Seychelles Fishing Authority
Annual Report 2007 - 2010

SFA

Annual Report

2007 - 2010

Seychelles Fishing Authority

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CONTENTS

ACRONYMS

AFIA	Agricultural and Fisheries Incentives Act (2005)
AMESD	African Monitoring of Environment for Sustainable Development
ASCLME	Agulhas-Somali Current Large Marine Ecosystem
BIOPS	BIOdiversité des milieux PélagiqueS marins de l'océan Indien
CAS	Catch Assessment Survey
CBS	Central Bank of Seychelles
CCA	Concessionary Credit Agency
COFI	Committee on Fisheries
CPUE	Catch Per Unit of Effort
DBS	Development Bank Seychelles
EEZ	Exclusive Economic Zone
EU	European Union
EC	European Commission
EAF	Ecosystem Approach to Fisheries
EPA	Economic Partnership Agreement
ESA	Eastern and Southern Africa
FADs	Fish Aggregating Devices
FIA	Fisheries Incentives Act
FMC	Fisheries Monitoring Centre
FPA	Fisheries Partnership Agreement
GST	Goods and Services Tax
GEF	Global Environment Facility
IFREMER	Institût Français de Recherche pour l'Exploitation de la Mer
IOC	Indian Ocean Commission
IOSSS	Indian Ocean Swordfish Stock Structure
IOT	Indian Ocean Tuna
IOTC	Indian Ocean Tuna Commission

IRD	Institût de Recherche pour le Développement
IUU	Illegal, Unreported and Unregulated
MADE	Mitigating ADverse Ecological impacts of open ocean pelagic fisheries
MCS	Monitoring, Control and Surveillance
MENR	Ministry of Environment and Natural Resources
MSA	Maritime Safety Administration
NSB	National Statistics Bureau
NDEA	National Drug Enforcement Agency
ODINAFRICA	Ocean Data and Information Network for AFRICA
OFCF	Overseas Fisheries Cooperation Foundation
SCG	Seychelles Coast Guard
SCA	Seychelles Concessionary Agency
SEnPA	Small Enterprise Promotion Agency
SEYPEC	Seychelles Petroleum Company
SFA	Seychelles Fishing Authority
SLA	Seychelles Licensing Authority
SPDF	Seychelles People Defence Force
SPA	Seychelles Port Authority
SWIOFP	South West Indian Ocean Fisheries Project
VMS	Vessel Monitoring System
WIOMSA	Western Indian Ocean Marine Sciences Association
YES	Youth Enterprise Scheme

FOREWORD

It gives me great pleasure to present the Seychelles Fishing Authority's Annual Report for the years 2007 to 2010. This Report reflects the work, challenges and achievements of the Authority and the Seychelles fishing industry in general.

According to the Establishment Act, the Seychelles Fishing Authority has the mandate of safeguarding, protecting and preserving the Seychelles fishing industry which is not only of vital economic importance for the country but represents the livelihood of many Seychellois.

During these four years SFA has strived to improve the welfare of our fishermen and improve the output of our fishing industry whilst ensuring sustainability of the resources. At the same time we have reinforced our research and development capacity by implementing numerous national, regional and international research projects and yielding significant data for management of marine resources and ecosystems in Seychelles. These include amongst others: Small Vessel Tracking Unit (SVTU), EM Project - CCTV Camera on Industrial Vessel), etc. Research has been dominated by the following projects: the South West India Ocean Fisheries Project (SWIOP), Agulhas Somali Current Large Marine Ecosystem Programme (ASCLME), Mitigating ADverse Ecological Impacts of open Ocean Pelagic Fisheries (MADE), Bait Fishing and Value Addition Project (co-financed by OFCF).

On the negative side the problem of piracy in our waters has been a major threat to our fishing industry. As well as being a threat to our fishing vessels, piracy has had a direct impact on certain of SFA's research projects, namely: fishing trials for deep water shrimps and deep water snappers. We are all very conscious of the risks our fishing vessels are taking and always present in our mind is the fate of our innocent fishermen still held captive in Somalia.

Despite these setbacks SFA has remained focused and committed to achieving its objectives through its activities and services. SFA's future plan is to continue to evolve and face up to fresh challenges.

Finally, I would like to underscore the fact that the successes highlighted in this Report are due to the considerable time and effort extended by SFA's dedicated and motivated staff.

I wish to take this opportunity to thank them all for their continued support and hard work.

Finley Racombo
Chief Executive Officer

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 and Industry (MNRI), which replaced the Ministry of Environment and Natural Resources (MENR) in 2010. 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.

2. ECONOMIC CONTRIBUTION OF THE FISHERIES SECTOR

2.1 General Observations

In the years 2007 to 2010, mixed results were obtained for the fisheries sector. Total domestic production decreased as well as the total volume of fish and fish products exported. In 2009 however, the value of exports reached a record high and by 2010, it had doubled the value for 2007. Total revenue from the industrial tuna fishery also increased. As a result, there was a substantial growth in total gross revenue generated by the fisheries sector and its related activities from 2007 to 2010.

The catch from the artisanal fishery landed in 2007 and 2008 increased by 9% and 14% respectively over previous years, with the highest catch ever recorded to date, in 2008. However in 2009, the artisanal catch dropped by 37% over the previous year and decreased further by 14% in 2010. In 2010, there was a decrease of 40% in the artisanal catch landed when compared to 2008.

The threat of piracy has had a serious effect on the fisheries sector, with a decrease in both the artisanal and semi-industrial catch for the period 2007-2010, as fishers were not prepared to take the risk of going out at sea. A drop in the catch by purse seiners was also recorded as some of the purse seiners fishing in the Seychelles EEZ, moved to the Atlantic Ocean. This has had severe repercussions on the fisheries sector, as domestic production decreased, exports dropped, and, local fish prices increased.

Figure 2.1 represents the price index of fish from 2007 to 2010. The price of fish in 2007 and 2008 remained relatively constant, with a growth of 10% from 2008 to 2007. There was however, a significant increase of 30 and 27 percent in fish prices during 2009 and 2010 respectively. The drop in the landed artisanal catch and adverse macro-economic factors could have resulted in this sharp increase in the price of fish for 2009 and 2010. From 2007 to 2010 there was a total increase of 83% in fish prices.

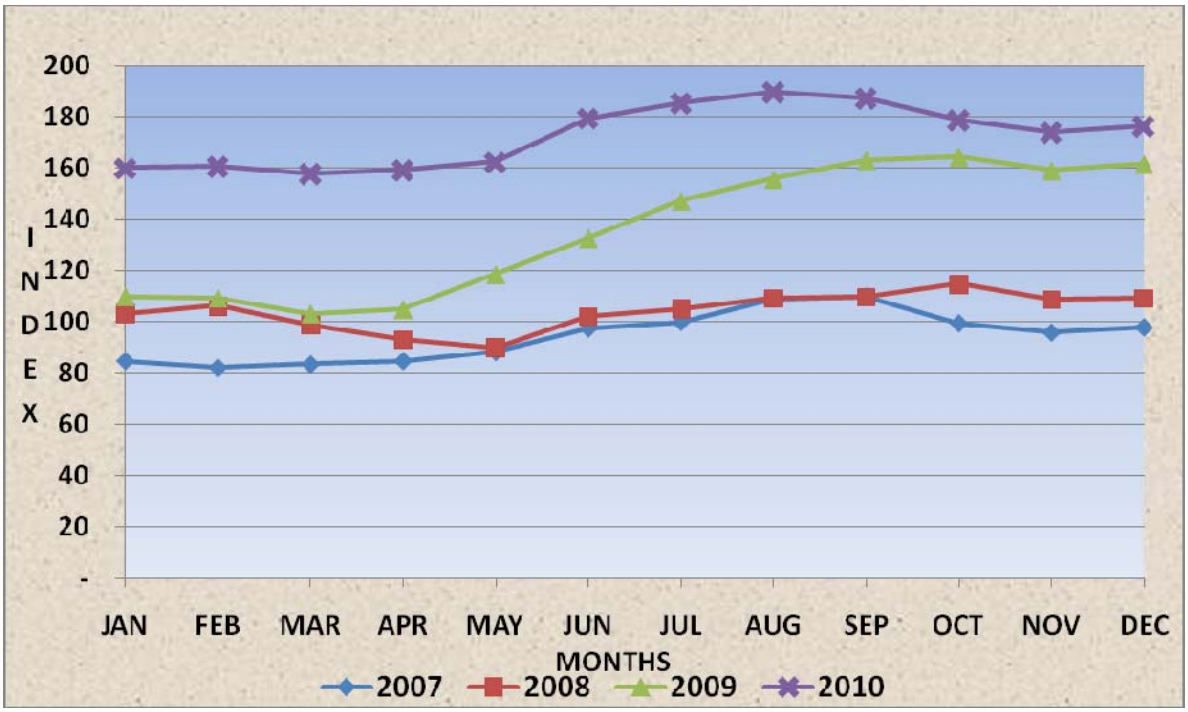

Figure 2.1 Monthly Price Index of Fish 2007 - 2010

The performance of the semi-industrial fisheries sector fluctuated from 2007 to 2010; with the catch peaking at 329 MT in 2009 but showing a decreasing trend again in 2010.

Concerning trade, both imports and expenditure receipts increased in 2010, when compared to 2007. A drop in the volume of fish and fish products traded was however, registered with a decrease in both imports and exports.

2.2 Production of Fish and Fish Products

In 2007, there was a significant drop in the domestic production of fish and fish products to an estimated 36,753 MT. This is in contrast to the 45,222 MT which was recorded in 2006. From 2007 to 2010, there was a decreasing trend in domestic production with levels reaching as low as 33,327 MT in 2010, representing a drop of 3,400 MT or 9%, from the production in 2007. Table 2.1 below shows the total production of fish and fish products for the period from 2007 to 2010.

Table 2.1 Total production of fish and fish products (MT) from 2007 to 2010

	2007	2008	% Change	2009	% Change	2010	% Change
Artisanal Catch	4,189.00	4,777.10	14.04	3,019.10	(36.80)	2,595.40	(14.03)
Semi-Industrial Catch	269.00	233.30	(13.27)	329.00	41.02	294.90	(10.36)
Canned Tuna	31,569.00	28,709.00	(9.06)	30,824.00	7.37	30,338.00	(1.58)
Other Processed Tuna	276.00	-		-		-	
Prawns	368.00	289.00	(21.47)	50.00	(82.70)	-	
Smoked Fish	29.00	30.80	6.21	28.40	(7.79)	29.60	4.23
Others.	53.00	35.10	(33.77)	60.20	71.51	70.00	16.28
Total Domestic Production	**36,753.00**	**34,074.30**	(7.29)	**34,310.70**	0.69	**33,327.90**	(2.86)
Purse Seine Catch*	49,938.00	56,382.40	12.90	68,339.40	21.21	75,786.60	10.90
Long Liner Catch*	8,462.00	6,795.30	(19.70)	8,323.10	22.48	6,659.00	(19.99)
Sub Total (2)	**58,400.00**	**63,177.70**	**8.18**	**76,662.50**	**21.34**	**82,445.60**	**7.54**
Fish Meal	6,899.00	6,873.00	**(0.38)**	5,168.00	**(24.81)**	7,863.00	**52.15**
Fish Oil	731.00	537.00	**(26.54)**	826.00	**53.82**	915.00	**10.77**
Sub Total (3)	**7,630.00**	**7,410.00**	**(2.88)**	**5,994.00**	**(19.11)**	**8,778.00**	**46.45**
Grand Total	**102,783.00**	**104,662.00**	**1.83**	**116,967.20**	**11.76**	**124,551.50**	**6.48**

* Seychelles flag vessels

Canned tuna accounted for approximately 88% of the total domestic production of fish and fish products and remained the most important product manufactured locally. Although the production of canned tuna fluctuated over the four-year period, in 2010, production only decreased by 4% compared to 2007.

From 2007 to 2010, the production of fish meal and fish oil increased from 5% to 11%.

The decline in total domestic production of fish and fish products can also be attributed to the fact that the production of other processed tuna ceased as well as that of the Coetivy Prawn Farm. Production of cooked tuna loins and prawns stopped in 2007 and 2009 respectively.

In contrast, there were no changes in smoke fish production as it remained rather stable between 2007 and 2010.

The production of dried sea cucumber and shark fins combined increased from 53 MT in 2007 to reach a total of 70 MT in 2010, representing a 32% increase.

The catch of the Seychelles' registered purse seiners increased steadily over the four year period from 36,753 MT in 2007 to reach a peak of 75,786 MT in 2010. This represents an estimated increase of 52 percent.

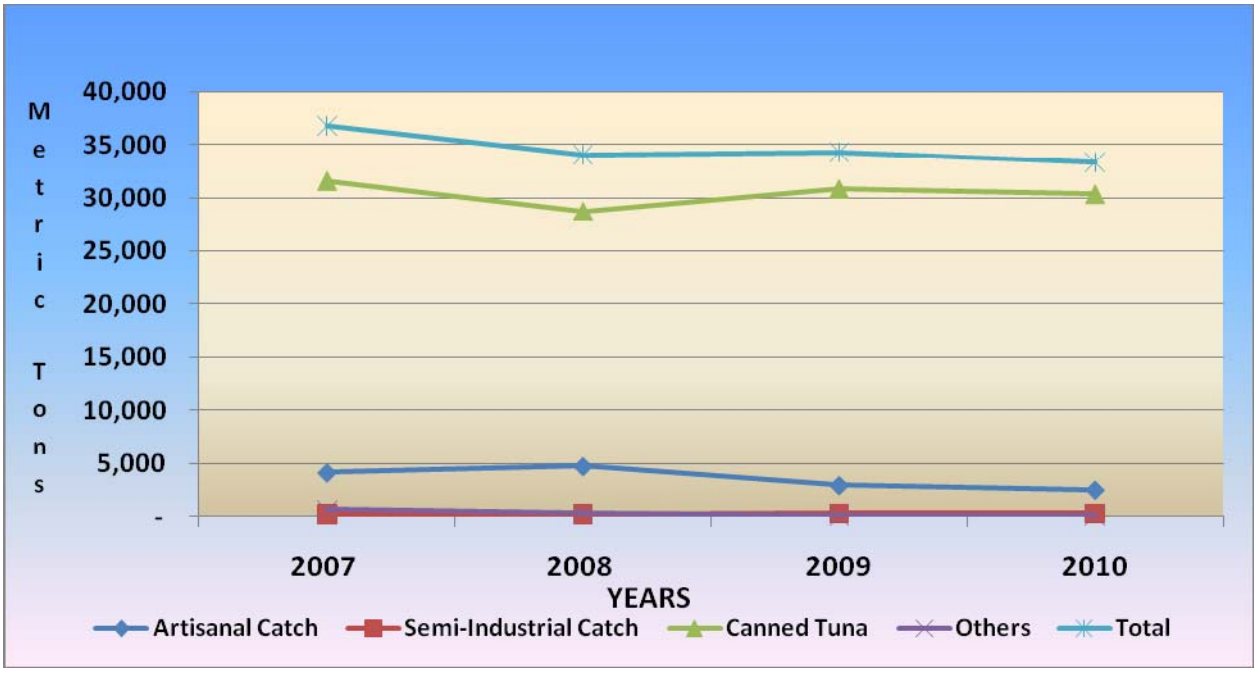

Figure 2.2 Production of Fish and Fish Products (MT) 2007 -2010

Figure 2.2 shows the domestic output of fish and fish products from 2007 to 2010 showing a close correlation between the production of canned tuna and total production of fish and fish products. During this period, production from the semi-industrial fishery remained constant. The artisanal production however fluctuated, with a decrease in 2009, but it levelled off in 2010. Other production of fish and fish products which included dried sea cucumber and shark fins remained relatively insignificant.

2.3 Revenue From The Industrial Tuna Fishery

Revenue from the industrial tuna fishery continued to be an increasingly important source of foreign exchange and employment for the country, as shown by the record in revenue generated from 2007 to 2010. Revenue derived from the industrial tuna fishing sector

consisted mainly of expenditure by foreign vessels on goods and services, spending by locally based foreign fishing companies and payment of fishing licence fees. The total gross revenue generated by the industrial tuna fishery showed an increasing trend, peaking in 2008 at a record high of SR1,691 million, followed by a steady decline to 2010.

In 2010, as compared to 2007, there was a 38% increase in gross income generated. Although there was an increase in the amount of revenue generated from the industrial tuna fishery, (as represented by the amount of rupees generated), due to the depreciation of the rupee, the total revenue generated in foreign exchange was basically stable.

Table 2.2 Revenue from the industrial tuna fishery (SR)

	2007	2008	2009	2010	%Δ (07-10)
Vessel Expenditure	931.44	1,521.00	1,157.00	1,145.00	23%
Company Expenditure	3.79	6.36	12.11	19.55	416%
Seamen Compensation	1.35	0.96	0.54	0.00	-60%
License Fees, Excess Catch & EU Compensation	50.85	163.00	229.00	100.74	98%
Total	**987.43**	**1,691.32**	**1,398.65**	**1,265.29**	**28%**

The increase in gross revenue inflow in 2008 and the decreasing trend that followed in 2009 and 2010 is primarily due to fluctuations in fuel prices. According to the Seychelles Petroleum Company (SEYPEC), fuel prices peaked in 2008 at a record high of US $1435 per MT, but fell again in 2010 to US $795 per MT.

Vessel expenditure remained the most important source of revenue from industrial tuna fishing activities, accounting for an average of 89% all revenues from this sub-sector over the four years. Vessel expenditure fluctuated from 2007 to 2010, but there was an increase of 23% in 2010 from 2007. Expenditure by foreign companies increased significantly by 416%, while licence fees collected for the excess catch and the financial compensation by the EU increased by 98%. This drastic increase in expenditure by foreign companies in 2010, can be attributed to the extra expenses incurred, such as for

accommodation for security personnel on purse seiners, which became necessary after the new piracy threat.

Figure 2.3 shows the trend in revenue generated by industrial tuna fishing activities between 1990 and 2010, illustrating an upward trend since 2003, with a peak in 2008 clearly shown.

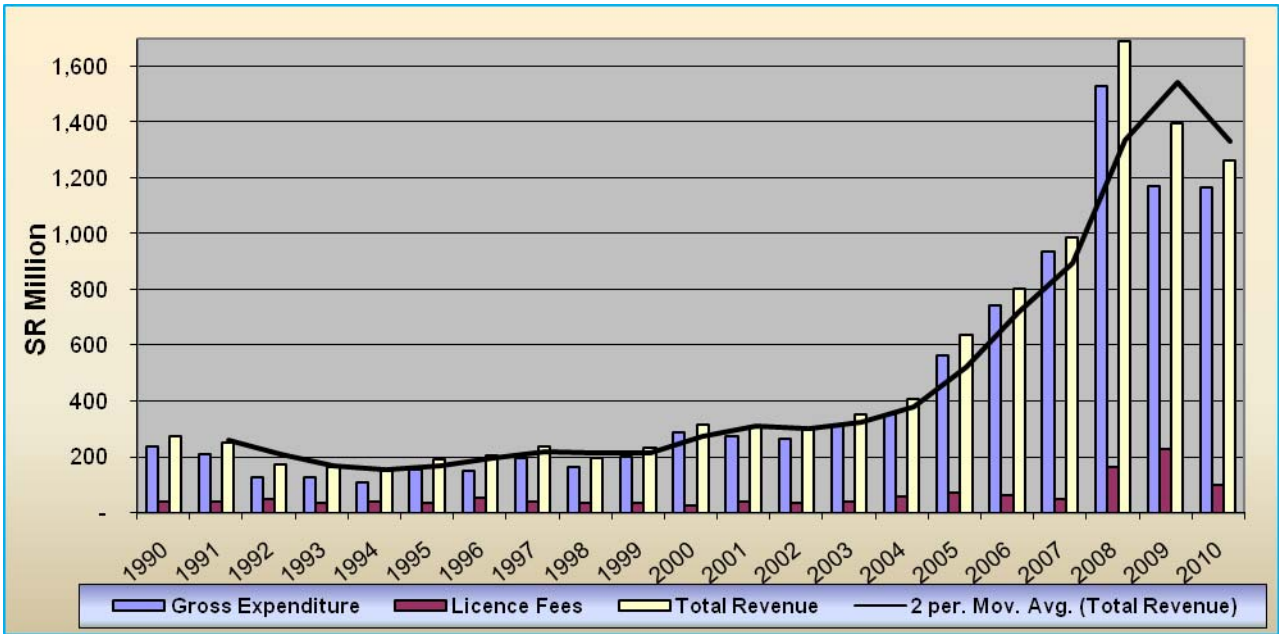

Figure 2.3 Revenue generated by the industrial fishery, 1990-2010

2.4 Trade in Fish and Fish Products

2.4.1 Exports of fish and fish products

Exports of fish and fish products constitute the major source of foreign exchange earnings by the industry and related activities. During the period from 2007 to 2010, mixed results were recorded in the volume and value of marine products exported. Whilst the volume dropped by 62% in 2010, compared to 2007, the value of exports registered an increase of

96%. The volume exported dropped from 41,030 MT in 2007 to 37, 355 MT in 2010, whilst the value increased from SR1.311 billion in 2007, to SR2.565 billion in 2010.

The opposite shift in volume and revenue earned reflects an overall increase in the unit price for fish products. This trend was driven primarily by the export of canned tuna which showed a sharp increase of 94% in earnings over the four year period, despite a drop of 10% in the volume exported. This is in line with the increasing trend in prices of canned tuna for the EU market.

After 2007 and 2008, other processed fish, namely cooked tuna loins and frozen prawns were no longer produced and exported.

Whilst there was a 21% increase in the volume of dried shark fins and sea cucumber exported, the value increased by a staggering 587% in 2010 compared to 2007. Similarly to canned tuna there was an increase in demand for these products on the international market and consequently, more favourable prices were obtained.

In 2010, the value of fish meal exported increased drastically by 181% compared to 2002, despite a 1% increase in the volume exported; with 6,947 MT exported in 2007 compared to 7,050 MT exported in 2010. Concerning the export of fish oil, both the volume and value increased by 25% and 309% respectively. Moreover, there was a drastic rise in the value of fish oil exports, similarly to the case for fish meal.

Over the period 2007-2010, the share of fish and fish products exports in terms of total domestic earnings remained relatively constant at an average of 94%. Europe remained Seychelles' primary market for fish and fish products, with canned tuna being the dominant commodity. South-East Asian countries however, including China, Japan and Singapore also constituted an important market for dried sea cucumber and shark fins.

