international treaties

United Nations Convention on the Law of the Sea(UNCLOS), 1982
Agreement relating to the implementation of Part XI of the UNCLOS, 1982
Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, Nairobi, 1985
Protocol Concerning Cooperation in Combating Marine Pollution in cases of Emergency in the Eastern African Region, Nairobi, 1985
International Convention on Oil Pollution Preparedness and Response, 1992
the International Convention on Civil Liability for Oil Pollution Damage, 1992
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution, 1992

4.5 Gaps in oil exploration/exploitation

- The present limit of 5 km away from any granitic island, as included in the Model Petroleum Agreement, is probably too short to avoid a visual impact for the tourists as well as the general public
- In general, oil exploitation can potentially create a disturbance to local ecosystems, both for the physical (biocoenosis) and the biotic aspects (biotype). Mastering these effects requires not only monitoring, but also the humans and

financial resources to do so. In a depressed world oil economy, companies might be tempted to save on some costs and environmental control may be one of the first obvious sacrifices. The Government has to control these changes in priorities.

Monitoring

- One of the clear priorities in the Seychelles is to improve the knowledge of the marine ecosystem, especially for very basic topics like the marine currents. Only small portions of the vast exclusive marine zone are known to a small extent.
- Experts recognize that, like in other sectors, preventive action is more effective than curative interventions. The high priority given to the cooperation between oil companies and environmental management organizations to assess and implement the proper preventive strategies should continue to be the rule.
- In general, the exploration and exploitation of oil in Seychelles' Exclusive Economic Zone should be preceded by a mapping showing the possible conflicts between environmental conservation and oil potential, in order to minimize these conflicts.
- An oil spill risk study has started in the Seychelles as part of the implementation of the EMPS 2000-2010. The recommendations of that study should be brought to the attention of the Government when it is published and the practical recommendations should be implemented.
- A number of indicators should be monitored to properly assess the environmental impacts of oil related activities on the Seychellois environment, including:
 - Water quality
 - BOD,
 - COD,
 - suspended solids,
 - heavy metals,
 - Hydrocarbons.
 - Air quality
- As recommended by the International Tankers Owners Pollution Federation Ltd, encouragement should be given to nationally organized training courses aimed specially at the practical problems of protecting and cleaning up inshore waters and shorelines. Problems associated with the disposal of oil and oily debris should also be covered and consideration given to providing financial encouragement for organisers to obtain equipment from other countries for demonstration purposes and to employ the services of lectures with pertinent experience. A financial assistance scheme should also be considered to facilitate the overseas training of personnel from countries lacking adequate training facilities of their own.
- In general, the exploration and exploitation of oil in Seychelles' Exclusive Economic Zone should be preceded by a mapping showing the possible conflicts between environmental conservation and oil potential, in order to minimize potential conflicts between oil companies and environmental organizations
- Legislation on environmental management for oil storage and distribution facilities should be strengthened, its implementation enforced and its effectiveness monitored.

5. PARKS AND WILDLIFE CONSERVATION

5.1 Background

There are currently 18 Marine Protected Areas (MPAs) in which consist of:

- Four Special Reserves (managed by two NGO's and a corporate body);
- Six Marine National Parks(managed by the SNPA)
- Four Shell Reserves(managed by SFA)
- Three Fisheries Reserves (managed by SFA)
- One Protected Area (designated under the Protected Area Act of 1967)
- One Protected Area (designated under the Protected Area Act of 1967)

The list of the MPAs and Special Reserves (including Protected Areas and Shell Reserves) as well as terrestrial national parks are listed in Annex 1.²⁸

The objectives of the MPAs in order of importance are: 1, Conservation. 2, Fisheries & 3, Tourism; but the focus largely depends on the institutions managing these areas.

5.2 Current Institutional Structure of the National Parks and Reserves

The marine and terrestrial national parks are managed by the Seychelles National Parks Authority (SNPA), an authority created in June 2009 which is a budget dependent organisation. The three Special National Reserves (SNRs) are managed by individual NGOs. The Shell Reserves are managed by the Seychelles Fishing Authority (SFA) and the Protected Areas by the Island Development Company (IDC).

All of the MNPs are IUCN category II protected areas whilst all of the SNRs are IUCN category Ia protected areas.

5.3 Legislative Framework for protected areas.

The following pieces of legislation provide for the designation, regulation and protection of protected areas in Seychelles:

- National Parks and Nature Conservancy Act, 1969, which provides for 4 categories of protected areas i.e. National Parks, both marine and terrestrial; Special Reserves; Areas of Outstanding Beauty; and Strict Nature Reserves.
- Fisheries Act 1986 which provide for Shell Reserves
- Wild Animals and Bird Protection Act 1961, which provide for the designation of Bird Sanctuaries and protection of birds
- Protected Areas Act 1967

5.4. Membership of relevant International treaties/fulfillment of obligations

Seychelles is signatory and party to various international conventions and treaties with regards to the protection of protected areas including MPAs and Wildlife Conservation

Table 6: Membership of International Conventions related to Protected Areas.

United Nations Convention on the Law of the Sea(UNCLOS), 1982

²⁸ SEYMEMP

Agreement relating to the implementation of Part XI of the UNCLOS, 1982
Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, Nairobi, 1985
The Convention on Biological Biodiversity(CBD)1992
The Indian Ocean Sea Turtle Agreement(IOSEA)
The African Convention on the Conservation of nature and Natural Resources, Algiers,1968
Convention on Migratory Species, CMS (2005)
Convention on International Trade in Endangered Species(CITES)
Cartagena Protocol for Biodiversity(2000)
Convention on the Wetlands of International Importance Especially as Waterfowl Habitat, Ramsar, Iran, 1971
Agreement for implementation of provisions of UNCLOS, 1982, relating to conservation and management of straddling fish stocks and highly migratory fish species
UN Convention to combat Desertification in those countries experiencing Serious Drought and/or Desertification particularly in Africa (UNCCD) Paris,1994

5.5 Funding sources and Level (to be completed-awaiting information)

Over the last 20 years considerable funding has been allocated to the National Parks, in particular to the MPAs. Funding has been obtained through International Organizations (UNEP, WWF, UNDP); regional organizations and bilateral donors. In many instances local conservation organizations and NGOs are the main beneficiaries of these funds. Other sources of funding are obtained from ongoing projects funded by international organizations in particular under the GEF/UNDP Programme.

