COUNCIL OF THE EUROPEAN UNION

Brussels, 24 January 2013

5685/13

PECHE 31

COVER NOTE

from:	European Commission
date of receipt:	24 January 2013
Subject:	Ex-post evaluation of the current Protocol to the Fisheries Partnership Agreement between the European Union and the Republic of Seychelles and ex-ante evaluation including an analysis of the impacts of the future Protocol on sustainability

Delegations will please find attached the above-mentioned document.

Encl.:

- Final report (January 2013)
- Copy of the Quality Assessment Evaluation of this report undertaken by the Commission services

Framework contract MARE/2011/01
Evaluation and impact assessment activities for DG MARE

Lot 3 – Retrospective and prospective evaluations on the international dimension of the common fisheries policy

Specific contract n° 4

Ex post evaluation of the current Protocol to the Fisheries Partnership Agreement between the European Union and the Republic of Seychelles and ex ante evaluation including an analysis of the impacts of the future Protocol on sustainability

Final Report

January 2013

IOC123R01G

COFREPECHE France Aquaculture — MRAG — POSEIDON Aquatic Resource Management Ltd — nfds Nordenfjeldske Development Services

This report has been prepared with the financial support of the European Commission.

The views expressed in this study are those of the authors and do not necessarily reflect the views of the European Commission or of its services.

This report must be cited in as follows:

NFDS, MRAG, COFREPECHE and POSEIDON, 2013. Ex post evaluation of the current Protocol to the Fisheries Partnership Agreement between the European Union and the Republic of Seychelles and ex ante evaluation including an analysis of the impacts of the future Protocol on sustainability (Framework contract MARE/2011/01 – Lot 3, specific contract 4). Brussels, 157 p.

Cover photo: Fishing vessels transhipping in Port Victoria, by Sandy Davies, Seychelles, December 2012

COFREPECHE: 32 rue de Paradis, 75010 Paris, France. info@cofrepeche.fr

Version: Final report **version "G"**	Report ref: IOC123R01G Number of pages: 157 (all included)	Date issued: 21 January 2013

Action	First name	Surname	Organisation Position
Author(s)	Sandy	Davies	NFDS Team leader
	Robert	Wakeford	MRAG Fisheries economist
	Peter	Manning	NFDS Fisheries economist
	Per Erik	Bergh	NFDS MCS expert
Peer review	Graeme	Macfadyen	POSEIDON Fisheries economist
Proofreading	Sandy	Davies	NFDS
Edition	Matthew	Bunce	MRAG
	Gwendal	Le Fol	COFREPECHE
Validation	Vincent	Defaux	COFREPECHE, Projects Director (on behalf of: Jean-Pierre Silva, Deputy Managing Director)

Executive Summary

Introduction

1. This report provides an ex post evaluation for the existing Protocol to the Fisheries Partnership Agreement (FPA) between the European Union (EU) and the Republic of Seychelles. The Protocol enables EU fishing vessels (fishing vessels flying the flag of an EU Member State and registered in the EU) to operate in the Exclusive Economic Zone (EEZ) of the Seychelles. The evaluation considers the Protocol in terms of its relevance, coherence, effectiveness, efficiency and sustainability. It also provides an ex ante evaluation to support the potential negotiation and implementation of a new Protocol. The current Protocol became provisionally active on 18th January 2011 and entered into force on 11th November 2011, it is valid until the 17th January 2014.

Country background

2. The Seychelles is a presidential republic. The Seychelles is a middle-income, small island developing state (SIDS) located at the centre of the migration path of tuna stocks in the Western Indian Ocean (WIO). Given that the Seychelles has limited land resource base and is remote from major markets its surrounding 1.3 million km^2 EEZ is highly important to the small population of 89 700 people for marine resources and related food and income. The EEZ borders with those of neighbouring Mauritius, Madagascar, Glorioso Islands (France), Mayotte, the Comoros and Mafia Island (Tanzania).

3. The Seychelles fisheries and its sector's growth are guided by The National Strategy 2017 and other policies covering fisheries and the environment. Fisheries and tourism form the main pillars of the economy. Since the nation's economic downturn in 2007 to 2008 – linked to the global economic crisis, regional piracy and the Seychelles' fiscal policy – the islands have been implementing economic reforms that have resulted in a 4.9 % growth compared to 2010.

4. The islands are highly dependent on international trade with imports accounting for 90 % of the goods traded in the islands. Fisheries account for 8 % of GDP; 7 % of employment and 35 % of export earnings. In 2011, revenue from the industrial tuna fish totalled SCR 1.45 billion (EUR 85.7 million) based on vessel expenditure on goods and services in Port Victoria, and payments for fishing authorisation and the financial contribution made by the EU. This equates to 33 % of government revenue, surpassing the tourism sector and highlighting the importance of the fisheries sector.

5. The fisheries sector provides employment for around 5 600 Seychellois and fish accounts for some 35 – 40 % of the total protein consumed by the islands' population.

6. The Seychelles has a national fishing vessel registry. In 2012 seven purse seiners and 25 longliners, were registered, authorised to fish and were actively fishing.

7. In addition to the FPA, the EU cooperates with Seychelles through the African, Caribbean and Pacific (ACP) group of states and the 2012 Economic Partnership Agreement (EPA) that provides for tariff free access to the EU market for Seychelles exports. The EU support provided under the National Indicative Programme (NIP) with the Seychelles for 2008–2013 provides EUR 11.9 million, mainly for the economic reform process.

The Indian Ocean and Seychelles tuna fishery and environment

8. The Indian Ocean (IO) is the second largest global tuna producing area and the most significant region for the EU fleet.

9. The legal purse seine fleet fishing in the IO in 2011 consisted of 13 vessels flagged to Spain and the remainder to France (8), Seychelles (5), French overseas territories, Iran (1) and Korea (1). The associated catches by EU fleets in the IO have remained relatively stable at around 250 000 t since 2007. Fleet activity usually follows the seasonal distribution of tuna, in a clock-wise movement around the WIO. However the fleet has contracted since 2006 due to piracy off Somalia and the 2010 closure

of fishing grounds around Chagos archipelago as a marine reserve. Fleet activity has concentrated more on the central and southern distributions of tuna, particularly in the Seychelles EEZ. There are also at least 420 known longline vessels operating in the WIO, these are mainly from the Asian fleets.

10. The management of large pelagic species in the IO is conducted by the Indian Ocean Tuna Commission (IOTC), to which both the EU and the Seychelles are Contracting Parties. The IOTC has assessed the key tuna species targeted by the EU purse seine fleets (i.e. skipjack, yellowfin and bigeye) as being not currently overfished nor are subject to overfishing, while albacore tuna, a species important to the longline fleet, is assessed to be not currently overfished despite some overfishing. Longline vessels also target sharks and catch them as an associated species; the IOTC uses the International Union for Conservation of Nature (IUCN) assessments for the threat status of pelagic sharks. There is a lack of information on the status of the stocks of associated species that are caught by the purse seine fleet, particularly in association with fish aggregating devices (FADs).

11. Seychelles legislation governs the fisheries sector and vessels operating within the EEZ. Primary legislation being the Fisheries Act of 1986, and Regulations of 1987, of the Ministry of Investment, Natural Resources and Industry which are implemented by the Seychelles Fishing Authority (SFA). These instruments are currently under revision. Amongst the changes, it is anticipated the SFA (i) will issue licenses to fishing vessels and (ii) it may refuse a licence application if a vessel is linked to IUU activity. Fishing in the Seychelles EEZ under the FPA should also be consistent with the provisions of international and regional instruments to which the EU and Seychelles are committed. The IOTC has the power to take decisions and adopt conservation and management measures (CMM) that are legally binding on its Contracting Parties.

12. The SFA collects catch and effort data from EU purse seine vessels' logbooks, and compiles fish length-frequency data at port. The SFA also collaborates on data with the French Institute of Research for Development (IRD) and the Spanish Institute of Oceanography (IEO). The Seychelles Fisheries Monitoring Centre (FMC) makes annual vessel compliance inspections, checks vessel logbooks, receives obligatory vessel monitoring systems (VMS) tracking data and conducts sea patrols. The FMC also implements the EU Catch Certificate Scheme (CCS), which ensures that products exported from Seychelles to the EU are not tainted by IUU fishing activity.

13. Tuna imported to the EU from the Seychelles must comply with national standards laid down in the Seychelles' Export of Fishery Products Act (1996) and the Export of Fishery Sanitary Regulations (2006). These are modelled on EU health and sanitary requirements and the FAO *Codex Alimentarius*. During a mission in March 2011, the Food and Veterinary Office of the EU Directorate General 'SANCO' (DG SANCO) concluded that there were no concerns about the Seychelles sanitary conditions for ensuring the quality of fishery products exported to the EU.

The Fisheries Partnership Agreement between the EU and the Seychelles

14. The EU has had fisheries agreements with the Seychelles for 25 years, initially as Framework Agreements with associated Protocols. More recently, the first Fisheries Partnership Agreement took effect on the 2nd November 2007 for a period of six years. The current Protocol differs from the previous in terms of its duration, now for three years instead of six. Also, there is now a flat rate fee payment system for authorising purse seiners to fish instead of the previous advance payment and final catch payment system.

15. In 2011 less than half of the allowable 48 purse seiners took up an authorisation to fish under the FPA. Of the 21 that did, the majority 13 were Spanish, followed by 8 French; 22 vessels (14 Spanish and 8 French) were licenced to fish in 2012. No surface longliners requested fishing authorisations in either year.

16. A detailed examination of the extent of compliance with obligations in the FPA, the Protocol and its Annexes was made by the evaluation team. The findings are summarised below. In most respects parties to the Agreement have been compliant. Where compliance has fallen short, there have been rational and acceptable explanations.

Evaluation findings

17. The **effectiveness** of the FPA and Protocol in achieving its specific objectives:
    a. Under the FPA the EU fleet mainly catches fish classified as 'sustainable'. The EU plays a significant role in promoting best practice. It works with the Seychelles and regional partners to ensure sustainability and responsibility in fishing. The FPA provides a transparent framework which ensures that all EU vessels fishing in the Seychelles waters are authorised and that they respect the provisions of the Protocol controlling key areas such as; catch recording; landing and transhipment; the use of VMS; and inspections and enforcement. The Protocol's provisions on sector support integrate EU support into the national multi-annual sector planning, ensuring that they make a valued long-term contribution to the future of the Seychelles' fisheries sector.
    b. For the EU catching sector all the EU vessels licenced to target tuna in the IO rely upon the FPA for access to fish in the Seychelles EEZ, where in 2011 they caught 23 % (40 545 t) of their total IO catch of tunas and associated species and utilised 78 % of the available reference tonnage under the protocol (52 000 t). In the same year, the estimated total value-added by the Protocol was EUR 41.49 million, of which 74.6 % went to the EU, due to the high profitability of the purse seine fleets.
    c. Piracy since the late 1990s has had a significant impact on WIO fisheries, where tuna catches fell by 25 %. The EU purse seiners now take on security personnel to enable them to continue fishing in the productive waters off the coast of Somalia, where the piracy threat is strong, but EU longliners withdrew from fishing in the Seychelles EEZ due to piracy risks.
    d. Of the tuna caught by the EU fleet within the Seychelles EEZ an estimated 20 % is canned in the Seychelles and the remainder is trans-shipped to elsewhere, of which an estimated 12.5 % goes directly to the EU for processing or retail trade. The WIO supplied 29.5 % of the total canned fish imports into the EU in 2011, 43 236 t (or 50.52 %) of this WIO canned tuna was from Seychelles.
18. The **efficiency** of the FPA and Protocol in achieving the desired effects at a reasonable cost:
    a. The compensation to the Seychelles for a tonne of tuna caught under the FPA in 2011 was EUR 170, through EUR 138 from the EU and EUR 32 from the vessel owners. For the vessel owners, this compares favourably with compensation they would have paid if authorised to fish under private, non-FPA, agreements at a rate of EUR 50 per tonne or of EUR 35 per tonne more generally applied under other tuna FPAs. The benefit/cost ratio for the EU demonstrates that the Protocol provides a good value for money for the EU; in fact in 2011 every EUR 1 invested generated EUR 4.50 worth of benefits for the EU. As fish prices rise this ratio is likely to increase, improving the position for EU vessel owners.
    b. The benefit of the Protocol to the Seychelles in 2011 is estimated to have been EUR 10.6 million, mainly accruing from value-added by vessel port calls, financial compensation from the EU and vessel owners and fish processing at the cannery. The Seychelles benefits more by granting fishing access under the FPA arrangement than through private agreements.
    c. The estimated employment attributable directly to the Seychelles FPA in 2011 was 1 072 full-time equivalent positions, of which 13 % were for EU citizens. However 3 824 people in the Seychelles depend to some extent on its existence for their jobs. The EU fleet also supplies relatively small quantities of by-catch species to local Seychelles processors, this trade is having a significant and increasingly positive impact on local food security and downstream sector development at a national level.
19. The **sustainability** of the FPA and Protocol in terms of long-term impacts:
    a. The FPA ensures access for the EU fleet to the Seychelles EEZ and to good port facilities at Victoria, which is critical to fishing vessel operational strategy in the WIO, and particularly so since the creation of the no-fishing Chagos Marine Reserve to the east and Somalia-based piracy to the west. The FPA framework has been the basis for mutually beneficial agreements and an alliance that has consolidated both partners' positions within the WIO. It has also provided extra

safeguards, beyond those provided by the IOTC or under Seychelles' legislation, that contribute to the long-term sustainability and responsibility of fishing in the Seychelles' EEZ and the WIO.

b. The absence of an FPA would be a major economic setback for the Seychelles, given the great advances made by its fisheries sector since the first EU-Seychelles fisheries agreement. In 2011 alone, the value of industrial tuna fishing activity was EUR 85.7 million, making it the highest gross earning sector in the economy. The FPA contributes directly about 11 % of this income. The EU sector support is worth EUR 2.22 million per year. It is an important element of the Seychelles multi-annual programme for fisheries sector development. The programme covers the improvement of fisheries management, and infrastructure development, notably the construction of the industrial tuna fishing quay at Ile du Port using EU sector support financing. This will provide much needed berthing space for, among others, EU purse seiners. It also provides for capacity building across the sector.

c. The Seychelles has 12 active 'private agreements' for purse seiners; seven of these cover Seychelles-flagged but European-owned vessels paying an access fee of EUR 71 429 per year/vessel; and five agreements cover non-Seychelles, non-EU vessels (of which one is Korean and four from Mayotte) paying EUR 95 238 per year per vessel for access. By contrast, the EU fleet operating under the FPA pays EUR 61 000 per year per vessel. The Seychelles has an active fisheries agreement for longline vessels with a Taiwanese Association and 'private agreements' for locally flagged vessels. In 2012, a total of 137 longline vessels were authorised to fish under these agreements. These are unlikely to challenge the FPA, which focuses instead on purse seiners and is well regarded in the Seychelles.

20. The **coherence** of the FPA and Protocol, and whether the intervention's logic is coherent or contradictory with itself and/or other interventions with similar objectives:

a. For the Protocol to be coherent with the CFP it must be coherent with the IOTC management measures. This is the case, for example through managing fishing capacity and effort, and controlling catches and minimising by-catch. In terms of regional policy there is coherence between the FPA and key SADC (Southern African Development Community) fisheries instruments on issues such as VMS, observers, local employment and the promotion of RFMOs (IOTC). However, the application of these, and especially the sharing of information is not as coherent as it could be, nor is the promotion of regional harmonisation a condition for access. The Seychelles FPA is coherent with the IOC's fishery programmes and is consistent with the FAO's Code of Conduct for Responsible Fisheries.

b. In respect to the FPAs coherence to the objectives of the Cotonou Agreement and the 10th European Development Funds, the sector support provided through the multi-annual programme provides good coherence to the national and regional development strategies (the national indicative plan – NIP - and the regional indicative plan – RIP). Good coherence exists between the FPA and the regional programmes of the Indian Ocean Commission (IOC) such as the SmartFish project and the Regional Plan for Fisheries Surveillance in the South-West Indian Ocean (SWIO). For trade, the interim EPA for the ESA countries including the Seychelles and the Protocol generally have coherent policies. All exports of fish caught under the FPA comply with EU standards for health and sanitary requirements and the EU IUU Catch Certificate Scheme.

c. The fisheries Policy of Seychelles promotes the development of sustainable and responsible fisheries and the optimisation of the sector's benefits for present and future generations, in line with the objectives of the FPA. The protocol sector support directly helps the Seychelles to achieve their policy objective of developing a major fishing port and processing location for the IO.

21. The **relevance** of the FPA and Protocol in terms of their objectives addressing needs and problems:

a. For the EU, the opportunities provided by the FPA include maximising its purse seine fleet capacity in the Seychelles EEZ and the IO; helping to create employment; providing fish products to the EU processing industry; and making a contribution to overall EU market consumer demand.

These outcomes are also furthered by the network of other FPA agreements within the IO. Given the levels of fleet activity and fish catch, related to the strategically advantageous location of the Seychelles in operational and cost terms, the Protocol has notably met the interests and needs of the EU purse seine fleet vessel owners. The piracy threat deterred the EU surface longliners from fishing in the WIO, away from the area threaten by piracy, including the Seychelles EEZ. However, with an anticipated decrease in piracy threats a return to the region by the EU longline fleet may occur.

b. For the Seychelles, the FPA provides a framework for generating income from surplus stocks and ensuring better compliance with management measures than achieved under private agreements. The financial compensation provided for fisheries access by the EU (including sector support and vessel owners' contributions) to the Seychelles has been at an acceptable level. The Protocol has contributed to the development of fisheries and to resource management in a way that is highly satisfying for the government, especially with respect to the new fisheries quay in Port Victoria. Economically important revenues from port calls by EU vessels support the development of the fisheries sector through value addition; landed by-catch from the EU fleets is contributing to local food consumption needs and economic growth. The Seychelles semi-industrial and artisanal fishers have benefited from the FPA mainly through the sector support.

Recommendations

22. The evaluation recommends that:

a. A new Protocol should be negotiated between the EU and the Seychelles to facilitate a continuation of their mutually-beneficial partnership on fisheries. It should take into account the on-going CFP reform process and be coherent with and supportive to Seychellois economic reforms, national policy directions and new fisheries legislation.

b. Any future Protocol should firmly align EU sector support with the Seychelles development and sector policy through the multi-annual plan - including strengthening fishery support infrastructure, the local fishing industry, private sector engagement and the development of Victoria into a major regional fisheries hub. However, the implementation of this plan should take into consideration the capacity of the Seychelles to manage and implement it in a satisfactory and attainable manner. Decoupling the sector support from the compensation paid for access, in line with the March 2012 Council Conclusions on the External Dimension of the CFP may assist this.

c. The Protocol provisions for embarking seamen should be reviewed to reflect the Seychelles policy on employment; contracting arrangements for embarking seamen need to be addressed in Seychelles legislation. Seychellois at-sea observers should be placed on EU purse seiners at the earliest possible opportunity to comply with the provisions of the current Protocol.

d. Open communication channels between the EU and the Seychelles' authorities should be maintained in both directions.

23. When a new Protocol is negotiated the following recommendations should be taken into account:

a. In respect to compensation by EU vessel owners for access to fish in the Seychelles EEZ; consideration should be given to the respective benefits of the flat rate fishing compensation system currently in place and the potential benefits of introducing a rate per tonne - with advance payment - for a reference tonnage per vessel; and to addressing the currently disproportionate balance of the financial contributions from the EU and the vessel owners. These considerations should refer to the level of fishing activity under the current Protocol and ensure that the Council Conclusions (March 2012) be reflected in the new Protocol's financing arrangements, where the level that vessels owners pay, is fair, non-discriminatory and commensurate to the benefits provided through access conditions.

b. The granting of fishing opportunities should be considered in relation to the average catches within the Seychelles EEZ and IOTC recommendations.

c. Options for electronic reporting and combining the implementation of the provisions of the IOTC Resolution on regional observers with the Protocol provisions on observers should be considered.

d. A requirement for all by-catch to be retained and landed in the Seychelles should be considered.

e. Consideration of options to support the development of further regional fisheries management arrangements between the coastal states of the WIO could include strengthening mechanisms through co-operation under regional programmes of the IOC, and the use of other innovative options such as the granting of support to a regional training centre for IO seamen or observers.

Résumé

Introduction

1. Ce rapport présente l'évaluation ex post de l'actuel protocole de l'Accord de Partenariat dans le secteur de la Pêche (APP) entre l'Union européenne (UE) et la République des Seychelles (les Seychelles). Le protocole permet aux navires de pêche de l'UE (navires battant pavillon d'un État membre et immatriculés au sein de l'UE) d'opérer dans la Zone Économique Exclusive (ZEE) des Seychelles. L'évaluation considère le protocole en termes d'efficacité, d'efficience, de durabilité, de cohérence et de pertinence. Ce rapport expose également une évaluation ex ante afin d'appuyer la négociation potentielle et la mise en œuvre d'un nouveau protocole. Le protocole actuel est appliqué provisoirement depuis le 18 janvier 2011 et est entré en vigueur le 11 novembre 2011 ; il est valable jusqu'au 17 janvier 2014.

Contexte du pays

2. La République des Seychelles est sous régime présidentiel. Il fait partie des pays à revenu intermédiaire, Petit État Insulaire en Développement (PEID) situé dans l'océan Indien occidental (OIO), les Seychelles sont au centre de la voie de migration des stocks de thon. Les Seychelles disposant de ressources agricoles limitées et étant éloignées de ses marchés principaux, ses 1,3 millions de km^2 de ZEE sont très importants pour sa petite population (89 700 personnes) en termes de ressources marines, d'apports en nourriture et de revenus dérivés. Les frontières de sa ZEE sont communes avec celles des pays voisins : Maurice, Madagascar, les Îles Glorieuses (France), Mayotte, les Comores et l'île Mafia (Tanzanie).

3. La pêche et la croissance du secteur de la pêche aux Seychelles sont orientées par la Stratégie Nationale 2017 ainsi que par d'autres politiques concernant la pêche et l'environnement. La pêche et le tourisme sont les piliers principaux de son économie. Depuis le ralentissement économique national de 2007 à 2008, lié à la crise économique mondiale, à la piraterie régionale et à la politique fiscale nationale, les Seychelles ont mis en œuvre des réformes économiques qui ont abouti en 2011 à une croissance de +4,9 % comparé à 2010.

4. Les îles seychelloises sont très dépendantes du commerce avec l'international, les importations représentant 90 % des marchandises échangées sur son marché national. La pêche représente 8 % du PIB, 7 % de l'emploi et 35 % des recettes d'exportation. En 2011, les recettes provenant de la pêche industrielle du thon ont totalisé 1,45 milliards de roupies seychelloises (85,7 millions d'euros) sur la base des dépenses des navires en biens et services dans le port de Victoria, des paiements pour les autorisations de pêche et de la contribution financière versée par l'UE. Cela équivaut à 33 % des recettes publiques, surpassant le secteur du tourisme et soulignant l'importance du secteur des pêches.

5. Le secteur des pêches assure un emploi à environ 5 600 seychellois et le poisson représente autour de 35 à 40 % de l'apport en protéines pour la population des îles.

6. Les Seychelles possèdent un registre national des navires de pêche. En 2012, sept thoniers senneurs et 25 palangriers étaient enregistrés, étaient autorisés à pêcher et pêchaient activement.

7. En complément de l'APP, l'UE coopère avec les Seychelles au travers du groupe des États Afrique - Caraïbes - Pacifique (ACP) et de l'Accord de Partenariat Économique (APE) de 2012. L'APE prévoit l'accès au marché européen avec des droits exonérés pour les exportations des Seychelles. Le soutien de l'UE aux Seychelles au titre du Programme Indicatif National (PIN) pour la période 2008 - 2013 s'élève à 11,9 millions d'euros, principalement pour la mise en œuvre de son processus de réforme économique.

La pêche thonière et l'environnement aux Seychelles et dans l'océan Indien

8. L'océan Indien (OI) est la deuxième plus grande zone mondiale de production de thons et la région la plus importante pour la flotte de l'UE.

9. La flotte de pêche à la senne autorisée dans l'OI se composait, en 2011, de 13 navires battant pavillon espagnol et le reste sous pavillons français (8), seychellois (5), territoires français d'outre-mer (1), iranien (1) et coréen (1). Les captures associées des flottes européennes dans l'OI sont restées relativement stables à environ 250 000 t depuis 2007. L'activité de la flotte suit habituellement la répartition saisonnière des stocks de thon, selon le mouvement des « aiguilles d'une montre » autour de l'OIO. Cependant, depuis 2006, la flotte s'est contractée en raison d'une augmentation de la piraterie au large de la Somalie et de la fermeture des zones de pêche autour de l'archipel des Chagos en 2010, suite à la création d'une réserve marine. L'activité de la flotte s'est concentrée davantage sur les répartitions centrales et australes du thon, en particulier dans la ZEE des Seychelles. Au moins 420 palangriers, principalement des flottes asiatiques, opèrent également dans l'OIO.

10. La gestion des espèces de grands pélagiques dans l'OI est orientée par la Commission des Thons de l'océan Indien (CTOI) dont l'UE et les Seychelles sont parties contractantes. La CTOI a évalué les principales espèces de thon ciblées par les flottes de senneurs de l'UE (i.e. listao, albacore et thon obèse) comme n'étant pas actuellement surexploitées, ni sujettes à la surpêche, alors que le thon germon, une espèce importante pour la flottille palangrière, est évalué comme n'étant pas actuellement surexploité malgré une certaine surpêche. Les palangriers ciblent aussi les requins et les capturent comme espèce associée ; la CTOI utilise les évaluations de l'Union internationale pour la conservation de la nature (UICN) pour identifier le risque de surexploitation des requins pélagiques. Il existe un manque d'information sur l'état des stocks d'espèces associées capturées par la flottille de senneurs, en particulier en relation avec des dispositifs de concentration de poissons (DCP).

11. La législation seychelloise régit le secteur des pêches des Seychelles et les navires opérant dans sa ZEE. En particulier, la loi sur les pêches de 1986 et le règlement de 1987 du ministère de l'investissement, des ressources naturelles et de l'industrie qui sont mises en œuvre par le Département des Pêches (DP) des Seychelles. Ces instruments sont actuellement en cours de révision. Parmi les changements à venir, il est prévu que la DP (i) délivre des licences aux navires de pêche et (ii) puisse refuser une demande de permis si un navire est lié à des activités de pêche Illégale, Non déclarée, Non réglementée (INN). La pêche dans la ZEE des Seychelles au titre de l'APP devrait également être compatible avec les dispositions des instruments internationaux et régionaux sur lesquels l'UE et les Seychelles se sont engagés. La CTOI a le pouvoir de prendre des décisions et d'adopter des mesures de conservation et de gestion (MCG) juridiquement contraignantes pour ses parties contractantes.

12. La DP recueille des données de capture et d'effort de pêche à partir des journaux de pêche des thoniers senneurs de l'UE, et compile des données de fréquence-tailles des poissons au débarquement. La DP collabore également avec l'Institut français de Recherche pour le Développement (IRD) et l'Institut Espagnol d'Océanographie (IEO). Le Centre de surveillance des pêches (CSP) des Seychelles réalise des inspections annuelles de conformité des navires, vérifie les journaux de pêche, reçoit les données de surveillance - transmission obligatoire - des navires par satellite (suivi des navires par satellite – SNS - VMS en anglais) et effectue des patrouilles maritimes. Le CSP applique également le système de certification des captures de l'UE veillant à ce que les exportations de produits de pêche depuis les Seychelles vers l'UE ne soient pas entachées par des activités de pêche INN.

13. Le thon exporté vers l'UE depuis les Seychelles doit se conformer aux normes nationales fixées par la loi des Seychelles relative à l'exportation des produits de la pêche (1996) et aux règlements sur les normes sanitaires pour l'exportation des produits de la pêche (2006). Ceux-ci sont harmonisés sur les

exigences sanitaires et d'hygiène de l'UE et du *Codex Alimentarius* de la FAO. Lors d'une mission en mars 2011, l'Office alimentaire et vétérinaire (OAV) de la direction générale de la santé et des consommateurs de l'UE (DG SANCO) a conclu qu'il n'y avait pas d'inquiétude quant au sujet des conditions sanitaires des Seychelles afin d'assurer la qualité des produits des pêches exportés vers l'UE.

L'Accord de partenariat dans le secteur de la pêche entre l'UE et la République des Seychelles

14. L'UE signe des accords de pêche avec les Seychelles depuis 25 ans, initialement en tant qu'accords-cadres avec des protocoles associés. Plus récemment, le premier accord de partenariat dans le secteur de la pêche est entré en vigueur le 2 novembre 2007 pour une période de six ans. Le protocole actuel diffère du précédent en termes de durée : trois ans au lieu de six. De plus, il applique dorénavant un système forfaitaire de paiement autorisant les thoniers senneurs à pêcher au lieu d'un système d'avance sur paiement combiné à un paiement par tonne de thons pêchés.
15. En 2011, moins de la moitié des 48 thoniers senneurs éligibles avaient pris une autorisation de pêche dans le cadre de l'APP UE/Seychelles. Sur les 21 l'ayant fait, la majorité étaient espagnols (13), suivis de 8 français. 22 navires (14 espagnols et 8 français) furent licenciés en 2012. Aucun palangrier de surface n'a demandé d'autorisation de pêche ces deux dernières années.
16. Un examen détaillé du niveau de conformité avec les obligations de l'APP, du protocole et de ses annexes a été réalisé par l'équipe d'évaluation. Les conclusions sont résumées ci-dessous. Les parties prenantes ont globalement respecté l'accord. Lorsque cela n'a pas été le cas, les explications étaient rationnelles et acceptables.

Conclusions de l'évaluation

17. **Efficacité** de l'APP et de son protocole dans l'atteinte de ses objectifs spécifiques :
    a. Dans le cadre de l'APP avec les Seychelles, la flotte de l'UE pêche principalement des stocks de poissons classés comme « durables ». L'UE joue un rôle important dans la promotion des bonnes pratiques. Elle travaille avec les Seychelles et les partenaires régionaux pour assurer la durabilité et la responsabilité des pêches. L'APP définit un cadre transparent qui garantit que tous les navires de l'UE pêchant dans les eaux seychelloises sont autorisés à le faire et qu'ils respectent les dispositions du protocole qui contrôle les secteurs clés tels que : l'enregistrement des données de capture, le débarquement et le transbordement, l'utilisation du VMS, les inspections et l'exécution des dispositions. Les termes du protocole quant à l'appui sectoriel intègrent l'appui de l'UE dans le domaine de la planification sectorielle pluriannuelle nationale afin d'assurer que le protocole soit en mesure de contribuer significativement sur le long terme à l'avenir du secteur des pêches des Seychelles.
    b. Pour le secteur de capture de l'UE, tous les navires de l'UE autorisés à cibler le thon dans l'océan Indien comptent sur l'APP pour accéder aux ressources thonières dans la ZEE des Seychelles. En 2011, les navires de l'UE y ont prélevé 23 % (40 545 t) de la capture totale de thons et espèces associées dans l'OI et utilisé 78 % du tonnage de référence sous le protocole (52 000 t). Dans la même année, l'estimation de la valeur ajoutée totale du protocole s'élève à 41,49 millions d'euros, dont 74,6 % ont été perçus par l'UE, en raison de la forte rentabilité des flottes de thoniers senneurs.
    c. Depuis la fin des années 1990, la piraterie a eu un impact considérable sur les pêches dans l'OIO où les captures de thon ont chuté de 25 %. Les thoniers senneurs de l'UE embarquent désormais du personnel de sécurité afin de leur permettre de continuer à pêcher dans les eaux productives au large des côtes de la Somalie, où la menace de piraterie est forte. Les palangriers de l'UE ont toutefois cessé de pêcher dans la ZEE des Seychelles en raison de ces risques de piraterie.

d. Parmi le thon capturé par la flotte de l'UE dans la ZEE des Seychelles, environ 20 % est mis en conserve aux Seychelles et le reste est transbordé puis affrété vers d'autres destinations, dont on estime que 12,5 % iraient directement à l'UE pour être transformés ou vendus au détail. L'OIO fournissait 29,5 % des importations totales de poisson en conserve de l'UE en 2011. 43 236 t (soit 50,52 %) de ce thon en conserve de l'OIO provient des Seychelles.

18. **Efficience** de l'APP UE/Seychelles et son protocole au regard de l'atteinte des effets désirés à un coût raisonnable :
    a. La contrepartie aux Seychelles pour une tonne de thon capturé au titre de l'APP avec l'UE en 2011 s'élevait à 170 EUR, dont 138 EUR provenant de l'UE et 32 EUR des propriétaires de navires. Pour ces derniers, ceci se compare favorablement à une contrepartie financière qu'ils auraient versée s'ils avaient été autorisés à pêcher en vertu d'accords privés, hors APP UE/Seychelles, à raison de 50 EUR par tonne ou des 35 EUR par tonne plus généralement appliqués sous les APP thoniers. Le rapport coût/bénéfice démontre que le protocole offre un bon rapport qualité/prix pour l'UE. En effet, en 2011 chaque euro investi a généré 4,50 euros de bénéfices pour l'UE. Comme les prix du poisson sont en hausse, ce ratio est susceptible d'augmenter, améliorant ainsi la situation des armateurs des navires de l'UE.
    b. Le bénéfice généré pour les Seychelles en 2011 par le protocole est estimé à 10,6 millions d'euros, provenant principalement de la valeur ajoutée liée aux escales des navires, de la contrepartie financière de l'UE et des propriétaires de navires et à la transformation du poisson à la conserverie. Les Seychelles bénéficient davantage en accordant l'accès à sa zone de pêche sous les dispositions de l'APP que par des accords privés.
    c. Le nombre estimé d'emplois directement attribuables à l'APP en 2011 était de 1 072 postes à équivalent temps plein, dont 13 % pour les citoyens de l'UE. Cependant, 3 824 personnes aux Seychelles dépendent dans une certaine mesure de son existence pour leurs emplois. La flotte de l'UE fournit également des quantités relativement faibles d'espèces accessoires aux transformateurs locaux des Seychelles. Ce commerce a un impact significatif et de plus en plus positif sur la sécurité alimentaire locale et sur le développement en aval de filière au niveau national.
19. **Durabilité** de l'APP et de son protocole en termes d'effets à long terme :
    a. L'APP garantit l'accès de la flotte de l'UE à la ZEE des Seychelles ainsi qu'à des installations de qualité à Victoria, ce qui est essentiel pour la stratégie de pêche des navires opérationnels dans l'OIO particulièrement depuis (i) la création à l'est de la réserve marine de Chagos, interdite à la pêche, et (ii) la piraterie basée en Somalie, à l'ouest. Le cadre de l'APP a servi de base à des accords mutuellement avantageux et à une alliance ayant consolidé les positions des deux partenaires au sein de l'OIO. Il a aussi fourni des garanties supplémentaires, au-delà de celles prévues par la CTOI ou dans la législation des Seychelles, contribuant à la viabilité à long terme et à la responsabilité des pratiques de pêches dans la ZEE des Seychelles et dans l'OIO.
    b. L'absence d'un APP [avec l'UE] serait un recul économique important pour les Seychelles, étant donné les grands progrès réalisés par son secteur de la pêche depuis le premier accord de pêche UE - Seychelles. Durant la seule année 2011, la valeur de l'activité de pêche industrielle du thon était de 85,7 millions d'euros, ce qui en fait le secteur avec le revenu brut le plus élevé de son économie. L'APP contribue directement à environ 11 % de ce revenu. L'appui sectoriel de l'UE équivaut à 2,22 millions d'euros par an. Il est un élément important du programme pluriannuel pour le développement du secteur de la pêche des Seychelles. Le programme porte sur l'amélioration de la gestion des pêches et le développement des infrastructures, y compris la construction du quai pour la pêche industrielle du thon à l'Île du Port avec le soutien financier de l'UE. Le quai sera un espace de mouillage nécessaire pour, entre autres, les thoniers senneurs de l'UE. Ce programme prévoit également le renforcement des capacités dans le secteur.

c. Les Seychelles sont engagés dans 12 « accords privés » actifs pour les thoniers senneurs, dont sept pour des navires battant pavillon seychellois mais appartenant à des européens payant une redevance d'accès de 71 429 EUR par an et par navire, et dans cinq accords portant sur des navires non-seychellois et non-communautaires (dont l'un est coréen et quatre de Mayotte) payant 95 238 EUR par an et par navire pour y accéder. En comparaison, la flotte de l'UE opérant sous l'APP verse un montant forfaitaire de 61 000 EUR par an/navire. Les Seychelles ont un accord de pêche actif pour les palangriers avec une association taïwanaise et un « accord privé » pour les navires palangriers sous pavillon local. En 2012, un total de 137 palangriers ont été autorisés à pêcher en vertu de ces accords. Ceux-ci sont peu susceptibles de remettre en cause l'APP entre l'UE et les Seychelles, qui se concentre sur les thoniers senneurs et qui est bien considéré dans les Seychelles.

