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RESPONSIBLE FISHING FOR SUSTAINABILITY



The Government of Seychelles,
Ministry of Natural Resources



Seychelles Fishing Authority

Annual Report

2014

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Acronyms

ACD	Average Chart Datum
ADFIS	Agriculture Disaster and Fisheries Insurance Scheme
AFIA	Agricultural and Fisheries Incentives Act (2005)
AFO	Authorised Fisheries Officer
AMSSI	Association of Members of Seychelles Sea cucumber Industry
BIOT	British Indian Ocean Territory
BSFC	British/Seychelles Fisheries Commission
CANAL	Changes in the Biochemical Composition of Tropical Tunas and its Effects on Meat Quality
CBS	Central Bank of Seychelles
CC	Compliance Committee
CCA	Concessionary Credit Agency
CMMs	Conservation and Management Measures
COA	Certificate of Authorisation
COFI	Committee on Fisheries
CPI	Consumer Price Index
CPUE	Catch Per Unit of Effort
DBS	Development Bank Seychelles
EAF	Ecosystem Approach to Fisheries
EC	European Commission
EEZ	Exclusive Economic Zone
EMOTION	Estimation of Maternal Effects on the Sustainability of Large Pelagic Populations
ESA	Eastern and Southern Africa
ESIA	Environmental and Social Impact Assessment
EU	European Union
FADs	Fish Aggregated Devices

FAO	Food and Agriculture Organisations
FBOA	Fishermen and Boat Owners Association
FDF	Fisheries Development Fund
FIDECO	Fishing Development Company
FMC	Fisheries Monitoring Centre
FPA	Fisheries Partnership Agreement
FSFA	Federal Somali Fisheries Authority
GDP	Gross Domestic Product
GEF	Global Environmental Fund
IDC	Islands Development Company
IOC	Indian Ocean Commission
IOT	Indian Ocean Tuna
IOTC	Indian Ocean Tuna Commission
IOTTP	Indian Ocean Tuna Tagging Programme
IRD	Institut de Recherche pour le Développement
IUU	Illegal, Unreported and Unregulated
MAC	Management Advisory Committee
MCS	Monitoring, Control and Surveillance
MDGs	Millennium Development Goals
MENR	Ministry of Environment and Natural Resources
MPA	Marine Protected Area
MT	Metric Tonnes
NSB	National Statistics Bureau
NDEA	National Drug Enforcement Agency
NPOA	National Plan Of Action
OFCF	Overseas Fisheries Cooperation Foundation
PLMP	Participatory Lobster Monitoring Programme
PSM	Port State Measure
PV	Patrol Vessel
RFSP	Regional Fisheries Surveillance Project

R/V	Research Vessel
SACOS	State Assurance Corporation of Seychelles
SADC	Southern African Development Community
SBFA	Small Business Financing Agency
SC	Scientific Committee
SCG	Seychelles Coast Guard
SFA	Seychelles Fishing Authority
SEYPEC	Seychelles Petroleum Company
SFA	Seychelles Fishing Authority
SFPA	Sustainable Fisheries Partnership Agreement
SIFA	Seychelles Industrial Fishing Authority
SLA	Seychelles Licensing Authority
SNPA	Seychelles National Park Authority
SOTN	Seychelles Ocean Temperature Network
SPDF	Seychelles People Defence Force
SPA	Seychelles Port Authority
SSC	Scientific Sub-Committee
SWIOFC	South West Indian Ocean Fisheries Commission
UN	United Nations
UNCLOS	United Nations Law of the Sea
VMS	Vessel Monitoring System
WIO	Western Indian Ocean
WWF	World Wide Fund for Nature

Foreword

2014 marked the 30th anniversary of the formation of the Seychelles Fishing Authority (SFA) with the enactment of the Seychelles Fishing Authority (Establishment) Act 1984. In 1984 the arrival of mainly French and Spanish purse seiners from the Atlantic brought a huge transformation to the fisheries sector and to the Seychelles economy in general. This was even more important to what happened to the tourism industry with the opening of the Seychelles International Airport in 1971.



By Mr Philippe Michaud,
Chairman of the Board
of Directors

Since these historic times the artisanal fishery has been modernized, vessels safety has improved, a semi-industrial longline fishery targeting tuna and swordfish has been developed. Plans are underway to complete the Mariculture Master Plan and redevelop mariculture in a big way. The industrial tuna purse seine fishery is under more control and better monitored to comply with the requirements of the Indian Ocean Tuna Commission and equally to ensure that regional countries maximize the benefits of this resource.

During the year SFA had to deal with a serious problem concerning the export of swordfish to the EU. I am confident that it will be able to meet this challenge and find a way forward.

Though SFA had to cope with an embargo on the recruitment of staff, it has managed to provide the training of its staff ranging from those at technical levels to those at post graduate levels. Financing for this training has come mainly from the fisheries sectoral support of the EU/Seychelles Fisheries Partnership Agreement. The Protocol under this agreement was renegotiated and renewed for a six year period starting from 18th January 2014.

Finally I wish to thank the staff of SFA and the Board members for their hard work and their effort to continue to develop further the fisheries sector.

A handwritten signature in blue ink, appearing to be 'P. Michaud', written in a cursive style.

Philippe Michaud

Chapter 1 - STRUCTURE AND FUNCTIONS

The SFA was incorporated on 31st August 1984 by the Seychelles Fishing Authority (Establishment) Act, although it had physically been in existence since September 1983 when the Seychelles Industrial Fishing Authority (SIFA) was formed. The first Chief Executive of SFA was Mr Maxime Fayon. The Authority was established at a time of intense fisheries development, especially in foreign industrial tuna fishing. It was created to develop the fishing industry to its fullest potential and to safeguard the resource base for sustainable development. It absorbed personnel from the defunct Fisheries Division and the Fishing Development Company (FIDECO) and became the executive arm of the Government in the field of fisheries.

SFA works closely with the Ministry of Natural Resources which replaced the Ministry of Natural Resources and Industry in 2014. The functions of the SFA as defined in article (5) of the Seychelles Fishing Authority (Establishment) Act are:

- To promote, organise and develop fishing, fishing industries and fishing resources in Seychelles.
- To assist in the formulation of national policy with respect to fishing, fishing industries and fishing resources and in the implementation of that policy.
- To conduct negotiations, engage in meetings, seminars or discussions, with regard to fishing or fisheries and the establishment or operation of fishing industries, whether at a national or international level, on behalf of the Republic.
- To identify the manpower training requirements of Seychelles with regard to fishing and fishing industries.

Subject to this Act, the Authority has the power to do all things necessary or convenient in connection with, or incidental to, the performance of its functions and, in particular the Authority may:

1. Own, lease or dispose of movables or immovables.
2. Form companies under the Companies Act.
3. Enter into partnership or joint-ventures.
4. Act as agent for the purpose of the management of any business or enterprise, or for any other purpose.
5. Hold shares in, or debentures of any company.
6. Carry on any business or enterprise for or in connection with:
 - a. fishing or fisheries
 - b. processing, transporting, handling, marketing or distributing fish or fish products
 - c. exporting fish or fish products
 - d. the sale of equipment or apparatus to be used for fishing, or
 - e. Any other matter relating to its functions where, in the opinion of the Authority, the carrying out of such a business or enterprise is in the best interest of the Republic.
7. Conduct surveillance operations, in conjunction with the Department of Defence, in relation to fishing operations in the Exclusive Economic Zone (EEZ) or in waters adjacent to the continental shelf.
8. Monitor the catch of all fishing vessels, and
9. Carry out scientific and development research

SFA is unique in that it is an organization with management, planning, development, scientific and training functions.

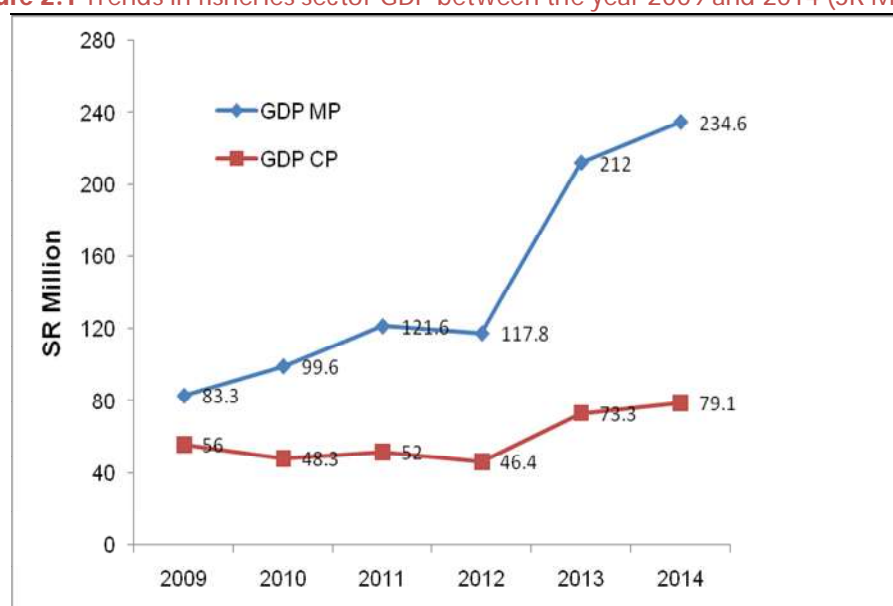
SFA is a Parastatal Organisation whose Board of Directors is appointed by the President.

Chapter 2 - ECONOMIC CONTRIBUTION OF THE FISHERIES SECTOR

2.1 General Observation

On the whole, for the year 2014, a positive growth was observed in the fisheries sector. According to the Central Bank of Seychelles (CBS) official figures for fisheries, Gross Domestic Product (GDP) at constant 2006 prices rose from SR73.3 million in 2013 to SR79.1 million (+7.9%), whilst the same indicator at current market prices rose from SR212 million to SR234.6 million (10.7%) (Figure 2.1). Note that these indicators reflect only the first point of sales value for artisanal and semi-industrial fisheries, which contributed to a mere 1.3% of GDP in 2014. The contribution of other fisheries related activities in the calculation of fisheries sector GDP would increase it to an estimated 7% - 8% of total GDP.

Figure 2.1 Trends in fisheries sector GDP between the year 2009 and 2014 (SR Million)

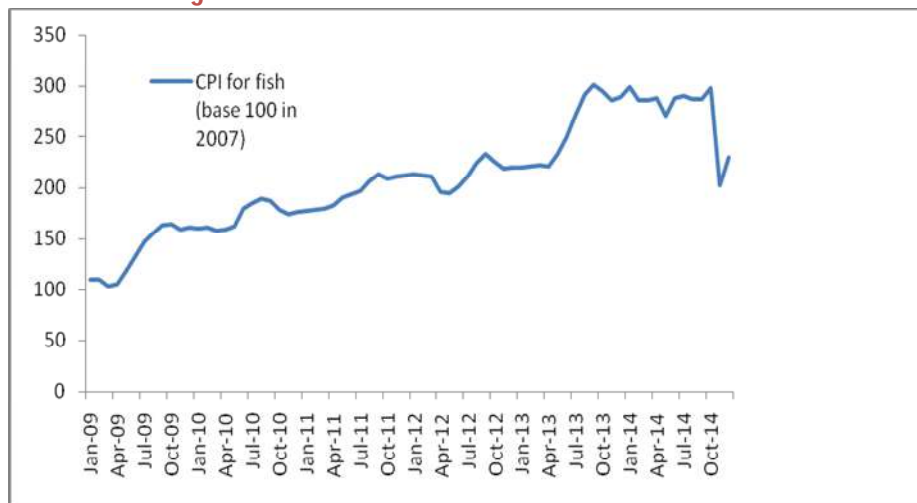


Source: CBS

Despite the positive growth in fisheries contribution to GDP, statistics in 2014 show a decline of 16% in total fish catch in relation to the previous year. This was mainly as a result of a drop of 12.5% in artisanal catch, coupled with a 69% fall in fish that were caught by semi-industrial vessels. The immense contraction in semi-industrial fishing was mainly due to the fact that exporters were not meeting European Union (EU) standards on exports of swordfish, which was the main target species, hence adversely impacting semi-industrial fishing activity. Consequently, total domestic production declined slightly, albeit higher than 2011-2012 output. In contrast, revenues generated from the industrial tuna fishing activity increased substantially to SR2.24 billion in 2014 as compared to SR1.76 billion in 2013.

In 2014, on average, the price of fish was 7% higher than in 2013 (Figure 2.2). However, consistent with previous years, the Consumer Price Index (CPI) fluctuated throughout the year.

Figure 2.2 Consumer Price Index for Fish 2009-2014



Source: NBS (2015)

Finally, there was an overall increase in gross revenue generated by the fisheries sector and related activities. According to figures calculated by the Seychelles Fishing Authority (SFA) the fisheries sector generated a gross foreign currency inflow of SR6.542 billion in 2014.

2.2 Employment

Direct and indirect employment in fisheries and related sectors was estimated to be between 5,000 – 6,000 people in 2014, representing around 10% of total formal employment in the country. This estimate also includes people employed by the Authority as well as in fish processing, export activities, net repairs, shipchandling, stevedoring, etc...

The Indian Ocean Tuna (IOT) canning factory was by far the largest single employer, with a workforce of approximately 2,300 workers of which over 70% were foreign nationals. The number of full and part-time commercial fishers varied between 1,300 and 1,400 primarily due to seasonal mobility associated with the sector.

In 2014, approximately 150 people were directly employed in the sea cucumber fishery as divers, skippers and apprentices. The Seychelles Fishing Authority employed 123 people. During 2014, a maximum of 45 Seychellois seamen made at least one trip on board purse seiners (16 aboard Spanish vessels and 29 aboard French vessels).

2.3 Production of Fish and Fish Products

Total domestic production of fish and fish products, including the production of fish meal and fish oil recorded a slight decrease from 118,112 Mt in 2013 to 114,549 Mt in 2014 and this is attributed to the decrease in canned tuna production (-12.5%). This represents a year-on-year decrease of 3% (Table 2.1).

Table 2.1 Total production of fish and fish products 2009-2014(Mt)

(Mt)	2009	2010	2011	2012	2013	2014	% change (2013/2014)
Artisanal Catch	3,019.10	2,595.00	2,875.00	2,502.00	4,150.40	3,632.50	-12.48%
Semi-Industrial Catch	329.00	295.00	237.70	270.80	262.20	82.00	-68.73%
Canned Tuna	30,824.00	30,338.00	30,152.00	31,400.00	36,826.00	32,219.00	-12.51%
Smoked Fish	28.40	29.60	29.40	27.69	40.10	41.00	2.24%
Fish Meal	5,168.00	7,663.00	6,986.00	6,597.00	7,337.00	6,927.00	-5.59%
Fish Oil	826.00	915.00	767.00	871.00	691.00	870.00	25.90%
Sea cucumber	59.93	78.71	108.80	80.06	46.90	64.34	37.19%
Others*	5.23	5.55	2.59	13.19	2.70	1.40	-48.15%
Total Domestic Production	40,259.66	41,919.86	41,158.49	41,761.74	49,356.30	43,837.24	-11.18%
Purse Seine Catch**	68,339.40	75,786.60	63,211.60	50,938.00	57,324.00	60,255.00	5.11%
Longliner Catch**	8,323.10	6,659.00	7,565.80	12,164.00	11,431.20	10,457.20	-8.52%
Total Industrial Catch**	76,662.50	82,445.60	70,777.40	63,102.00	68,755.20	70,712.20	2.85%
Grand Total	116,922.16	124,365.46	111,935.89	104,863.74	118,111.50	114,549.44	-3.02%

*Sharks & Rays

** Sey flagged vessels only

The artisanal catch, which experienced an increase of 64.2% in 2013, after a decreasing trend since 2008 mainly due to the piracy threat in the Indian Ocean, has once again dropped by 12.5% to reach 3,632.50 Mt. Although this figure remains higher than post-2008 levels, the drop in catches may be due to shortages of bait and ice experienced by fishermen in 2014. This is further substantiated by the drop in total effort for handline fishery in 2014 which decreased by 5% from an estimated total of 47,082 men days in 2013 to an estimated at 44,691 men days. The estimated effort for both trap and net fishery has remained more or less the same as that estimated for the previous year.

Following a peak in landings in 2009 and more or less stable landings over the last 4 years, output from the semi-industrial fishery dropped by a staggering 68.7% to reach 82 Mt in 2014. This is attributed to the problems encountered with exports of swordfish to the EU markets due to high mercury levels which as a result caused fishing effort (number of trips) to sharply

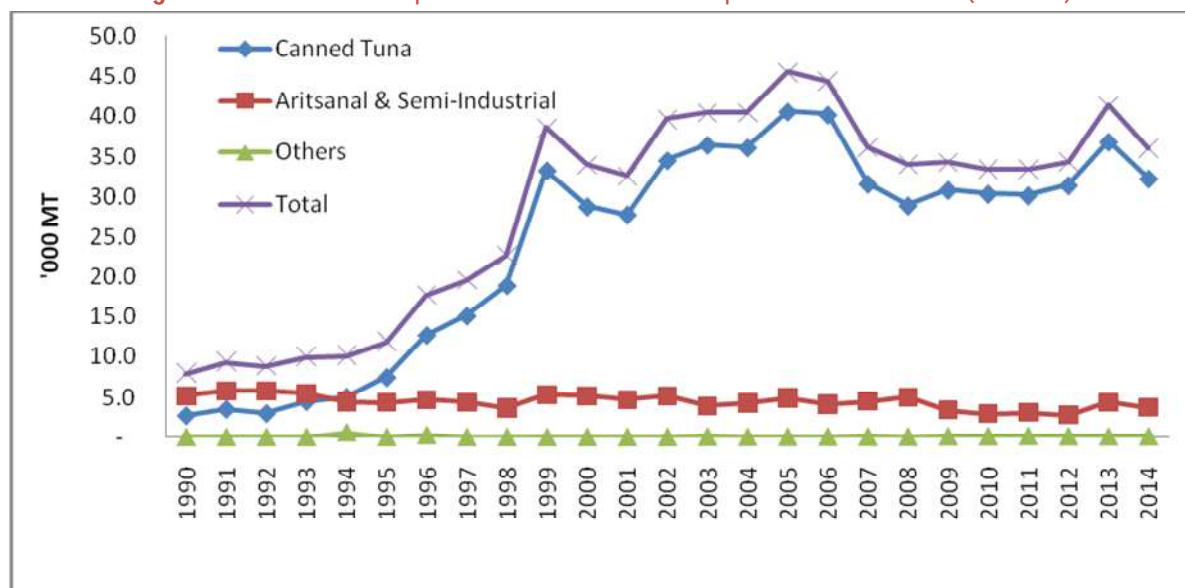
decrease by 65% from 68 trips conducted in 2013 by 6 vessels to 24 fishing trips by 9 vessels in 2014.

Canned tuna remained the dominant produce with a total output of 32,219 Mt (almost 73% of consumable domestic production). Dried sea cucumber production stood at 64.3 Mt, a 37% increase from the previous year, whilst catch of sharks & rays (Others) landed halved from 2013 to a mere 1.4 Mt. The total domestic production of consumable fish and fish products (i.e. excluding fish meal and fish oil), when compared to 2013 remained constant with a slight increase of 1% over the previous year.

Fish meal is a by-product produced from the tuna factory trimmings and fish oil is obtained during the reduction process by which fish meal is produced. They are both important by-products of the tuna canning industry. Production of fish oil decreased by 25.9% to 870 Mt in 2014, while the production of fish meal increased by 5.6% to 6,927 Mt.

Total catch by Seychelles registered but foreign owned fishing vessels recorded a provisional year-on-year increase of approximately 3% to reach 70,712 metric tons in 2014 and the figure is expected to increase.

During 2014, ten Seychelles registered purse seiners caught a total of 60,255 Mt of tuna, representing a 5% rise from 2013 when catch stood at 57,324 Mt. With 97% of log books returned and captured in the database, the catch from the 32 Seychelles registered longliners stood at 10,457 Mt representing a 9% drop in catches in the WIO corresponding to a 9% decrease in fishing effort.

Figure 2.3 Trends in the production of fish and fish products 1990-2014 ('000 Mt)

Source: SFA

Figure 2.3 above illustrates the trend in the domestic output of fish and fish products over the last two decades, revealing the high correlation between total output and canned tuna output. The total output, which had increased sharply in 2013 as a result of the increase in canned tuna production, dropped to pre-2013 levels where it had more or less remained constant since 2009. The production of dried sea cucumber, shark fins and smoked fish remained relatively minor in contrast to their economic importance. The artisanal and semi-industrial catch decreased in 2014, although remaining higher than 2009-2012 levels.

2.4 Revenue from Industrial Tuna Fishing Activities

Industrial tuna fishing remains one of the most important sources of foreign currency earnings in the economy. Gross income from the sector is derived mainly from foreign fishing vessels' expenditure on goods and services in Port Victoria, as well as through payments for licenses and financial compensation. In 2014, gross expenditure increased across the board and reached SR2.238 billion, a 23.4% increase from the SR1.813 billion calculated for 2013 (Table 2.2).

Table 2.2 Total revenue from industrial fishing activity 2010-2014 (SR Million)

(SR Million)	2009	2010	2011	2012	2013	2014	% change (2013/2014)
Vessel Expenditure	1,157.00	1,145.00	1,290.00	1,054.00	1,640.47	2,032.903	23.92%
Company Expenditure	12.11	19.55	19.84	18.52	17.59	27.652	57.19%
Seamen Compensation	0.54	0.51	0.58	0.84	0.67	1.198	78.48%
License Fees, Excess Catch & Sectoral	229.00	132.15	146.13	191.72	154.22	175.874	14.04%
Total	1,398.65	1,297.21	1,456.55	1,265.08	1,812.95	2,237.627	23.42%

Source: SFA

Spending by vessels remained the most important outlay from industrial tuna fishing activities. Vessel's expenditure increased by 23.9%, principally due to an increase in both the number of port calls and number of days spent in port, as shown in Table 2.3. The former increased from 543 in 2013 to 683 in 2014 and the latter by approximately 38%, from 3,426 in 2013 to 4,718 in 2014 (Table 2.3). It is worth noting that this is an approximate figure and the majority comprises of expenditure by purse seiners, reefers and supply vessels as data for industrial longliners' expenditure has as at the close of the database for data processing not yet been made available to SFA by the agents.

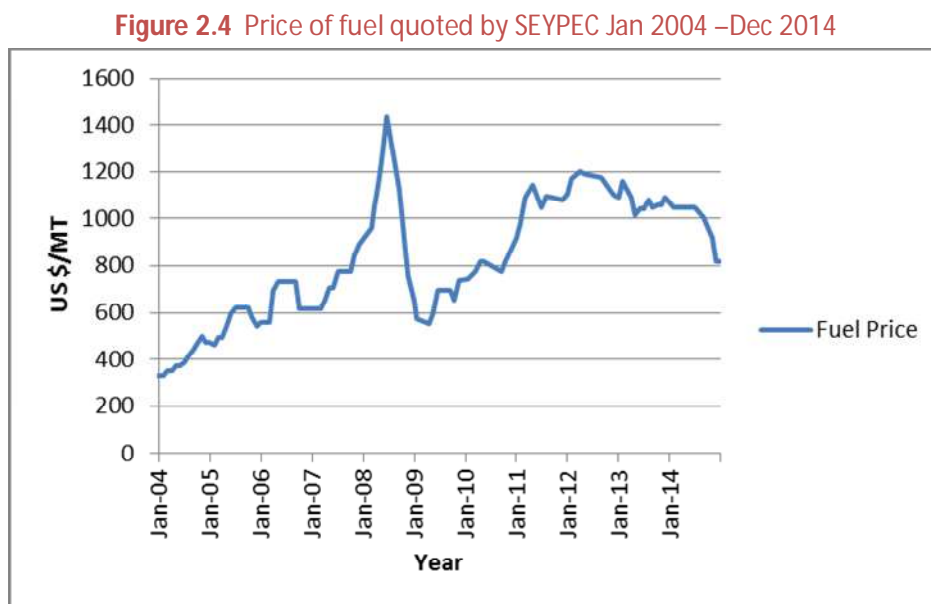
Table 2.3 Vessels activity in Port Victoria

Year	Port Calls	Sum of Days in Port	Average of Days in Port
2009	435	2,687	6
2010	401	1,908	5
2011	373	2,017	5
2012	559	3,107	6
2013	543	3,426	6
2014	683	4,718	7

Source: SPA

The purchase of gasoil by industrial tuna fishing vessels and reefers constitutes a major component of vessel expenditures and figures provided by SEYPEC for 2014 showed that a total value of SR1.79 billion of gasoil was purchased. This compares to a total procurement of SR1.45 billion in 2013 (+23%). Port fees and dues also increased by 31% from SR10.9 million in 2013 to SR14 million in 2014. Similar to the previous year, bunkering accounted for 89% of the total vessel expenditures, port dues and fees represented only 1% and the remaining 10% was accounted for by other expenses.