The latest environmental project to be funded by the GEF includes a grant for Protected Areas that was signed in March 2011. The GEF donated US \$2.1 million to strengthen Seychelles protected areas network through NGO management modalities. The project is expected to create synergies between government and non-government organisations in their effort to set up new protected areas. The three NGOs benefiting from the project are: Nature Seychelles; Marine Conservation Society; Green Islands Foundation; and Seychelles Islands Foundation. These NGOs will work in partnership with government, especially agencies such as Seychelles National Park Authority and the Seychelles Fishing Authority. It will also assist in improving policies, legislation and institutional framework in the better management of protected areas on land. The project will be monitored by the EU delegation based in Mauritius and it was chosen by the European Commission last year under the EU Environment and Sustainable Management of Natural Resources

Other UNDP/GEF funded projects related to tourism and the environment ongoing within the country include the Biodiversity Mainstreaming and Capacity Building 2 Projects.

The Regional Programme for the Sustainable Management of the Coastal Zone of the Countries of the Indian Ocean (ReCoMaP) under its five-year (2006-2011) regional support programme of the Indian Ocean Commission, financed by 9th Environment Development Framework of the European Union (EU) has supported such initiatives

Most of the Projects funded by ReCoMaP concerns ICZM project with the objective of protecting and improving the management of the coastal zone including coral reefs areas for a total cost of over €400,000.00

SNPA in addition to its annual budget allocated from government, charges entrance fees to the marine national parks.

5.6 Gaps and the need for Harmonization

- Capacity gaps, inadequate funding, lack of technical knowledge and effective management skills to identify needs. There is the need for a Management Plan to bridge gaps for better management of MPAs;
- Currently there exists no coherent network or “system” of MPAs but rather a collection of Marine Protected Areas which address diverse objectives; and have no unifying strategy. However, a diversity of management bodies is in principle good as it allows for focused management initiatives taking into account the local communities and stakeholders. Diverse and decentralized NGOs and private management bodies may also serve to enhance the specificities of the various MPAs and their respective ecological and economic priorities;
- The current collection of MPAs in Seychelles has come about in a largely piecemeal and reactive manner without consultations with the major stakeholders—namely fishers;
- The mandate of the two main Agencies responsible to manage the MPAs, i.e. the SNPA and the SFA is quite distinct and offers a limited leeway for harmonization;
- A closer analysis of the current management of the MPAs reveals that quite a few receive very limited management and/or enforcement focus and can be considered to be only paper parks
 - Only 3 of 6 MPAs receive fulltime management and at least one has virtually no management input
 - None of the Shell and Fisheries Reserves receive any management or enforcement input;
- The MNPs boundary is typically 200m from shore, but modifications in boundary delimitation have been made to include island groups in the case of the Ste. Anne and Curieuse MNPs. Silhouette MNP is the only exception with boundary that extends 1 km from the low water mark around the perimeter of the island. This was necessary as a result of turtle poaching which was still taking place in the early 1980s around the island. The boundaries of the Aride and Cousin Island SNR are 400 metres from shore whereas that of the Aldabra WHS is 1 km from shore;
- Administrative structures in the National Parks and Protected areas should as much as possible be streamlined and harmonized to provide clarity and ease of function for MPA managers and users alike;
- Decentralization and the development of partnership for MPA management should be sought;
- Revision and updating of the legislation concerning protected areas should be done in a holistic and comprehensive manner taking into account all aspects of the

legislation on Biodiversity and taking into account the IUCN categories and guidelines.²⁹

²⁹ SEYMEMP

6. COASTAL ZONE MANAGEMENT ISSUES (INCLUDING EIA, LAND BASED DISCHARGES, LAND TENURE AND PERMITTING ISSUES/COASTAL MINING)

6.1 Historical and current institutional structure

Traditionally coastal zone management has been the responsibility of the Department of Environment and in particular the Division responsible for Pollution Control and Environment Impact Assessments.

In 2010 the Climate & Environmental Services Division previously the Policy, Planning and Services Department, with the main responsibility of coastal zone management was created, within which the Environmental Engineering & Wetland. Other divisions with the DOE with related functions include the Wildlife & Enforcement Permit Division comprising the following three units: Wildlife Trade & Conservation; Environment Assessment & Permit; and Standard & Enforcement.

In the past, the Seychelles Centre for Marine Research and Technology (SCMRT) was a unit under the Policy Planning and Services which had the responsibility of managing marine National Parks, Terrestrial National Parks were management by the Forestry Division within DOE. Since 2010, the newly formed Seychelles National Park Agency now manages both marine and terrestrial national parks. The Agency is independent of the Department of Environment.

The Solid Waste and Cleaning Agency (SWAC) which in the past was responsible for waste management in the country has now been absorbed under the Land Waste Management Agency.

The main institution involved in wastewater management is the PUC Water & Sewerage Division. The company has the responsibility of providing adequate water and sewerage facilities to the population.

Land use planning and development is the responsibility is the Ministry of National Development. The Ministry also grants licenses for certain activities concerning natural resources such as gravel extraction.

6.2 Legislative and Policy Framework

6.2.1 Legal Framework

The **Environment Protection Act (EPA) 1994**³⁰ is the main piece of legislation providing for the protection, preservation and improvement of the environment and for the control of hazards to human beings, other living creatures, plants and property. The Act also provides for the coordination, implementation and enforcement of policies pursuant to the national objectives on environment protection. This Act is administered by the Department of Environment, which has been designated as the Authority under the Act. The Act makes provisions for the Authority to co-ordinate the activities of other agencies concerned with the protection of the Environment.