20. **Cohérence** de l'APP et du protocole, et cohérence ou contradiction de la logique de l'intervention avec elle-même et/ou avec d'autres interventions ayant des objectifs similaires :

a. Afin que le protocole soit cohérent avec la politique commune des pêches (PCP), il doit être cohérent avec les mesures de gestion de la CTOI. C'est le cas, par exemple, au travers de la gestion de la capacité et de l'effort de pêche, du contrôle des captures et de la minimisation des prises accessoires. En termes de politique régionale, il existe une cohérence entre l'APP UE/Seychelles et les instruments de pêche clés de la Communauté de développement de l'Afrique australe (SADC en anglais) sur les questions telles que le VMS, les observateurs, l'emploi local et la promotion des ORGP (CTOI). Toutefois, l'application de ceux-ci et en particulier le partage de l'information, n'est pas aussi cohérent qu'il pourrait l'être, et la promotion de l'harmonisation régionale n'est pas une condition d'accès non plus. L'APP est cohérent avec les programmes de pêche de la Commission de l'océan Indien (COI) et est conforme au Code de conduite pour une pêche responsable de la FAO.

b. En ce qui concerne la cohérence de l'APP UE/Seychelles avec les objectifs de l'Accord de Cotonou et avec le 10e Fond Européen de Développement (FED), le soutien fourni au secteur par le programme pluriannuel offre une bonne cohérence avec les stratégies (ou plans) de développement nationales et régionales (le Plan Indicatif National – PIN - et le Plan Indicatif Régional - PIR). Une bonne cohérence existe entre l'APP et les programmes régionaux de la COI, tel que le projet Smartfish et le Plan régional de surveillance des pêches dans l'océan Indien du sud-ouest. Pour le commerce, l'APE intérimaire pour les pays d'Afrique de l'Est et australe, y compris les Seychelles, et le protocole ont généralement des politiques cohérentes. Toutes les exportations de poissons capturés dans le cadre de l'APP sont conformes aux normes européennes sanitaires et d'hygiène et au système de certification des captures de l'UE.

c. La politique de pêche des Seychelles favorise le développement d'une pêche durable et responsable et l'optimisation du secteur bénéficie aux générations présentes et futures, en ligne avec les objectifs de l'APP. L'appui sectoriel requis dans le cadre du protocole contribue directement aux Seychelles afin d'atteindre leur objectif politique de développer un port de pêche et un lieu de transformation majeurs des produits de la mer pour l'OI.

21. **Pertinence** de l'APP et du protocole selon leurs objectifs répondant aux besoins et aux problèmes :

a. Pour l'UE, les possibilités offertes par l'APP avec les Seychelles comprennent la maximisation de la capacité de sa flottille de thoniers senneurs dans la ZEE des Seychelles et dans l'OI, en contribuant à la création d'emplois, en fournissant des produits halieutiques pour l'industrie de transformation de l'UE et en apportant une contribution à la demande en poisson des consommateurs de l'UE. Ces résultats sont également favorisés par le réseau des autres APP au sein de l'OI. Compte tenu des niveaux d'activité de la flotte et des prises de poissons en relation avec la position stratégiquement avantageuse des Seychelles en termes opérationnels et de coût, le protocole a satisfait notablement les intérêts et les besoins des propriétaires de navires thoniers senneurs de la flotte de l'UE. La menace d'actes de piraterie a dissuadé les palangriers de surface de l'UE de pêcher dans l'OIO, loin des zones exposées à la piraterie y compris la ZEE des

Seychelles. Cependant, avec l'anticipation d'une baisse de cette menace, un retour dans la région par la flotte palangrière de surface de l'UE pourrait se produire.

b. Pour les Seychelles, l'APP fournit un cadre pour générer des revenus à partir des stocks thoniers excédentaires et assurer un meilleur respect des mesures de gestion que celui obtenu en vertu d'accords privés. La contrepartie financière (y compris l'appui sectoriel et les contributions des propriétaires de navires) par l'UE pour l'accès aux zones de pêche des Seychelles a été d'un niveau acceptable. Le protocole a contribué au développement de la pêche et à la gestion des ressources de façon très satisfaisante pour le gouvernement, en particulier en ce qui concerne le nouveau quai de pêche à Port Victoria. Les recettes économiquement importantes des escales techniques portuaires par les navires de l'UE soutiennent le développement du secteur des pêches par la valeur ajoutée [du protocole]. Le débarquement des captures accessoires des flottes de l'UE contribue aux besoins alimentaires locaux et à la croissance économique. Les pêcheurs semi-industriels et artisanaux des Seychelles ont bénéficié de l'APP principalement grâce à l'appui sectoriel.

Recommandations

22. L'évaluation fournit les recommandations suivantes :

a. Un nouveau protocole devrait être négocié entre l'UE et les Seychelles afin de faciliter la poursuite de leur partenariat mutuellement bénéfique en matière de pêche. Il devrait prendre en compte le processus en cours de réforme de la PCP ; être cohérent avec et accompagner les réformes économiques seychelloises, les orientations de la politique nationale et la nouvelle législation des pêches.

b. Tout futur protocole devrait aligner solidement l'appui sectoriel de l'UE avec le développement et la politique du secteur aux Seychelles au travers du plan pluriannuel - y en renforçant les infrastructures d'appui à la pêche, l'industrie locale de pêche, la participation du secteur privé et le développement de Victoria en tant que pôle régional majeur de pêche. Cependant, la mise en œuvre de ce plan devrait prendre en considération la capacité des Seychelles à le gérer et à le mettre en œuvre de façon satisfaisante et réalisable. Le découplage de l'appui sectoriel et de la contrepartie versée pour l'accès aux zones de pêche, en ligne avec les Conclusions du Conseil de mars 2012 sur la dimension externe de la PCP, pourrait y contribuer.

c. Les dispositions du protocole pour l'embarquement des marins devraient être revues pour refléter la politique des Seychelles sur l'emploi ; les arrangements contractuels pour l'embarquement des marins devraient être abordés dans la législation des Seychelles. Des observateurs en mer seychellois devraient être déployés sur les thoniers senneurs de l'UE à la première occasion possible pour se conformer aux dispositions de l'actuel protocole.

d. Les modes de communication entre l'UE et les autorités seychelloises devraient être maintenus ouverts dans chaque direction.

23. Quand un nouveau protocole sera négocié, les recommandations suivantes devraient être prises en compte :

a. Concernant la contrepartie financière des armateurs des navires européens pour l'accès aux zones de pêche des eaux seychelloise, il convient d'envisager les avantages respectifs du système de contribution forfaitaire actuellement en place et les avantages potentiels de l'introduction d'un tarif à la tonne - avec avance - pour un tonnage de référence par navire, et à redresser le déséquilibre actuellement disproportionné des contreparties financières de l'UE et des armateurs. Ces considérations doivent se référer au niveau de l'activité de pêche dans le cadre du protocole en cours et veiller à ce que les conclusions du Conseil (mars 2012) soient prises en compte dans les dispositions financières du nouveau protocole, où le montant que les propriétaires de navires devraient payer, soit équitable, non discriminatoire et proportionné aux bénéfices prévus par les conditions d'accès.

b. L'octroi de possibilités de pêche devrait être considéré en relation avec les captures moyennes au sein de la ZEE des Seychelles et avec les recommandations de la CTOI.

c. Des options pour la mise en place de journaux de pêche électroniques en combinant la mise en œuvre des dispositions de la résolution de la CTOI sur les observateurs régionaux avec les dispositions du protocole sur les observateurs devraient être considérées.

d. Une exigence que toutes les prises accessoires soient conservées et débarquées aux Seychelles devrait être considérée.

e. Une étude des options pour soutenir le développement de nouveaux arrangements de gestion régionale des pêches entre les états riverains de l'OIO pourrait inclure le renforcement des mécanismes au travers de la coopération au titre des programmes régionaux de la COI, et l'utilisation d'autres options innovantes telles que l'octroi d'un soutien à un centre régional de formation des marins ou des observateurs de l'OI.

TABLE OF CONTENTS

ANNEXES

FIGURES AND TABLES

FIGURES

TABLES

INTRODUCTION – PURPOSE AND SCOPE OF THIS EVALUATION

This evaluation provides a retrospective ex post evaluation for the existing Protocol to the Fisheries Partnership Agreement (FPA)[1] between the EU and the Republic of Seychelles[2]. The evaluation considers the Protocol in terms of its relevance, coherence, effectiveness, efficiency and sustainability. It also provides a prospective analysis of impacts and an ex ante evaluation of a future Protocol, in order to provide sufficient data and information for the negotiation and implementation of a new Protocol.

The framework and scope of the evaluation are defined by the Terms of Reference provided to the consultants and are informed by the Council Decision of 19 July 2004 on FPAs (COM (2002) 637 final) and the Council conclusions of 19 March 2012[3]. The conclusions in particular set out the principles and standards that apply in relation to FPAs, including long term fisheries sustainability, strengthening RFMOs and negotiating bilateral and multilateral agreements. In addition, evaluation guidelines including the Specific Methodological Guidelines for Evaluation of FPAs (Oceanic Development and Megapesca Lda, 2008), and European Commission guidelines (Evaluating EU Activities – a Practical Guide for the Commission Services, 2004) were used.

According to the Article 27(4) of the Financial Regulation and Article 21 of its Implementing Rules, Commission Services have to ensure that the spending activities they manage are subject to an ex post and/or ex ante evaluation in terms of the human and financial resources allocated and the results obtained in order to verify consistency with the set objectives. These evaluations must be proportionate to the resources mobilised for, and the impact of, the programme and activity concerned. The Commission requires the evaluation and analysis of impacts to support its focus on improving the quality and coherence of the policy development process.

The current Protocol became provisionally active on 18th January 2011 before fully entering into force 11th November 2011. It will be valid until the 17th January 2014. Before the Commission begins negotiating a new Protocol with the Seychelles, the Protocol requires:

- Factual information and an analysis of the general situation in Seychelles and its fishing sector, covering the economic, financial, political, institutional, social and environmental aspects, and likely developments in the short and medium term;
- A cost–benefit analysis, for the European stakeholders, of the conditions of access to Seychelles waters and fishing possibilities allocated to the European distant-water fleet under the current FPA; and
- A cost–benefit analysis of the current FPA for the EU and Seychelles, assessing in particular its impacts on Seychelles, at the political, institutional, economic, financial, social and environmental level.

It is in response to these requirements that this ex post and ex ante evaluation is being undertaken before the end of the current Protocol.

This report presents information collected from various sources, including Directorate Generals of the European Commission (EC) including Maritime Affairs and Fisheries (MARE) and European External Action Service (EEAS), DG DEVCO, Delegations of the EU, EU Member State administrations, and the professional

[1] Throughout this report when referring to the 'FPA' we refer to the FPA, Protocol, and Annex. And when referring specifically to the 'Protocol' we refer to both the Protocol and the Annex.
[2] Throughout this report when referring to Seychelles (the), we refer to the Republic of Seychelles.
[3] Council conclusions on a communication from the Commission on the external dimension of the Common Fisheries Policy', 19 March 2012.

association groupings of European Union (EU) ship-owners, concerned with the utilisation of fishing possibilities.

The report draws from the findings of a mission in Seychelles that took place between 15th to 21st September 2012 during which discussions were held with key Seychelles stakeholders, including Seychelles Fishing Authority (SFA), the Indian Ocean Tuna Commission (IOTC) and a wide range of government authorities and private sector players (see Annex L for 'People consulted').

The findings are presented in nine chapters as follows:

- Chapter 1 presents a general background of the situation in the Seychelles including a summary of likely developments that may influence relationships between the EU and the Seychelles;
- Chapter 2 presents the coastal and marine environment, including its aquatic and fisheries resources and with a focus on the status of fish stocks of importance to the EU;
- Chapter 3 presents an overview of the Indian Ocean tuna fishery including the management framework and the purse seine and longline fisheries;
- Chapter 4 presents detail on fisheries governance in the Seychelles and its state of implementation;
- Chapter 5 presents the fisheries in the Seychelles and associated information;
- Chapter 6 presents detail about the implementation of the FPA;
- Chapter 7 provides detail of the ex post evaluation of the Protocol by the agreed evaluation criteria;
- Chapter 8 provides an ex ante evaluation of a future Protocol based on the analysis of impacts; and
- Chapter 9 provides some conclusions and recommendations.

PRESENTATION OF THE FISHERIES PARTNERSHIP AGREEMENT AND ITS PROTOCOL IN FORCE

Table 0.1: main characteristics of agreement and protocol between EU and Republic of Seychelles

Item	Specificities
Agreement duration	6 years renewable (02.11.2007 to 01.11.2013)[4].
Protocol duration	3 years (18.1.2011 to 17.1.2014).
Date of entry into force (protocol) /Initialisation	Entered into force 11.11.2011 for the period 18.1.2011 to 17.1.2014. (By agreement between parties, provisionally applied from 18.01.2011).
Nature of the agreement	Tuna Fishery Agreement.
Yearly financial contribution	EUR 5 600 000 out of which EUR 2 220 000 are dedicated to the support of the fisheries sector of Seychelles. If the overall quantity of catches of tuna by EU vessels in Seychelles exceeds reference tonnage per year then the financial contribution shall increase by EUR 65 for each additional tonne caught.
Fishing fees to pay by the fishing vessel	Tuna seiners: EUR 61 000 per year. Surface longliners =or< 250 GRT: EUR 3 150 per year (reference catches: 90 t). Surface longliners > 250 GRT: EUR 4 200 per year (reference catches: 120 t). Surface longliners will pay an additional EUR 35 per tonne for catches over the reference tonnage for each vessel.
Reference tonnage	52 000 t per year.
Number and flags of vessels authorised to fish	Tuna purse seiners – Spain 22, France 23, Italy 3 (total 48). Surface longliners – Spain 2, France 5, Portugal 5 (total 12).

Source: European Commission[5]

[4]Official Journal of the European Union, 25.10.2012. L 295/24 [EN}. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:295:0024:0024:EN:PDF

[5] Modified from http://ec.europa.eu/fisheries/cfp/international/agreements/seychelles/index_en.htm.

1 GENERAL BACKGROUND AND SITUATION IN SEYCHELLES

1.1 Geography and population

1.1.1 Geography

The Seychelles is an archipelago of over 110 granitic islands occupying the south-western part of the Indian Ocean (IO) between latitudes 4° and 10° S. The total land area of the country is 452.5 km². The main island, Mahé has an area of 152.5 km²; the two other larger islands are Praslin and La Digue, with areas of 37.56 km² and 10.1 km² respectively. The relatively small area for the country and the fact that most land is mountainous cause's competition between resource users for land suitable for cultivation or development and recent land reclamation projects have been underway to create space for developments. This indicates the high value afforded to the extensive marine resources in respect to fisheries, tourism and offshore oil exploration.

The climate is tropical humid with an annual mean temperature of about 27ºC with only a 5ºC difference between maximum and minimum temperatures. Relative humidity is high at about 80 % throughout the year. Annual rainfall ranges from 1 700 mm in the south to about 3 000 mm in the hills.

As one of the world's small island developing state (SIDS), Seychelles is also remote from major markets. Its limited land-based resources mean it is heavily reliant on external resources and particularly those resources required for tourism and fisheries, imports of consumer products and capital inputs (Government of Seychelles, 2007).

The Seychelles Exclusive Economic Zone (EEZ) is 1.3 million km^2 and bordered by those of Mauritius, Madagascar, the Glorioso Islands (France), Mayotte, the Comoros and Mafia Island (Tanzania). The Seychelles EEZ is defined in the Maritime Zone Act (1999). An agreement for the delimitation of the maritime borders of Seychelles, the Union of Comoros and Tanzania on the IO triple-point was signed in February 2012 in Victoria, Seychelles, as part of the implementation of the AU border programme paving the way for the marking of the border.

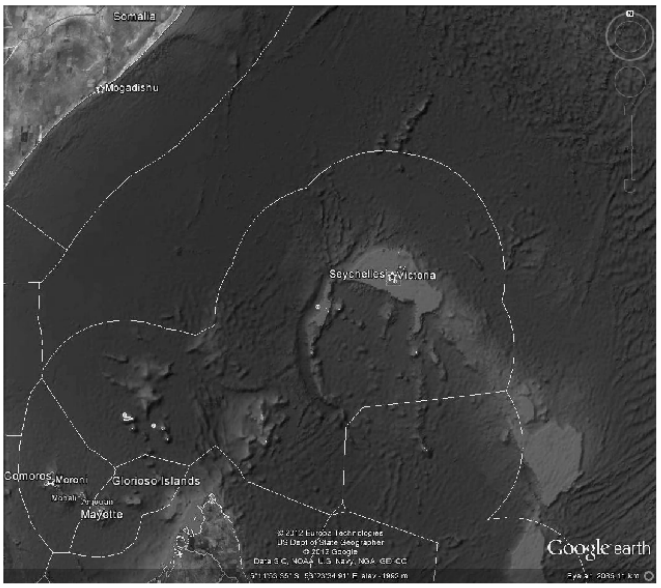


Figure 1.1: geographical location of Seychelles and EEZ

Source: Google Maps; extracted by consultants 01/11/12

1.1.2 Population

Classified as a middle income country, Seychelles has a population of 89 700 people with a growth rate of around 1 % per annum and an expected population of 105 700 in 2027. The population density is high and it exceeds 500 inhabitants per km² on the main island of Mahé, where 77 500 people reside. The population's age distribution shows 19.8 % are aged under 15 years and 6.8 % are aged 65 years or older. Life expectancy at birth was recently 73 years (National Statistics Bureau, 2011).

1.2 Political, economic and social issues

1.2.1 Institutional framework, political context and governance

Politics of Seychelles takes place within a framework of a presidential republic, whereby the President of Seychelles is both head of state and head of government, and of a multi-party system. Executive power is exercised by the government. Legislative power is vested in both the government and the National Assembly. The National Assembly has 34 members, elected for a term of five years, 25 members elected in single-seat constituencies and 9 members elected by proportional representation. The current Constitution of the Republic of Seychelles was approved by referendum on June 18, 1993 and amended in 1994, 1995, 1996, 2000, and in 2011. It enshrines the fundamental rights of citizens of Seychelles and affirms the democratic values.

President James Michel, representing the People's Party, in 2011 was elected to his second term in office. Earlier his party (known then as the Seychelles People's Progressive Front, or SPPF) practiced more quasi-socialist politics but after the global financial crisis and the subsequent economic reforms of 2008-10 they have adopted more liberal economic policies. According to the African Development Bank (2011) the Seychelles performs very well in terms of political stability in comparison to other African countries and its record on political and human rights and civil liberties is above the African average. Noted scope for improvements include the development of a more independent judiciary and improving press freedom.

The Seychelles National Strategy 2017 (Seychelles Government, 2007) provides a template for sustained growth through a strategic positioning of Government as facilitator. The mission statement is 'to double the GDP of Seychelles by 2017 through focused fisheries and tourism expansion programmes, the development of the financial services industry and the resultant growth of other economic sectors'. A Medium Term National Development Strategy (MTNDS) for the period 2013-2017 is currently being elaborated to supersede the Strategy 2017. A national committee has been set up to drive the process in which all government departments are represented, as well as civil society and the private sector. This new strategy is particularly expected to address changes in the economic base for development in light of the strengthened institutional framework for government and the global implications on the assumptions underlining the economy.

1.2.2 Fisheries policy

The fisheries policy of the Government of the Seychelles was first drafted in 1986 and the latest revision of the policy was published in 2005. Its principal focus is on "the promotion of sustainable management and responsible fishing practices, to provide food, employment, income, foreign exchange earnings, and the effective protection of the marine eco-system."[6] A fuller discussion of the fisheries policy is provided in section 4.2 of this Report.

1.2.3 Environmental policy

The fundaments of environmental policy are enshrined in the constitution that states that 'the State recognises the right of every person to live in and enjoy a clean, healthy and ecologically balanced environment and with a view to ensuring the effective realisation of this right …' it also sets out the roles and responsibilities of the state and its citizens in respect to realising this goal.

[6] Government of the Republic of Seychelles, 2005. For the Sustainable and Responsible Development of the Fishing Industry: The Fisheries Policy of Seychelles. http://www.sfa.sc/policy/policy2005.pdf

There are many examples of practical application of policy and strategy. For example, about 47 % of the land area has been designated as 'environmentally fragile and under protection' (including natural reserves, national parks, World Heritage Sites, and surrounding reefs and marine areas), as a result of the Seychelles becoming party to the United Nations Convention on Biological Diversity (UNCBD). Incorporating international best practices into national legislation is also common, for example, all cetaceans, turtles and the whale shark are protected according to law. This law has been encouraged through environmental education and groups of young people are now regularly involved in environmental activities under the umbrella of the Wildlife Clubs of Seychelles, a local NGO.

Of relevance to tuna fisheries are shark catches, either targeted (by semi-industrial fishers) or incidental (in any fishery). Many shark species are considered threatened in Seychelles in accordance with IUCN criteria but this status has not yet been translated into national legislation. The Seychelles is however, implementing a shark-national plan of action (NPOA), which constitutes national policy on sharks and management requirements, including the incorporation of regional standards (as given by the Indian Ocean Tuna Commission (IOTC) guidelines) regarding reporting of shark by-catch. In recent years as part of the fishery sector development plan, loans have been made available to the semi-industrial fleet, specifically to attract them out of the shark fishery and into the swordfish and tuna fishery.

With respect to incidental catches of sea birds the regional standard (IOTC resolutions 05/09, 10/06, 12/06) for mitigation of sea bird by-catch applies to the EU and Seychelles-flagged vessels fishing in the EEZ. However, it was reported that no sea bird by-catch occur in the EEZ.

As for turtles, the regional standards (IOTC resolution 12/04) for mitigation of sea turtle by-catch have also been adopted into Seychellois policy, encourage uptake by the industry. It was reported by the 'fishing boat owners association' that the introduction of selective hooks had reduced the catch of turtles greatly and that they no longer see this as a problem. Concerns were expressed over the level of by-catch of turtles and sharks (including rays) in the industrial purse seine fisheries. Without fishery observers placed on industrial vessels it is difficult to validate or discount this concern.

1.2.4 National budgetary, social and development objectives

The most recent National Development Plan is encapsulated in 'Seychelles Strategy 2017' that was adopted in 2007; the medium-term strategy outlined the Government's vision for 23 sectors (including fisheries). The strategy identified thematic priorities and focused on doubling the GDP in 10 years by stimulating private sector development and reducing the commercial activities of the State, expanding the fisheries and tourism sectors, and reducing public debt.

However, following the severe national economic crisis of 2007-2008 and the recognition of serious macroeconomic imbalances in the country, coupled with the global economic crisis, the need to recast the development agenda became strongly apparent. At the end of 2008, the Seychelles defaulted on its foreign debt repayment, and this spurred a new comprehensive reform programme that the Government put in place with the assistance of development partners (including the Bank Group, the Bretton Woods Institutions and the European Union). As a result the economy has recorded a significant turnaround and the creditworthiness of the country has been revived. The Ministry of Foreign Affairs expect the new medium term National Development Strategy 2013-17 to be finalised before the end of 2012 (AFDB, 2011).

The new strategy is expected to be more practical with targeted interventions in five core areas; these are currently being considered in (a) Climate change, renewable energy and water development, (b) Human resource development, (c) Economic infrastructure including information and communication technology (ICT) and transport, (d) Food security, trade and diversification and (e) Improvement in measurement of national statistics.

The UNDP (2011) Human Development Index (HDI) that provides a measure of national development ranks the Seychelles at 0.773, which gives the country a rank of 52 out of 187 countries with comparable data. The HDI of Sub-Saharan Africa as a region increased from 0.365 in 1980 to 0.463 today, placing Seychelles above the regional average.

1.2.5 Economic situation and outlook

1.2.5.1 General

As a SIDS with a relatively open economy which is highly dependent on international trade, Seychelles is particularly vulnerable to external shocks. Furthermore, the country imports over 90 % of all the goods that it consumes and, as such, its trade balance is inevitably in deficits.

Since November 2008, an International Monetary Fund (IMF) supported economic reform programme aimed at putting the country's economy back on a more sustainable footing has been implemented. Economic liberalization is a key component of the reform programme whereby prices are now primarily market determined and the government is gradually moving out of the productive sectors and assuming the role of facilitator in the private sector driven economy. Furthermore, the country adopted a floating exchange regime in 2008 replacing the pre-reform fixed exchange rate system. The authorities have also embarked on a comprehensive programme of downsizing the country's total debt from a hitherto reform level of 151 % of GDP to stand at 81 % of GDP at the end of 2011. Debt restructuring negotiations namely with the Paris Club has been central to the success of the above-mentioned initiative.

Following the implementation of the reform programme Seychelles has been on a path of sustained economic growth. The country's economy grew at 6.7 % and 4.9 % in 2010 and 2011 respectively despite the generally unfavourable global economic environment. The floating exchange rate led to the depreciation of the local currency, the Seychelles rupees (SCR), resulting in higher prices in light of the fact that Seychelles is a net importer. Nevertheless, inflation generally remained low in 2010 and 2011 at 2.4 % and 2.6 % respectively.

The overall size of the economy is small, with nominal GDP estimated to be about EUR 700 million in 2010 (Table 1.1). The direct contribution to GDP from the fishing industry has remained generally constant over the last three years at less than 1 % or around SRC 100 million (Table 1.1). However, when the indirect contributions from industries servicing the fisheries sector and fish processing are considered, this figure rises to about 8.4 % of the GDP (Figure 1.2), 7 % of jobs and 35 % of export earnings.

Tourism is the main contributor to economic growth and to foreign exchange earnings, directly contributing over 26 % to GDP. Its upward and downward linkages to the rest of the economy are quite extensive and provide about 30 % of the total employment and 70 % of foreign exchange earnings.

The most important risks to the economic outlook are external risks, including a further deterioration of economic conditions in Europe that could lower tourist inflows and piracy. Domestic risks include additional losses by key public enterprises such as the national airline and public utilities, that could jeopardize the government's debt reduction objectives and, in an extreme scenario, put into question stabilization gains since 2008. These risks have been mitigated by corrective measures, including a strategic alliance that endows the national airline with new capital and international management expertise, and increases in public utility tariffs to cost-recovery levels. Stricter monitoring of public enterprises and early action in case their financial situation deteriorates will minimize risks of drains to the budget (IMF, 2012).

Table 1.1: GDP by industry at current market prices: SCR (million)

Production account – Industry	2004	2005	2006	2007	2008	2009	2010
Agriculture	95.5	92.3	95.9	106.6	130.5	172.0	165.0
Fishing	64.1	72.2	71.4	83.6	104.5	88.3	99.6
Manufacture of food	130.9	157.5	184.4	275.5	338.9	386.9	423.4
Manufacture of beverages and tobacco	83.8	109.9	153.1	170.2	171.1	198.7	207.8
Manufacture of concrete, rock products, glass etc.	27.3	41.4	51.1	51.2	70.7	80.2	79.0
Manufacturing, other	111.5	133.2	114.3	166.2	201.0	152.6	153.1
Electricity, gas, steam and air conditioning supply	67.1	34.0	58.0	36.3	28.5	70.4	69.6
Water supply; sewerage, waste management and remediation activities	32.4	41.8	45.6	53.8	64.9	74.5	87.4
Construction	229.9	311.0	304.6	360.6	486.2	568.5	534.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	278.6	310.4	355.7	522.2	762.6	1 000.7	929.1
Transportation and storage	347.5	505.3	641.9	674.7	855.4	1 027.2	810.3
Accommodation and food service activities	447.0	464.9	558.7	1 001.2	1 501.0	1 954.7	1 994.2
Information and communication	204.5	224.7	246.6	231.2	275.9	347.6	357.9
Financial and insurance activities	232.8	242.8	269.8	361.7	429.1	538.6	484.7
Real estate activities	47.0	70.0	107.9	156.3	314.7	556.2	623.3
Owner occupied dwellings	466.9	493.2	521.9	549.7	760.0	1 130.8	1 187.1
Professional, scientific and technical activities	49.2	48.6	101.7	121.5	155.0	164.5	198.0
Administrative and support service activities	85.0	105.9	127.4	177.2	211.5	310.1	336.0
Public administration and defence; compulsory social security	453.7	433.8	518.4	590.5	622.0	558.8	521.3
Education	197.8	210.1	212.0	231.4	257.8	243.5	273.2
Human health and social work activities	145.7	158.3	149.8	145.1	156.8	161.4	178.8
Arts, entertainment and recreation	38.8	44.0	44.9	46.7	55.6	65.3	67.3
Other service activities	26.0	30.5	34.1	36.7	37.3	55.8	57.5
less intermediate FISIM	(81.8)	(88.6)	(100.2)	(132.0)	(188.0)	(224.9)	(181.9)
GDP at basic prices	**3 781.0**	**4 247.2**	**4 868.8**	**6 018.2**	**7 803.2**	**9 682.3**	**9 655.9**
Taxes on Products and Imports	520.4	477.6	458.8	559.7	713.4	814.7	1 311.9
Goods and Services Tax	429.0	452.2	487.5	534.9	626.8	970.3	670.9
Subsidies	(16.1)	(26.0)	(68.5)	(150.3)	(42.6)	(16.8)	(17.3)
GDP at current market prices	**4 714.4**	**5 151.0**	**5 726.5**	**6 962.5**	**9 100.8**	**11 450.4**	**11 621.3**

Source: Seychelles National Bureau of Statistics (http://www.nsb.gov.sc/statistics/national-accounts) 2012

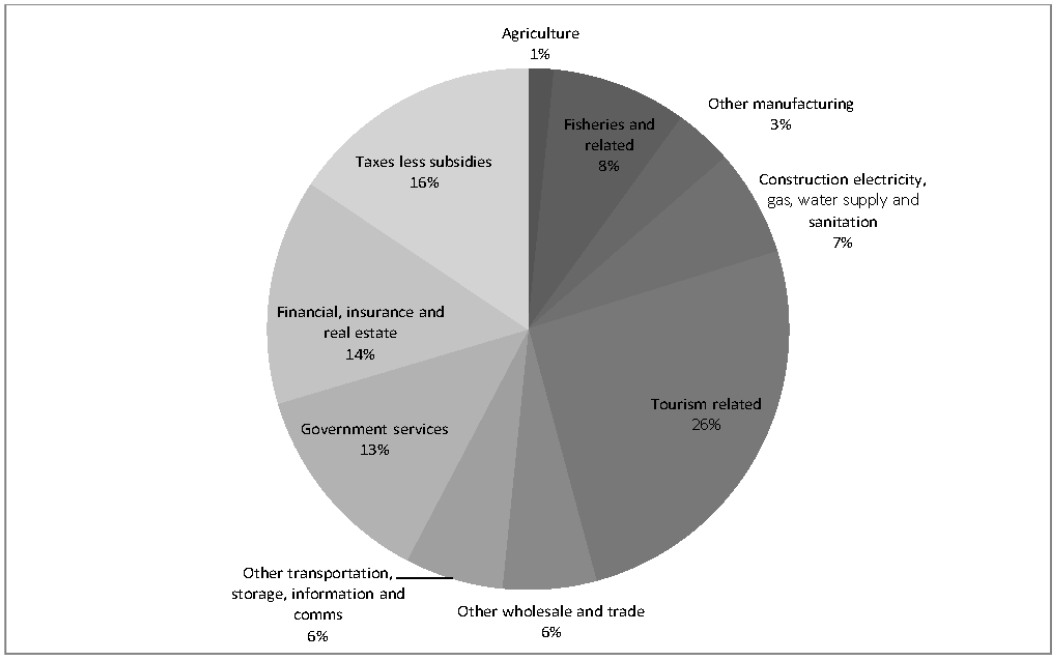


Figure 1.2: GDP by sector at current market prices (% in 2009)

Source: Seychelles National Bureau of Statistics (http://www.nsb.gov.sc/statistics/national-accounts) 2012

1.2.5.2 Contribution of fisheries to national economy

The fisheries sector had mixed results in 2011, with total domestic production declining together with the total volume of fish and fish products exported. The revenue generated from the industrial tuna fishing activity reached a record high as did the value of exports, due to the price of yellowfin and skipjack on the international market (Table 1.2). As a result, gross revenue generated by the fisheries sector and related activities increased in respect to previous years and the fisheries sector retained its position as an important foreign exchange earner for the country. Concerning trade, both export and import receipts increased in 2011 compared to the previous year.

Table 1.2: estimated ex-vessel prices for tuna (Euro) 2011

	EUR /tonne		
	Skipjack	**Yellowfin**	**Bigeye**
2009	848	1 338	1 209
2010	969	1 767	1 425
2011	1 258	1 951	1 640

Source: Average annual prices based on Globefish CIF price data converted to Free on Board (FOB) prices by accounting for transportation costs[7] (see Annex K for further discussion of these prices).

[7] Based on stakeholder interviews, transportation costs have been estimated at approximately $108/tonne. Skipjack price estimates were based on annual averages of CIF prices of frozen skipjack in Thailand. Yellowfin and bigeye tuna price estimates were based on annual averages of CIF prices of frozen yellowfin and bigeye tuna in Spain. Exchange rates were taken from an annual average of values from www.oanda.com.

The semi-industrial sector production decreased in 2011 by nearly 20 % mainly due to piracy and strong monsoon winds, while the artisanal catch increased by 10 % compared to 2010. This increase in artisanal catches indicates a potential increase in the quantity of fish available for domestic consumption and export. The index of monthly fish prices on the domestic market recorded an increase in 2011 (Figure 1.3).