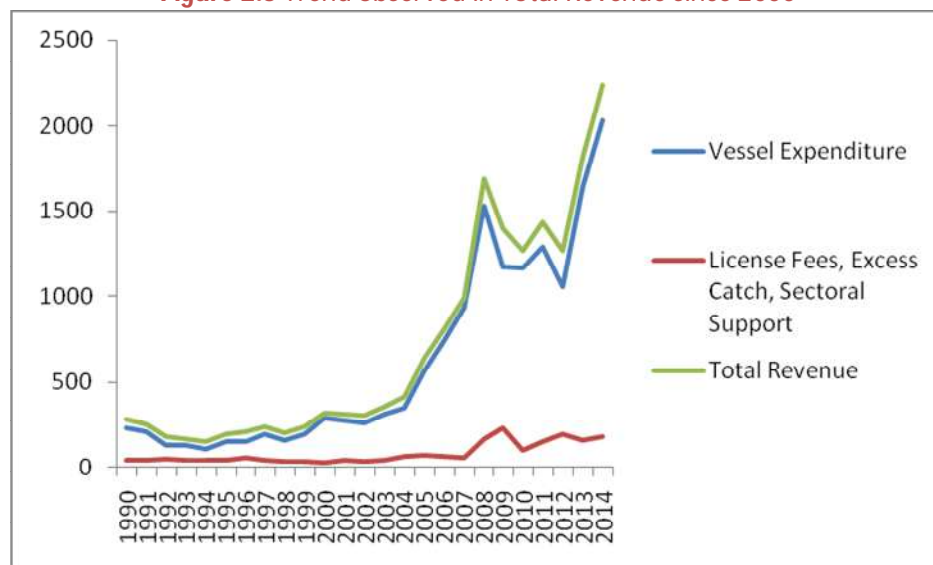
Figure 2.4 shows the trend in fuel prices from 2004 to 2014 and as can be seen, there has been a continuous increase in the price of fuel since January 2009 and although prices remained fairly constant over 2012 and 2013, in 2014 fuel prices fell quite drastically, reflecting the drop in international fuel prices.



Source: SEYPEC

Figure 2.5 shows the trend observed in total revenue since the 1990s. Up until 2009, there was a general upward trend in total revenue earned from industrial tuna fishing activities. Due to the threat of piracy, activity in the sector decreased in 2009 and 2010, but showed signs of recovery as revenue increased slightly in 2011. However, in 2012, figures dropped to reach similar levels to 2010 but have since been on an upward trend. Total revenue in 2014 reached a record high and this can be attributed to the entry into force of the new Fisheries Partnership Agreement in 2014 and the introduction of a reference catch tonnage of 50,000 Mt for EU vessels fishing in Seychelles EEZ and the payment of excess catch fees if this is exceeded. In 2014, 18,889 Mt of excess catch was recorded from French and Spanish vessels fishing in the Seychelles EEZ.

Figure 2.5 Trend observed in Total Revenue since 2000



Source: SFA

2.5 Trade in Fish and Fish Products

Trade in fish and fish products and related activities constituted an important growth and income generating activity for the national economy in 2014. These activities have a major influence on the country's balance of payment as a substantial portion of the country's current inflow of foreign exchange is derived from fish trading activities.

2.5.1 Exports of fish and fish products

Exports of fish and fish products constitute a vital source of foreign currency earnings for the country. In addition, processing of fish into exportable products generates a major source of employment and income and contributes positively to the national trade balance. The volume of fish and fish products exported decreased by 10.3% from 45,142 Mt of fish and fish products, with a corresponding value of SR4.45 billion, exported in 2013 to 40,507 Mt, valued at SR4.25 billion, exported in 2014.

In 2014, the decrease in volume of fish and fish products exported was mainly due to a decrease of 11.2% in the volume of **canned tuna** exported, bringing the volume of canned tuna exported to 32,394 Mt. The value of canned tuna exports also fell by 5%, from SR4.27 billion in 2013 to SR4.06 billion in 2014.

The volume of **fish meal** exported decreased by 7.82%, from 7,467 Mt in 2013 to 6,883Mt in 2014. This translated in a 6% decrease in export value of fish meal from SR103 million in 2013 to SR97.3 million in 2014. The export of fish oil was markedly different, with an increase of 40.7%, from 618 Mt in 2013 to 869.8n mt in 2014. The value of fish oil exports also increased by 22.3% from SR32.4 million in 2013 to SR39.6 million in 2014.

In 2014, the value of exports of fish and fish products constituted 97% of the total value of domestic exports. This illustrates the importance of marine product exports for foreign exchange earnings. Europe remained Seychelles' primary market for fish and fish products, with canned tuna being the dominant commodity. Other than exporting to the EU (including Reunion), Seychelles also exported to Mauritius, U.S.A and the Middle East. East Asian markets such as Hong Kong and Singapore also constituted an important market for Seychelles, particularly for dried sea cucumber and shark fins.

Table 2.4 Volume and value of fish and fish products exported, 2010-2014

	2010		2011		2012		2013		2014		% change	
	MT	SR ,000	Mt	SR ,000	Mt	SR ,000	Mt	SR ,000	Mt	SR ,000	Mt	SR ,000
Fresh and Frozen Fish	306	26,225	203	18,788	180.25	24,303.07	243.63	20,778.68	293.84	14,740.00	20.61%	-29.06%
Canned Tuna	29,015	2,382,456	31,283	3,001,272	31,104.81	3,411,049.92	36,763.30	4,266,277.00	32,394	4,055,433.00	11.88%	-4.94%
Dried Shark fin & sea cucumber	70	30,560	110	53,902	68	41,681	49.60	27,988	65.75	41,544	32.56%	48.44%
Total	29,391	2,439,241	31,596	3,073,962	31,352.79	3,477,034	37,057	4,315,043	32,754	4,111,716.54	11.61%	-4.71%
Total Domestic Exports		2,640,500		3,284,052		3,723,503		4,508,374		4,296,452.01		
% of Domestic Exports		92%		94%		93%		96%		96%		
Fish Meal	7,050	85,821	6,645	91,302	6,931.05	82,841.94	7,467.30	103,511.00	6,883	97,302.00	-7.82%	-6.00%
Fish Oil	915	40,928	767	32,379	930	43,288.00	618.10	32,396.00	869.81	39,614.93	40.72%	22.28%
Grand Total	37,356	2,565,990	39,008	3,197,643	39,213.84	3,603,163	45,141.93	4,450,950	40,507	4,248,633	10.27%	-4.55%

Source: NSB

2.5.2 Imports of fish and fish products

During 2014, there was a decrease in both the volume and value of fish and fish products imported into the country. The main product, frozen tuna, was destined for the IOT canning factory for canning and fish-meal production. The other commodities imported were supplies for the hotel and local market and bait for the domestic fishing industry.

The volume of fish and fish products imported decreased by 15.8% to reach 67,504 Mt in 2014 and total expenditure on imports decreased by 26.1%, from SR2.25 billion in 2013 to a record SR1.66 billion. As the main raw material for the canning factory, frozen fish, namely tuna, remained the dominant import commodity, accounting for over 99% of total imports of fish and fish products in terms of volume and approximately 96% in terms of value. In 2014, frozen tuna imports amounted to 66,968 Mt, a 15.6% decrease from 2013.

Table 2.5 Volume and value of fish and fish products imported, 2013-2014

	2012		2013		2014		% change (2013/2014)	
	Mt	SR ,000	Mt	SR ,000	Mt	SR ,000	Mt	SR ,000
Fish, Fresh or Chilled	9.30	1,007	22.78	702.25	62.36	3,179.03	173.74%	352.69%
Fish, Frozen	66,663	2,146,649	79,373	2,211,067	66,968	1,593,921	-15.63%	-27.91%
Fish, Fillets and other fish meat	8.47	983.97	9.71	448.33	4.18	901.89	-56.98%	101.17%
Fish, dried, salted	35.36	4,455.05	56.63	2460.10	38.27	5175.17	-32.42%	110.36%
Molluscs and Crustaceans	705.19	42,391.80	660.99	30,380.52	430.83	55,877.07	-34.82%	83.92%
Fish prepared and preserved	14.34	2,186.79	1.20	19.55	0.16	28.73	-86.43%	46.99%
Molluscs and Crustaceans preserved	8.15	1,409.57	52.56	834.10	0.00	0.00	-100.00%	-100.00%
Total	67,443.53	2,199,083.87	80,177.29	2,245,912.07	67,504.18	1,659,082.98	-15.81%	-26.13%

Imports of fresh or chilled fish showed interesting results with the volume continuously increasing over the years, with volume imported in 2014 recorded at 62.4 Mt, a 173.7% increase, and value increasing by a staggering 352.7% to reach SR3.18 Million in 2014. This is mainly due to the imports constituting of high value fish, particularly Pacific salmon.

2.6 Foreign Currency Flows

For the year 2014, the total gross inflow generated by the fishing sector and related activities increased by 19% to reach SR6.486 billion (US\$508 Million), compared to total inflow of SR5.467 billion in 2013 (Table 2.6). Although there was a substantial increase in the gross inflow from the fisheries sector, its total contribution to the total current account receipts increased from 40% in 2013 to only 41% in 2014. This is mainly due to the total current account receipts in 2014 also increasing by 15% from SR13.69 billion in 2013 to SR15.78 billion, equivalent to US\$1.24 billion, in 2014.

Table 2.6 Gross inflow of foreign exchange generated by the fisheries sector 2012 - 2014

Foreign Currency Flows (SR '000)	2012	2013	2014	% change
Visible Exports	3,599,892.00	4,450,950.22	4,248,633.46	-5%
Revenue from Industrial Tuna Fishing	1,264,799.00	1,757,636.00	2,237,626.53	27%
Gross Inflow from fisheries (a)	4,864,691.00	5,466,954.42	6,486,259.99	19%
Current Account Receipts (b)	15,959,800.00	13,692,724.12	15,780,438.46	15%
(a) as a % of (b)	30%	40%	41%	

According to the Central Bank of Seychelles' annual report, 2014 earnings from tourism amounted to US\$397.9 million. In 2014 the total gross inflow from the fisheries sector amounted to US\$508 million. This clearly shows the vital importance of fisheries and related activities to the national economy and in the development of the country. In addition, there is future potential to further develop the sector's potential contribution to the blue economy through value addition and continued development of the semi-industrial fishing industry.

Chapter 3 - Industrial And Semi Industrial Tuna Fishing Activities

3.1 The Purse Seine Fishery

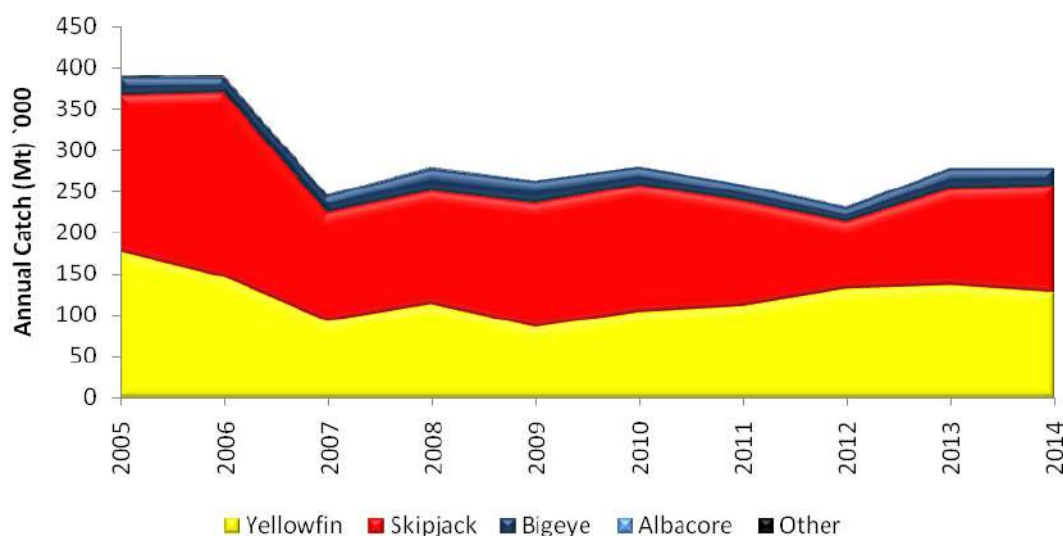
3.1.1 Catches, fishing effort, catch rates and species composition

An estimated total catch of 277,927 Mt was made in the Western Indian Ocean by purse seiners licensed to fish in Seychelles EEZ more or less similar to the estimated catch of 277,879 Mt reported in 2013.

The fishing effort in 2014 was estimated at 11,821 fishing days, 16% higher than in 2013. The average catch rate decreased from 27.29 Mt/fishing day in 2013 to 23.51 Mt/fishing day in 2014. However, monthly catch rates in 2014 remained highly variable and ranged from 10.41 to 40.02 Mt/fishing day.

Yellowfin (*Thunnus albacares*) and skipjack (*Katsuwonus pelamis*) tuna dominated the total purse seine catches equally, accounting for 46% of the total catch each, whilst bigeye (*Thunnus obesus*) tuna made up 8% of the total catch. The catches of skipjack tuna increased by 10% in 2014 whereas yellowfin and bigeye tuna catches declined by 6% and 14% respectively (Figure 3.1).

Figure 3.1 Total catch reported by purse seiners licensed to fish in the Seychelles waters, from 2005 – 2014



In terms of catches by flag state, the Spanish recorded a decrease whilst French and Seychellois fleets recorded an increase in catches. The largest year-on-year increase in total catch (47%) was recorded by the French fleet which landed 58,560 Mt in 2014 compared to 39,862 Mt in 2013. The increase could be attributed to the 5 vessels which changed flag from Mayotte to France. Total year-on-year catch of the Seychelles fleet increased by 5%, from 57,324 Mt in 2013 to, 60,255 Mt in 2014. Total year-on-year catch of the Spanish fleet decreased by 9%, from 146,983 Mt in 2013 to, 133,741 Mt in 2014 (Table 3.1).

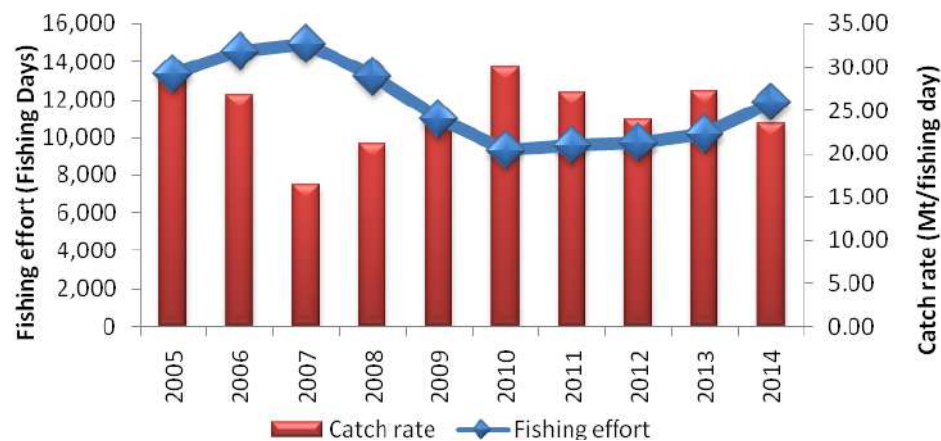
Table 3.1 Tuna catch statistics by country of registration for 2013 to 2014

Country	2013			2014		
	Catch (Mt)	Effort	CPUE	Catch (Mt)	Effort	CPUE
Spain	146,983	4,224	34.8	133,741	4,185	31.96
France	39,862	2,291	17.4	58,560	3,762	15.57
Seychelles	57,324	1,809	31.69	60,255	2,109	28.57
<u>Others*</u>	33,710	1,860	18.12	25,371	1,765	14.37
Total	277,879	10,184	27.29	277,927	11,821	23.51

*Others represent other countries and include South Korea (2013-2014), (2013) and Mauritius (2013-2014)

Analysis of the trend in fishing effort over the past 10 years shows a yearly increase in fishing effort from 2005 (13,351 fishing days) to 2007 (14,930 fishing days). This was followed by almost constant decrease between 2007 and 2010 (9,318 fishing days) when fishing effort more or less stabilised with minimal year-on-year increase up to 2013. In 2014, the fishing effort was estimated to be 11,821 fishing days, representing a 16% increase from 10,184 fishing days in 2013. In contrast, trends in CPUE showed more fluctuations with a decreasing trend from 2005 reaching a minimum of 16.45 Mt/fishing day in 2007 followed by an increasing trend reaching a high of 29.97 Mt/fishing day in 2010. The CPUE then fluctuated between 27.29 to 23.87 Mt/fishing day during the period 2011 to 2013. In 2014 CPUE stands at 23.51Mt/fishing day (Figure 3.2).

Figure 3.2 Total effort (fishing days) and catch rates (Mt/fishing day) reported by purse seiners licensed to fish in the Seychelles waters, from 2005 – 2014



3.1.2 Spatial distribution of catch

Figures 3.3a and 3.3b show the distribution of catches reported by purse seiners (holding licenses to operate in Seychelles waters) in the Western Indian Ocean by 1° square, for 2013 and 2014 respectively. In both years fishing pattern appears to be similar, however increased catches in the east Somalia, North West and South East Seychelles areas in 2014 and reduced catches in Mozambique Channel area were observed.

Figure 3.3a Distribution of catches reported by purse seiners by 1° square, in 2013

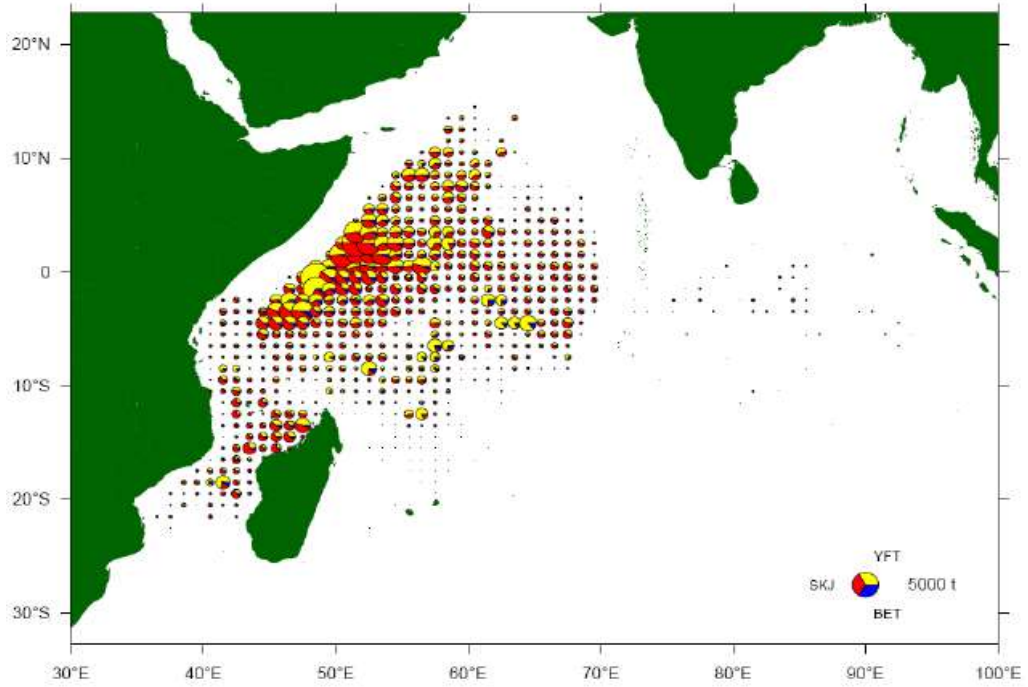
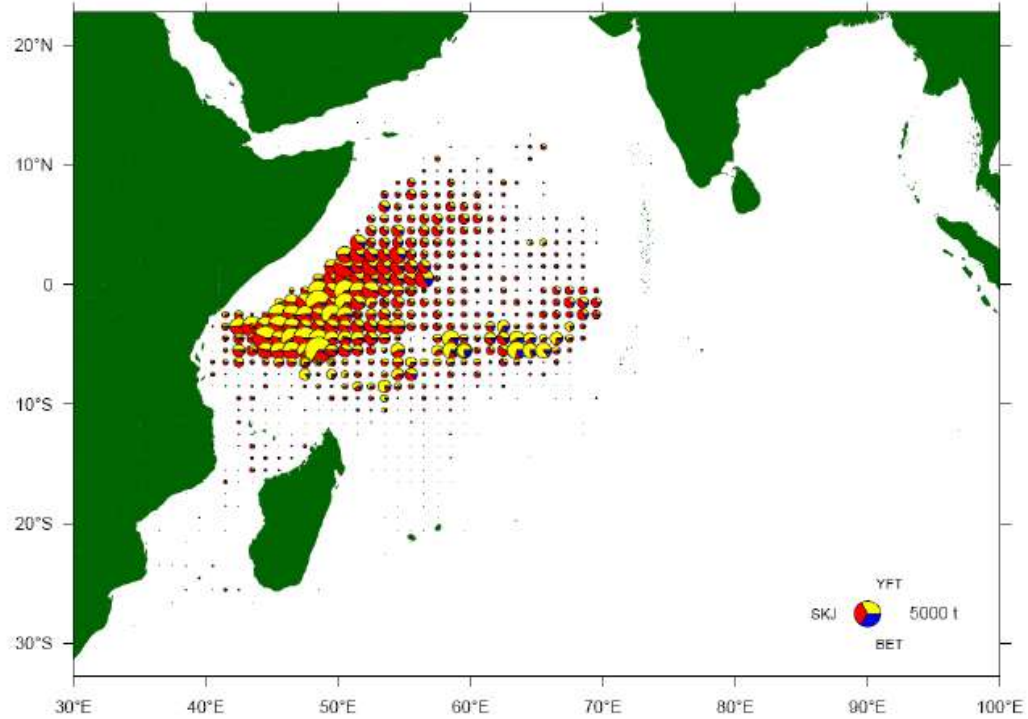


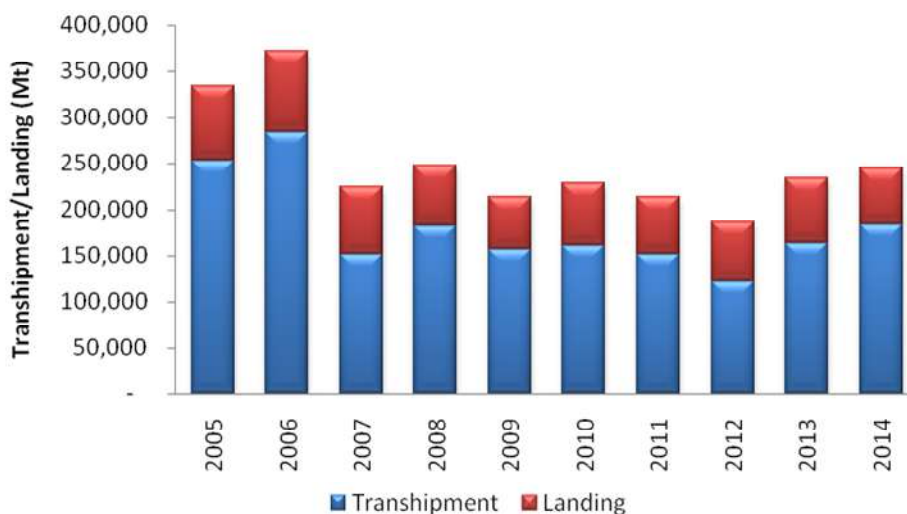
Figure 3.3b Distribution of catches reported by purse seiners by 1° square, in 2014



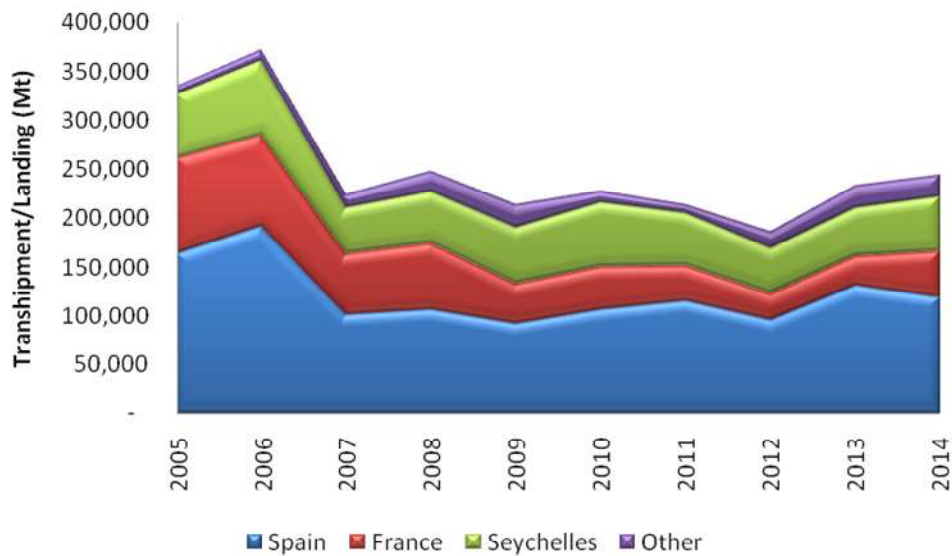
3.1.3 Transshipment and landings in Port Victoria

A total of 244,353 Mt of purse seine catches were landed or transshipped in Port Victoria in 2014, compared to 233,574 Mt in 2013. This represents a year-on-year increase of 5% in landing/transshipment in Port Victoria and accounts for 90% of the total catches of purse seiners licensed to fish in Seychelles EEZ for the year 2014. Overall, average total catch and amount of fish landed or transshipped in Port Victoria has remained more or less stable since 2007 but is about 150,000 Mt less than maximum recorded level made in 2006 (Figure 3.4). The amount of discards in port has remained low (<1%) throughout the last decade and represented <0.1% of catch landed or transshipped in Port Victoria in 2014.

Figure 3.4 Transshipment and landings in Port Victoria in Mt between 2005 and 2014



Spanish flagged vessels accounted for the majority of landings and transshipments in Port Victoria (49%), followed by Seychelles (23%), French (19%) and others, which include South Korea and Mauritius flagged vessels (Figure 3.5).

Figure 3.5 Transshipment and landings in Port Victoria by vessel flag between 2005 and 2014

3.2 The Longline Fishery

This section summarises the activities of Seychelles flagged and international longliners licensed to operate inside the Seychelles EEZ between the years 2005 and 2014. Figures presented here for the years 2005 to 2014 may be different to those provided in subsequent SFA publications due to recent incorporation of data from previously outstanding logbooks.