The volume and value of fish and fish products exported from 2007 to 2010 is summarized in table 2.3.

Table 2.3 Volume and value of fish and fish products exported, 2007-2010

	2007		2008		2009		2010	
	MT	SR,000	MT	SR,000	MT	SR,000	MT	SR,000
Fresh and Frozen Fish	335	16,237	395	20,917	267	24,704	306	26,225
Canned Tuna	32,328	1,231,207	29,313	2,037,085	28,723	2,974,030	29,015	2,382,456
Frozen Prawns	308	12,930	232	16,625	-	-	-	-
Other Processed Fish	323	6,450	-	-	-	-	-	-
Dried Shark Fins & Sea Cucumber	58	4,447	35	5,367	60	32,243	70	30,560
Total	**33,352**	**1,271,271**	**29,975**	**2,079,994**	**29,050**	**3,030,977**	**29,391**	**2,439,241**
Total Domestic Exports		**1,348,700**		**2,186,300**		**3,271,952**		**2,640,500**
% of Domestic Exports		**94%**		**95%**		**93%**		**92%**
Fish Meal	6,947	30,574	5,485	49,512	6,388	65,113	7,050	85,821
Fish Oil	731	10,015	537	27,503	826	46,122	915	40,928
Grand Total	**41,030**	**1,311,860**	**35,997**	**2,157,009**	**36,265**	**3,142,212**	**37,355**	**2,565,990**

2.4.2 Imports of fish and fish products

As can be seen from Table 2.4 below, frozen fish, namely tuna, constituted the bulk of total imports for fish and fish products. Frozen tuna used as raw material for the IOT canning factory made up over 99% of total imports. However, in 2010, an 8% decrease in the import of frozen fish was recorded since nine purse seiners moved to the Atlantic Ocean due to the piracy threat in the Indian Ocean, resulting in less tuna being landed during the period from 2007 to 2010. Hence, less raw material available for production.

In 2010, the volume of fish and fish products imported decreased, whereas the value of imports increased (Table 2.4). Total volume imported in 2010 dropped by 8% from 71,245 MT in 2007 to 65,788 MT in 2010. A decreasing trend can be observed in the volume of imports from 2007 to 2010; 2009 being the exception, when a slight increase of 3%, compared to 2008, was recorded. However, the value of imports increased by 43% in 2010, from SR676 million in 2007, to SR965 million in 2010. This suggests a significant increase in the overseas price of frozen tuna which is our main import.

Table 2.4 Volume and value of fish and fish products imported, 2007-2010

	2007		2008		2009		2010	
	MT	SR,000	MT	SR,000	MT	SR,000	MT	SR,000
Fish, Fresh or Chilled	2	115	8	66	1	129	5	377
Fish, Frozen	71,005	659,659	68,327	1,043,648	70,203	1,084,062	65,607	948,230
Fish, Fillets and other fish meat	1	85	1	104	1	78	1	165
Fish, dried, salted or in brine	11	1,631	19	1,994	24	2,737	13	787
Molluscs and Crustaceans	219	14,147	190	17,510	253	31,990	158	15,140
Fish prepared and preserved	7	413	14	845	37	2,617	5	410
Total	**71,245**	**676,050**	**68,559**	**1,064,169**	**70,520**	**1,121,613**	**65,788**	**965,109**

2.5 Foreign Currency Flows

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

In 2010, a total of 33,328 MT of fish and fish products were produced locally, a 9% decrease from 2007. Imports also decreased in 2010 to 65,788 MT, a decrease of 8% from 2007. Total exports also decreased by 9%, from 41,030 MT in 2007 to 37,355 MT in 2010.

The gross value of exports in 2007 was SR1.31 billion whereas gross value of imports amounted to SR676 million. In 2010, total gross exports were valued at SR2.57 billion, a staggering 96% increase from 2007, whilst the gross value of imports of fish and fish products also increased by 43%, to SR965 million.

This translates into a gross balance of trade surplus in fish and fish products of SR1.6 billion in 2010, which represents a 152% increase from 2007. However, this balance of trade figure is a gross figure which only takes into account fish and fish products

imported, and, not other inputs required by the fishing industry which could imply a much lower net currency inflow.

Table 2.5 summarises the gross inflow of foreign exchange generated by the fisheries sector from 2007 to 2010 and its related activities.

Table 2.5 The gross inflow of foreign exchange generated by the fisheries sector, 2007-2010

	2007	2008	2009	2010	%Δ (2007-2010)
Visible Exports	1,311,860	2,157,009	3,142,212	2,565,990	96%
Revenue from Industrial Tuna Fishing	987,430	1,691,319	1,398,649	1,265,291	28%
Gross Inflow from Fisheries (a)	**2,299,290**	**3,848,328**	**4,540,861**	**3,831,281**	67%
Gross Inflow from Tourism (b)	**1,901,200**	**2,437,800**	**2,841,400**	**2,784,900**	46%
Current Account Receipts (c)	**6,229,900**	**9,888,200**	**12,291,100**	**10,627,800**	71%
Fisheries - (a) as % age of (c)	37%	39%	37%	36%	
Tourism - (b) as a % of (c)	31%	25%	23%	26%	

In 2010, the gross inflow from fisheries made up 36% of the current account receipts. This is a decrease of one percentage point from 2007. Although both the gross current account receipt as well as inflows from fisheries grew significantly in 2010, compared to 2007, the current account receipts grew by a slightly larger margin.

Official figures from the Central Bank of Seychelles indicate that from 2007 to 2010 gross earnings from fisheries and fisheries related activities surpassed gross earnings from tourism (see table 2.5). This further highlights the economic importance of the fisheries sector and its role in the development of the country.

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

In 2007, the total catch in the Western Indian Ocean by purse seiners licensed to fish inside the Seychelles EEZ was estimated at 245,670 MT compared to 389,935 MT in 2006, representing a drop of 37%. It should be pointed out however, that the purse seine tuna catch for 2007 was the lowest annual catch recorded over the last 10 years. The catch increased by 14% in 2008, to 278,956 MT and decreased slightly by 6% in 2009, to 262,719 MT. In 2010, the total catch was estimated at 272,244 MT, representing an increase of 6% from that of the previous year.

The fishing effort in 2007 was estimated to be 14,930 fishing days, only 3% higher than the 14,549 fishing days reported in 2006. The fishing effort then decreased from 13,223 fishing days in 2008 to 9,318 fishing days in 2010. It should be highlighted however, that the expansion in the area of operation of pirates from Somali in the South-West Indian Ocean forced some fishing vessels to leave the Indian Ocean, which in part accounts for the reduction in the fishing effort.

The average catch rate has however increased, from 16.45 MT/fishing day in 2007, to 29.97 MT/fishing day for 2010. Skipjack remained the dominant species caught by the purse seine fishery during the period from 2007 to 2010, ranging from 57% to 49% of the total catch. This was followed by yellowfin tuna with the total catch ranging from 37% to 40% (Table 3.1).

Table 3.1 Tuna catch statistics for the last ten years

	Total Catch	Catch Rate	Yellowfin		Skipjack		Others	
Year	**(MT)**	**MT/Day**	**Catch**	**%**	**Catch**	**%**	**Catch**	**%**
2001	299,957	21.70	111,877	37	165,492	55	22,588	8
2002	378,027	28.74	128,206	34	217,847	58	31,975	8
2003	408,366	34.87	197,782	48	189,566	46	21,018	5
2004	358,258	30.03	201,727	56	137,103	38	19,428	5
2005	389,256	29.16	176,322	45	190,053	49	22,882	6
2006	389,935	26.80	145,596	37	224,065	57	20,274	5
2007	245,670	16.45	92,034	37	132,238	54	21,399	9
2008	278,956	21.10	112,724	40	137,330	49	28,903	10
2009	262,719	24.02	84,821	32	150,420	57	27,478	10
2010	279,244	29.97	103,127	37	153,782	55	22,334	8

In term of catches by fleet, the Spanish and Seychelles' registered fleet recorded an increase in their total catch, from 2007 to 2010 whereas the French fleet recorded a decrease during the same period. The catch of the Spanish fleet increased from 112,249 MT in 2007 to 137,386 MT in 2010 whilst the catch by the Seychelles' registered fleet increased from 49,936 MT in 2007 to 75,787 MT in 2010. Total catch for the French fleet decreased from 69,387 MT to 47,102 MT for the period under review (Table 3.2).

Table 3.2 Tuna catch statistics by country of registration for 2007 to 2010

	2007			2008			2009			2010		
Country	**Catch (MT)**	**Effort**	**CPUE**	**Catch (MT)**	**Effort**	**CPUE**	**Catch (MT)**	**Effort**	**CPUE**	**Catch (MT)**	**Effort**	**CPUE**
Spain	112,249	5,973	18.79	121,522	4,812	25.25	106,286	3,814	27.86	137,386	3,879	35.42
France	69,387	4,918	14.11	75,131	4,254	17.66	57,763	2,762	20.91	47,102	2,132	22.10
Seychelles	49,936	3,156	15.82	56,382	2,698	20.89	68,339	2,432	28.10	75,787	2,323	32.63
Others*	14,098	883	15.97	25,921	1,458	17.78	30,330	1,928	15.73	18,969	985	19.26
Total	**245,670**	**14,930**	**16.45**	**278,956**	**13,223**	**21.10**	**262,719**	**10,936**	**24.02**	**279,244**	**9,318**	**29.97**

*** Others represent other countries and include Italy (2007-2010), Mayotte (2007-2010) and Thailand (2008-2010)**

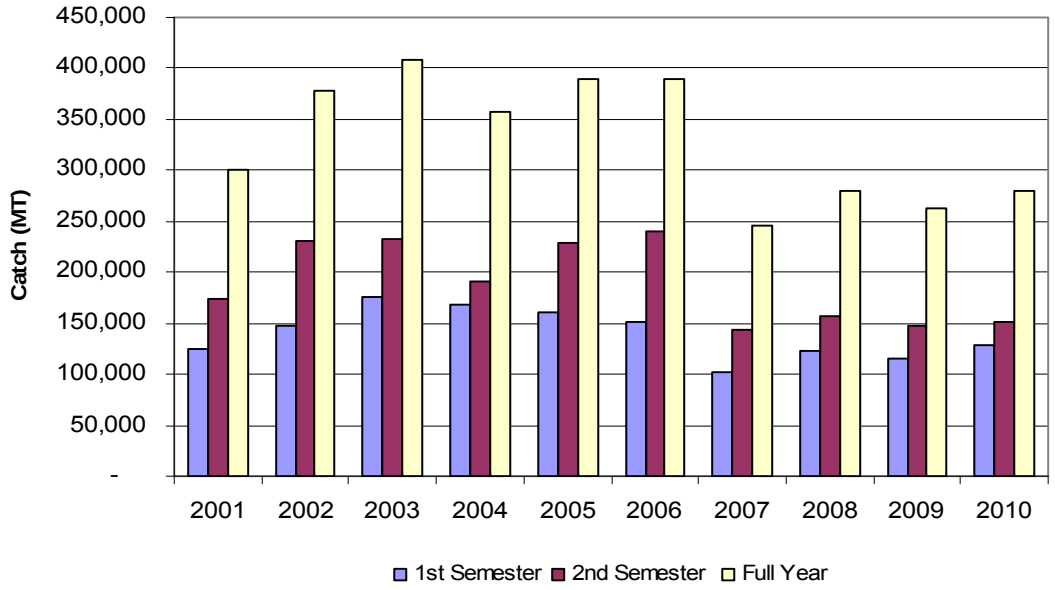

Figure 3.1 Total catch reported by purse seiners licensed to fish in Seychelles waters, from 2001 – 2010

Between 2004 and 2007, an increasing trend has been observed in the purse seine fishing effort whilst the CPUE showed a decreasing. This trend however, was reversed for both CPUE and fishing effort from 2007 to 2010. The CPUE increased from 16.45 MT/fishing day in 2007 to 29.97 MT/fishing day in 2010, whilst the fishing effort decreased from 14,930 fishing days in 2007 to 9,318 fishing days in 2010 (Figure 3.2).

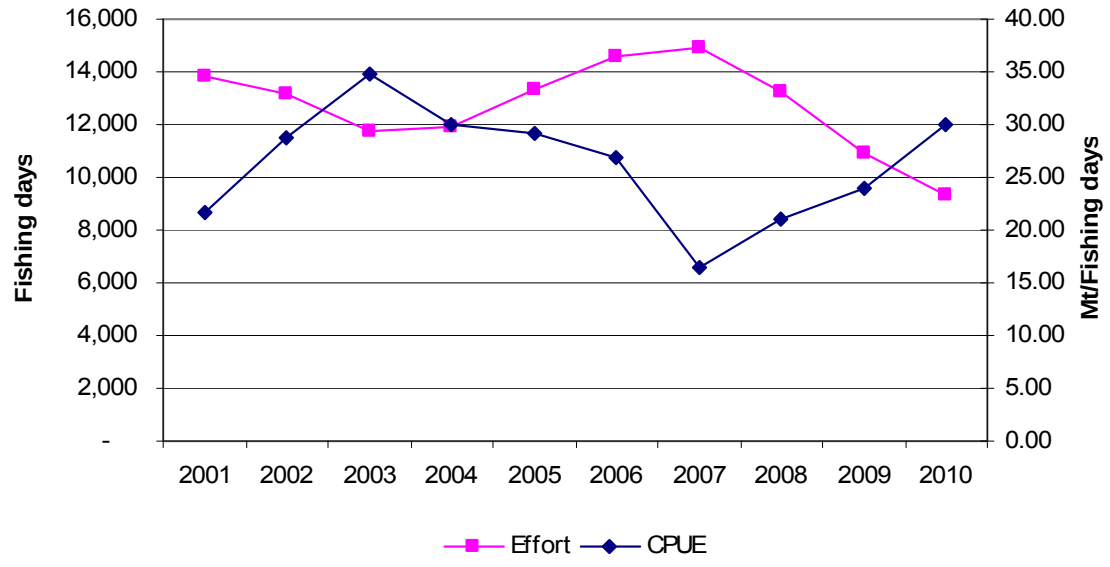

Figure 3.2 Total effort (fishing days) and catch rates (MT/fishing day) reported by purse seiners licensed to fish in the Seychelles waters, from 2001 – 2010

3.1.2 Fishing grounds exploited

Figures 3.3a to 3.3d show the distribution of catches reported by purse seiners (holding licences to operate in Seychelles waters) in the Western Indian Ocean by 1º square, from 2007 to 2010. The shift of fishing activities eastward, away from the Somali coast is clearly evident in 2008 and 2009. The situation was slightly reversed in 2010, most probably as a result of the deployment of armed security on purse seiners.

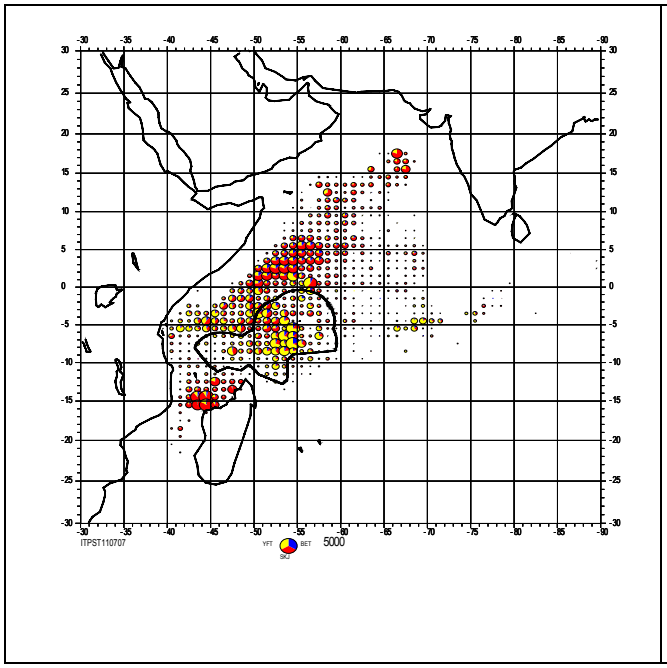

Figure 3.3a Purse Seine total catch by 1º square, 2007

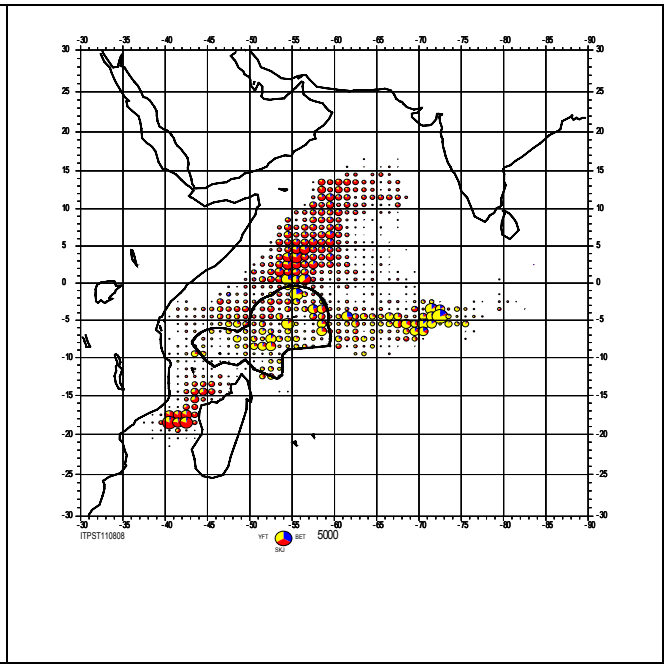

Figure 3.3b Purse Seine total catch by 1ºsquare, 2008

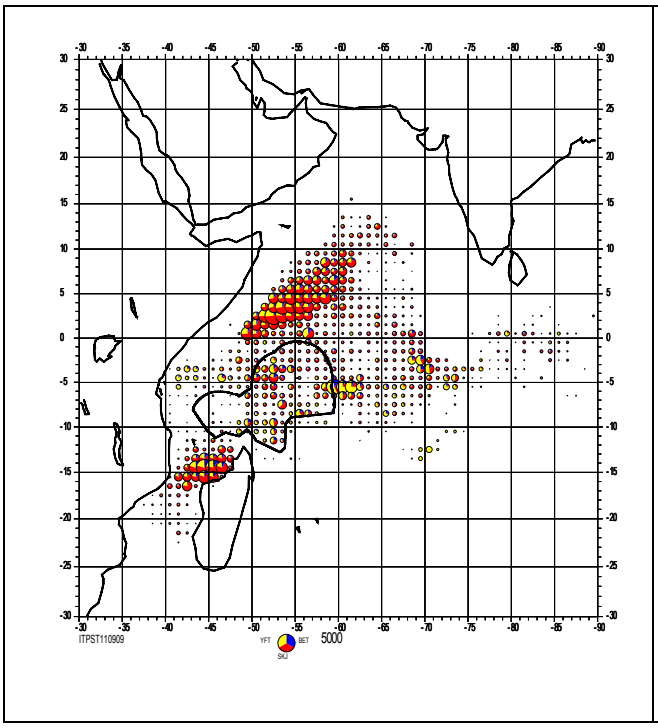

Figure 3.3c Purse Seine total catch by 1º square, 2009

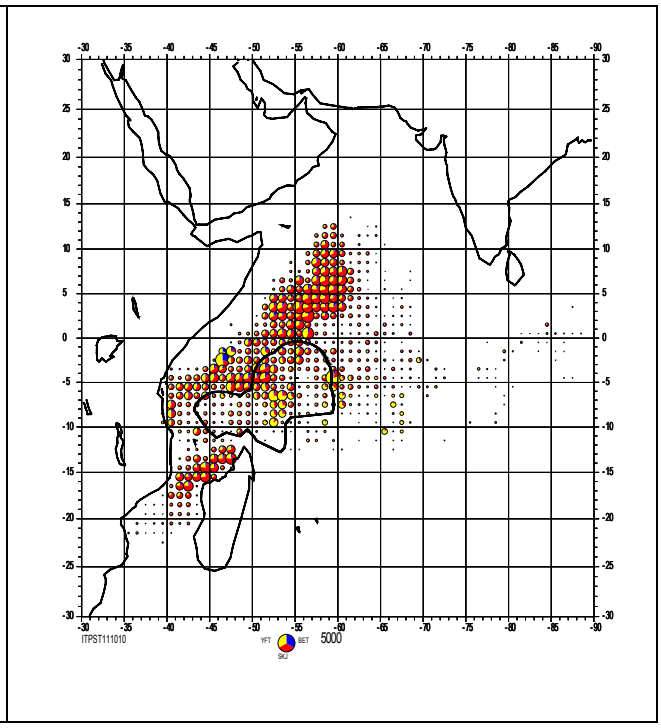

Figure 3.3d Purse Seine total catch by 1ºsquare, 2010

3.1.3 Transhipment and landings in Port Victoria

In 2007, a total of 221,752 MT of tuna was transhipped or landed in Port Victoria, representing 90% of the total tuna caught in the western Indian Ocean for that year (Table 3.3). In 2008, there was a slight increase of 12%, to 250,253 MT. For the following year, (2009) transhipment and landings dropped by 15% to 211, 594 MT. This is likely to be as a result of piracy activities in the northern part of the Indian Ocean, forcing vessels to tranship in ports further south.

In comparison to other regional ports used by purse seiners for transhipping, the total catch transhipped or landed in Diego Suarez increased from 15,035 MT in 2007, to 27,370 MT in 2010 (Table 3.4). Other ports in the region that recorded an increase in transhipment/landings from 2007 to 2010 were Port-Louis, (Mauritius) and Mombasa, (Kenya). In 2010, however, an 11% increase in transhipment and landings were recorded in Port Victoria.

Table 3.3 Transhipment and landings in Port Victoria by nationality, for 2007 and 2010 (MT)

Country	2007		2008		2009		2010	
	Transhipment/ Landings	% Of Catch*	Transhipment/ Landings	% Of Catch*	Transhipment/ Landings	% Of Catch*	Transhipment/ Landings	% Of Catch *
Spain	100,478	90	109,340	90	88,251	83	117,124	85
France	63,164	91	64,948	86	40,429	70	42,483	90
Italy	3,465	70	5,569	77	3,717	61	-	-
Mayotte	8,868	97	8,448	84	10,389	83	11,785	64
Seychelles	45,778	92	53,321	95	59,528	87	63,703	84
Thailand	-	-	8,628	100	9280	79	110	18
Total	**221,753**	**90**	**250,253**	**90**	**211,594**	**81**	**235,206**	**84**

*** Total tuna transhipped/ landed in Port Victoria by country as a percentage of their total catch**

Table 3.4 Transhipment and landings by ports for 2007 and 2010 (MT)

Ports	2007	2008	2009	2010
Diego Suarez	15,035	22,872	34,157	27,370
Maurice	4,757	4,483	11,214	11,339
Mombasa	4,126	1,348	3,327	4,832
Seychelles	221,753	250,253	211,594	235,206
Others	-	-	2,426	498

3.2 The Longline Fishery

This section summarises the activities of longliners licensed to operate inside the Seychelles EEZ for the years 2001 to 2010. Figures presented in this table for the years 2001 to 2009 may differ from previously published figures since the data has been revised as more logbooks have been received by SFA for these years.