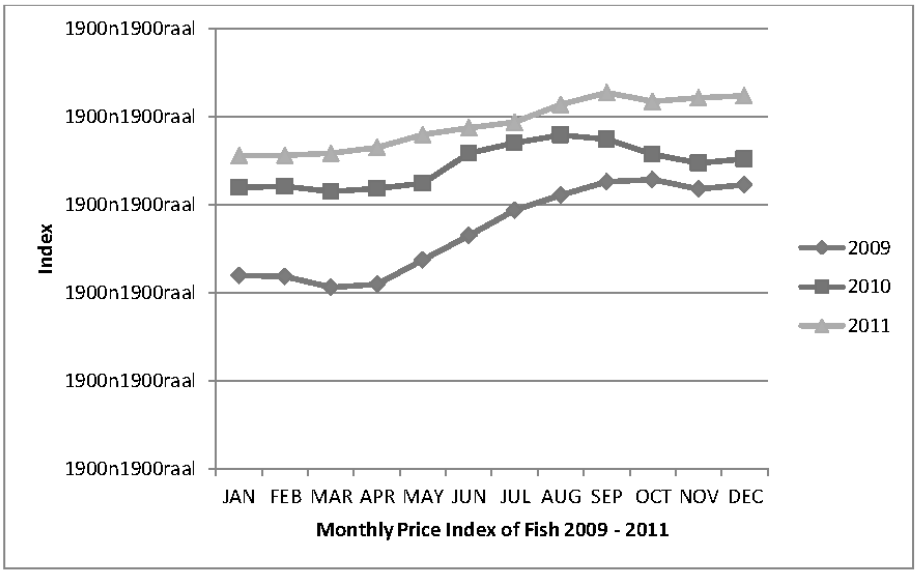


Figure 1.3: monthly price index of fish 2009 - 2011 sold in Seychelles

Source: SFA and price index from NSB (2012)

Industrial tuna fishing activity continues to be of increasing importance to the economy, with a steady increase in gross income over the last decade, albeit with a dip in 2009 and 2010 attributable mainly to the impact of piracy[8]. The largest contribution comes from the expenditure by vessel owners on goods (e.g. fuel, berthing fees, food supplies), and services in Port Victoria and from the fishing authorisation fees paid by EU and other vessel owners and the financial contribution made by the EU. In 2011, gross expenditure reached SCR 1.45 billion, 14.9 % more than the SCR 1.27 billion earned in 2010 (Table 1.3)[9].

Trade in fish products and related activities are also an important income generating activity for the country and significantly important for the inflow of foreign exchange. In 2011, 33 404 t of fish were caught by domestic fleets and fishers, 36 919 t of fish and fish products were exported and 68 712 t of fish were imported (SFA, 2012), of which 59 069 t was landed by the EU fleet (Eurostat).

In value terms, the gross value of exports in 2011 was SCR 3.14 billion, a rise of 23 % from 2010, while the gross value of imports increased by almost three times that rate, at 67 %, to reach SCR 1.61 billion. This gave a gross trade balance surplus in fish and fish products of SCR 1.53 billion for 2011 (SFA, 2012).

[8] Project Manager, SFA, M, Marguerite, pers. comm., 20 September 2012
[9] Ibid.

Table 1.3: main sources of revenue from industrial tuna fishing activity 2009-2011: SCR (million)

	2009	2010	% change	2011	% change
Vessel Expenditure (provisions and services for vessels in port, fuel etc.)	1 157.00	1 145.00	-1.04	1 290.00	12.66
Company Expenditure (agents in Seychelles etc.)	12.11	19.55	61.44	19.84	1.48
Seamen Compensation	0.54	0.51	-5.56	0.58	13.73
Fishing Vessel Authorisation, Excess Catch & EU Compensation	229.00	100.74	-56.01	143.40	42.35
Total	**1 398.65**	**1 265.80**	**-9.50***	**1 453.82**	**14.85**

Source: SFA 2012[10] (* No reason was provided or found for the reduction in revenue that occurred between 2009 and 2010 for the fishing vessel authorisation, excess catch and EU compensation)

Table 1.4: surplus of exports over imports of fish and fish products

2011	Domestic catch	Imports	Exports
Mass in t	33 303	68 712	36 919
Value in billions SCR	-	1.61	3.14

Source: SFA 2012

The gross inflow from fisheries made up 33 % of current account receipts in 2011 (Table 1.5). Official figures from the Central Bank of Seychelles indicate that in 2011 gross earnings from fisheries and fisheries-related activities surpassed gross earnings from the tourism industry. This clearly highlights the economic importance of the fisheries sector and its role in the development of the country.

Table 1.5: gross inflow of foreign exchange generated by fisheries sector, 2009-2011: SCR (,000)

Foreign Currency Flows	2009	2010	% change	2011	% change
Visible Exports	3 142 212	2 565 990	-18.34	3 147 020.00	22.64
Revenue from Industrial Tuna Fishing	1 398 649	1 265 800	-9.53	1 453 820.00	14.90
Gross inflow from fisheries (a)	4 540 861	3 831 790	-15.63	4 600 840.00	20.09
Current Accounts receipts (b)	12 291 100	10 627 800	-13.53	14 126 000.00	32.92
(a) as % of (b)	37%	36%		33%	

Source: SFA 2012

The Seychelles also provides a national registry for fishing vessels, in November 2012 seven purse seiners, previously Spanish registered, and 25 longliners, previously Taiwanese registered, were reported as registered in the islands and holding authorisation to fish in the Seychelles. These vessels may be flagged in the Seychelles for a variety of reasons and ownership may be foreign or local. The registered addresses of the owners of these vessels appear to be generally in tax-free havens including the Channel Islands, Belize, and Netherland Antilles for the purse seine vessels and the Seychelles for the longliners. This may have a

[10] Section 5.4 provides more detail on fishing related income.

significant impact on the level of revenue benefits the Seychelles gains from providing a registry for such fishing vessels.

1.2.5.3 Outlook

The Seychelles' economic growth is expected to remain positive in coming years, with fisheries remaining an important contributor to overall economic development. While the services sector will remain the main component of the country's economy, driven by growth in the tourism industry, the domestic fishing fleet is expected to expand, and fish processing is likely to increasingly add value to available fishery resources. The Seychelles serves as a hub for the purse seine tuna fleet in the region and this role is expected to be strengthened in the medium to long term as its capacity to service the purse seine fleet develops.

1.2.6 Employment

As a SIDS the Seychelles has severe human resource limitations and skills shortage, although the opening of the Seychelles University in 2009 was a positive step towards addressing skill gaps. The most significant sector for employment in the Seychelles is the tourist industry (accommodation and food service activities in Table 1.6). The fisheries sector employed 17 % of the 2005 workforce, some 4 600 Seychellois employed in fishing and processing and a further 1 000 finding employment on an ancillary basis. As a result, in excess of 2 200 families were supported by employment in the fisheries sector (SFA, 2012). However, in national statistics this figure is not easily discernible as this sectoral employment is spread between the fishers industry (also merged with agriculture and forestry), manufacturing and other areas (Table 1.6).

1.2.7 Food security

A large amount of local food consumption is imported due mainly to the small area of land under cultivation for crops or livestock. This implies that accessible food imports are an element of national food and nutrition security until such time as the local agricultural sector develops to reduce the need for some imported foods. Fish provides a substantial portion of the protein component of the Seychellois diet and accounts for some 35-40 % of the total protein consumed, in 2009 and 2010, fish was imported for consumption as the local supplies were not adequate to meet demand.

By-catch from the industrial tuna fleet (e.g. swordfish, marlin) in recent years been increasingly important for local consumption of fresh and frozen fish. In 2011 imports of prepared and preserved fish rose and fish fillets increased by over 200 %, due in part to a reduction in locally available fish and high demands from the local community and the tourist industry. Two local processors have shops in Victoria where they sell directly to the public locally caught fish and by-catch from the foreign (EU) tuna purse seiners. These processors also reported that they are exploring new product lines for locally produced processed fish to meet local demands.

1.2.8 Business and investment climate

The Seychelles was ranked 103rd out of 183 countries for ease of doing business by the International Finance Corporation and the World Bank in their Doing Business Guide 2012. Seychelles's rank was higher (easier to do business) than the regional average but behind far better rankings for Mauritius and South Africa. In the 2007 'Strategy 2017', the Government of Seychelles indicates a commitment to provide an efficient and transparent service to facilitate the private sector.

1.2.8.1 Fisheries-specific investment climate

The main limitations for fisheries investments were reported to be: the remoteness and associated cost for supplies, spare parts, fuel, etc.; the limited labour force and the associated competition from the tourist industry for qualified maritime personnel; the limited quay and port facilities and overall space for dock side activities; and the perceived monopoly of the cannery Indian Ocean Tuna (IOT), which limits opportunities for international businesses to set up and for local investors to expand.

The potential advantages and future advantages for fisheries were reported to include; the potential branding of the Seychelles as a niche and pristine environment that is attractive to consumers that demand eco-friendly high quality products; signs of liberalisation of IOT market hold; government indications of a desire to facilitate

investment subject to sustainability and ecologically safe limits; the construction of a new quay to facilitate easier port access, and to offer further processing opportunities whilst easing transhipments. International stakeholders in the tuna industry have cited among the advantages of working in the Seychelles as being the good relationship with the government and a safe environment as the main features that made it attractive.

Table 1.6: breakdown of employment, by industry (2010 - 2011)

Industry	*2010 Annual Average*	*2011 Annual Average*
Agriculture, forestry and fishing	480	506
Mining and quarrying	30	33
Manufacturing (including fish processing/canning)	4 570	4 670
Electricity, gas, steam and air conditioning supply	298	417
Water supply; sewerage, waste management and remediation activities	690	663
Construction	5 647	6 114
Wholesale and retail trade; repair of motor vehicles and motorcycles	3 620	4 424
Transportation and storage	3 358	3 825
Accommodation and food service activities	7 887	10 098
Information and communication	861	922
Financial and insurance activities	1 071	1 159
Real estate activities	515	727
Professional, scientific and technical activities	1 494	1 744
Administrative and support services activities	3 145	3 491
Public Administration and defence; compulsory social security	4 958	4 945
Education	2 460	2 548
Human health and social work activities	1 593	1 686
Arts, entertainment and recreation	601	903
Other service activities	853	970
Activities of extraterritorial organizations and bodies	32	46
All industries	**44 159**	**49 891**

Source: NSB 2012

Business promotion at the local level include the Small Enterprise Promotion Agency (SEnPA), which promotes the development of small business enterprises, crafts and cottage industry in Seychelles, complementing the loan provision function of the Development Bank of the Seychelles (DBS). Their mission is to improve the business environment and facilitate entrepreneurship in small enterprises and to provide the necessary structures for their sustainable growth. SEnPA implements government policy on small business development including for small scale fishing and for agro processing (Government of Seychelles, 2010).

The Agriculture and Fisheries Incentives Act (AFIA) provides for the grant of certain incentives to persons engaged in agriculture, fisheries and related activities. These incentives include; business tax concessions; exemption from social security contributors; import foreign labour and receive concessions on GOP (Gainful Occupation Permit); trade tax concessions; G.S.T (Goods and Services Tax) concessions; and retentions of a percentage of foreign exchange earnings (Seychelles Investment Bureau, 2012[11]).

Loans availability includes the Credit Concessionary Agency (CCA) and the Development Bank of Seychelles (DBS), which in 2011 together provided 61 loans to fisheries totalling SCR 7 383 million. Commercial banks also are able to make loans to the fishing industry.

1.3 External Relationships

1.3.1 EU and Seychelles relationships in the regional context

The context and nature of the EU's relations with Seychelles is considered in this section.

1.3.1.1 EU co-operation strategy (regional and national context)

The EU's relation with Seychelles has developed through its contacts with the wider group of African, Caribbean and Pacific (ACP) states, and notably through the Lome Conventions and Cotonou Agreement. The latter is gradually being replaced by the negotiation of regional reciprocal trade and development agreements referred to as Economic Partnership Agreements (EPAs). The Seychelles negotiated an EPA which came into force in May 2012. It provides for tariff free access to the EU market for exports from the Seychelles, subject to origin rules.

Article 23a of the 2010 revision to the Cotonou Agreement emphasises the importance, *inter alia*, of the development and implementation of fisheries development strategies and management plans; the mainstreaming of fisheries into national and regional development strategies; the development of infrastructure and technical know-how necessary to enable ACP countries to achieve maximum sustainable value from their fisheries; capacity building of ACP countries to overcome external challenges that hinder them from taking full advantage of their fisheries resources, and the promotion and development of joint ventures for investment in the fisheries sector of ACP countries. The Article also recognises that any fisheries agreement negotiated between the Community and ACP States "shall pay due consideration to consistency with the ACP development strategies"[12].

The EU has had fisheries agreements with the Seychelles for the last 25 years and currently has a Fisheries Partnership Agreement (FPA) with the Seychelles. The six-year FPA entered into force on 2 November 2007[13] and will expire on 1 November 2013. The current Protocol to the FPA provisionally entered into force on 18 January 2011 for a period of three years for a total financial contribution of EUR 5.6 million per year for the three years[14].

1.3.1.2 10th EDF commitments

Seychelles

The significance of the FPA for the Seychelles is highlighted when compared to the EUR 11.9 million EU contribution supporting the Seychelles National Indicative Programme (NIP) for the six year period, 2008–2013

[11] http://www.sib.gov.sc/pages/invsey/AgricultureIncentives.aspx

[12] Article 23a, Cotonou Agreement, 2010 Revision. http://ec.europa.eu/development/icenter/repository/second_revision_cotonou_agreement_20100311.pdf.

[13] Official Journal of the EU 25.10.2012 L 295/24 [EN].

[14] See Chapter 6 for a fuller discussion.

(i.e. slightly less than EUR 1 million per year). The focus for the current NIP is budgetary support for the Seychelles Economic Reform Programme[15].

At regional level

However, also of considerable significance is the EU contribution of EUR 645 million from EDF 10 funds to the Regional Indicative Programme (RIP) for the region of Eastern and Southern Africa and the Indian Ocean (ESA-IO). The Strategy Paper associated with the RIP presents the strategic framework for the co-operation between the EU and four regional economic communities or RECs (COMESA, the EAC, the IOC and IGAD) for the period 2008-2013[16].

The EUR 645 million is allocated as follows:

1. EUR 548 million (85 %) to support regional integration processes, trade related assistance, private sector development in order to deepen regional integration and enhance trade.
2. EUR 64 million (10 %) is committed to regional political integration supporting activities in the areas of peace and security, conflict prevention, post-conflict reconstruction, and to an extent, security issues (piracy) and governance (electoral processes).
3. EUR 32 million (5 %) for other interventions such as assisting the region in knowledge development and capacity-building, and improvement of inter-regional coordination[17].

The four regional organisations and the EC constitute the Inter-regional Coordinating Committee (IRCC) which is responsible for the implementation of the strategy and for the harmonisation of policies[18].

These developments towards greater regional organisation, the development of fisheries strategies by the RECs, the existence of the IOTC as a regional fisheries body and the highly migratory nature of tuna and tuna-like species indicate a movement towards more comprehensive regional fisheries management. In this context a regional FPA for these species may need to be considered in the future.

EU funded regional projects

There are several fisheries programmes of a regional nature being funded by the EU:

1. Implementation of a Regional Strategy for the ESA-IO (IRFS) Project (GCP/RAF/466/EC), also known as the SmartFish project, has as its specific objective "to support the implementation of ESA-IO regional strategy for sustainable management and development of the fishery sector"[19] (EU funding EUR 6 million, 10th EDF[20]).
2. The ACP FISH II Programme is an ACP-wide programme, which aims "to improve fisheries management in ACP countries so as to ensure that fisheries resources under the jurisdiction of these countries are exploited in a sustainable manner" (EU funding: EUR 30 million[21]).
3. The Regional Plan for Fisheries Surveillance in the South-West Indian Ocean is a partnership between the EU and the IOC. The objectives of the programme are to reduce IUU fishing in the region, improve surveillance in the IO, strengthen MCS capacity of the countries in the region and

[15] Seychelles Country Strategy Paper and Indicative programme for the period, 2008-2013 and addenda. Information provided by the European External Action Service (EEAS).
[16] Delegation of the European Union to the Republic of Zambia and COMESA, Regional Strategy Paper, found at: http://eeas.europa.eu/delegations/zambia/eu_comesa/dev_coop/regional_strategy/index_en.htm.
[17] Ibid.
[18] Ibid.
[19] http://www.agrotec-spa.net/?NODE=PORTFOLIO&id=408
[20] Press release, 25.01.2012. Delegation of EU to Mauritius, Seychelles and Comoros.
http://eeas.europa.eu/delegations/mauritius/press_corner/all_news/news/2012/240112_fao_smartfish_en.htm.
[21] ACP Fish II website: http://acpfish2-eu.org/.

thereby contribute to fisheries resources conservation and sustainable management. (EU funding EUR 10 million)[22].

1.3.2 Trade relationships between Seychelles and the EU

Under the interim EPA which came into force in May 2012, the Seychelles will continue to benefit from a 0 % tariff for its exports to the EU market. The EU is by far the Seychelles' largest market as it accounts for sales equivalent to 60.9 % of exports[23]. The Seychelles exports to the EU totalled EUR 185.081 million euros worth of goods in 2011, of which canned tuna accounted for EUR 170.242 million (Table 1.6). This was followed by fresh and frozen fish valued at EUR 7.633 million[24]. The wider export base of the Seychelles is otherwise very limited beyond fisheries and tourism. Some 29.4 % of imports to the Seychelles comes from the EU[25] and are comprised mainly of machinery, vehicles, pharmaceutical products and chemicals[26].

Table 1.7: trade between EU and Seychelles showing the importance fishery products

Imports and exports	Euro (million)
Total imports from Seychelles to EU	**185.081**
Total exports to Seychelles from EU	**199.496**
Canned tuna imports from Seychelles to EU	170.242
Other fish and fish products imports from Seychelles to EU	7.634
Total fish and fish product imports from Seychelles	177.876
Fish as % of total imports from Seychelles to EU	96.11 %

Source: Eurostat

1.4 Other relevant third country relations

The Seychelles benefits from a range of large regional projects that are coordinated through regional bodies such as SADC or COMESA in the field of fisheries.

In addition to donor agencies, Seychelles has relations with other countries in the IO such as with Mauritius. In August 2012 a joint commission was launched to manage the world's largest offshore joint management zone measuring 400 000 km^2 of continental shelf of the Mascareigne Plateau. This will enable both countries to jointly regulate seabed activities, including the conservation and management of the living resources of the seabed.

1.5 Summary of likely developments in the short and medium term

In response to the local and global economic changes between 2007 and 2008 and the resultant IMF supported reform programme the government has been rethinking its development agenda and is preparing a new medium-term National Development Strategy to replace 'Seychelles Strategy 2017' (March 2007). Expanding fisheries and tourism were major elements of Strategy 2017 – with the hope that they would contribute to the doubling of GDP over 10 years. It has been indicated that the new Strategy will still continue with this direction, and that the fisheries sector will continue to be of importance in national social and economic development. It has also been indicated (AFDB 2011) that expanding the on-shore value chain of fisheries is likely to be a priority, with the overall aim of improving the climate for private sector development. It

[22] Indian Ocean Commission website: http://fisheries.ioconline.org/regional-fisheries-monitoring.html.
[23] Delegation of the European Union to the Republic of Mauritius, the Union of the Comoros and the Republic of the Seychelles: http://eeas.europa.eu/delegations/mauritius/eu_seychelles/trade/index_en.htm
[24] Eurostat.
[25] Footnote 23.
[26] Footnote 24.

was evident during consultations with the private sector in September 2012 that this priority is already being applied. Consulted processors spoke of their new value adding activities, both current and /or in the pipeline, and there was optimism that the new fisheries quay and associated infrastructure would open further opportunities. In the Seychelles Strategy 2017 many proposals were made for developing the fisheries sector. During recent consultations it appears that this priority remains intact, with key proposals including aims:

- To expand production and value adding of existing and new industrial processing facilities;
- To maximise supply and diversity of high-value fresh fish to the tourist industry;
- To promote local employment, domestic ownership and outsourcing of non-core functions;
- To implement policies to enhance the industry's competitiveness;
- To improve community awareness and ownership of the fisheries sector;
- To improve fisheries and maritime education from schools to the Maritime Training Centre;
- To ensure that incentives are granted on an equal and transparent basis;
- To reduce the Governments share of equity in the industry; and
- To explore additional markets for fisheries products.
- To bolster the role of the SFA;
- To meet and exceed FAO standards, e.g. on ensuring environmental protection.

2 COASTAL AND MARINE ENVIRONMENT, AQUATIC ECOSYSTEMS AND FISHERIES RESOURCES

2.1 Coastal and marine environment

The IO is generally accepted as having an area of some 73 440 000 square km, making up about one fifth of the world's ocean area[27]. Opinions differ as to the exact borders of the Ocean, which in turn partly determine estimates of its exact size.

2.1.1 Main characteristics of the IO waters in relation to the biology of the highly migratory pelagic species.

The distribution of tuna relates to oceanographic environmental characteristics, such as the distribution of sea-surface temperatures (SST) and chlorophyll concentrations[28] vital for photosynthesis and the production of phytoplankton and zooplankton. Primary production is significantly more intense in two regions of the Indian Ocean: the North-West Indian Ocean region adjacent to the Somali coast where coastal upwelling occurs driven by the monsoons and in an area known as the Seychelles-Chagos Thermocline Ridge which is characterised by periodic open oceanic upwelling (see Annex D for more detailed discussion). Primary production in the various EEZs of the IO is compared in Figure 2.1 along with the average production levels in the region and globally. Of the tropical tunas, bigeye is more abundant in a band between about 10ºN and 10ºS of the equator. Yellowfin tuna are caught mainly in the northern IO (Arabian Sea) and in the region north of the Mozambique Channel[29]. Skipjack tuna (*Katsuwonus pelamis*) have a SST preference of between 20-32ºC[30] and are widely distributed in the northern and western Indian Ocean[31].

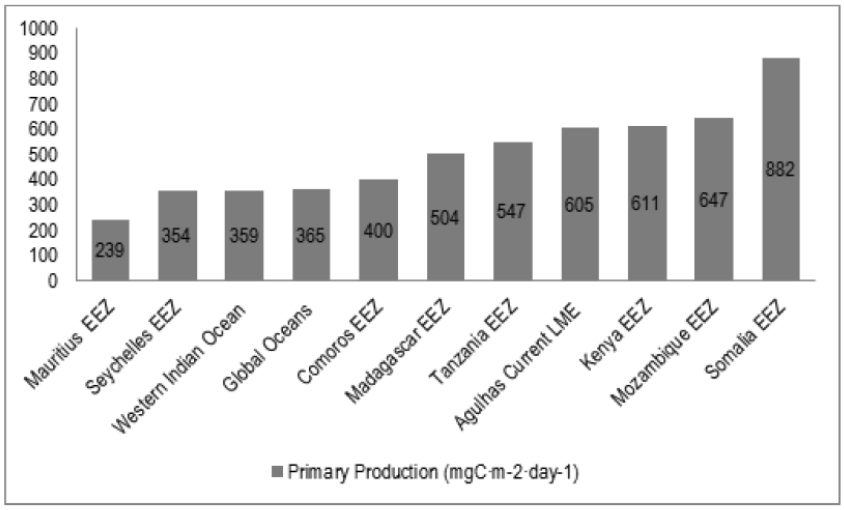


Figure 2.1: primary production in EEZs and regions of south-western IO

Source: http://www.seaaroundus.org/data/

[27] http://www.britannica.com/EBchecked/topic/285876/Indian-Ocean/22775/Upwelling

[28] Pei-Fen Lee, I-Chin Chen and Wan-Nien Tseng. 1999 Distribution Patterns of Three Dominant Tuna Species in the Indian Ocean, Proceedings Esri International User Conference, San Diego, California. Found at: http://training.esri.com/bibliography/index.cfm?event=general.recorddetail&id=6695

[29] Ibid.

[30] J.D. ARDILL, 1984, TUNA FISHERIES OF THE SOUTH WEST INDIAN OCEAN. FOUND AT: HTTP://WWW.FAO.ORG/DOCREP/FIELD/255095.HTM

[31] Fuller detail in Annex E.

2.1.2 Coastal and marine environment of the Republic of Seychelles

The territory of the Seychelles consists of a scattered archipelago of granitic and coralline islands spread over about 1 million km^2 of the western Indian Ocean[32]. There are an estimated 115 islands that make up the archipelago.

2.1.2.1 Main characteristics of the Seychelles coastal waters

The natural coastline of the Seychelles consists of two primary types: steep granitic shorelines, and flatter coastal plains fringed by coral reefs, which are the more vulnerable type of coastline. A third and newer type of shoreline has resulted from land reclamation, particularly around the capital Victoria[33]. An extensive area of coral reef of some 1 690 km^2, with numerous coral lagoons, 310 coral species and eight sea grass species, characterize the Seychelles coastal area. Mangroves are limited to relatively small areas, covering in total approximately 29 square kilometres[34].

2.1.2.2 Health status of the coastal and marine environment

The coastal waters of the Seychelles are sensitive to direct and indirect anthropogenic impacts and to natural disasters. Serious coral bleaching around the Seychelles was recorded following the 1998 SST warming event associated with the El Nino Southern Oscillation phenomenon. However, encouraging signs of new coral growth have been noted. The coastal area is in any case likely to have varied responses to climate change and to associated sea level rises that are anticipated to impact upon the demersal fisheries and offshore industrial fisheries. Sea level rise could, for example, result in saltwater intrusion into rivers, marshes, wetlands and aquifers, whilst adversely affecting the habitats of certain species of fish and coastal shellfish. This is particularly likely to be so for mangrove systems.

For environments lying further offshore there are remotely-sensed datasets available on the EEZ and wider region. These include SST, altimetry and current data. Recently, these have been used to support climate change research (e.g. studies on climate variability effects on tuna fisheries under the Seychelles Second National Communication to the UNFCCC, 2007). Global warming can influence ocean-atmosphere interactions, altering ocean currents and affecting the delivery of nutrients into the euphotic layer, resulting in changes in reproductive patterns, migration routes and ecosystem relationships.

The health of the coastal and marine environment is of vital importance to the economy of the Seychelles. Given that the Seychelles faces serious anthropogenic and natural risks, including fluctuations and natural disasters, there is a need for greater resources to monitor changes for the benefit of the archipelago and its fisheries resources.

2.2 Main fisheries resources in Seychelles

The biodiversity found in the open ocean of the Seychelles EEZ includes over 1 000 fish species and countless other marine invertebrates and microorganisms, and new species discoveries continue to be made. Inshore coral reefs continue to provide habitats for many marine mammals, reef fishes, invertebrates and microorganisms.

In the near shore, demersal fish resources include snappers (Lutjanus spp.), green jobfish (*Aprion virescens*), groupers (Epinephelus spp.), capitaines (Lethrinids spp.) and the semi-demersal trevally (Carangoides spp.). The main fishing grounds for these species are the Mahé and Amirantes plateaux. Lobsters are found in the coastal areas led by pronghorn spiny lobster (*Panulirus penicillatus*) and followed by long-legged spiny lobster (*Panulirus longipes*). Sea cucumbers are also abundant, the main species being black teatfish (*Holothuria*

[32] Ouna, T. O. 2002. Digital Coastal and Marine Resources Atlas for Seychelles found at: http://gridnairobi.unep.org/chm/EAFDocuments/Seychelles/Seychelles_atlas.pdf
[33] UNEP, 2004. National Rapid Environmental Assessment – Seychelles found at http://www.unep.org/tsunami/reports/TSUNAMI_SEYCHELLES_LAYOUT.pdf
[34] Ibid.

nobilis), white teatfish (*Holothuria fuscogilva*), prickly redfish (*Thelenota ananas*) and the locally-named 'pentard'. The pelagic species are dominated by skipjack (*Katsuwonus pelamis*) and yellowfin (*Thunnus albacores*) with a smaller abundance of bigeye (*Thunnus obesus*), marlin (*Makaira indica*, *M. mazara*,), swordfish (*Xiphias gladius*), bonito (*Euthynnus affinis*), wahoo (Acanthocybium solandri), dorado (Coryphaena hippurus), sailfish (*Istiophorus platypterus*), and shark species.

2.3 Regional, and national science/research capacity (commercial tuna species and fisheries)

The Research and Development Section of the SFA has responsibility "for undertaking research activities in order to generate scientific information for the management of different fisheries". The main areas of research with which the SFA has been involved, relate to: demersal line and trap fishery resources; assessment of deep water resource for development (e.g. deep water shrimp and snapper); and ecological research on problems such as the impacts of coral bleaching on reef fisheries.

The SFA routinely collects catch and effort data from logbooks of the EU purse seine vessels in compliance with IOTC mandatory requirements[35]. The SFA also routinely collects length-frequency data for yellowfin, bigeye and skipjack tuna through port sampling, and supplies data to the IOTC sampling programmes[36]. The SFA collaborates with the Institut de Recherche pour le Développement (IRD) and Spanish Institute of Oceanography (IEO) in the collection and management of data from the French and Spanish fleets.

The SFA has not conducted independent studies on the spatio-temporal distribution of spawning, locations of nursery grounds, recruitment relationships or tuna species life histories. Neither has it conducted independent stock assessments. Two issues contribute to this: firstly, the limited scientific human resource capacity in the Seychelles is a constraint limiting independent studies; and secondly, such studies and assessments need to be done on a much larger regional scale using a much broader dataset, given the highly migratory nature of these stocks.

In relation to tuna species, the SFA has participated in oceanographic research (e.g. larval dispersal), climate research (e.g. effects of climate variability on tuna fisheries) and in biological and behavioural studies, such as its involvement as a partner in the research project on "mitigating adverse ecological impacts of open ocean fisheries" (MADE). The project focuses on tropical tuna purse seiners and their use of fish aggregating devices (FADs) and on pelagic longliners. It aims to produce a better understanding of the behavioural ecology of the targeted species and how to mitigate the possibly negative impacts of their exploitation.

Other projects of regional significance include the South-West Indian Ocean Fisheries Project (SWIOFP), a GEF-funded, World Bank-implemented project with a pelagic fisheries component designed to complement the MADE project. Links between the pelagic components of SWIOFP and IOTC have become stronger in recent years and the identification of research gaps under SWIOFP were based on recognised IOTC needs. Sampling of swordfish has also been shared between SWIOFP and the IO Swordfish Stock Structure project (IOSSS) that is currently in the analysis phase. The Agulhas and Somali Current Large Marine Ecosystem Programme (ASCLME), a GEF-funded, UNDP-implemented programme adopts an ecosystem approach to management of the east coast of Africa in order to ensure the long-term sustainability of regional living resources through cooperative management of the ecosystems. Tuna resources are not its main focus, but there are overlapping areas of interest in terms of governance, climate change and environmental monitoring that link the programme to tuna resources. Although not dealing with tuna directly the ASCLME and SWIOFP projects are sister projects to the West Indian Ocean Land Based Activities Project (WIO-Lab), a GEF-funded, UNEP-implemented project that links the land based activities to the coastal processes. Together these three projects overlap and allow a complimentary approach to regional co-operation over ocean affairs.

As mentioned previously, remotely-sensed oceanographic datasets are managed through the Seychelles Centre for Marine Research and Technology. While local academic based research is currently limited in the

[35] IOTC-2012-CoC09-CR23_Rev2[E], IOTC Compliance Report for: Seychelles, Report produced on: 10/03/2012
[36] Ibid.

area of fisheries, the new Seychelles University, started in 2009, provides a promising opening for the future development of ocean and fisheries research-based teaching. The non-governmental research activities tend to focus on conservation issues or research on coral reefs or management of marine protected areas (MPAs), rather than on core fisheries research, all of which are inshore and coastal.

2.4 Status of fish stocks (inc by-catch species) caught by the EU tuna fishing fleet

Management of large pelagic species such as tuna and billfish in the Southwest Indian Ocean is conducted by the IOTC. The IOTC Scientific Committee performs stock assessments and it is responsible for collecting data on the stock status. Using data from the Scientific Committee, the Working Parties analyse in more detail technical issues relating to the management goals of the Commission. Each of the stocks has a Working Party dedicated to it in analysing the status of the stock and offering management recommendations to the Scientific Committee. This section provides an overview of the status of the main pelagic stocks targeted by the EU tuna fleet and associated by-catch species. Further details of each species are given within Annex E. Overall, the main tuna species targeted by the EU purse seine commercial fleets (i.e. skipjack, yellowfin or bigeye) are not currently overfished nor have overfishing (Table 2.1).

Table 2.1: summary of status of tuna and billfish species caught by EU tuna fleet in WIO

Common Name	Scientific Name	Overfished ($SB/SB_{MSY}<1$)	Overfishing ($Fyear/F_{MSY}>1$)
Skipjack	*Katsuwonus pelamis*	No	No
Yellowfin	*Thunnus albacores*	No	No
Bigeye	*Thunnus obesus*	No	No
Albacore	*Thunnus alalunga*	No	Yes
Swordfish	*Xiphias gladius*	Yes	No

Source: IOTC. 2011. Report of the fourteenth session of the IOTC Scientific Committee. 259pp. http://www.iotc.org/files/proceedings/2011/sc/IOTC-2011-SC14-R[E].pdf

The current stock status of skipjack tuna is considered to be healthy. The spawning stock biomass is about 2.5 times higher than that required to obtain the maximum sustainable yield. Recent declines in catches are attributed to reduced fishing effort from the purse seine fleet and not to a reduction in stock biomass. Similarly, yellowfin tuna does not currently appear to suffer from overfishing. However, the spawning stock biomass has shown a marked decrease over the past decade, which has been accelerated by high catches between 2003 and 2006. Recent declines in the fishing effort have helped to prevent a further decline in the stock. Bigeye tuna is caught by both purse seine and longline vessels and is not overfished nor is there overfishing. The recent declines in longline effort, particularly from the Japanese, Taiwanese, Chinese and South Korean longline fleets, as well as purse seiner effort, have lowered the pressure on the IO bigeye tuna stock, indicating that current fishing mortality would not reduce the population to an overfished state.

In contrast, albacore tuna is currently heavily exploited, so maintaining or increasing current levels of fishing effort will probably result in further biomass declines. Whilst there remains considerable uncertainty about the data used in the stock assessment, the results indicate that the stock is not currently overfished but there is overfishing. The impacts of piracy in the western IO has resulted in the displacement of a substantial portion of longline fishing effort into the traditional albacore fishing areas in the southern and eastern Indian Ocean. It is therefore unlikely that catch and effort on albacore will decline in the near future.

Longline vessels also target swordfish and sharks. Swordfish was historically overfished and biomass remains below the level that would attain maximum sustainable yields. However, recent declines in catch and effort have reduced fishing mortality rates and halted overfishing. Any increase in current levels of catch will risk preventing the stock to rebuild by 2019.

Sharks are often targeted by longliners and also caught as an associated species. The Scientific Committee of the IOTC recommended three options for amendment to IOTC Resolution 08/04 regarding the catch

recording by longline vessels in IOTC jurisdiction. These aim to improve data collection and statistics on sharks in order to allow the development of stock status indicators for the species[37]. Currently, the IOTC uses the IUCN assessments for the threat status of pelagic sharks[38], which indicate that the scalloped hammerhead is classified as 'endangered', silky shark as 'threatened', blue shark as 'near threatened', and oceanic white tip, pelagic and bigeye thresher, and short-fin mako as 'vulnerable' (Table 2.2).

A number of associated species are also caught, including marlin and sailfish. Associated species are taken by the longline fleet, and also by the purse seine fleet in association with fish aggregating devices (FADs). In general, there is a lack of information on the status of by-catch species (Annex H) although recent work includes ecological risk assessment for by-catch species caught by IOTC fisheries. This uses observer program data focused on by-catch species incidentally caught by major tuna fishing gears; this revealed that most of these species are caught by longline fisheries, followed by gillnets and purse seines[39].