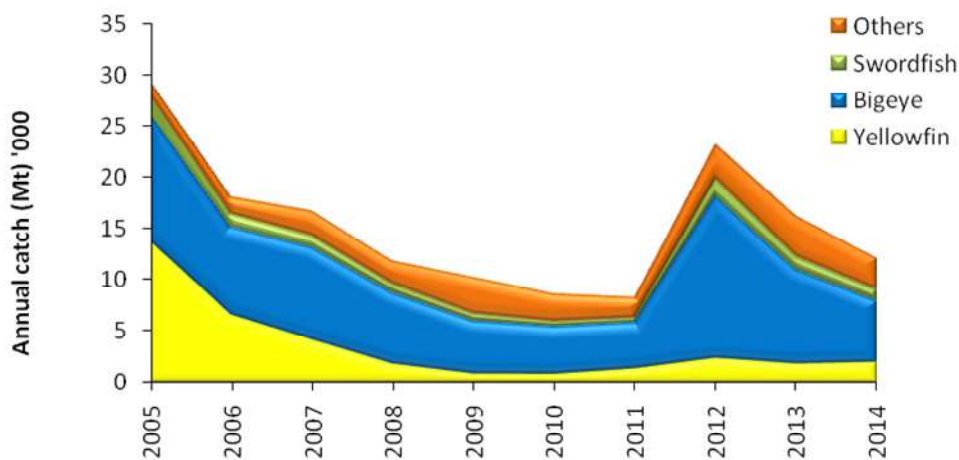
The number of logbook returns from Seychelles flagged and international longliners licensed to fish in the Seychelles EEZ was very low prior to 2004 (<50%). However, since 2004 the number of logbook returns has increased remarkably. Increases in logbook returns have improved the level of confidence in the data of the industrial longline fishery.

3.2.1 Catches, fishing effort, catch rates and species composition

Statistics presented in this section for the year 2013 and 2014 are based upon an 85% and 57% logbook return rate respectively. There are often extensive delays in the return of logbooks by industrial longliners to SFA.

Total catch reported by industrial longliners licensed to fish inside the Seychelles EEZ was estimated at 12,096 Mt in 2014. An estimated 25.7 million hooks were deployed by these vessels giving a mean catch rate of 0.47 Mt/1000 hooks (Table 3.2). Catch rate over the last decade has remained more or less constant apart from 2012 when a large increase was observed. However, fishing effort has been showing a long-term declining trend since 2005. In terms of catch composition, bigeye tuna remained the dominant species caught in this fishery, accounting for 49% of the total catch. Yellowfin tuna and swordfish were the second and third most dominant species, comprising 17% and 9% of the total catch respectively. The remaining 25% of the catch in 2014 comprised of species grouped as others*, which includes marlins, sailfish and sharks (Figure 3.6).

Figure 3.6 Total catch reported by longliners licensed to fish in Seychelles waters from 2005 – 2014



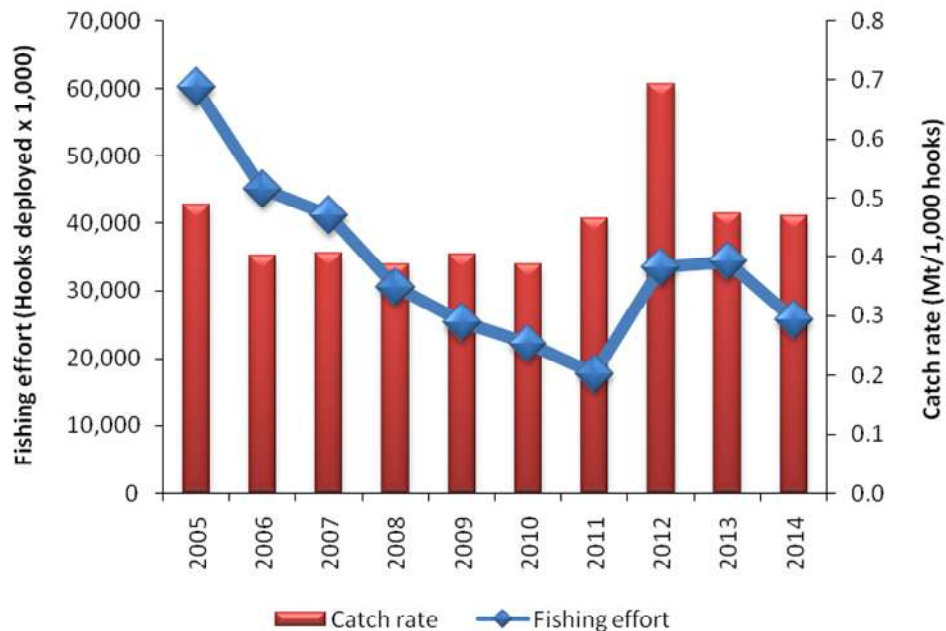
The catch reported for the Seychelles fleet was estimated at 10,457 Mt which was achieved from a fishing effort of 21.3 million hooks compared to 11,431 Mt achieved from a fishing effort of 23.5 million hooks reported for the year 2013. This gives a mean catch rate of 0.49 Mt/1000 hooks in 2014 similar to the catch rate for the previous year. For Seychelles flagged vessels the logbook return rates were 100% and 95% for the year 2013 and 2014 respectively (Table 3.2).

Table 3.2 Catch statistics reported by country for 2013 and 2014

Country	2013				2014			
	Logbook %	Fishing Effort (Million Hooks)	Catch (Mt)	Catch Rate (Mt/1000 Hooks)	Logbook %	Fishing Effort (Million Hooks)	Catch (Mt)	Catch Rate (Mt/1000 Hooks)
Seychelles	100	23.48	11,431	0.49	97	21.25	10,457	0.49
Taiwan (POC)	77	8.74	4,008	0.46	36	3.38	1,280	0.38
China	86	1.58	568	0.36	38	0.84	272	0.32
Japan	91	0.07	27	0.38	37	0.01	4	0.32
Oman	90	0.04	23	0.61	0			0.00
Philippines	89	0.25	121	0.48	57	0.12	56	0.48
Tanzania	92	0.14	57	0.41	45	0.10	26	0.26
Grand Total	85	34.29	16,234	0.47	57	25.70	12,096	0.47

Trend analysis from logbooks submitted to SFA shows that between 2005 and 2011 the catch rate of longliners operating in the Seychelles waters has remained more or less constant ranging between 0.39 Mt/1,000 hooks and 0.49 Mt/1,000 hooks, whilst the fishing effort has been on a decreasing trend from 60 million hooks in 2005 to 17.7 million hooks in 2011. In 2012, both the fishing effort and catch rate increased significantly to 33.8 million hooks and 0.69 Mt/1,000 hooks and has since then been on a decreasing trend. In 2014 the fishing effort and catch rate decreased to 25.7 million hooks and 0.47 Mt/1000 hooks (Figure 3.7).

Figure 3.7 Total effort (fishing days) and catch rates (Mt/1,000 hooks) from logbooks submitted to SFA by longliners licensed to fish in the Seychelles waters, from 2005 – 2014



3.2.2 Fishing Grounds Exploited

Figures 3.8a and 3.8b show the distribution of catches reported by longliners (holding licenses to operate in Seychelles waters) in the Western Indian Ocean by 1° square, for 2013 and 2014 respectively. The maps show that the 2014 fishing pattern appears to be similar to that of the previous year with a significant increase in catches the Indian Ocean Monsoon gyre, particularly in East Somalia and South East Seychelles areas and a decrease in catches in the Indian Ocean subtropical gyre in the Southern Indian Ocean.

Figure 3.8a Distribution of catches reported by industrial longliners by 1° square, 2013

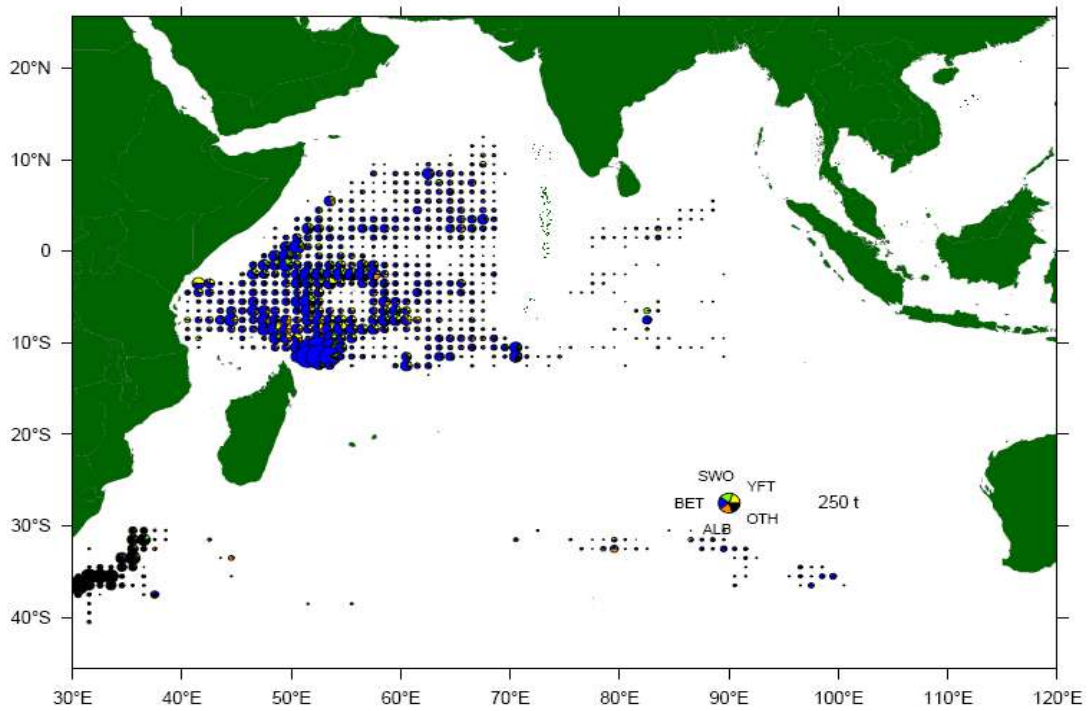
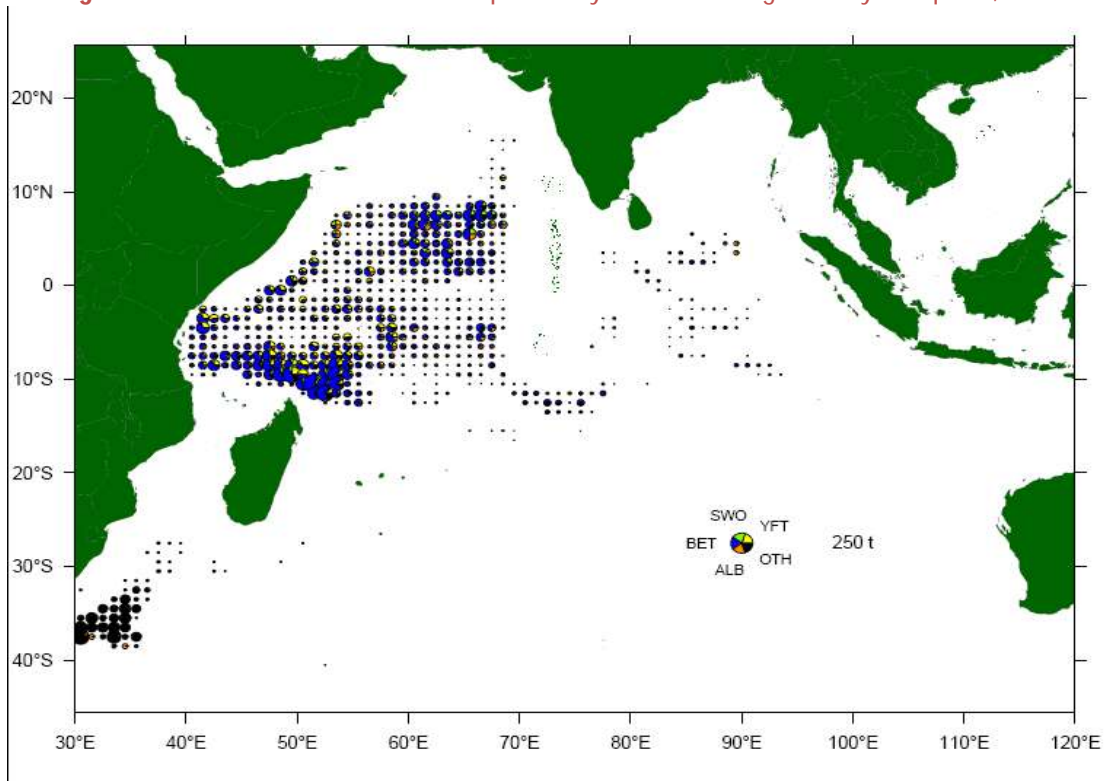


Figure 3.8b Distribution of catches reported by industrial longliners by 1° square, 2014



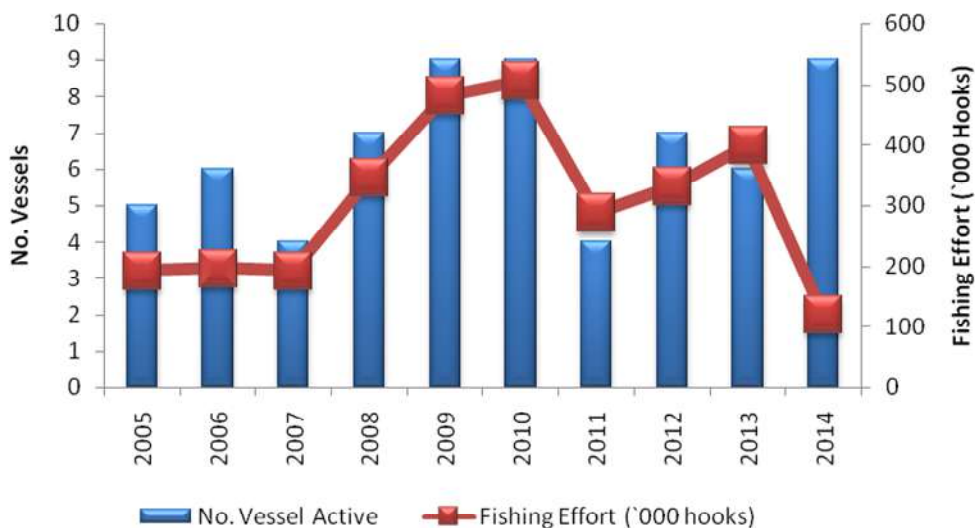
3.3 The Semi-industrial Fishery

3.3.1 Vessels active and fishing effort

In 2014, the 9 vessels that were operating in the semi-industrial longline fishery undertook 24 fishing trips compared to the 68 trips conducted by 6 local vessels in 2013. This represents a 65% decrease in the number of fishing trips targeting tuna and swordfish. The sharp drop in the number of trips may be attributed to the problems encountered with the export of swordfish to the EU market due to its high level of mercury. This has led most semi-industrial vessels to switch to targeting demersal species instead of pelagic fish.

Fishing effort (number of hooks) in the fishery decreased by 81% from 2013 to 2014 from 398,770 to 118,973 hooks (Figure 3.9).

Figure 3.9 Trend in number of vessels operating in the semi-industrial longline fishery and fishing effort (No. hooks deployed) from 2005 – 2014

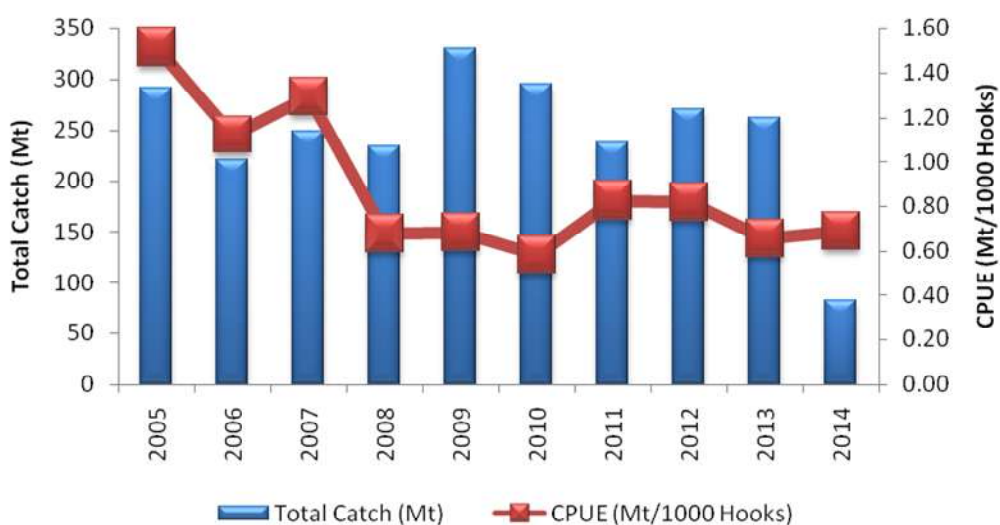


3.3.2 Total catch and catch rates

The total catch by the local semi-industrial fleet decreased by 76% between 2013 (262.2 Mt) and 2014 (82.1 Mt). This was the lowest catch recorded since 1996, one year after the start of the fishery (Figure 3.10).

The catch rate for 2014 was estimated at 0.69 Mt/1,000 hooks. This represents a slight increase from the 2013 level when catch rates of 0.66 Mt/1,000 hooks were recorded (Figure 3.10). The 2014 catch rate remains within the long-term average for the last 6 years but is far less than what was being recorded between 2005 and 2007 during which time average catch rates as high as 1.5 Mt/1,000 hooks were being recorded. Decreasing catch rates were observed for both yellowfin and bigeye between 2013 and 2014. Catch rates for yellowfin decreased from 0.14Mt/1,000 hooks in 2013 to 0.13 Mt/1,000 hooks in 2014 whereas those of bigeye decreased from 0.06 Mt/1,000 hooks in 2013 to 0.04 Mt/1,000 hooks in 2014. In contrast, catch rates of swordfish increased from 0.41 Mt/1,000 hooks in 2013 to 0.49 Mt/1,000 hooks in 2014.

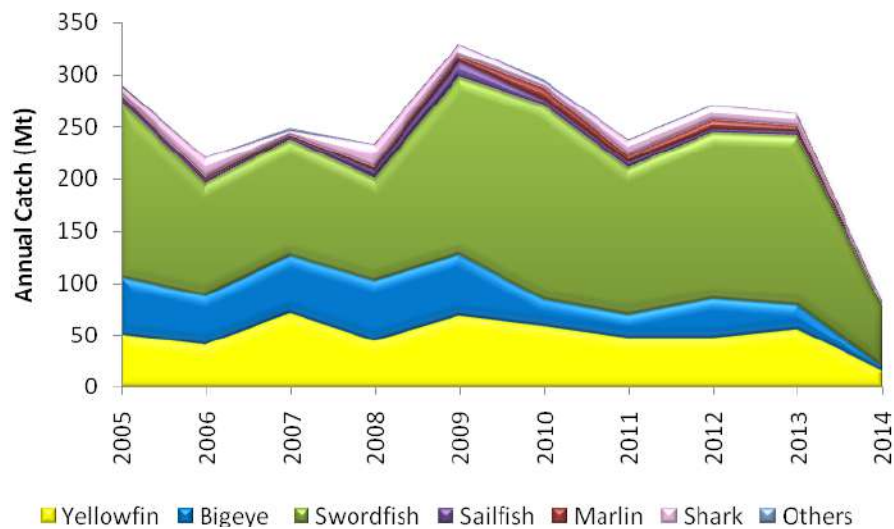
Figure 3.10 Total landed catch and catch rates reported in the semi-industrial longline fishery between 2005 to 2014



3.3.3 Species composition

Species composition reported for the period 2005 to 2014 is illustrated in Figure 3.11. In 2014, swordfish remained the dominant species caught in the semi-industrial fishery, accounting for 71% of the total catch whilst tuna (yellowfin & bigeye) consist of 25% of the total catch.

Figure 3.11 Species composition of the total catch reported from 2005 to 2014



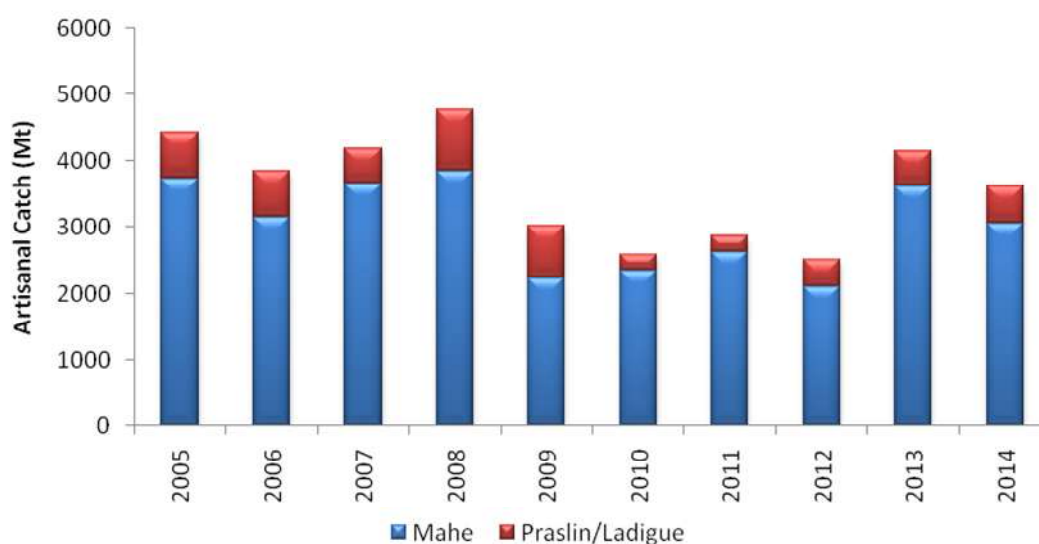
Chapter 4 - Artisanal Fishery

4.1 Catch

The catches for artisanal fishery presented here may be slightly different to the previously published figures since data published as dropline catches have been revised and published as 'Others' to include catches for gears not previously captured by the processing software.

The total artisanal catch for 2014 was estimated at 3,629 Mt, out of which 84% was landed on Mahé and 16% was landed on Praslin and La Digue (Figure 4.1). This represents a decrease of 12% or 522 Mt compared to the 4,150 Mt landed in 2013. The drop in catches may be due to shortage of ice and bait experienced by the fishermen in 2014.

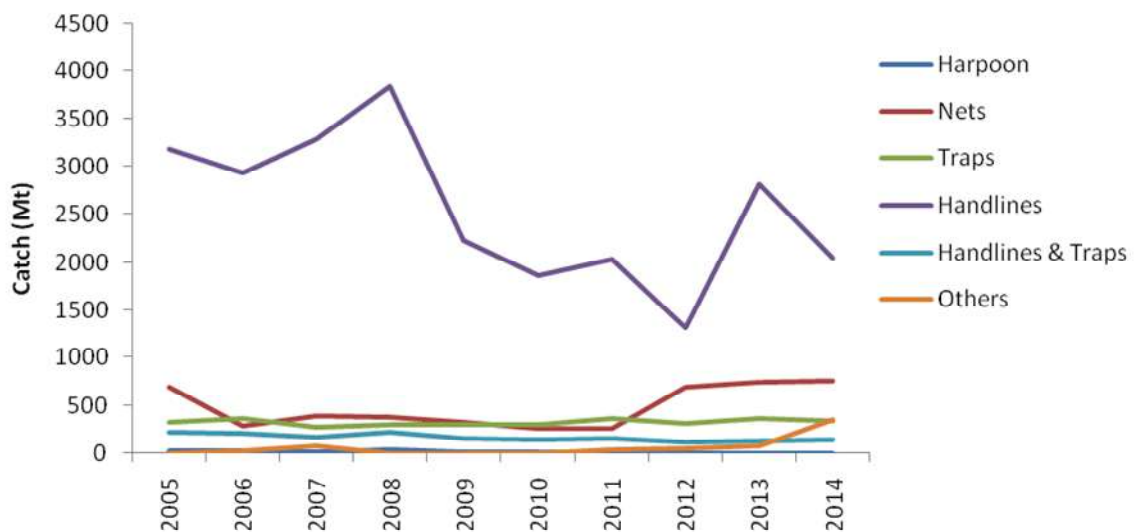
Figure 4.1 Artisanal fisheries catch (Mt) for Mahé and Praslin/La Digue: 2005 to 2014



Catches by handline fishery dominated artisanal catch accounting for 56% of the total catch whilst net fishery accounted for 21% of 2014 artisanal catch. A significant increase from 81 Mt

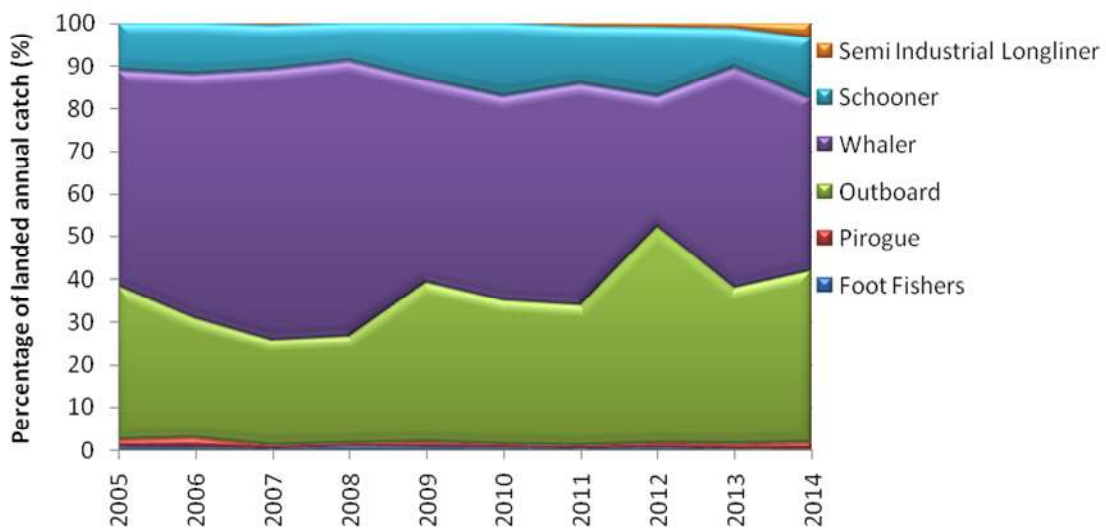
in 2013 to 345 Mt in 2014 was observed in catches using gears classified as “others” (dropline, reels etc). This may be attributed to the increasing number of semi industrial longliners targeting demersal species. Catch of harpoon, handlines and traps recorded year-on-year decrease of 64%, 28% and 6% respectively (Figure 4. 2).