Prior to 2003, the number of logbooks returned to SFA were very low (<50%). There has however, been a remarkable increase in the number of logbooks returns since 2003 (Table 3.5). It must be noted that longliners only report activities conducted within the

Seychelles EEZ, unless they are Seychelles registered vessels, which are required to report all of their fishing activities.

3.2.1 Fishing effort catches, fishing effort, catch rates and species composition

In 2007, the total catch reported by industrial longliners licensed to fish inside the Seychelles EEZ was estimated at 16,601 MT with a fishing effort of 40.8 million hooks, thus giving a mean catch rate of 0.41 MT/1000 hooks (Table 3.5). This figure represents a decrease of 8% in the total catch, corresponding to a decrease of 10% in the fishing effort when compared to the previous year. The total estimated catch continued to decrease from 11,806 MT in 2008 to 8,594 MT in 2010. Similarly, the fishing effort also decreased from 30.3 million hooks in 2008 to 22.2 million hooks in 2010. The mean catch rate fluctuated between 0.41 MT/1000 hooks and 0.37 MT/1000 hooks for the period under review.

In term of species composition, bigeye tuna remained the dominant species caught by industrial longliners during the period 2007 to 2010, ranging from 58% to 50% of the total catch, whilst the percentage of yellowfin tuna for the same period decreased from 25% of the total catch in 2007, to only 10% in 2010.

Table 3.5 Catch Statistics reported to the SFA for the last ten years

Year	Logbook returned (%)	Total catch (MT)	Fishing effort (Million hooks)	Catch Rate (MT/1000 hooks)	Yellowfin		Bigeye		Others*	
					Catch	%	Catch	%	Catch	%
2001	35	15,332	23.4	0.65	6,086	40	5,819	38	3,427	22
2002	42	17,481	28.7	0.61	5,499	31	7,837	45	4,145	24
2003	56	18,661	34.0	0.55	7,642	41	7,519	40	3,500	19
2004	71	24,432	46.6	0.52	9,451	39	11,695	48	3,286	13
2005	75	29,301	60.0	0.49	13,706	47	12,391	42	3,205	11
2006	82	18,096	45.1	0.40	6,562	36	8,614	48	2,920	16
2007	84	16,601	40.8	0.41	4,145	25	8,933	54	3,523	21
2008	84	11,806	30.3	0.39	1,833	16	6,832	58	3,141	27
2009	81	10,221	25.2	0.40	881	9	5,112	50	4,228	41
2010	84	8,594	22.2	0.39	840	10	4,603	53	3,150	37

*** Others mean other species which include mainly swordfish and other billfish (marlins, sailfish and sharks)**

During the period under review, the three major longline fishing fleet operating inside of the Seychelles EEZ, the Taiwanese, Japanese and Seychelles' registered fleet reported a significant decrease in both the catch and effort when compared to the previous years (Table 3.6). The decrease in fishing activity by the longline fleet may be linked to the decrease in the number licences issued to these vessels and could be linked to piracy activities in the region (especially the northern part of the western Indian Ocean which historically are important fishing grounds for the longline fleet).

Table 3.6a Catch statistics reported by country for 2007 and 2008

Country	2007			2008		
	Fishing Effort (Million Hooks)	Catch (MT)	Catch Rate (MT/1000 Hooks)	Fishing Effort (Million Hooks)	Catch (MT)	Catch Rate (MT/1000 Hooks)
Japan	11.24	4,476	0.40	8.99	2,649	0.29
Taiwan (ROC)	10.21	3,376	0.33	6.23	2,119	0.34
Seychelles	18.87	8,642	0.46	14.85	6,795	0.46
South Korea	0.27	59	0.22	-		-
China	0.18	48	0.27	0.19	48	0.25
Others	-		-	0.08	194	2.43
Total/Average	**40.76**	**16,601**	**0.41**	**30.34**	**11,806**	**0.39**

Table 3.6b Catch statistics reported by country for 2009 and 2010

Country	2009			2010		
	Fishing Effort (Million Hooks)	Catch (MT)	Catch Rate (MT/1000 Hooks)	Fishing Effort (Million Hooks)	Catch (MT)	Catch Rate (MT/1000 Hooks)
Japan	2.19	772	0.35	0.00		0.00
Taiwan (ROC)	2.53	942	0.37	4.32	1,831	0.42
Seychelles	19.87	8,323	0.42	17.62	6,659	0.38
South Korea	0.07	14	0.19	0.00		0.00
China	0.50	144	0.29	0.00		0.00
Others	0.08	27	0.32	0.23	103	0.46
Total/Average	**25.25**	**10,221**	**0.40**	**22.17**	**8,594**	**0.39**

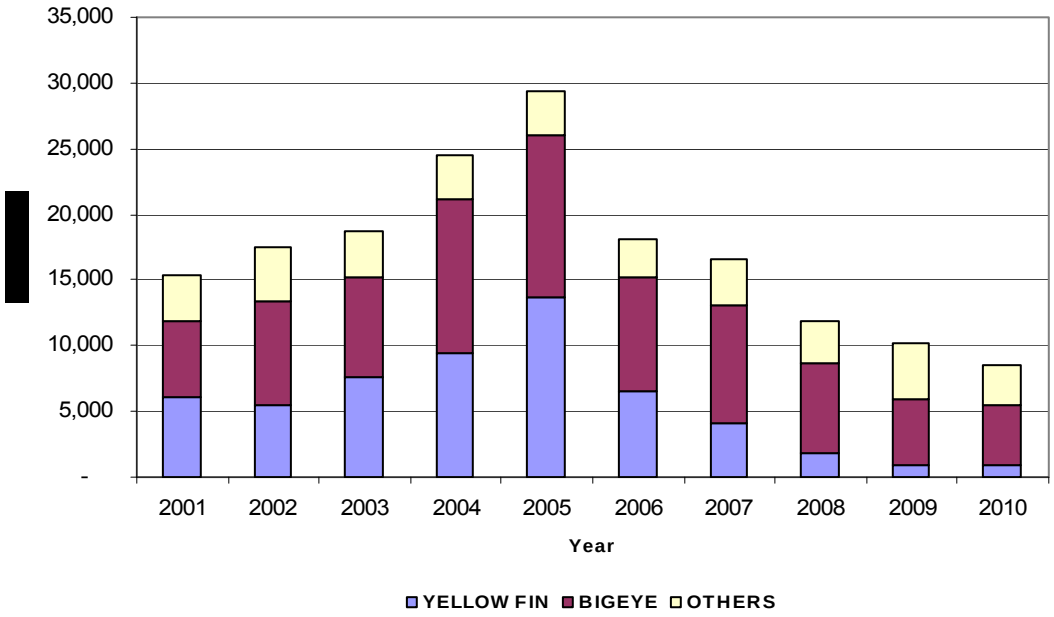

Figure 3.4 Total catch (MT) reported by longliners licensed to fish in Seychelles waters, from 2001 – 2010

Since 2001, the CPUE of longliners operating in Seychelles waters has showed a decreasing trend, whilst the fishing effort has increased. The fishing effort however, decreased sharply in 2006, from 60 million hooks in 2005 to 45 million hooks in 2006. The fishing effort continued to decrease to 22 million hooks in 2010 (Figure 3.5). Following a steady decline between 2001 and 2006, however, the overall CPUE remained more or less constant, ranging from 0.41 MT/1000 hooks to 0.39 MT/1000 hooks for the period 2007 to 2010.

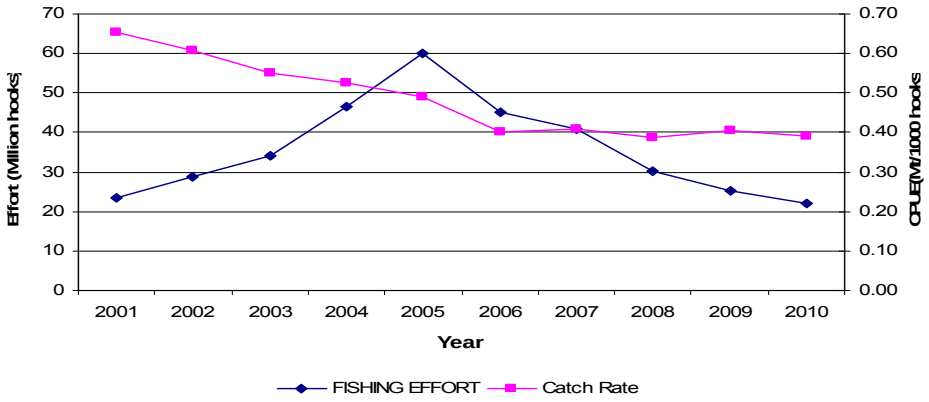

Figure 3.5 Total effort (fishing days) and catch rates (MT/1000 hooks) reported by longliners licensed to fish in the Seychelles waters, from 2001– 2010

3.2.2 Fishing grounds exploited

Figures 3.6a to 3.6d shows the distribution of catches by 1º square reported by longliners (holding licences to operate in Seychelles waters) in the Western Indian Ocean, from 2007 to 2010. The shift of fishing grounds southward and eastward is clearly evident in 2009, and, even more so in 2010.

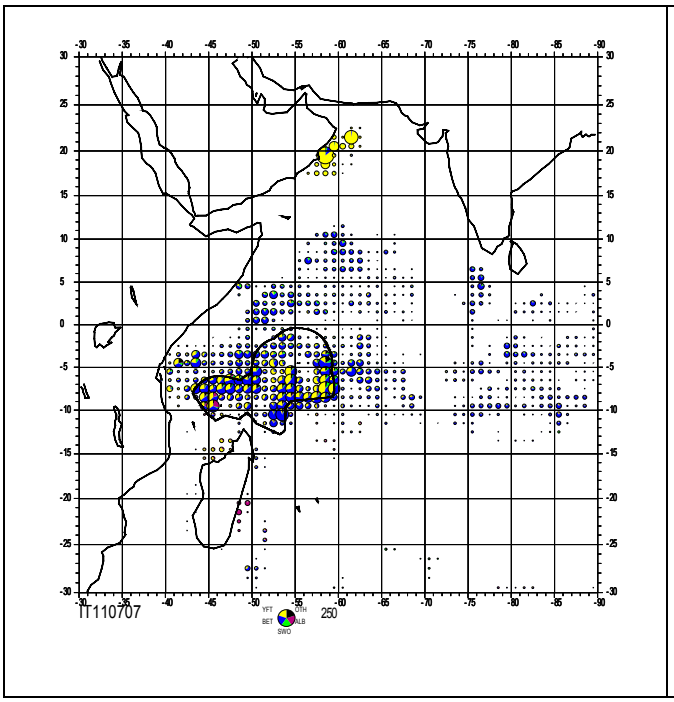

Figure 3.6a Distribution of catches reported by industrial longliners by 1º square, 2007

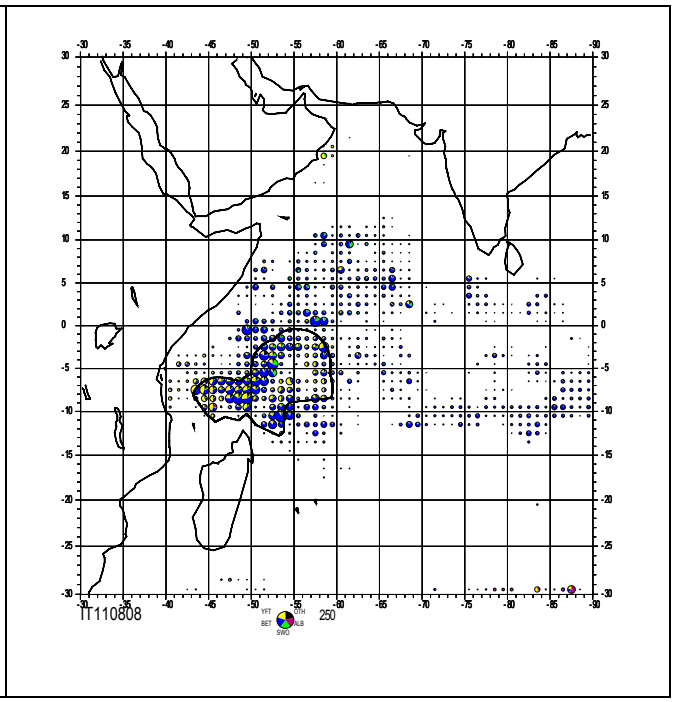

Figure 3.6b Distribution of catches reported by industrial longliners by 1º square, 2008

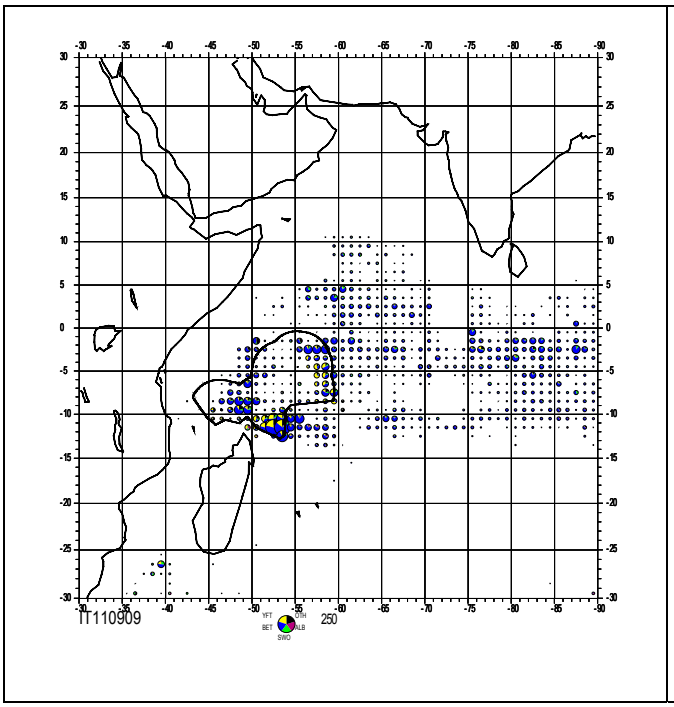

Figure 3.6c Distribution of catches reported by industrial longliners by 1º square, 2009

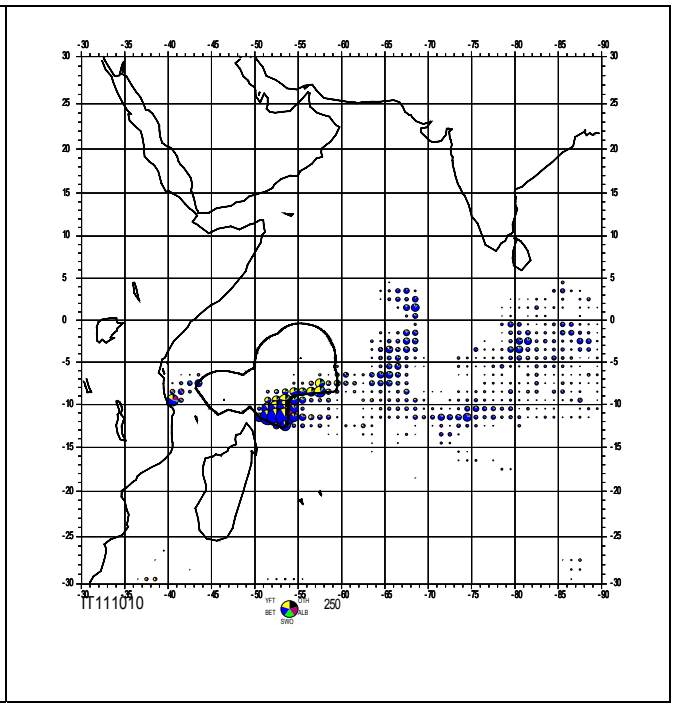

Figure 3.6d Distribution of catches reported by industrial longliners by 1º square, 2010

3.3 The Semi-Industrial Fishery

3.3.1 Vessels active and fishing effort

The number of local semi-industrial longline vessels fishing for tuna and swordfish has showed a declining trend since 2002. In 2007, four semi-industrial vessels conducted a total of 40 longlining fishing trips, (for tuna and swordfish) compared with 40 trips conducted by six local vessels in 2006. Similarly, at the beginning of 2008, only four vessels were active in the semi industrial longline fishery, which included two new vessels. In September 2008, the SFA reviewed the incentives provided to fishing vessels, particularly those targeting sharks, whereby, vessels landing sharks in excess of 15% of the total catch on a particular trip, would not qualify to receive concessions on fuel. As a result of this new regulation, three vessels switched from shark fishing to target swordfish and tuna. Hence, during 2008, seven semi-industrial vessels conducted a total of 71

longlining trips (for tuna and swordfish). The number of vessels active and fishing trips continued to increase to 9 and 107 respectively by 2010.

The fishing effort (number of hooks) decreased by only 2%, from 196,181 hooks in 2006 to 192,271 hooks in 2007, (Figure 3.7) but, increased sharply to 506,334 hooks in 2010.

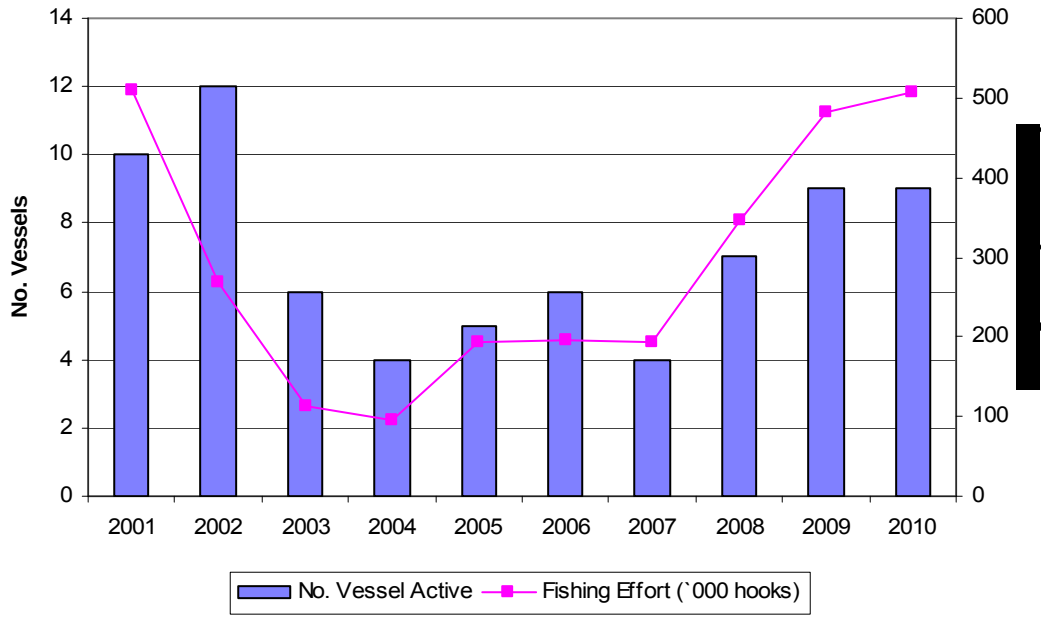

Figure 3.7 Trend in the number of vessels and fishing effort from 2001 – 2010

3.3.2 Total catch and catch rates

The total catch by the local semi-industrial fleet for 2007 was estimated at 248.5 MT, compared to 232.8 MT in 2006 (Table 3.7). The total catch decreased slightly by 6% in 2008 then increased by 41% in 2009 to 329 MT. In 2010, the total catch was estimated at 294.8 MT, representing a decrease of 10% over the previous year.

The catch rate for 2007 was estimated at 1.29 MT/1000 hooks compared to 1.12 MT/1000 hooks for 2006 (Figure 3.8). As from 2007, the CPUE declined, with 0.68 MT/1000 hooks for both 2008 and 2009 and 0.58 MT/1000 hooks in 2010. The CPUE recorded in 2010 was the lowest since the beginning of the commercial fishery in 1995.

Similarly, the overall CPUE for swordfish decreased from 0.58 MT/1000 hooks in 2007 to 0.37 MT/1000 hooks in 2010. Yellowfin tuna and bigeye tuna also recorded a decrease in CPUE for the same period.

It should be pointed out that the piracy has also impacted the local semi-industrial fishery, whereby fishers had to move away from their usual fishing grounds in the northern part of the EEZ to find new fishing grounds in the south. This could have contributed to the declined CPUE.

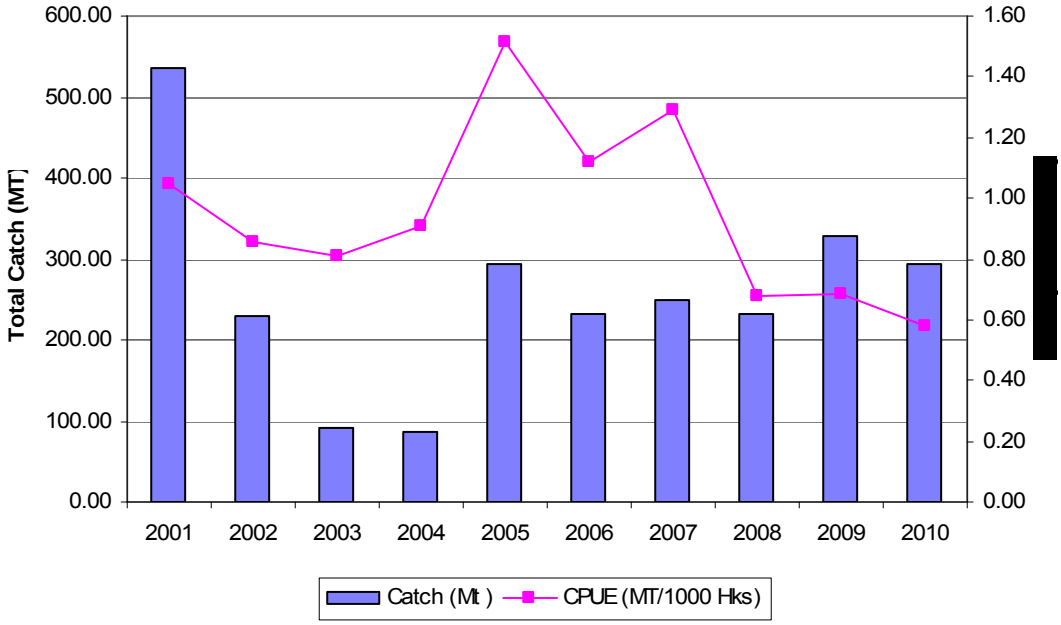

Figure 3.8 Total landed catch and catch rates reported since the beginning of the fishery

3.3.3 Species composition

The species composition reported for the period 2001 to 2010 is given in table 3.7. In 2007, for the first time since the beginning of the fishery, tuna (bigeye and yellowfin) dominated the catch accounting for 51% (125 MT) of the total catch, whilst swordfish (111MT) accounted for 45% of the total catch (Table 3.7). The same pattern occurred in

2008, with tuna accounting for 44% of the catch and swordfish accounting for 42% of the total catch. In 2009 and 2010, swordfish regained its position as the dominant species caught by the semi-industrial fishery.