³⁰ Act 9 of 1994

The Act provides for the declaration of one or more coastal zones as protected. No person is allowed to release or cause to be released into the Coastal Zone polluting or hazardous substances by dumping or through the atmosphere.³¹ However, to date no coastal zones have been declared under these provisions.

The Act provides for the prevention, control and abatement of environmental pollution.³² Under the Act no person is allowed to discharge or place in to the ground or dispose in the subsoil or dig into the ground any polluting or hazardous substance or waste³³ or throw, deposit or place any polluting, or hazardous substance or waste in any watercourse or in the territorial waters without authorisation³⁴.

This is further supported by the **Environment Protection (Standard) Regulations 1995** which prescribes effluent quality standards for the purposes of implementing the objectives of the EPA Act, and cover the discharge of effluents to a recipient system from any industry, operation or process. The effluent quality standard specifies maximum concentrations for a range of pollutants, including organic and heavy metal pollutants which may be present in effluent discharges.

Part IV of the EPA and the Environment Protection (Impact Assessment) Regulations (EP) (EIA) Regulations³⁵ deals with Environment Impact Assessment (EIA). The legislation requires that an EIA study be carried out and that an environmental authorisation is obtained if any person commences, proceeds with, carries out, executes or conducts or causes to commence, proceed with, carry out execute or conduct any prescribed project or activity in a protected or ecologically sensitive area³⁶. The criteria, which establishes the necessity of an EIA is found in the EP (EIA) Regulations which lists categories of projects or activities requiring environmental authorisation.³⁷

Schedule 1 of the EIA Regulations lists the prescribed projects and activities which necessitate an authorisation and these include activities falling within the following: mining, agricultural production, forestry, fish and associated farming products, chemical industries, industry (construction), food and agro-industries, energy production and distribution, water reservoirs and distribution, sewage and wastewater treatment systems, solid waste management systems, the hotel industry (hotels, restaurants and tourism activities), transport (harbours, air transport infrastructure, roads and coastal defences); land reclamation, and housing development.

Schedule 2 of the EIA Regulations lists the protected or ecologically sensitive areas as follows:

Protected areas: National parks, special nature and wildlife reserves and other protected areas; Historical sites and areas surrounding National Monuments; Sites, buildings and monuments; Remarkable natural landscapes on Mahé, Praslin and La Digue; Viewpoints; Inter-urban buffer zones; Water catchment areas; Industrial risk areas on Mahé, Praslin

³¹ S 11(4) EPA

³² Part III EPA 1994

³³ S 7(4)(a) EPA

³⁴ S 7(5) EPA

³⁵ SI 39 of 1996 as amended by SI 36 of 2000

³⁶ S 15 EPA

³⁷ Schedule 1 SI 39 of 1996

and La Digue; Natural risk areas; Steep slopes; Earth erosion areas; High elevations; Skyline.

Ecologically sensitive areas: Natural habitats for rare, protected or endemic species of flora and fauna; Marshes and wetland habitats; Streams and surroundings; Coastal strip; Beaches and intertidal zones; Seabed; Small and outlying islands.

A set of thirteen Environment Assessment Guidelines exist for the following sectors: Agriculture and Livestock; Coastal Zone Management; Construction; Fisheries and Aquaculture; Forestry; Oil Resource Management; Waste Management; Transports and Hull cleaning

Other pieces of legislation regulate matters relating to land development and activities carried there upon. These include:

- The **Town and Country Planning Act, 1972** which is currently being is the primary legal instrument dealing with land use and development. It has established an inter-ministerial body, Town and Country Planning Authority, which is the authorising body for all land development proposals. The Act is currently being revised to integrate sustainable development and environmental concerns and in particular climate change considerations in the development process and bring it in line with the EPA.
- The **State Land and River Reserves Act** which provides for the protection of State land as well as the protection of trees and brushwood on riverbanks for a distance of between 3-16 metres on either side of the river, depending on altitude and flow.
- **The Agriculture Act, 1966** which provides for land preservation orders to be made prohibiting, regulating or controlling the breaking or clearing of land for cultivations; for grazing of livestock and for firing, clearing and destruction of vegetation for several purposes. Such purposes include the preservation of soil on ridges, slopes and valleys and the protection of land against erosion.
- The **Land Reclamation Act, 1967** lays down the procedure to follow for a private or public reclamation of land by filling any foreshore (Section 3 (1)). A person may object to any land reclamation under section 5 (C) of the Act by stating that the proposed reclamation may adversely affect either:(a) any property owned; (b) may affect public rights; and (c) may affect the natural beauty of the coastal area. A person may object to any land reclamation under section 5 (C) of the Act by stating that the proposed reclamation may adversely affect either:(a) any property owned; (b) may affect public rights; and (c) may affect the natural beauty of the coastal area. Unfortunately, this criterion does not cover all the environmental impacts or factors associated with land reclamation.

Furthermore, the President may authorise “any owner of land...to fill in the whole or any portion of the foreshore which borders on the land belonging to such an owner” (Sec 2 (1)).

Other relevant legislation within that framework includes the following:

- Land Reclamation (Delegation of Statutory Functions) Order (1972)
- Land Reclamation (Amendment of schedule) (1975)
- Land Reclamation (Amendment) Decree (1978)
- Land Reclamation (East Coast Development) Retrospective Authority Order
- Land Reclamation (Retrospective Authority) Order (1987)
- Land Reclamation (Amendment of schedule) Rules (1988)

Under the Environment Protection Act (1994), land reclamation is listed as an activity which requires an environmental impact assessment.