Figure 4.2 Artisanal fisheries catch (Mt) by gear category for 2005 to 2014



In 2014, whalers and outboards accounted for 40% of the total artisanal catches whilst schooners accounted for 14% of the total catch (Figure 4.3). A significant increase of 132% was observed in catches by semi industrial longliners conducting trip targeting demersal species whilst schooner and pirogue catches increased by 37% and 29% respectively. On the contrary, catches by fishermen on foot and whaler decreased by 46% and 32% respectively.

Figure 4.3 Percentage of annual landed catch (Mt) by vessel type for 2005 to 2014



4.2 Fishing Effort

The total effort for handline fishery decreased by 5% from an estimated total of 47,082 men days in 2013 to an estimated 44,691 men days in 2014. Similar year-on-year decrease in fishing effort (4%) was observed in the trap fishery from an estimated 97,082 trap sets in 2013 to 94,051 in 2014 whilst effort for the net fishery has remained more or less similar as that estimated for the previous year (Figure 4.4). This decrease in fishing effort is accompanied by slight decreases in the mean monthly number of whalers, schooners and pirogue in operation and a slight increase in the mean monthly number of outboards in operation. (Table 4.1).

Figure 4.4 Fishing effort for major gear type for 2005 - 2014

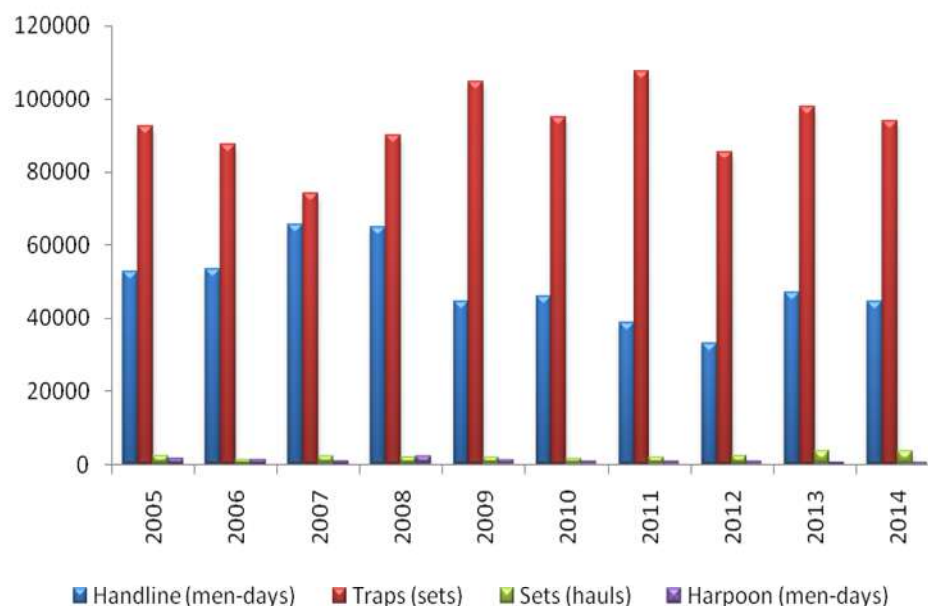


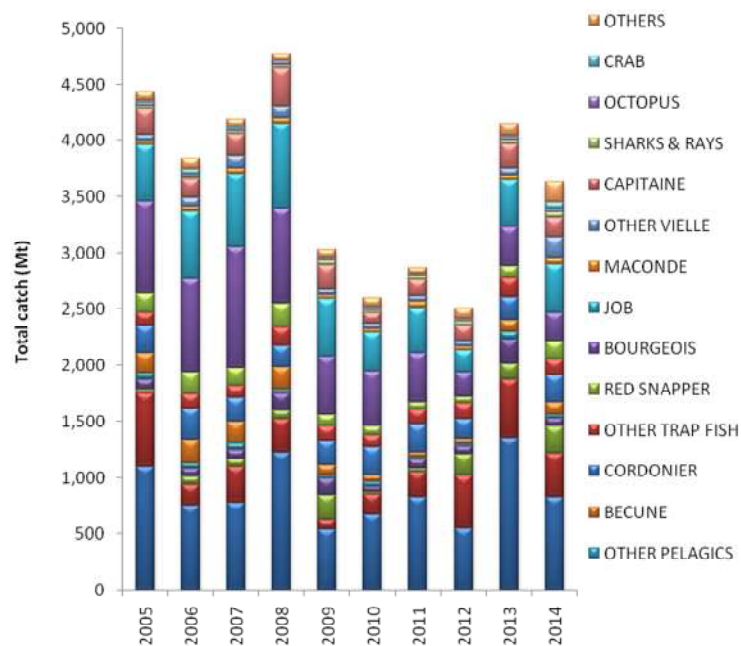
Table 4.1 Mean number of boats operating per month by year for 2005 to 2014

Vessel Type	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Pirogue*	21	17	19	15	15	10	10	9	9	7
Outboard*	215	218	209	261	310	284	270	283	287	298
Whaler	78	90	99	103	104	97	96	96	99	95
Schooner	16	17	17	19	21	22	21	22	20	19
Semi Industrial Longliner**	1	1	2	1	1	1	1	2	2	4

*Includes part time fishing vessels. ** Semi-industrial longliners conducting artisanal fishing trips

4.3 Species Composition

Trevallies (*Carangoides* and *Caranx spp.*), jobfish and mackerel (*Rastrelliger spp.*) dominated the artisanal catch for 2014 accounting for 23%, 12% and 11% of the total respectively (Figure 4.5). The largest increase in catch between 2013 and 2014 was recorded in crabs (486%), other vielle (194%), other maquereau (67%) and vielle maconde (66%) whilst the largest decrease was recorded in bonite (66%), other pelagic (57%), carangues (39%) and bourgeois (26%).

Figure 4.5 Species composition of artisanal fishery for 2005 to 2014

4.4 Lobster fishery

The lobster fishery is managed as a limited entry and seasonal fishery. The fishery is traditionally only opened for a period of three consecutive months during a year. A boom-and-bust cycle has long characterized the fishery's history whereby the fishery is opened for several consecutive seasons followed by a period of closure to allow the stock to recover.

In 2014, the 2014/2015 fishing season remained closed to allow the stock to recover. The decision to close the fishery was based on information collected from fisheries independent surveys. Analysis of data collected in 2005, 2006, 2010, 2013 and 2014 showed that there were marked declines in the relative abundance of legal size lobsters (more than 7.5 cm carapace length) caught over the period, especially in 2013 and 2014. Moreover, declines in the average size of males and females of the two most common lobster species known locally as "Oumar Gros Tet" and "Oumar Rouz" were observed. Lobsters caught in recent years are significantly smaller than lobsters caught in the past. In addition, clear shifts can be observed

in the size composition of lobsters caught. In recent years, the proportion of large lobsters in the catch has decreased whilst the proportion of smaller individuals have increased. Such declines in abundance and size composition can be attributed to the fishing pressure considering that the fishery has remained opened for the past four years. To allow the resource sufficient time to recover to sustainable levels, a closure period of one year was recommended.

Figure 4.6 Interview fishermen on the fisheries independent survey



Figure 4.7 Taking the weight of lobster on the fisheries independent survey



4.5 Sea Cucumber Fishery

The sea cucumber fishery has experienced a rapid development since its commercialisation due to the increase in demand, and consequently the higher prices being paid, on Asian and even local markets, for dried sea cucumbers. Currently the fishers target mainly four species of sea cucumber which are White Teat Fish (Kokosye Blan) Black Teat Fish (Kokosye Nwar), Flower Teat Fish (Pentard) and Prickly Red Fish (Sanpye), due to the highest price on the market and a few other species such as Black Fish, Red Surf Fish, Yellow Surf and Sand fish (Figure 4.9). The number of sea cucumber harvested annually has shown an overall increase from 330,658 pieces in 2007 to 642,404 pieces in 2011 (Figure 4.8). However from 2012 to

2014 there was a decrease in the harvest numbers from 618,554 pieces, 489,314 pieces and 441,684 pieces which highlights a decrease of 4%, 21% 10% respectively.

The decrease in number of harvested sea cucumber in 2014 was observed in most of the species, with the highest decrease of 23% for Prickly Red whereas the only exception was for White Teat with an increase of 3%. For 2014 Flower Teat Fish was the dominant species accounting for 63% of the total sea cucumber harvested, followed by white Teat Fish, 17%.

Figure 4.8 Number of sea cucumber harvested from 2007 to 2014

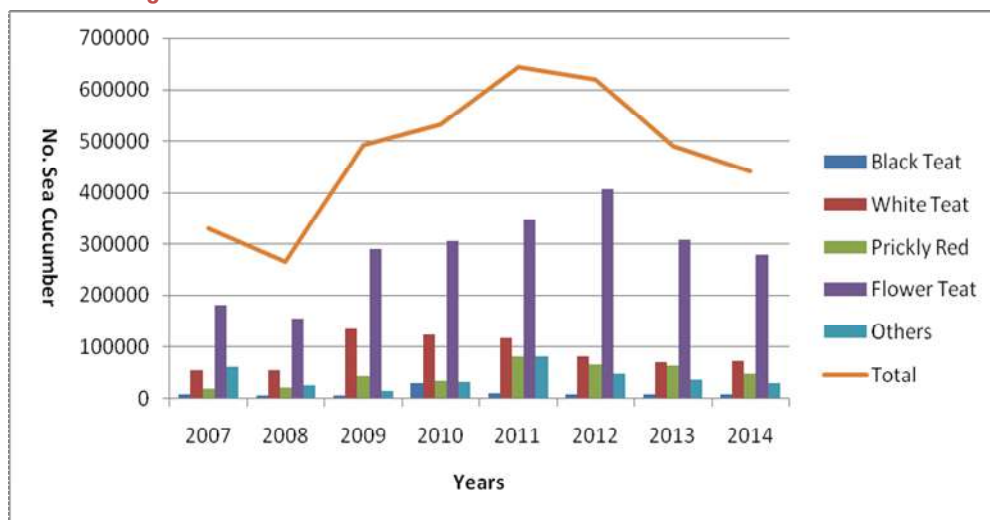
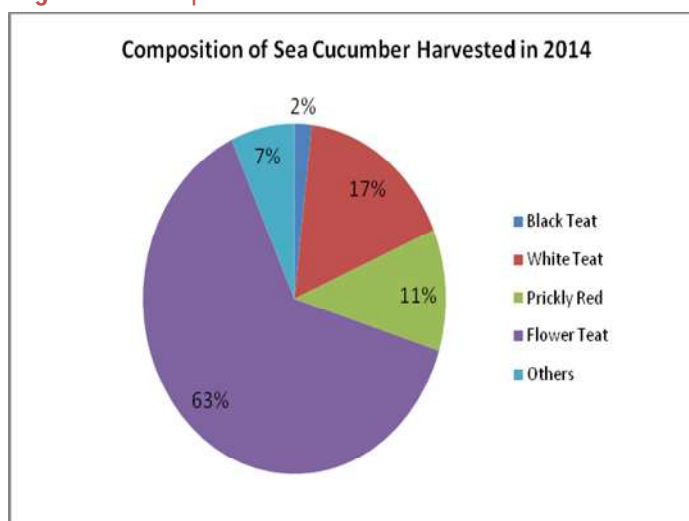


Figure 4.9 Composition of sea cucumber harvested in 2014



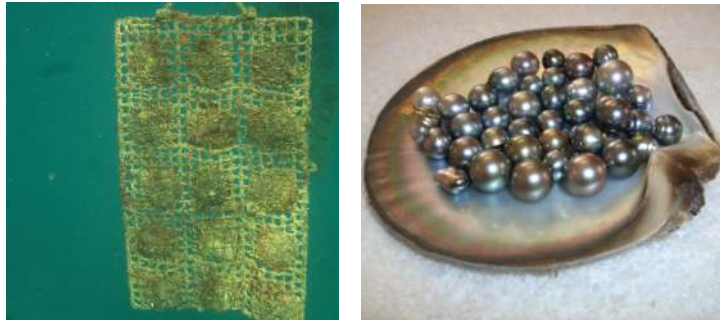
Chapter 5 - AQUACULTURE

5.1 Aquaculture Production

There is currently only one aquaculture farm in operation in Seychelles, the Black Pearl Farm (Ltd.) which started operations in 1995. The pearl oyster farming operation is based on Praslin and its grow-out facility is based in the Curieuse Marine National Park where the sea concession of the farm covers an area of around 19 ha. Black lipped oyster (*Pinctada margaritifera*), and the winged Oyster (*Pteria penguin*) are currently being produced. Round pearls are produced from the Black lipped Oyster, while half pearls are produced by winged oyster. The pearls are then sent to Perth Australia where they are set in a variety of jewellery and they come back to Seychelles where they are eventually sold in the farm's retail shop. The black pearl production for 2014 amounted to 8,000 pieces of un-set pearls. The farm has further implanted a total number of 10,000 black pearl oysters which will be harvested by early 2016.

The Black Pearl farm on Praslin ceased commercial production of giant clams (*Tridacna maxima*) for export since 2011 as it was not a viable activity any longer. The farm was carrying out a trial submersible frame-type grow-out system (Figure 5.1) to assess its feasibility as a new way to farm pearl oysters to reduce the amount of stress to the oysters with the aim of getting the best quality of pearls possible. The results showed that the submersible frames provided a slightly better system to grow pearls in the Curieuse Marine National Park as it validated the assumption that the oysters tend to perform better with less mortality that were recorded. The system also allowed most of the grow-out area to be submerged unlike the longline system which meant more buoys that remain afloat.

Figure 5.1 Submersible trial frames for black pearl oysters

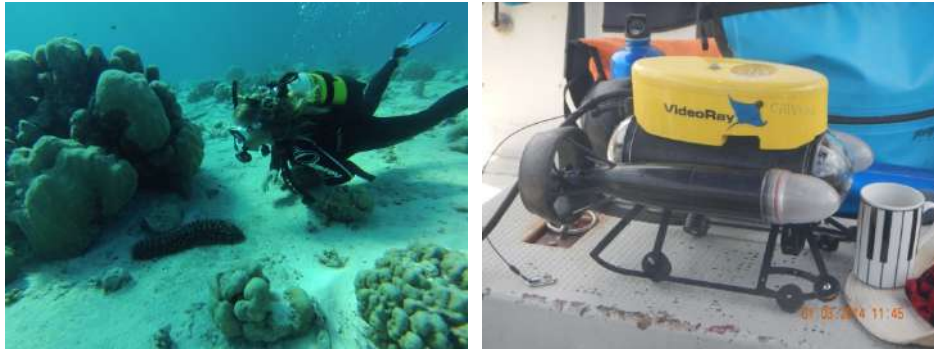


5.2 The Mariculture Master Plan Project

The Seychelles Mariculture Master Plan was still the main activity which was on-going as part of the overall aquaculture development plan in 2014. Phase 3 which consisted of assessing the potential for aquaculture development in the outer islands started in January 2014. A survey was undertaken with the collaboration of the Islands Development Company (IDC) to assess the aquaculture opportunities of sea cucumber ranching and farming, fin fish cage culture, pond farming of tiger prawns and black pearl oyster farming on Coëtivy, Alphonse, St Francois, Bijoutier, Poivre and Desroches islands. The preliminary results showed some level of potential and a further 3 islands are earmarked to be surveyed in 2015 to conclude the outer island report. This phase was being supported in full by the European Union through the Fisheries Partnership Agreement (FPA) funding under the SFA.

Phase 4 of the Mariculture Master Plan Project was also undertaken in 2014 (July – December). The fourth phase was funded by the Government of Seychelles. This phase focused on developing the following components; an aquaculture policy for Seychelles, training of our scientific and technical staff, international collaboration in Research & Development, baseline and economic feasibility studies, and the promotion of Seychelles as an excellent destination for aquaculture investment in the Western Indian Ocean region.

Figure 5.2 Diver recording sea cucumber species and ROV used for bio-physical surveys in outer islands



5.3 The Development of the Seychelles Aquaculture Industry

The completion of the Mariculture Master Plan is near and some implementation activities have started which will concentrate on three main areas; an Environmental and Social Impact Assessment (ESIA), finalisation of a species data sheet and a market study. The ESIA will consist of a full assessment of impacts and perceptions of aquaculture by other users and general public. The terms of reference for the ESIA were drafted in 2014 and are expected to start in early 2015. The species data sheet consists of a list of finfish, crustaceans and mollusks that are found and can be farmed in Seychelles waters. The species data sheet was to be reviewed and updated in 2015. These three areas are key to the success of establishing the aquaculture industry in Seychelles as they are pre-requisites to other activities such as infrastructure and certification which will be developed over the coming years.

Chapter 6 - RESEARCH

6.1 Research Section

The Research Section's objective is to develop and manage fisheries research activities, to provide timely and robust advice for the sustainable management of fisheries. The section comprises of 2 units; Fisheries Research Unit and Research Vessel Unit. The Fisheries Research Unit has a total of 11 staffs, responsible for undertaking fisheries research in a wide array of areas. This unit also encompasses two main research laboratories, the wet lab and the dry lab where all lab-based scientific research takes place. The Research Vessel Unit has 7 staffs which are responsible for the operation of SFA research vessels, which includes R/V L'Amitie, our main research platform at sea, and other small support vessels.

The research section worked with a number of partners on joint implementation of research projects. The Institut de Recherche pour le Développement (IRD) and the different fisherman Association were SFA's strongest research collaborators in 2014.

During 2014 the research section implemented 9 different research programmes. The majority of SFA's research was funded by the European Union (EU) from the sector policy support funds of the EU/Seychelles Fisheries Protocols under the Fisheries Partnership Agreement. The research programmes focussed towards a better understanding of the fisheries stock, environmental impact on fisheries and biological condition of fisheries. In 2014 the research section undertook 10 research trips at sea on R/V L'Amitie, with an average duration of 10 days per research trip.

6.2 The Research Programmes

6.2.1 Balancing risks with benefits associated with consumption of swordfish: from local to global case study (CONSWO)

The CONSWO Project started in 2014, in collaboration with IRD and FBOA. The aim of the project is to investigate the factors which affect the level of heavy metals and organic contaminants in large pelagic fishes targeted by the semi-industrial longline fishery. The project is in direct response to the standard set by the EU for the acceptable concentration level of cadmium and mercury detected in swordfish. Laboratory tests are being undertaken to investigate how the concentration of different contaminants varies in different types of tissues (e.g. white muscle, liver and gonads), with size, age and sex. Sample from other regions of the world (e.g. Atlantic Ocean, Pacific Ocean, Mediterranean Sea and Southern Indian Ocean) will also be tested to investigate whether the issue of high contaminant loading is specific to Seychelles waters or is a global issue.

All samples required were collected in 2014 and laboratory tests for trace metallic elements are planned for mid-2015 in collaboration with the University of La Rochelle whereas tests for persistent organic pollutants are scheduled to take place in late 2015 to early 2016 in collaboration with the University of Nantes. Identification of factors linked with high level of contaminants should make it easier to pre-select fish with low nutrient loads for export and will reduce the risk of fish with high nutrient loads from reaching the market. The project is also raising the awareness of the public on the health benefits of consuming pelagic fishes such as swordfish.



Figure 6.1a Fishers taking measurement



Figure 6.1b Fishers collecting sample

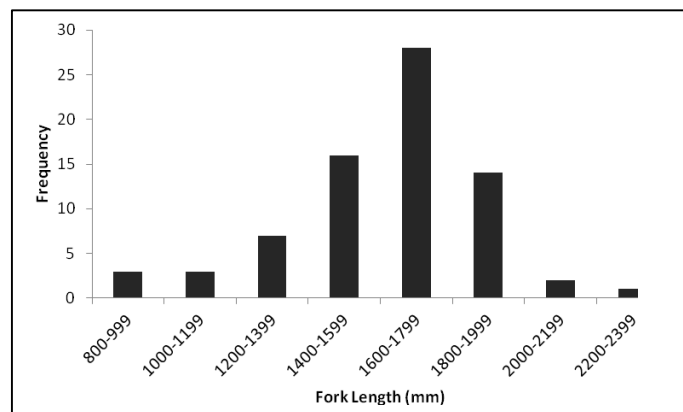


Figure 6.1c Length frequency of swordfish sampled between Oct 2013 - Dec 2014

6.2.2 Estimation of Maternal Effects on the Sustainability of Large Pelagic Populations (EMOTION) and Changes in the Biochemical Composition of Tropical Tunas and its Effects on Meat Quality (CANAL)

EMOTION is a collaborative project with IRD and other international institutions which aims at testing and quantifying maternal effect on large pelagic species. The study is targeting females of 3 main exploited tuna species from the Indian Ocean i.e. the yellowfin (*Thunnus albacares*), the skipjack (*Katsuwonus pelamis*) and the bigeye (*Thunnus obesus*).

Alongside the EMOTION project is the CANAL project which aims to find out why tropical tunas collected from March to June in the Mozambique Channel and processed by the Indian Ocean Tuna (IOT) cannery have meat with lower quality compared to tunas fished during the rest of the year. Under both projects biometric measurements including total weight, fork length, predorsal distance and thorax girth along with samples of white and red muscle, liver and gonads are collected. Tissue samples are tested for bioenergetics tracers such as total lipid content, lipid class composition and fatty acid profiles. Information regarding tuna reproduction and diet will be obtained through histological and stable isotope analyses. Estimation of age and individual growth will be done using otolith readings. Growth models will also be developed using data set of the Indian Ocean Tuna Tagging Programme (IOTTP). The main sampling activities ended in January 2014, however due to a massive loss of samples in 2014 because of power failure, the sampling activities were extended for 9 more months. Histological and fecundity analysis carried out by SFA staff was completed by end of 2014. A paper entitled "Methods of lipid-normalization for multi-tissue stable isotope analyses in tropical tunas" was also submitted and accepted by Rapid Communication in Mass Spectrometry.



Figure 6.2a Research staff taking measurement



Figure 6. 2b Taking different tissue samples

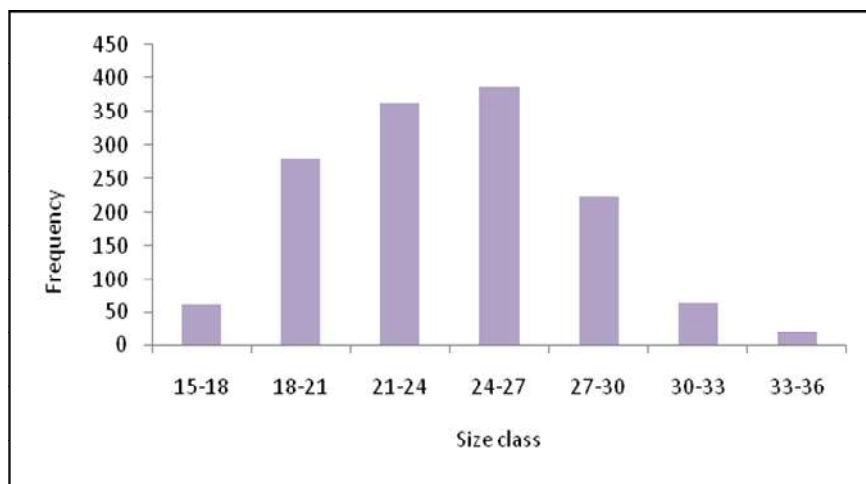


Figure 6.2c White and red muscle

6.2.3 Using length- and age-frequency data from spawning aggregation catches for stock assessment purposes of Spinefoot shoemakers

The project aimed to provide some core data and information for stock assessment of Spinefoot shoemaker. This will be achieved by comparing length and age of Spinefoot shoemakers caught in the normal fishery and those caught in the spawning aggregation fishery. Catch per trap during spawning aggregations are usually several folds higher than during non-spawning aggregation periods. Collecting length and age data during the spawning period may be a cheaper and less time consuming way of collecting the amount of data required for stock assessments. The sampling activities were done during the new moon (normal fishery) and full moon (spawning aggregation fishery) period from October 2013 to August 2014. In total, 1392 Spinefoot shoemaker were sampled with 944 during the full moon and 448 during the new moon within those there were 543 females and 600 males with the rest being juveniles (Figure 6.3).