Table 3.7 Species composition of the total catch (MT) reported from 2001 to 2010

Year	Swordfish	Yellowfin	Bigeye	Sailfish	Marlin	Shark	Others	Total
2001	270.18	96.28	57.56	21.42	12.10	71.30	6.75	**535.60**
2002	135.12	41.94	24.08	7.56	3.92	14.79	2.92	**230.34**
2003	65.51	13.13	11.44	0.43	0.28	0.07	0.00	**90.87**
2004	71.06	7.43	7.24	0.65	0.40	3.21	0.19	**90.16**
2005	168.00	49.83	55.83	5.11	1.95	11.68	1.79	**294.19**
2006	107.88	40.06	47.72	3.32	2.34	31.10	0.36	**232.79**
2007	111.10	70.17	55.45	2.59	1.91	4.62	2.72	**248.54**
2008	97.86	43.69	58.61	7.22	3.23	22.17	0.56	**233.33**
2009	169.90	67.71	59.16	14.52	5.34	11.64	0.74	**329.02**
2010	185.66	57.87	26.13	4.90	11.82	6.28	2.12	**294.79**

3.3.4 Shark fishing activities

In 2007, six vessels conducted a total of 60 fishing trips targeting sharks. Only a small proportion of the total catch however, was landed as shark meat, with a significant percentage of the catch finned and the carcasses discarded at sea, because of the low commercial value of shark meat.

During the first nine months of 2008, five semi-industrial longline vessels continued to target sharks. However, during the last quarter of the year (following the revision of the concessions on fuel), three of those vessels switched to targeting tuna and swordfish, and one vessel stopped fishing. In 2009, only one vessel targeted shark but later switched to targeting swordfish and tuna. Hence in 2010, no vessels were involved in the shark fishery (Table 3.8).

The total volume of shark meat and fins landed also decreased, from 20.4 MT of meat and 18.6 MT of fins in 2007, to 1.8 MT of meat and 0.9 MT of fins in 2009 (Table 3.8).

The main species of the sharks caught in this fishery are blue shark (*Prionace glauca*), oceanic whitetip shark (*Carcharinus longimanus*), silky shark (*Carcharinus faciformis*), mako shark (*Isurus oxyrinchus*), and tiger shark (*Galeocerdo cuvieri*).

Table 3.8 Shark fisheries statistic 2004 to 2009

Year	Trips	% Logbook Return	%Landing Return	Shark meat (MT)	Shark Fins(MT)	No. vessels active
2004	59	88	100	29.4	11.2	9
2005	79	97	100	17.8	16.5	10
2006	75	100	100	12.3	16.9	8
2007	60	100	100	20.4	18.6	6
2008	37	100	100	21.0	9.3	5
2009	4	100	100	1.8	0.9	1

4. ARTISANAL FISHERY

4.1 Catch Assessment Survey (CAS)

The Catch Assessment Survey (CAS) was implemented in 1985. This section of the Report reviews the performance of the major artisanal fisheries for the period from 2007 to 2010 and summarizes the important trends. The total artisanal catch increased by 14% from 4,181 MT in 2007 to 4777 MT in 2008. In 2009, there was a remarkable decrease of 37% in the total artisanal catch, to 3019 MT. In 2010, the annual artisanal catch continued to decrease, by a further 14%, to reach 2595 MT, representing the lowest catch recorded since 1985 (Figure 4.1). The average catch for the period 2007 to 2010 was 718 MT lower than the long term (26-years) average annual catch of 4,361 MT. The decline in the artisanal catch during the past two years is partly due to a reduction in the fishing effort (Figure 4.2).

From 2008 to 2010, in terms of fishing effort, the harpoon, handline and net fishery recorded a decrease of 62%, 29% and 28% respectively. The other factor contributing toward the decline in the catch is the effect of the Somali piracy activities operating inside of the Seychelles EEZ. Due to the piracy activity and the fear of attacks, fishers have reduced the frequency and length of their fishing trips. Concerning the artisanal catch landed on Mahe and on Praslin/La Digue, the average catch for Mahe was 3017 MT and 627 MT for Praslin/.La Digue, for the period under review.

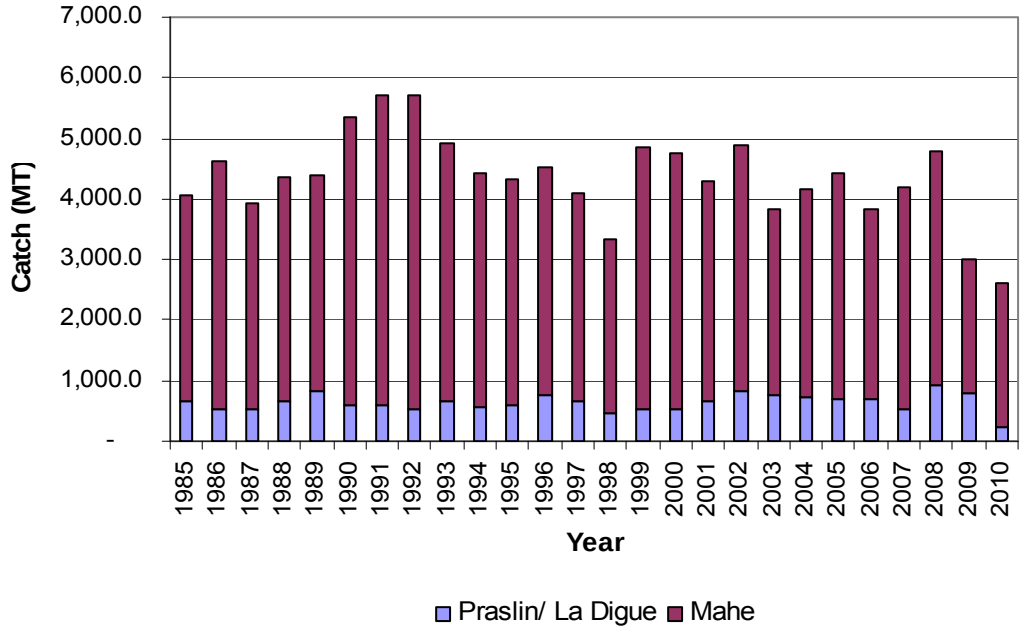

Figure 4.1 Total artisanal fishery catch (MT) on Mahe and Praslin/La Digue, 1985-2010

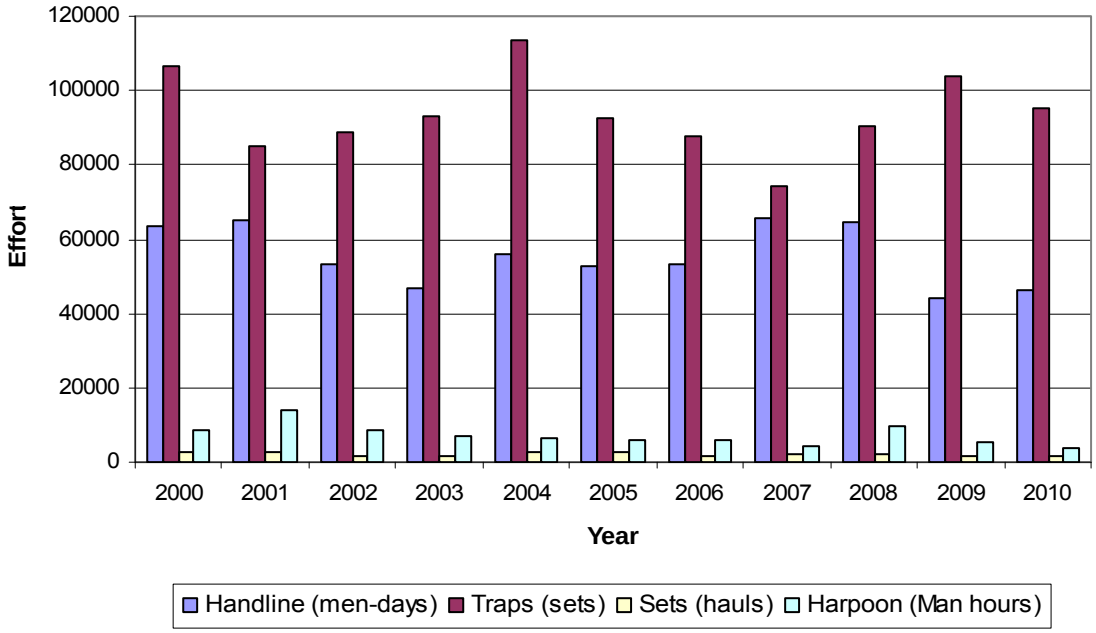

Figure 4.2 Fishing effort by the major types of gear for the period 2000-2010

As determined from the mean monthly estimate of the number of vessels in operation, (whereby the maximum value is used as an indicator of fleet activity for the year), the fishing effort of whalers and outboard vessels increased over the period 2007 to 2009,

then decreased slightly in 2010 whilst fishing effort for pirogues decreased during the same period. The fishing effort for schooners increased from 2005 to 2009 then remained stable during 2010. There were no logbook returns for the Sport fishery for the period under review, ruling out any estimates of the number of vessels engaged in that fishery (Table 4.1).

Table 4.1 Maximum mean monthly number of fishing vessels in operation 2005 – 2010

Vessel Type	2005	2006	2007	2008	2009	2010
Pirogue*	30	27	22	19	19	16
Outboard*	234	242	243	293	324	316
Whaler	83	94	105	107	113	105
Schooner	18	26	22	22	27	27
Sport	**	**	**	**	**	**
Dropline	2	4	5	3	2	1

***Includes part time fishing vessels. ** Data not available due to lack of logbook returns**

The distribution of the total artisanal catch by vessel category was typical of long-term trends, with whalers dominating catches, followed by outboards and schooners (Table 4.2).

Table 4.2 Percentage of annual catch landed by major types of vessels, 2005 – 2010 (including fishers on foot)

Boat Type	2005	2006	2007	2008	2009	2010
Pirogue	1.5	2.1	0.7	0.6	1.1	0.7
Outboard	35	28.2	24.9	25.4	37.5	33.8
Whalers	52	56.8	63.4	64.3	47.5	47.8
Schooners	10.7	11.4	9.3	8.9	13.3	17.1
Foot fishers	0.7	0	0.3	0.8	0.6	0.5
Dropline vessels	0.1	0.6	1.4	0	0	0
Research vessels	0.1	0.1	0.1	0	0	0

In term of species composition, red snapper (*Lutjanus spp*) and trevally (*Caranx spp*.) were the two species group dominating the catch during the period from 2007 to 2010 (Table 4.3). Catches of emperor red snapper (bourgeois) decreased from 1237 MT in

2007 to 561 MT in 2010, whereas catches of trevally (carangues) decreased from 783 MT in 2007 to 675 MT in 2010. Catches of jobfish also decreased from 658 MT in 2007 to 354 MT in 2010 whilst the catch of rabbit fish (cordonier) increased from 215 MT to 255 MT (Table 4.3).

Table 4.3 Species composition (%) of the artisanal catch, 2005 - 2010

Species Group		Percentage (%) of the total annual catch					
English/Scientific	**Kreol**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Trevally (*Caranx* spp.)	Karang	24.1	19.9	19	25.8	17.9	26.2
Red snapper (*Lutjanus* spp.)	Bourzwa, Bordomar	24.7	26.7	29.5	22.0	20.4	21.6
Jobfish (*Aprion virescens*)	Zob gri	10.9	15.5	15.8	15.8	16.9	13.6
Emperors (*Lethrinus* spp.)	Kaptenn	4.9	4.4	4.6	7.2	7.2	3.7
Bonito (*Euthynnus affinis*)	Bonit	1.9	1.9	1.9	3.1	5.0	1.8
Groupers (*Epinephelus* spp.)	Vyey	2.0	3.2	3.8	3.2	2.7	3.0
Rabbitfish (*Siganus* spp.)	Kordonnyen	5.3	7.2	5.1	4.0	7.3	9.8
Mackerel (*Rastrelliger* sp.)	Makro dou	14.2	4.8	7.5	6.1	2.9	6.7
Others		12	16.4	12.8	12.8	19.7	13.6
Total annual catch (MT)		**4433.3**	**3845.0**	**4181.4**	**4777.1**	**3019.1**	**2595.4**

4.2 Lobster Fishery

The annual lobster fishing season opened from December 2007 to March 2008. An analysis of the catch indicated a sharp drop in landings with estimates of 3.89 MT reported for the 2007/2008 season, compared with 5.58 MT for the previous season. A total of 20 licences were granted; 13 for Mahe, five for Praslin and two for La Digue. Most lobsters were captured by snorkelling (96.5%), while catches from traps accounted for only 3.5% of the total catch.

Based on logbook submissions, a total of 321 trips were undertaken during the 2007/2008 season, compared to 218 trips undertaken for the previous season. The estimated Catch Per Unit Effort (CPUE) was 12.1kg/trip, which was considerably lower than the 25.6 kg/ trip for the previous season. Typical of previous seasons, the catch composition of lobsters was dominated by pronghorn spiny lobster *(Panulirus penicillatus)*, which accounted for 61.5% of the total catch, followed by long-legged spiny lobster *(Panulirus longipes)* with 33.8%.

As a precautionary measure, the SFA and Ministry of Environment and Natural Resources (MENR) decided to close the lobster fishing season for the next two consecutive fishing seasons i.e. the 2008/2009 & 2009/2010 seasons.

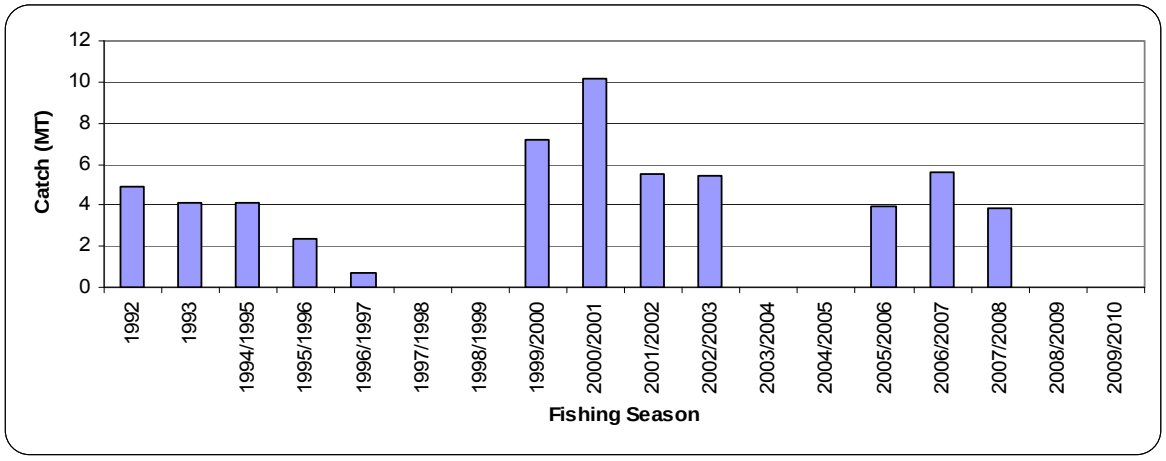

Table 4.4 Total lobster catch per season from 1992 to the 2009/2010 season

4.3 Sea Cucumber Fishery

The rapid development of the sea cucumber fishery in recent years is mainly due to the sharp increase in demand, and, consequently the higher prices being paid for this resource on the Asian as well as the local markets. Fishers target mainly three species of sea cucumber i.e. teat fish (black teatfish, white teatfish and pentard), which fetches the highest prices on the market.

The number of sea cucumbers harvested annually has increased significantly (Table 4.5) from 330,658 units in 2007 to 530,909 units in 2010, representing an increase of 61%. The most significant increase was for the species pentard, of which 181,657 units were harvested in 2007 and 306,525 units in 2010, an increase of 69%. Given the increase in fishing pressure observed over the past six years, there is an urgent need to undertake a stock assessment of the sea cucumber resource, and, based on the results of the study, current management measures should be reviewed. Management issues regarding the sea cucumber will be covered in the fisheries management section of this report.

Table 4.5 Number of sea cucumbers harvested for the years 2005 - 2010

Year	Black Teat	Sandfish	White Teat	Prickly Red	Pentard	Others	Total
2005	9,232	92	36,822	13,727	65,660	85,237	210,770
2006	10,371	2047	39,361	15,873	165,002	106,138	338,792
2007	7,868	433	57,812	19,674	181,657	63,214	330,658
2008	5,687	1,842	57,084	21,272	155,674	24,650	266,209
2009	6,230	303	134,978	44,885	290,285	13,950	490,631
2010	31,434	1639	125,472	35,470	306,525	30,369	530,909

5. AQUACULTURE

5.1 Prawns Farming

According to the Seychelles Marketing Board (SMB) (Figure 5.1), 360.0 MT of prawns were produced in 2007. This represents a sharp decrease of 48.9% from the production for 2006. Production figures in 2008 showed a further decrease to 289 MT, which represents a reduction of 78.5%. The last prawn production figures available was for 2008, as the farm has since closed down and all farming operations have ceased.

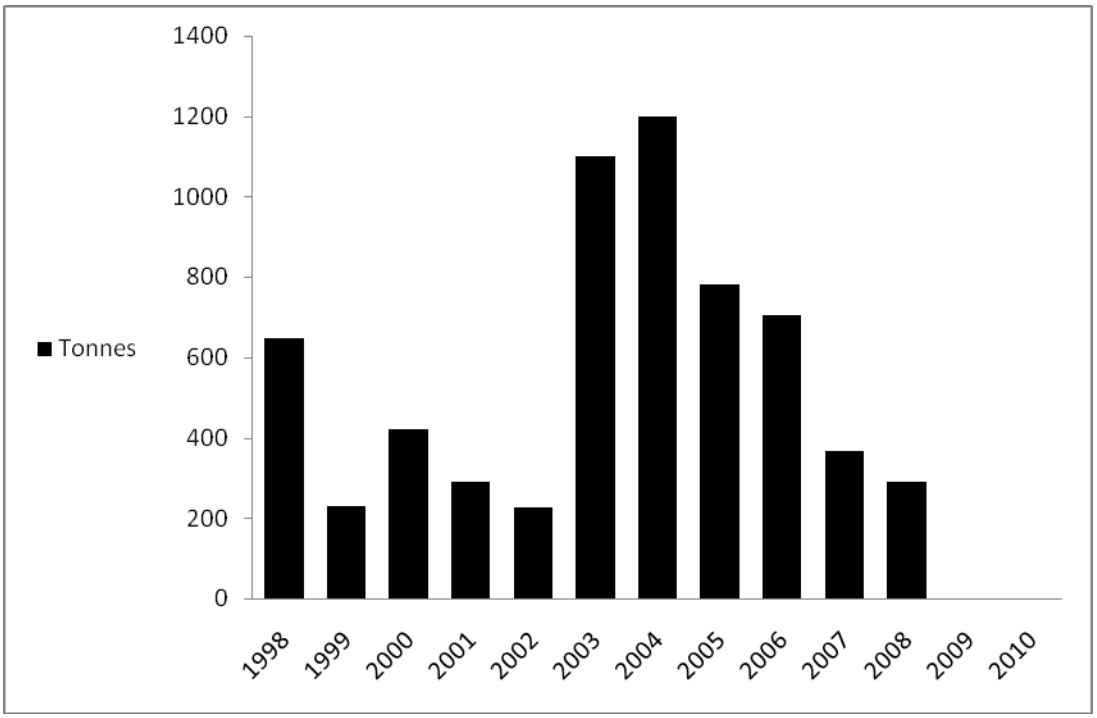

Figure 5.1 Prawns production from 1998 to 2010

5.2 Giant Clam and Pearl Oyster Culture

Production figures from 2007 to 2010 are not available, although the farm is currently still in operation. The farm has been facing difficulties with keeping up production due to high loss of pearl oysters on the grow-out lines. With the recent economic crisis, sales of

both pearl oysters and giant clams may have been impacted to some extent, although this assumption may need to be verified with updated data.

Figure 5.2 Raceway pond with giant clam culture, Black Pearl Seychelles, Praslin

Production of the aquaculture sector has slowed down since 2007. The government however, recognizes the importance of aquaculture worldwide, and, believes that it has an excellent potential in Seychelles to relieve pressure on capture fisheries and ensuring food security for the future. A scoping study was carried out in early 2009, which showed that significant potential existed for the development of aquaculture in Seychelles. The final conclusion of the study was the recommendation to formulate a Mariculture Master Plan for Seychelles, in order to set a framework in which the sector could grow in a more sustainable manner. The project is on-going and should provide both investors and the government with decisive information on the potential for mariculture development in Seychelles.

6. RESEARCH PROJECTS

6.1 Fisheries & Marine Ecosystem Research

The years from 2007 to 2010 were a busy and productive period for fisheries and marine research at SFA. Numerous national, regional and international research projects were successfully implemented, yielding significant data for management of marine resources and ecosystems in Seychelles. This section provides a brief overview of the status of these projects and their significant research findings.