Table 2.2: IUCN status of by-catch species of sharks caught by EU tuna fleet in WIO

Common Name	Scientific Name	Global IUCN threat status	WIO IUCN threat status
Blue shark	*Prionace glauca*	Near threatened	-
Oceanic whitetip	*Carcharhinus longimanus*	Vulnerable	-
Scalloped hammerhead Shark	*Sphyrna lewini*	Endangered	Endangered
Shortfin mako Shark	*Isurus oxyrinchus*	Vulnerable	-
Silky shark	*Carcharhinus falciformis*	Near threatened	Near threatened
Bigeye thresher Shark	*Alopias superciliosus*	Vulnerable	-
Black marlin	*Makaira indica*		Unknown

Source: IOTC–WPEB08 2012. Report of the Eighth Session of the IOTC Working Party on Ecosystems and By-catch. Cape Town, South Africa, 17–19 September, 2012. IOTC–2012–WPEB08–R[E]: 77 pp. based on International Union for Conservation of Nature threat status

[37] IOTC. 2010. Report of the thirteenth session of the scientific committee. Indian Ocean Tuna Commission. Victoria, Seychelles, 224pp. http://www.iotc.org/files/proceedings/2010/sc/IOTC-2010-SC-R[E]_rev1.pdf
[38] IUCN Red List of threatened species: http://www.iucnredlist.org/
[39] http://ebfmtuna-2012.sciencesconf.org/7658

3 THE INDIAN OCEAN TUNA FISHERY

The IO is the second largest production area for tuna, after the Pacific Ocean. However, it is the region which provides most of the catches for the EU fleet.

The total global catch of tuna and tuna-like species was about 6.6 million t in 2010 (FAO 2012)[40]. In 2010 catches from the Pacific accounted for 70.5 %, the IO 19.5 %, and the Atlantic and the Mediterranean Sea 10.0 % of the total catch of the principal market tuna species. These are albacore, bigeye, bluefin, skipjack and yellowfin. In total they contributed 4.3 million t of fish to the global market a figure that has remained level for about one decade. Globally among the principal tuna species in 2009, one-third was estimated to be overexploited, 37.5 % were fully exploited, and 29 % non-fully exploited (FAO, 2012d).

3.1 International fisheries management framework

3.1.1 International agreements

The national legislation of countries should be consistent with and implement the provisions of international, regional and sub-regional instruments to which they are committed. Similarly, it should be consistent with decisions agreed to formally as member of an organisation, or decisions accepted as a cooperating non-member. Such states should ideally implement through national legislation any voluntary instruments that have been adopted as international best practice. Several key instruments are relevant to the tuna fisheries of the IO (for a fuller discussion see Annex F):

- The 1982 United Nations Convention on the Law of the Sea[41] (UNCLOS) sets the framework within which states must manage their fisheries. It includes rules relating to the EEZ, the high seas and to highly migratory species.
- The UN Fish Stocks Agreement[42] provides for the establishment of regional or sub-regional management organisations (Part III).
- Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (2009). This has not yet entered into force but the IOTC largely adopted its provisions in its Resolution 10/11[43], which has an application limited to IO ports.

3.1.2 The Code of Conduct for Responsible Fisheries

The Code of Conduct for Responsible Fisheries (1995) is a global voluntary instrument that provides principles and standards for the conservation, management and development of fisheries.

3.2 Regional Tuna Organisations and their management and enforcement measures

3.2.1 Indian Ocean Tuna Commission (IOTC)

The IOTC is an intergovernmental organization that focuses on tuna and tuna-like species in the IO and adjacent seas but that also collates data on non-target, associated and dependent species. It was established in 1996 under the FAO constitution. The IOTC held its first session in December 1996 (IOTC 2012)[44]. Its members are from the IO coastal countries and countries or regional economic integrated organisations (the EU) that are fishing for tunas in this ocean. It seeks "to promote co-operation among its Members with a view

[40] FAO. 2012. The State of World Fisheries and Aquaculture 2012. Rome. 209 pp.
[41] United Nations, 1982, United Nations Convention on the Law of the Sea (UNCLOS).
[42] United Nations, 1995, Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks. http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N95/274/67/PDF/N9527467.pdf?OpenElement
[43] IOTC, 2011. Resolution 10/11, On Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. http://www.iotc.org/files/CMM/Resolution%2010-11.pdf
[44] http://www.iotc.org/English/info/background.php

to ensuring, through appropriate management, the conservation and optimum utilisation of stocks" and by "encouraging sustainable development of fisheries based on such stocks".

It has the power to take legally binding decisions that are implemented by the Contracting Parties to the IOTC, which includes both the Seychelles and the EU. Its core functions include: reviewing the conditions and trends of the stocks and to gather, analyse and disseminate relevant data and information; working with research and development activities for relevant stocks and fisheries; adopting suitable conservation and management measures to promote the principles of the Agreement; and reviewing economic and social aspects of the fisheries.

3.2.1.1 Geographical coverage

The IOTC's area of competence is the Indian Ocean, which is defined for the purpose of the Agreement as being "FAO Statistical Areas 51 and 57, and adjacent seas, north of the Antarctic Convergence, insofar as it is necessary to cover such seas for the purpose of conserving and managing stocks that migrate into or out of the Indian Ocean"[45] (Figure 3.1). This applies to the territorial waters of members of the IOTC, their EEZs and the high seas. In 1999, the Commission extended the western boundary of the IOTC statistical area from 30ºE to 20ºE, thus eliminating the gap in between the areas covered by the IOTC and ICCAT.

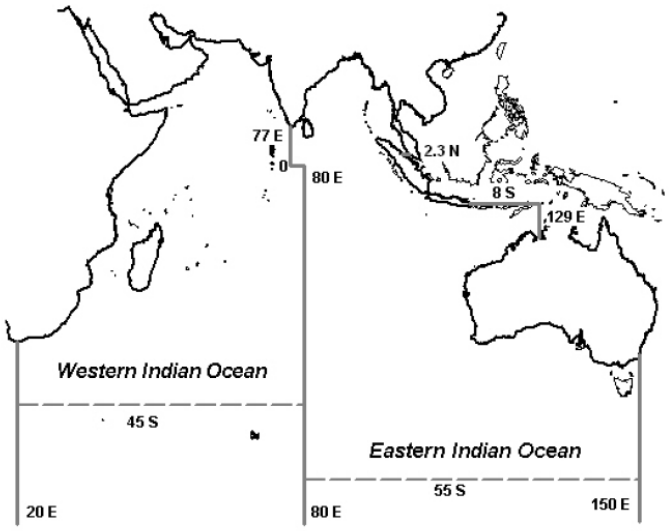


Figure 3.1: geographical coverage of the IOTC

Source: IOTC website http://www.iotc.org/assets/iotc_area_I.gif

3.2.1.2 Technical measures applicable to catch tuna in the Seychelles EEZ

The conservation and management measures (CMM) adopted by the IOTC are applicable to species that fall within the mandate of the IOTC. Compliance with the CMMs is overseen by the Compliance Committee of the IOTC. Compliance reports are prepared annually for all members, covering compliance levels over the last year for applicable CMM (Annex G provides the full table of active measures). Compliance is recorded both in terms of timeliness and content.

[45] Article 2, Agreement for the Establishment of the Indian OceanTuna Commission. (ftp://ftp.fao.org/Fi/DOCUMENT/iotc/Basic/IOTCA_E.pdf

In 2011, the Seychelles had not complied with IOTC reporting of size-frequency data for the artisanal fishery and had not included conservation and management measures on marine turtles, seabirds and thresher sharks into domestic legislation[46].

The capacity of the IOTC to undertake research rests with the capacity of the research institutions of its members. In a recent IOTC paper (2011) [47] it was noted that in respect to demands on reporting, "if close-to-real time reporting was required by the Commission, it is likely that 35 % or more of the catches of the species concerned will not be reported as per the timeframe proposed and will need to be estimated using data from previous years, or a combination of these data and data available from similar fisheries for which catches are reported in time. The use of such an approach will probably require the adoption of more conservative measures, to account for the uncertainty of the estimates, and mitigate the risk of exceeding any catch limits set by the Commission". This indicates that in many of the coastal States as well as the Seychelles the ability to contribute scientific data and analysis to regional assessments and studies of highly migratory species is limited and would benefit from being strengthened.

3.2.2 Other regional organisations

South-West Indian Ocean Fisheries Commission: The SWIOFC was established under the FAO Constitution in 2004, and has a current membership of 12 countries including the Seychelles and the EU[48]. It provides guidance to its members with the objective to promote the sustainable utilization of the living marine resources within the countries' EEZs by addressing common problems of fisheries management and development[49]. **The South Indian Ocean Fisheries Agreement** (SIOFA), mentioned earlier, is now in force for the Southern Indian Ocean and both the Seychelles and the EU are members.

Indian Ocean Commission: The COI-IOC (French-English) was, founded in 1982 and in force since 1984, is another inter-governmental organization comprising of Comoros, France (Reunion Island), Madagascar, Mauritius and Seychelles[50], with a mandate that reaches beyond fisheries. For fisheries, it aims to promote regional co-operation on the conservation, management, and responsible, sustainable exploitation of fisheries resources. The IOC is involved in the implementation of the SmartFish programme and the Regional Plan for Fisheries Surveillance (IOC-PRSP)[51].

Southern African Development Community: The SADC is a Regional Economic Community (REC), established under the SADC treaty, to galvanize economic integration in Southern Africa. Its main objective is to strengthen socio-economic development and co-operation within and between its member states[52]. The SADC Protocol on Fisheries came into force in 2002 and it guides development of the sector in the region. The SADC is currently working towards a Regional Monitoring, Control and Surveillance (MCS) Coordination Centre, to be hosted in Mozambique that will assist in developing regional co-operation in MCS.

3.3 Tuna fishing agreements in the WIO

Many coastal states declared EEZ during the 1970s and 1980s, establishing the practice in customary international law, which was later formalised by inclusion in UNCLOS. This development required that foreign vessels obtain permission from coastal states in order to harvest fishery resources in the coastal state's EEZ

[46] See footnote 35.
[47] IOTC–2011–SC14–38[E] Evaluating the ability of IOTC CPCs and other fishing parties in the Indian Ocean to produce close-to-real time estimates of catches of yellowfin tuna and bigeye tuna.
[48] http://www.fao.org/fishery/rfb/swiofc/en
[49] SWIOFP-WWF, 2012. Swan, J. Consultancy for the Harmonization of Fisheries Legislation and Assessment of the Implementation of Fisheries Management Plans and Rights Based Management in the South West Indian Ocean. Victoria, Seychelles.
[50] http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/EXTREGINI/EXTAFRREGINICOO/0,,contentMDK:20627489~menuPK:1592485~pagePK:64168445~piPK:64168309~theSitePK:1587585,00.html
[51] http://fisheries.ioconline.org/regional-fisheries-monitoring.html
[52] http://www.sadc.int/index/browse/page/52

through some form of fisheries access arrangement. The productivity of the IO provides good opportunities for many foreign vessels targeting tuna stocks, and remains one of the most important areas for tuna fishing access agreements.

Since the early 1990s, African nations with an EEZ in the IO have entered into a significant number of bilateral fisheries agreements. The EU is an important participant in fisheries access agreements (Table 3.1). In addition, a number of private and joint-venture agreements exist for which no information is available in the public domain. Up until the mid-2000s, the primary form of fisheries agreements struck between the EU and coastal African nations were fisheries access agreements. In 2004, the EU proposed a new form of access arrangement known a fisheries partnership agreement (FPA).

Table 3.1: summary of active EU fishing agreements in WIO

Coastal State	Flag State	Agreement	Period	Species
Comoros	EU	Fisheries partnership agreement	2005 – 2013	Tuna
Madagascar	EU	Fisheries partnership agreement	2007 – 2012	Tuna
Mauritius	EU	Fisheries partnership agreement	2012 - 2018	Tuna
Mozambique	EU	Fisheries partnership agreement	2007 – 2015	Tuna
Seychelles	EU	Fisheries partnership agreement	2005 – 2013	Tuna

Source: EU website

FPAs aim to provide sustainable and equitable framework for access to fishing grounds of the coastal states, and encouraging economic, scientific and technical co-operation. Under the FPA, the EU's contribution to the coastal nation extends beyond merely paying access fees, whereas in the traditional fisheries agreements, the EU's contribution consists mainly of financial compensation. Under FPAs, the EU would support the coastal nation's fisheries sector in various ways, including investing a portion of the access fees into sustainable development of the coastal nations fishing industry, and providing training for workers involved in the coastal nation's fisheries sector and scientific co-operation and transfer of knowledge.

Both parties have a shared responsibility in ensuring sustainable exploitation of the targeted stock and the implementation of the FPA. As part of the agreement, a Joint Committee consisting of representatives from both Parties is established with the objective of monitoring the application of the FPA and acting as mediators for any disputes concerning the application of the FPA protocol. This Joint Committee meets at least once a year.

FPAs are more transparent than the traditional fisheries agreements, and their full Protocol can be found online at EC Europa[53]. The move towards higher level of transparency has been lauded by critics as a step towards combating corruption and illegal fishing.

3.4 The purse seine tuna fishery

3.4.1 Fishing ground evolution

Historically, the pattern of purse seine fleet activity in the WIO has mirrored the seasonal distribution and abundance of tuna (Figure 3.2). The movement of tuna follows a clock-wise direction, which is found at the beginning of the calendar year towards the east around Chagos archipelago, south of the Maldives. During the following months, the fleet move westwards into the Seychelles EEZ and further south into Mauritius' EEZ. Between March-April purse seine activity is concentrated within the Southwest Indian Ocean, moving through

[53] http://ec.europa.eu/fisheries/cfp/international/agreements/

the Comoros EEZ and into the Mozambique Channel around May to June. The fleet moves northwards around July off the coast of Tanzania and Kenya before nearing the coast of Somalia between August and September. Finally, the towards the year's end, the fleet starts to move eastwards again towards the Chagos archipelago. It can be seen that the position and size of the Seychelles EEZ is well placed to serve as a regional hub for the purse seine fleet. The vast majority of catch is landed at or trans-shipped through Victoria, Seychelles.

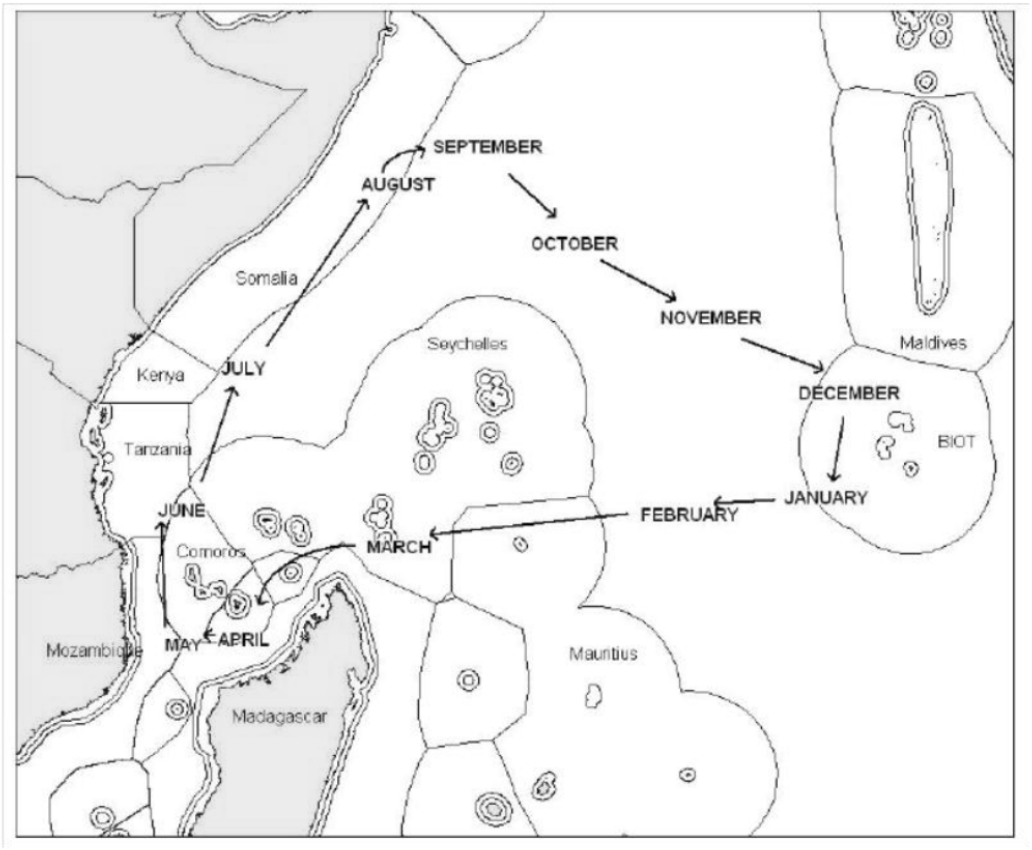
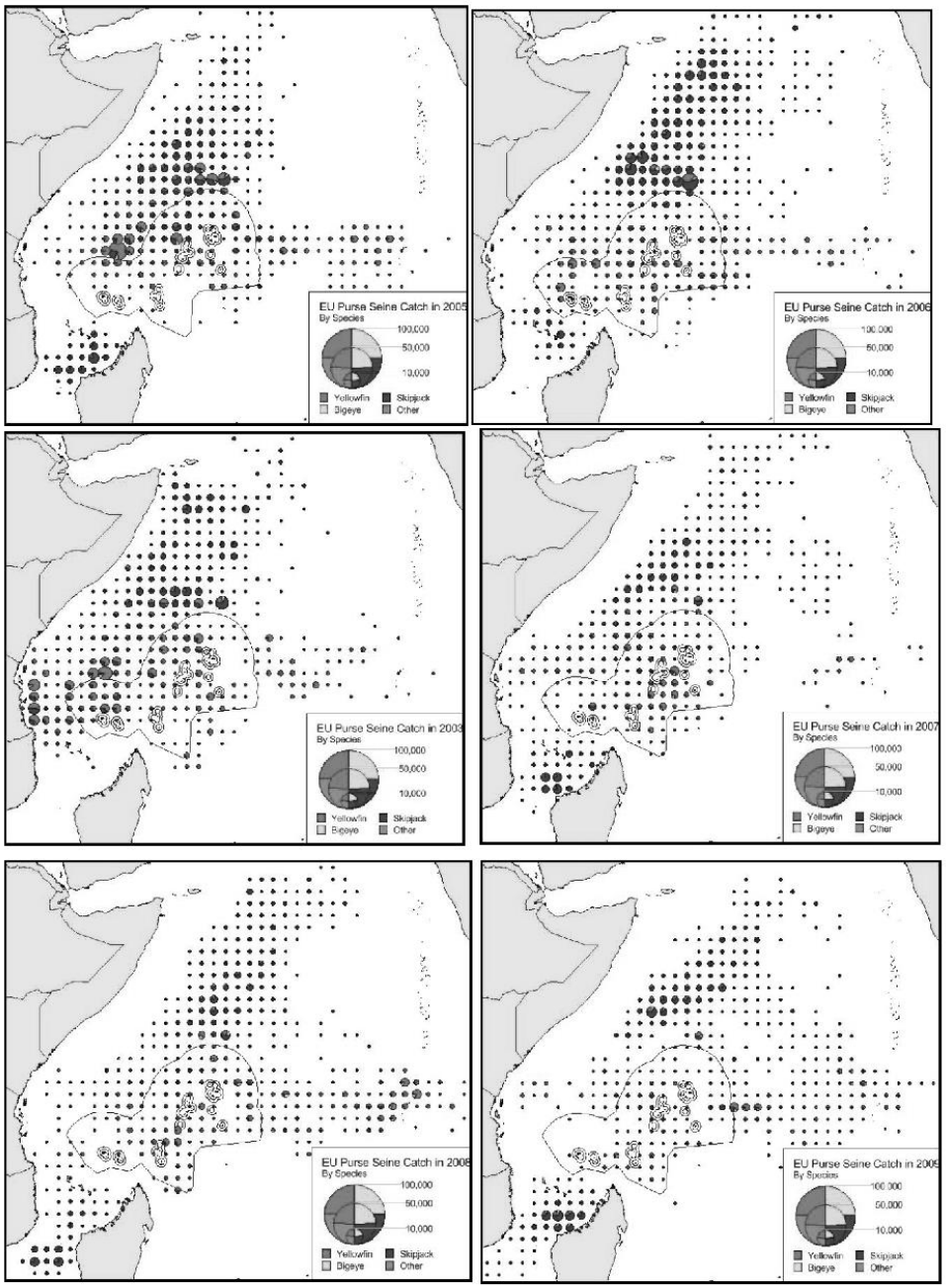


Figure 3.2: indicative pattern of historical tuna purse seine fishing activity in WIO

Source: Consultants' analysis of purse seine fleet effort using IOTC data

More recently, the behaviour of the purse seine fleet has changed due to piracy off Somalia (Figure 3.3). Until 2004, the pattern of fleet movement showed vessels operating along the entire coast of East Africa, including


EU Purse Seine Catch in 2005
By Species
100,000
50,000
10,000
Yellowfin
Skipjack
Bigeye
Other
EU Purse Seine Catch in 2006
By Species
100,000
50,000
10,000
Yellowfin
Skipjack
Bigeye
Other
EU Purse Seine Catch in 2003
By Species
100,000
50,000
10,000
Yellowfin
Skipjack
Bigeye
Other
EU Purse Seine Catch in 2007
By Species
100,000
50,000
10,000
Yellowfin
Skipjack
Bigeye
Other
EU Purse Seine Catch in 2008
By Species
100,000
50,000
10,000
Yellowfin
Skipjack
Bigeye
Other
EU Purse Seine Catch in 2005
By Species
100,000
50,000
10,000
Yellowfin
Skipjack
Bigeye
Other

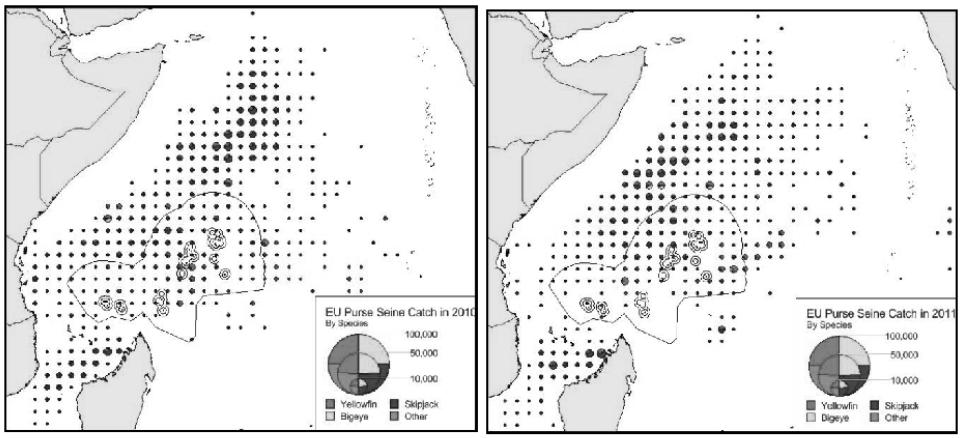


Figure 3.3: purse seine catches (1x1° IOTC reports) by EU fleets In WIO (2002 - 2011)
Source: Consultants' extractions from IOTC data

northern productive areas within the Somalia EEZ. However, in 2005 the World Food Programme expressed concerns over the increase in the number of ship hijackings off the coast of Somalia[54]. In response to the increased risk of vessel hijack, the pattern of purse seine fishing activity started to change in 2006 with little or no fishing occurring within the Somali EEZ.

In 2008, there was a marked increase in the potential risk of pirate attack within the region. This prevented the fleet from fishing further south, off the coast of Tanzania. This led to a significant shift in the spatial behaviour of the fleet, which moved to the west and east of Seychelles (between the equator and 10°S) and the Mozambique Channel, resulting in higher landings of skipjack and yellowfin tuna. To date, increased levels of security on board purse seine vessels have enabled part of the fleet to return to the productive waters off the coast of Somalia, although catches have yet to return to former levels.

The pattern of fleet distribution and movement has also undergone another major change since the closure of fishing grounds around Chagos archipelago, which became a marine protected area in 2010. The introduction of a no-take marine reserve on the eastern boundary of the tuna resource, coupled with the high security risk in the North and West Indian Ocean has resulted in the fleet becoming more compact within the central and southern parts of the tuna's distribution. This has made the Seychelles EEZ particularly valuable to the purse seine fleet, which is now more likely to take fishing opportunities within this region, in addition to high seas[55].

3.4.2 Fleet evolution

The majority of the purse seine fleet fishing in the IO is comprised of European vessels (mostly fishing under Spanish and French flags) and vessels under Spanish ownership flying the Seychelles flag (Table 3.2). The number of EU vessels remained relatively stable at about 40 until 2008, when the issue of piracy caused several vessel owners to relocate their vessels outside the Indian Ocean. In 2010, the total number of EU purse seine vessels dropped to 26. In contrast, the number of Seychelles purse seine vessels remained relatively constant at around 10, although dropping to 8 in 2011. Only a small number of Japanese purse seiners operate in the Eastern Indian Ocean (3 vessels in 2007, 2 vessels in 2009).

[54] http://www.wfp.org/news/news-release/hijackings-cut-aid-access-south-somalia-lives-risk

[55] Consultants inter

Table 3.2: indicative composition of purse seine fleet fishing in WIO (2002-2011)

Year	European Seiners				Other Flags				
	Spain	France	Italy	French overseas territories	Seychelles	Belize	Iran	Panama	Korea
2002	18	16	1	2	7	0	3	1	0
2003	18	14	1	0	11	1	0	1	0
2004	20	15	1	0	13	0	1	1	0
2005	20	16	1	0	11	0	0	0	0
2006	22	17	1	1	10	0	0	0	0
2007	21	17	1	2	10	0	0	0	0
2008	17	17	1	2	10	0	0	0	0
2009	15	15	1	3	10	0	0	0	0
2010	13	8	0	5	9	0	0	0	0
2011	13	8	0	5	8	0	1	0	1

Source: Flocha *et al.* (2012)[56]

Purse seine catches by EU fleets in the IO have shown an increasing trend since the start of the fishery in the early 1980s, until reaching a peak in 2003 with a total more than 407 000 t (Table 3.3). In 2007, catches showed a sharp decline in response to a reduction in fishing effort[57] and have remained relatively stable at around 250 000 t since 2007.

Skipjack tuna has dominated EU purse seine catches, which peaked in 2006 at around 221 000 t before declining to 132 000 t in the following year due to a reduction in fishing effort. Reported catches of skipjack tuna have since remained around 130 000 - 150 000 t per annum. In comparison, catches of yellowfin tuna peaked earlier in 2004, with a total of approximately 204 000 t. In subsequent years, catches of yellowfin declined to about 100 000 t. In addition to skipjack and yellowfin, purse seine vessels also retain a much smaller volume of bigeye and albacore. Interestingly, annual reported catches of bigeye have remained relatively stable at around 20 000 – 25 000 t whereas relatively small catches (< 2 000 t) of albacore tuna have shown large annual fluctuations. This is primarily due to the fact that albacore is not directly targeted by the purse seine fleet.

Fish-aggregating devices (FAD) usage is highly prevalent in the purse seine fleet in the IO and has been steadily increasing since the late 1980s. FADs are man-made objects used to attract large pelagic fish species such as tuna and billfish, and have become more widespread since the closure of Chagos and movement of the purse seine fleet away from the Somali EEZ. In 2005, only 60 % of all tuna caught by EU vessels were associated with FADs, while this has now increased to 80 % in 2011[58]. A number of concerns are expressed

[56] Flocha *et al.* 2012. Statistics of the European purse seine fishing fleet and associated flags targeting tropical tunas in the Indian Ocean (1981-2011). IOTC-2012-WPTT14-22. pp29. http://www.iotc.org/files/proceedings/2012/wptt/IOTC-2012-WPTT14-22.pdf

[57] A number of vessels left the Indian Ocean as a result of the piracy issue which led to a 25 % reduction in fishing effort between 2005 and 2009 (IOTC-2010-SC-09).

[58] Ibid.

over use of FADs, which can attract over 300 species and may well contribute to purse seine by-catch and discards[59].

Table 3.3: catch by species for EU purse seine fishing fleet of WIO during 2000 – 2011

Year	Yellowfin	Skipjack	Bigeye	Albacore	Other	Total
2000	115 952	171 189	20 903	1 069	2 149	311 262
2001	114 017	157 747	20 541	1 239	22 596	316 140
2002	122 774	207 712	26 941	712	1 371	359 511
2003	199 137	183 295	22 573	1 476	736	407 217
2004	204 762	137 736	22 201	240	1 098	366 036
2005	173 396	188 214	22 009	169	848	384 635
2006	148 791	220 989	20 202	1 358	1 017	392 357
2007	93 139	132 322	21 147	714	285	247 606
2008	112 736	133 997	26 582	1 391	304	275 010
2009	84 700	146 780	26 465	422	65	258 431
2010	101 675	148 263	21 544	207	56	271 746
2011	111 514	129 349	21 439	725	37	263 064

Source: Flocha *et al.* (2012)[60]

3.4.3 By-catch and discards

By-catch is defined as the incidental catch of non-target species, which can either be retained on board or discarded. A detailed study to monitor by-catch and discard rates from the French and Spanish purse seine fleet operating within the IO was conducted between 2003 and 2007 (Amande *et al.*, 2008)[61] (Table 3.4). The results showed that total by-catch of the two fleets totalled on average around 10 000 t annually, corresponding to around 3.5 % of the total catch or 35.5 t of by-catch per 1 000 t of tuna caught. The results showed that discards of tuna were also higher from FADs as compared to fishing on free schools. The annual discard rate of tuna represented 5 177 t or 19.2 t per 1 000 t of tuna caught. The prominent species discarded were skipjack, undersized tuna and kingfish. The three major tuna species (skipjack, yellowfin and bigeye) were also discarded at small sizes less than 1.5 KG in weight.

Of the total by-catch and discards taken by the purse seine fleet, around 1.5 % is billfish. Billfish are more susceptible as by-catch catch when FADs are used. Sharks (except whale shark) comprise 10 % of the total by-catch and discards in the purse seine fleet. Silky shark (*Carcharhinus falciformis*) and oceanic whitetip (*Carcharhinus longimanus*) are the two most prominent shark by-catch species. In comparison, ray by-catch is

[59] Ibid.
[60] Ibid.
[61] Amande, Ariz, Chassot, Chavance, Delgado, Gaertner, Murua, Pianet et Ruiz. 2008. By-catch and discards of the European purse seine tuna fishery in the Indian Ocean. Estimation and charactéristics for the 2003-2007 period. IOTC-2008-WPEB-12. 26 pp.

minimal, constituting only 0.7 % of the total by-catch and discard. 33.7 % of the by-catch and discards consists of other fishes like triggerfish, dolphin fish, barracuda, wahoo and others which are mainly caught on FADs.

Table 3.4: tuna discards and by-catch estimated for French/Spanish purse seiners in WIO

Species	t	%	t/1,000 t
Other tuna	5 177	54.0	19.2
Other fish	3 231	33.7	12.0
Shark	964	10.1	3.6
Billfish	148	1.5	0.5
Rays	65	0.7	0.2
Total (t)	**9 585**	**100.0**	**35.5**
Total fishery (t)	**270 235**		

Source: Amande *et al.* (2008)[62]

In addition to finfish by-catch, six species of marine turtle are likely to be affected by the tuna fishery. No assessment has been undertaken by the IOTC WPEB for marine turtles due to the lack of data being submitted by CPCs. However, the current International Union for Conservation of Nature (IUCN) threat status for each of the marine turtle species reported as caught in IOTC fisheries to date is provided in Table 3.5.

It is important to note that a number of international global environmental accords (e.g. Convention on Migratory Species (CMS), Convention on Biological Diversity (CBD), as well as numerous fisheries agreements oblige States to protect for these species. While the status of marine turtles is affected by a range of factors such as degradation of nesting beaches and targeted harvesting of eggs and turtles, the level of mortality of marine turtles due to capture by gillnets and to a lesser extent purse seine fishing and longline is not known.

Table 3.5: IO marine turtles: IUCN status for species reported caught in fisheries in IOTC area

Common name	Scientific name	IUCN threat status
Flatback turtle	*Natator depressus*	Data deficient
Green turtle	*Chelonia mydas*	Endangered
Hawksbill turtle	*Eretmochelys imbricata*	Critically Endangered
Leatherback turtle	*Dermochelys coriacea*	Critically Endangered
Loggerhead turtle	*Caretta caretta*	Endangered
Olive ridley turtle	*Lepidochelys olivacea*	Vulnerable

Source: IOTC (2011)[63]

In the purse seine fleet, the most common turtle by-catch species are olive ridley, green and hawksbill turtle, with the olive ridley turtle being most impacted. Green and hawksbill turtles are mostly caught due to FAD

[62] Ibid.

[63] IOTC 2011. Report of the Seventh Session of the IOTC Working Party on Ecosystems and By-catch. pp99.IOTC–2011–WPEB07–R[E]. http://www.iotc.org/files/proceedings/2011/wpeb/IOTC-2011-WPEB07-R[E].pdf

usage and are often released alive. However, the turtle mortality level for turtles caught on FADs is still unknown. The European purse seine fleet is transitioning towards adopting ecologically friendly FADs to reduce incidence of turtle by-catch.

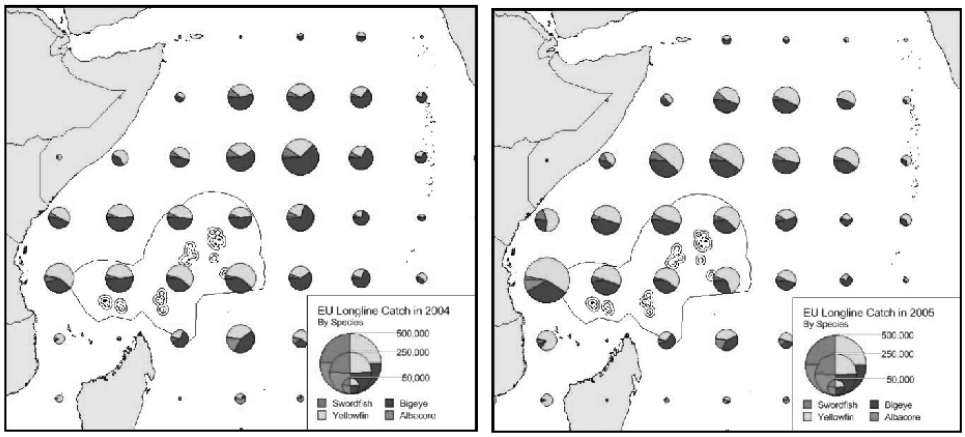
3.5 The longline tuna fishery

3.5.1 Fishing ground evolution

The majority of longline vessels operating in the IO have been large Asian fleets from Taiwan (China), Japan and Korea. European longliners from Spain, France, Portugal and UK are present albeit in relatively smaller numbers and size compared with the European presence in the IO purse seine fishery. The EU longline vessels can be grouped into those targeting tropical tunas and those targeting swordfish and sharks. Historically, the Asian longline fleets have targeted valuable bigeye and yellowfin tuna which occur in both western and eastern Indian Ocean. At the beginning of the year, the Taiwanese fleet used to operate in waters surrounding Kenya and Somalia with a smaller proportion of mainly Japanese and Korean vessels fishing in and around the Mozambique Channel, then the majority of the Taiwanese, Korean and Japanese fleet started to move eastwards during February to May to fish on the high seas and the region around Chagos, while some of the other Taiwanese and Japanese vessels moved southwards through the Mozambique Channel to target albacore and bigeye tuna. During June to July fishing effort in the southern IO increased substantially as the Japanese fleet target southern bluefin tuna.