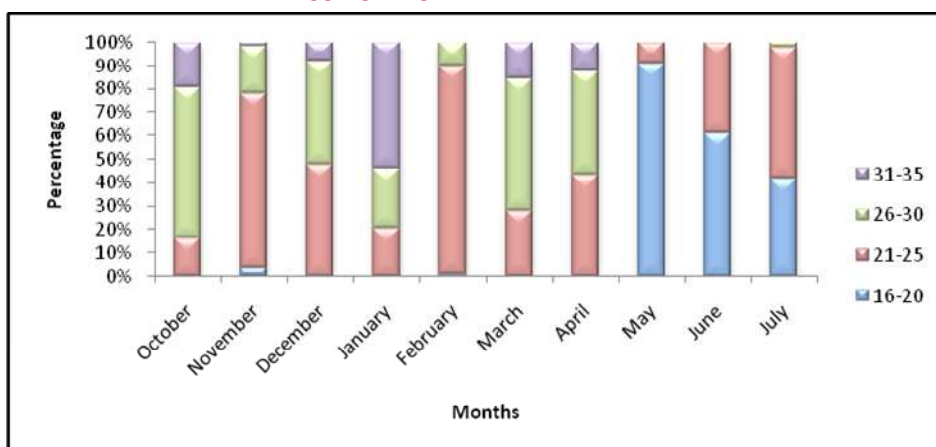
Figure 6.3 Length frequency of spinefoot shoemaker sampled between Oct 2013 – Aug 2014 during the full and new moon on Praslin Island



6.2.4 Change in body condition, fecundity and gonado-somatic index in Spinefoot shoemaker throughout a spawning season (SUTOR)

The aim of the project is to investigate the change in body condition and fecundity in Spinefoot shoemaker caught during spawning periods over the length of a spawning season. Body condition will be assessed through fat content analysis in muscle, gonad and liver tissue. Parameters to be measured include total fat, triacylglycerols (main reserve lipid) and sterols (structural lipids) per gram of wet weight. These results may explain patterns observed concerning the contribution of different spawning months to stock structure. If there is ever a need to control fishing effort at the spawning aggregation sites during some months, these results may also help to identify the months in which fishing of spawning aggregations could be restricted to bring the greatest fisheries benefits. Field sampling started in October 2013 and ended in August 2014, samples of white muscle, liver and gonads were collected and stored at -80°C . Lipids and stable isotope analysis will be carried out mid 2015 at IRD's Sète laboratory, while fecundity analysis will be carried out at the SFA laboratory. In total 280 fish were sampled.

Figure 6.4 Percentage catch of spinefoot shoemaker in each size class sampled during the full moon from Oct 2013 - July 2014 on fish aggregating sites around Praslin Island



6.2.5 Determination of a minimum length/weight Index as a size limits control for Sea cucumber Fishery

This research project is in joint partnership with SFA and the sea cucumber association. It aims to assess the current status of exploited sea cucumbers in Seychelles and determine a minimum length/weight for sea cucumber harvesting. The project was initiated in 2013 with a sampling programme to collect length and weight of commercially targeted sea cucumbers from the point they are harvested at sea till the export stage. Currently, SFA has a sample size of about 83 samples of the eight commercial species. In 2015, SFA plans to increase the research collaboration with the association whereby SFA will work closely with the sea cucumber vessels to increase the sample size and the spatial distribution of the sampling programme. The results will be used to support management measures in the implementation and enforcing minimum harvest sizes. Furthermore, the information collected can provide indicative information on the size distribution and density of sea cucumbers in Seychelles' waters.



Figure 6.5a Measuring sea cucumber



Figure 6.5b Sample of landed sea cucumber



Figure 6.5c Sample of tagged sea cucumber after processing

6.2.6 Seychelles Ocean Temperature Network

The Seychelles Ocean Temperature Network (SOTN) was initiated in 2007, with the objective to determine the long term trend and variation of ocean temperature within Seychelles waters, which can be linked and used to determine the potential impact ocean temperatures have on our marine resources, coral reef ecology, marine habitat, and predict possible bleaching index. Time series Ocean temperature data are being collected at depths of 5m and 15m, with in situ temperature loggers which have been deployed at a number of sites. As per our monthly climatology pattern, in 2014, we observed a maximum temperature of 31.6°C at 5m and 31.3°C at 15m in April (Figure 6.6a, and 6.6c). The maximum anomaly was observed in October, whereby the temperature was 0.65°C above the normal for the month of October. The data shows that 2009 had the highest average sea surface ocean temperature of 28.31°C followed by 2012 at 28.23°C (Figure 6.6b). In 2014, two new loggers were deployed at 5m and 15m in the Ste Anne Marine Park with the consent of the Seychelles National Parks Authority (SNPA). In addition, SFA is discussing with Green Island Foundation to retrieve two old loggers deployed at Denis Island.

Figure 6.6a Monthly Average Temperature 2014 (Deg C)

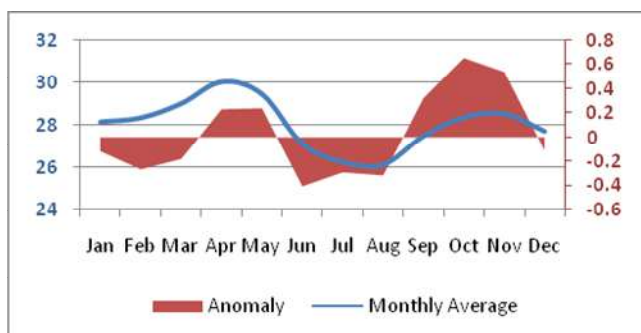


Figure 6.6b Yearly Average Temperature (Deg C)

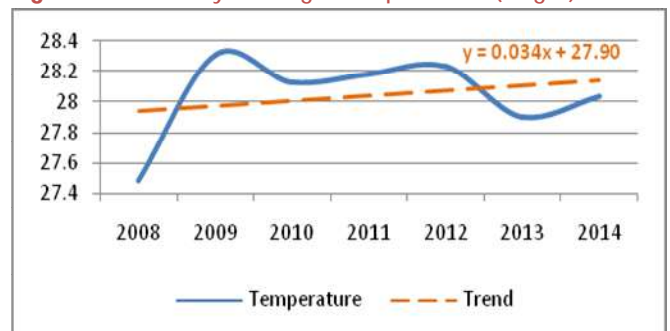
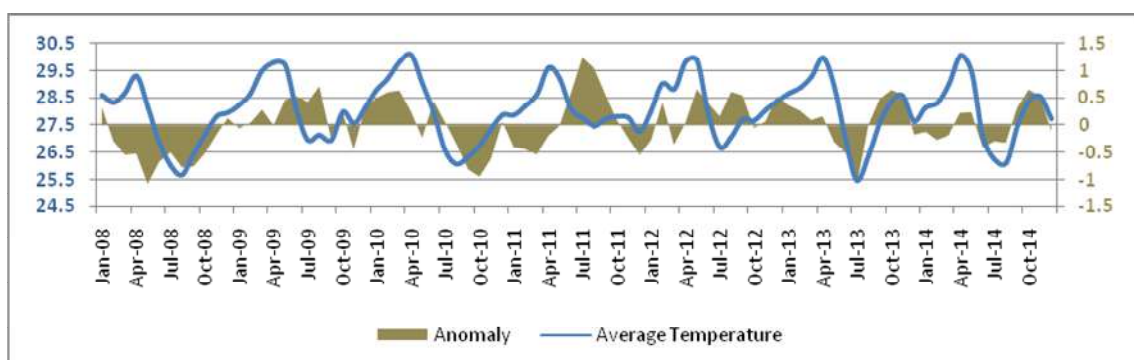


Figure 6.6c Monthly Average Temperature 2008 to 2014 (Deg C)



6.2.7 Improving the understanding of Red Snapper (*Lutjanus sebae*) stock structure on the Seychelles Bank

Concerns over the status of the stock of emperor red snapper, *Lutjanus sebae*, were raised in a stock assessment, whereby it was highlighted that there is a need to incorporate age-based demographic parameters. Therefore, it was imperative that the age at size data for both sexes were collected to account for differences in growth. The overall aim of this project is to improve the understanding of the stock structure and demographics of *L. sebae*. The specific objectives are to determine sex-specific age and growth parameters; determine size and age at sexual maturity; derive age frequency distribution of the catch; derive mortality estimates; define reproductive periodicity, estimate fecundity and possible genetic differences in *L. sebae* among locations on the Seychelles Bank and the Amirantes Ridge. Sampling for *L. sebae* started in April 2014. The fish are weighed, measured and otoliths, gonad and fin clip samples are collected. A total of about 500 fish has been sampled so far. Gonad samples are processed in the lab to prepare histology slides. A training course is planned in May 2015 to equip research staff with the necessary skills to be able to prepare otoliths for age reading. Sampling will continue until December 2015 and preliminary data analysis will be undertaken in June 2015.

Figure 6.7a Otoliths for age determination



Figure 6.7c Gonad for reproductively

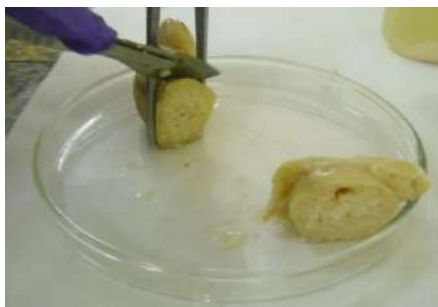
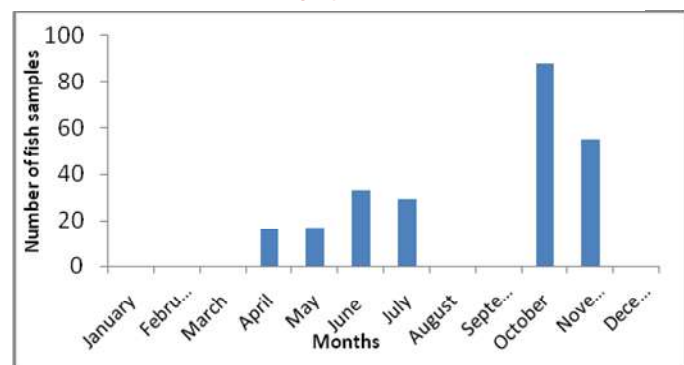


Figure 6.7b Number of fish samples per month from April 2014



6.2.8 Monitoring and assessment of the lobster stocks on the Mahé Plateau using a multidisciplinary approach

Monitoring and assessment of lobster stocks is an integral part of assessing the status of the stock and to derive informed decisions on the management of the lobster fishery. This project builds on the Participatory Lobster Monitoring Programme (PLMP) which was set up in 2005 by the SFA. The PLMP is a fisheries-independent survey whereby fishers collaborate with researchers from SFA to monitor lobster stocks during the closed seasons. A total of 20 monitoring sites located in the northwest, western and southern parts of Mahé are surveyed during the closed season to monitor the recovery of lobster stocks. The main objectives of this project are to (i) establish the abundance and monitor recovery of lobster stocks (ii) establish appropriate minimum size at first capture for *P. penicillatus* and *P. longipes* based on length at first maturity and (iii) set up a tagging programme to monitor growth and movement of lobsters.

The most recent survey was carried out in November 2014. Survey data from 2005 to 2014 showed that the relative abundance of lobsters was quite stable over time, however, changes in biomass were observed between years. Moreover, significant changes were observed in the relative abundance of legal size lobsters and a decline in mean size of lobsters caught was noticed over the study period. Estimates of size at maturity for *P. penicillatus* were found to be higher than minimum size limits whilst those of *P. longipes* were smaller. Further surveys will be carried out in 2015 to reassess the status of the stock.

Figure 6.8a Tagging of lobster

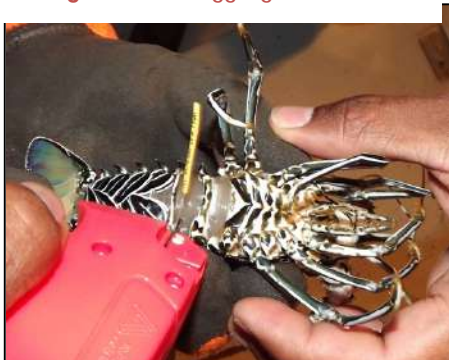


Figure 6.8b Taking measurement of lobster



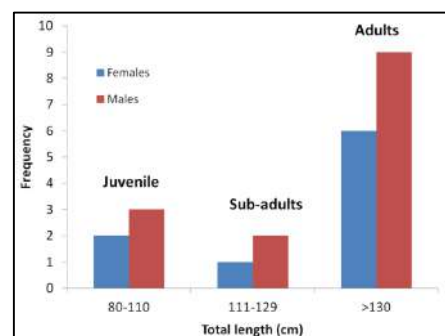
6.2.9 Understanding the residency, movement and habitat use of grey reef sharks (*Carcharhinus amblyrhynchos*) along the west coast of Mahé, Seychelles

The grey reef shark, *Carcharhinus amblyrhynchos*, which is important for both the tourism and fishing industry, is currently described as near threatened. In order to protect this species, we must first understand the movement, habitat use patterns, biology and ecology of the sharks. This project aims to use acoustic telemetry to provide key information on the ecology of the grey reef shark. The main objectives of the project are, (i) determine the extent of movement of grey reef sharks between several fishing banks and coastal reef habitats, (ii) determine the level of fidelity to fishing banks, (iii) determine if there are ontogenetic differences in fidelity and movement patterns and (iv) identify the potential mechanism driving the fidelity and movement of sharks. A total of 18 acoustic listening stations (VR2W) were deployed in September 2013 at Pilot patch, Stork patch and along the coast near Grand Anse. A total of 25 sharks (23 Grey reef sharks, 1 Tiger shark, 1 White tip reef shark) were tagged between October 2013 and May 2014 with the help of a local fisherman. The sharks tagged ranged from 84 cm to 169 cm total length. Information collected by the listening stations was downloaded in October 2014 and preliminary data analysis showed that sharks were more resident at Stork patch followed by Pilot patch. The majority of sharks made extensive movements between the two fishing banks. In addition, 2 sharks made extensive movements between the two fishing banks and the coastal areas of Grand Anse. Data collection will continue until November 2015 where final data analysis and reports will be produced.

Figure 6.9a Tagging of grey reef shark



Figure 6.9b Classification of tagged shark



Chapter 7 - FISHERIES DEVELOPMENT

7.1 Credit Facilities to the Fisheries Sector

Table 7.1 summarises the number of loans and their values approved for investment in the fisheries sector, for years 2012 to 2014. The table only provides information of loans from the Small Business Financing Agency (SBFA) which prior to 2013 was known as the Concessionary Credit Agency (CCA) and the Development Bank of Seychelles (DBS). SFA could not obtain any information for loans granted by other lending institutions such as commercial banks. According to Central Bank figures, total loans and advances to the fisheries non-government sector in 2014 stood at SR37.4 million compared to SR15 million the previous year. However, the end of year outstanding loans to the sector contracted by 24% compared to an increase of 17% the previous year.

In line with the Development Bank of Seychelles' decision to put all lending activities on hold in February 2012, due to difficulties to raise finances to meet demand, no loans were approved by DBS in 2012. Towards the end of 2013, however, DBS renewed its engagement in providing loans to all sectors and in 2014 27 fisheries related loans were approved for a value SR10.086 million.

The CCA/SBFA grants soft loans of up to SR300,000 for purchasing new and second hand boats and engines, fishing gears and for the refurbishment of fishing vessels. In 2014, SBFA approved a total of 10 loans compared to 43 in the previous year.

Table 7.1 Number and value of loans approved by DBS and CCA/SBFA (2012 - 2014)

	2012			2013			2014		
	CCA	DBS	Total	SBFA	DBS	Total	SBFA	DBS	Total
Number of Loans Approved	21	0	21	43	5	48	10	27	37
Value of Loans Approved (SR M)	2.063	0	2.063	7.174	1.143	8.317	1.695	10.086	11.781

7.2 Fisheries Incentives

7.2.1 VAT and Trades Tax Concessions

As indicated in Table 7.2, 205 applications with a CIF value of SR77.6 million were made in 2014 for VAT and Trades Tax concessions on imported materials for fisheries related businesses. These included various items such as fishing vessels, engines, commercial vehicles, equipment and spare parts. Applications were received from boat owners (individuals as well companies) and companies processing and exporting fish and other fish related products.

Table 7.2 Application for concessions under the AFIA (2012 – 2014)

	2012	2013	2014	% change
No Applications	190	157	205	30.57%
Est. Value (SR M)	11.3	16.8	77.6	361.9%

The drastic increase of over 360% in the estimated value of goods imported in 2014 can be mainly attributed to the multiple imports of longline fishing vessels and a training vessel for the Maritime Training Centre costing an approximate total value of SR37.7 million.

7.2.2 Agriculture Disaster and Fisheries Insurance Scheme (ADFIS)

The ADFIS was launched in February this year. It is designed to provide fishermen with the necessary insurance protection they will need should the unthinkable happen to their boats and to provide farmers necessary insurance protection following an official declared disaster due to natural hazards.

The voluntary scheme approved by the government is available for all full time farmers and boat owners registered with the Seychelles Agricultural Agency (SAA) and the SFA. The scheme is administered by the State Assurance Corporation of Seychelles (SACOS) with the participation of H. Savy Insurance.

The fisheries insurance scheme has three different components

- Marine hull covers the entire vessel and its machinery from damage sustained from perils of the sea, tsunami, fire, piracy, volcanic eruption and lighting. The maximum sum insured eligible under the scheme is SR2 million per vessel,
- Third party liability covers any loss or damage or injury caused by the insured to a third party, such as to any other vessel or property, accidental loss of life or bodily injury. The third party liability covers an annual limit of SR500, 000. It is subject to an excess of SR5,000 or 10% of the claim value,
- Personal accident covers a combination of accidents which may result in bodily injury, accidental death, permanent total disablement, and permanent/partial disablement sustained by the insured with a limit of SR100,000 per crew member.

Each boat type has its number of maximum fishermen insured per boat. Mini Mahé up to three fishermen, Lekonomi up to four fishermen, Lavenir up to five fishermen, Whaler up to six fishermen and Schooner up to seven fishermen.

Premium for the comprehensive package is 4% of the total insured boat value of which 50% will be subsidised by the Seychelles Government, therefore the net premium rate to be paid by the beneficiary is only 2%.

By the end of December 2014, 11 policies had been issued for a total value of SR85,164. This shows a very low participation level of boat owners in the scheme.

7.3 Fisheries Development Fund

The Fisheries Development Fund (FDF) was launched in July 2009 and had an allocation of €2.7 million. It is funded through the European Union's sectoral support to Seychelles, under the EU/Seychelles Fisheries Partnership Agreement. This fund aims to boost investment in fisheries value addition and processing, purchasing of new long-line vessels, and upgrading existing long-line vessels.

Loans under this fund attract a 3% annual rate of interest, with a period of repayment that should not exceed 10 years and are available exclusively to Seychellois investors or joint partnerships where the majority shareholder is Seychellois. Investors are asked to contribute a minimum of 5% of the total project cost.

In 2014, an additional 3 loans was approved under the Fisheries Development Fund for a value of SR11.8 million. This brings the total number of loans approved by the end of the year to 15 with a corresponding total value of SR55.4 million. The total amount disbursed in 2014 stood at SR6.94 million.

7.4 Fisheries Development Facilities

7.4.1 Ile du Port Zone 14

The Turn quay measuring 120 meters was completed and handed over as planned. Inauguration of the Port was held in September 2015 and the President of the Republic had the honour to inaugurate the quay. The quay has 8 number 60 tons bollard bits and 24 trapezoidal fenders. With a 9.5 draft alongside at Average Chart Datum (ACD) the facilities will

be able to accommodate the new generation size purse and super seiners. At a cost of SR52 million the quay will principally be used to load and unload tunas, tuna transshipment, loading and unloading nets, loading and unloading salt, fuel and water bunkering, etc. There is no doubt with the coming into service of this quay it will assist at reducing congestion during peak fishing season considerably, as well as providing a boost to the competitive position of Port Victoria.

The New Quay forms part of facilities which fall under SPA's responsibility and accordingly the transfer formalities was effected.

Land Management and Site Survey Works at Ile du Port: From January to December 2014 the SFA had the mandate to monitor net repair activities at the common net repair area. For the whole of that year the net repair activities and storage of containers generated Euro 115.000 and SR300,000 respectively. Due to the site being not level with many pot holes and several casuarina trees fallen down, the SFA had to task a contractor to improve the site. It was unfortunate we could not fill all the holes due to unavailability of coral fill as it would have facilitated the SFA to have more space to repair nets. The situation was further aggravated after land was allocated to CCCM for their activities.

To create more working space it is planned to use the area under the wind turbines in the future for stacking nets and containers with a maximum of two high hence liberating the common net repair yard for working of net only. But for this to happen we need to wait after the IPHS quay is completed next year since all materials and equipment for the construction of the quay are deposited on the site.

Survey Works: three new plots of land to stack salt were surveyed during the year. These plots are 4000m², 2800m² and 1500m² respectively. The main purpose for allocating land on Zone 14 for salt stacking and storage for the industrial fleet is to cut transport cost and traffic congestion in Victoria.

7.4.2 GIBB (Seychelles) LTD - Ile Du Port Consultancy Project

GIBBS consulting firm was awarded a contract to provide consultancy services for infrastructure on Ile Du Port for a sum of over SR2million. The consultancy services GIBBS is to provide is for Zone B (ref. A3-1) including main trunk connection to allow the Zone to become operational (all infrastructure comprising of roads, bridges, canals drainage, power reticulation, water supply reticulation, sewer network and street lighting). As per the scope of works they are to advise the client of the plans.

Coordinate and administer all technical studies and site investigations (including administering procurement of specialist services for surveys not covered in the consultant's contract). The following technical studies are part of the consulting firm responsibilities; consultation with service providers, regulators, land administration authorities (ie SFA, SPA, MLUH) general site survey of the existing situation, topographical and cadastral spatial surveys, verification of setting out of works during construction stages, establishing requirement for connecting to utilities link of main networks and estimating demand loads from future developments in order to design utilities. The contract provides for technical detailed designs (technical and civil works, mechanical, electrical and plumbing plan and images, calculation, specifications and schedules all in conformity to the statutory regulations for construction, building, utilities, service provision and roads in force in Seychelles at the ensuing time and to obtain Planning Approval for all construction designs.

7.4.3 Navigation Aids

Over the last couple of years the SFA had installed solar powered leading lights at several access channels in between reef in districts outside Victoria on Mahé and Praslin. These leading lights are placed to guide fishermen, the general public to negotiate access to and from fishing grounds safely particularly at night and in bad weather conditions. The lights are

fixed on floating buoys supported with heavy concrete sinkers and hot dip galvanized chain preventing same from shifting and drifting from anchored location. With those lights installed at 9 locations they have proven to be very useful and necessary over the years since reaction and feedback from the groups benefiting from the service is very positive. These lights and accessories are frequently serviced and maintained to improve their life expectancy.

7.4.4 Fish Market, Gear Store and Others

As part of its objectives to improve fisheries facilities on Mahé, Praslin and La Digue the following activities were earmarked and planned; (i) Belombre - 4 units Fish Processing Building. On the land ward side, alignment of jetty and extension of landing shed. (ii) Beau Vallon - one small fishing boat slipway. (iii) Glacis one gear store and one market. (iv) Cascade - land reclamation, one gear store, one fish market and one slipway. (v) Anse Royale - one fish market and one fishermen gear store. (vi) Anse Boileau - one fish market and one fishing gear store. (vii) Praslin - extension of office Baie Ste Anne and installation of new ice plant. (viii) La Digue - one market and one gear store. (ix) Providence - extension of existing Fishing Port. (x) Victoria - extension of SFA HQ, construction of one security house and constructing of new drain to contain storm water.

7.5 Ice Plants

The SFA managed and operated five ice plants, four on Mahé and one on Praslin. The age of these ice plants and production capacities varied considerably. The Praslin plant, built in 1991, has a daily production capacity of 3 tons. The Anse a La Mouche plant, built in 1995, produced 2 tons daily, while the Anse Royale plant, built in 2002 produced 5 tons daily. Providence and Bel Ombre, with production capacities 10 and 5 tons daily, were built more recently, in 2010. The plants provided most of the ice needed by fishermen on Mahé, Praslin and La Digue, except for the Baie Ste Anne Praslin ice plant, which experienced a major

breakdown putting the plant out of service from April to August of the year. Table 7.3 indicates sales of ice from 2009 to 2014.

Table 7.3 Sales of Ices from 2009 - 2014

PLANTS	2009 SR	2010 SR	2011 SR	2012 SR	2013 SR	2014 SR	TOTAL SR
Anse A La Mouche	81,510.00	208,180.00	195,920.00	194,590.00	172,825.00	167,885.00	1,020,910.00
Anse Royale	65,660.00		354,680.00	283,740.00	135,430.00	173,645.00	1,013,155.00
Baie Ste Anne	149,475.00		271,850.00	281,254.00	272,135.00	352,167.00	1,326,881.00
Bel Ombre		100,930.00	275,930.00	392,420.00	277,325.00	329,435.00	1,376,040.00
Providence		163,085.00	1,069,540.00	1,247,210.00	752,320.00	769,195.00	4,001,350.00
TOTAL	296,645.00	472,195.00	2,167,920.00	2,399,214.00	1,610,035.00	1,792,327.00	8,738,336.00

7.6 Promoting Value Addition

7.6.1 Fishermen training on good handling practices under the IFAD CLISSA project

Under the IFAD CLISSA project the Seychelles Fishing Authority in collaboration with the Seychelles Tourism Academy organized on the 29th - 30th July 2014 a one and half day workshop for the artisanal fishermen on Post Harvest Handling at the SFA Training Room.

The workshop aims at strengthening the economic activity of artisanal fishermen by using modern and sustainable practices to increase and diversify their market access. During this first workshop a batch of 20 artisanal fishermen gained practical and useful skills required to develop capacity building in good handling practices, reduce post-harvest loss, value addition and promote good financial management tools. The expected outcome of this workshop

includes an increase in the quality of the fish; reduce post harvest loss by using techniques to preserve and increase fish shelf life and also reduce the financial vulnerability of the artisanal fishery.

In order to have a maximum coverage the same workshop was conducted on Praslin for both fishermen of Praslin and La Digue.

Figure 7.1 Group photo of fishermen with their certificate



7.6.2 August opening of new fish processing facilities at Providence

After a construction period of 15 months, the fish processing facilities at the Providence Fishing Port was officially opened on the 26th August 2014 by the Minister for Natural Resources Peter Sinon in the presence of President James Michel.

The 9 units each of an area of 400 m², have been be allocated solely to Seychellois Promoters who also received the keys to their units.

Investors are given a period of 6 months for them to submit their internal layouts to be vetted by the Seychelles Fishing Authority and the Fish Inspection and Quality Control Unit before being submitted to Planning Authority for approval.