- **Removal of Sand and Gravel Act, 1982**

The Removal of Sand and Gravel Act, 1982 controls the removal of sand and gravel. Following the impact of the activity on the beaches, a ban on removal of sand from the beach and the plateau on the Seychelles have been imposed. However, removal of gravel from rivers is still permitted subject to authorisation under the Act though the Act does not specify any criteria which should be taken into consideration when granting such licenses. The Act does not cover extraction of sand from the bottom of the sea, although it clearly states in Section 3(2) (a) that prohibition includes abstraction of sand or gravel from any place, including the public domain.³⁸

- **Minerals Act, 1991**

The Minerals Act governs and defines minerals and their extraction within the Seychelles. It specifies that the entire property in and control of all minerals in, under or upon any land in Seychelles or in all rivers or streams throughout the Seychelles is vested in the Republic and the Republic shall have the exclusive right of prospecting and mining for such minerals (Section 3). In Section 6 it provides for mining rights in the form of a special mining lease granted by the Minister. However, the definition of minerals does not include coral, sand or sediments

6.2.2 Policy Framework

As it stands the Seychelles does not have a Intergrated Coastal Zone Management policy. However, the **Strategic Action Programme for the Protection of the Coastal and Marine Environment of the Western Indian Ocean from Land-based Sources and Activities (2009) (WIOLAB SAP)** has been developed under the Nairobi Convention to address problems and causes of degradation of the coastal and marine environment in the WIO region, with a special emphasis on land-based sources and activities. It promotes sustainable approaches for the management of their common marine and coastal ecosystems and assists governments in the WIO Region to build capacity for addressing the coastal and marine environment. Strategic components include: Protecting, Restoring and Managing Critical Coastal Habitats; Ensuring Water Quality & Managing River Flows Wisely; & Strengthening Governance and Awareness.³⁹

The ReCoMaP project, the main objective of which is to enhance sustainable integrated management of natural coastal and marine resources contributing to poverty alleviation among coastal populations in the Western Indian Ocean (WIO) countries i.e. Comoros, Madagascar, Mauritius, Seychelles, Kenya, Tanzania and Somalia. ReCoMap intends to support the development of a national institutional framework for Integrated Coastal Zone Management including the drafting of ICZM Plans, ICZM Action Plans and the promotion of inter-disciplinary dialogue.⁴⁰

³⁸ Akunga Momanyi 2004

³⁹ Nairobi Convention Secretariat (2009) “ Strategic Action Programme for the Protection of the Coastal and Marine Environment of the Western Indian Ocean from Land-based Sources and Activities”, Nairobi, Kenya

⁴⁰ ReCoMaP ICZM Short Course Seychelles, 10-13 February 2009

There are several related national policies seeking to promote sustainable management of coastal resources, which include the following:

Seychelles is in the process of preparing its third policy document for environmental management. The two previous documents, the **Environmental Management Plan of Seychelles 1990-2000 and 2000-2010**, thematic areas were chosen to cover all major social and economic sectors as well as certain key subjects of relevance to environmental management with various programmes chosen for each thematic area. Cross cutting themes are also covered.

The **Seychelles National Wetland Conservation and Management Policy** does not address the threats of invasive species, water diversions, reclamation, pollution and climate change. Root causes identified for these threats are lack of import controls; lack of public concern and an inadequate regulatory and policy framework.⁴¹

There are no guidelines for incorporating wetland issues into ICZM. Although identified in the NBSAP, climate change has not been identified as one of the six major threats to wetlands. Actions developed to implement the National Wetlands Policy should include climate change issues using the Ramsar Guidelines. The Policy needs to be science-based and incorporate the CBD rapid assessment resources for Small Islands Developing States (SIDS) wetlands. One of the policy objectives of the National Wetlands Policy is to incorporate and recognise wetland functions in resource planning, management and economic decision-making for all national projects, programs and activities. However, this needs to be institutionalised and legalised in the planning decision making processes.⁴²

The **National Land Use Plan** or “Plan d’Aménagement du Territoire” (PAT) 1993 is the main guide to land use decision making by the Town and Country Planning Authority in the country though it covers the three main islands of Mahé, Praslin and La Digue only. The Plan is however, only an advisory document without legal status.

The Land Use Plan has also been criticized as only being used as planning instruments on an *ad-hoc* basis and plans are not followed through with detailed land use/ development plans. Several reviews have noted that the scarcity of level land has created competition for land and pressure for land reclamation along the shoreline. This coupled with lack of planning, zoning and integrated management of government land has lead to ad hoc land and water development resulting in deforestation, erosion, pollution and aesthetic problems especially in the coastal zones.⁴³ It must be noted that a new national Land Use Plan is currently being developed, which will be given legal status under new planning law which is being developed simultaneously under the Sustainable Land Management Project funded by UNDP GEF.

⁴¹ National Biodiversity Action Plan, 1997/Draft Integrated Ecosystems Project Proposal.

⁴² 2005 Issue Based Modules for Coherent Implementation of Biodiversity Conventions: Climate Change and Biodiversity

⁴³ Ferguson and Carolus 2005

6.3 Membership of international treaties

Table 6: Membership of international treaties relevant to coastal zone management

Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, Nairobi, 1985
Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region, Nairobi, 1985
Convention on the Wetlands of International Importance Especially as Waterfowl Habitat, Ramsar, Iran, 1971
UN Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification particularly in Africa, (UNCCD), Paris, 1994
United Nations Framework Convention on Climate Change (UNFCCC), Rio de Janeiro, 1992
Kyoto Protocol to the UNFCCC, 1997
Vienna Convention for the Protection of the Ozone Layer, 1985
Montreal Protocol on Substances that Deplete the Ozone Layer, 1987
Vienna Amendment, 1990
London Amendment, 1990
Copenhagen Amendment, 1992
Montreal Amendment, 1995
Beijing Amendment, 1999

6.4 Gaps and need for harmonization

The use of Geographical Information System (GIS) is being increasingly used as a tool for coastal governance in the Seychelles. However, due to lack of staff and equipment⁴⁴ with the GIS Unit nationally, update of the GIS system is very slow.

A sensitive marine habitats atlas was produced under the Oil Spill Contingency Plan. Shallow marine habitat and vulnerability maps around the island of Mahé and those of the Ste Anne Marine National Park were produced in 1997 just before the 1998 coral bleaching event. However, since then the marine habitats around the inner island have changed quite significantly (Graham et al., 2006) and these maps are now outdated. Vulnerability maps for other islands are not available. New marine habitat maps for areas around the island of Mahe and for the MPAs in the inner islands are being developed.