More recently, similar to the purse seine vessels, the longline fleets have changed their behaviour due to the issue of piracy in the area off Somalia. While the level of reporting for longline catches is of lower resolution than purse seine data (by 5° grid square), information is available to show the fleet moved significantly further eastwards and southwards in their distribution over the last years. In comparison to purse seine vessels, longline vessels are much smaller and due to the nature of their fishing operations have to return to retrieve the gear within a period of 48 hours. These characteristics of the longline fishery make them particularly vulnerable to pirate attack. Following the marked increase in potential risk of pirate attack in 2008, it can be seen that the fleet has almost completely left the WIO by 2010.

In addition to the issue of Somali pirates, the closure of the Chagos archipelago has also prevented fishing opportunities in this region since 2010. However, unlike the purse seine fleet, this is unlikely to act to concentrate the fishery into a smaller region, since the longline fleet can operate over a much wider area. These changes to the pattern of fishing behaviour are known to impact the selection of target species, which in turn increases fishing pressure on tuna stocks with a southerly distribution such as bigeye and albacore.



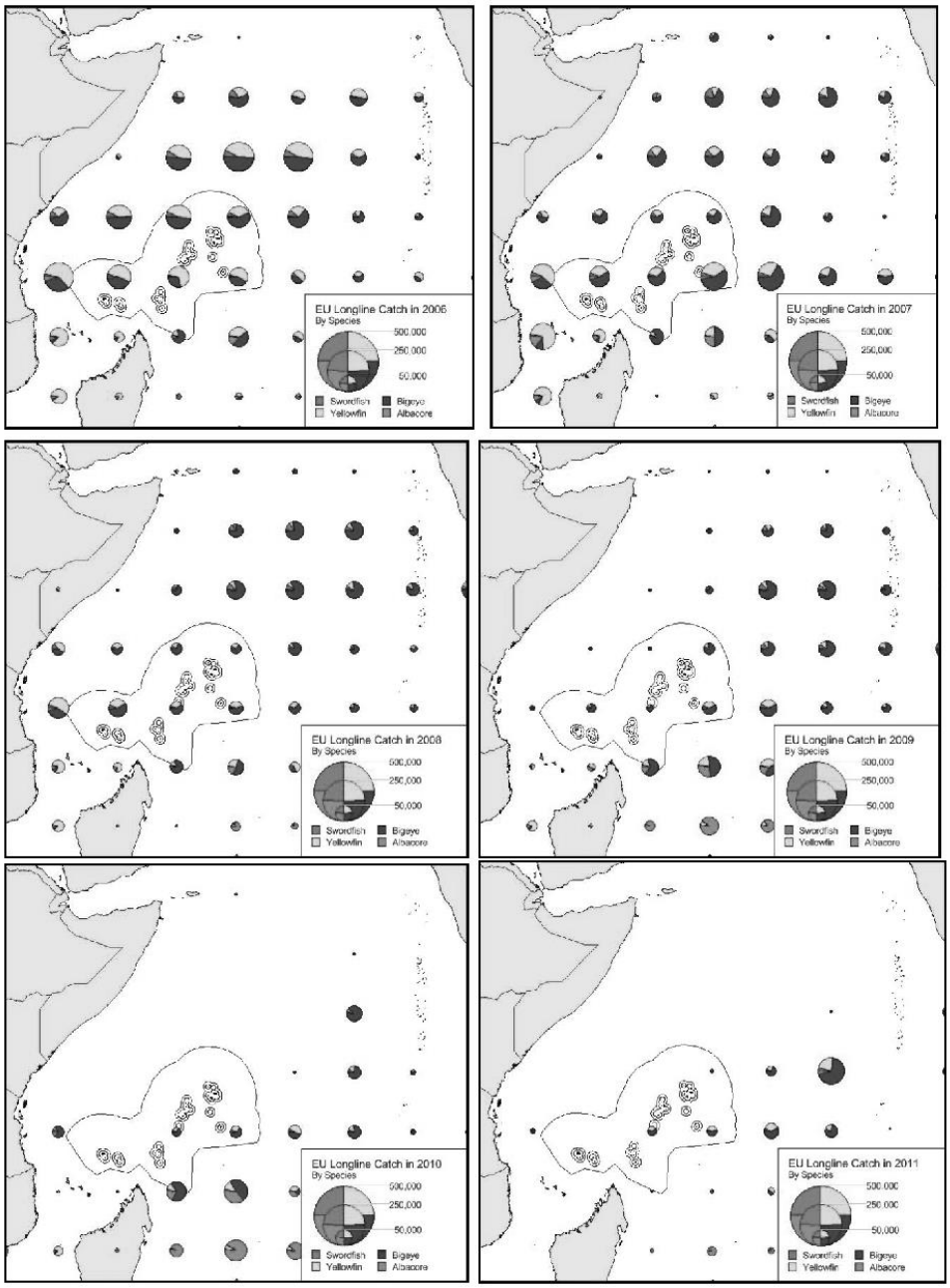


Figure 3.4: pelagic longline catches (5x5° IOTC data) by Asian/EU fleets in WIO (2004 – 2011)

Source: Consultants' extractions from IOTC data

Although there are no specific figures available, it is believed that there has been in 2012 a return by some vessels of the longline fleet to the more northerly fishing grounds with armed guards on board[64].

3.5.2 Fleet evolution

There are at least 420 known longline vessels operating in the Western Indian Ocean, comprising of EU flagged vessels, Asian fleets (Taiwan, Japan, Korea, Philippines, China) vessels from the Seychelles representing Asian interests and vessels flying flags of convenience (Belize, Honduras, Oman, Equatorial Guinea, Panama). The estimate also includes unreported fishing activities (IOTC, 2010), of which recent examples include the 11 vessels previously flagged to Sri Lanka that were caught IUU fishing in the IO and had action taken against them by including them in the provisional IUU list at the 15th session of IOTC.

Taiwan, Japan and Korea longline fleets represent the majority of the total recorded landings from longline fisheries in the Western Indian Ocean. There is wide variation even amongst vessels within fleets of the same flag in terms of size and capacity, and equipment for freezing and onboard storage, due to the vessels coming from different generations and having evolved in response to changing target species and market conditions. (See Annex M)

The European longliners operating in the area are fewer and smaller in size compared to their Asian counterparts. The French fleet operates from La Reunion with a fishery that began in 1991 and 43 operating vessels as of 2009[65]. The French vessels are relatively small, with none longer than 22 m (Table 3.6)

Table 3.6: French longline vessels operating in IO (2003 - 2009)

Year	Vessels < 16m	Vessels > 16m	Total
2003	27	6	33
2004	24	6	30
2005	26	10	36
2006	29	10	39
2007	29	16	45
2008	31	15	46
2009	28	15	43

Source: IOTC (2010)[66]

The Spanish fleet began fishing in the IO in 1993, peaking at 28 vessels in 2008 before shrinking to 15 vessels in 2009. The Portuguese had 3 vessels in 2009, compared to over three times as many (16), in 2006[67].

Between 2000 and 2008, the longliners in the WIO yielded a total annual average catch of 166 000 t. Both yellowfin and bigeye tuna remain the dominant species in the catch, while swordfish and albacore also made a significant contribution to the overall total catch (Table 3.7). The Asian fleet accounted for 75 % of this while the European fleet landed just 4 % with an average annual landing of 7 300 t. Taiwan accounted for the largest single-country portion of the total longline haul with an average of 72 000 tonnes or 48 % of the total catch between 2000 and 2008. Japan was second with 16 % of the total (Table 3.8).

[64] Perception gathered during consultant's field visit. The number of longline vessels licenced in 2012 (Until September) by SFA has more than doubled from 2011.
[65] IOTC. 2010. Rapport de L'Union Europreenne pour le Comite Scientifque del la CTOI de 2011 (Donnes 2010). pp.58. http://www.iotc.org/files/proceedings/2011/sc/IOTC-2011-SC14-NR06.pdf
[66] Ibid.
[67] Ibid.

Table 3.7: average annual catch of major longline fleets in IO (2000 - 2010)

Flag	Yellowfin	Bigeye	Skipjack	Albacore	S.Bluefin	Swordfish	Others	Total	%
Taiwan	29 891	39 100	57	16 149	1 076	9 466	3 684	99 423	48
Japan	14 351	12 049	12	3 867	3 320	1 372	755	32 726	16
China	2 210	5 012	-	516	14	525	321	8 598	4
Seychelles	2 024	3 912	-	553	120	882	756	8 247	4
NEI	10 783	8 329	7	2 769	158	3 063	2 077	27 186	13
Korea	2 125	1 586	1	180	478	141	68	4 578	2
Philippines	1 073	1 205	-	79	51	148	45	2 601	1
EU including:	**518**	**517**	**11**	**874**	**40**	**5 736**	**5 485**	**13 183**	**6**
Spain	83	176	7	357	11	3 702	4 003	8 340	4
France	408	321	-	504	-	1 069	147	2 449	1
Portugal	27	20	4	13	29	965	1 335	2 394	1
TOTAL	**62 975**	**71 710**	**88**	**24 987**	**5 257**	**21 333**	**13 191**	**196 542**	**100**

Source: Consultants' calculations from IOTC database

Table 3.8: total annual catches for longliners in IO from 2007 to 2011

		Year					
Group	**Country**	**2007**	**2008**	**2009**	**2010**	**2011**	**Average**
Non-EU	China	10 892	7 097	4 510	8 074	2 208	6 556
	Japan	49 226	35 147	22 907	15 308	13 205	27 170
	Korea	5 860	2 769	2 978	2 724	2 079	3 282
	Seychelles	10 958	7 528	8 934	7 807	8 338	8 713
	Taiwan	94 079	70 242	77 790	63 212	58 177	72 700
	NEI	20 303	24 226	23 341	18 136	12 098	6 143
	Total	**191 318**	**147 009**	**140 460**	**114 261**	**96 105**	**124 564**
EU	France	3 494	2 600	2 351	2 372	2 372	2 638
	Portugal	3 984	1 086	1 133	2 098	1 989	2 058
	Spain	10 455	9 357	7 816	7 136	7 768	8 504
	Total	**17 933**	**13 043**	**12 870**	**12 273**	**13 294**	**14 710**
Grand Total		**209 251**	**162 079**	**153 330**	**126 984**	**109 399**	**139 274**

Source: Consultants' calculations from IOTC database

Generally, each fleet employs different fishing strategies depending on which species they are targeting (e.g. tunas, swordfish, and shark) and the fishing area and fishing techniques selected. Asian longliners mainly target tuna and these are the most prevalent species in their catch, although the proportions of different tuna species caught vary between the Asian fleets. Albacore, swordfish and shark are the main target of the

Taiwanese longline fleet while southern bluefin tuna is the most important component in the Japanese longline fleet catch. In the European longline fleet, the swordfish catch far outstrips the catch of major tuna species. The forced movement of the longline fleet due to the piracy has resulted in increased fishing pressure on the Eastern IO and possible localised depletion of shark species in the region (IOTC, 2011e) from targeted catches and by-catch.

3.5.3 By-catch and discards

No information on by-catch and discards was found for EU vessel operations in the Indian Ocean. However, the Taiwanese longline fishery is the most important longline fleet operating in the Indian Ocean. The following section provides an overview of the by-catch taken by the Taiwanese fleet over the past ten years (Huang, 2011)[68].

3.5.3.1 Seabirds

Over 33 species of seabird have been recorded within the Indian Ocean, with 6 species affected by by-catch. The main species include Indian yellow-nosed albatross (*Thalassarche carteri*), sooty albatross (*Phoebetria fusca*), wandering albatross (*Diomedea exulans*) and Salvin's albatross (*Thalassarche salvini*). In total, by-catch rates were estimated from fisheries observer data to be 0.0002 per 1 000 hooks in tropical areas and 0.0158 per 1 000 hooks in the southern IO between 2004 and 2008[69].

No assessment has been undertaken by the IOTC WPEB for seabirds due to the lack of data being submitted by CPCs. However, the current International Union for Conservation of Nature (IUCN) threat status for each of the seabird species reported as caught in IOTC fisheries to date is provided in Table 3.9.

Table 3.9: IUCN threat status of IO sea birds reported caught in IOTC area fisheries

Common name	Scientific name	IUCN threat status
Atlantic Yellow-nosed Albatross	*Thalassarche chlororynchos*	Endangered
Black-browed albatross	*Thalassarche melanophrys*	Endangered
Indian yellow-nosed albatross	*Thalassarche carteri*	Endangered
Shy albatross	*Thalassarche cauta*	Near Threatened
Sooty albatross	*Phoebetria fusca*	Endangered
Tristan albatross	*Diomedea dabbenena*	Critically Endangered

Source: IOTC 2011[70]

It is important to note that a number of international global environmental accords (e.g. Convention on Migratory Species (CMS), Convention on Biological Diversity (CBD)), as well as numerous fisheries agreements oblige States to provide protection for these species. While the status of seabirds is affected by a range of factors such as degradation of nesting habitats and targeted harvesting of eggs, the level of mortality of seabirds due to fishing gear in the IO remains poorly known.

[68] Huang, H. (2011). By-catch of high sea longline fisheries and measures taken by Taiwan: Actions and challenges. *Marine Policy* 35: 712-720.
[69] Huang H. W, Liu K. M. (2010) By-catch and discards by Taiwanese large-scale tuna longline fleets in the Indian Ocean. *Fisheries Research* 106:261–70.
[70] IOTC. 2011. Report of the Seventh Session of the IOTC Working Party on Ecosystems and By-catch. IOTC–2011–WPEB07–R[E]

3.5.3.2 Sea turtles

In addition to finfish, surface longline vessels can also impact sea turtles. While there is sparse information on the level of turtle by-catch, IOTC have reported that leatherback turtles are the most common species caught in the gear with lesser amounts of loggerhead, hawksbill and green turtles (IOTC, 2010)[71].

The average marine turtle catch on longline is estimated to range from 0.005 to 0.3 per 1 000 hooks laid and varies across the season. The IOTC adopted Resolution 09/06[72] as a precautionary measure to mitigate the impact of fishing operation on sea turtles.

3.5.3.3 Sharks

At least ten by-catch shark species were recorded in the Indian Ocean, accounting for 4 % of all the fish in number, including 2 % blue shark, followed by the silky shark, shortfin mako and bigeye thresher. Of the by-catch sharks, 54 % was released alive or discarded while the sharks captured by different vessels ranged from 1 % to 3.8 % of the total catch in number (Huang and Lui, 2010)[73]. The life history characteristics (e.g. low fecundity, slow growth and longevity) of shark species mean that they have a low resilience to fishing effort and high susceptibility to recruitment overfishing. The scarcity of data on the shark fisheries in the region bars progress in management measures and this may make it necessary to adopt precautionary measures such as IOTC resolution on thresher sharks prohibiting the onboard retention of thresher sharks and obliging vessels to release thresher sharks alive if possible.

[71] Ibid.
[72] http://www.iotc.org/English/resolutions/Resolution_09_06.pdf
[73] Ibid

4 FISHERIES GOVERNANCE IN SEYCHELLES: INSTITUTIONAL FRAMEWORK, LEGISLATION AND POLICY

4.1 National legislation and agreements

4.1.1 Fisheries legislation

The main legislation governing the fisheries sector in the Seychelles includes;

- **National Parks and Nature Reserves Act (1969)**: provides the legal instrument to establish and manage marine protected areas for fisheries;
- **Seychelles Fishing Authority (Establishment) Act (1984)**; provided for the establishment of the SFA to be the executive arm of Government for fisheries and related matters;
- **Fisheries Act (1986) and Regulations (1987)**; these are in the final stages of revision but aim to provide a legal basis for the management and regulation of the Seychelles fisheries. This includes, including defining terms and assigning responsibilities for management and exploitation control. The Fisheries Act in Part II, Section 6, deals with Fishing Agreements. This empowers the Minister to 'enter into agreements with other States, with intergovernmental organisations and with associations representing foreign fishing vessel operators allocating fishing rights to vessels of those States, organizations and associations.' It states that 'the total fishing rights allocated shall not exceed the total resources or amount of fishing permitted to foreign fishing vessels by the applicable fisheries management and development plan, and that any agreement shall include provision establishing the responsibility of the other State, organization or association to take all necessary measures to ensure compliance by its vessels with the agreement and with the law relating to fishing in Seychelles waters; and such other provisions as may be prescribed';
- **Export of Fisheries Products Act (1996);** defines the legal obligations of those wishing to export fishery products;
- **Maritime Zone Act (1999)**; sets out the different limits of Seychelles maritime zones, the territorial sea, archipelagic waters, contiguous zone as well as the EEZ and the continental shelf;
- **Agriculture and Fisheries Incentives Act (2005) and Regulations (2007)**; encourages persons involved in fisheries to achieve higher production though providing concessionary rates in respect to business tax, trades tax, goods and services tax, social security contributions, permits for employing foreigners, and permission to retain a percentage of foreign exchange earnings; and
- **Export of Fishery Sanitary Act Regulations (2006);** sets out the legal framework for implementing the provisions of the FAO *Codex Alimentarius* and promoting Seychelles standards.

The draft fisheries Act is currently available on the SFA website[74] as part of a stakeholder consultation[75]. It has also been sent to EU vessel owners for their comments. It is hoped that the process will progress swiftly to completion but some stakeholders noted that there are issues that still needed to be clarified and discussed further before the draft fisheries Act can be presented to cabinet. The draft fisheries Act provides a more detailed and updated instrument than the current Law; it responds to local, regional and international developments, such as the incorporation of the provisions required to implement the IOTC resolution on port State measures (Resolution 10/11) and other IOTC resolutions. Aspects of the draft fisheries Act that may impact on EU stakeholders under the FPA include;

- SFA will take over the licensing function of the Seychelles Licensing Authority;

[74] http://www.sfa.sc/Index.htm

[75] Three public consultation meetings have been held as of September 2012.

- The EU, as the signing entity for an access agreement will need to take all necessary measures to ensure compliance with 'any international fisheries conservation and management measure' in addition to the provisions in the current Law;
- SFA may refuse a licence application on the grounds of *inter alia*; connection with IUU activity as evidenced through inclusion in an RFMO or any other appropriate regional or international organisation list of fishing vessels having engaged in, or supported, IUU fishing; and having not satisfied all financial obligations in respect of previous fishing activities or related activities under a previous licence granted under this Act, by that fishing vessel, its master or owner.

4.1.2 Fisheries agreements and arrangements for purse seine and longline vessels

In addition to the FPA with the EU, some private agreements exist for purse seiners. Seven purse seiners with European ownership interests and previously with EU member State flag are now flagged to the Seychelles. These vessels apply for fishing authorisation under what is called a 'private agreement' and pay USD 90 000 (EUR 71 429) per year for an authorisation. Non-Seychelles, non-EU purse seine vessels also fall under the 'private agreements' arrangement and pay USD 120 000 (EUR 95 238) per year. Vessels taking up this opportunity have included vessels with the flag of Iran, Korea, Mayotte and Thailand. The 'private agreements' are permitted under the Seychelles legislation and this means that any foreign vessel may apply for a fishing authorisation without falling under a specific fisheries agreement. Within the new fisheries draft fisheries Act this flexibility still exists within section 12 (d) 'A foreign fishing vessel licence shall not be granted …. unless the Minister determines that an agreement under section 9 ['power of Minister to enter into fisheries agreements etc.'] is not practical and the applicant provides sufficient financial and other guarantees for the fulfilment of all obligations under this Act as the Minister may determine'.

The Seychelles also has a fisheries agreement for longline vessels with Japan. This agreement incorporates the provision of goods and services to the Government when Japanese vessels take up fishing authorisations. Vessels that do take up a fishing authorisation pay a licence fee of USD 22 000 (EUR 17 460) per year or USD 14 500 (EUR 11 508) for six months and USD 4 000 (EUR 3 175) for each extra 30 days. Initially it is required to take a one year authorisation and this can then be extended for shorter periods of six months or 30 days. Under the agreement only Japanese vessels affiliated with the association may apply for fishing authorisations. The agreement was signed in 2007 for a maximum of 120 surface longliners, but since 2009 there have been no vessels taking up fishing opportunities under this agreement, apparently mainly due to the concerns over piracy.

A second longline fisheries agreement, signed in 1997 and renewed annually, between the Seychelles and Taiwan Deep Sea and Tuna Longline Boat Owners and Exporters Association, permits any Asian nationality vessel to apply for fishing authorisations if they are affiliated with the association. In 2011 and 2012 vessels registered in China, Philippines, Japan and Taiwan fished under this agreement. A maximum of 120 surface longliners are permitted and a fishing authorisation costs USD 24 000 (EUR 19 048) per year, USD 17 500 (EUR 13 888) for six months and USD 5 500 (EUR 4 365) per month. Initially an authorisation for a period of 6 months can be taken followed by a month at a time up to another 6 months, from which time a one year or a six month authorisation must be applied for. Vessels re-started to fish under this agreement since late 2011, after having stopped fishing in 2009 and 2010 due to piracy.

For non-Asian longliners private agreements are available for the provision of fishing authorisation. These operate under the same conditions as above; longliners from the Seychelles, Oman and the United Republic of Tanzania have taken up fishing opportunities under this arrangement.

In 1998 an agreement was signed with a Chinese company, based in Hong Kong for longliners. This agreement was renewable annually. The last agreement with China was signed in 2006 and expired in 2008.

All Asiatic agreements were due to be revised in 2008, with the intention to move towards an FPA model. However, following the increase in piracy this has still not materialised. Instead, the agreements have been extended one year at a time since 2008.

A bilateral co-operation also exists with Mauritius including reciprocal access to each other's waters which includes permission for five Mauritian-flagged purse seiners and one longliner to gain fishing authorisation in Seychelles waters. No Mauritian vessels have taken up this opportunity.

The involvement of the World Bank (following the economic crisis in 2008) has added new pressure for the Seychelles to demonstrate transparency with respect to fishing agreements; it is anticipated that information about fishing agreements will be placed in the public domain in the near future.

Table 4.1: summary of fishing agreements in force in the Seychelles (EU and non-EU)

Country with agreement	Type of vessel	Cost for fishing authorisation	Other cost
EU	Purse seine	EUR 61 000	EUR 5 600 000 out of which EUR 2 220 000 are dedicated to the support of the fisheries sector of Seychelles
	Longline	Surface longliners =or< 250 GRT: EUR 3 150 per year (ref catches: 90 t) Surface longliners > 250 GRT: EUR 4 200 per year (ref catches: 120 t)	
Taiwan	Longline	USD 24 000 / EUR 19 048 per year USD 17 500 / EUR 13 888 for six months and USD 5 500 / EUR 4 365 per month	
Japan	Longline	USD 22 000 / EUR 17 460 per year or USD 14 500 / EUR 11 508 for six months and USD 4 000 / EUR 3 175 for each extra 30 days	Provision of goods and services
Private agreement for non-Asian flagged vessels	Longline	USD 24 000 / EUR 19 048 per year USD 17 500 / EUR 13 888 for six months and USD 5 500 / EUR 4 365 per month	
Private agreement for Seychelles flagged vessels	Purse seine	USD 90 000 / EUR 71 429 per year	
Private agreement for non-Seychelles flagged vessels	Purse seine	USD 120 000 / EUR 95 238 per year	

Source: compiled from SFA information

4.1.3 Fishery products health and sanitary regulation impacting on trade

4.1.3.1 To trade on the domestic market

Tuna and by-catch species caught by EU vessels are traded on the local market. No regulations apply to them at the import stage. For onward processing the Seychelles' Food Act Sanitation Regulations (1992) are applicable to the preparation, packaging, storing or sale of products to ensure hygiene in the production chain.

The governmental Seychelles Bureau of Standards (SBS) regulatory agency sets and monitors the standards of product, processes and practices for hygiene[76].

4.1.3.2 To export fishery products into the European Union market

The EU is the world's largest importer of fish and fish products; it is dependent on imports for fish supplies. The Seychelles' Export of Fishery Products Act (1996) states that a person who uses, operates or is in charge of an establishment[77] requires a permit granted by the Director of Veterinary Services and a health certificate. To get a health certificate, samples of the fishery products may be tested to ensure quality before they are certified as fit for export. Health certificates are issued by the Fish Inspection and Quality Control Unit (FIQCU) of the SBS, and the standards for these are established in the Seychelles' Export of Fishery Sanitary Regulations (2006), which are modelled on the health and sanitary requirements of the EU market. They state that all approved fish exporting establishments, factory, freezer vessels and other fishing vessels and personnel must implement the associated requirements of the FAO Codex Alimentarius. There are seven technical personnel in the inspection unit working on fishery products and they inspect fishing and reefer vessels[78], landings and processing sites. It was noted by the Unit that they focus on implementing the regulations for exports destined to the EU while they do not fully implement the regulation for exports destined for Asian markets that do not require a health certificate.

4.2 National fisheries policy

The current Fisheries Policy of Seychelles (2005) is a revision of the 1986 policy – the objective for the fisheries sector is described as 'promotion of sustainable & responsible fisheries development & optimization of the benefits from this sector for present and future generations'. Amongst its objectives, the policy aims to; promote conservation and management of marine resources; generate the maximum amount of employment; maximise revenue from fisheries and other related activities; promote an integrated economy; enhance food supply and food security; promote safety at sea; and maintain Port Victoria as the major tuna landing/transhipment port in the Western Indian Ocean.

The fisheries strategies that are also provided within the policy are to increase the yield, value of the yield and the financial benefit of fisheries to Seychelles by maximising domestic processing, promoting export and increasing the level of Seychellois engagement in the industrial sector. Another strategy to achieve greater return from the sector is that, in time, the Seychelles will become a one-stop seafood hub and processing location for the Indian Ocean. The Government is taking steps towards this today through its facilitation of local and international participation and investment in the sector and fostering of greater competitiveness. The priority areas and the associated strategies are summarized in Annex G.

4.3 Organisation of the institutional framework for fisheries

4.3.1 Fishery sector stakeholders

4.3.1.1 Domestic stakeholders

Important aspects and issues relating to the tuna fishery are the responsibility of a number of government ministries, departments and agencies, including;

- **Ministry of Investment, Natural Resources and Industry**; responsible for promoting sustainable, responsible fisheries development and optimizing the benefits from the sector;

[76] There is a Code of Practice for handling and storage of fish used by local establishments to implement the regulations.
[77] Defined as any premises where fishery products intended for export are prepared, processed, chilled, frozen, packaged or stored but does not include any auction or wholesale market where fishery products are only displayed and sold by wholesale.
[78] The Fish Inspection Unit only inspects vessels with Seychelles flag, EU and other nationality vessels are inspected by the flag State.

- **Seychelles Fishing Authority** (SFA); the executive arm of Government for fisheries and related matters, responsible for promoting sustainable, responsible fisheries development and optimizing the benefits from this sector;
- **Ministry of Foreign Affairs**; responsible for ensuring that the outcome of negotiations in respect to fishing access is favourable to the country, and for developing economic and trade relations with third countries and regional bodies;
- **Ministry of Finance, Trade and Investment**; responsible for issues of taxation, trade and commerce and fiscal planning and control;
- **Department of Defence**; is the parent department to the Seychelles Coastguard who are responsible for search and rescue, deterring maritime offences, environmental protection, prevention of maritime pollution, ensuring navigational safety, defence of territorial waters and development of regional cooperative strategies to deal with illegal activities;
- **Seychelles Bureau of Standards** (SBS); sets and monitors the quality standards for export of fish and issues health certificates for export;
- **Seychelles Ports Authority** (SPA); is a government agency that governs and operates the ports of the country, principally the Port of Victoria and is currently developing the new fisheries quay with SFA and once it is constructed will be the operator;
- **Seychelles Maritime Safety Authority** (SMSA); registers all vessels;
- **Seychelles Licensing Authority** (SLA); issues fishing authorisations;
- **Department of Transport**; is the national authority maintaining register of certificates and endorsements for seafarers; and
- **National Assembly**; ensures that the EU sectoral support is well and correctly utilised.

There is only a limited degree of civil society involvement with fishing and related issues in the Seychelles. The Seychelles Fishing Boat Owners Association (FBOA) is an association representing about 50 artisanal, longline and hook and line boat owners. It facilitates and encourages engagement in the management of the fishery. The chamber of commerce represents the business community in the Seychelles, interacting with the SFA on issues of sectoral development. The Chamber pays particular interest to the benefits and opportunities that the FPA offers to local businesses as well as the government, with the aim of ensuring that benefits accrue to local business. The Apostle of the Sea is a faith based group that aims to support vessel crew in social matters and, by liaising with the authorities, improving work conditions for Seychellois crew. The Apostle of the Sea is actively working to develop an inclusive seamen's mission, and to be able to provide basic facilitates for sailors under normal and distress situations.

A Regional Anti-Piracy Prosecution & Intelligence Coordination Centre (RAPPICC) is under construction in the Seychelles. Once it is active, this Centre will hopefully have a positive impact on the fisheries sector by reducing the incidences of piracy for fishing vessels. It may also offer opportunities to obtain information on any illegal fishing activity through its aerial surveillance operations.

In addition to the bodies listed above, other key local stakeholders include the tuna fishing companies and processors (see Section 5.6.2) and the regional IOTC secretariat (see Section 3.2.1).

4.3.1.2 External stakeholders

Other countries of the IO and members of the IOTC have an interest in the management of the tuna stocks and play an important role through the IOTC in the tuna fisheries of the Seychelles. The bulk of the fish caught in Seychellois waters is exported after processing. The recipient countries of the tuna, including the EU (Spain, Italy and Portugal), Kenya, Madagascar, Mauritius and Thailand have a stake in the interest of flow of tuna into these markets. The countries and vessel owners of vessels that fish in the Seychelles EEZ, including Spain,

France, Taiwan, Korea and China have a vested interest in the state of the fishery and the access and management arrangements in place. French and Spanish research institutes (IRD and IEO) also play an active role in science in the region (see Section 2.3).

With respect to EU-ACP issues (including FPAs), the NGO Coalition for Fair Fisheries Arrangements (CFFA) documents the development and environmental impacts of EU-ACP fisheries relations on small-scale fishing communities. While Transparent Sea is active in campaigning for access to information and accountability in marine fisheries they successfully initiated a petition to the EU in 2011 to disclose ex ante evaluations of FPAs.

4.3.2 Monitoring, control and surveillance and fight against IUU fishing

The Fisheries Management Division of the SFA has an MCS department that is based at the Fisheries Monitoring Centre (FMC). The department has 22 people; seven inspectors, five observers, five officers, two licensing officers and two VMS officers. SFA has good infrastructure with facilities conducive to carrying out MCS operations. Office space is adequate, computers and internet is available, transport and fuel not considered a limiting factor. Inspectors are uniformed and the offices are placed ideally in the harbour very close to the fishing industry where landings, transhipments and processing takes place. All personnel are trained through national and regional training programmes and perform their job to an adequate or higher standard. Limitations include numbers of personnel and equipment, for example SFA has to lease larger patrol vessels to monitor the tuna fleet and at times there is difficulty in maintaining equipment getting supplies and spare parts. The FMC also processes catch report data, authorises the landing of catch outside Seychelles' waters, and ensures that the licensing unit maintains an updated register of licensed local and foreign fishing vessels.

Patrol capacity has declined. In 2011, 50 days of sea patrol took place, but in 2012 there have not been any patrols to monitor the tuna fleet to date, reportedly due to equipment break-down. The fishing vessels are checked through a compliance inspection at the start of each season and the logbooks are collected during port visits or sent by Agents if the vessel does not return to Victoria. All vessels targeting tunas have operational vessel monitoring systems (VMS); this is not mandatory for local vessels but a new Act is likely to make it so when passed. The VMS data is used for both compliance and scientific purposes and SFA link it to logbook data. VMS is used as a monitoring tool for ensuring compliance to restricted zones, such as the closures for shallow water (<200m) to industrial vessels. Apart from the depth restriction there are no other fisheries management measures for the tuna fisheries specifically for the Seychelles EEZ as the resolutions of the IOTC are in force (see Section 3.2.1). It is of general interest that the Seychelles bans bottom trawling as a measure to protect the bottom habitat of the sea.

The FMC provides supports to local agencies such as the Seychelles Coastguard (SCG), the National Drug Enforcement Agency (NDEA) and the Seychelles Police and the Attorney General's Office. The Seychelles interacts with other countries in the fight against IUU fishing and actively takes a lead in promoting co-operation at international fora such as the UN Committee on Fisheries (COFI).

The Seychelles is currently active in: the IOTC compliance committee; the IOC's Regional Plan for Fisheries Surveillance project (PRSP); the Stop Illegal Fishing (SIF) working group; the development of the SADC regional fisheries MCS Centre; the SIF and PEW supported Fish-i Africa project; the SmartFish programme in respect to risk assessment in MCS and also in data harmonisation and capacity-building.

The IOC regional surveillance PRSP, supported by EUR 10 million of EU funding, is a major regional MCS Programme in the IO and part of the regional co-operation on MCS. It is implemented through the IOC of which the Seychelles is a Member. IOC aims to eliminate illegal, unregulated and unreported (IUU) fishing in the EEZs of its Member States, and thereby contribute to the sustainable management of fisheries resources

and the promotion of responsible fishing. It aims to co-ordinate fisheries enforcement to make regional surveillance more effective through pooling resources and expertise[79]

Patrol boats, aircraft, satellites and fisheries monitoring centres are mobilized to enable fisheries inspectors to carry out their missions in all EEZ's. Each patrol ensures the supervision of existing activities, acts as deterrence to illegal fishing fleets and, if necessary, puts an end to any serious offence. The organization of coordinated patrols for fisheries enforcement makes the regional surveillance more effective through the pooling of resources and expertise.

4.3.3 Catch certification

All third party countries importing marine fishery products into the EU are required to implement the EU IUU Catch Certificate Scheme (CCS) of Council Regulation EC 1005/2008 and subsequent legislation. The regulation came into force on 1 January 2010 and intends to provide assurance that fishery products are compliant with all existing international, regional and national conservation and management measures and therefore are not obtained through IUU activities. The CCS is implemented through the FMC, who keep a comprehensive hardcopy (paper) database. There are validation procedures in place to verify the authenticity of catch certificates, and as yet no fraudulent certificates have been detected.

In August 2012 a report[80] was compiled to 'to support Seychelles in improving the implementation and functioning of its CCS and related mechanisms that ensure compliance with conservation and management measures'. The report assesses provisions in place to combat IUU fishing, including MCS arrangements, insofar as these relate to species and products exported to the EU under the CCS. The report concluded with 54 separate recommendations for improvements, however in respect to the residual of IUU fish into the EU the study concludes 'the residual risks are low for catches caught by industrial tuna vessels but medium for artisanal and semi-industrial vessels. IUU issues represented by artisanal fisheries are of less importance as most of the products exported to the EU come from tuna industrial vessels'.

4.3.4 Seafood hygiene and safety to export fishery products to the European Union market

In addition to the requirements set by the Seychelles (listed in section 4.1.3.2) all imports of fishery products into the EU are subject to official certification by the competent authority of the Seychelles, the FIQCU within the SBS. The Seychelles is presently listed in Annex II of Commission Decision 2006/766/EC establishing the list of third countries and territories from which imports of fishery products in any form for human consumption are permitted. FIQCU is responsible for; audit of fish processing plants; inspection of fishing vessels; inspection of landing sites; and sampling of fishery products, water and ice for testing microbiological and physico-chemical parameters.

A mission[81] by Food and Veterinary Office of the EU Directorate General 'SANCO' (DG SANCO) to Seychelles in March 2011, aimed to assess the sanitary conditions for fishery products exported to the EU and to follow up on a previous mission in 2006. In general the mission found that the competent authority was able to offer adequate guarantees concerning the quality of the fishery products exported to the EU. However, a number of shortfalls were identified concerning the official supervision of the primary production, deficiencies in the EU listed facilities (establishments and freezer vessels), the monitoring of contaminants, and in the capacity for testing for histamine and heavy metals.