6.2 SEYSHA: From Behavioural Ecology, to Spatial Management for the Conservation of Sharks in the Seychelles (SEYSHA)

The SEYSHA research project which was initiated in January 2010, addressed much needed research on shark population in the Seychelles as highlighted by the National Plan of Action for the Conservation and Management of Sharks (NPOA-sharks, 2007). This three years project funded by the IRD (Institût de Recherche pour le Développement) consists of using biotelemetry (acoustic receivers and tags) to study the behavioural ecology of sharks, i.e. their movements, home range and critical habitats. The objective is to improve our knowledge of the behavioural ecology of some coastal shark species in the Seychelles, and combined with other results obtained from similar research studies, would be used to decide if spatial management should be implemented, and its design requirements. The project also has the objective of building the capacity for Seychellois scientists from SFA and SNPA, (Seychelles National Park Authority) in the use of biotelemetry (including internal tagging of animals, deployment and use of acoustic receivers and data analysis) to investigate the behaviour of marine animals.

Sharks will be caught in coastal waters mainly using hook and line and will, include juveniles caught in nursery grounds during the breeding season. Acoustic transmitters will be surgically implanted *in situ* in their abdominal cavity while the sharks are

maintained in a state of tonic immobility. The shark will later be released alive and the acoustic signals will be captured by the network of acoustic receivers.

The initial phase of the project (Year 1, 2010) consisted of gathering knowledge from different stakeholders (mainly artisanal shark fishers and dive operators). This was essential to identify potential species and sites for the studies as well as identifying conflicts between any stakeholders which the project could assist in resolving. Secondly, tests were conducted on the detection ranges of the acoustic equipment as this may be influenced by the level of background noise which varies according to locations.

The project which is ongoing, will tag 25 sharks of various species (tiger, grey reef, lemon, white tip and black tip sharks) mainly at Anse à la Mouche (an area where shark is often targeted) and Baie Ternay Marine Park (a Marine Protected Area) as well at some hotspots such as Marianne Island. The deployment of Acoustic listening stations (VR2) and tagging of sharks is expected to begin in early 2011.

6.3 South West Indian Ocean Fisheries Project (SWIOFP) and Agulhas-Somali Current Large Marine Ecosystem (ASCLME) Programme

SWIOFP focuses on transboundary fisheries resources, including migratory fish and straddling fish stocks, and, aims to promote the sustainable utilisation of those resources through the adoption of an Ecosystem Approach to Fisheries (EAF) in the Agulhas and Somali Current Large Marine Ecosystems (LMEs). The development of this regional fisheries project involving nine countries of the South West Indian Ocean was initiated in 2002. However, it took a further six years for the project to become operational (the end of 2008) and for member states to have access to the necessary funding. Unfortunately, this coincided with the sharp increase in piracy activities in the region thus causing the project to be delayed further. Seychelles being seriously affected by piracy, the only offshore research activity that has since been undertaken was a multi-disciplinary ecosystem survey by the R/V Dr. Fridtjof Nansen. This survey which was carried in

November 2008 on the Mascarene and Seychelles plateau, as part of the wider LME program, involved the participation of two SFA staff.

Although SFA was unable to conduct offshore research in the Seychelles EEZ, it continued to participate in several other aspects of SWIOFP activities during 2009 and 2010, particularly in the, development of regional bibliographic and fisheries databases, training of scientific observers training in fish stock assessment and the development of fisheries management plans. Moreover, the Regional Coordinator for the Pelagic Fisheries Component of SWIOFP, has been active in coordinating research and training activities for the other participating countries and Seychelles.

SFA has been able to conduct SWIOFP coastal research on colonisation and fish biodiversity around deep and shallow water anchored Fish Aggregating Devices (FADs) in collaboration with other projects, notably BIOPS (see section 6.11). Four FAD's were deployed in the Amirants in 2009 to conduct scientific research looking at colonization by medium-size pelagic fish species such as tuna, dorado, kingfish, rainbow-runner etc. The development of fisheries on anchored FADs in the South West Indian Ocean is one of several objectives of this program and it is expected that FAD's for commercial fishing will be deployed in the future. SWIOFP is primarily funded by the Global Environment Facility (GEF) and it is implemented through the World Bank and member states.

6.4 Mitigating ADverse Ecological Impacts of Open Ocean Pelagic Fisheries (MADE)

Activities under the MADE project began in 2008 with a kick-off meeting in Genoa, Italy. This international project involves 13 research institutes from eight countries of the Mediterranean Sea, Atlantic and Indian oceans. It is funded by the European Commission's Seventh Framework Programme. The main goals of the project are threefold: to gain appropriate knowledge of the biology and ecology of by-catch species; to propose measures to mitigate adverse impacts of fisheries targeting large pelagic fish in the open ocean (purse seiners using FADs and longliners); and to assess the ways in

which FADs are believed to have impacted upon the ecology and behaviour of tropical tuna and other marine species.

As with SWIOFP, research activities in the Indian Ocean were severely curtailed by the threat of piracy and MADE has had to adapt and modify its original plans. Nevertheless, there has been good progress in all of the main activities, including: behavioural and biological studies on sharks and juvenile swordfish; behavioural studies on other drifting FAD associated species; development of ecological baits and drifting FADs; evaluation of by-catch handling protocols; identification of by-catch hotspots; and experimental longline configurations to reduce by-catch of sharks and juvenile swordfish.

6.5 WIOMSA MASMA Project: Incorporating Reef Fish Spawning Aggregations into Optimal Designs for no-take Fishery Reserves

SFA has been very successful in obtaining competitive research grants from the Western Indian Ocean Marine Science Association (WIOMSA). The first research grant SFA obtained from the Marine Science for Management (MASMA) Programme of WIOMSA was to support research on spawning aggregation-based fisheries in Seychelles between 2003 and 2006. In 2008, SFA was successful in obtaining a further MASMA grant (US$200,000), this time to lead a team of institutions from Kenya and Zanzibar in research focused on providing the necessary data and tools for the assessment and management of spawning aggregation-based fisheries in the region.

Field work for the project was carried out in all of the three countries in 2009 and 2010, with monitoring of *Siganus sutor* (‘kordonnyen blan’), *Epinephelus fuscoguttatus* (‘vyey goni’) and *Epinephelus polyphekadion* (‘vyey masata’) spawning aggregations, using acoustic technology and underwater visual census. An indicator framework for assessing the vulnerability of aggregation-based fisheries was developed and tested, as was a model for predicting the effects of management measures, including no-take reserves. The work on *Siganus sutor* is being implemented in collaboration with the Praslin Fishers

Association to support the ongoing project by UNDP, SFA and the Praslin Fishers Association in developing a co-management plan for the Praslin inshore fisheries. The MASMA project is also supporting the PhD studies of a Seychellois student, Mr. Jude Bijoux.

6.6 WIOMSA MASMA Project: An Economic Valuation of Coastal and Marine Ecosystem Services in the WIO to identify specific beneficiaries, and the role of Marine Protected Areas (MPAs) in ensuring that these services are sustained

SFA partnered with research teams from Kenya, Tanzania and Madagascar on another project that gained a MASMA grant in 2008. This project aims at understanding the value of goods and services provided by coastal marine ecosystems in the Western Indian Ocean. In addition, it specifically addressed the role of Marine Protected Areas in preserving these coastal ecosystems' goods and services. With fish production constituting one of the main goods provided by these ecosystems in the region, much of the field work in Seychelles involved in-depth interviews with fishers. The first interview-based survey was conducted in 2008, with a follow up survey planned for 2011. The main findings from the 2008 study indicated that a mixture of policy instruments is necessary for the management of Seychelles' inshore fisheries. This would include the establishment of community based institutions and social policy instruments designed to build trust and encourage accountability and monitoring, characteristics that were likely to improve social and conservation values associated with the fishery. The findings of this study are therefore highly relevant to the ongoing project by UNDP, SFA and the Praslin Fishers Association for the development of a co-management plan for the Praslin inshore fisheries.

6.7 WIOMSA MASMA Project: The Spatial Behaviour of Artisanal Fishers. Implications for Fisheries Management & Development

SFA collaborated with an international research team on a third MASMA-funded project between 2008 and 2010. The objective of this study was to use a range of methods to understand the various factors that influence the spatial behaviour of artisanal fishers in Seychelles and Kenya and to investigate evidence for perceived or realized spill over benefits to fishers from Marine Protected Areas. During 2009 and 2010, the project conducted structured interview-based surveys and participatory fishing effort for conducting mapping and catch monitoring surveys in Seychelles and Kenya. Field studies will continue into 2011 and the resulting data will be analysed to yield information on spatial behaviour, factors affecting fisher's decision-making and spatial patterns for fisheries in areas both inside the MPAs' boundaries and adjacent to it.

The project were seeking answers about how fishers distribute their fishing effort over a fishing ground and how it can affect the ecological impact and the economic performance of fisheries. This distribution can be influenced by a number of social, economic, and institutional factors such as technology, management, and fishers' knowledge. Many fisheries development and management interventions invariably alter the spatial distribution of fishing effort. Success of interventions such as protected areas and attempts to encourage fishing effort to move offshore, often rest on largely untested assumptions about fishers' spatial behaviour and their willingness or ability to change it. Thus, understanding spatial distribution of fishing effort is increasingly recognised as an important tool for fisheries management. However, the spatial behaviour of fishers is poorly understood, especially for artisanal fisheries in developing countries. The vast majority of research into fishers' spatial behaviour has been conducted for large-scale fisheries, which are able to make use of large volumes of data obtained through vessel monitoring systems that are frequently installed on many industrial fishing vessels. In developing countries, however, these vessel monitoring systems are not used and little empirical work has been carried out to explore fishers' spatial behaviour.

This project accomplished the following activities:

1. Reviewed the extent to which the spatial behaviour of fishers has been evaluated.
2. Examined the distribution of fishing effort for artisanal fishers in Kenya.
3. Explored how fishers chose their fishing sites in Kenya and Seychelles.
4. Examined displacement of fishing effort in Kenya and Seychelles.
5. Examined evidence for spill over of catch from marine reserves.

6.8 OFCF Bait Fishing and Value Addition Project

In 2007, the Seychelles Fishing Authority in collaboration with the Overseas Fisheries Cooperation Foundation of Japan (OFCF) initiated two research projects. The first one was to investigate the feasibility for catching small pelagic species using small scale purse seines in certain areas on the Mahe plateau and the second was the development and promotion of seafood value-added products.

The main objective of catching small pelagic fishes is to maintain an adequate supply of bait on the local market to be used by local fishers. The project was implemented in different stages beginning with the fitting of a local vessel (M/V "Sans-Soucis", chartered from Marine Resource Investment Seychelles - MIR) with the necessary fishing gears. This was followed with the construction of the purse seine net. Fishing trials at sea together with crew training started in January 2009 and continued for 3 months. The initial trials were very successful with large quantities of targeted species such as mackerels (i.e. Indian mackerel and bigeye scad), caught. Other bycatch species such as mawann (*decapterus spp*), makro kannal (fusillers), sardine ordiner (spotted *sardinella*) and other bait species were also caught. Those species are highly appreciated by both local fishers and the general public and used both as bait and for consumption.

The commercial phase of the project was initiated in July 2009 when MIR through an arrangement with SFA agreed to continue with the implementation of the project. All

fishing equipment was handed over to MIR and commercial fishing operations proceeded as planned. However, due to various technical and operational constraints (including damaged gears and the sad loss at sea of the SFA counterpart) the project remained dormant throughout 2010. Steps are presently being taken for SFA to request further technical assistance from the OFCF-Japan to revive this project which is of vital importance to the fisheries sector.

The development of seafood value-added products is one approach taken to increase the revenue generated by the fishing sector. The project will study the market requirements and assist in the development of new products of improved market value so as to promote the manufacturing of high quality products for the semi-industrial fishing sector. This project will also find ways to utilize by-catch /under-utilised fish species that often goes to waste.

In early 2009, a product development laboratory with modern food processing facilities was constructed through financial and technical assistance from the OFCF- Japan. This was followed by a nine months on the job training for an SFA technician, provided by a Japanese sea food expert. The project focused on fish species that are seasonally abundant such as carangue and mackerel as well as less common species such as bonito, sharks etc. Fish products such as fish burgers, fish fillets in batter, fish croquettes, squid buns, fish sticks, fish sausages and fish kebabs were produced and sold to the general public during public fairs such as the National day celebration and the WHO world food day. The feedback from the general public was very positive. The expertise was also passed on to the local communities through the SEnPA (Small Enterprise Promotion Agency) cottage industry initiatives, whereby some members and staff of this agency received training in the production of value-added sea food products at a small scale level, i.e. at home.

6.9 Indian Ocean Swordfish Stock Structure (IOSSS)

Swordfish has traditionally been fished by longliners from distant water fishing nations, but in the past 15 years some coastal countries in the region (Mauritius, Reunion and Seychelles) have developed their own fishing fleet to exploit this resource. Recognising that there was a lack of biological data (age, sex ratio, gonad maturity stages) to carry out accurate stock assessments and the potential for local depletion, especially in the South-West Indian Ocean, the IOTC recommended that priority should be given to the collection of more biological data so as to determine the stock structure of the swordfish in the Indian Ocean.

During 2009 and 2010 SFA collaborated with IFREMER and other regional partners on a regional program (Indian Ocean Swordfish Stock Structure, IOSSS), to gain improved knowledge of the biology of swordfish stocks in the Indian Ocean. The study carried out research on the growth, reproduction and genetics of swordfish. In March 2009, three scientists from IFREMER came to the Seychelles and provided training to six local technicians on - ***Otolith extraction, - Sex identification and determination of maturity stages of gonads*** and **– *Onboard data collection protocol***. However, it has not been possible to place observers on the commercial longliners during 2009 and 2010 due to security concerns (the piracy threat). SFA collaborated with longline skippers and vessels owners to collect gonad samples at sea and conducted port sampling during landings to collect genetic samples as well as other data. Analysis of the collected data is expected to be carried out in 2011.

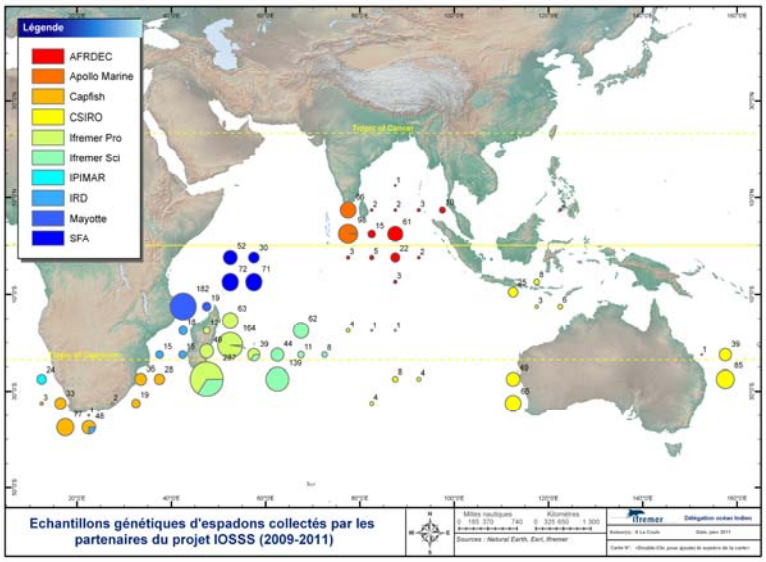

Figure 6.1 Genetic Samples collected by different partners of the IOSSS project

6.10 Hydrodynamic Modelling of Larval Dispersal from Spawning Aggregation Sites

This project was funded by UNESCO under a capacity building programme for the region. SFA developed a 3-dimensional hydrodynamic model to determine the influence of oceans on larval distribution from two verified spawning aggregation sites for *Siganus sutor* ('kordonnyen blan'). Larvae were modelled as passive particles using a tracer. Wind velocity was important in determining larval dispersal during the months of April and September. The general dispersal patterns obtained showed that connectivity between the two spawning sites in both months and the larvae merged to produce a single larva dispersal envelope. Larvae dispersal from these spawning sites was confined to the northern part of the model area, supplying suitable juvenile and adult habitat on three fringing reef systems off the islands of Cousin, Cousine and Praslin, the former being located within a no-take reserve zone.

The study supports the theory that the spawning sites are critical for the maintenance of *S. sutor* populations, which is a primary target species for the inshore trap fishery over large areas of the fringing reef system to the south and southwest of Praslin. The results are

being used for the development of a co-management plan for the Praslin small-scale fishery. During 2012 SFA intends to replicate this work for other known spawning aggregation sites and spawning months.

6.11 BIOdiversité des milieux PélagiqueS marins de l'océan Indien (BIOPS)

This project was funded by the Institût Français de la Biodiversité (IFB) and IRD, in collaboration with SFA, Albion Fisheries Research Centre (Mauritus), the Marine Research Centre of Seychelles, and the Maldives. It aims to study open ocean patterns in pelagic fish biodiversity using a range of novel approaches. Using existing data from longline observer data and stomach content analysis and new datasets derived from underwater visual census (UVC) and survey data taken from deep water anchored FADs. This project will undertake a multi-indicator assessment of biodiversity and an analysis of how biodiversity is structured by physical and biological processes. In 2008, deep water FADs were anchored by SFA near D'Arros and Desroches islands, in order to complement the FAD networks in the Maldives and Mauritius. Underwater Visual Surveys of the developing fish communities around these FADs were initiated in 2009, led by an MSc student from Rhodes University in South Africa. The project is ongoing and will run from 2008 to 2011.

6.12 Recovery Dynamics of Inner Seychelles Coral and Fish Communities

Local scientists from SFA and the Seychelles National Parks Authority have continued their collaboration with an international team of scientists, lead by Dr. Nicholas Graham from Newcastle University (UK), on a regional study of the impact of the 1998 mass coral bleaching event on reef fish communities and fisheries. Based on sites first surveyed by SFA and Newcastle University (Dr. Simon Jennings) in 1994, and, on continued monitoring of highly replicated sites spanning over 21 locations, the scientific knowledge obtained from this project is improving our understanding of the recovery processes of the

inner Seychelles reef system. In April 2008, the team spent several weeks in Seychelles conducting surveys. The expedition included studies on the impact of Marine Protected Areas (MPAs) on the sea cucumber resource.

6.13 African Monitoring of Environment for Sustainable Development (AMESD)

AMESD is a project that has the objective of helping African countries improve the management of their natural resources by providing remote sensing equipment and data. For the countries of the Indian Ocean, the theme is 'coastal and marine management and environmental data (e.g. sea surface temperature, ocean colour) which is monitored by satellite and is freely disseminated to participating countries. These data will be used to: (1) Observe oceanic processes and analyse their role in fisheries productivity, (2) Monitor and control fishing activities, and (3) combine with physical oceanographic data for the management of maritime risks.

SFA was nominated as the national focal point for this project and the organisation will receive the equipment and tools for remote sensing, including a satellite dish and computers to receive and process the data. The project also includes a training component. More information on the project can be obtained by visiting the website: http://www.amesd.org/.

6.14 Ocean Data and Information Network for AFRICA (ODINAFRICA)

The ODINAFRICA project has the objective of promoting the sustainable management of marine and coastal resources through information, data and product sharing and is currently in its fourth phase. The objectives of this phase are to strengthen the National Oceanographic Data Centres (NODC) and marine related institutions. To contribute to this project, SFA aims to develop an online National Marine Atlas and an E-Repository. The Marine Atlas will allow users to create their own maps from fisheries and marine

ecosystem-related data available in Seychelles, while the E-Repository provides online access to related publications, reports and books.

6.15 Fisheries and Marine Environmental Projects for Seychelles Second National Communication to the United Nations Framework Convention on Climate Change

SFA led national and international teams on the two projects funded in the fisheries and marine environmental sector. The first project, '***Socio-economic Impacts of Climate Variability on Seychelles Tuna Industry***', modelled the effects of climate oscillations such as El Nino on the tuna-dependent economy of Seychelles. The model predicted a 40% decline in tuna landings and transhipment in Port Victoria, a value commensurate with that the strong El Nino phenomenon observed in 1998. This resulted in a 34% loss for the local economy solely through reductions in expenditures associated with this activity. The Indian Oscillation Index, one of the indices that track the development of El Nino, accurately predicted the probability of switching between low and high regimes of landings and transhipment, which translates into economic impacts for the national economy. The effects of fishing and climate change on tuna fisheries are complex and pose significant challenges for fisheries management and the economic development of coastal countries in the Indian Ocean.

The second project, '***Establishment of the Seychelles Ocean Temperature Monitoring Network***' established a collaboration network between public, private and NGO organisations in Seychelles for monitoring and sharing of ocean temperature data. The network had 16 members by 2010 and had deployed over 49 temperature loggers within Seychelles; 37 around the Inner Islands, ten in the Amirantes and two at the Farquhar Atoll. The temperature data will be used to provide information for studies of coral reef ecology and monitor and predicts possible bleaching events.

6.16 Research Projects Impacted by Piracy

6.16.1 Fishing trials for deep water shrimps

Fishing trials were conducted during 2006 and the results were very positive, although catches were never substantial and heavy loss of gear was experienced. Given the interest from the private sector to venture into such fishing operations, the SFA had planned to undertake further trials in 2010 and the traps were improved with more suitable materials. However, the outbreak of piracy in the Western Indian Ocean in 2009 resulted in postponement of the trials. To date, no further fishing trials have been undertaken.

6.16.2 Trials for deep water snappers

Fishing pressure on the deepwater snappers is expected to increase as the snapper stocks from shallower waters are depleted. While the SFA has previously assessed the stocks of kalkal (*Pristipomoides filamentosus*) in certain areas of the Seychelles EEZ, the stocks of deep water snappers mainly *Etelis spp* (*Etelis carbunculus* and *Etelis coruscan)* in waters deeper than 150 m, have never been studied. In 2008, the SFA initiated drop-line research cruises to carry out a survey of the stocks of deep water snappers and estimate the biomass and yields of *Etelis spp.* on the drop-offs and deep water banks such as Fortune Bank, Bar Espagnol and Correira Banks. In addition, otoliths were to be collected from all *Etelis* spp for future analysis so as to estimate growth parameters. The results obtained were very encouraging with good catches of the ruby snapper (*Etelis carbunculus*). Other species caught were mainly from the serranidae family,and included such species as “vyey plat bordaz”, “tioffe” (*Epinephelus morrhua*) and “vyey makonde” (*Epinephelus chlorostigma*). More research cruises were necessary in order to establish biomass estimates. However, with the upsurge of piracy in 2009, it was judged to be too risky to pursue such research activities.