Integrated coastal management need to take into account rapid urbanisation and growth and competing demands on coastal zones land use by different sectors in particular housing, agriculture and tourism. The new Land Use Plan is currently being developed and it must be ensured that these issues are adequately addressed in there.

⁴⁴ lack of up-to-date, geo-referenced aerial photographs of the islands

The involvement of the public in coastal management matters in the Seychelles remains relatively low. The public display of Class I EIA reports for a period of 2 weeks is compulsory as required by the Environment Protection Act and EIA Regulations. This low turnout is often related to the perception of the public that the decision regarding the developments have already been made and that the meetings are only a formality. A second cause for the low participation is a lack of information dissemination and the fact that coastal communities are not organised into groups at the district level.⁴⁵ This is slowly changing with the creation of CBOs and the involvement of NGOs at community level. Their increased involvement in decision making should be promoted.

Capacity issues associated with administering the EIA process have been identified⁴⁶ and include:

- the lack of adequate and reliable baseline environmental data that is area-specific;
- inefficient management of wetlands and consideration of alternatives to wetland reclamation;
- the capacity within the EIA unit in Ministry of Environment to review, manage, and monitor implementation of EIA;
- capacity building of EIA Consultants, EIA Expert Reviewers, Government Specialists and EIA Enforcement Inspectors; and
- The auditing and monitoring framework to ensure compliance with the EIA recommendations.
- EIA being viewed as just a certificate for construction, rather than an approach to sustainable development and responsible practices.

These issues will need to be addressed in the review of the EPA planned for 2011, the new environmental policy being developed as well as the new ICZM policy. A project that involves taking up-dated geo-referenced aerial photos of the islands will start in June 2011.

⁴⁵ Domingue et al., 1999

⁴⁶ Payet, R.A., Effectiveness of the Environmental Impact Assessment Process in Managing Tourism Development in the Seychelles, in Environment Law in Africa Review, Gray, E., ed., 2004

7. PORTS AND COASTAL TRANSPORT/REGULATION OF SHIPPING

7.1 Historical Perspective/Evolution

The main shipping port in the Seychelles is Port Victoria which is located on the eastern side of Mahé Island. The port was designed by Sir William Halcrow & Partners and built with funding from the British Government under the Capital Aid Development Program and was officially opened by the Governor of Seychelles at these time, Sir Bruce Greatbatch, on 6 October 1973. Port Victoria is a modern deep water port which has been specifically planned for mechanized handling of cargo.

Today's Port Victoria has berthing facilities for all major vessel types including cargo and container ships, tankers, naval vessels, large fishing ships (e.g. tuna purse seiners) and smaller local fishing vessels, recreational yachts and launches, and inter-island ferries (Anon, 2006). The longest wharf (New Port Wharf) is 370 m long and can service ships up to 210 m in length. Port Victoria has a range of large storage sheds for cargo, an industrial dock yard and slipway and a tuna processing plant adjacent to the main tuna vessel wharf that services purse seine vessels of up to 160 m in length (Anon, 2006). Port Victoria is a busy international shipping port and the major hub for the Western Indian Ocean tuna fishery.

In 2003, Port Victoria handled 88 % of the 449 300 tons of tuna caught by purse seiners in the Western Indian Ocean (SFA, 2003). The total volume of goods handled by Port Victoria (imports plus exports) in recent years has been on the decline from a total of 683 000 tons in 1998 to 397 000 tons in 2002 (Portfocus, 2003). Shipping import cargos to Port Victoria include bulk oil (53.4 % of total imports in 1997 – 2002), general cargo (42.5 %), bulk cement (3.8 %) and liquid petroleum gas (0.3 %).

Transshipment cargo handled by Port Victoria solely consists of fish – mainly tuna –and has steadily increased from 39 000 tons in 1998 to 69 000 tons in 2002 (Portfocus 2003). In 2004, a total of 1106 vessels arrived and departed from Port Victoria and associated marinas. These included merchant vessels (all types combined, 44 % of total), fishing vessels (41.9 %), private yachts (8.4 %), cruise ships (5.3 %) and research and dredging vessels (0.4 %). The vessels arrived from 92 different ports from all over the globe, and ranged in gross tonnage from 4 to 77 500 tonnes. All fishing vessels arrived from oceanic fishing grounds rather than from other ports. Residency time in Port Victoria (or surrounding marinas) ranged from less than 1 day to 373 days and was on average higher for recreational yachts (39 days) than for the other vessel types (6, 5, 2 and 1 days for merchant, fishing, cruise and research/dredge vessels, respectively).

In addition to these movements, three high speed passenger ferries' sail between the islands of Mahé and Praslin three times each day. In addition, an average of around 12 locally built and owned, wooden/fiberglass/steel hull schooners and small tankers (ranging in size from 15 to 50 meters) operate between Mahé, Praslin and La Digue transporting general cargo and passengers on daily basis. Certain schooners also travel to the inner islands (on the Mahé Plateau) on a regular weekly basis, in particular those with hotel establishments, ferrying she necessary supplies.

Inter island vessels belonging to the Island Development Company(IDC)- a State owned company- or chartered by this company, travel to the outer islands, (up to a distance of 750 kms from Mahe) carrying general cargo for the islands and retuning with cargo of copra, salt fish and other general products from these islands.

7.2 Current Institutional Structure

The Commercial port at Victoria Harbour and the Inter-island quay are managed by the Seychelles Ports Authority (SPA), a parastatal organization which falls under the Ministry of Home Affairs, Environment, and Transport. The artisanal fishing port at Victoria as well as the Semi-industrial fishing port at industrial estate at Providence is managed by the SFA falling under the responsibility of the Ministry of Investment, Natural Resources and Trade (MINRT)

7.3 Legislative Framework

Shipping in Port Victoria harbour is regulated by the **Harbour Act 1933 (Amended in 1988)** and its Regulations. Provision is made for the following: regulation of marine traffic; pollution prevention in the harbour; regulation of location for berthing and anchoring of ships; control of disposal of waste from ship and control exchange of ballast water by ship in port areas.