[79] IOC website at: http://fisheries.ioconline.org/regional-fisheries-monitoring.html

[80] Gaudin, C., 2012. - Accompanying developing countries in complying with the Implementation of Regulation 1005/2008 on Illegal, Unreported and Unregulated (IUU) Fishing EuropeAid/129609/C/SER/Multi. Country Evaluation Report: Seychelles. European Union, Brussels.

[81] Report of mission: DG(SANCO) 2011-8885 - MR FINAL, Final report of an audit carried out in the Seychelles from 09 to 17 March 2011 in order to evaluate the control system in place governing the production of fishery products intended for export to the EU.

The FIQCU is currently accredited to implement six testing methods for fishery products including for fish, fish products, water and ice. Test results issued by the fish-testing laboratory of SBS are used by the competent authority to issue export certificates for fish and fishery products to the EU. The SBS are also working towards accreditation to ISO/IEC 17025 for the various parameters associated with fish testing as stipulated in the EU directives and regulations. To help in achieving this, the Seychelles received assistance from the EU under the Strengthening Fishery Products Health Conditions (SFP) Project, and from the sector support provided under the FPA for equipment and supplies for the SBS laboratories. This includes an atomic absorption spectrophotometer (AAS) and high-performance liquid chromatography (HPLC) equipment to detect low level of heavy metals and trace elements and for the testing of histamine. To date, the competent authority has not been accredited to conduct these tests and the samples are sent to Mauritius for testing. However, accreditation should be given in the near future.

The competent authority has started making use of TRACES (Trade Control and Expert System) for export certification to the EU. So far, several health certificates have been issued under TRACES, which is a web-based veterinarian certification tool controlling the import and export of live animals and animal products to and from the EU.

There were no rapid alerts published by the EU against any export of fish from Seychelles in 2011 or 2012, but the competent authority reported that the greatest challenge faced by establishments, especially smaller ones, is the maintenance of factories to the required levels, as there can be difficulty in obtaining spare parts and maintain equipment to the standards required. It was also noted that continual training of staff is required.

4.4 National Tuna Management and Development Plan

The national tuna management and development planning takes place within the framework of the IOTC (Section 3.2.1).

4.5 Onshore fisheries investment plan: current and future

The Seychelles have developed a detailed fisheries multi-annual programme (2011-2013), that sets out the budgets for utilising their own and donor's funds, including the EU sectoral support for three core areas. The largest of these is fisheries infrastructure development, with approximately EUR 4.3 million allocated to the development of the artisanal and semi-artisanal sector and just over EUR 5 million allocated to the construction of an industrial tuna fishing quay on Ile du Port (Zone 14). The government hopes that the Zone 14 initiative will benefit the economy through new business start-ups, land rent, port dues, pilotage/tug fees, stevedoring, and other sources of revenue which are brought in by the industrial tuna purse seiners, which will together also create more employment.

4.6 Implementation of the fisheries policies and management plans

Over the last year the SFA has been restructuring, this has been a lengthy and challenging task for the organisation. During this period the governing Board of SFA has been meeting twice each month to oversee the process and give regular guidance to the Chief Executive Officer and his deputy, who head the daily work of SFA and have been active in the process of moving SFA towards a more efficient and effective organisation. The restructuring has among other things aimed to address the problem of loss of experienced staff by providing a new framework for staff conditions of service that appears to be encouraging a longer-term outlook among staff members for the organisation to build upon.

With the positive impact of the restructuring of SFA starting to be felt, it is expected that the enactment of the new fisheries Act will add further momentum to this process. For the tuna fishery, the new Act will bring many resolutions of the IOTC into the legal framework and thus place Seychelles in a stronger position to negotiate sustainable access plans for the tuna resources.

The newly restructured organisation is starting to put in place other improvements that will assist SFA to implement the new management plans developed under sectoral support programme such as the sea cucumber plan (including quota allocation) and the NPOA for sharks while progress with plans still being developed, may lead to new momentum with respect to the NPOA IUU fishing and NPOA sea birds.

The observer programme is an area where the SFA hopes to make progress in 2013 by having five observers trained, equipped and available for sea. When problems are resolved relating to reduced space on board vessels, caused partly by the requirement for up to five anti-piracy security personnel, they will be able to go to sea with the EU purse seine fleet.

The last annual report of SFA covered the period 2007 to 2010, while the report for 2011 is currently being drafted. Annual reporting to stakeholders and the public is an important accountability aspect of the SFA and within the new structures it is planned that this task will become a routine annual activity.

4.6.1.1 Budget and financial capacity of SFA

Expenditure data were available for consideration up to 2010 (Figure 4.1) indicates a growth in SFA expenditure between 2007 and 2010. The large 'other costs' in 2010, were reported to be for payment for the fuel scheme, which was not financed under SFA's recurrent budget (at SCR 17 291 573).

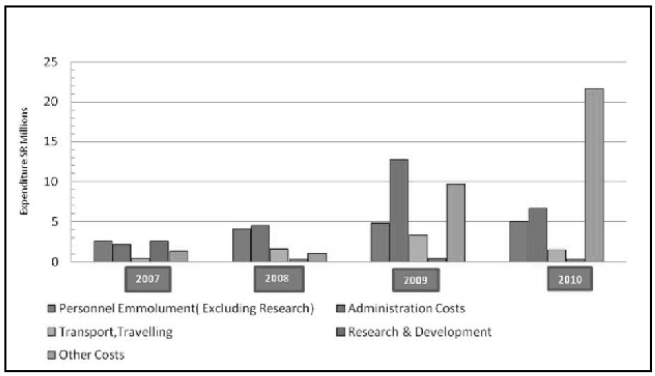


Figure 4.1: SFA expenditure (2007 - 2010)

Source: SFA Annual report 2007-2010

5 FISHERIES IN THE SEYCHELLES

The fisheries of the Seychelles target a variety of marine resources and usually fall into three sub-sectoral categories; artisanal, semi-industrial and industrial. There is also a limited aquaculture sector.

5.1 Artisanal fisheries

The traditional artisanal fishery of the Seychelles catches trevally, red snapper, jobfish, emperors, bonito, groupers, rabbit fish, mackerel, octopus, sea cucumber, spiny lobster, sharks and crabs. These are utilised in various ways including for home consumption, the local market, for sale to the foreign fishing and cargo vessels including the EU purse seine fleet, as well as to supply the hotels and restaurants linked to the tourism industry. The artisanal fishery includes around 400 boats including small fibreglass boats powered by outboard motors and 7–9 m "whalers" and slightly larger schooners. In 2011 SFA estimated a total catch of 2 875 t for this sector. There are only a few regulations for the artisanal fishery with respect to catch controls for species (turtles and sharks), gears (no bottom trawling, spear-fishing or shark fishing with nets), closed seasons and area restrictions. There are no limitations on catch levels.

Table 5.1: summary of artisanal fisheries, gear, location, species and catches

Fishery	Gear	Location	Main species	Catch in 2011 (t)
Semi-pelagic gillnet stock	Encircling gillnets	Seychelles Bank	75 % of catch is mackerel	265
Demersal handline	Demersal handline from small boats, whalers and schooners.	Main Island Mahé, Praslin, La Digue	Mostly emperor red snapper and Jobfish	1 044
Semi-pelagic hand-line fishery	Handline from small boats, whalers and schooners.	Seychelles Bank	Trevally	736
Traditional bamboo traps and metal traps	Traps on foot or from small boats, whalers.	Seychelles Bank	Rabbit fish and other trap species	308
Inshore shark fishery from small boats, whalers and schooners.	Small boats, whalers and schooners.	Seychelles Bank	Shark and ray	20
Lobster fishery	Hand collecting using snorkelling or scuba gear and bamboo or metal traps	Mahé, Praslin and La Digue	Lobster	3
Sea cucumber fishery	Scuba diving from whalers and schooners	Mahé plateau	Sea cucumber	530 909 (pieces, 2010)

Source: SFA 2012, compiled by consultant

5.2 Semi-industrial non-tuna fisheries

The semi-industrial fishery has around 10 locally-owned longline vessels that target either swordfish and tuna or sharks. The shark fishery, which was historically a shark finning fishery for oceanic white-tip shark and silky shark for export to the Far East, has not recorded any catches since 2009, when the catch was 32 t. This was considerably reduced from the 2007 catch of nearly 400 t. This decline is due to a disincentive that was put in place in 2008 to reduce shark finning, and to encourage vessels to switch to targeting swordfish and tuna assisted by the EU sectoral support programme.

5.3 Aquaculture

The aquaculture sector has never developed due to the abundant supply of marine fish and the relative shortage of both fresh water and available sites. However, a few mariculture projects have emerged over the years including a prawn farm on Coetivy Island, started in 1989, a pearl oyster farm in the National Park and a giant clam farm located inland at L'Amitie.

5.4 The tuna fisheries in Seychelles

The fishing vessels currently targeting tunas in the Seychelles EEZ can be divided into:

- Purse seiners
  - Seychelles flagged vessels fishing under private agreement
  - French and Spanish flagged vessels fishing under the EU FPA
  - Other nationality flagged vessels fishing under private agreement
- Longliners
  - Seychelles flagged vessels and other non-Asian flagged vessels fishing under private agreement
  - Asian flagged vessels fishing under the Taiwanese association agreement
  - Semi-industrial local vessels fishing under local licenses

Catch data collected by SFA is derived from vessel logbooks. Data provided for semi-industrial longline vessels is for the Seychelles EEZ only. SFA notes that some Distant Water Fishing Nations (DWFNs) provide SFA with log sheets covering their activity in the whole IO while others confine their reports to the Seychelles EEZ. Generally, the catch data reported includes catches outside of the Seychelles EEZ. Table 5.2 provides an overview of these catches from 2005 to 2011.

Table 5.2: total tuna catches by Seychelles licenced vessels in WIO, by gear type (2005 - 2011)

Year	Catch in t by gear type	
	Purse Seine	Longline
2005	389 256	29 301
2006	389 935	18 096
2007	245 670	16 601
2008	278 956	11 806
2009	262 719	10 221
2010	279 244	8 593
2011	258 361	8 257

Source: compiled from SFA information: note that the purse seine and foreign longline catches are from vessels licenced to fish in the Seychelles but includes the total catch from the Indian Ocean

The vessels that received fishing authorisations in 2011 and 2012 from the Seychelles Government are provided in Table 5.3.

Table 5.3: fishing authorisations issued by Seychelles Government (2011 and 2012)

2011				
Vessel type	**No of fishing authorisations**	**No of vessels**	**Flag of vessels**	**Agreement type**
Purse seine	8	8	France	EU
Purse seine	13	13	Spain	EU
Purse seine	10	7	Seychelles	Private
Purse seine	1	1	Iran	Private
Purse seine	5	5	Mayotte	Private
Total	**37**	**34**		
Longline	1	1	Philippines	Taiwanese
Longline	15	15	Seychelles	Taiwanese
Longline	43	43	Taiwan	Taiwanese
Longline	1	1	Oman	Taiwanese
Total	**59**	**59**		
2012 (to October)				
Purse seine	8	8	France	EU
Purse seine	14	14	Spain	EU
Purse seine	8	7	Seychelles	Private
Purse seine	1	1	Korea	Private
Purse seine	4	4	Mayotte	Private
Total	**35**	**34**		
Longline	6	6	China	Taiwanese
Longline	2	2	Japan	Taiwanese
Longline	7	7	Philippines	Taiwanese
Longline	96	93	Taiwan	Taiwanese
Longline	2	2	Oman	Private
Longline	27	26	Seychelles	Private
Longline	1	1	Tanzania	Private
Total	**141**	**137**		

Source: SFA licence list (October 2012)

Table 5.4 provides an overview of the different financial contributions by sector for each element of the fleet in 2011 received by the Seychelles government.

Table 5.4: direct income to Seychelles for fishing authorisations issued in 2011 (EUR total and %)

Sector	Payment in EUR	%
EU payment total (including sector support)	6 881 000	77.67
Foreign, non-Seychelles PS payments	571 428	6.45
Seychelles PS payments	500 003	5.64
Longline payments	907 112	10.24
Total payment for access	8 859 543	100

Source: consultants' calculations based on 2011 licence list and the fees for fishing authorisations (Table 4.1)

5.4.1 The semi-industrial tuna fishery

The semi-industrial longline vessels that target swordfish and tuna (Figure 5.5) reported a catch of 238 t in 2011, mainly consisting of swordfish (63 %) but also some yellowfin (19 %) and bigeye (8 %) this total catch is about 20 % lower than the previous year. Vessels generally only fish for about half of the year; in March, April, May part of June, October, November and up until mid-December, this is due to the monsoon winds and water temperature.

This fleet reported that they discarded no fish, as all catch was retained on board. The fishing ground exploited can be the northern and southern parts of the EEZ around the main islands. However, since the onset of piracy the vessels only fish in the southern fishing grounds of the Seychelles.

Table 5.5: summary of semi-industrial catch composition targeting swordfish and tuna (t, 2006 - 2010)

Year	Swordfish	Yellowfin	Bigeye	Sailfish	Marlin	Shark	Others	Total
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**

Source: SFA Annual Report 2007-2010

5.4.2 The purse seine tuna fishery

Tuna purse seining catches by species are provided in Table 5.6 as recorded in the vessel catch logs returned to the Seychelles.

Table 5.6: summary of WIO catches (t) from purse seiners authorised to fish in Seychelles (2001 – 2011)

	Total Catch	Catch Rate	Yellowfin		Skipjack		Others		No of licenced vessels
Year	(t)	t/day	catch	%	catch	%	catch	%	
2001	299 957	21.70	111 877	37	165 492	55	22 588	8	unknown
2002	378 027	28.74	128 206	34	217 847	58	31 975	8	unknown
2003	408 366	34.87	197 782	48	189 566	46	21 018	5	unknown
2004	358 258	30.03	201 727	56	137 103	38	19 428	5	unknown
2005	389 256	29.16	176 322	45	190 053	49	22 882	6	unknown
2006	389 935	26.80	145 596	37	224 065	57	20 274	5	unknown
2007	245 670	16.45	92 034	37	132 238	54	21 399	9	58
2008	278 956	21.10	112 724	40	137 330	49	28 903	10	59
2009	262 719	24.02	84 821	32	150 420	57	27 478	10	38
2010	279 244	29.97	103 127	37	153 782	55	22 334	8	33
2011	258 361	27.03	110 574	43	127 150	49	20 637	8	34

Source: SFA Annual Report 2007 – 2010 and the 2011 Tuna Bulletin

The catch information by year and country of registration, for the WIO catch is provided (Table 5.7).

Table 5.7: summary of WIO Seychelles authorised purse seiner catches (t) by flag (2007-11)

Country	2007	2008	2009	2010	2011
Spain	112 249	121 522	106 286	137 386	126 009
France	69 387	75 131	57 763	47 102	42 530
Seychelles	49 936	56 382	68 339	75 787	63 212
Others*	14 098	25 921	30 330	18 969	26 610
Total	**245 670**	**278 956**	**262 719**	**279 244**	**258 361**

*Others represent other countries and include Italy (2007-2010), Mayotte (2007-2011) Thailand (2008-2010) and Iran (2011)

Source: SFA Annual Report 2007 – 2010 and SFA 2011 Tuna Bulletin

The EU purse seine fleet consisted of 21 vessels in 2011. In total 13 of these were Spanish with 8 under 100 m and 5 over 100 m in length, 8 were French and all were less than 100m. These vessels were active in the Seychelles EEZ and they also have licences for other EEZs within the Indian Ocean. Table 5.8 indicates the catch caught by these vessels in the Seychelles EEZ by species for each country of registry for 2011. Table 5.9 provides a comparison of the percentage of the EU fleets catch that was caught within the Seychelles EEZ compared to the WIO.

Table 5.8: summary of species catches (t) taken by EU purse seiners in the Seychelles EEZ in 2011

	Yellowfin	Skipjack	Bigeye	Albacore	Total caught in the Seychelles
Spain	13 450	11 534	2 251	0	27 235
France	7 240	4 703	1 327	30	13 300
Total	20 690	16 237	3 578	30	40 535

Source: compiled from EU supplied catch data

Table 5.9: summary of catches (t) by EU purse seiners in Seychelles EEZ and WIO in 2011

	Total caught in the Seychelles	Total caught in the IO	% of catch taken in Seychelles EEZ
Spain	27 235	130 231	21%
France	13 300	42 593	31%
Total	40 535	172 825	23%

Source: compiled from EU supplied catch data and SFA Annual Report and Tuna Bulletin

5.4.3 Longline vessels fishing in Seychelles

The EU does not currently have any longliners fishing under the FPA catching tuna in the Seychelles EEZ. The longline catch statistics are provided in Tables 5.10 and 5.11 by species and country of registration.

Table 5.10: catches (t) by species: industrial longline vessels licenced for Seychelles EEZ (2005 - 2011)

Year	Yellowfin catch (t)	Bigeye catch (t)	Others (t)	Total catch (t)
2005	13 706	12 391	3 205	**29 302**
2006	6 562	8 614	2 920	**18 096**
2007	4 145	8 933	3 523	**16 601**
2008	1 833	6 832	3 141	**11 806**
2009	881	5 112	4 228	**10 221**
2010	845	4 604	3 154	**8 603**
2011	1 343	4 383	2 399	**8 125**

Source: SFA Annual Report 2007 – 2010 and Tuna Bulletin 2011

Table 5.11: catch (t) from industrial longliner vessels reported by country (2009 - 2011)

Country	Catch (t)		
	2009	2010	2011
Japan	772	n/a	n/a
Taiwan (POC)	942	1 841	650
Seychelles	8 323	6 658	7 566
South Korea	14	n/a	n/a
China	144	n/a	n/a
Others	27	103	n/a
Oman	n/a	74	33
Total	**10 222**	**8 676**	**8 249**

Source: SFA Annual Report 2007 – 2010 and Tuna Bulletin 2011

5.5 Illegal, unreported and unregulated fishing and piracy impacts in IO

5.5.1 IUU fishing

The main IUU fishing activities in the artisanal fishery are fishing during the closed season, in marine protected areas or using unlicensed fishing gear. The semi-industrial shark fishery in theory no longer exists but in practice may still be underway, with longline vessels simply not reporting the catches. The situation is unclear.

Within the tuna fishery, poaching by foreign unlicensed vessels has been a longstanding problem. In 2010, four Iranian vessels were spotted illegally fishing in the Seychelles EEZ by legal vessels, which reported them to the SFA. No new cases of poaching have been reported since then.

Under-reporting by licensed fishing vessels is not considered to be a major risk as vessels fishing in the Seychelles do not have to pay any additional fees in relation to the size of catch, although the EU increases the compensation if the total catch is above the reference tonnage indicated in the Protocol. It is possible that over-reporting may occur by vessels that, in addition to the Seychelles fishing authorisation, also hold a fishing authorisation with another country within the IO that requires that fees be paid in relation to the catch volume or for any excess over the reference tonnage.

Landing by-catch is not a requirement in the current legislation, although it is currently drafted in the Draft fisheries Act, as is the illegality of high grading. Once this is the case, either observers or other monitoring equipment, such as onboard cameras will be required to ensure that this regulation is enforced. The can also help to ensure that over-or under-reporting does not take place.

Delays in logbook returns are a problem associated with some longliners due to the length of time they spend at sea, which can be up to a year of transhipping their catch and not entering port. For purse seiners the delays are usually during and just after the second quarter of the year when most vessels are fishing in the Mozambique Channel and are not necessarily using Port Victoria for transhipment.

Several of the EU vessels, under the FPA, or else their sister vessels, have been implicated in IUU fishing in other countries of Africa[82]. This should be of concern to the Seychelles and EU and efforts are required to

[82] For examples and links to other websites see www.stopillegalfishing.com

ensure compliance with Seychelles and the IOTCs rules and regulations. The VMS tracking does not currently provide for any buffer zone when the EU vessels leave the Seychelles EEZ. It may be useful as an improvement in MCS for the Seychelles to receive positions of the vessels when they are not fishing in their EEZ.

The IOTC compliance report produced on the 8th March 2012 for the EU states that the EU was compliant or else the measures were not applicable for all CMMs covered under; implementation obligation; management standards; IUU vessels; transhipments; and port inspections. It indicates that for; reporting on vessels; vessel monitoring systems; statistical documentation programme; and mandatory statistical requirement not all information was provided. There was partial compliance reported for implementation of mitigation measures for by-catch of non-IOTC species and for observers. The regional observer programme had been disrupted by piracy. The only areas of notable non-compliance identified by the chair of the Compliance Committee, and therefore requiring further discussion, were: Resolution 10/7 that a list of foreign fishing vessels licensed had not been provided and Resolutions 10/02, 05/05/, and 09/06 that the EU had not reported statistics in accordance to IOTC standards, in particular statistics on catch and effort, size frequency for the artisanal and longline fisheries.

5.5.2 Piracy impacts

Somali piracy has been a problem in the region since the 1990s, with serious and costly impacts for the Seychelles. The Seychelles has responded by establishing a High Level Committee on Piracy, inclusive of all relevant national agencies, and it has collaborated with international agencies to patrol their waters and attempt several at-sea rescues. The Seychelles has also established military protocol to combat piracy, as well as reviewing its national legislation to ensure swift, effective prosecution of pirates. The European Navel Force Somalia - Operation Atalanta – (EU-NAVFOR – ATALANTA)[83], an EU operation based in the UK that involves 23 members and four other countries is an example of the joint collaboration underway to overcome piracy. Commencing operations in December 2008, the aim of this operation is to combat piracy in the Horn of Africa. Their mandate includes monitoring fishing activities off the coast of Somalia, reinforcing coastal policing capacity in Somalia, and strengthening the ability of Djibouti, Kenya, the Seychelles and Tanzania "to fight piracy and face other challenges such as illegal fishing and trafficking."[84] The UK, under Operation Atalanta and NATO, under operation Ocean Shield has positioned surveillance aircraft operating in Seychelles. Seychelles based RAPPICC will provide new support to the region and an opportunity for the SFA to work with the coastguard and regional and international partners to ensure that fisheries concerns are incorporated in the response to piracy.

The International Maritime Bureau (IMB) Piracy Reporting Centre reports that piracy in 2012 has been at the lowest level in the last three years, with only 70 attacks on ships by Somali pirates in the first nine months of 2012, compared with 199 in the corresponding period in 2011. From July to September, the pirates attacked only one ship, compared with 36 incidents over the same period in 2011. As of November 2012, nine vessels are being held by Somali pirates and 154 hostages. Two Seychellois fishermen were hijacked in 2011 and held for over one year before being released in late 2012, this incidence had large repercussion spreading fear among fishers who were too scared to take to sea, resulting in the on-shore processors having to import fish for the tourist industry and local consumption in 2011 as inadequate fresh fish was being landed to meet the demand.

The most recent attempted attack on a fishing vessel was in October 2012 to the north-west of the Seychelles off the Somalia coast (Figure 5.1), when a skiff with six to eight pirates onboard approached and fired upon a fishing vessel at high speed. The onboard security team returned fire resulting in the skiff aborting and moving

[83] EU-NAVFOR – ATALANTA website: http://www.eunavfor.eu/about-us/mission
[84] Ibid

away, there were no injuries to the crew. While the most recent recorded successful hijacking of a fishing vessel with 15 crew members was on the 26 March 2012 off Somalia.

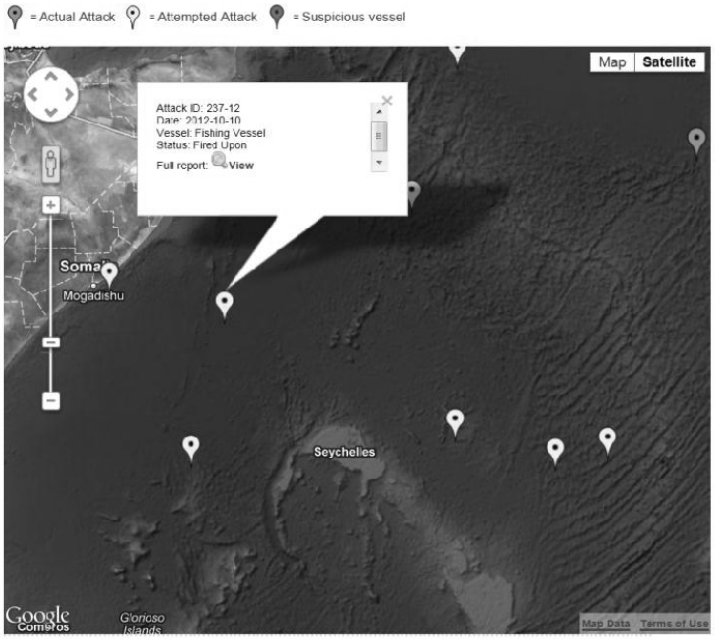


Figure 5.1: piracy & armed robbery (IMB 2012) map of attempted attacks on fishing vessels in WIO

Source: http://www.icc-ccs.org/piracy-reporting-centre/live-piracy-map

The impacts of these attacks has had strong economic and psychological repercussions in the Seychelles. The costs to shipping in general have been passed on to the clients, and this has increased the cost of supplies and spare parts for the community and for fishing vessels. In relation to the fishery, fear of piracy has forced all the longline vessels to relocate from the northern to the southern fishing grounds within the EEZ, this has reportedly reduced the CPUE and thus the overall catches.

The impact on the purse seiners fishing patterns has been less significant from a fishery perspective since they have been permitted and able to go fishing with armed teams on board; the French and Spanish purse seiners may carry up to five security personnel provided by the military (French) or by a private security company (Spanish). The impacts for purse seiners have been in relation to the cost incurred for this security.

Piracy limits the ability of the SFA to monitor its fishery as national resources tend to become dedicated to piracy. Consequently, and also for operational reasons, scientific research and observation of the fishery have been reduced; the at-sea observer programme has been notably set back by the pirate attacks.

Port activity has been negatively impacted due to piracy with the amount of traffic coming into port decreasing with longliners going further south and east, and as a result there has been a decrease in the transhipments. Amongst other economic losses, revenue from fisheries and port revenues have been estimated by the government of Seychelles to be down by 30 %, largely due to a reduction in port calls and servicing of vessels.

In respect to imports of fish for the canning factory (Table 5.12), there is no significant evidence that this reduced after 2008 when the piracy really took hold.

Table 5.12: volume of fish imported for canning 2007 to 2011 (t)

T	2007	2008	2009	2010	2011
Frozen Fish	71 005	68 327	70 203	65 607	68 440

Source: SFA annual report 2007-2010, and supplementary data SFA

5.6 The onshore tuna industry

Due to its strategic geographical position at the centre of the tuna fishing grounds, the Seychelles is an ideal port base for the tuna fishing fleet in the South-West Indian Ocean. Over the past 20 years Port Victoria has become a more prominent tuna transhipment port for the purse seine vessels of the region, and the establishment of the Indian Ocean Tuna (IOT) factory in 1987 has encouraged the growth of this industry.

5.6.1 Ports and infrastructure

Seychelles has a commercial port that accommodates all types of vessel from tourist ships, military vessels to industrial fishing vessels. The facilities for the fishing industry are therefore not as ideal as they could be – a situation that creates limiting factors for the fleets that operate out of the islands.

Tuna and by-catch that is off-loaded or trans-shipped in the Seychelles either goes to the canning factory, into containers for forward transportation on cargo vessels, into refrigerated vessels known as 'reefers' that transport the fish in bulk freezers to their next destination or into one of the two processing factories for sale or processing. During and/or after offloading, the vessels complete their maintenance tasks, such as mending nets or other vessel repairs before loading fuel and supplies. Supplies include large quantities of salt for the brining process to prepare the vessel to take to sea. Currently, this occurs at the commercial port. However, there are limitations to this. There is often is often a shortage of berths for vessels; there is not adequate space to store salt at the quay so this needs to be stored elsewhere and transported as required; there are limitations to the numbers of fishing vessels and reefers that can park parallel to each other to offload all at once; there is limited dock-side space for mending nets, and there is no shipping yard.

The government has allocated approximately 30 hectares of land for the fisheries sector, to build a fishing quay and house businesses and services related to the fisheries sector. The quay will be 120 m in length and 30 m in width and it will serve as a logistics base for the industrial tuna purse seiner fleet to land its catch. It will also be suitable for the loading and unloading of fishing nets and salt. Ships will berth in a horizontal manner parallel to one another, thus also facilitating efficient transshipments. The construction of the quay is expected to start during late 2012 and to take approximately 14 months to complete; the constructor has been contracted.

5.6.2 Fish processing, distribution markets and trade

5.6.2.1 Fish processing

The main tuna processor is Indian Ocean Tuna Ltd. (IOT) a large processor that cans skipjack, yellowfin and bigeye tuna. IOT buys about 20 % of all tuna landed or trans-shipped in the Seychelles and produces 1.3 million cans of tuna per day from an annual supply of around 70 000 t. The cannery is one of the largest tuna canneries in the world with seven cold stores to store 25 days' supply of fish. The factory has a fishmeal production factory, which uses the cannery's by-products and certain by-catches of the fleet, a subsidiary company of IOT, Ocean Products Seychelles that extracts oil from the tuna heads for fish oil.

Two smaller companies, Oceana Fisheries Co. Ltd. and Sea Harvest Pty. Ltd. buy fresh fish from artisanal and semi-industrial fishermen and frozen (wet and dry) by-catch from the purse seiners for processing for the local and international markets. The supply of fresh fish is seasonal and this provides challenges for supplying export markets and even for supplying the year-round tourist industry.

By-catch from the EU fleets may include dorado, bonito, kingfish, trevally, barracuda, sailfish, marlin and shark. This is generally brine frozen, and thus of lower quality and destined for use as bait or processed as a cheap form of protein. One of the processors has trained the crew on the EU purse seine vessels to dry-

freeze gutted by-catch and to thus gain a much higher price for it (ranging from SCR 16 per KG for top quality dry frozen to SCR 3 per KG for lower quality, brine frozen). This is reported to have worked well and the practice on EU vessels is to allow that the crew are allowed to 'take' the by-catch and process this for their private sale on shore. The Spanish vessels are reported to generally sell more by-catch than the French vessels; this could be for a variety of reasons, size of vessel (all French vessels are <100 m), different fishing grounds, or less non-EU crew interested in this side-line.

The sectoral support is supporting investment and research into improving the opportunities of value addition for the longline caught fish, such as through increasing ice production and exploring new vacuum packed options for processing. Other opening niche options for developing new processed products include; the smoking of marlin for e.g. Italy, France and Germany; fresh fish to be flown to Dubai to access the Middle East; making local processed products like 'fish fingers' and 'fish nuggets', and branding the Seychelles as a quality product.

It was noted by one on-shore processor that, in 2011, 70 % of the fish they sold was exported but that up to September 2012 there had been no exports due to catch reductions in the semi-industrial sector.

5.6.2.2 Trade and markets

Exports of fish and fish products constitute an important source of foreign exchange earnings and generate a significant amount of employment and indirect income. In 2011 a slight increase of 7.82 % was recorded in the volume of canned tuna exported bringing the volume of canned tuna exports to 31 283 t in 2011 compared to 26 225 t in 2010. The value of canned tuna exports was just over SCR 3.0 billion (EUR 188 million, Table 5.13).

Table 5.13: volume and value of fish and fish products exported, 2010-2011

	2010			2011		
	t	EUR	SCR million	t	EUR	SCR million
Fresh and frozen fish	306	1 903 120	26	203	1 111 059	19
Canned tuna	29 015	172 892 308	2 382	31 283	177 485 038	3 001
Dried shark fin and sea cucumber	70	2 217 707	30	110	3 187 581	53
Total	**29 391**	**177 013 135**	**2 439**	**31 596**	181 783 678	**3 073**
Total domestic exports		191 618 287	2 640		194 207 688	3 284
% of domestic exports		92%	92%		94%	94%
Fish meal	7 050	6 227 939	86	5 323	4 320 402	73
Fish oil	915	2 970 102	41	767	1 914 784	32
Grand total	**37 356**	**186 211 176**	**2 566**	**37 686**	**188 018 865**	**3 178**

Source: SFA (note: this data reflects only direct exports to the EU)

Seychelles imported 68 000 t of frozen fish in 2011, for SCR 1.5 billion (EUR 88.7 million); this was mainly heading for the canning factory and equates to 99 % of the overall fish imports by volume and 98 % by value. The rest of the imports by Seychelles included smaller quantities of fresh fish, molluscs and crustaceans and prepared fish for local consumption and the tourist industry. This took the total volume of fish and fish products imported to 68 712 t.

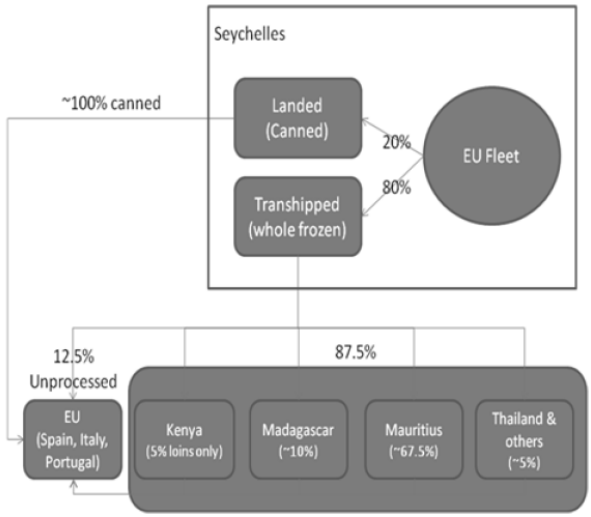


Figure 5.2: diagram of the movement of tuna caught and landed in the Seychelles by EU fleet

Source: consultants' findings

For tuna caught by the EU in the Seychelles EEZ and landed in the Seychelles, Figure 5.2 shows how the fish was distributed following landing; approximately 20 % went to the cannery and 80 % was transshipped and destined for other markets.

Longline fresh swordfish and tuna loins are exported fresh on ice by air mostly to the EU (United Kingdom, Holland, Switzerland, France, Germany and Italy) with some going to Australia and Japan. Some produce is sold fresh to local hotels and restaurants, whilst other product is frozen and sold locally or exported. Wet frozen by-catch from the EU fleet is destined for the local market for use in the canteens and hotels of the Seychelles or else it is exported, mostly commonly to Thailand, Mauritius, Turkey or the Middle East. High quality by-catch that has been dry frozen is used for local consumption.

5.7 Short and medium term outlook for Seychelles' tuna fisheries and onshore fishing industry

Many of the constraints and possible developments to the tuna fishery and industry in the Seychelles have been discussed in previous sections. They include:

- There is a need for improved cross-checking and triangulation between information, in particular in the VMS and logbook information, to allow a clearer picture of catches within the EEZ and within the Indian Ocean as a whole;
- The use of onboard observers offers new opportunities for improving MCS, as does electronic monitoring equipment and some of the strengthened provisions in the proposed draft fisheries Act;
- The new quay will offer new opportunities for vessels to use Port Victoria as a home base and Zone 14 will increase attractiveness for investment and up and downstream opportunities for the industry, such as expanding the production of local made packaging for processed products;
- A new opportunity is likely to be the requirement to retain all by-catch on board. This may alter the current practice of crew being 'given' the by-catch to process and sell, and it may also adjust the dynamics for the onshore processors;
- A constraint is the demand for experienced labour and the challenges for the Seychelles to develop this capacity. The university and the Maritime Training Centre (MTC) provide options for bridging skills gaps; and
- The threat of piracy appears to be reducing but this remains in a fragile state.