6.16.3 Longline fishing

Between 2006 and 2008, the Seychelles Fishing Authority in collaboration with scientists from IRD (Institût de Recherche pour le Développement) and with the support from the French Ministry for Foreign Affairs, implemented a research project as part of the development of the local monofilament longline fishery. The aim of this project was to improve the knowledge of the habitat of longline targeted species (swordfish, bigeye tuna and yellowfin tuna) in the Seychelles EEZ. Results of this research project would have allowed fishers to target different species depending on the market, the fishing seasons and the fishing grounds. At the same time, the project was also looking at ways and means of mitigating depredation from cetaceans in the semi-industrial longline fishery, mainly from short finned pilot whale (*Globicephala macrorhynchus*) and false killer whale (*Pseudorca crassidens*). Again, the threat posed by piracy did not permit SFA to pursue these research activities.

7. FISHERIES DEVELOPMENT

7.1 Credit Facilities to the Fisheries Sector

Table 7.1 summarizes the number of loans granted for the fisheries sector and their total value. The number of loans and the value of these loans only include loans taken from the Development Bank of Seychelles (DBS) and the Concessionary Credit Agency (CCA) since no information was received from the Commercial Banks.

Table 7.1 Number and Value of Loans Approved by DBS and CCA

	2007			2008			2009			2010		
	CCA	DBS	Total	CCA	DBS	Total	CCA	DBS	Total	CCA	DBS	Total
Number of loans approved	24	12	36	11	17	28	18	15	33	25	24	49
Values of loans approved (SRM)	1,020	1,373	2,393	421	1,860	2,281	2,222	3,350	5,572	2,655	6,560	9,185

Figures 7.1 (a) and 7.1 (b) illustrates the number of loans and their respective value that were granted between 2007 and 2010. As from 2008, a trend has been observed whereby the total number of loans granted by the DBS and YES/CCA and their value increased by 36% and 287% respectively in 2010, as compared to 2007.

The figures from Table 7.1 show that the number of loans granted by DBS had doubled from 12 in 2007 to 24 in 2010, and, the value of the loans had increased from SR1.4m in 2007 to SR6.5m in 2010, corresponding to a rise 376%. This increase could be the result of the lower interest rate of 8.5% offered in 2010, compared to an interest rate of 17% in 2009 (a decrease of 50%) making the cost of borrowing more attractive for most individuals.

After Seychelles implemented the economic reform programme and had to float its currency in 2008, the cost of living increased drastically as the Rupee depreciated. As seen in the figures above, from 2008 to 2010, both the number and value of loans from

CCA increased sharply, by 127% and 531% respectively. This could be as a result of individuals trying to find additional income to supplement their normal earning.

The depreciation of the Rupee could also explain the increase in the total value of loans in 2010, from SR2.4 million in 2007 to SR9.2 million in 2010, a rise of 284%, as more money was now needed to buy or repair boats and equipment.

The increase in the amount and value of loans granted by both DBS and CCA has encouraged more investment in the fisheries sector. This will contribute to increasing the economic strength as well as the macro-economic activity of the sector. Moreover, these investments will contribute to retaining wealth in the country through value-added activities in the fisheries sector.

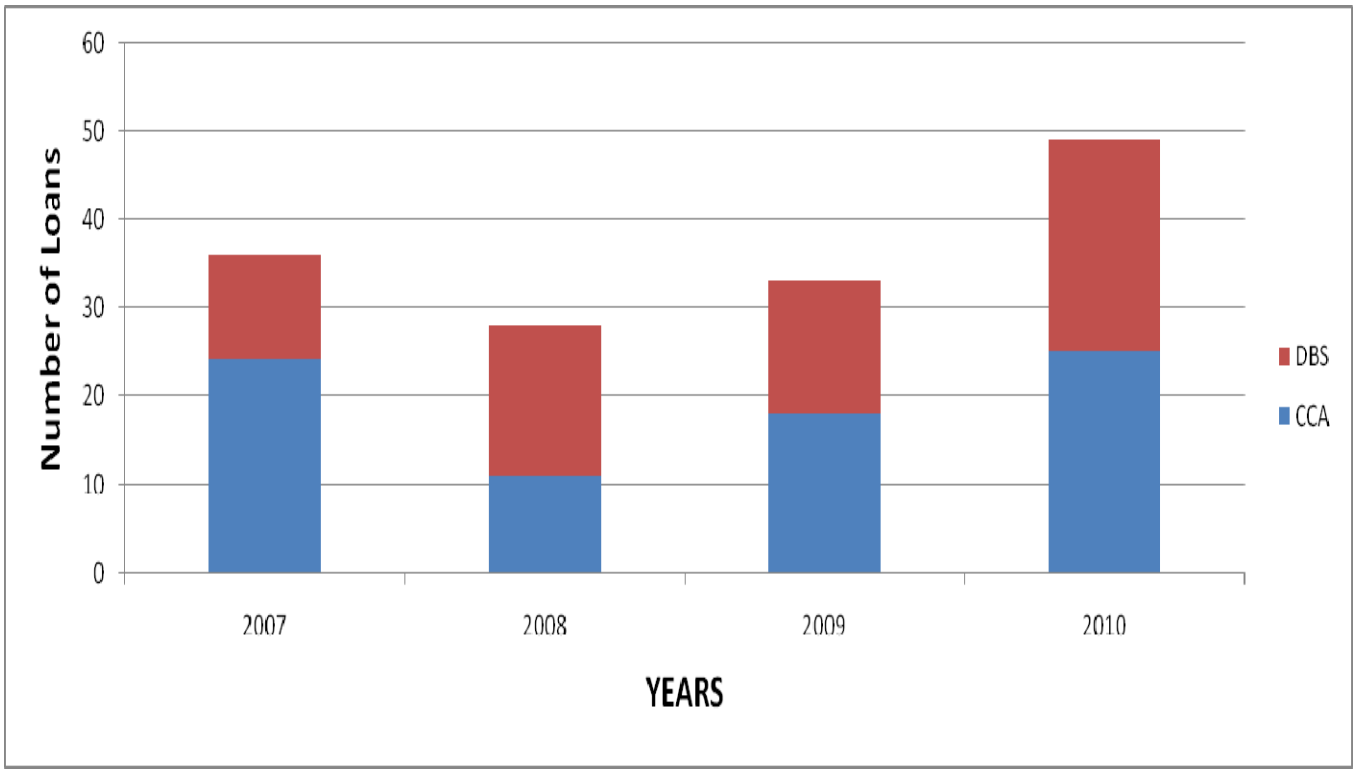

Figure 7.1a Number of loans granted by DBS and CCA 2007 – 2010

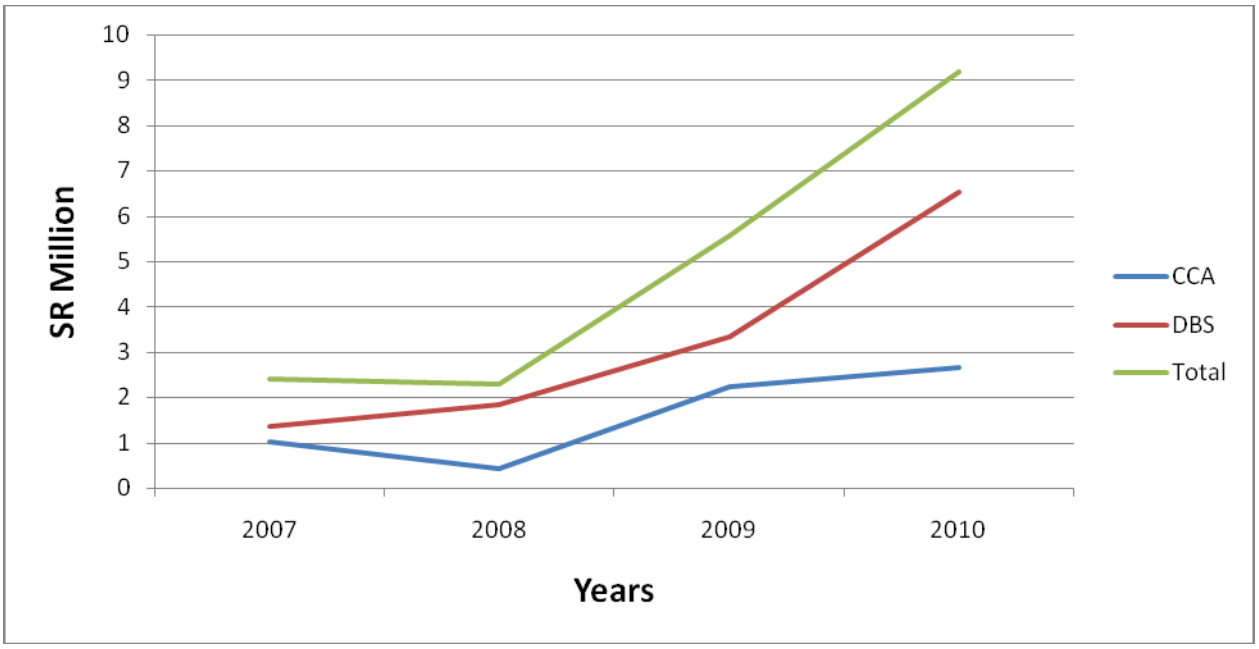

Figure 7.1b Value of loans granted by DBS and CCA 2007-2010

7.2 Fisheries Incentives

7.2.1 Introduction

Since the enactment of the Agriculture and Fisheries Incentive Act (AFIA) in 2005, the number of fisheries related activities recorded by SFA has increased. Under the Act, registered fishers, boat owners, fisheries processors and/or exporters have benefitted from the various concessions/incentives. These include: concessions on fuel, trades tax, GST, exemptions on imports, business tax rebates, exemption on social security payment, concessions on Gainful Occupation Permit (GOP), and payments from the "Sickness Benefit Scheme".

The Act has also benefitted SFA as it has provided the means of keeping track and recording the number of active full time fishers and boat owners and their contact details. Not only does this provide a better control of access to the fishery with improved management of fisheries resources, but it also implements a framework which facilitates the monitoring and enforcement of fisheries regulations.

7.2.2 Registration

As can be seen from Table 7.2 below, there has been a continuous decline in the number of new boat owners that have registered from 2007 to 2010. In 2010, there were only 48 new registrations, a decline of 56% from 2007, when there were 109 new registrations. According to SFA's record, there were a total of 660 boat owners registered in 2010.

The number of new fishers who registered also followed the same downward trend from 2007 to 2009, with a slight increase in 2010. In 2007 however, there were 128 new fishers who registered, compared to, only 86 who registered in 2010, representing a 33% decrease. By the end of 2010, there was a total of 919 fishers who had registered at SFA.

Table 7.2 Number of new registrations under AFIA

	2007	**2008**	**2009**	**2010**
Boat Owners	109	92	49	48
Fishers	128	79	66	86
Companies	2	9	1	2
Total	**239**	**180**	**116**	**136**

As can be seen from Table 7.2 above, the number of new companies registered at SFA remained fairly low with the exception of 2008, when nine new companies were registered.

7.2.3 GST and trade tax exemptions

The number of applications received under the AFIA for GST and trades tax exemptions on imported materials increased between 2007 and 2009, when it peaked at 226 applications. In 2010, the number of applications decreased to 180; however, this still represented an increase of 23% from the 146 applications received in 2007. In 2010, the CIF value of applications increased by 52% to SR23.4 million as compared to SR15.4

million in 2007. This could be as a result of a change in the composition of imported items, with individuals purchasing items of greater value.

Table 7.3 No. of applications and CIF value for concession under the AFIA

	2007	2008	2009	2010
No. of Applications	146	187	226	180
CIF VALUE (SR M)	15.4	8.5	20.8	23.4

The increase in the number of applications received, as well as the increase in their CIF value in 2009, could be as a result of the increase in the number of loans granted during the same period. Hence, individuals had access to more funds for importing goods. The depreciation of the rupee at the end of 2008 could also have contributed to a rise in the CIF value.

For the period from 2007 to 2010, there was an increase in both the CIF value and the number of applications; 2008 being an exception. The CIF value decreased by 45% from SR15.4 million in 2007, to SR8.5 million in 2008, despite an increase of 25% in the number of applications.

Applications were received from individuals as well as companies that were processing and exporting fish and other related products. The various applications were made for different items including engines, commercial vehicles, equipment and spare parts.

7.3 Importation of YAMAHA Marine Engines

In 2007, due to the foreign exchange constraints there was an acute shortage of inboard and outboard engines on the local market, posing a serious problem to the local fishing industry. Moreover, the frequency of engine breakdowns and lack of spare parts aggravated the situation. In October 2007, Government took an important decision to import YAMAHA outboard engines, valued at US$330,000. These engines, which

consisted of 102 units of 40 HP, 50 units of 25Hp, 16 units of 15 HP and 10 units of 8 HP, were sold only to registered fishers.

The demand for these engines was so high that within two months after they had been imported, over 50% of the stock had been sold.

The 35 units of YAMAHA inboard engines however, which had been ordered in October 2008, only arrived in the country in March 2009. These engines consisted of the following models: twenty, 4-cylinder engines of 95 BHP, ten, 2-cylinder engines of 40 BHP, and five, 2-cylinder engines of 29 BHP. Again, due to very high demand, the engines were sold out in short delay.

7.4 Fuel Refund Claims

Prior to November 2008, when a fuel refund claim was introduced, a voucher system had been in place. Fishing boats in the artisanal fisheries sector were issued with fuel vouchers corresponding to the fuel consumed and depending on the boat and engine horse power and the distance they operated from their base.

As from November 2008, when the new system was introduced, claims were received, processed and payments to fishers executed within an average delay of four working days. There were also cases of fraudulent activity when fishers were requested to justify their claims, thus delaying the refund process. It is important to note that in many instances when claims could not be justified, payments were not executed. Table 7.4 below gives an indication of the number of claims received and processed and the amount of funds disbursed from 2008 to 2010.

Table 7.4 Fuel claims for 2008-2010

	2008	2009	2010	**TOTAL**
Fuel Claims Processed	1,119	6,134	5,649	**12,902**
Fund Disbursed (SR)	3,284,891	20,719,788.00	23,410,217.00	**47,414,896.00**

7.5 Ice Plants

To date, the Seychelles Fishing Authority owns five ice plants. The daily production capacity of the ice plants are as follows: Baie Ste Anne Praslin, (constructed in 1991), four tonnes; Anse Royale, (constructed in 2000), five tonnes; Anse à La Mouche, (constructed in 1995), two tonnes; Zone 6 Providence and Bel Ombre (both constructed in 2010), ten tonnes and five tonnes respectively. All the ice plants produce plate ice and registered fishers are given priority over the general public when purchasing ice. Moreover, ice is subsidised for registered fishers who pay SR30/bag of 50 kg compared to the general public who pay SR80/bag.

Due to the fact that the management of the Anse Royale and Baie Ste Anne, Praslin ice plants have been privatized since 2008, receipts for 2008-2010 are not available. Table 7.5 shows receipts from the sales of ice to fishers and to the general public for the ice plants owned and managed by SFA.

Table 7.5 Sale of ice for 2008-2010

	2008 (SR)	2009 (SR)	2010 (SR)	**TOTAL (SR)**
Anse a La Mouche	58,040.00	81,510.00	208,180.00	**347,730.00**
Anse Royale	168,100.00	65,660.00	-	**233,760.00**
Baie Ste Anne	-	149,475.00	-	**149,475.00**
Bel Ombre	-	-	100,930.00	**100,930.00**
Providence			163,085.00	**163,085.00**
TOTAL (SR)	**226,140.00**	**296,645.00**	**472,195.00**	**994,980.00**

7.6 Fuel Bunkering Facility

SFA manages the fuel bunkering facility located in the Victoria Fishing Port. The station sells gas oil, lubricating oil and fresh water to fishers. It provides an important service to the fishing community based at the Victoria Artisanal Fishing Port. Table 7.6 gives an indication of the operational activities of the fuel bunkering facility over the last three years.

Table 7.6 Fuel sales at SFA Depot, 2008-2010

SFA Fuel Depot	2008 (SR)	2009 (SR)	2010 (SR)	**TOTAL (SR)**
Sales of fuel lub. oil and water	6,038,543.00	11,243,384.00	12,478,506.00	**29,760,433.00**
TOTAL (SR)	6,038,543.00	11,243,384.00	12,478,506.00	**29,760,433.00**

7.7 Processing Laboratory

In 2009, a processing laboratory co-financed by the Overseas Cooperation Fisheries Foundation (OFCF) of Japan was built at the Victoria Fishing Port. The laboratory is equipped with state of the art equipment such as a liquid smoke machine, fish bone separator, vacuum pack machine etc. This facility was inaugurated in 2009. More details on activities are provided under section 6.8.

7.8 Fish Market

In 2009, the Anse Gaulette Fish Market was rehabilitated at a cost of SR80, 000.00.

7.9 Japanese Fisheries Development Project (Providence/Bel Ombre)

In December 2009, the project funded by the Japanese Government (JICA) for the construction of the port and fisheries infrastructure facilities at Zone 6 at Providence and at Bel Ombre was initiated. The Project, valued at over US $10 million, was a grant from the Japanese Government and the tender was won by Penta Ocean Construction Company of Japan. The Project which includes an ice plant for the Belombre district, a 100-meter long jetty, ice plants and office building among others on zone 6, was started in early 2010 and completed by December of the same year.

7.10 Navigational Lights

Navigation lights were installed and serviced in the following access channels on Mahe and Praslin, Anse Etoile, Cascade, Anse aux Pins, Anse Royale, Anse Marie Louise, Anse Boileau, Anse a La Mouche, Port Launay and La Passe Cousin, Praslin. The cost for this service amounted to SR280,000.00. The lights assist fishers in negotiating access when departing or leaving port/landing sites, in particular at night and/or in rough weather. A leading light costing SR22,000.00 was also installed under the bridge at Cascade, to assist fishers.

7.11 Improvement to Access Channels

Improvement to access channels at Anse Marie Louise and Anse Gaulette were carried out in 2009 at a cost SR300,000. The work involved dredging and removing coral heads that were hindering safe access.

7.12 Victoria Processing Quay

Work to rehabilitate the Victoria Processing Quay that was damaged during the 2004 tsunami was initiated in late 2010 at a cost of SR23,000,000.00. This project was financed by the Japanese Government under the Japanese Social Development Fund Program (JPSF) and supervised by the World Bank. The quay was built by Vijay Construction and has a length of 98 metres.

7.13 Other Minor Projects

The following minor projects were carried out from 2007 to 2010: (i) Construction of a plum wall at Anse Aux Pins to prevent further erosion of the shoreline, costing SR281,910.00 (ii) Construction of a slipway facility at Port Glaud to assist fishers in slipping their boats, costing SR80,000.00. (iii) Survey work and sub-division of land parcel No.7665 at Zone 20, costing SR20,000.00 (iv) Renovation of the Aquarius building, costing SR25,000.00 (v) The construction of a tank for storing water for the ice plant at Baie Ste Anne, Praslin, costing of SR78, 000.00.

8. 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 unit is composed of the Fisheries Monitoring Centre (FMC) and the Fisheries Control unit.

The Fisheries Monitoring Centre (FMC) is concerned with the reporting requirements of all vessels, Vessel Monitoring System (VMS), validation of statistical documents for ICCAT and IOTC, EU and Non-EU catch certificates.

The Fisheries Control unit is responsible for the processing of fishing licences.

The Enforcement unit carries out all inspectorate duties, with regards to, port state inspection, land inspection and sea and air surveillance duties for both the national and regional requirements.

Its main objectives include:

- To ensure compliance of the Fisheries Act and Regulations, fisheries agreement and protocols;
- To provide supports to local agencies working closely with SFA such as the Seychelles Coastguard (SCG), the National Drug Enforcement Agency (NDEA), the Seychelles Police and the Attorney General's Office;
- To work in close collaboration with regional partners to improve the regional MCS capability in a concerted effort to eliminate IUU fishing activities.
- To ensure compliance of the Licensing Act and Regulations
- To ensure compliance for the international legal framework as well as the IOTC resolutions that has been endorsed by Seychelles.

8.1 Fisheries Monitoring Centre (FMC)

With the phasing out of the X-25 system in 2006, several options were discussed in order to replace this medium. This included amongst others, secure email (HTTPS) and normal email (HTTP). However, with the increasing number of vessels operating in the Seychelles EEZ and the increasing number of reports and security concerns, the SFA found it necessary to introduce a newly designed system to cater for all the changes and emerging situation.

The new VMS software which is called THEMIS, was integrated in mid-2009 on a 6-month's trial basis and became fully operational in 2010. This made the SFA VMS data transfer operation fully compatible to send and receive data through the HTTPS and SMTP Protocol.

8.2 VMS For The Local Fishing Fleet

During 2007 to 2010, 46 local fishing vessels were fitted with the VMS transceivers, bringing the number of local vessels equipped with this modern technology to 190.

The system has proved to be very effective both for the collection of statistics and for improving safety at sea. The number of alerts calls that were received and processed during 2007 to 2010 is given in Table 8.1.

Table 8.1 Breakdown and Distress Alerts received for the years 2007 - 2010

	2007	2008	2009	2010
BREAKDOWN	7	10	9	13
DISTRESS	8	18	10	19

Depending on the nature of the alerts, they were all successfully assisted by the Seychelles Coast Guard, boat owners or/and other fishing vessels in the vicinity of the incident.

8.2.1 VMS data report received and processed

Table 8.2 indicates the magnitude of the different reports that have been processed by the FMC and the VMS positions processed from international FMC's from 2007 to 2010.

There was a 61% reduction in manual reporting highlighting the continued improvement in the performance of the unit. This minimises manual reporting from foreign fishing vessels.

Since 2009, there was a decline in the number of catch and entry/exit reports, as well as requests for innocent passage due to the impact of piracy in the Western Indian Ocean.

Table 8.2 Number of reports processed by the FMC

Year	VMS data	Manual Position	Weekly	Entry & Exit	Innocent passage
2007	1,121,561	911	2900	3546	97
2008	1,086,410	397	2139	2983	77
2009	1,196,460	490	1091	1791	34
2010	1,294,065	115	671	2105	18

Table 8.3 indicates the number of trade certificates that have been issued plus the total transhipment at sea authorised for Seychelles registered longliners, which require location verification through the VMS.

With the implementation of the EC/ IUU Catch Regulation Certificate, there was a large increase in the volume of demersal and tuna and tuna like species exported to EU countries.

The large increase in the number of requests for Local Catch Certificates processed by SFA is indicative of the possible increase in the volume of demersal and tuna and tuna like species; in particular those exported to Non-EU countries.