In addition the **Merchant Shipping Act, 1992** and its Regulations provides for the registration of ships and for the control, regulations and development of merchant shipping including provisions on safety aspects, qualifications of crew, wages, accommodations, welfare and discipline.

The Merchant Shipping (Masters and Seamen) Regulations 1995, establishes regulations concerning payments of crew wages as well as disciplinary measures for breach of duty

The Merchant Shipping (Local Voyages) Regulations 1995, regulates safety requirements for ships including minimum safety equipment to be carried on board.

The Merchant Shipping (Manning and Certificate) (Amendments) Regulations 2005, establishes certificates of competency for officers and engineers to comply with the International Conventions on standardizing of training certificates and watch keeping for seafarers. A ferry or trade vessel may not be navigated by anyone who does not hold a certificate of competency

The License (Vessels) Regulations 1987 specifies requirements in relation to manning, crew agreement and registered harbour mechanics and boatmen.

7.4 International Conventions

Seychelles is party to and signatory to the following international maritime conventions:

Table 7: Membership of international conventions related to ports, coastal transport & regulation of shipping

Convention on the International Maritime Organisation (IMO)
Convention for the Prevention of Pollution from Ships (MARPOL)
Convention on Oil Preparedness, Response, and Cooperation
Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter
Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

7.5 Gaps and need for harmonization

- The current infrastructure at the commercial port in Victoria is inadequate, not only is the quay too small and gives rise to congestion but modern loading and unloading facilities are lacking compared to regional port like Port Louis in Mauritius
- Due to congestion both fishing and cargo vessels often have to be unloaded at anchor in Victoria harbour; this is both time consuming and expensive for the shipping vessels
- The last improvement and upgrading of port facilities date back to 2003 and although a port development Plan exist it has so far yet to be implemented

8. COASTAL AGRICULTURE AND FORESTRY

8.1 Agriculture

8.1.1 Historical Evolution

Agriculture in the Seychelles is presently characterized by small farms with the average size of 0.75 ha and rarely exceeding 2 ha (Moustache, 2007). There are presently about 500 registered farms located throughout the major granitic island of Mahe, Praslin and La Digue on both the coastal plains and upland areas. The coastal plains of the large inhabited granitic islands contain about 70% of available agricultural land. On certain outer islands, bird guano has mixed with the soil making it highly fertile and ideal for crop farming. Despite this fact, only a small amount of agriculture takes place. The upland areas are made up of a lateric soil high in kaolinitic clay with low nutrient and organic matter and acidic in nature.

The area of land which has been identified for potential agricultural activities in the Seychelles is small (3,100 ha). However, only 20% of these areas are under some form of agricultural production with only 6% of the identified areas being under intensive cultivation.

There is no subsistence agriculture in the Seychelles. The country presently have about 400 registered crop farmers 1,500 legal pig farmers and 47 commercially registered layer farms, 10 commercially registered commercial broiler farms with farm land being either leased from the state or privately owned. Backyard agriculture is also very common with about 33% of household nationally practicing some form of agricultural production which has been estimated to cover an area of 45 ha cultivating mostly vegetable and fruit crops. The agriculture sector employs around 3,200 people and currently account for 2.9% of the GDP with current agricultural production meeting about 2.8% of the local demand for beef, 60% for pork, 60-70% for fruits and vegetables, 75% for poultry and 100% for table eggs (Moustache, 2007).

Although agriculture contributes only about 4% of GDP it has great significance for national food security for Seychelles where rice is the main staple food, a commodity which is imported and is not grown locally. The five year Agriculture Development Strategy (2007 – 2011) plans to enhance food security and reduce the country's vulnerability and dependency on external food sources while attempting to maintain the GDP contribution of agriculture to the national economy, increase farm income, sustain employment in the sector and explore the production of value added products for local consumption and for export to niche market.

It has been forecasted that by 2011 the national agriculture production will provide 70% of the required fruits and vegetables and 100% of pork and broiler poultry which is consumed locally.

8.1.2 Current Institutional structure

The Ministry with the current responsibility for Agriculture is the Ministry of Investment and Natural Resources and Industry (MINRI). A budget dependent agency, the Seychelles Agricultural Agency (SAA), was established in 2009. The main objectives of the Agency are to provide for food security, increase of agricultural production and the modernization and development of the agricultural sector. The functions of the Agency include the formulation of national policy, the promotion of organic production and providing technical assistance to the agricultural sector. The Agency has established a

fund and is governed by a Board. The SAA regroups both the Plant Protection and Veterinary Services.

8.1.3 Legislative and Policy Framework

The Agriculture Development Strategy (2007 – 2011) remains the guiding light for the development of agriculture in the Seychelles. There are however many challenges to achieving its stated targets, such as the promotion of adequate technology to adapt/mitigate the climate change, finding the necessary funds to purchase the technology, meeting the infrastructure cost and having the relevant qualified personnel to promote such technologies.

Legislation relevant to the Agricultural sector includes the following:

- Agriculture Act, 1966
- Seychelles Agricultural Agency Act, 2009
- Plant Protection Act, 1996
- Animal (Diseases and Imports) Act, 1981
- Pesticides Control Act, 1996.
- Code of Practice for Handling, Storage and Disposal of Hazardous Chemicals & other Agricultural Pesticide
- Public Health Act, 1960
- Pig Production (Control) Act
- Public Health Act
- Food Act
- Environment Protection Act 1994

Biosecurity legislation and policy are currently being developed under the Biosecurity project funded by UNDP GEF.

8.1.4 Membership of International Conventions and Treaties

Seychelles is party to and signatory to the following International Conventions and treaties pertaining to agriculture and forestry.