6 THE FISHERIES PARTNERSHIP AGREEMENT BETWEEN THE EU AND THE REPUBLIC OF SEYCHELLES

6.1 Evolution of the fisheries partnership agreements between the EU and Seychelles

The first fisheries agreement between the Seychelles and the EU was signed in 1984 and, from 1987 until 2006 took the form of a Framework Agreement and a series of successive Protocols.[85]

Table 6.1: main characteristics of the FPA and current and previous protocols

Item	FPA and current protocol	Previous protocol
Agreement duration	6 years renewable (02.11.2007 to 01.11.2013)[86].	
Protocol duration	3 years (18.1.2011 to 17.1.2014).	6 years.
Date of entry into force (protocol) /Initialisation	Entered into force 11.11.2011 for the period 18.1.2011 to 17.1.2014. (By agreement between parties, provisionally applied from 18.01.2011).	18.01.05 – 17.01.11.
Nature of the agreement	Tuna Fishery Agreement.	Tuna Fishery Agreement.
Yearly financial contribution	EUR 5 600 000 out of which EUR 2 220 000 are dedicated to the support of the fisheries sector of Seychelles. If the overall quantity of catches of tuna by EU vessels in Seychelles exceeds reference tonnage per year then the financial contribution shall increase by EUR 65 for each additional t caught.	EUR 4 125 000 per year until 2007, then EUR 5 355 000 per year for fishing opportunities of which EUR 2 241 900 per year was in sectoral support.
Fishing fees to pay by the fishing vessel	Tuna seiners: EUR 61 000 per year Surface longliners =or< 250 GRT: EUR 3 150 per year (reference catches: 90 t). Surface longliners > 250 GRT: EUR 4 200 per year (reference catches: 120 t). Surface longliners will pay an additional EUR 35 per t for catches over the reference tonnage for each vessel.	EUR 21 000 per tuna seiner. EUR 3 150 per surface longliner (<250 GRT). EUR 4 200 per surface longliner (<250 GRT). All vessels paid EUR 25 per t (2006-2008) and EUR 35 t (2008-2011).
Reference tonnage	52 000 t per year.	
Number and flags of vessels authorised to fish	Tuna purse seiners – Spain 22, France 23, Italy 3 (total 48). Surface longliners – Spain 2, France 5, Portugal 5 (total 12).	Tuna purse seiners 40. Surface longliners 12.

Source: European Commission

[85] Martin, Jesus Iborra. 2011. Fisheries in the Seychelles and Fisheries Agreements with the EU, Brussels.
[86] Official Journal of the European Union, 25.10.2012. L 295/24 [EN}. http://eur-lex.europa.eu/LexUriServ /LexUriServ.do?uri=OJ:L:2012:295:0024:0024:EN:PDF

In December 2002 the Commission announced the advent of Fisheries Partnership Agreements[87]. In July 2004, the EU's Agriculture and Fisheries Council agreed to the Commission's proposal for FPAs.[88] In 2005 and 2006 negotiations began between the Government of the Seychelles and the Commission and an FPA was agreed between the two parties. The FPA, however, only took effect from 2 November 2007 for a period of six years. It is automatically renewable[89] and a notice of at least six months must be given if either party wishes to terminate the agreement[90].

The main characteristics of the EU-Seychelles FPA and its current Protocol are summarised in Table 6.1 and are compared to the conditions of the previous protocol.

The current Protocol is in many respects similar to the previous protocol, but was negotiated for a period of three years rather than six years, as in the previous protocol.

A key difference between the previous and current protocols was the agreement to have a flat rate fee payable for purse seiners of EUR 61 000 paid by vessel owners to the Seychelles authorities for authorisations to fish instead of the previous advance payment and a rate per tonne.

Provision was made in the current Protocol for new fishing opportunities (Article 6) and the parties undertook to encourage experimental fishing, especially with respect to under-exploited deep water species (Article 6.2).

6.2 Management measures to which EU vessels must comply to fish in Seychelles waters

EU vessels must comply with the applicable national legislation of the Seychelles (Article 10, Protocol). Legislation relevant to the governance of the fisheries sector is reviewed in section 4.1 of this report. Both the EU and the Seychelles are members of the IOTC. Vessels flying the flag of Members or co-operating non-Members, are obliged to comply with the management measure decided on by the IOTC. The management and technical measures of the IOTC and the functioning of the Compliance Committee are discussed in 3.2.1.2 and set out in Annex G.

6.3 Utilisation

6.3.1 Authorisations and uptake of the fishing opportunities negotiated

European purse seiner vessels wishing to benefit from the fishing opportunities offered in the Seychelles' EEZ must have a license to do so from the EU and must be granted an authorization by the Seychelles Government to fish in the Seychelles EEZ on the payment of a EUR 61 000 flat rate fee. This fee is paid in two equal instalments, the first when the authorisation is applied for, and the second when within 100 days for the beginning of the period covered by the authorisation[91]. Surface longliners are required to pay an advance depending on the size of the vessel (see detail in Table 6.1 above) plus a rate of EUR 35 per tonne if the reference tonnage for the vessel is exceeded.

Table 6.2 summaries the uptake by EU vessel in 2011 and 2012. No surface longliners took up the fishing opportunities in the Seychelles EEZ in either year. Less than half (21 out of 48) of the fishing opportunities offered to the purse seine fleet were made use of.

If the Mayotte islands were to change status and the vessels currently fishing under Seychelles private agreement, four in 2012 (Table 5.3) were to fall under the FPA the impacts would be most likely in respect to the reference tonnage as, as additional four vessels are likely to increase the annual catch of the EU fleet under the FPA to above the reference tonnage, implying a further payment would be required by the EU.

---

[87] Communication from the Commission on an integrated framework for fisheries partnership agreements with third countries, 23 December 2002, COM (2002) 637-final

[88] Council conclusions on fisheries partnership agreements with third countries, 19 July 2004.

[89] FPA, Article 11.

[90] FPA, Article 12.

[91] Section 2.2 of Chapter 1 of the Annex to the Protocol, FPA EU-Seychelles.

Table 6.2: utilisation of fishing opportunities provided for in the Seychelles Protocol

Fishing category	Country	Fishing opportunities: No. of vessels	Fishing seasons: 2011 Uptake	2011 %	2012 Uptake	2012 %	Catch 2011
Purse seiners	Spain	22	13	59	14	64	27 245
	France	23	8	34	8	35	13 300
	Italy	3	0	0	0	0	0
	Total PS	48	21	44	22	46	40 545
Surface longliners	Spain	2	0	0	0	0	0
	France	5	0	0	0	0	0
	Portugal	5	0	0	0	0	0
	Total LL	12	0	0	0	0	0
Total		**60**	**21**	**35**	**22**	**37**	**40 545**
Total reference tonnage		52 000					
Percentage utilisation		78					

Note: one Italian PS reflagged as part of the French fleet for security reasons.
Source: DG Mare data

6.3.2 Catches and utilisation of the possibilities negotiated

The total catch by the EU fleet in 2011 within the Seychelles EEZ was 40 545 t (Table 6.2), harvested by the 21 EU purse seine vessels. This represented 78 % of the total reference tonnage under the protocol, which envisaged the participation of 48 purse seiners and 12 longline vessels. Had the full complement of 48 EU purse seiner vessels been deployed in the IO, then – at this rate - the catch in the Seychelles EEZ would have been 92 674 t. This suggests that the reference tonnage bears little relationship to the catching capacity of the fleet. Fishing opportunities for the longline fleet were not utilised. The additional vessels would also seek fishing opportunities in other EEZs and on the high seas, increasing the impact on total catch for the WIO quite considerably.

6.3.3 Total payments made to Seychelles

Table 6.3 provides a summary of payment made to the Seychelles for fisheries access and for sector support. The EU pays a total of EUR 5.6 million, of which EUR 3.38 million is for fisheries access and EUR 2.22 million is paid to support the sustainable development of the fisheries sector in the Seychelles in accordance with a programme agreed between the two parties. In 2011, the EU and vessel owners paid a total EUR 4 661 000 for access, amounting to EUR 114.96 per tonne or EUR 83.36 per tonne from the EU and EUR 31.59 from the boat-owners. If the sector support payment is included in the calculation, then the figure rises to EUR 169.71 per tonne.

Table 6.3: summary of total payments made to Seychelles by the EU and EU fleet (2011)

PAYMENT	2011 in Euro
EU payments for access	3 380 000.00
EU payments for sector support	2 220 000.00
Total EU payments	**5 600 000.00**
Fleet payments	1 281 000.00
Total payments for access	4 661 000.00
Total payment for access and sector support	**6 881 000.00**
Tonnes caught	40 545.00
EU payment for access per tonne	83.36
Fleet payment per tonne	31.59
Total access payment per tonne (excluding sector support)	114.96
Total payment per tonne (including sector support)	169.71

Source: consultants' calculations

6.4 Economic analysis of the Fisheries Partnership Agreement

The methodology used for the economic assessment is described in Annex K.

6.4.1 Sales values

Despite rising prices[92], imports of canned tuna into the EU from third countries grew in 2011. The total imports of canned tuna, reached 353 457 t last year with a value of EUR 1.55 billion. This reflected an increase of 4.6 % in quantity and of 21.1 % in value year on year[93]. The Seychelles, the fourth largest supplier of canned tuna to the European market (after Ecuador, Thailand and Mauritius), posted a growth in exports to the EU of 22.7 % in 2011.

The Spanish and French purse seiners have reported poor catches in the IO, pushing up prices in the first half of 2012[94]. In December 2011, the free on board (FOB) price in the Seychelles of skipjack was EUR 1 200 per tonne, and of yellowfin EUR 1 800 per tonne. By November 2012, the FOB Seychelles prices per tonne of skipjack and yellowfin had risen to EUR 1 760 and EUR 2 450, respectively[95].

6.4.2 Value-added

Table 6.4 provides an estimate of the average annual value-added accruing as a result of the Protocol, based on the methodology described in Annex K. Based on 2011 values, EUR 41.49 million of value added accrued as benefits to the Seychelles and EU as a result of the Protocol, 75 % of which accrued to the EU.

6.4.2.1 Upstream subsector

In the upstream sector, annual value-added based on 2011 data accrue to Seychelles to the value of EUR 7.68 million through port calls and through payments made for access to Seychelles waters by both the EU and vessel owners. The rate of value-added from port calls is relatively high because of the large labour

[92] Prices discussed in 1.2.5.2 and table 1.2. For fuller discussion see Annex K.
[93] Globefish, July 2012. http://www.globefish.org/canned-tuna-july-2012.html
[94] Globefish, October 2012. http://www.globefish.org/tuna-october-2012.html
[95] Data provided by Globefish.

force used during transhipments. Upstream value-added in the EU is made on insurance, value-added on vessel construction and overheads and management charges. The total amounts to EUR 3.7 million.

6.4.2.2 Catching sub-sector

The low level of value added for the Seychelles in the catching sub-sector is explained by the absence of observers on EU vessels and the poor implementation of the provision to have at least two Seychellois crew on board each EU vessel. The catching sub-sector generates high levels of value-added for the EU, primarily through vessel profits of EUR 22.1 million and crew payments of EUR 3.7 million.

Table 6.4: average value-added (VA) accruing to EU and Seychelles from the Protocol (EUR, 2011)

	% VA accruing to EU	% VA accruing to Seychelles	rate of VA	EU VA	Seychelles VA	TOTAL
						Upstream sub-sector i.e. inputs [1, 2]
Port calls Seychelles [3]		90%	75%		796 249	796 249
Insurance [4]	100%		40%	453 659		453 659
Depreciation	100%		25%	1 553 899		1 553 899
Overhead/management charge	100%		100%	1 701 221		1 701 221
Fishing access rights [5]		100%	100%		6 881 000	6 881 000
Total upstream sub-sector				3 708 779	7 677 249	11 386 028
Catching sub-sector						
Crew [6]	50%	<0.5%	100%	3 725 970	-	3 725 970
Observers [7]			100%		-	
Vessel profit	100%		100%	22 085 731		22 085 731
Total catching sub-sector				25 811 701	-	25 811 701
Downstream sub-sector						
Fish processed in EU	10%		25%	1 431 315		1 431 315
Fish processed in Seychelles		100%	35%		2 862 631	2 862 631
Total processing sub-sector				1 431 315	2 862 631	4 293 946
TOTAL all sub-sectors				**30 951 795**	**10 539 880**	**41 491 675**

Source: consultants' calculations

Notes:

[1] Upstream inputs only included if the value-added estimated is thought to accrue to either the EU or Seychelles

[2] Fuel not included in value-added estimations as taken at sea by tanker from international sources

[3] Port calls comprise the cost of labour for transhipment, supplies, management charges and taxes

[4] Vessels assumed to be insured and constructed in the EU

[5] Access fees (EU contribution arising from Protocol + vessel owners authorisation fees) considered as input and thus included in upstream sub-sector

[6] 50 % EU, 50 % other, Seychelles crew negligible.

[7] No Observers on board vessels.

6.4.2.3 Downstream processing sub-sector

The Indian Ocean Tuna cannery is the largest such facility in the IO region. This accounts for substantial value added in the processing sub-sector in the Seychelles, estimated at EUR 2.8 million. Local sales of by-catch of the EU fleet supplied to local processers are not estimated by the model, as it is not highly significant.

EU value added in the downstream processing sub-sector arising from the Protocol is relatively small at EUR 1.4 million, due to the small proportion of the catch that reaches Europe for processing. It is estimated that approximately 361 t of the EU catch under the Protocol reaches the EU market as unprocessed product and that more than half of that is sold directly through retail outlets while the remainder is processed.

6.4.2.4 Balance of value-added between sub-sectors and between the EU and Seychelles

Table 6.4 clearly illustrates that the most of the value-added accrues in the catching sub-sector, due to the high profitability of the purse seine fleets.

6.4.3 Discussion of the economic and financial impacts of the FPA

The balance of value-added between sub-sectors, and between EU and Seychelles is provided in Table 6.5. Value added for the EU is highly concentrated in the catching sub-sector (83.4 % of value added by the EU) and relatively little (4.6 %) of EU value added coming from the processing subsector. The upstream subsector provides 12.0 % of value added for the EU.

In contrast, for the Seychelles, 72.8 % of value added accrues to the upstream subsector, mainly in the form of access payment by the EU and vessel owners' payments for fishing authorisations. The processing subsector accounts for virtually all of the remaining 27.2 % of value added, while value added accruing to the catching subsector is negligible.

Table 6.5: balance of value-added (EUR) between sub-sectors, and between EU and Seychelles

Value-added	Accruing to EU	% of EU's VA	EU VA as % of Total	Accruing to Seychelles	% of Seychelles' VA	Seychelles VA as % of Total
Upstream/input sub-sector	3 708 779	12.0%	32.6%	7 677 249	72.8%	67.4%
Catching sub-sector	25 811 701	83.4%	100.0%	-	0.0%	0.0%
Processing sub-sector	1 431 315	4.6%	33.3%	2 862 631	27.2%	66.7%
Total	**30 951 795**	**100.0%**	**74.6%**	**10 539 880**	**100.0%**	**25.4%**

Source: consultants' calculations

6.4.3.1 Costs and benefits

A summary of the costs and benefits of the current Protocol to the EU, to ship owners and to the Seychelles is given in Table 6.6. The Protocol generated a benefit/cost (B/C) ratio for the EU of 4.50, demonstrating that the Protocol provides excellent value for money for the EU, with every EUR 1 invested by the EU and the EU fleet generating EUR 4.50 worth of benefits for the EU.

The benefits accruing to the vessel owners from the Protocol are particularly high and are attributable to the high value-added benefits accruing in the catching sub-sector. Under this protocol vessel owners have paid a flat-rate fee of EUR 61 000 for the 2011 authorisation to fish in Seychelles waters. This means that, given the declared catch for 2011 of 40 545 t, vessel owners effectively paid EUR 31.59 per tonne.

For the Seychelles, estimating costs is far more difficult as they relate to the value of the fish as part of the natural capital of the Seychelles and before it is 'sold' to the EU. In order to make a comparison with the benefits of the Protocol, the income per tonne was calculated on the basis of the amount that the Seychelles would have gained if they had offered the EU fleet access to the resource through private agreements for

foreign vessels in the absence of the Protocol. Foreign vessels paid EUR 96 238 (USD 120 000) for one year private licences in 2011. On the basis of the 2011 EU catch in the Seychelles EEZ, the cost for the EU fleet operating under a private agreement would have been EUR 49.89 per t of tuna caught. The resultant benefit-to-cost ratio is 3.44 when this sectoral support is considered in the calculation and 2.30 if it is excluded. This indicates that the Seychelles have benefited significantly more from 'selling' the 40 545 t of fish caught under the Protocol in 2011 through this method than if they had done so through private agreements (Table 6.6).

Table 6.6: annual costs and benefits (EUR) of the Protocol (2011)

Total Costs and Benefits (Euros) (2011)	Costs	Benefits	B/C ratio
To European Union and fleet owners			
Total value-added benefits		30 951 795	4.50
Total payments to Seychelles	6 881 000		
Payments to Seychelles per tonne of fish	170		
To Fleet owners			
Payments to Seychelles	1 281 000		
Payments to Seychelles per tonne of fish	31.59		
Profit before interest and tax		22 085 731	
Catch value		62 369 819	
To Seychelles			
Total benefits received EUR per tonne with and without sector support		169.71 (114.96)	3.44 (2.30)
Potential total benefits received if EU fleet had access by foreign vessel private licenses (EUR per tonne)[1]	49.33		
Value-added from port calls		796 249	
Value-added from processing subsector		2 862 631	
Payments made for access and sectoral support		6 881 000	

[1] The cost to the Seychelles is the forfeiture of the alternative of issuing foreign vessel private licences. () indicate the B/C ratio if sector support is not included in the calculation.

Source: consultants' calculations

Table 6.7, provides a comparison of the different costs per tonne for tuna caught by the EU fleet calculated based on the 2011 information.

Table 6.7: comparison of relative cost per tonne under different options using 2011data

Comparison of actual and comparative values per tonne of tuna	EUR per tonne
Price paid per tonne by EU (excluding sector support)	83
Price paid per tonne by EU (including sector support)	138
Price paid by EU fleet per tonne	32
Total price paid to Seychelles from EU and EU fleet per tonne (excluding sector support)	115
Total price paid to Seychelles from EU and EU fleet per tonne (including sector support)	170
Price received by Seychelles from EU and EU fleet per tonne including value added (excluding sector support)	205
Price received by Seychelles from EU and EU fleet per tonne including value added (including sector support)	260
Estimate of price/tonne that would have been paid if access had been under private agreement for foreign vessels	50

Source: consultants' calculations

6.5 Compliance with the obligations specified in the FPA, Protocol and Annex

Annex J provides a detailed examination of the extent of compliance with obligations in the FPA, the Protocol and its Annex. From scrutiny of this review it becomes clear that in most respects parties to the Agreement are compliant.

6.5.1 Access by European Union fishing vessels

The Seychelles authorities issued authorisations to fish in its EEZ to all the EU vessels licenced by the EU to fish in the IO in accordance with the procedure set out in the FPA and its Protocol. No vessels were refused authorisation.

6.5.2 Compliance of EU vessels with requirement of FPA

Vessels complied with the requirement to use VMS. However, observers were not placed on board vessels due to a lack of trained observers able to embark on the vessels.

The fulfilment of the requirement to employ at least two Seychellois seamen on each of the vessels while fishing in the EEZ has been varied (Protocol, Chapter 4 of the Annex). The Seychelles and the EU have agreed to view this with reference to the average among vessels of the same owner, as it may be more appropriate to have e.g. four Seychellois seamen on one vessel than to divide them between vessels. However, there is a shortfall of seamen available, able and willing to go to sea. This has meant that vessels owners are being required to pay the compensation for not carrying crew at EUR 20 per vessel, per crew, per day fished in the EEZ. For 2010, the last year for which a payment has been made, the Spanish seiners paid USD 28 620 and the French USD 11 380 as the penalty for not having Seychelles seamen on board. The invoices for 2011 have not yet been sent, as it takes the SFA some time to calculate how many days' a vessel was in the Seychelles EEZ based on VMS records.

There are various potential reasons for the shortage of available crew including crew dissatisfaction with their contracts, and suitable candidates perhaps preferring to take up positions on luxury yachts in the tourist industry. Potential crew also are not qualified because of lack of safety training or a reluctance on the part of the masters of vessels to take on board those that present themselves for employment. However, there is clearly a general problem with the fulfilment of this provision of the Protocol.

6.6 Promotion of responsible fishing

Annual and multiannual guidelines were presented and agreed at the February 2011 Joint Committee meeting in fulfilment of the requirement in Article 3 of the Protocol, on the promotion of responsible fishing in the waters of the Seychelles. At the Joint Committee meeting in February 2012, information was found to be missing from the annual plan for 2012, but the missing information was added and both Parties agreed that it be adopted.[96] Some concern was expressed by the Commission regarding the slow pace of the programme's implementation. This issue is discussed more fully in 6.7 below.

6.7 Joint venture/local arrangements

There are no joint venture arrangements involving European interests with respect to fishing vessels in the Seychelles. However, the IOT processing factory is a joint venture between Thai Union as the main shareholder of MW Brands, a French based company, which holds 60 % shares in IOT, and the Seychelles government through Société Seychelloise D'Investissements (SSI) holding the remaining 40 %.

Local arrangements made by the ship owners to have agents present in the Seychelles are being fully complied with and all parties reported cooperative and good relations in this respect.

6.8 Employment analysis of the FPA

An estimate of the employment attributable to the FPA and its Protocol is provided Table 6.8. The estimate uses the best available information and it provides the best basis for making a reasonably informed estimate of employment generated by the Protocol.

Employment of EU crew arising directly from the Protocol (i.e. covering the period fishing in the Seychelles EEZ) was estimated at 67.28 full-time equivalent positions for 2011, while that of Seychelles crew was negligible at 2.45 full-time equivalent jobs for the year. Crew drawn from neither of the two parties to the Protocol were estimated at 50.68 for the year. The total full time jobs provided for on EU vessels and arising from the Seychelles FPA Protocol was thus 120.41 full-time equivalent positions for 2011.

For the upstream sub-sector (i.e. inputs) the number of full-time equivalent EU jobs were estimated at 98.68 and those for the Seychelles were estimated at zero in 2011. Downstream EU related jobs (i.e. in processing, transhipping etc.) were calculated at 16.22 for the year and for the Seychelles at 874. In total the FPA generated 182.18 full-time jobs for the EU and 876.45 for the Seychelles – a total including the 'other' crew of 1 109.31 in 2011.

In addition, the presence of the EU vessels in Port Victoria create additional jobs, associated with catches taken outside of the Seychelles EEZ and can be considered secondary benefits from the FPA.

6.9 Supplies to the market

The IO is an important source of canned tuna to the EU market, with some 96 000 t (29.5 % of total EU imports, Table 6.9) coming from the Seychelles, Madagascar and Mauritius. The EU fleet caught 40 545 t in the Seychelles EEZ out of a total EU catch in the Indian Ocean of 172 825 t. Of this amount caught by the EU it is estimated that some 20 % has been canned in the Seychelles and re-exported to the EU[97]. Part of the EU catch is trans-shipped and taken to Mauritius and Madagascar and other destinations. A small quantity (361 t) is imported unprocessed, of which a little over half destined is directly for the retail market. It should also be noted that, through the Seychelles Protocol, efficient and economically viable EU fleet operations in the western Indian Ocean from the Seychelles home base are ensured. This means that the Protocol has an indirect positive impact on the supply of fish and fish products to the EU market.

[96] Records of the meetings of the JC, February 2011 and February 2012

[97] It has not been possible to verify this percentage as the information on the catch traceability of the processed product was not available.

Table 6.8: employment generated by the Protocol (full-time equivalent per annum, based on 2011)

Catching sub-sector: fleet segments	Spanish	French	Total for fleet
Fleet (no of vessels)	13	8	21
Vessel crew			
EU crew	300	15	315
Seychelles crew	12	0	12
Seychelles observers	0	0	0
Other crew	225	10	235
Total	31	25	56
Dependency on Seychelles	21.72 %	20.80 %	
FPA related employment			
EU FPA related crew	64.18	3.1	67.28
Seychelles FPA related crew	2.25	0	2.45
Seychelles FPA related observers	0	0	0
Other FPA related crew	58.58	2.1	50.68
Total FPA related jobs	115.21	5.2	120.41
Upstream sub-sector			
EU jobs per fleet segment	286	176	462
FPA related EU jobs	62.08	36.6	98.68
Other country FPA related jobs	Not estimated	Not estimated	Not estimated
Downstream sub-sector			
Seychelles jobs	587.3	286.7	874
Employment within EU			300
Yearly production capacity (t)			75 000
Input of loins from FPA (t)			4 055
FPA EU related jobs			16.22
Total EU FPA-related jobs			182.18
Total Seychelles FPA-related jobs			876.45
TOTAL FPA-related jobs			1 109.31

Source: consultants' calculations

Table 6.9: EU imports of canned tuna from IO islands (2011)

	value - EUR	% by value	t	% by volume	% of total EU imports canned tuna
Madagascar	24 975 672	7.41 %	9 599.6	10 %	2.95 %
Mauritius	141 851 526	42.08 %	43 209.0	45 %	13.27 %
Seychelles	170 306 880	50.52 %	43 236.0	45 %	13.28 %
Total EU imports from IO	**337 134 078**	**100 %**	**96 044.6**	**100 %**	**29.50 %**
Total EU canned tuna import			**325 616.0**		

Source: Eurostat data and IEO catch data

6.10 Sectoral support

EU sectoral support paid to the Seychelles under the FPA has a value of EUR 2.22 million per year. At the end of the last Protocol, EUR 4.8 million had accrued in the Central Bank of Seychelles (CBS) account. Currently, there is approximately EUR 6.2 million available and the 2012 instalment for EUR 2.22 million has been paid. The accrued balance of the EU sectoral support allocation increased, primarily due to delayed implementation of the sectoral support programme, and some concerns over this are expressed in records of the joint committee meetings of February 2011 and 2012. However, this has been significantly reduced in 2012 following the conclusion of a contract for major infrastructure development in the port of Victoria. Moreover, a very detailed fisheries multi-annual programme has now been now agreed, setting out budgets including the EU, other donor and government funds within three core areas.

The three core areas are:

- Improvement of management of artisanal and industrial fisheries – with a total budget for three years of EUR 5.8 million. This includes activities such as; development of management plans, a fisheries development fund (for providing loans to the semi-industrial sub-sector for the purchase of longline vessels); supporting monitoring, control and surveillance (MCS); improved observer programme, and co-operation with international bodies.
- Fisheries infrastructure development, with approximately EUR 4.3 million. This is primarily for the development of the artisanal and semi-artisanal sector. Progress with this has been limited by the processes required for identifying sites and preparing for development. It was also noted by SFA that as for the quay and other larger investments it is often required that money should accumulate, to ensure that once an activity is contracted adequate funds exist to complete the contractual obligations.
- Capacity building, with a smaller budget of just under EUR 1 million. This is intended to address capacity building needs, and notably to cover areas such as human resources development, improvements at the SBS for fish inspection and improvements to the maritime school. The school is progressing well with reportedly good results.

Otherwise, just over EUR 5 million is allocated to the main investment project of the SFA - the construction of the industrial tuna fishing quay planned for Ile du Port (Zone 14), as discussed in section 5.6.1.

7 EX POST EVALUATION OF THE CURRENT PROTOCOL TO THE FPA AGAINST THE EVALUATION CRITERIA

Based on the information and analysis in the preceding chapters, and their annexes, this chapter provides an evidence-based ex post evaluation of the current Protocol against the evaluation criteria of effectiveness, efficiency, sustainability, coherence and relevance.

7.1 Effectiveness

This section examines the extent to which the specific objectives of the Seychelles FPA were achieved.

7.1.1 FPA contribution to the development of sustainable and responsible fishing

The FPA aims to provide a sustainable and equitable framework for access by EU vessels to the fishing grounds within the Seychelles' EEZ. The intention is that it works towards the goal of a rational and sustainable exploitation of the surplus marine resources of the EEZ and therefore prevents overfishing.

The tuna species targeted by the EU purse seine fleets (i.e. skipjack, yellowfin and bigeye) are not currently overfished and nor is there overfishing. However, it was noted that there has been a marked decrease in yellowfin spawning stock biomass over the past decade. The most recent IOTC scientific advice indicates that swordfish are overfished and albacore are subjected to overfishing (Table 2.1). The Spanish fleet reported no swordfish or albacore catches, while the French reported that 29.96 t of albacore were caught in 2011, equivalent to 0.23 % of total catch by the French fleet (Table 5.8). We therefore can consider that EU fleets are mainly catching fish classified as 'sustainable'.

The EU has been involved in the Seychelles' tuna fishery since 1987, making it a long-standing partner in the islands with which it now has correspondingly stronger ties and connections (Table 3.1). The EU is also a key regional player in tuna fisheries, holding agreements in the Comoros, Mauritius, Mozambique and Madagascar. All of these states are critical as migration paths of tuna within the Indian Ocean (see Figure 3.2). This places the EU in a strong position to make an impact on the sustainability and responsibility of national and regional fishing. To these ends, the EU has a clear interest in developing regional approaches and standards. The EU is already playing a significant role in promoting on-going best practice, introducing and piloting new tools and working collaboratively with the countries of the region. In the case of the Seychelles, this co-operation has been facilitated through the ongoing FPA co-operation.

The FPA introduced a binding legal framework for control of fishing by EU vessels in the waters of the Seychelles. EU vessels can fish in the Seychelles' EEZ waters only if licenced to do so by the EU and authorised by the Seychelles government. Provisions of the Protocol include rules relating to catch recording and communicating; landing and transhipment of catch; the use of VMS and provisions for fisheries inspections and rules for enforcement. The Protocol itself is supportive of the Seychelles' fisheries laws and it contributes to sustainable fisheries and responsible fishing in the Seychelles EEZ.

A significant contribution is also made through the Protocol's provisions on sectoral support, governed by agreed annual and multi-annual sector programmes. A part of the programme focuses on governance, MCS, stock assessment and applied scientific research. Although there have been some delays in implementing the three elements of the programme (see Section 6.10), it can be said that overall it is now progressing well and it is making a valued contribution to the long-term future of the Seychelles' fisheries sector.

The MCS elements of the multi-annual programme is complemented by the Regional Surveillance Plan, a major regional MCS Programme based at the IOC and backed by EUR 10 million of EU funding (Section 4.3.2).

There is also good regional co-operation between EU and Seychellois scientists at meetings of the IOTC and its Science Committee, which depends on co-operation for gathering information needed to promote fishery sustainability.

The Seychelles and the EU are bound by the conservation and management measures (CMMs) agreed by the IOTC and which they both endeavour to implement.

7.1.2 FPA contribution to the activities of the EU catching sector

All the EU vessels targeting tuna, and licenced by the EU to fish in IO, hold authorisations to fish in the Seychelles EEZ. This is advantageous for the fleet, because its vessels move around the IO in a clock-wise direction to follow the seasonal distribution and abundance of tuna (Figure 3.2) as they cross through the EEZs of Mauritius, Comoros, Madagascar and Mozambique. To do this they rely critically upon access rights provided by the FPAs.

Port Victoria is the base port to the 22 purse seine vessels fishing covered by the Protocol in IO. This location is convenient for the fleet as the Seychelles is the pivotal centre of the migration of the tuna. This means that the islands provide shorter and economical access to the large Seychelles EEZ, which is a main fishing ground for the vessels. The Spanish catch 27 245 t, or 21 % of their total WIO catch from within the Seychelles EEZ, compared to the French with an equivalent of 13 300 t, or 31 % (Table 5.9).

Under the Protocol in 2011, the estimated annual value-added accruing to the Seychelles and EU totalled EUR 41.49 million, of which 74.6 % went to the EU (Table 6.4, Table 6.5). The EU's total of EUR 30 951 795 in benefits included upstream value added through insurance, vessel construction, and overheads and management charges (EUR 3.71 million); catching sub-sector value-added through vessel profits (EUR 22.1 million) and crew payments (EUR 3.71 million), together totalling EUR 25.81 million. The value added by the downstream processing sub-sector totalled EUR 1.43 million. Table 6.4 illustrates that most of the value was added in the catching sub-sector, due to the high profitability of the purse seine fleets.

Less than half (22 out of 48) of the fishing opportunities offered to the purse seine fleet were taken up, and no surface longliners fished under the Protocol (Table 6.2) - probably due to piracy (see 7.1.3.1). However, the vessel owners see the Seychelles' EEZ as pivotal to their WIO operations, particularly as piracy has relocated some fishing effort and the Chagos Archipelago has more recently been closed to fishing[98].

It should be noted that the total catch within the Seychelles EEZ by the European fleet in 2011 was 40 545 t (Table 6.3). This represents 78 % of the total reference tonnage for the entire Protocol (purse seiners and longliners) which is above the average utilisation of allowances in other FPAs.

7.1.3 Impact of piracy in the Indian Ocean

Piracy has had a significant impact on WIO fisheries.

7.1.3.1 Impact of piracy on EU fishing fleet activities under the FPA

Somali piracy has been a problem in the region since the 1990s with major impacts on fishing. The EU fleet's catch in the IO rose between 1980 to 2003 to a peak of 407 000 t (Table 3.3), before falling significantly by 25 % in 2005-2009 as piracy led to some fishing vessels leaving the IO altogether[99]. The remainder of the fleet shifted to the west and east of Seychelles and into the Mozambique Channel, resulting in a shift in species composition to higher landings of skipjack and yellowfin (Figure 3.4). However, during the period of this Protocol, the impact of piracy on purse seiner fishing patterns has been less. This is because they have taken on security personnel to enable a partial return to the productive waters off the coast of Somalia (Section 3.4.1).

Longline fishing activities have been more seriously curtailed by piracy. Longline vessels are much smaller than purse seiners and due to the nature of their fishing operations – notably their need to return to retrieve gear – they are more vulnerable to pirate attack and less able to defend themselves. With no other reason for

[98] Consultants interviews with ship owners professional associations.

[99] No other reason was cited for the withdrawal of vessels.

the withdrawal of these vessels, it is safe to assume that in the absence of piracy, longline fishing by the EU fleet in the Seychelles EEZ would have continued. It is reasonable to expect that it would resume if the problem of piracy were to be resolved.

The main impact for purse seiner owners relates to costs incurred for hiring extra security and the consequential loss of on-board space for other crew. This has caused a reduction in the employment of crew and observers, although in some ways this trend has been counterbalanced by the employment of the security personnel. It should be noted that in the first nine months of 2012 the level of attempted attacks by pirates on fishing vessels fell significantly (Section 5.5).

7.1.3.2 Impacts of Indian Ocean piracy on the fisheries industry and economy of the Republic of Seychelles

Sections 1.2.5.2 and 5.5 highlight that Somali pirates have had a serious and costly impact on the Seychelles. Piracy has had a significantly negative impact on the behaviour of the fishermen, who fear going to sea, and on catches in the semi-industrial sector, which have declined.

In economic terms, the Seychelles' revenue from its fisheries has reduced by 30 % due to piracy since 2008. Port revenues have been depressed by a similar amount and fuel re-exports and bunkering revenues have sunk by 35 %. There has been an increase in the cost of freight and insurance which has resulted in a large increase in the cost of imported food, fuel and other essential commodities.

The cost to the Seychelles of defensive measures relating to piracy has been over USD 5 million per year for the islands. The contribution of EU fishing compensation, sectoral support, fishing activities and the value added by fishery sectors have been important in maintaining the local economy's momentum during this period, which has coincided with economic reforms put in place in 2008 (Section1.2).

7.1.3.3 Impact of IO piracy on down-stream processing and supply chain activities in the Republic of Seychelles and onward to the EU

Piracy has resulted in a reduction of longline catches for the semi-industrial fishery, which supplies local and tourist demand, forcing local processors to import their fish and fishery products in 2011 to meet local demand.