Table 8.3 No. of Certificates Validated by the FMC

Year	Certificate Of Origin superseded by Local Catch Certificate	Certificate Of Eligibility	Re-Export Certificates	European Community Catch Certificate Local Vessels	Seychelles European Community Catch Certificate	Foreign Catch Certificates	Authorised Longliner Transhipment
2007	90	472	0	0	0	0	110
2008	235	507	0	0	0	0	116
2009	246	550	5	0	0	0	97
2010	239	693	7	256	157	113	113

8.3 Fisheries Control

The Fisheries Control Unit of the Monitoring Control and Surveillance section has the responsibility of vetting all licences required for commercial fishing activities in the Seychelles EEZ. All fishing licence applications must be submitted to the SFA and depending on the Authority's recommendations, the licences are forwarded to the Seychelles Licensing Authority (SLA) for processing and issuance or refusal. With the exception of the lobster and sea cucumber fishing licence which are issued for specific period of the year, all other licences are issued for a period of one year.

8.3.1 Local fishing licences

There are currently four types of fishing licences that are issued: namely a general fishing vessel licence, a fishing net licence, a sea cucumber fishing licence and a lobster fishing licence. Tables 8.4a and 8.4b shows the total number of local fishing licences that were issued from 2007 to 2010.

Table 8.4a No. of new and renewed licences issued per month for 2007-2008

Month	2007			2008		
	New	Renewal	Total	New	Renewal	Total
January	14	20	34	12	27	39
February	11	36	47	9	40	49
March	18	32	50	16	41	57
April	4	12	16	13	39	52
May	16	24	40	17	35	52
June	3	19	22	3	30	33
July	17	16	33	18	38	56
August	13	16	29	11	29	40
September	12	23	35	11	34	45
October	13	31	44	13	43	56
November	12	34	46	12	32	44
December	8	33	41	8	44	52
TOTAL	**141**	**296**	**437**	**143**	**432**	**575**

Table 8.4b No. of new and renewed licences per month for 2009-2010

Month	2009			2010		
	New	Renewal	Total	New	Renewal	Total
January	7	32	39	6	42	48
February	7	41	48	7	44	51
March	3	39	42	4	42	46
April	2	32	34	10	35	45
May	10	36	46	4	30	34
June	3	29	32	5	22	27
July	18	35	53	11	28	39
August	11	35	46	6	28	34
September	6	29	35	14	38	52
October	16	35	51	6	37	43
November	6	32	38	7	33	40
December	3	37	40	3	38	41
TOTAL	**92**	**412**	**504**	**83**	**417**	**500**

Table 8.5 No. and percentage of licence that were issued from 2007 to 2010 on Mahe, Praslin and La Digue

Island	2007		2008		2009		2010	
	Total	%	Total	%	Total	%	Total	%
Mahe	618	79.5	436	76	398	78.9	403	81
Praslin	114	14.7	105	18	78	15.5	72	14
La Digue	39	5	30	5.2	26	5.2	25	5
Others	6	0.8	4	0.7	2	0.4	0	0
TOTAL	**777**	**100**	**575**	**99.9**	**504**	**100**	**500**	**100**

In terms of geographical distribution, the highest percentage of vessels is from Mahe

The annual quota of licences issued for the sea cucumber fishery remains at 25. The number of licensed sea cucumber processors remains at three.

The lobster fishing season for 2010/2011 was opened in December 2010, for a three - month period.

The numbers of licences were limited to 20 and comprised of 13 licences; five for fishers from Mahe , five for fishers from Praslin and two for fishers from La Digue.

In 2007, 45 net fishing licences were issued. The percentage of licences issued by type of nets for the following fishery is as follows: 60% were issued for mackerels; 18% for sardines; 20% for slipper lobsters and 2% for rays. Table 8.6 shows the number of licences by type of nets issued for the years 2007 to 2010.

Table 8.6 No. of net licences by target species for 2007-2010

Type of net	2007		2008		2009		2010	
	No. of licences	% of licences	No. of licences	% of licence	No. of licences	% of licence	No. of licence	% of licence
Mackerel	27	60	24	62	19	51.4	28	61
Sardine	8	18	4	12	7	19	9	20
Crevice	6	13.3	8	21	10	27	7	15
Slipper Lobster	3	6.7	2	5	1	2.6	1	2
Rays	1	2	0	0	0	0	1	2
Total licences	**45**	**100**	**38**	**100**	**37**	**100**	**46**	**100**

8.3.2 Foreign fishing vessel licences

All foreign longliners and purse seiners operating within the Seychelles EEZ must apply for a valid licence to fish for tuna and tuna like species. Supply vessels associated with purse seiners are also required to be licensed to operate in Seychelles waters.

Tables 8.7a and 87b show the number and types of licences by nationality from 2007 to 2010.

Table 8.7a No. of foreign licenses recommended by nationality for 2007-2008

Flag	2007			2008		
	No. of renewal	No. of new licences	Total No. of licences	No. of renewal	No. of new licences	Total No. of licences
Belize	0	0	0	0	0	0
China	0	11	11	0	5	5
France	0	17	17	0	17	17
Italy	0	1	1	0	1	1
Japan	25	50	75	1	28	29
Korea	0	0	0	0	0	0
Mayotte	0	2	2	0	2	2
Oman	0	0	0	0	0	0
Philippines	0	0	0	0	1	1
Portugal	0	0	0	0	0	0
Seychelles	3	32	35	3	29	32
Spain	0	27	27	0	28	28
Taiwan	1	50	51	3	17	20
Thailand	0	0	0	0	5	5
Total	**29**	**190**	**219**	**7**	**133**	**140**

Table 8.7b No. of foreign licenses recommended by nationality for 2009-2010

Flag	2009			2010		
	No. of renewal	No. of new licences	Total No. of licences	No. of renewal	No. of new licences	Total No. of licences
Belize	0	0	0	0	1	1
China	0	2	2	0	0	0
France	0	14	14	0	8	8
Italy	0	1	1	0	0	0
Japan	3	20	23	0	0	0
Korea	0	8	8	0	0	0
Mayotte	0	3	3	0	5	5
Oman	0	1	1	0	1	1
Philippines	0	1	1	0	0	0
Portugal	0	0	0	0	0	0
Seychelles	3	21	24	3	24	27
Spain	0	20	20	0	18	18
Taiwan	2	26	28	0	29	29
Thailand	0	5	5	0	0	0
Total	**8**	**122**	**130**	**3**	**86**	**89**

The reduction in the number of applications for renewal of fishing licences is due to more vessels taking a one year licence rather than taking a licence for three or six months, as is the case for most Taiwanese and Japanese vessels.

The reduction in the number of new licences is mostly due to the decrease in licence applications by Japanese fishing vessels as a consequence of piracy in the Western Indian Ocean during the last two years.

In term of vessels application by licence categories, longliners accounted for 65%, purse seiners for 29% and supply vessels for 6% as shown in the Table 8.8.

Table 8.8 Summary of vessel licences recommended during 2007-2010

Number of Issued Licences By Type Per Year				
	2007	**2008**	**2009**	**2010**
Longliners	150	70	69	42
Purse Seiners	58	59	51	35
Supply Vessels	11	8	10	9
TOTAL	**219**	**137**	**130**	**86**

8.4 Fisheries Surveillance

The Enforcement Unit is an integral part of the MCS section. This Unit is responsible for ensuring that all operators in the fishing industry operate in accordance with the Fisheries Regulations. Inspectors from this Unit are required to inspect fishing vessels, and to undertake routine patrols on land and at sea (using patrol vessels and aircrafts).

The Enforcement Unit is still placing more emphasis on deterring illegal fishing practices for the local fisheries. Patrols are conducted in the coastal waters of the main islands of Mahe, Praslin and La Digue.

The Unit is also responsible for the inspection of sea cucumber and shark fins designated for the export market and advising the Import and Export Division of the Ministry of Finance with regards to export permits.

During 2007 to 2010, a total of 1752 inspections were carried out on fishing vessels calling in Port Victoria. This covers 98% of all port calls made by fishing and supply vessels (Table 8.9a and 8.9b)

Purse seiners which are based in Port Victoria make the largest number of calls either for transhipment or for landing their catch.

Longliners made the least number of calls to Port Victoria. Supply vessels usually work with the purse seiners, which call to Port Victoria.

Table 8.9a No. of inspections for fishing vessels in Port Victoria by nationality and type of vessels from 2007-2008

Flag	2007				2008			
	Purse Seiner	Longliner	Supply Vessel	Others	Purse Seiner	Longliner	Supply Vessel	Others
China		3						
France	155				168			
Italy	6				3			
Japan		16						
Korea		1						
Seychelles	87	1	51		89	8	38	
Spain	175		18		168		10	
Taiwan								
Thailand	5				14			
Iran					2			
Mayotte								
Dominica			2					
Russia				1				
Mauritius			1					
Total	**428**	**21**	**72**	**1**	**444**	**8**	**48**	**0**

Table 8.9b No. of inspections for fishing vessels inspected in Port Victoria by nationality and type of vessels from 2009-2010

Flag	2009				2010			
	Purse Seiner	Longliner	Supply Vessel	Others	Purse Seiner	Longliner	Supply Vessel	Others
China								
France	113				76			
Italy					9			
Japan		5						
Korea								
Seychelles	68	23	22		77		22	
Spain	128	1	5		127		22	
Taiwan		3						
Thailand					5			
Iran	2							
Mayotte					21			
Dominica								
Russia								
Mauritius							1	
Total	**311**	**32**	**27**	**0**	**315**	**0**	**45**	**0**

9. INTERNATIONAL CO-OPERATION

9.1 EU/Seychelles Fisheries Partnership Agreement

The good relationship that has existed between Seychelles and the European Community (EC) in the context of the Fisheries Partnership Agreement (FPA) has continued to thrive over the last six years.

Both parties met regularly as per established procedures for hosting joint Committee meetings in order to assess the performance of the agreement and discuss possibilities of improving the partnership.

The existing Fisheries Partnership Agreement was signed by Seychelles in February 2007. During this same year the reference tonnage under the agreement was increased from 55,000 tonnes to 63,000 tonnes on the basis of the excess catch made in the EEZ by the European Community vessels during the preceding years. Under the agreement, the license fee for purse seiners was revised to 21,000 Euros per vessel.

During the period from 2007 to 2010 the EC agreed, as in the past, to support the development of a sustainable fisheries policy for Seychelles by allocating an annual grant. There was an increase in the EC financial contribution under the EPA from 35% to 56%, for Seychelles to develop and implement its sectoral fisheries policy.

Moreover in 2008, there was an increase in the number of EU purse seiners licensed compared to the previous year. However, due to the threat of piracy (which started in 2008), there has been a gradual reduction in the number of EU purse seiners licensed, from a peak of 31 in 2010 down to 21 in 2009. The threat posed by piracy resulted in the fishing vessels having to adjust their fishing operation to cope with this emerging situation. Negotiations for a new EU/Seychelles Fisheries Partnership Agreement for the

years 2011 to 2013 were initiated in 2010 and details will be reported in the next issue of the annual report.

9.2 British/Seychelles Fisheries Commission (BSFC)

This Commission was established in 1995 to promote, facilitate and coordinate conservation and scientific research. From 2007 to 2010 the Commission met for its annual meetings as scheduled in the Agreement, the venue alternating between Seychelles and London (UK).

The Commissions meetings were preceded by the Scientific Sub-Committee (SSC) meetings addressed a number of issues, such as how to improve data collection for inshore stock assessments carried out by SFA, the issue of by-catch, the observer programme and various fisheries management and MCS issues. The Commission has over the years endorsed recommendations for collaborative research proposed by the SSC and strongly reaffirmed its commitment for the actions taken by both governments to combat and address the problems of illegal fishing activity. With regards to the management of tuna and tuna-like species, the parties have collaborated through the formulation and submission of joint proposals during the Indian Ocean Tuna Commission meetings.

The parties will continue to work in close collaboration, in particular within the framework of the IOTC.

9.3 Indian Ocean Tuna Commission (IOTC)

Members of SFA's staff from the Research and Management sections have actively participated in the various scientific workshops, and working Parties as well as the annual Commission meetings.

During the 13th Session of the IOTC meeting held in Indonesia, Seychelles expressed its concern over the issue of discards in the Indian Ocean and tabled a proposal calling for the implementation of a ban on discards at sea by purse seiners. This was to control excessive discards at sea, in particular for juvenile skipjack , yellowfin and bigeye tuna, which are the main target species for the industrial purse seiners. The ban also had the objective of controlling the discard of other non-target species referred to as by-catch.

The Seychelles' proposal was not adopted as a resolution as it did not receive unanimous support. However, the proposal was again tabled at the 14th Session of the Commission in 2010, in South Korea, when it was adopted as a recommendation.

9.4 South West Indian Ocean Fisheries Commission (SWIOFC)

The South West Indian Ocean Fishery Commission (SWIOFC), is an FAO body established in 2004. It is a regional fisheries advisory body for coastal States in the South West Indian Ocean region and its main objective is to promote the sustainable utilization of living marine resources in the zone falling under its jurisdiction. The Commission also addresses the problems of fisheries management and development that member states are facing.

Member states provide the Commission with updates on the status of their fisheries. Seychelles has recently presented a case study on resource assessments, focusing on the sea cucumber stock assessment. The Commission at its 3rd Scientific Committee session, recommended amongst other matters, to consider the implementation of the Ecosystem Approach to Fisheries (EAF). The EAF principles call on resources managers to consider the entire ecosystem and the services that they provide when developing management strategies. Since Seychelles participates in the FAO funded EAF-NANSEN project, it is planning to implement the EAF for all future fisheries management plans. Seychelles has also started the implementation of its National Plan of Action for the Conservation and

Management of Sharks (NPOA Sharks), as recommended by FAO, through its International Plan of Action for the Conservation and Management of Sharks (IPOA Sharks) adopted during one of the previous meetings of the Committee on Fisheries (COFI) in Rome.

In 2010, Seychelles hosted the 4th Session of the SWIOFC Scientific Committee meeting.

9.5 EU/IOC Regional Plan for Fisheries Surveillance

The European Commission (EC), on behalf of the European Union, pledged to assist Indian Ocean Commission (IOC) countries in their fight against Illegal, Unreported and Unregulated (IUU) fisheries. At a meeting, held in the Seychelles in January 2007, the two Parties signed a Framework Partnership Agreement that launched a regional plan for fisheries surveillance in the South West Indian Ocean. The EU provided €7 million to cover the funding of the first three years (2007-2010) for the implementation of the Project.

The regional plan for fisheries surveillance was developed in close co-operation between the members of the Indian Ocean Commission (Comoros, France (La Reunion), Madagascar, Mauritius and Seychelles) and the EU. The objective of the plan was to improve the competence of the IOC countries to develop, adopt and implement strategies for monitoring, control and surveillance. This is extremely important for the region since illegal fishing is threatening the sustainability of fisheries and most states presently lack sufficient resources to ensure efficient monitoring, control and surveillance.

The plan had the objective of strengthening existing national efforts by combining available resources, improving co-ordination and sharing of data. The EU contributed to the costs of intensified surveillance efforts and assisted in studying the benefits of using

sophisticated technology for surveillance such as satellite monitoring. Member countries reinforced their commitment through financial contributions.

The SFA, in collaboration with the Seychelles Coast Guard conducted a total of 288 days of sea patrol, of which 122 days were under the national plan. In collaboration with other IOC countries and 166 days were carried out under the regional plan. A total of 131 vessels were inspected at sea and four infractions were recorded, which led to prosecution of the offenders.

The SFA in collaboration with the Air Wing of the SPDF also conducted 299 hours of aerial surveillance in support of the sea patrols.

10. INFORMATION AND TECHNOLOGY SERVICES

10.1 Documentation Services

10.1.1 Acquisitions

The number of documents/publications acquired by the Documentation Centre continued to increase from 2007 to 2010. Seven hundred and eighty new publications were added to the collection. Most of the publications were acquired through SFA's exchange programme.

10.1.2 Library management

During 2007 to 2010 a total of 1304 new records were catalogued in the library database and 945 documents were loaned to both SFA staff and external users. In all, there are now a total of 5611 records in the database.

10.1.3 Publications, 2007-2010

AUMEERUDDY, R. (2007) Sea cucumbers in Seychelles. ***In: Commercial Sea Cucumbers: A review for the Western Indian Ocean WIOMSA Book Series No.5. p.41-51***

AUMEERUDDY, R.; CONAN, C. (2007) Seychelles' sea cucumber fishery: Data on processed products and other parameters. ***In: SPC Beche de Mer Information Bulletin No.26, p.19-25***

DORIZO, J.; LUCAS, V.; FONTENEAU, A. (2007) Preliminary analysis of tuna catches by Purse Seiners fishing in the Western Indian Ocean over the period January to April 2007. 19 pp.

DORIZO, J.; LUCAS, V.; FONTENEAU, A. (2007) Preliminary analysis of tuna catches by Purse Seiners fishing in the Western Indian Ocean over the period January to August 2007, 29 pp.

FONTENEAU, A.; JAVIER, A.; DELGADO DE MOLINA, A.; DORIZO, J.; LUCAS, V.; PIANET, R. (2007) Species composition of FAD and free swimming schools fished by purse seiners in the Western Indian Ocean during the period 1990-2006. 26 pp.

GAMBLIN, C.; BACH, P.; LUCAS, V. (2007) Comparison of unwanted species captured during daytime and night time: preliminarily results of longline experiments carried out in Seychelles waters. 8 pp.

GAMBLIN, C.; BACH, P.; LUCAS, V. (2007) Capture depths of longline targeted species (yellowfin, bigeye, swordfish): preliminary results obtained from experimental longline fishing carried out in Seychelles' oceanic waters. 10 pp.

GRAHAM, N.A.J.; S.K. WILSON, S.K.; JENNINGS, S.; POLUNIN, N.V.C.; ROBINSON, J.; BIJOUX, J.P.; DAW, T.M. (2007) Lag effects in the impacts of mass coral bleaching on coral reef fish, fisheries, and ecosystems. ***In: Conservation Biology Volume 21, No.5, p.1291-1300***

PIANET, R.; DELGADO DE MOLINA, A.; DORIZO, J.; NORDSTROM, V.; HERVE, A.; ARIZ, J. (2007) Statistics of the main purse seine fleets fishing in the Indian Ocean (1981-2006). 25 pp.

POTIER, M.; BRISTOL, N.; FONTENEAU, A. (2007) Results obtained from the biological sampling of large bigeye tuna caught on free schools by purse seiners in the Indian Ocean. 17 pp.

SEYCHELLES FISHING AUTHORITY, FISHERY RESEARCH SECTION (2007) Seychelles National Report 2006.

SEYCHELLES FISHING AUTHORITY (2007) Result of the Catch Assessment Survey (CAS) 2006 and Research Activities for Artisanal Fisheries. ***In: Nineteenth Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission, 22 pp.***

SEYCHELLES FISHING AUTHORITY (2007) Summary of Activities of the Seychelles Industrial and Semi-Industrial Fisheries for the year 2006**.** ***In: Nineteenth Meeting of the British/Seychelles Fisheries Commission Scientific Sub-committee Meeting, 28 pp.***

SEYCHELLES FISHING AUTHORITY (2007) Seychelles Fisheries Monthly Bulletin (January-December 2007)

SEYCHELLES FISHING AUTHORITY (2007) Seychelles Fishing Authority: Tuna Bulletin, First Semester 2006, 45 pp.

SEYCHELLES FISHING AUTHORITY (2007) Seychelles National Plan of Action for the Conservation and Management of Sharks. 59 pp.

AUMEERUDDY, R.; CONAND, C. (2008) Seychelles: a hotspot of sea cucumber fisheries in Africa and the Indian Ocean region. ***In: FAO Fisheries and Aquaculture Technical Paper No.516, p. 195-209***

AZEMIA, R.T.; ASSAN, C.N.; DORIZO, J.L. (2008) Seychelles Artisanal Fisheries Statistics for 2006. SFA Technical Report, SFA/R&D/064, 72 pp.

GRANDCOURT, E.M.; HECHT, T.; BOOTH, A.J.; ROBINSON, J. (2008) Retrospective stock assessment of the Emperor red snapper (*Lutjanus sebae*) on the Seychelles Bank

between 1977 and 2006. ***In: International Council for the Exploration of the Sea, p.889-898***

ROBINSON, J.; AUMEERUDDY, R. (2008) Dynamics of camouflage (Epinephelus polyphekadion) and brown marbled grouper (Epinephelus fuscoguttatus) spawning aggregationsat a remote reef site, Seychelles. ***In: Bulletin of Marine Science No.83 (2) p.415-431***

ROBINSON, J.; SAMOILYS, M.; KIMANI, P. (2008) Reef fish spawning aggregations in the Western Indian Ocean: Current knowledge and implications for management***. In: Coastal Oceans Research and Development in the Indian Ocean, Status Report 2008 p.263-276***

SEYCHELLES FISHING AUTHORITY (2008). Result of the Catch Assessment Survey (CAS) 2007 and Research Activities for Artisanal Fisheries. ***In: Twentieth Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission, 16 pp.***

SEYCHELLES FISHING AUTHORITY (2008) Summary of Activities of the Seychelles Industrial and Semi-Industrial Fisheries for the year 2007. ***In: Twentieth Meeting of the British/Seychelles Fisheries Commission Scientific Sub-committee Meeting, 7th November 2008, 24 pp.***

SEYCHELLES FISHING AUTHORITY (2008) Seychelles Fishing Authority Annual Report 2006, 65 pp.

SEYCHELLES FISHING AUTHORITY (2008) Seychelles Fishing Authority: Tuna Bulletin, Year 2006, 51 pp.

SEYCHELLES FISHING AUTHORITY (2008) Seychelles Fisheries Monthly Bulletin (January-December 2008)

ASSAN, C.N.; DORIZO, J.L. (2009) Seychelles Artisanal Fisheries Statistics for 2007. SFA Technical Report, SFA/R&D/065, 72 pp.

ASSAN, C.N.; DORIZO, J.L. (2009) Seychelles Artisanal Fisheries Statistics for 2008. SFA Technical Report, SFA/R&D/066, 72 pp.