Table 8: International Conventions related to agriculture and forestry

International Plant Protection Convention
Convention on Biological Diversity & Cartagena Protocol to the CBD
Codex Alimentarius
International Health Regulations
World Trade Organization – Agreement on Application of Sanitary and Phyto-Sanitary Mechanism
World Customs Organization Convention
International Civil Aviation Organization Convention
International Maritime Organization Convention

8.1.6 Issues and gaps in Agricultural practice.

The overriding objective for agriculture is to achieve food security on a sustainable basis. The Government provides an enabling environment to enhance local agricultural production and to promote agricultural technologies.

One of the guiding principles of the agricultural policy of the Seychelles is “To ensure safe and sustainable agricultural development with due regard to biodiversity and the environment”. This is not always the current practice. Progress at all levels of agriculture is hampered by an inadequacy of technically trained staff at the graduate level.

Furthermore, since the beginning of the 1990s, encroachment of agricultural land by social, industrial and tourism infrastructure has been very apparent. Concurrently, there have been numerous reports of under-utilization of existing agricultural land.

In order to meet increasing demand for food along with an enhancement of food security in the coming decade, especially in the face of decreasing availability of land, it is imperative that the productivity of existing agricultural land is considerably increased through appropriate technologies and conservation methods.

Consequently, in the face of the necessity to considerably increase agricultural production to meet the increasing need in food demand, there will be a higher intensity of user conflicts

Collaborating ministries (i.e. Environment, Health & Planning) thoroughly assess all applications for livestock activities and their impact on the environment. However, the impact of the inorganic fertilisers and general pesticides use has never been assessed.

8.2 Forestry

8.2.1. Historical Evolution

The forestry sector is generally perceived as marginal. The sectoral GDP contribution, including wood industries, is no more than 0.4%. However, the indirect economic and environmental benefits of the sector are considerable. The amenity provided by the forests is extremely important for the tourism industry. The extremely vulnerable water supply is highly dependent on the vegetation cover provided by forests.

It is estimated that the forest area is 40,600 ha, i.e. 90% of the land area. About 90% of the forests are natural. Plantations, including casuarina forests, cover about 4,800 ha. More than 45% of the forests are within national parks or other conservation areas.

The main forest management problems include housing encroachment due to land pressure, invasive exotic plant species competing with endemic and indigenous species for the habitat, and prevention and control of forest fires, which have had disastrous effects on soil and water conservation. The main utilisation problems are the difficult access to the forests, low productivity of both harvesting and processing, and consequently high extraction costs.

8.2.2 Institutional Framework

Forest management has traditionally been done by the Forestry section within the Department or Ministry responsible for environment. As of July 2009 the SNPA is responsible for all forests, including forest Reserves in Seychelles and regulates and manages the forest resources of the country. Previously, the focus was mainly on production forestry and plantation establishment. The trend has now moved to forest management of conservation areas.

8.1.4 Policy Framework

Forest Management Plan, 1993⁴⁷

Within the Forest Management Plan management zones have been identified with varying emphasis on biodiversity, catchment, production and non-forest. The production forest makes up less than 3% of the forest lands. Most of Seychelles forests are mixed endemic and exotic species forests. There are some 600-700 introduced plant species in Seychelles and a few species present particular problems for forest management: Cinnamon, Albizia, Prune de France (coco plum) and bracken fern.⁴⁸ Three quarters of deforested areas are found (1993) in Praslin mainly due to fires.

The priority 'Biodiversity Zones' have also been specified in the draft Plan⁴⁹ specifying that management plans should be prepared for all those 'Biodiversity Zones'.

It is also noted in the Draft Management Plan that some endemic tree species merit special attention for reasons such as:

- Rarity; e.g., jellyfish tree
- Economic value; e.g. coco de mer, palmiste
- Regeneration problems; e.g. bois de fer
- Narrow genetic base after an evolutionary 'bottleneck'; e.g., bois de natte
- Special ecological requirements; e.g., maybe pitcher plant which occurs almost always with the tree *Randia sericea*.⁵⁰

EMPS 2000-2010

The Forest Management sub-programme under the EMPS proposed three projects all of which were given highest priority rating: Preservation of Endemic Tree Species; Fire Prevention Measures; and Preparation and Implementation of National Forest Management Plan

8.1.5 Forest Legislation

Several pieces of legislation relate to forestry. These include the following:

⁴⁷ Ministry of Environment, Economic Planning and External Relations, Seychelles Forest Management Plan/Sector Study, June 1993, p 26 and p. 82.

⁴⁸ Ibid., 1993, p. 26.

⁴⁹ These include Congo Rouge/Morne Seychellois Peak/Mt. Coton/Jasmin; La Reserve/Brulee; Mt. Sebert; Bernica; Mt. Cauvin; Praslin National Park; Fond Ferdinand; Curieuse Island, including mangroves; Silhouette highlands and lowlands; and all mangrove swamps

⁵⁰ Carolus & Ferguson 2005

- Bread Fruit and Other Trees (Protection) Act, 1917
- Coco-de-Mer (Management) Decree, 1978 as amended by Act 10 of 1994
- Forest Reserves Act, 1955
- Lightning of Fires (Restriction) Act 1940
- The Town and Country Planning Act, 1972
- State Land and River Reserves Act, 1903
- National Parks and Nature Conservancy Act

However, most of the legislation is outdated. There are various ongoing projects which seek to update forestry related laws. The Mainstreaming Biodiversity, the Sustainable Land Management and Protected Areas projects, all funded by UNDP/GEF are currently providing assistance for the update and review of these laws.