Figure 7.2 Cutting the ribbon and unveiling the plaque marking the inauguration of the facilities



Figure 7.3 Providence fish processing factory



7.6.3 Food week October

To commemorate the Seychelles Food Week which was held from the 13th-19th October 2014, the Post-harvest and Development section of the SFA participated in the Bazaar Manze Lokal which was held on the 19th October, at the SFA's Fishing Port. The aim of the Bazaar was to promote locally made products within the agricultural and fisheries sector.

With the objectives of adding value and promoting by-catch, the Development and Assessment unit came with locally made Fish burger and Fish batter. The main fish species used in fish burger were Trevally and Dog tooth tuna and as for fish batter the dolphin fish was preferred.

Both products were highly appreciated and recommended by the general public.

Figure 7.4a SFA stall situated on Fishing Port



Figure 7.4b Selling of fish burger and fish fingers



7.6.4 Workshop with investor at Savoy Resort and Spa

As part of our consultative services, the Seychelles Fishing Authority organised on the 14th November 2014 a one day forum at the Savoy Resort and Spa, Beau Vallon for all successful fish processing investors for Zone 6 Fish Processing Plant and those who had been selected for other Fish processing projects. The aim of the forum was to make known to the fish processing investors of the service providers, found both locally and internationally, that eventually they will be working alongside with once they launch into their fish processing project.

Below is the list of business categories that attended the forum:

- Pest Control Services
- Cleaning and Maintenance Agency
- Laundry Services
- Refrigeration services/ Insulated wall cladding
- Hospitality Supply and Machinery
- Food Packaging and Hygiene solution
- Fish Inspection and Quality Control Unit (FIQCU)

Outcome

The participants appreciated the idea behind organising such a workshop as they were able to learn more on local and international standards with regards to fish processing and export and also create a network of contacts necessary for the setting up of their activity.

Figure 7.5 Group photo with investors and service providers



7.6.5 Building capacity of the fish processing laboratory

In line with the main Blue economy objective to increase investment and revenue production from the post-harvest sector through value addition, a short term consultancy was conducted in November 2014 with the following objectives:

- Obtain expert advice on the status of the development undertaken.
- Carry out a follow up on the feasibility study of investing into the seafood processing sector taking into consideration the actual context so as to confirm and or readjust the strategic plan of the post-harvest sector.
- Based on existing consumption survey, assess the type of product development required for the local needs and exports.
- Enhance capacity building of the laboratory and its staff in order to gain ability to assist the private sector and project bearers throughout the whole process of product development up to setting up of industry.

Activities conducted were the following:

1. Site visits at different areas where land has been dedicated to fish processing activities.
2. Visit and meetings with potential investors to understand their activities.
3. Conduct an overall survey of the post harvest sector to identify it's potential and GAPS in terms of capacity and infrastructure.
4. Based on existing consumer survey confirm and or update information collected.
5. Establish capacity, potential and GAPS and provide Training to the laboratory staff on new processing technologies.
6. Based on the local demand and request from investors develop, design, up to the phase of industrialization 4 new recipes by adding value to local fish.

7. Organize meetings with respective stakeholders in order to obtain essential inputs to determine the new strategic plan of the processing laboratory.

7.6.6 Deliverables

At the end of the short term consultancy a very comprehensive report was submitted providing findings on the actual status of the post harvest sector in Seychelles with a SWOT analysis and relevant recommendations to meet our objectives.

Under the activity to assist in product innovation and development, three high end products (Terrine d'espadon, Verrine de maquereau and Mousse de Bonite) were created from low valued species which are either not consumed by the local market or are having difficulties to be exported. Figures 7.6a and b show the two main products which have been well appreciated by the local market.

Figure 7.6a Verrines de maquereau



Figure 7.6b Terrine d'espadon



Chapter 8 - FISHERIES MANAGEMENT

8.1 Fisheries Act 2014

The National Assembly on Tuesday 7th October 2014 unanimously approved a new modern fisheries legislation to cope with the rapid development of the Seychelles fishing industry, to cater for new future advancement in this sector and ensure that all fisheries in Seychelles remain sustainable and economically viable by providing for the proper management of this sector.

This comprehensive and modern fisheries regime was in the making for some time and replaces the existing Fisheries Act dated 1986. The new Act has gone through several processes of stakeholder consultations locally, with Seychelles fisheries partners such as the European Union, and has also been reviewed by fisheries legal experts from the Food and Agricultural Organisation (FAO) of the United Nations under different regional projects, and it has been classified by them as a very modern well established piece of legislation that ensures the proper management and conservation of Seychelles fisheries sector whilst at the same time ensuring sustainable growth for the benefit of the Seychellois people and the economy.

This new Act will enable the Seychelles Fishing Authority to implement and fulfil its obligations locally and internationally and is in line with the United Nations Law of the Sea (UNCLOS), the FAO Fish Stocks Agreement and the relative FAO Port State Measures Agreement to Prevent Deter and Eliminate Illegal, Unreported and Unregulated (IUU) fishing, at the same time taking into account Seychelles' obligation in relation to the Indian Ocean Tuna Commission (IOTC) amongst other agreements Seychelles is party to.

This is a major overhaul of the 1986 Act which contained four parts and 27 clauses. This new piece of legislation now contains seven parts and 79 clauses. It brings in new elements such as an ecosystem approach to fisheries and a co-management approach to fisheries management amongst others. In order to ensure that fisheries habitats are not destroyed or adversely affected by fisheries, the ecosystem approach takes into consideration other resource users and the environment. To this effect the Act now has new provisions for enabling SFA to have a list of authorised fishing gears and methods so as to ensure that both the habitat and non-targeted species are not affected. This will provide for example how by-catch are limited and handled, how gears should be designed so that they do not interfere with unintended target species, the ecosystem etc.

The co-management approach introduced in the new law will allow stakeholders (including NGOs, local fishers) participation, involvement and ownership of fisheries management regime. The new Act provides for stakeholders consultation in the decision making of management plans and its implementation, monitoring and reviewing.

To better ensure the proper management of a fishery, the authority has to have access to all information on what is happening in that fishery. The commercial fishermen, the sports fishermen, the recreational fishermen all harvest from the same stock. It is to this effect that the new Act makes provision for SFA to properly regulate these fisheries for better stock management, and to ensure that they are not in direct competition with the commercial fishermen.

The new Act empowers SFA to introduce a permit system for these activities and to develop appropriate regulations in line with these activities. A permit system will now be applicable for sports fishing and competition sports fishing for a person or business operating hire craft licences, and organisers of fishing competitions. However recreational fishing is exempted from the permit requirement, but it may be regulated. Regardless catches from all of the

mentioned three categories of activities (sports, competition and recreational) will be prohibited from being sold, except for fishing competition where the catch can be given for charitable purposes with the authorisation of the Authority.

The new Act also introduces new provisions for licensing of gears which are independent (i.e not physically attached to a vessel) and provides for conditions of use for those type of gears, their fishing methods, areas and periods from which they can be used including the target species of those gears, and restrictions on their by-catch. These are applicable to gears used whether or not in conjunction with a boat. The necessity of these provisions is to ensure that no destructive or unauthorised gears or fishing methods are practiced in Seychelles waters.

Also the practice of attracting sharks with blood or bait known as chumming for diving purposes is strictly prohibited under this new legislation.

Foreseeing the huge potential and development of aquaculture in Seychelles, the Seychelles Fishing Authority has over the past few years engaged in developing a comprehensive Mariculture Master Plan for Seychelles. This master plan includes the policy for aquaculture development, the regulatory framework, the strategy for implementing this policy, guidelines, code of practice and operational standards for investors. The new Act takes into account these provisions to ensure that the aquaculture development in Seychelles is done in a controlled and well-regulated manner to protect the country against pollution, introduction of new exotic species, and invasive species including but not limited to diseases outbreak in this sub-sector. This is a sub-sector that will have huge potential for local employment in a variety of specialisation like in veterinary services, marine biology, bio chemistry to name a few.

With its 1.3 million m², Seychelles has one of the largest Exclusive Economic Zones in the region and the world, and to ensure its optimal protection with regards to the protection of its marine resources against illegal, unreported and unregulated fishing, the new Act has

extended the mandate of the enforcement agency to the Seychelles Police, the Defence Forces and the NDEA. These agencies are now empowered under the Act to support and assist the Authorised Fisheries Officers (AFO) with the enforcement of the fisheries legislation. New to the Act is provision for more power being entrusted in the Authorised Fisheries Officers. Their powers have now been extended to be effective in Seychelles waters and beyond, and also on land. This includes the power to stop, arrest and detain a vessel which has fled the Seychelles EEZ after a hot pursuit arising from an illegal activity occurring inside Seychelles waters.

An Authorised Fisheries Officer may now without a warrant when it is believed that an offence under the Fisheries Act has been committed, stop any person conveying fish, examine any vehicle, aircraft, vessels, equipment, baggage, package or container in which fish or fish products in relation to the committed offence is believed to be contained. For the purpose of enforcing the Fisheries Act, an AFO may also enter without a warrant any premises (except a dwelling house) used for carrying a business relating to fishing, pier, quay, dock, marina etc, where a fisheries related offence is believed to have been committed, and has the power to seize any vehicle, gear, fish, documents that may be used as evidence in any proceedings under the Act. The Act also makes clear provisions for how seizures and detentions are dealt with pending judicial proceedings.

The new Act is also more stringent in relation to penalties committed under this legislation. The higher penalties are be a dissuasive factors for would be offenders. In the 1986 Act the highest fine was for a foreign fishing vessel which fished in Seychelles waters without a licence, and that was SR2.5 million. In the new Act the same offence is now up to SR31 million. A range of new offences and fines has also been introduced to curb the practice of illegal fishing.

The Act also makes provision for ensuring safety and security at sea of fishermen and fishing vessels. This new Act makes provision for SFA and the Maritime Safety Administration to legally collaborate in ensuring that the safety and security of fishermen and fishing vessels are regulated accordingly so as to minimise and eradicate accidental or negligence loss of life at sea and of vessels. The new law now makes provisions for mandatory Vessel Tracking System on all applicable local fishing. These will be governed by appropriate regulations to ensure that the safety and security aspects of the fishing industry prevail.

8.2 Sea Cucumber Fishery

Over recent years, the Seychelles Fishing Authority has been working in very close collaboration with the Association of Members of Seychelles Sea-Cucumber Industry (AMSSI) through a Management Advisory Committee (MAC) to sustainably manage the sea cucumber fishery.

The main activity for 2014 was the drafting of a Memorandum of Understanding (MoU) between AMSSI and SFA with the assistance of SmartFish. The MoU tries to tackle four main areas of collaboration which comprised of:

- Improving monitoring of the fishery to allow a comprehensive stock assessment
- Improving safety at sea and raise awareness of inherent risks
- Evaluating and implement precautionary management measures
- Implementing a minimum economic size scheme as precautionary management measure

This was required so as to improve the quality and reliability of the data being collected via the logbook system in order to achieve more comprehensive stock assessment in the future

as well as to set guiding recommendations in order to better manage the fishery with shared responsibilities between the two signatories.

Several workshops were organised with the aim to sensitize skippers and divers on the proper way of collecting data and on how to improve safety at sea and raise awareness of inherent risks. This was also done in collaboration with the Ministry of Health to improve safety in sea cucumber fishing operations. The Management Advisory Committee (MAC) met on a monthly basis to discuss all issues with regards to the industry. License conditions were revised for the opening of the 2014/2015 fishing season so as to make the licensee adhere to the proper management of the resources. Another main area of collaboration was to set a minimum economic size and was able to be agreed on between SFA and AMSSI (with assistance provided by FAO-SMARTFISH). The Cabinet of Ministers has already granted approval on the matter and this measure is to be sent to the Attorney General's office to be gazetted. This proposed measure will be discussed further with SFA and the appropriate legislation will subsequently be developed.

8.3 Seychelles Shark National Plan Of Action (NPOA)

The Seychelles National Plan of Action for the conservation and management of sharks was approved in May 2007. The NPOA was developed as per the FAO guidelines under its International Plan of Action sharks and through a highly consultative, stakeholder driven process. As specified under section 9.5 of the plan, it was intended to have an initial 4-year duration (2007 - 2010) with an independent review during year four, which will provide the basis for a consultative revision of the NPOA so as to enable an adaptive management approach and the optimal attainment of its strategic objectives. However due to a lack of funds the plan is yet to be reviewed. The SFA is trying to seek funding possibly from one of their collaborating partners in order to have this activity undertaken in 2015.

8.4 Plateau Fishery for Demersal Fish Resources Management Plan

In order to develop the Demersal Fishery Management plan, more funding has been acquired from the Global Environmental Fund (GEF) to cater for the participation of all stakeholders in the plan with the concept of participatory approach. This is necessary to have the plan finalised. An educational and awareness plan has been approved and is being implemented. The Ecological and Risk Assessment are on-going with several stakeholder consultations initiated.

The first draft of the Management Plan is expected by end of November and is expected to be presented to the Cabinet of Ministers by February 2015.

Chapter 9 -

MONITORING CONTROL AND SURVEILLANCE

The Monitoring Control and Surveillance (MCS) Section is comprised of two sub-units. These are: The Monitoring and Control Unit and the Enforcement Unit.

The Monitoring and Control Unit is composed of the Fisheries Monitoring Centre (FMC) and the Fisheries Control Unit.

The Fisheries Monitoring Centre (FMC) deals with the compliance of all fishing vessel's reporting requirements, Vessel Monitoring System (VMS), validation of statistical documents for ICCAT, IOTC, EU and Non-EU catch certificates.

The Fisheries Control Unit is responsible for the processing and issuing of fishing licenses.

The Enforcement Unit carries out all inspectorate duties with regards to port state inspection, land inspection, sea and air surveillance duties pertaining to national and regional requirements. They are also mandated to enforce the Fisheries Act of the Seychelles, as empowered to them, and to make sure there is proper compliance to the Artisanal, Semi Industrial and Industrial applicable regulations, Agreements and protocols.

The main objectives of MCS Section include:

- To ensure compliance to the Fisheries Act and regulations, Fisheries agreement and protocols;

- To provide support to local partners such as the Seychelles Coastguard (SCG) and the National Drug Enforcement Agency (NDEA) and Seychelles Air Force;
- To work with countries in the region to improve MCS implementation in a regional effort to eliminate IUU fishing activities;
- To ensure compliance to international legal framework plus the IOTC resolutions.

9.1 Fisheries Monitoring Centre (FMC)

9.1.1 Vessel Monitoring System (VMS)

With the integration of our VMS software (Themis), SFA's VMS data transfer operation is fully compatible to send and receive data through HTTPS and SMPT protocol. The Themis platform was introduced in 2009, and further upgrade has been done since then to build the capacity of the server. The Software has enabled the FMC to be able to monitor licensed fishing vessels on a larger scale.

In 2013, the THEMIS software was installed at the Seychelles Coast Guard (SCG) so they can have the 24 hours surveillance of all licensed fishing vessels operating inside and outside the Seychelles waters. In 2014, we installed the Themis at the NDEA base and the Seychelles Air Force Base.

A technical team of the FMC ensures the smooth operation of the FMC servers on a daily basis, plus the installation and maintenance of VMS mobiles on local fleet and the inspection of VMS mobiles on local vessels, Seychelles Flagged, and Foreign Flagged fishing vessels as necessary. Figure 9.1 shows a sample of vessel activity within the Seychelles EEZ.

Figure 9.1 Screen capture of Themis viewer platform

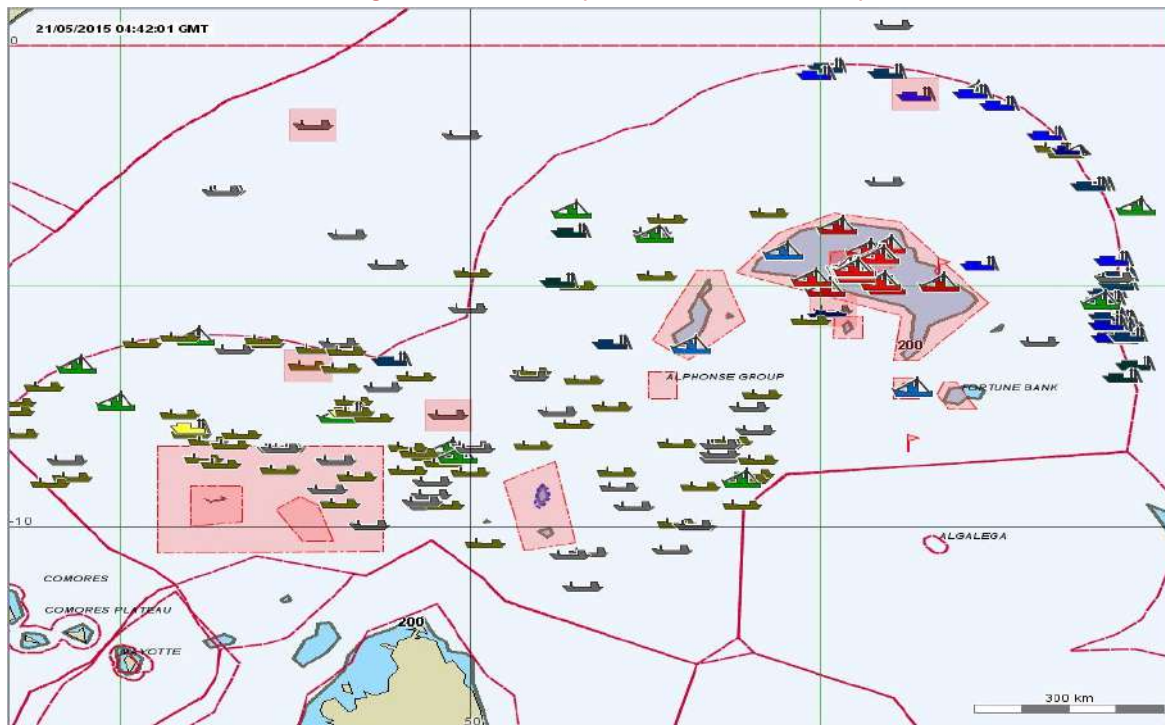


Table 9.1 illustrates data transmission records from 2012 to 2014 for different fleets which have licences to operate in Seychelles waters.

The decrease of data reporting for the year 2014 is due to the decrease of vessel applying for fishing licenses which is in-turn due to a change of pattern of the tuna and tuna like migration in the northern to the southern zone of the Seychelles EEZ.

Table 9.1 VMS data transmission records per vessels flags

VMS DATA TRANSMISSION RECORD PER FLAG			
VESSELS FLAG	YEAR		
	2012	2013	2014
CHINA	12825	21,261	14,524
FRANCE	75136	56,153	60,702
JAPAN	8781	9,152	2,515
SEY FLAG (ARTISANAL VESSELS)	579012	627,493	584,849
SEY FLAG (INDUSTRIAL VESSELS)	563154	671,234	684,286
MAYOTTE	31626	14,114	12,186
SPAIN	52710	38,460	50,412
TAIWAN (ROC)	354624	349,629	269,615
OMAN	10797	2,075	0
PHILLIPPINES	2123	8,566	8,678
ITALY	0	0	4,902
KOREA	15804	30,120	32,907
THAILAND	0	0	5,106
TANZANIA	0	46,933	2,990
TOTAL	1,706,592	1,875,190	1,733,672

9.1.2 VMS on Local Fishing Fleet

The number of local vessels installed with Inmarsat-C transceivers continued to increase each year due to new license applications for the artisanal fishery. The maintenance of the VMS terminals on these local fishing vessels still remains one of the main challenges to the Centre. The centre continues to provide VMS maintenance services to boats owners on a daily basis. At the end of 2014, there was a total of 250 VMS installed on the local fishing vessels. In 2014

12 vessels were installed with VMS transceivers for the first time, whereas 22 vessels needed their terminals to be replaced. In late 2014, the SFA also procured 20 Small Vessels Tracking Units, and we are expecting to receive further Equipment in form of donation from the EU-Cap Nestor. This will enable the FMC to monitor and track small fishing vessel that do not have autonomous power supply onboard. The units are rechargeable M2M Inmarsat terminals with built in message interface. The project should be initiated in Q2 of year 2015.

Maritime Distress

In 2014 there was an increase in the amount of distresses recorded by the Seychelles Coast Guard. They received 63 distresses compared to year 2013 which was 32.

9.1.3 VMS on industrial fishing vessels

Most industrial vessel VMS reports were satisfactory during 2014. There was however 5 cases of major compliance inspection, due to failure of the VMS transceivers on board 5 Seychelles Flagged vessels. 4 of these were done on longliners in foreign Ports, and one inspection was done in the Seychelles Port, on a purse seiner.

9.1.4 Innocent passage

A total of 43 requests of innocent passage by fishing vessels in Seychelles waters were approved in 2014.

9.1.5 Entry and exit reports

There's a continuation of improvement of compliance from the industrial vessels on the reporting of their Entry and Exit in the Seychelles waters. The total numbers for Entry and Exit recorded in 2013 were 3049 and in 2014 were 3636.

9.1.6 Longliner transshipment

All Seychelles flagged longliners carrying out transshipment at sea or in Port have to seek prior authorisation from SFA. In line with the IOTC resolution 12/05 and in combination with the IOTC observer programme, the SFA has continued to authorise transshipment at sea for Seychelles flagged longline vessels. We are making sure that all the Seychelles LSTLV (Large Scale Fishing Vessel) has all the necessary documents on-board before the authority can acknowledge the request for transshipment from a vessel.

Table 9.2 Total number of transshipments carried out in Port and at sea during 2013 to 2014

YEAR	2013	2014
Total No. of Transshipments	120	114
Total No. of kg Transshipped	9,263,083	7,221,907

Table 9.2.1 Total quantity of species transshipped both at sea and in port

YEAR 2014	
SPECIES	TOTAL (KG)
Albacore	53,957
Yellowfin	1,318,718
Skipjack	0
Bigeye	4,309,096
Southern Bluefin	0
Blue Marlin	108,739
Marlin	51,234
Black Marlin	32,552
Striped Marlin	70,264
Red Marlin	2,300
Sailfish	0
Swordfish	589,986
Shortfin mako shark	0
Shark	89,162
Blue shark	4,600
Sharks fins	0
Oil fish	166,833
Other	452,418
TOTAL	7,221,907

In 2014 there were a total of 38 at sea transshipment and 76 port transshipment recorded. Table 9.2 shows the total number of transshipment carried out in port and at sea for the year 2013 and 2014, whereas Table 9.2.1 shows the total quantity of fish by species transhipped during the year 2013 and 2014 for both in port and at sea.

9.1.7 Purse seiner transshipment

All Seychelles, EU and Korea seiners' carried out the majority of their transshipment in Port Victoria, hence maintaining Port Victoria as the most active transshipment and landing fishing port in the region for purse seiners. Table 9.3 shows per flag the total quantity of fish by species transhipped or landed in Port Victoria for the year 2014.

Table 9.3 Total quantity of fish by species transhipped or landed in 2014

FLAGS	SPECIES	TOTAL (KG) 2013	TOTAL (KG) 2014
SEYCHELLES	YFT	31,415,213	23,437,415
	SKJ	18,353,533	18,783,717
	BET	4,809,615	3,559,832
	ALB	525,566	1,891
SPAIN	YFT	41,604,139	35,104,274
	SKJ	26,713,625	30,479,318
	BET	8,418,467	6,310,133
	ALB	272,244	33,963
FRENCH	YFT	5,541,966	6,134,565
	SKJ	4,582,174	3,751,243
	BET	961,921	1,425,079
	ALB	48	0
MAYOTTE	YFT	4,025,817	2,083,700
	SKJ	2,563,498	2,297,617
	BET	453,856	192,109
	ALB	260	0
KOREA	YFT	1,908,517	3,956,836
	SKJ	2,953,821	3,648,157
	BET	726,832	623,148

9.1.8 Statistical document

Since 2002, Seychelles has been validating statistical documents for ICCAT and IOTC. As of the 1st January 2010 when COUNCIL REGULATION (EC) No 1005/2008 came into force, SFA successfully implemented the catch certificates as per article 12 of the regulation. During 2010-2011 there was continuous improvement in the EU/IUU regulations, especially from processing products whereby partial certificates were introduced for partial processing of products from the industrial tuna fishery.

In 2014 a total of 2511 catch certificates and statistical documents were validated for export of which 58 were Non-EU catch certificate, 51 EU catch certificate for local vessel, 1465 EU IUU catch certificate, 300 EU foreign catch certificate, 168 EU Seychelles catch certificate, 416 statistical certificate and 53 re-export catch certificate. There has been a decline of 44.34% compared to year 2013 which was 115. The decline in local export was due to the change of processors in the local industry. The Figure 9.2 shows the illustrations of the data for 2014.

Figure 9.2 Graphical illustrations of validated Catch Certificates for the period 2014

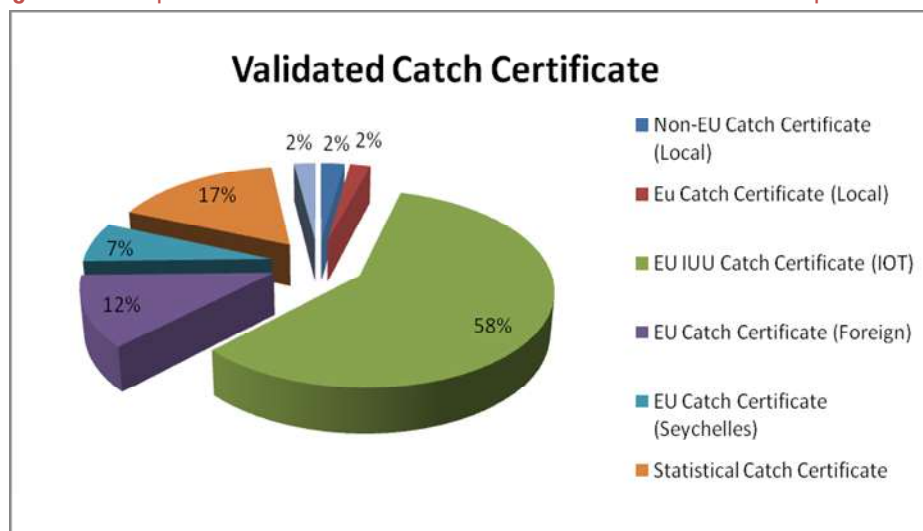


Table 9.4 shows the total weight of fish exported in 2013 and 2014 by country as per validated catch certificates.