SEYCHELLES FISHING AUTHORITY (2009). Result of Catch Assessment Survey (CAS) 2008 and Research Activities for Artisanal Fisheries. ***In: Twenty-first Meeting of the Scientific Sub-Committee of the British/Seychelles Fisheries Commission, 17 pp.***

SEYCHELLES FISHING AUTHORITY (2009). Overview of Research Projects. ***In: Twenty-first Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission, 10 pp.***

SEYCHELLES FISHING AUTHORITY (2009) Summary of Activities of the Seychelles Industrial and Semi-Industrial Fisheries for the year 2008***. In: Twenty-first Scientific Sub Committee of the British Seychelles Fisheries Commission, 23 pp.***

SEYCHELLES FISHING AUTHORITY (2009) The Seychelles Spiny Lobster Fishery, Fishery & Stocks Status: 2005-2008***. In: Twenty-first Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission, 19 pp.***

SEYCHELLES FISHING AUTHORITY (2009) Seychelles Fisheries Monthly Bulletin (January-December 2009)

SEYCHELLES FISHING AUTHORITY (2010) Summary of Activities of the Seychelles Industrial and Semi-Industrial Fisheries for the year 2009. ***In: Twenty-second Meeting of* the *Scientific Sub Committee of the British Seychelles Fisheries Commission. 21 pp.***

SEYCHELLES FISHING AUTHORITY (2010) Result of the Catch Assessment Survey (CAS) 2009 and Research Activities for Artisanal Fisheries. ***In: Twenty-second Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission, 17 pp.***

SEYCHELLES FISHING AUTHORITY (2010) Overview of Research Projects. ***In: Twenty-Second Meeting of the Scientific Sub-committee of the British/Seychelles Fisheries Commission, 3 pp.***

SEYCHELLES FISHING AUTHORITY (2010) Seychelles Fisheries Monthly Bulletin (January-December 2010).

10.2 Information Technology

As SFA advances further into the computer age, Information Technology (IT) is becoming indispensable for all office operations. All Office work, such as secretarial, statistical and clerical, has now been automated. The ICT department keeps providing the ultimate support, maintenance upgrades and daily operation for the Authority.

During 2007, the X25 link for VMS was phased out and replaced by SMTP and HTTPS, and all data for the VMS is received via email and HTTPS. In the last quarter of 2009, the VMS server was also upgraded to Themis with a new platform using Linux from Vision. This was mainly due to the lack of support from the predecessor. Prior to that, two staff members had been sent to CLS in France for training on the implementation and maintenance of the system.

The demand for the exchange of data has increased exponentially and in view of the fact that Kokonet was the single ISP being utilised by SFA, it became inadequate, thus a second ISP (Intelvision) was added to cater for the additional load. The Existing LAN (Local Area Network) has expanded to a MAN (Metropolitan Area Network) with new

offices at Providence for the Zone 6 Project, which requires similar services as the HQ Office. The Authority's vehicular fleet was equipped with a tracking system in order to render the transport services more efficient.

To conclude, during mid 2010, the Authority embarked on a new project with IFREMER to implement a new database system which will supersede the existing Artfish system which is over 15 years old and has severe limitations. The new system will replace all the small databases at the Authority by a centralized database system. This new system will link with existing data management systems such as FINNS, the VMS database and Artfish, to enhance data management and reporting.

11. FINANCE

For the financial year ending on the 31st December 2010, the Government of Seychelles subsidized 17% of the Authority's recurrent and minor capital expenditure. The allocation of SR 6.05 million for the year 2010 represented an increase of 61.33% in comparison with the previous year.

SFA's expenditure for the period 2007 to 2010 is represented in Figure 11.1.

SFA still has the responsibility under its recurrent budget to pay the Seychelles' contribution to the IOTC for 2010.The contribution of Seychelles as a member state of IOTC, was SR739,617.00.

For 2010, the payment for the fuel scheme, which was not financed under SFA's recurrent budget, was SR17,291,573.00, representing an increase of 250 % compared to 2008.

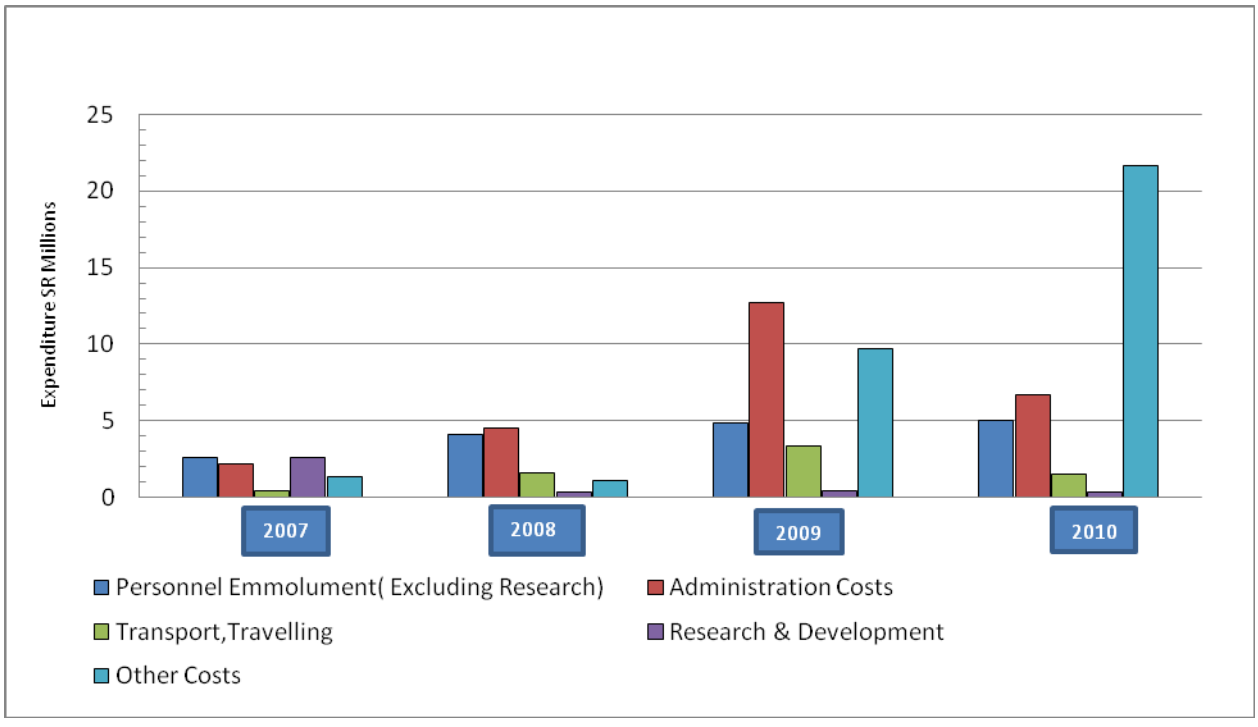

Figure 11.1 SFA's expenditure from 2007 to2010

Please note that the figures above are only indicative, pending the publication of the final audited report

12. STAFFING AND ADMINISTRATION

The SFA is proposing a new organization structure in line with the SFA's Fisheries Policy.

The new structure is still pending as it is subject to government approval. Certain Sections however, such as Research and Development and the Fisheries Economic Information are operating on the basis of the proposed new structure.

In June 2010, a new Unit in the Secretariat Division was opened. This Unit, which comprises the Bel Ombre and Providence Fishing Port, is being managed by a Port Administrator.

The Unit's mandate is to organize, co-ordinate and manage the Providence, Victoria and Bel Ombre fishing ports including all land infrastructures and facilities such as berthing, sheds, fuel stations, storage facilities, ice plant and any other fisheries facilities falling under SFA's responsibility.

The Unit is comprised of the following personnel:

Port Administrator	1
Assistant Port Administrator	1
Pier Master	2
Ice Plant Operator	2
Fuel Attendant	2
Forklift Operator	1

12.1 Staff Movement

During 2007, SFA had a high staff turnover due to governments' restructuring programme, whereby qualified staff were made redundant. This loss of staff placed a heavy constraint on the technical sections, in particular the Research and Development Sections. SFA has been unable to replace departing staff with suitably qualified and experienced personnel required for the various sections. Hence, to date, SFA's staff has to face extra work load to meet deadlines and targets.

Recruitments have been carried out at all levels. One of the new recruits include a graduate for the position of economist.

There have been certain changes in SFA management, the resignation of the former Managing Director in 2009. A new Managing Director has since been recruited and with the assistance of the Managers from the various sections, SFA should look forward to a brighter future.

New recruitments have also been carried out in the Corporate Services section which is now being managed by a new Senior Human Resource and Budget Management Officer, assisted by a new Senior Human Resource and Budget Management Assistant. There is also a consultant in the Corporate Service Section who is undertaking an audit of human resources and development and who is also assisting in administrative and establishment duties.

Table 12.1 Staffing for 2008-2010

Divisions/Sections/Units	2008	2009	2010
Secretariat	7	7	9
Fisheries Management	5	0	1
Monitoring Control & Surveillance	4	2	2
ICT	1	0	1
Fisheries Administration	1	0	0
Fisheries Economic Information	0	0	1
Fisheries Development	2	1	1
Fisheries Research	8	5	1

12.2 Training and Development

SFA continued to emphasize on capacity building and is doing its utmost to train its staff. Training ranges from local to international workshops and short to long courses. Certain staff members also participate in in-house training and workshops. SFA is still in the process of drafting a training policy but this is still in its first draft. The objective of the training policy is to guide staff members on how training will be implemented, so that everyone is aware of the procedures to follow and their expectations where training is concerned.

The Human Resource Unit will also establish a Succession Plan which will provide a detailed professional development plan for all staff.

There are presently five staff members attending long term courses overseas; 21 staff members has attended local/international short courses, in-house workshops , as well as at external venues.

Emphasis will be placed on the training of more technical staff to obtain higher qualifications (BSc with Honours/Masters Degrees). Staff members not meeting university entrance requirements will follow technical training sessions to meet the necessary university entrance requirements.

Table 12.2 Overseas Training

NAME	TITLE/Country	DURATION
Colleen Morel	Country Coordinators' Meeting/MASMA Planning Workshop (Mombasa, Kenya)	21st to 22nd February 2007
Nanet Bristol	Aquaculture Training Course (Reunion)	5th – 30th March 2007
Juliette Dorizo	Training in Database design and Tuna Statistics (Sete, France)	2nd – 22nd April 2007
Riaz Aumeeruddy	Participate in a "Proposal Writing Workshop" (Mombasa, Kenya)	15th to 22nd April 2007
Josette Confait	Participated in the E-Repository Workshop (Oostende, Belgium)	21st to 29th April 2007
Jan Robinson & Roland Azemia	SWIOFC Working Party on Fisheries Statistics Workshop (Mombasa)	22nd – 29th April 2007
Bernadette Gill	International Training Program on Information (Brussels, Belgium)	2nd May – 4th June 2007

Felix Labrosse, Leon Edouard, Carmel Rene & Khurlsen Gonsalves	Port Inspection Training (Mauritius)	2nd – 9th June 2007
Calvin Gerry	Training on the Buoy Program Implementation and Data Management (Oostende, Belgium)	11th – 15th June 2007
Gerard Domingue & Mike Laval	Symposium/Workshop organised by the COI/MCS Pilot Project and other partners (Mauritius)	18th – 22nd June 2007
Gerard Domingue	Meeting of the Steering Committee for MCS Network Global Fisheries Enforcement Training Workshop (Norway)	24th – 30th June 2007
Riaz Aumeeruddy	Regional Workshop organized by the Indian Ocean Commission on the Study and Conservation of Cetaceans (Sainte Marie, Madagascar)	1st – 4th July 2007
Mike Laval	Regional Workshop on Fisheries Access Agreements (Addis Ababa, Ethiopia)	8th – 15th July 2007
Clifford Toussaint & Gerard Ernesta	Technical training on Maritime Resources (Xiamen, China)	8th July – 26th August 2007
Calvin Gerry	Workshop regarding the African Monitoring of Environment for Sustainable Development (AMESD) Project (Mauritius)	18th – 19th September 2007

Calvin Gerry	Training in Method and Application of Ocean Colour Remote Sensing (Mombasa, Kenya)	24th September – 5th October 2007
Roy Clarisse & Jude Talma	Workshop on the Regional Plan of Fisheries Surveillance in the South West Indian Ocean (Mauritius)	2nd to 3rd October 2007
Slim Dogley	BSc. (Hons) in Computing with Specialization in Computer Security (Malaysia)	October 2007 (2 years)
Riaz Aumeeruddy & Jan Robinson	WIOMSA Symposium	22nd – 26th October 2007
Maria Cedras	Workshop on the use of Socio-Economic Database (Mombasa, Kenya)	25th October – 27th November 2007
Riaz Aumeeruddy	Workshop on Scientific Team Building organized by the IOC-UNESCO (South Africa)	26th – 31st October 2007
Denise Mathiot & Joan Didon	Certificate Course in Office Productivity (India)	8th November – 19th December 2007
Aubrey Lesperance & Sabrina Lowtoy	Aquaculture training in Fuzhou, China	8th May – 16 July 2008
Margaret Figaro & Danny Henriette	Seminar on Fisheries Development in Guangzhou China	12th May – 4th June 2008
Daniel Suzette & Christopher Laurence	Training workshop to evaluate New VMS software in France	12th – 17th January 2009
Karl Seraphine, Carol Low, Luta Faure & Ladis Laurette	Formation à L'utilisation de Traces	2nd April 2009
Bernadette Gill	International Training Program on Information (Brussels, Belgium)	June – July 2009

Yashim Marday & Fred Mondon	Training course for Fisheries Crewmen, Japan	18th July – 10th September 2009
Denise Mathiot	Attended the INMAGIC library Module training in South Africa	1st – 4th September 2009
Slim Dogley & Bruno Deprez	Attended a short training on the Fishing Information System in France	14th – 18th June 2010
Denise Mathiot	Attended the ODINAFRICA Marine Information Management Workshop (Dakar, Senegal)	29th November – 2nd December 2010
Cindy Assan	Regional STATBASE in Kenya	7th – 11th December 2010
Belinda Jean & Cindy Assan	Attended the SWIOFP GEONETWORK training in Kenya	14th – 16th December 2010

12.3 Overseas Duty Trip

There was an increase in fisheries related activities and consequently SFA's participation at meetings, forums and workshops also increased.

Junior Managers and Supervisors were given the opportunity and exposure by participating in international meetings.

Table 11.3 Duty Travel

Participants	Country/Title	Duration
Rondolph Payet	Negotiation Meeting with IOT/Lehman Brothers (Paris, France)	15th – 18th January 2007
Rondolph Payet	Discussion with FAO regional Rep. on SWIOFC (Mombasa, Kenya)	26th – 28th January 2007

Rondolph Payet	EPA Meeting on the Rules of Origin Protocol (Kigali, Rwanda)	30th – 31st January 2007
Gerard Domingue & Marlene Isidore	Meeting on the Regional Fisheries Strategy (Quatres Bornes,Mauritius)	20th – 21st February 2007
Peggy Carosin	Initiation Meeting and Working Session on the Administrative and Financial Procedures of Projects, financed by the European Development Fund (Mauritius)	20th – 21st February 2007
Nanet Bristol	Worked with IRD Scientist on data collected during the CAPPES Research Project (Reunion)	24th February – 4th March 2007
Gerard Domingue & Marlene Isidore	Twenty-Seventh Session of the FAO's Committee on Fisheries (Rome, Italy)	3rd – 10th March 2007
Rondolph Payet & Mike Laval (Legal Officer)	Negotiation Meeting on the Review of the Fisheries Protocol (Brussels)	19th – 22nd March 2007
Roy Clarisse	Information Technology Seminar (Electronic Commerce on the Internet) (Beijing, China)	7th – 28th April 2007
Michel Marguerite	Technical Advisory Meeting of the INFOSA (Windhoek, Namibia)	14th – 26th April 2007

Jude Talma	First Meeting of the Consultative Commerce for Regional Fisheries Surveillance of the South West Indian Ocean Region (Mauritius)	23rd – 26th April 2007
Michel Marguerite	Meeting on Trade and Sustainable Approaches to WTO/EPA Negotiations on Fisheries (Mauritius)	30th April – 5th May 2007
Rondolph Payet; Gerard Domingue & Mike Laval	Eleventh Session of the Indian Ocean Tuna Commission (Mauritius)	12th – 19th May 2007
Michel Marguerite	Regional Negotiating Forum Meeting for ESA-EV EPA (Nairobi, Kenya)	13th – 20th May 2007
Khurlsen Gonsalves	Patrol in the EEZ for any illegal fishing activities (Reunion)	27th June – 1st July 2007
Michel Marguerite	Dedicated Session on Fisheries, & Markets Access (tariffs offers, sensitive products, Rules of Origin (Mauritius)	21st – 28th July 2007
Mike Laval	Negotiation of the Fisheries Agreement with Taiwan Deepsea Tuna Boat Owners Association (Taiwan)	4th – 11th August 2007
Jan Robinson	Second Meeting of the Scientific Committee of the South West Indian Ocean Fisheries Commission (SWIOFC) (Albion, Mauritius)	6th – 11th August 2007

Rondolph Payet	RUPMER Conference (Reunion)	20th – 21st September 2007
Riaz Aumeruddy	MASMA Grantee Meeting (for the regional Sea Cucumber Project (South Africa)	19th – 21st October 2007
Nanet Bristol & Christopher Dugasse	Seminar on Management of Coastal Zone & Surveillance of the Exclusive Economic Zone (China)	25th October – 27th November 2007
Roy Clarisse & Gerard Domingue	Regional meeting on 'Combating of Illegal, Unreported and Unregulated Fishing in Southern and Eastern Africa (Maputo, Mozambique)	28th October – 3rd November 2007
Jude Talma	Regional Fisheries Surveillance Project (Madagascar)	17th – 29th November 2007
Michel Marguerite	Dedicated Sessions on Market Access (Djibouti)	25th October – 1st November 2007
Rondolph Payet & Juliette Dorizo	12th Session of the Seychelles/British Fishery Commission (London, UK)	28th – 29th November 2007
Peggy Carosin	Seminar on Financial & Contractual Procedures – 9th EDF ACP Countries (Lusaka, Zambia)	8th – 25th November 2007
Jerry Mousmie & Leon Edouard	Conducted fisheries Inspection, Surveillance & Control on a French Vessel (Reunion)	12th November – 3rd December 2007
Jan Robinson	Attended the WIOMSA meeting in Kenya	

Juliette Dorizo & Jan Robinson	Attended the WIOFISH workshop in Durban, South Africa	28th January – 1st February 2008
Juliette Dorizo	EU technical meeting, Brussels	11th – 12 March 2008
Leon Edouard	Regional High Sea Patrol	30th April – 17th May 2008
Khurlsen Gonsalves & Sonny Naiken	Regional High Sea Patrol	19th – 30th May 2008
Juliette Dorizo	SWIOFP workshop on Data and Statistics	28th April – 30th May 2008
Jan Robinson & Juliette Dorizo	Launch/Planning meeting and Steering Committee Meeting with (SWIOFC) Mombasa	15th – 22nd June 2008
Vincent Lucas & Cindy Assan	Regional Tuna Tagging program, Indian Ocean Steering committee meeting Madagascar	3rd to 4th January 2009
Roy Clarisse	Attended the TXOTX meeting in London	18th – 22nd January 2009
Jude Talma	2nd S.E African Forum (IUU) Mozambique	20th – 21st January 2009
Calvin Gerry & Andrew Souffe	Seminar for Launching of the IOC project-THEMA-AMESD in Mauritius	20th – 21st January 2009
Andrew Souffe	Regional Patrol	23rd January – 7th February 2009
Rodney Govinden	Tagging of shark (MADE) in the Maldives	26th January – 1st February 2009
Roy Clarisse	FAO technical Consultation to draft legally-binding instruments (IUU) Rome	29th – 30th January 2009
Aubrey Lesperance	Meeting of the regional WIOFish project held in Nairobi, Kenya	2nd – 3rd March 2009

Jan Robinson	WIOMSA meeting to develop results Based Management indicators for the MASMA program with CORDIO in Kenya	2nd – 4th March 2009
Rondolph Payet & Veronique Herminie	Attended the FAO 28th session committee on fisheries, held in Rome, Italy	2nd – 6th March 2009
Wendy Perreau, Christopher Laurence & Roy Clarisse	Regional Seminar to prevent, deter and eliminate IUU Fishing. South Africa	4th – 5th March 2009
Andre Gabriel	Participate as a panellist in the SWIOFP interview in Mombasa	17th – 18th March 2009
Rondolph Payet & Elisa Socrate	Attended the 13th session of Indian Ocean Tuna Commission in Bali, Indonesia	30th March – 3rd April 2009
Khurlsen Gonzalves	Patrol & Surveillance Mission on Board the C.S.P vessel ATSANTA	6th – 15th May 2009
Carmel Rene	Inspected the Seychelles' flag registered fishing vessel, YUTUNA 212, in Durban, South Africa	9th – 11th May 2009
Rondolph Payet & Veronique Herminie	Attended the European Commission Fisheries Partnership Agreement in London	12th May 2009
Rondolph Payet, Veronique Herminie, Roy Clarisse & Vincent Lucas	Senior fisheries officials meeting and 1st meeting of Fisheries Ministers in Brussels	8th – 9th June 2009
Christophe Laurence & Roddy Alissop	System Configuration and setup for the new VMS.	19th – 27th July 2009
Andre Gabriel	Workshop on Budget Expenditure and control in public Service Kenya, Nairobi	20th – 24th July 2009

Rona Albert	Fisheries Certification and ECO-Labelling workshop in Mauritius	26th – 27th August 2009
Khurlsen Gonzalves	Inspection on Seychelles' flagged Vessels	30th October – 1st November 2009
Rodney Govinden	Visit Mayotte and participate in the tuna tagging cruise in the Mozambique channel under the MADE project	2nd – 20th March 2010
Rodney Govinden	Attended the annual MADE project meeting in Azores, Portugal.	28th April – 4th May 2010
Jan Robinson	Attended the annual MADE project meeting in Azores, Portugal.	2nd – 5th May 2010
Elisa Socrate & Calvin Gerry	Attended the EAF-NANSEN project meeting in Dar es Salaam	22nd – 23rd July 2010
Calvin Gerry	Attended the ODINAFRICA/ASCLME Coastal and Marine Atlases workshop in Mombasa	26th July – 6th August 2010
Calvin Gerry	Workshop on Hydrodynamic Modelling in Mombasa.	5th – 15th September 2010
Jan Robinson	Attended the meeting of TXOTX Research projects in Spain	6th – 8th October 2010
Jude Talma	Regional Fisheries Surveillance Project in Mauritius	8th – 9th December 2010
Roy Clarisse, Andre Gabriel & Jan Robinson	Regional Surveillance on CCR Elargie & SEZ EC Matrix Work Plan in Mauritius	8th – 11th December 2010

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