8.2.5 Gaps in Management and Forestry practices

- There is the need to improve the planning, coordination and monitoring capacities of SNPA and DOE to enable them to fully benefit from the available external support and the national opportunities for increased mobilization of NGO and private sectors for conservation and sustainable utilization of forest resources.
- Forestry legislation is extremely outdated with some not being appropriately used. Legislation on forestry reserves has in fact never been used to promulgate forestry protected areas.
- Forestry practices in Seychelles have not moved in line with current international practices. Guidelines and best practice for sustainable forest management are not in existence.
- Precise geographical information on Seychelles' forests is sketchy and at best, outdated. The status of River Reserves is not known. Forest mapping using remote sensing and GIS can lay the foundation for better forest and water shed management.
- The national emphasis on biodiversity, eco-tourism, sustainable management and sustainable exploitation of Seychelles' natural resources necessitates a review of present management practices of the national parks. It is necessary to review and implement management plans, to elaborate other plans, to study possible extensions or creations and to improve collaboration and networking with other protected areas
- Most staff working in Forestry are semi-skilled field personnel. A forestry management programme plan cannot be implemented properly with the present staff. Senior staff needs to undergo university level training.
- Participate actively in regional (Indian Ocean, Eastern African, etc.) cooperation programmes. This would bring in relevant experience and expertise needed in the country.

BIBLIOGRAPHY

- Aumeeruddy, R. et al, (2005) “Resource assessment and management of the sea cucumber fishery” TCP/SEY/2902
- Bijoux, J.P, Decomarmond, A. & Aumeeruddy R. (2007) “Status of the Marine Environment Report Seychelles”
- Government of Seychelles (GOS) (2004) Final Report: “Seychelles Marine Ecosystem Management Project (SEYMEMP)
- Grandcourt E. M. et al, (2008) « Retrospective stock assessment of the Emperor Red Snapper (*Lutjanus sebae*) on the Seychelles Bank between 1997 and 2006” –ICES Journal of Marine Science, 65: 889-898
- Jones T. et al. “Seychelles National Report Phase 1: Integrated Problem Analysis, March 2002” GEF MSP Sub-Saharan Africa Project (GF/6010-0016):
- Mees C.C. et al, (1998) « Inshore fisheries Management Strategy of the Seychelles”. Final Report of Project No. FAO/TCP/SEY/6713(A)
- Nageon de Lestang J. (2005) “Report on Existing and Potential Employment Opportunities in the Fisheries Sector in Seychelles” MENR & SFA Consultancy.
- SFA Annual Report (2006)
- SFA (2007) “Seychelles Artisanal Fisheries Bulletin
- Shipton T. & Hetch T. (2007) “Coastal Mariculture Assessment Mission. Draft Final Report” (COI/EU Project)
- UNDP (2010) “The Seychelles Country Assessment Report”
- UNEP-GEF WIOLaB Addressing Land Based Activities in the Western Indian Ocean (Carolus, I.) (2006) “Report on Legal, Regulatory and Institutional Frameworks in the Seychelles”
- UNEP-GEF WIOLaB Addressing Land Based Activities in the Western Indian Ocean (Carolus, I.) (2006) “Report on the Status of Ratification and Implementation of Relevant International Conventions”
- UNDP-GEF Mainstreaming Biodiversity in Seychelles (Ferguson and Carolus (2005) “Institutional and Policy Review”; Dogley (2005) Tourism Sector Report

UNEP/GPA and WIOMSA (Akunga Momanyi) (2004) “Review of National Legislations and Institutions Relevant to Tourism, Ports, Land Reclamation and Damming of Rivers in selected countries along the Western Indian Ocean”

NBS (2010) Seychelles in Figures

Department of Public Administration Manual

Republic of Seychelles, EMPS 2000-2010 and its review

MENR (2004), Functions and Responsibilities Manual

NCSA Capacity Assessment Report, April 2005

Nairobi Convention Secretariat (2009) “Strategic Action Programme for the Protection of the Coastal and Marine Environment of the Western Indian Ocean from Land-based Sources and Activities”, Nairobi, Kenya

ReCoMaP ICZM Short Course Seychelles Report, 10-13 February 2009

2005 Issue Based Modules for Coherent Implementation of Biodiversity Conventions: Climate Change and Biodiversity

Domingue et al., 1999

Payet, R.A., Effectiveness of the Environmental Impact Assessment Process in Managing Tourism Development in the Seychelles, in Environment Law in Africa Review, Gray, E., ed., 2004

Legislation

Maritime Zones Act, 1999; MZ (Marine Pollution) Regulations, 1981

Merchant Shipping Act 1992; MS (Oil Pollution Preparedness and Response) Regulations, 2001

Minerals Act, 1991

Pesticides Control Act (PCA), 1996

Seychelles Agricultural Agency Act, 2009.

Fisheries Act (1986), Fisheries regulations (1987)

Petroleum Mining Act, 1976 & Petroleum Mining (Petroleum Drilling) Regulations, 1980

Petroleum Mining (Pollution and Control) Act, 1980

Removal of Sand and Gravel Act, 1982

Policy Documents

National Biodiversity Action Plan, 1997

Fisheries Policy of the Government of Seychelles (April 2005)

Ministry of Tourism and Transport (2001) Vision 21: Tourism Development in Seychelles 2001-2010)

National Agriculture Policy 2003-201

Plan D'aménagement du Territoire 1993

Republic of Seychelles, “Seychelles Strategy 17”

Republic of Seychelles, “Environment Management Plan of Seychelles, 2000-2010”

SFA, February 2007 ‘Seychelles National Development Plan 2007-2011’ (Unpublished)

Annex 1

A) List of Marine Protected Areas

- Aldabra World Heritage Site
- Aride Island Special Nature Reserve

Special Reserve	Marine National Park	Shell Reserve	Protected Area
Recife Cousin Cousine	Baie Ternay; Port Launay; Curieuse ; Ile Coco; Ile la Fouche; St Pierre; Silhouette; Ste. Anne	Anse Faure/Pointe aux Sel ; La Digue ; North East Point; Praslin Shell Reserve	African Banks Protected Area

b) List of Terrestrial Parks and Special Reserves

- Morne Seychellois National Park
- Praslin National Park
- Silhouette National Park
- Aldabra Special Reserve
- Cousin island Special Reserve
- Aride Special Reserve
- Moyenne Special Reserve
- Recife island Special Reserve
- La Digue Veuve Reserve (bird sanctuary)