As per the data shown on the table, there has been a decline in 2014 for export to countries such as UK, Germany, and France. But for new destinations e.g. Russia exports increased.

Table 9.4 Destination of the catch for the semi-industrial and artisanal fishing vessels

	2013	2014
Country of Export	Quantity (Kg)	Quantity (Kg)
United Kingdom	68,297.16	12,654.05
Reunion	16,728.60	2,950.20
Germany	5,309.80	0.00
France	2,373.60	1,077.50
Italy	0.00	533.68
Russia	0.00	163,105.56
Mauritius	39,544.65	8,002.05
Australia	6,233.00	374.20
U.A.E	4,047.80	1,369.10
Sri Lanka/Colombo	37,075.70	12,368.40
Hong Kong	21.40	0.00
USA	17,895.10	3,907.10
Pakistan	0.00	0.00
Spain	1,067.80	0.00
South Africa	26,014.57	0.00
Kenya	28.70	0.00
Japan	7,930.00	0.00
Czech Republic	386.30	0.00
TOTAL	232,954.18	206,341.84

Table 9.4.1 shows in detail the total catch record by species exported to the EU Countries.

The highest importer for 2014 was UK with an amount of **12,654.05 KG** and the lowest was Italy with an amount of **533.68 KG**.

Table 9.4.1 shows export in detail per species to the EU countries for 2014

Common name	Total Exported 2014 (KG)	U.K	FRANCE	ITALY	RUSSIA	REUNION
Swordfish	2,253.84	865.20	1,055.40	125.16	208.08	0.00
Bourgeois	10,343.10	10,343.10	0.00	0.00	0.00	2,284.40
BET	273.94	0.00	22.10	251.84	0.00	0.00
Tuna	649.92	401.50	0.00	0.00	248.42	0.00
Crab Giraffe	63.68	0.00	0.00	0.00	63.68	0.00
Spanner Crab	50.00	0.00	0.00	50.00	0.00	0.00
Vielle Plate	154.20	154.20	0.00	0.00	0.00	86.20
Vielle Maconde	107.60	107.60	0.00	0.00	0.00	117.70
Vielle Rouge	12.20	12.20	0.00	0.00	0.00	23.60
Moontail Seabass	224.20	0.00	0.00	0.00	224.20	0.00
Green Jobfish	177.44	0.00	0.00	26.74	150.70	0.00
Vielle Goni	43.10	43.10	0.00	0.00	0.00	0.00
White Blotch Grouper	116.28	0.00	0.00	28.16	88.12	0.00
Brown Spotted Grouper	192.76	0.00	0.00	26.46	166.30	0.00
Marbled Grouper	20.20	0.00	0.00	0.00	20.20	0.00
Job	43.80	43.80	0.00	0.00	0.00	0.00
Spangled Emperor	56.40	0.00	0.00	0.00	56.40	0.00
Grouper	121.10	7.30	0.00	0.00	113.80	0.00
Job Gris	70.70	70.70	0.00	0.00	0.00	0.00
Job Jaune	110.70	110.70	0.00	0.00	0.00	0.00
Emperor Red Snapper	416.25	0.00	0.00	25.32	390.93	0.00
Ruby Red Snapper	53.46	0.00	0.00	0.00	53.46	0.00
Two spot Red Snapper	198.44	0.00	0.00	0.00	198.44	0.00
Captain Blanc	205.45	205.45	0.00	0.00	0.00	0.00
Captain Rouge	25.10	25.10	0.00	0.00	0.00	0.00
Black Saddled Coral	104.10	0.00	0.00	0.00	104.10	0.00
Marlin	60.30	60.30	0.00	0.00	0.00	0.00
Bordomar	144.50	144.50	0.00	0.00	0.00	0.00
Therese	54.10	54.10	0.00	0.00	0.00	0.00
Barracuda	5.20	5.20	0.00	0.00	0.00	0.00
TOTAL	16,352.06	12,654.05	1,077.50	533.68	2,086.83	2,511.90

Table 9.4.2 shows in detail the total catch record by species exported to the non-EU countries. The highest importer for 2014 was Russia with an amount of 160,057.23 KG and the lowest were Australia with an amount of 374.20 KG.

Table 9.4.2 shows export in details per species to the Non-EU Countries for 2014

Common name	TOTAL EXPORTED 2014	MAU	UAE	SRI LANKA	USA	AUS	RUS
Bourgeois	5,838.95	5,402.35	312.80	0.00	0.00	123.80	0.00
Capitaine Blanc	270.80	270.80	0.00	0.00	0.00	0.00	0.00
Capitaine Rouge	59.40	16.30	0.00	0.00	0.00	43.10	0.00
Crab	722.12	716.12	0.00	0.00	0.00	0.00	6.00
Dorade	9,679.95	9.75	0.00	9,670.20	0.00	0.00	0.00
Emperor Red Snapper	4,104.61	0.00	0.00	0.00	0.00	0.00	4,104.61
Etelis (Ruby Snapper)	20,885.30	1.75	0.00	0.00	0.00	0.00	20,883.55
Job Green	973.70	0.00	0.00	0.00	0.00	0.00	973.70
Job Gris	1,713.05	1,180.05	0.00	0.00	0.00	0.00	533.00
Job Jaune	558.90	526.90	0.00	0.00	0.00	32.00	0.00
King Fish	22,703.57	0.00	0.00	0.00	0.00	0.00	22,703.57
Marbled Grouper	1,241.15	0.00	0.00	0.00	0.00	0.00	1,241.15
Marlin	4.00	4.00	0.00	0.00	0.00	0.00	0.00
Moontail Seabass	4,408.80	0.00	0.00	0.00	0.00	0.00	4,408.80
Octopus	79.00	79.00	0.00	0.00	0.00	0.00	0.00
Potato Grouper (V.Touko)	21.40	0.00	0.00	0.00	0.00	21.40	0.00
Saumon	51.40	51.40	0.00	0.00	0.00	0.00	0.00
Spangled Emperor	18,144.95	0.00	0.00	0.00	0.00	0.00	18,144.95
Swordfish	5,570.65	9.15	975.50	2,698.20	1,887.80	0.00	0.00
Indian Mackerel	25,888.94	0.00	0.00	0.00	0.00	0.00	25,888.94
V.Babonne	35.00	0.00	0.00	0.00	0.00	35.00	0.00
V.Croissant	46.68	1.58	0.00	0.00	0.00	45.10	0.00
V.Goni	21.60	0.00	0.00	0.00	0.00	21.60	0.00
V.Maconde	4,305.70	122.20	0.00	0.00	0.00	0.00	4,183.50
V.Platte	54.90	2.70	0.00	0.00	0.00	52.20	0.00
V.Thiof	774.50	0.00	0.00	0.00	0.00	0.00	774.50
Tuna	172.70	62.15	0.00	0.00	0.00	0.00	110.55
Two Spot Red Snapper	4,936.11	41.15	0.00	0.00	0.00	0.00	4,894.96
White Blotch Grouper	37,863.29	0.00	0.00	0.00	0.00	0.00	37,863.29
Yellow Spotted Trevally	11,454.48	0.00	0.00	0.00	0.00	0.00	11,454.48
Yellowfin Tuna	1,632.40	0.00	0.00	0.00	1,632.40	0.00	0.00
TOTAL	186,681.28	8,605.25	1,369.10	12,368.40	3,907.10	374.20	160,057.23

9.1.9 Data exchange

During 2012, data exchange between Seychelles and Reunion (CROSS REU) continued to progress with weekly exchanges. In addition, data exchanges also took place during regional fisheries surveillance missions.

The SFA is optimistic for further data exchanges under the SADC regional MCS program and the Smart Fish MCS component of the 10th EDF for ESA IO member states.

Stop illegal Fishing launched a program called **Fish-I** in December 2012 in Seychelles. It is a regional partnership between the southeast African countries to combat fisheries crimes. The countries exchange intelligence data through a web portal called the basecamp.

In 2013 the 5 member states of the IOC signed the contract for the launching of the new Regional VMS System within the Indian Ocean. The 5 member states are Seychelles, Mauritius, Madagascar, Reunion and Comoros. The system is already operational in 2014. Two members of the SmartFish Project, Kenya and Tanzania are also interested in joining the Regional Fisheries Surveillance Project (RFSP).

9.2 Fisheries Control

In the past SFA's responsibility was limited to compliance verification and approval of the licenses. To issue or revoke a fishing license was the responsibility of the Seychelles Licensing Authority (SLA).

Since October 2014, SFA legally took responsibility from the SLA for the processing and issuance of fishing licences.

9.2.1 Industrial sector

The number of licences issued by SFA in 2013 and 2014 is reflected in table 9.5. There was an increase in the number of licences issued in 2014 compared to 2013. In 2013 158 licenses were issued while in 2014 there were 183. The increase in the number of fishing licenses issued in 2014 was mostly due to the number of purse seiners using 3 months license validity and also there has been new addition of vessels in the Seychelles Flag Industrial fleet. Longliners from the Far East continue to dominate in the amount of license applied per year. Table 9.6 gives the cost of different licences.

Table 9.5 Number of industrial fishing licensed issued per country and by types of fishing vessels for 2013 and 2014

Country	2013				2014			
	Longliner	Purse Seiner	Supply Vessel	Total	Longliner	Purse Seiner	Supply Vessel	Total
Spain	0	14	6	20	0	13	10	23
China	8	0	0	8	18	0	0	18
France	0	8	0	8	0	8	0	8
Italy	0	0	0	0	0	1	0	1
Korea	0	3	0	3	0	4	0	4
Japan	2	0	0	2	1	0	0	1
Mayotte	0	9	0	9	0	10	0	10
Mauritius	0	3	0	3	0	8	0	8
Philippines	2	0	0	2	1	0	0	1
Seychelles	27	8	4	39	32	10	6	48
Taiwan Republic of China (ROC)	60	0	0	60	59	0	0	59
Tanzania	1	0	0	1	0	0	0	0
Thailand	0	0	0	0	2	0	0	2
Total	100	45	10	158	113	54	16	183

Table 9.6 License fees 2014

Type of vessel	Duration	Amount	Currency
Longliner			
Sey/Taiwan	1 Year	24,000	USD
	6 Month	17,500	USD
Purse Seiner			
Sey. Flagged	1 Year	90,000	USD
French/Spanish (EU Agreement)	1 Year	38,500	EURO
Private Agreement	1 Year	120,000	USD
Supply Vessel	1 Year	5,000	USD

9.2.2 Local fishing licenses

In 2012, a total of 381 local fishing licenses were issued and in 2013, 450 licenses were issued. Open deck Mini Mahé fishing vessels still remains the dominant type of licenses issued during the years.

Table 9.7 shows a sharp decrease from 2012 to 2013 due to the fact that vessels were not operating or even exporting their fish abroad and thus this caused a general decrease around in all type of vessels. In 2014 the same situation prevailed with a general decline while others which has risen constantly including extended Mini Mahé, super Mini Mahé, Butram, Monohull & Skivy.

Table 9.7 Type of local licenses issued for 2012 – 2014

Boat Type	2012	2013	2014
Catamaran	2	2	3
Seadog	9	12	11
Longliner (semi-industrial)	18	22	21
Lekonomi	16	16	16
Lavenir	20	27	20
Schooner	61	59	61
Whaler	36	38	35
Mini Mahé	219	272	255
Others	0	2	50
Total	381	450	472

9.2.3 Sea cucumber licences

The number of sea cucumber licenses has remained constant over the years whereby the number is capped at 25 licenses. The total number of sea cucumbers exported by processors for 2013 was **489,268** and the total biomass was **86,188.16 kgs** (Table 9.8). In 2014 there was a decline in the export quantity while landing has increased as shown in Table 9.8.1 and exported by processors for 2014 was **353,915** and the total biomass was **34,850.56 kgs**.

Table 9.8 Number of sea cucumber landed and exported for the first closure of the season in June 2013 for each exporter

SEA CUCUMBER SEASON CLOSURE DATA FOR 2013 IN JUNE			
ACTION	MONTH/NAME	NUMBER	QUANTITY (KG)
LANDING	January to March	225,635	
	April to June	153,463	
TOTAL		379,098	
EXPORT	January to December	157,429	21,081.51
		132,173	22,694.25
		128,137	30,586.6
		71,529	11,825.80
TOTAL		489,268	86,188.16

Table 9.8.1 Number of sea cucumber landed and exported for the first closure of the season in June 2014 for each exporter

SEA CUCUMBER SEASON CLOSURE DATA FOR 2014 IN JUNE			
ACTION	MONTH	NUMBER	QUANTITY (KG)
LANDING	October 2013 to June 2014	437,492	
TOTAL		437,492	
EXPORT	January to December 2014	97,081	18,140.46
		92,428	14,450.32
		57,395	10,054.62
		107,011	16,710.10
TOTAL		353,915	34,850.56

9.3 Fisheries Surveillance

This is an area that is lacking in both manpower and equipment but on the other hand there have been major improvements in terms of sea patrol and port state control. Land based monitoring remains an area that needs to be reviewed as well as the type of inspections undertaken.

In the framework of the regional fisheries surveillance program, SFA Enforcement Officers have had training in the field of inspection at sea, radio telecommunication, and procedures for safety at sea.

In 2013, SFA officers received training on the IOTC Port State Measure resolution 10/11. The training was conducted by IOTC and was funded under the IOC-SmartFish program. The objective of the training was to increase the Port State Control capacity of the coastal CPC by implementing operational aspects of the PSM resolution related to national interagency collaboration and regional cooperation.

9.3.1 Port state control

Port state control has been one of the strong points of Seychelles even before the creation of the MCS section. Despite this fact the overall approach to port state control was reviewed in 2009, concentrating on an investigative rather than an informative approach. The results have been positive since then with detection of infractions. In one case, it resulted in the capturing of the Sri Lankan flag fishing vessel Lucky Too in 2012. The vessel was fined SCR100,000. In 2013 two Malagasy catamarans were captured practising illegal fishing of sea cucumber in the Alphonse islands and they were fined SCR1,500,000 for both vessels. In 2014 two Iranian dhows were captured and they were both fined 45,000 USD for illegal fishing as shown in Table 9.9.

Table 9.9 Records of vessel apprehended in 2014

DATE	Vessel/ Captain/ Owner	NATIONALITY	CHARGE	ZONE	OUTCOME
16/12/2014	Maliki/Yusuf Tinad	Iran	USD 45,000	Operating within the Seychelles EEZ without a valid license, fishing tuna and tuna like species and also in restricted area.	
16/12/2014	Maoullai/Mahomed Unes	Iran	USD 45,000		

Nevertheless, there is still a need to improve port state inspection so that it can be brought in line with the requirements of the FAO Port State Measure (PSM) and the IOTC PSM resolution 10/11.

Table 9.10 shows the total number of vessels inspected in port by Enforcement Officers for the year 2014.

Table 9.10 Number of fishing vessels inspected in Port Victoria by country and type of vessel for 2014

2014					
Flag	Purse Seiner	Longliner	Supply Vessel	Others	Total
France	74	0	0		74
Korea	35	0	0		35
Seychelles	62	1	12		75
Spain	116	0	20		136
Mauritius	16				0
Total	303	1	32	0	336

9.3.2 Compliance inspection

Compliance inspection is carried out on all Seychelles flagged industrial vessels to ensure compliance as per FAO requirement for port state responsibility. The inspection is carried out when the vessel is registered and prior to issuance of the Certificate of Authorisation (COA) to fish outside of Seychelles waters. Most of the inspections are carried out in foreign ports, particularly, Jurong in Singapore, Port Louis in Mauritius and Colombo in Sri Lanka. This inspection is repeated every two years to ensure continuous compliance for all Seychelles Flag vessels.

In 2013, 11 longliners had undergone compliance inspection and in 2014, 16 longliners were inspected for newly registered and registered vessels.

9.3.3 Land patrol

Land patrols targets mainly landing sites around the three main islands: Mahé, Praslin and La Digue. The main purposes of land patrols are:

- Inspection of boats upon license application;
- Inspection with regards to fuel claims;
- Inspection of sea cucumber landing at authorised landing sites;
- Inspection at point of export of sea cucumber;
- Monitoring of the lobster fishery;
- Investigation on report of illegal activities;
- Periodic inspection at beach landing sites.

For 2014 there were 29 land patrols which have been carried out on Mahé and Praslin respectively to make sure the owners are complying and 6 coastal patrols to make sure that all vessels operating are carrying activities stated by their licence conditions.

9.3.4 Regional fisheries surveillance

The Regional Fisheries Surveillance Project (RFSP) financed by the EU and other member states under the management of the IOC was extended for another year in 2011. Another three year extension has also been proposed for the coming years. 43 regional patrols have been conducted from November 2007 to December 2014, covering all jurisdictions of the Indian Ocean Commission member states.

With the implementation of the RFSP and the allocation of a budget financed by the Seychelles Government for joint fisheries and piracy patrol, Seychelles has improved its efficiency in the surveillance of its EEZ, as illustrated in table 9.11. For 2012 there was no

patrol conducted due patrol vessel and aircraft unavailability. In 2013 no regional patrol was carried out due to availability of vessel to carry out the patrol, but we could only carry out national patrols. The decline in the number of days at sea patrol is due to the increased costs of operation and thus this has lowered the days of operation. In 2014, 30 days of regional patrol were carried out with 32 hours of aerial surveillance.

Table 9.11 Records of patrol conducted between 2007 and 2014

Patrol	YEARS						
	2007	2008	2009	2010	2011	2013	2014
Sea	7 days	38 days	107 days	110 days	91 days	36 days	44 days
Air	3.2 hrs	74.6 hrs	216. hrs	40 hrs	6hrs	8.0 hrs	46 hrs

9.3.5 Patrol vessels

The Seychelles Coast Guard (SCG) has four long range patrol vessels, the 'PV Andromache', 'PV ETOILE', 'PV CONSTANT' and 'PV Topaz'. They received the two vessels 'PV ETOILE' and 'PV CONSTANT' in 2014. By receiving the two vessels, the SGC are now more capable to assist in the Fisheries Patrol.

9.3.6 Aircrafts

SFA has been utilising the Seychelles' People Defence Force (SPDF) aircrafts for fisheries surveillance. Availability of the aircrafts was again limited, in particular during 2011-2012 because of aircrafts involvement in piracy surveillance. The arrival of a new Twin Otter plane for the SEYCHELLES AIR FORCE of the Seychelles People Defence Forces did not alleviate this problem. The arrival of the Dornier has given the fleet more resources but there was still issue of availability of planes as not all were operational during the course of 2013. In 2014 we had the availability of the Dornier to carry out both the Regional and National air patrol consecutively as piracy activity was lower.

9.3.7 Piracy

With the decrease in the threat of piracy since early 2012, the number of license application rose in 2012 (207 licenses) but declined in 2013 (158 licenses). In 2014 license application has risen again to 183 which broadened the Seychelles fleet and piracy activity has decreased immensely in our EEZ.

The threat of piracy has forced local, semi-industrial longliners to restrict most of their fishing activities within or just beyond the Mahé plateau, hence increasing fishing pressure. In 2013 and in 2014 with reduced risk of piracy activity, the vessels have resumed their activities in the area outside of the Mahé plateau.

9.3.8 Regional MCS effort

Two main regional MCS projects are ongoing in the region. These are: The establishment of the SADC Regional MCS Centre based in Maputo, Mozambique and the MCS component of the EU 10th European Development Fund (EDF) for the ESA-IO countries.

The MCS component financed under the EDF has now been named the Smart Fish project. The project has materialised for the Regional MCS named SIGMA where all the five member states have signed the protocol and are transmitting data to the system. The system will be in review after the 1 year trial in March 2015.

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Chapter 10 - INTERNATIONAL CO-OPERATION

10.1 EU/Seychelles Sustainable Fisheries Partnership Agreement

A new Protocol of the Seychelles-EU Sustainable Fisheries Partnership Agreement (SFPA) came into force in 2014. The Protocol, for a duration of six years, for a value of Euro 30.7 million, gives the opportunity for 40 tuna purse seiners and six surface longliners flying the flag of a member countries of the European Union (EU) to fish for tuna and tuna like species in the Seychelles Exclusive Economic Zone for a reference tonnage of 50,000 tonnes. In 2014, 28 EU purse seiners (14 each from Spain and France) were licensed by Seychelles and their total catch was 22,763 tonnes.

Of the financial contribution of the Protocol, a sum of Euro 15.2 million to be disbursed in yearly instalments of between Euro 2.6 million and Euro 2.5 million is allocated for the support and implementation the Seychelles' fisheries sector policy and maritime policy. This is done through an approved multi-annual programme for the duration of the Protocol inclusive of a yearly detailed activity work programme.

The total budget of the sectoral support approved by the Joint Committee meeting in Victoria, Seychelles in March 2014 as provided by the EU under the SFPA for this budget year which included accumulated funds from the previous year brought forward was Euro 5,020,341. Fisheries infrastructure development was top of the three priorities identified by Seychelles for a total value of Euro 3,225,257. This comprised financing for the completion of the fish processing facilities at the Providence artisanal fishing port, clearing access channels used by artisanal fishermen including the reparation and placement of new navigational aids in these access channels, installation and commissioning of two new ice plants used by the artisanal

and semi-industrial fishing community at Providence and Praslin amongst others. An allocated amount of Euro 1 million was allocated for the development of the Bel Ombre artisanal infrastructure project, however this sum was not fully executed during the year due to unforeseen delay in the procurement of a construction contractor for this project.

The second priority under the Protocol is the development and improvement of the Fisheries and Aquaculture management plans with a sum of Euro 1,215,262 allocated for. These funds assisted the Seychelles Fishing Authority (SFA) with its fisheries and economic data collection, processing dissemination, for the running of the observer programme on tuna purse seiners, the conduct of aerial and sea surveillance against illegal, unregulated and unreported fishing activities, procurement and installation of vessels tracking devices on the domestic fleet, the development and implementation of the sea cucumber, lobster and aquaculture management plans amongst other activities in support of fisheries management. To support SFA with its human resource development plan and capacity building Euro 495,462 was allocated of which Euro 131,203 was allocated for empowering fishermen professional associations, and supporting their operation and activities, of which Euro 40,000 was allocated to the Fishing Boat Owners Association (FBOA) for the development of their fish labelling project, and Euro 84,360 was allocated as contingency.

Reciprocally the EU and Seychelles also signed a six year agreement which took effect in January 2014 for Seychelles flagged fishing vessels to fish in Mayotte waters, which is under the jurisdiction of the EU. Unlike the agreement for EU vessels to fish in Seychelles waters, this agreement did not consist of an element of sector support contribution. Eight Seychelles flagged tuna purse seine fishing vessels as provided for under the agreement operated in Mayotte water in this year catching a total of 52 tonnes of tuna and tuna like species.

10.2 British/Seychelles Fisheries Commission (BSFC)

The 19th meeting of the British/Seychelles Fisheries Commission preceded by the 26th meeting of the Scientific Sub-Committee (SSC) was held in Seychelles in October. This Commission was established in 1995 to promote, facilitate and coordinate conservation and scientific research.

Areas of focus of the SSC and Commission were on the status of the British Indian Ocean Territory (BIOT) Marine Protected Area (MPA) and on ongoing research in the MPA and same that was ongoing in Seychelles in the coastal and offshore fisheries. The Commission reported on progress being made by each Party internally, with regards to amending the scope of the Joint Statement on the Conservation of fisheries signed by both Seychelles and the UK government on 20th July 1995.

Other points of exchange and collaboration discussed during the meetings were in relation to management of fisheries in Seychelles, in particular preparation of the demersal fisheries management plan and FAD management plan, monitoring control and surveillance activities conducted by the UK and the Seychelles and the illegal activities that have been detected by both parties. It was agreed to investigate the potential of establishing a regional VMS through IOTC and for a possible reconsideration of the size of vessels which should be tracked by VMS so as to reduce illegal fishing incidences. The UK and Seychelles agreed to collaborate and push these agendas jointly through proposals for consideration as resolutions at the next IOTC Commission meeting.

10.3 Indian Ocean Tuna Commission (IOTC)

Seychelles' participation in the Indian Ocean Tuna Commission (IOTC) has remained consistent over the years. The main IOTC activity for the year started with the 10th

Compliance Committee (CC) meeting followed back to back with the 17th Commission meeting in Colombo, Sri Lanka.

The CC meeting was preceded by a close session for coastal States of IOTC facilitated by Australia for like-minded coastal States to go through the proposals for the Commissions' session and converge where possible.

The purpose of the CC meeting is to strengthen compliance among IOTC members, this includes Contracting Parties, and Cooperating Non-Contracting Parties by firstly reviewing progress made during the 2013/2014 intercessional period, identifying outstanding issues of non-compliance as well as identifying the challenges and difficulties that each member and notably developing coastal States are facing in enforcing and complying with IOTC Conservation and Management Measures (CMMs) adopted through various resolutions. The Committee also makes recommendations for improvement during the next intersession period.

Seychelles' compliance level had increased to 63% in 2014 compared to 58% the previous year. In general there has been overall improvement on the level of compliance of members to IOTC CMMs especially in countries where the IOTC secretariat had conducted compliance mission in support of the countries understanding, implementing and reporting on the different applicable resolutions. Seychelles improvement was noticeable despite not having received the compliance mission at the time of assessment. However in November the IOTC Secretariat conducted a compliance mission for Seychelles' SFA staff, of which Seychelles took the opportunity to invite Somalia to attend so that they could learn from the Seychelles' experience, noting that Somalia had only just joined IOTC the same year.

As for the Commission meeting, the most debated proposal was with regards to the management of drifting Fish Aggregated Devices (FADs). The secretariat noted that out of the 12 members of the Commission having purse seine vessels add/or bait boats, only seven had provided FAD management plans. The establishment of a limit on the number of FADs used per fishing vessels was hotly contested but the Commission could not agree on a consensus on same.

As for the status of the stocks, the Commission noted the advice from the Scientific Committee (SC) that indicated that striped marlin stock is currently subject to overfishing and all parties should take a precautionary approach and immediately reduce their impact on striped marlin.

With regards to the impact of catching bigeye tuna and yellowfin tuna juveniles and spawners, the Commission asked the SC to perform an evaluation of the impact on yellowfin and bigeye tuna stocks by catching juveniles and spawners taken by all fisheries. The Commission noted however, that the fishery statistics available for many fleets, in particular for coastal fisheries, are not accurate enough for a comprehensive analysis. The Commission thus requested that the countries engaged in those fisheries take immediate actions to improve fishery statistics reporting to the IOTC Secretariat. It should be noted that Seychelles consistently reports its fisheries statistics to IOTC in line with the obligation of the respective resolution.

10.4 South West Indian Ocean Fisheries Commission (SWIOFC)

The South West Indian Ocean Fisheries Commission (SWIOFC) which is an article 6 (advisory body) of the United Nation (UN), Food and Agriculture Organisation (FAO) started its activity for the year with the hosting in Seychelles of a regional conference on sustainable fisheries development and its contributions to the Millennium Development Goals (MDGs). This

conference provided an opportunity for member countries of the Commission to review and critically examine how development in the previous decade had contributed to the (MDGs). The intent was to have a stocktake of fisheries development over the previous decade, what were the challenges and difficulties encountered, how they were addressed, the extent to which they were resolved either successfully or not, and what were the lessons learnt. The intent of the conference was to inform policy makers of changes that may need to be done in the future.

Seychelles's presentation at the conference showcased the external threats to the role of Seychelles' tuna economy in meeting developmental agenda'. It addressed the integration of tuna fisheries in supporting social welfare systems, the service sector, household and livelihood portfolios, while addressing the main threats of climate change, piracy and sustainability.

The Commission with the support of World Wide Fund for Nature (WWF-East Africa) embarked on discussions for establishing a regional protocol containing minimum terms and conditions for governing access to foreign fishing vessels including those of SWIOFC member states while accessing a third party EEZ in the region. This was with the aim of standardising procedures for the management and control of industrial fishing vessels within with the region. The first meeting was held in Mauritius.

As special adhoc meeting of the Commission was held in Maputo, Mozambique in November to officiate the relocation of the SWIOFC from Harare, Zimbabwe where it had been located since its inauguration to Mozambique at the request of the member countries following a performance review. The ceremony was attended by the Assistant Director General of the FAO.

10.5 Consultative Meetings with Somalia

In its collaboration with countries of the region, Seychelles participated in the national consultative workshop of Ministers of Fisheries of Somali regions held in Mogadishu, Somalia in October 2014. This was the third in a series of meetings for the possible establishment of a permanent structure or mechanism in Somalia for administering their off-shore fisheries sector of which Seychelles has participated, providing its assistance and sharing its experience with the Somali fisheries administration.

The previous two meetings of the Focal Points and Ministers of Fisheries of the Somali regions were held in Addis Ababa, Ethiopia in May, and the first at the Beau Vallon Coral Strand Hotel in Seychelles in April.

These workshops were focused on having agreement amongst the Somali regions on the modalities for the establishment of the Federal Somali Fisheries Authority (FSFA) similar in structure and function to the Seychelles Fishing Authority. Assistance for same was provided by FAO and the Regional Somali Administration.

Chapter 11 - INFORMATION AND TECHNOLOGY SERVICES

11.1 Documentation Services

11.1.1 Acquisitions

The number of documents/publications acquired by the Documentation Centre continued to increase in 2014. Over fifty new publications were added to the collection. Most of the publications were acquired through SFA's exchange programme.

11.1.2 Library management

In 2014 a total of 114 documents were catalogued in the library database AgriOcean DSpace. In all, there are now a total of 6714 records in the database. A total of 110 documents were loaned to both SFA staff and external users.

A lot of effort and work took place to develop and maintain our Institutional Repository. The conversion of the InMagic Database to AgriOcean DSpace has enhanced and increased our national repository records. However there was a need to go over all the converted record to check for discrepancy, which is still ongoing. The repository is operational within our internal network, accessible by all staff. Our future plan is to get the repository online.

11.1.3 Publications 2014

ASSAN, C.N.; DORIZO, J.L. (2014) Seychelles Artisanal Fisheries Statistics for 2010. SFA Technical Report, SFA/R&D/071.

ASSAN, C.N.; DORIZO, J.L. (2014) Seychelles Artisanal Fisheries Statistics for 2011. SFA Technical Report, SFA/R&D/072.

NAGEON, J.; LUCAS, V.; SAUER, W. (2014) An EAF baseline report for the Seychelles artisanal and recreational fisheries targeting the demersal fish stocks by handline, traps, gillnets and droplines. In: Baseline Reports: Preparation of Management Plans for Selected Fisheries in Africa. FAO EAF-Nansen Project Report No.23, p.215-246.

SEYCHELLES FISHING AUTHORITY (2014) Report on the Spiny Lobster Fishery: Summary of Fishing Activity for the 2013-2014 Season. SFA/R&D/072, 14 pp.

SEYCHELLES FISHING AUTHORITY (2014) Fishery Independent Indices for the Seychelles Lobster Resource. SFA/R&D/073, 26 pp.

SEYCHELLES FISHING AUTHORITY (2014) Monitoring, Control and Surveillance. ***In: Twenty-sixth Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission Meeting, 30th September – 1st October 2014, 19 pp.***

SEYCHELLES FISHING AUTHORITY (2014) Overview of Fisheries Management Projects. ***In: Twenty-sixth Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission Meeting, 30th September – 1st October 2014, 5 pp.***

SEYCHELLES FISHING AUTHORITY (2014) Overview of Research Projects 2013. ***In: Twenty-Sixth Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission Meeting, 30th September – 1st October 2014, 8 pp.***

SEYCHELLES FISHING AUTHORITY (2014) Results of the Catch Assessment Survey (CAS) 2013 and Research Activities for Artisanal Fisheries. ***In: Twenty-sixth Meeting of the Scientific Sub-***

committee of the British/Seychelles Fisheries Commission Meeting, 30th September – 1st October 2014, 21 pp.

SEYCHELLES FISHING AUTHORITY (2014) Summary of Activities of the Seychelles Industrial and Semi-Industrial Fisheries for the year 2013. **In: *Twenty Sixth Meeting of the Scientific Subcommittee of the British/Seychelles Fisheries Commission Meeting, 30th September – 1st October 2014, 50 pp.***

SEYCHELLES FISHING AUTHORITY (2014) Quarterly Fisheries Statistics Year 2013, 10 pp.

SEYCHELLES FISHING AUTHORITY (2014) Quarterly Fisheries Statistics 1st Quarter 2014, 19 pp.

SEYCHELLES FISHING AUTHORITY (2014) Seychelles Fishing Authority Annual Report 2012, 75 pp.

SEYCHELLES FISHING AUTHORITY (2014) Seychelles Fisheries Monthly Bulletin (January-December 2014).

11.2 Information Technology

For the year 2014 the Information Technology (IT) section maintained its high level of service to the organization and other collaborators.

11.2.1 Software

The new and revamped SFA website was officially launched on the 28th August 2014 by then Minister Peter Sinon as part of SFA's 30th anniversary celebrations. The main objective of the

website is to promote and market the fishing industry and to provide information to current and potential clients.

The IT section provided assistance with the training of AVDTH Data management software.

It became compliant with the Government Electronic Document Repository e-service as all documents considered as public domain are either on the website or on the eDoc Repository.

11.2.2 Hardware

New computers and other peripherals were purchased to replace obsolete ones. Some staffs were issued laptops instead of personal computers to allow them to complete tasks and ensure they meet deadlines.

11.2.3 Training

Staffs were sent for overseas training to stay abreast with current technologies and have hands on practice.

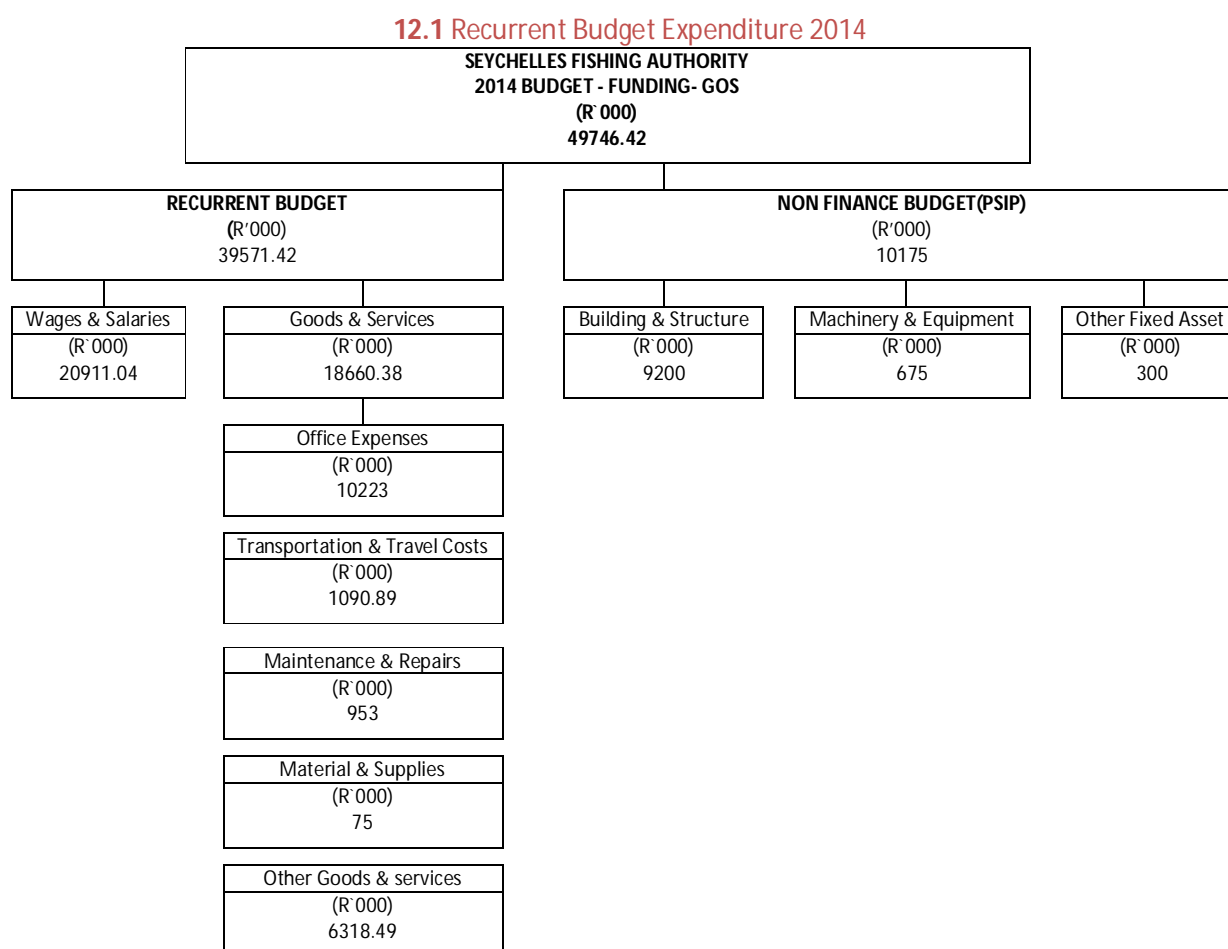
Training included:

- Developing EGov Strategies
- CompTIA A+ with certification
- CompTIA Network + with certification

Chapter 12 - FINANCE

The Authority received a total of **Rs. 49,746,420.00** from Government of Seychelles as subsidy towards its Recurrent & Minor Capital Expenditure for the year ending 31st December 2014.

The Authority's Recurrent Budget Expenditure for 2014 was made up as per chart below:



The Seychelles Government through Seychelles Fishing Authority paid a total of **Rs. 26,731,650.42** under the Fuel Incentive Scheme for Fishermen.

The Year 2014 was a year when the maximum budget allocated to the Authority was executed.

Chapter 13 - STAFFING AND ADMINISTRATION

13.1 Staffing for 2014

In view of the embargo on recruitment during 2014, there were no recruitments (Table 13.1), however there were 2 resignations and 2 terminations

Table 13.1 Recruitment of staff for 2014

Divisions/Sections/Units	2014
Secretariat	0
Fisheries Management & Evaluation	0
Monitoring Control & Enforcement	0
Fisheries Economic Information Management	0
Fisheries Research	0

13.2 Training and Development

There were five staff attending long term courses overseas; of which three successfully completed their training in 2014 (Table 13.2).

13.2 Overseas Tertiary Training

Participants	Title /Country	Duration
Mr. Gregory Berke	Masters	September 2013 to October 2014
Ms. Karine Rassool	Masters	September 2013 to October 2014
Ms. Veronica Alphonse	BSC	September 2010 to September 2014

13.3 Overseas and local training

Participants	Title /Country	Duration
Mr. Roy Clarisse	4 th Global Fisheries Enforcement Training in Costa Rica	14/02/2014 - 25/02/2014
Mr. Daniel Kilindo	Developing E- Government in Singapore	24/02/2014 - 07/03/2014
Ms. Dora Lesperance/Mr. Karl Seraphine	International Conference on Seafood Safety, Quality & Traceability	03/03/2014 - 05/03/2014
Miss Julie Jean/Johnny Louys/Freddy Lesperance	Formation Administrateur et Utilisateur de Themis, Mauritius	04/03/2014 - 07/03/2014
Mr. Johnny Louys/Freddy Lesperance/ Ms. Julie Bibi	VMS Regional Training, Madagascar	18/03/2014 - 19/03/2014
Mr. Nicolas Najar	Tailor made course for new Economic Unit	07/04/2014 - 11/04/2014
Mr. Andy Stephen	Marine Fisheries Management for African Countries, Beijing China	16/04/2014 - 13/05/2014
Ms. Maria Cedras	Aquaculture Technology for Developing Countries, Haikou, China	08/05/2014 - 04/06/2014
Rodney Melanie	Identification of Deep Sea Cartilaginous Fishes of the Indian Ocean, Mauritius	10/06/2014 - 13/06/2014
Ms. Denise Mathiot	Libraries & Documentation Management, Swaziland	9/06/2014 -20/06/2014
Ms. Mellissa Joseph/ Mr. Vincent Lucas	Sustainable Fisheries Management in the Indian Ocean Region	23/06/2014 - 11/07/2014
Mr. Rodney Govinden	Stock Assessment Introduction Training	14/07/2014 - 19/07/2014
Ms Maria Cedras/Mr. Savio Andrews	Aquaculture Technology, Cairo Egypt	6/09/2014 - 25/09/2014
Ms. Bernadette Gill	Electronic Archiving & Record Management, Swaziland	20/10/2014 - 31/10/2014
Mr. Ralph Jean- Louis/ Mr. Juan Marimba	Certified International Project Management Course, South Africa	23/11/2014 - 23/11/2014
Ms. Kethsia Georges / Mrs. Bernadette Boniface	Procurement and Supply Chain Management, Seychelles	17/11/2014 - 19/11/2014

13.3 Overseas Duty Trip

There has been an increase in fisheries activities and participation in meetings, forums and workshops (Table 13.4).

Junior Managers and Supervisors are being given the opportunities and exposures at international meetings and conferences.

13.4 Overseas Duty Trip

Participants	Country/Title	Duration
Mr. Finley Racombo/Mr. Alejandro Anganuzzi/ Mr. Jan Robinson	Blue Economy Meeting	19/01/2014 - 20/01/2014
Mr. Roy Clarisse	The meeting of the policy Advisory Committee of the EX-SWIOFP Project to review the Draft SAPHIRE Project document	22/01/2014 - 23/01/2014
Mr. Roy Clarisse	The protocol Seminar for Regional Exchange of Fisheries Information under the Smartfish Program, Tanzania	05/02/2014 - 06/02/2014
Mr. Vincent Lucas/ Mr. Rodney Govinden	Regional Symposium on Octopus Fisheries Management in the South West Indian Ocean, in Mauritius	13/02/2014 - 14/02/2014
Mr. Ralph Jean-Louis/ Mr. Clifford Toussaint	The delivery and sea trials of the MTC Vessel, Sri Lanka	17/02/2014 - 31/03/2014
Mr. R. Clarisse	4th Global Fisheries Enforcement Training, Costa Rica	03/03/2014 - 05/03/2014
Mr. Finley Racombo	35 ème réunion de la cellule de coordination régionale (CCR) du plan régional de surveillance des pêches, Mauritius	06/03/2014 - 07/03/2014
Mr. Vincent Lucas/Mr. Michel Marguerite	Invitation to a Special Meeting of SWIOFC, Zanzibar, Tanzania	06/03/2014 - 07/03/2014
Minister Peter Sinon	Global Fishing Capacity - Less is More, Greece	13/03/2014 - 14/03/2014
Ms. Cindy Assan	Compliance with IOTC Requirement	18/03/2014 - 20/03/2014
Ms. Marie-Antoinette Saminadin	Compliance inspection in Singapore	30/03/2014 - 02/04/2014
Mr. Roy Clarisse	Informal consultation of State Parties to the UN Fish Stocks Agreement/ Side Meeting on Ratification of Port State Measures, New York	07/04/2014 - 8/04/2014
Mr. Alex Tirant/ Mr. Vincent Lucas	OCUP – Observer Programme Regional Coordinator workshop, Concarneau, France	07/04/2014 - 13/04/2014
Ms. Cindy Assan/ Mrs. Juliette Lucas	Un séjour scientifique dans le cadre d'une réunion de concertation pour le suivi des pêcheries thonières tropicales, France	17/04/2014 - 26/04/2014

Mr. Philippe Michaud	Global Ocean Action Summit for Food/Blue Growth, Netherlands	22/04/2014 - 25/04/2014
Mr. Roy Clarisse/Ms Mellissa Joseph	Indian Ocean Coastal States Tuna Fisheries Management	22/04/2014 - 25/04/2014
Ms. Dora Lesperance	International Seafood Expo Brussels, Belgium	05/05/2014 - 09/05/2014
Mr. Aubrey Lesperance	International Seafood Expo Brussels, Belgium	05/05/2014 - 09/05/2014
Mr. Philippe Michaud/ Mr. Nicholas Najar	13th INFOFISH World Tuna Conference/ Thailand	21/05/14 - 23/05/2014
Mr. Phillippe Michaud/ Mr. Roy Clarisse	Pre-IOTC, 11th Sessions of the IOTC Compliance Committee, 11th Sessions of the Committee of Finance & Administration, Sri Lanka	24/05/2014 - 05/06/2014
Mr. Finley Racombo	National Focal Point Meeting, Mauritius	29/05/2014 - 30/05/2014
Mr. Aubrey Lesperance	World Aquaculture Conference in Adelaide, Australia	07/06/2014 - 11/06/2014
Mr. Roy Clarisse	31st Session of the FAO Committee on Fisheries - COFI, Italy	9/06/2014 - 13/06/2014
Mr. Rodney Melanie	Identification of Deep sea Cartilaginous Fishes of the Indian Ocean in Mauritius	10/06/2014 - 13/06/2014
Mr. Roy Clarisse	Our Oceans Conference - US Sate Dept New York	16/06/2014 - 17/06/2014
Mr. Calvin Gerry	Monitoring for Environment and Security in Africa (MESA)" in Mauritius	23/06/2014 - 24/06/2014
Mr. Jude Bijoux	Design and Analysis of Statistically Sound Catch Sampling Programmes, Denmark	23/06/2014 - 27/06/2014
Mr. Rodney Govinden	01 st Meeting On Connecting Science And Management Processes (SMWS01) in Thailand	25/06/2014 - 27/06/2014
Mr. Freddy Lesperance	FISH-I Africa Task Force in Mozambique	01/07/2014 - 02/07/2014
Ms. Tracey Pillay	Compliance inspection in Singapore	09/07/2014 - 11/07/2014
Mr. Freddy Lesperance/ Mr. Michel Marguerite	PRSP UCR élargie Technique et CCR normal in Mauritius	15/07/2014 - 17/07/2014
Mr. Jude Bijoux	Cites workshop on implementation of shark Appendix II Listings in Sri Lanka	30/07/2014 - 31/07/2014
Mr. Roy Clarisse	FISH-I Africa Tasks Force	01/07/2014/ - 07/2014
Mr. Finley Racombo	ACP - Revolutioning Finance for Agri-value chains	14/07/2014 - 18/07/2014
Mr. Clifford Toussaint	New Oceana Fisheries Longliner	28/07/2014 - 03/08/2014
Mr. Mervin Elizabeth/ Mr. Alex Tirant	Observer Deployment in Port Louis, Mauritius	06/08/2014 - 08/08/2014
Mr. Freddy Lesperance	2eme réunion de L'Unité de Coordination Régionale (UCR), in Réunion	26/08/2014 - 27/08/2014

Ms. Sharon Roselie	Compliance inspection in Singapore	26/08/2014 - 30/08/2014
Mr. Dave Azemia	Compliance inspection in Mauritius	27/08/2014 - 29/08/2014
Mr. Aubrey Lesperance	Seychelles Trade and Business Forum in Sri Lanka	27/08/2014
Mr. Jude Bijoux	Science Policy Consultative in Kenya	26/08/2014 - 30/08/2014
Mr. Khulsen Gonzalves	Compliance inspection in South Africa	31/08/2014 - 04/09/2014
Mr. Philippe Michaud	International Workshop on Blue Economy, Bangladesh, Indonesia	01/09/2014 - 02/09/2014
Mr. Ricky William	Compliance inspection in Sri Lanka	02/09/2014 - 06/09/2014
Mr. Vincent Lucas	IOTC Stock Assessment Workshop and Workshop on connecting IOTC Science and Management Processes in Cape Town, South Africa	15/09/2014 - 22/09/2014
Mr. Jude Bijoux/Mr Calvin Gerry	IOTC Stock Assessment Workshop in Cape Town, South Africa	15/09/2014 - 20/09/2014
Mr. Johny Louys	Compliance inspection in Sri Lanka	21/09/2014 - 26/09/2014
Mr. Sonny Naiken	Compliance inspection in Singapore	08/10/2014 - 09/10/2014
Mr. Vincent Lucas/Mr. Alex Tirant	Training and deployment of a Malagasy observer in the framework of the OCUP Programme in Mauritius	15/10/2014 - 17/10/2014
Mr. Jude Bijoux	Stakeholder Council and Developing World Working Group in South Africa	15/10/2014 - 16/10/2014
Mr. Aubrey Lesperance	Strengthening Intuitional Capacity to enhance governance of the Fisheries Sector in Cairo, Egypt	19/10/2014 - 19/10/2014
Mr. Roy Clarisse	National Consultative Workshop, Mogadishu, Somalia	21/10/2014 - 22/10/2014
Ms. Marie-Antoinette Saminadin	Compliance inspection in Cape Town, South Africa	28/10/2014 - 30/10/2014
Mr. Calvin Gerry	Monitoring for Environment and Security in Africa (MESA)"	03/11/2014 - 07/11/2014
Mr. Aubrey Lesperance	Regional Workshop to improve Aquatic Animal Health Management and Strengthen Biosecurity Governance in South Africa in Durban, South Africa	05/11/2014 - 07/11/2014
Mr. Alex Tirant	Observer Deployment in Mauritius	05/11/2014 - 07/11/2014
Mr. Finley Racombo	Strengthening institutional capacity to enhance Governance of the Fisheries section in Africa, Tanzania	18/11/2014 - 21/11/2014
Mr. Carmel Rene	Compliance inspection in Singapore	20/11/2014 - 25/11/2014
Mr. Freddy Lesperance	FISH-I Africa Task Force Meeting in Madagascar	25/11/2014 - 27/11/2014
Mr. Roy Clarisse	FISH-I Africa Task Force Meeting	25/11/2014 - 27/11/2014
Mr. Vincent Lucas	Scaling Success In Octopus Fisheries Management in the Western Indian Ocean in Zanzibar, Tanzania	02/12/2014 - 06/12/2014
Mr. Michel Labrosse/Ms. Tracey Pillay	Conduct National Sea Patrol	16/12/2014 - 22/12/2014

13.4 Long Serving Staff – 10 to 30 years continuous service

In 2014 SFA rewarded the following staffs who have been in continuous service for the past 10 to 15 years (Table 13.5).

13.5 Long Serving Staff

10 years in service	15 years in service
Mrs. Marie-Helena Marie - House Keeper	Mr. Khurlsen Gonzalves - Enforcement Officer
Ms. Wilgina Barbe - House Keeper	Mr. Andy Stephen - Senior Fisheries Statistical Technician

Staff attaining 20 years and above were rewarded for their long dedicated service during the celebration of SFA's 30th Anniversary.

13.5.1 Long Serving Staff 20 years and above

20 -24 years in service	25 - 30 years in service
Ms. Bernadette Gill	Mr. Clifford Toussaint
Ms. Ketsia Georges	Mr. James Sinon
Mrs. Joan Didon	Ms. Antoinette Marie Therese
Mr. Basil Louis Marie	Ms. Claire Pierre-Louis
Mr. Collin Lavigne	Ms. Denise Mathiot
Ms. Monette Dorby	Mr. Carmel Rene
Mr. Michel Marguerite	Ms. Margaret Figaro
Ms. Cecile Botsoie	Mr. Evans Mathiot
Ms. Jacintha Matombe	