Port activity on a general level has been negatively impacted by piracy, leading to an overall decrease in the transhipment of tuna from the Seychelles. This has not affected the cannery, where supplies remained at around 65 000 to 70 000 t annually over the last five years (Table 5.12).

7.1.6 FPA contribution to tuna supplies to local and EU markets and their processing industries

The contribution of the FPA to meeting EU tuna market demand needs to be considered in its regional context. Of the tuna caught by the EU fleet within the Seychelles EEZ, about 20 % is landed for canning in the Seychelles itself. The remaining 80 % is trans-shipped to elsewhere, of which an estimated 12.5 % is destined for EU markets (Figure 5.2 and Section 6.7). Some the Seychelles' landings for canning or transhipment have been caught on the high seas or in other EEZs. The tuna that is trans-shipped could be destined for other canneries in the region, for the EU or elsewhere.

Information on the catch traceability of the processed product was not available, and so it is difficult to attribute how the FPA affects the origin of supply to the EU market. What is clear is that the WIO is a very important source of supply to the EU market and that the Seychelles, as an operational base for the EU fleet, is pivotal to efficient operations in that region. It was noted in Section 6.5 that the WIO islands of Seychelles, Madagascar and Mauritius supplied 29.5 % of the total canned fish imports of the EU in 2011. Some 16 853 t of whole frozen product was supplied directly by the EU IO fleet to the EU market for processing or to the retail market (based on the estimate of 12.5 % of the EU catch in the WIO being shipped to the EU market).

7.2 Efficiency

This section seeks to analyse the extent to which the desired effects of the Protocol are achieved at a reasonable cost.

7.2.1 The extent to which the cost of the fishing possibilities negotiated under the FPA is advantageous for the EU fishing industry

The effective compensation to the Seychelles for a tonne of tuna caught under the FPA was EUR 170 after taking into access and account sector support equivalent to EUR 138 from the EU and EUR 32 from the vessel owners (Table 6.7). The benefits accruing to the vessel owners are particularly high due to high level of value added in the catching sub-sector as company profits. Under this protocol vessel owners have paid a flat-rate fee and thus effectively they paid an average of EUR 32 per tonne in 2011. For the vessel owners, this compares favourably with compensation they would have had to pay paid if the EU vessels had been authorised by private agreements, standing at EUR 50 per tonne for the vessel owners (Table 6.7) or the generally applied price of EUR 35 per tonne for other FPAs. Fish prices have risen considerably in recent years (Section 1.2.5.2 and Table 1.2) and they continued to do so in 2012. The ex-vessel price in the Seychelles of skipjack rose by 46 % between December 2011 and November 2012, while prices for yellowfin rose by 36 % (Section 6.4.1). This suggests that the potential for vessel owners to make a profit in 2012 will be higher than in 2011 as the price for access has remained the same. This is a favourable arrangement for EU vessel owners.

The estimated annual employment attributable to the Seychelles FPA stood at 1 072 full-time equivalent positions (Section 6.6 and Table 6.8), of which 145 (13 %) were for EU citizens. These full-time equivalent positions were calculated using an estimate of employment on EU vessels operating in the WIO under the Seychelles Protocol, in other EEZs and on the high seas, and also on estimates of employment in the upstream and downstream sub-sectors.[100] This came to approximately 3 824 employed people. However, as only a portion of their time is attributable to the Seychelles FPA, full-time equivalent jobs were estimated. Although 1 072 full-time equivalent posts are attributable to the Seychelles Protocol, in fact 3 824 depend on its existence for jobs. This is particularly because of the pivotal role played by Seychelles Protocol in the EU fleet's wider IO operations.

7.2.2 Advantages to the Seychelles of FPA provisions

The benefit to the Seychelles of the Protocol in financial terms is estimated to equate to EUR 10 539 880, in exchange for 40 545 t fished under the Protocol for 2011. This is mainly derived from the upstream activities including the EUR 7 677 249 in value-added by vessel port calls and compensation from the EU - including EUR 3.38 million for fisheries access and EUR 2.22 million for sectoral support - and vessel owners. There was negligible value added by the catching sub-sector, (due to an absence of observers and the small number of Seychellois crew, thus increasing income through salaries). The processing added a more significant amount of value (EUR 2 862 631) due mainly to the cannery. Of the total value added attributable to the Protocol, the Seychelles received 25.4 %, with rest going to the EU.

An interesting comparison is the relative income generated to the Seychelles per tonne of tuna caught in their EEZ in 2011. The EU under the FPA made payments per tonne of EUR 170 (including sector support) compared to EUR 115 excluding the sector support.

The employment of Seychellois crew is not high for several reasons[101] (Section 6.5.2). Downstream employment is mostly concentrated in the canning factory[102], and it was estimated at 874 people in 2011. This takes the total of local jobs generated from the Protocol (see discussion in 7.2.1) to 875.63.

The most direct benefit that the Seychelles government receives from industrial tuna fishing is the financial compensation for fishing access which represents 10.34 % of total income generated by the industrial tuna

[100] No estimate was made of employment attributable to the Seychelles Protocol elsewhere (e.g. canneries in Madagascar and Mauritius).
[101] Several reasons were provided in Section 6.5.2, prominent among them is a shortage of suitably qualified Seychellois crew.
[102] The IOT canning factory employs about 2 500 people.

fishery at EUR 8 859 543 in 2011. In that year, the EU's overall contribution (including sector support) represented 77.67 % of the Seychelles' total revenue from fishing access. Contributions also came from other foreign purse seiners (6.45 %), the Seychelles purse seiners (5.64 %) and longliners (10.24 %) - as illustrated in Table 5.4. The EU's access and sectoral support contributions made up 7.8 % of the Seychelles' gross income from its industrial tuna fishery.

7.2.3 The cost benefit ratio of the FPA

The Protocol generated a benefit/cost (B/C) ratio for the EU of 4.50, demonstrating that the Protocol provides excellent value for money for the EU. In effect, every EUR 1 invested generated EUR 4.50 worth of benefits for the EU (Table 6.6).

The cost element to the Seychelles is harder to assess. However, if the EU fleet had caught the same fish volume through foreign vessel private agreements then the benefit/cost ratio would have been different at 3.44 - with sector support - and 2.30 if the support had been excluded from the calculation. So, the Seychelles has benefited significantly from granting fishing access under the FPA than if, for example, the same 40 545 t of fish had been caught alternatively under private agreements.

7.2.4 Relative importance and impact of EU vessel catches on the processing sector in the Seychelles with reference to the FPA and its objectives

There is no obligation to land fish caught in the Seychelles EEZ in the Seychelles itself. However, the EU purse seiners fishing under the Protocol do nevertheless use Port Victoria as their IO base for landing or transhipping 90 % of their catch. Approximately 20 % of the EU fleet's IO catch is canned in the IOT factory in Port Victoria (Figure 5.2). Some 43 236 t of canned tuna was exported from the Seychelles to the EU in 2011 (Table 6.9), with the raw material sourced not only from the EU fleet.

While the Seychelles is an important supplier of canned tuna to the EU market, the lack of information needed for fish traceability makes it difficult to estimate with confidence the proportion of the product that comes as a result of the FPA Protocol. In 2011, an estimated 361 t of tuna was imported to the EU unprocessed, of which about half was destined directly for the retail market (Section 6.7). The FPA therefore effectively supports the objective to facilitate the integration of the Seychelles into the global economy, through the provision of raw commodity to a local processing plant (IOT under a joint venture arrangement, see Section 6.4.4) that supplies canned tuna to the EU market.

It was noted in Section 6.7 and Table 6.9 that the EU imports 13.28 % of its canned tuna from the Seychelles and 29.5 % of its total supplies from the Seychelles, Mauritius and Madagascar. The EU vessels under the FPA caught 168 539 t[103] in the Indian Ocean in 2011. This was either landed for canning in the Seychelles or trans-shipped for canning in Mauritius or Madagascar - or else destined for elsewhere. The EU fleet operating in the WIO is a major source of raw materials for these canneries.

Landing by-catch is not a requirement in the current legislation, although this obligation is drafted into the Seychelles Fisheries draft Act that is currently under preparation. However, the EU fleet supplies relatively small quantities of by-catch species, both wet and dry frozen, to local processors for processing and onward sale on the local market. With such a small population of 89 700 people (Section 1.1.2) this has a significant and growing impact on local food security and local downstream sector economic development (Section 1.2.6 and 5.6.2.1). This is seen as a positive development, particularly in view of the reduction in supply by the domestic fleet attributable to piracy.

7.3 Sustainability

This section examines the extent to which positive and negative effects are likely to last after an intervention has terminated.

[103] Data from DG Mare

7.3.1 Effect of the FPA on the viability of the EU fishing sector

The Seychelles and its EEZ play a central role in the fishing strategies of the EU's IO tuna fleet. The fleet bases itself in Port Victoria - a central location for IO tropical tuna fisheries equipped with good facilities for transhipments, landings and general services. The fishing vessel strategies have changed in recent years due to the closure to fishing of the Chagos Marine Reserve to the east and Somalia-based piracy to the west. These factors together have resulted in a greater concentration of fishing activity in the Seychelles' EEZ.

The Seychelles' FPA has helped to foster a good relationship between the Government of the Seychelles and the EU, and an alliance between them for improved governance of the tuna fisheries in the IO. The EU has had a long-term interest in the sustainability of the tuna fishery of the IO due to its distant-water fleet and EU consumer demand for tuna species. The co-operation created between the EU and the Seychelles since 1987 (Table 3.1) has laid a framework for both parties to negotiate on-going mutually beneficial agreements.

A sound relationship between the Seychelles and the EU is also critical for both parties within the regional framework context of the fishery. There is rising interest in the Seychelles and from other players in strengthening regional co-operation and regional approaches to the WIO fishery (Section 3.2). This provides yet more opportunities for the EU to work with the Seychelles in consolidating the EU position within the WIO.

In addition to the Seychelles' legislation, and rules established by the IOTC - of which both the EU and Seychelles are members - the FPA and its Protocol provide extra safeguards and a broader regional context to further the development of sustainable and responsible fishing in the Seychelles' EEZ and other FPAs in the region. In the absence of an FPA, these safeguards would no longer exist. EU vessels would likely seek out private licences under less favourable conditions - and without any of the constraints currently ensuring the move to sustainability fostered by the FPA. The absence of an FPA would be a setback for the Seychelles, whose fisheries sector has made great advances since EU-Seychelles fisheries agreements began 25 years ago.

7.3.2 Effect of the FPA on the viability of the partner-country fishing sector

Industrial tuna fishing activity is of growing importance to the Seychelles economy, with a value in 2011 of EUR 85.7 million (SCR 1.5 billion, Table 1.3). The largest contribution comes from the expenditure by vessel owners on services in Port Victoria (around 90 %) and from the fishing authorisation fees paid (around 10 %). The gross earnings from fisheries have surpassed those from tourism, highlighting the economic importance of the sector and its rising role in the development of the country.

The FPA has contributed to long-term sustainability through financial compensation, attracting vessels to utilise the services of Port Victoria and through sector support. The contribution of the first two are discussed above: the FPA contributes directly about 11 % of the gross industrial related fishery income to the islands based on the number of vessels and port visits, and 62 % of the purse seiners using the port on a regular basis are vessels operating under the FPA (21 out of 34 (2011), Table 5.3).

The EU sector support, at EUR 2.22 million per year (Section 6.7), is an important element contributing to the development of the fishing sector in the Seychelles. This is of particular importance at a time when the Seychelles is recovering from economic setbacks (Section 1.2.5) and restructuring the SFA (Section 4.3.1). The sector support is integrated into a detailed fisheries multi-annual programme that merges the budgets of the EU, other donors and government contributions into three core areas.

The first core area is the improvement of fisheries management, notably supporting MCS (including aerial and on-the-water surveillance), stock assessment and applied research, governance and regional co-operation. Many of these are successfully underway and critical to the Seychelles' desire to promote the sustainability and responsibility of its fishery. The second area is fisheries infrastructure development, with projects to improve landing and processing facilities and to reduce post-harvest losses while promoting sustainable development. Of note, an industrial tuna fishing quay is being constructed on Ile du Port (Zone 14). This will provide much needed berthing space for, among others, EU purse seiners. It will also contribute to the Seychelles' plan to promote Victoria as a regional tuna processing and transhipment hub. Progress with the

project has been slower than expected, due to a need to fully formulate the project and to fund the process of development. However, sector support has helped the Seychelles to plan and execute longer term investment projects such as the quay, which would have been difficult without the security of the three years of assistance provided by the FPA. The third area relates to capacity building, including human resources development, improvements at the SBS for fish inspection and improvements to the maritime school.

As a small island developing state the major risks to the Seychelles economy are external. An advantage of the FPA is its long-term vision, which allows for some certainty and a secure price for fish harvested. However, if the price of fish increases substantially over the three years of the FPA the fixed price basis of negotiation may be less beneficial to the Seychelles.

7.3.3 Fisheries agreements between the Republic of the Seychelles and other third countries

The Seychelles has 12 active 'private agreements' for purse seiners; seven are Seychelles-flagged vessels (with European ownership) paying EUR 71 429 per year for access (based on a USD rate); and five are non-Seychelles, non-EU vessels (one Korean and four Mayotte) paying EUR 95 238 per year for access also based on USD rate. These 'private agreements' are permitted under Seychelles legislation implying that specific fisheries agreement, such as the FPA, are not required to ensure on-going access to the Seychelles EEZ by EU vessels, nor are the Seychelles legally obliged (by their own law) to negotiate broader agreements.

The Seychelles has an active fisheries agreement for longline vessels with the Taiwan Deep Sea and Tuna Long-Line Boat Owners and Exporters Association (Section 4.1.2) and 'private agreements' for locally flagged vessels with a total of 137 fishing authorisations issued under these agreements in 2012. Fishing authorisations cost either EUR 19 048 per year, EUR 13 888 for six months or EUR 4 365 per month (based in USD). It would seem that these agreements are unlikely to challenge the FPA, primarily because the primary focus of FPA is fishing opportunities for the EU purse seine fleet and because the FPA is well regarded in the Seychelles.

7.4 Coherence

This section explores the extent to which the intervention logic is coherent or contradictory with itself or other interventions with similar objectives.

7.4.1 Coherence of the FPA with the Common Fisheries Policy in general and with the regional fisheries policy (RFMO and network of FPA)

International fisheries instruments, including the CFP and IOTC management measures, contain a number of requirements to manage fishing capacity and effort and to control catches and minimise by-catch. The CFP recognises the important role that RFMOs must play in the management of regional stocks, and the need for the EU to participate in this process. This means that if the Protocol is to be coherent with the CFP it must also be coherent with IOTC management measures.

The EU is a Member of the IOTC, and the Protocol is coherent with the CFP and IOTC resolutions and management measures. For example, the Protocol contains provisions for use of VMS that are being followed, and all vessels must be duly authorised and registered as per the requirements of the CFP and IOTC. The introduction of an electronic catch data system is included in the Protocol provisions and this is coherent with an IOTC pilot project. In other aspects, there is coherence of the Protocol, and in cases stronger provisions, than in the IOTC CMM, such as the banning of transhipment at sea. Because of the strong emphasis in the CFP on responsible fisheries and working within RFMOs, the Protocol is thus also coherent with the CFP in this respect.

In terms of regional policy the SADC Protocol on Fisheries and the SADC Statement of Commitment on IUU fishing, two key policies, there is coherence in terms of the Seychelles Protocol and the policies of the SADC on issues such as VMS, observers, local employment and the promotion of RFMOs (IOTC) but the application of these, and especially the sharing of information is not as coherent as it could be. The SADC Protocol

promotes regional harmonisation in access conditions, but the differences between vessel owners' financial contributions under the Seychelles and other FPA protocols in the region mean that there is not full coherence with the SADC Protocol.

The Seychelles FPA is coherent with the IOC's Regional Surveillance Plan, supported by EU funding (see Section 4.3.2) with the decisions of the IOTC and with the CFP.

Section 7.1 comments on the extent to which the Protocol is contributing to responsible fishing, which is a key principle of the CFP. The EU regulations and the Protocol are coherent in terms of prohibiting fishing on marine mammals and on shark-finning. The FPA also refers to, and is consistent with the FAO's Code of Conduct for Responsible Fisheries.

7.4.2 Coherence of the FPA with the other EU policies and cross-cutting issues

The Cotonou Agreement emphasises, among others, the importance of the development and implementation of fisheries development strategies and management plans and the mainstreaming of fisheries into national and regional development strategies. There is good coherence to this in the Protocol through the sector support component. The sector support is complementary to the EU support to the Seychelles NIP (2008 – 2013) and its focus on budgetary support for the Seychelles Economic Reform Programme. The EDF 10 funded RIP includes a strategic framework for the co-operation between the EC and the four RECs of COMESA, the EAC, the IOC and IGAD, this includes regional integration processes, and trade-related assistance, private sector development and regional political integration including joint anti-piracy initiatives. As such, the FPA can be considered complementary to the objectives of the 10th EDF through the provisions of its Annexes to the Protocol.

The Protocol refers to and is consistent with the application of the International Labour Organisation's Declaration on Fundamental Principles and Rights at Work (Chapter IV of Protocol).

There is a good level of coherence between the FPA and the regional programmes such as the SmartFish project and the ACP FISH II programme where assistance has been given on developing sector policy, capacity building on fisheries personnel and training in MCS, however again, the need for better information and data sharing has been noted.

In terms of trade, an interim EPA for the ESA countries including the states of the Comoros, Madagascar, Mauritius and Seychelles came into force in May 2012, with a chapter on fisheries. The fisheries chapter starts by acknowledging the mutual (EU and ESA States) interest in the fishery resources of the region and particularly in value addition to them. The EPA and the Protocol are generally coherent on issues of sustainability, trade, VMS, observers, the need to participate in and conform to measures of IOTC and other regional agreements. Special note is made to improving port facilities and the competitiveness of processing factories which falls in line with the sector support. It is also worth noting that the areas of co-operation (Article 32) provide some additional areas that could be incorporated into the next FPA Protocol to improve coherence towards regional integration. However, Objective B of Article 32 aims to 'ensure a more equitable share of the benefits derived from the fisheries sector', which in this case this is not coherent with the findings on payments by fleet owners as described below in Section 7.4.3.

In terms of exports to the EU of fish caught under the FPA, the Seychelles has integrated the EU standards into their own 'Export of Fishery Sanitary Act Regulations (2006)', making the two fully coherent. In terms of IUU fish, all third countries importing marine fishery products into the EU are required to implement the EU IUU Catch Certificate Scheme (CCS) of Council Regulation EC 1005/2008 and subsequent legislation. The Seychelles are implementing a CCS that is coherent with the monitoring and reporting requirements of the Protocol.

7.4.3 Coherence of the FPA with the fisheries and development policy of the partner coastal State

The fisheries policy of Seychelles (2005, Section 4.2) promotes sustainable and responsible fisheries development and it aims for an optimisation of the benefits from this sector for present and future generations, an objective that is in line with the objectives of the FPA. The government's strategies include increasing the

yield, the value of the yield and the financial benefit of national fisheries to Seychelles by maximising the islands' domestic processing levels, promoting exports and increasing Seychellois engagement in the industrial sector. In the long term, the aim is to develop a one-stop seafood hub and processing location for the IO. The Government is taking steps towards this by facilitating increased local and international participation and investment levels in the sector and facilitating greater competitiveness.

In most respects that FPA Protocol is coherent with the fisheries and development policies of the Seychelles. However, the Protocol has a flat rate fee payable for purse seine fishing authorisations by the vessel owners. This meant that on average in 2011, the vessel owners paid EUR 32 per tonne for the fish caught in the Seychelles EEZ, with a large variation, depending on catch, in the cost per tonne between vessels. If the vessels had provided equivalent conditions to one of the other FPAs active in the IO, the vessels' owners would have paid EUR 35 per tonne, bringing in a further EUR 138 075 in government revenue. If the FPA had not existed, and the EU fleet had fished under private agreements for foreign vessels, then a flat rate fee of EUR 95 238 per vessel would have been paid that would equate to an average of EUR 50 per tonne based on the 2011 catch. The low price per tonne paid to the Seychelles by vessel owners, as a result of the compensation paid by the EU (Table 6.7), is inconsistent with the Seychelles objective to maximise benefits from the fisheries sector for its citizens.

The flat rate fee, while reducing the incentive to under-report catches in the Seychelles EEZ, may have the unintended impact of encouraging under reporting of fish caught in a neighbouring EEZ, where the price per tonne for the Seychelles catch for a particular vessel falls below the EUR 35 per tonne that applies in the other jurisdictions. There is no evidence that this is happening but if it is, it would impact on stock assessments undertaken by the IOTC. This also indicates the need to consider the FPAs from a regional perspective that would be coherent with the ESA interim EPA, the SADC Protocol on Fisheries and the CFP.

The Seychelles has a well-developed legislative framework that is regularly updated to accommodate new obligations and international best practice (Section 4.1). The EU's relations with Seychelles under the FPA have encouraged the continual scrutiny and updating of this framework; the Seychelles are including EU stakeholders in this process. The Protocol is consistent with the current Seychelles Fisheries Act, for example it bans transhipment at sea, in line with Seychelles law, and the current draft Fisheries Bill is crafted in coherence with the Protocol.

The Protocol, in theory, is coherent with the employment policy of the Seychelles but for reasons discussed in Section 6.5.2 this is not being fully implemented due to the lack of human capacity for and coherence in application in the Seychelles.

7.5 Relevance

The extent to which the intervention's objectives are pertinent to needs, problems and issues to be addressed.

7.5.1 FPA satisfaction of the needs of different interest groups in the EU

The key EU interest group is the purse seine fleet, which requires access to productive areas of the Seychellois fishery in order to effectively and efficiently catch fish. Catches are not constant during the year, and the fleet's movements are mainly determined by patterns of fish migrations. The FPA enables EU vessel owners to maximise the use of the EU fleet capacity in the Seychelles EEZ and the IO, in general; to create employment and added value both in the EU and in the Seychelles; to provide fish produce to the EU processing industry; and contribute to overall EU market supplies, all of which is furthered through the development of a network of FPA agreements within the IO (Section 3.3).

The Protocol, in conjunction with other FPAs in the IO region, satisfies the EU fleet's need for access to IO EEZs through which yellowfin and skipjack stocks migrate. Given the levels of fleet activity and fish catch, related in turn to the strategically advantageous central position of the Seychelles in operational and cost terms, the Protocol can be said to have notably met the interests and needs of the EU purse seine fleet. Although the number of vessels that made use of the Protocols fishing opportunities fell short of the fishing opportunities on offer, the catch by purse seiners in 2011 reached 78 % of the reference tonnage whilst in

2012 the catch is expected to exceed this level. This would suggest that the fleet is satisfied with the volume of fish that it did catch.

In terms of other Member States fleets, the Protocol provides for three purse seine licences for Italy. Italian vessels were unable to take on board armed security to protect them from the piracy, so one Italian vessel reflagged to France's shipping register to overcome this and it now fishes under the Protocol. Likewise, it is also the piracy threat that has deterred the surface longliners from fishing in the WIO; they are highly vulnerable and most left the region after 2008. The SFA have observed that with the subsequent decrease in piracy threats, the number of longliners applying for access has increased. Most of these vessels are under Asian flags, with 137 authorised to fish in the Seychelles EEZ in 2012 compared to 59 in 2011. This suggests that the EU longline fleet may also choose to return to this area.

The Protocol can be described as relevant to the needs of EU consumers as it contributes to the security of canned tuna and whole frozen product supplies to the EU market for processing and retail trades (Section 6.7). There is a controversial debate, which is to be further addressed in the framework of IOTC, on the use of FADs and their association with an undesirable increase in by-catch of non-targeted species, in particular billfish, sharks (silky shark and oceanic whitetip) triggerfish, dolphin fish, barracuda and wahoo.

7.5.2 FPA satisfaction of the needs of the different interest groups in Seychelles

The Protocol is highly relevant to the Seychelles. It provides a framework for the income generation from surplus stocks whilst ensuring better compliance with management measures than those under private agreements with foreign vessels.

Overall, the compensation provided for fisheries access to the Seychelles has been at an acceptable level, in comparison to other arrangements in the Seychelles. However, as noted already, there are reasons why the Seychelles may wish to raise the level of payments currently made by vessel owners.

The Protocol provides for sectoral support that has contributed to the development of fisheries and to resource management in a way that has been acknowledged as coherent and is also highly satisfying for the government. This is especially important with respect to the new fisheries quay in Port Victoria.

The Seychelles is encouraging development of the fisheries sector through value addition; this goal has been well met by the contribution of the EU vessels from economically important port calls. Opportunities for greater investment in the Seychelles may open with the development of Zone 14 and the potential liberalisation of the perceived monopoly of IOT on the canning of tuna.

While minimising by-catch remains an objective, an improved utilisation of unavoidable by-catch from the industrial tuna fleet (e.g. swordfish, marlin) has in recent year become increasingly important to meet local consumption needs. Local producers and consumers have been satisfied with this increase in landing of by-catch on the islands.

The Seychelles semi-industrial and artisanal fishers have benefited and will benefit from the sector support in a range of ways. There is no perception of competition between the purse seine vessels and the local fishers as they target different stocks and use different fishing grounds. Local agents used by the fleets benefit from the work created through the FPA and its associated use of Port Victoria.

8 EX ANTE EVALUATION OF A FUTURE PROTOCOL TO THE FPA BASED ON ANALYSIS OF IMPACTS

8.1 Views of the key EU stakeholders

This ex ante evaluation of the Protocol to the FPA takes into account the views of various stakeholders.

8.1.1 European Union

Through recent public communications and reports, the European Commission, Council and Parliament have expressed their respective views that the Fisheries Partnership Agreements should be maintained under the external dimension of the reformed CFP. These FPAs should contribute to sustainable fisheries practices, be beneficial and fair to both parties and that it should contribute to the development of the fisheries sector in the partner State. The FPAs should also contribute to the supply of fish and fish products to the EU and to the partner States.

It is recognised that the Seychelles FPA is strategically important for the EU fleets. The FPA and the pivotal location of the Seychelles in WIO enables the fleet to follow tuna stocks as they migrate between EEZs and the high seas.

8.1.2 EU private sector

Spanish and French producer organisations were visited as part of the stakeholder consultation. All spoke of the increased importance of the Seychelles, and important trends leading to a greater concentration of fishing effort in its EEZ: 1) the WIO's piracy problem, and 2) the establishment in the IO of the Chagos Marine Reserve – a no-take zone which extends to the outer limits of the Seychelles archipelago and effectively excludes previously accessible fishing areas. These two factors have led to a greater concentration of fishing in the Seychelles EEZ. On a more general level, the fishing companies see the Seychelles as offering the best facilities for transhipment, landings, crew change and repairs. Over 80 % of the IO EU purse seine fleet port calls are made to the port of Victoria.

Piracy initially diverted fishing effort away from seas areas adjacent to Somalia. However it was reported that the introduction of security personnel on board Spanish and French vessels had allowed them to fish again off the seaward boundary of Somalia's EEZ.

The vessel operators expressed various views on the Seychelles FPA Protocol. All considered it an important agreement that should be renewed. One operator considered the current authorisation fee of EUR 61 000 to be excessive. However, another operator, observing that while the price of fish had risen significantly whilst the cost of access remained static, suggested that the cost of access should be linked to the fish price.

The operators complained of difficulties in recruiting good seamen in the Seychelles to meet the requirement of the Protocol that each vessel should have at least two Seychelles crew on board. This problem may be due in part to trained seamen in the Seychelles opting instead for tourist industry jobs. The operators expressed a consensus view that the requirement should be adjusted to permit them to recruit crew more widely - from the region or from any ACP country.

The vessel operators also outlined difficulties leading to failures to meet obligations to take fisheries observers on board. The need to take on security personnel had led to a lack of adequate on-board accommodation for observers. Another reason cited for the Protocol not working on all levels was that potential vessel observers found it hard to obtain insurance cover for their work.

8.2 Expectations of the key Seychelles stakeholders

A cross-section of Seychelles stakeholders were interviewed in the course of the consultation.

8.2.1 Seychelles government

The Seychelles Government and the SFA in particular, value the FPA with the EU and its Protocol for providing an important contribution to the national economy and for developing the national fishing industry. Access payments agreed under the FPA and Protocol have contributed to state revenues and valuable foreign

exchange earnings. Meanwhile, sector support, *inter alia*, is providing a major part of the financing for infrastructural development that will enable the Seychelles to provide the transhipping, off-loading and servicing facilities needed to consolidate the position of the Seychelles as an important hub for fisheries in the WIO.

However, the Seychelles Government is concerned that the Protocol should not jeopardise the sustainable use of its fisheries resources. It is also concerned that a healthy marine environment should be maintained, to preserve a healthy habitat for its marine species and to maintain the pristine image of the islands underpinning by the tourist industry. Finally, the Government will wish to ensure that the Seychelles receives a fair compensation for providing access to fish stocks.

8.2.2 Seychelles Industry

Indian Ocean Tuna (IOT) favours a renewal of the FPA and its Protocol as a "key to Seychelles development". During the consultation they advocated raising the reference tonnage to 100 000 t per year and including in the Protocol a requirement that every boat should be required to supply the cannery with fish. IOT also supported port infrastructure development, and in particular the building of the new quay at Port Victoria.

The two smaller processors who were consulted would like to see the landing of all bycatch a as a compulsory requirement in any new Protocol.

8.2.3 National civil society

The seamen's mission expressed concerns over what they see as needs for improved conditions for the Seychellois seafarers, including insurance, safety training and adequate and fair compensation. In the consultation they also noted that a new seamen's mission building is required to provide services to all sailors, with the hope that such a project could be incorporated into a new Protocol.

8.3 Expectations of other key stakeholders

8.3.1 IOTC

The IOTC welcomes the close working relationship between the Seychelles and the EU in the form of their FPA and its Protocol. It regards both Members as making constructive and positive contributions to the governance of fisheries targeting tuna and tuna like species in the Indian Ocean.

8.3.2 International NGOs

Although the international NGOs expressed concerns in general regarding FPAs, they have not expressed any particular opinion in respect to a future Protocol with the Seychelles.

8.4 Ex ante evaluation

This final section presents in short tabular form some key points based on the ex ante evaluation criteria specified in Article 21(1) of the 2009 EU Impact Assessment Guidelines.

Table 8.1: ex ante evaluation of the renewal of the EU/Seychelles

Ex ante evaluation criteria	Main points for consideration
Needs to be met (short- and long-term) - involves a situational analysis and a good understanding of the motivations and interests of the key actors	The Seychelles EEZ of 1.3 million km^2 is of prime strategic interest for the operations of the EU Indian Ocean fishing fleet being as the islands are in a central position on the migration route for tropical tuna. It is in the interest of the EU to maintain a presence. ***Short term*** EU needs: • To achieve continuity in maintaining fishing opportunities for the European fleet in the western Indian Ocean region. • Maintain the supply of fish and fish products to the EU market. Seychelles needs: • To maintain the revenue stream provided by the EU financial contribution for access under the terms of the Protocol and the authorisation fees from vessel owners. • To benefit under the terms of the Protocol, from sectoral support by helping the nation to develop its fisheries sector. ***Long term*** EU needs: • To secure and/or maintain fishing opportunities for the EU fleet. • To ensure reliable supplies of fish and fish products for the EU market. • To contribute to the sustainable management of fish stocks in the WIO though the FPA with Seychelles, and the other FPAs involving the EU, and as members of the IOTC. Seychelles needs: • To maximise the benefits perceived by the Seychelles from its fisheries resources while protecting the ecosystem: ○ by maximising revenue from fisheries access fees. ○ by developing domestic fishing capacity. ○ by further development of the processing industry. • To ensure that it develops the infrastructure and facilities to enable it to function as a hub for the tuna fisheries in the WIO. • To build the human and institutional capacity within the Seychelles to enable it to function as an efficient and responsible fishing nation.

Ex ante evaluation criteria	Main points for consideration
Added-value of EU involvement - this is the value from an EU intervention in excess of the value that would have resulted from a national-level intervention by public authorities and / or the private sector without the EU	The EU is deeply involved in the region through membership of the IOTC, which involves both the Seychelles and the EU in the quest for a sustainable regional management of IO tuna resources. The FPA complements these regional efforts at a local level: The EU has invested heavily in regional projects all of which also involve the Seychelles: • The FPA Protocol has a strong focus on MCS and, at a national level; it complements and is coherent with the IOC/EU partnership. This involves the EUR 10 million Regional Plan for Fisheries Surveillance (PRSP), which focuses on strengthening MCS in the region. • The FPA has as an objective the promotion of "responsible fishing in the waters of the Seychelles" (Protocol Article 3). This necessarily involves management across the whole of the range of tuna resources, and it addresses the responsibilities in the Seychelles EEZ of both the FPA Parties in the context of their regional obligations. The Implementation of a Regional Strategy for the ESA-IO (IRFS) Project (known as SmartFish for EUR 6 million), is supporting implementation of an ESA-IO regional strategy for sustainable management of the fishery sector. A major component of such a strategy would be the management of highly-migratory species ranging across IO jurisdictions and high seas. Thus, the FPA can complement the evolving regional approach to fisheries management by focusing on the Seychelles national dimension of what needs to be part of an integrated region strategy. • The FPA helps set a standard for fisheries agreements with the Seychelles, the example of which would not be available in its absence. • The EU provides funding and acts as a supportive interlocutor for the development of the Seychelles fisheries sectors. The FPA makes this possible. • EU vessels are unlikely to abandon fishing in the western Indian Ocean in the absence of a new Protocol. Even so, the FPA and its Protocol provide a useful legal framework for the EU to better exercise flag state responsibility. In view of the extensive involvement of the EU in the WIO region, particularly in the fisheries sector, the FPA provides a vehicle for a coordinated approach that would not be as easily achieved at the level of Member States. Through the FPA it is possible to standardise and harmonise Member State involvement in the fisheries to the best economic effect for both the EU and the Seychelles. It also provides a useful channel for sector support providing an efficient means of avoiding duplication of effort and leading to greater effectiveness.

Ex ante evaluation criteria	Main points for consideration
Objectives to be achieved - this relates to the desired change from an identified baseline situation	• Management of the Seychelles fisheries sector has been evolving over time. The baseline for a new Protocol is one in which 1) a revised (in 2005) fisheries policy and strategy is in place, 2) a new Fisheries Act is in the final stages of being adopted by Parliament, and 3) the structure of the SFA, the fisheries authority is being reviewed and restructured. In the industrial fisheries, the EU fleet dominates the purse seine sector while Asian fleets are dominant in the longline fishery. In coming years, the challenge facing the Seychelles as a SIDS (with a small population of some 89 700 people and a large EEZ of some 1.3 million km^2), will be to develop its institutions, build the capacity of their staff, and ensure the efficient and effective running of all aspects of its fisheries management system to achieve the long-term sustainability of its fisheries. With respect to tuna and tuna like species, regional cooperation in this endeavour is essential. The EU has a major interest in the success of the Seychelles. • None of Indian Ocean stocks of tropical tuna targeted by the EU fleet are currently assessed as being overfished or having overfishing (Section 2.4), although some by-catch species are thought to be endangered or near-threatened (Table 2.2). Caution can be exercised using the institutions of the IOTC to maintain the status of tuna stocks, to limit bycatch (including in relation to FADs) and in so doing contribute to resource conservation and environmental sustainability. • The access fees paid by vessel owners are relatively low in relation to the changing value of the fish and the relatively high level of financing by the EU. In light of the accrued benefits, it would seem appropriate that an increase in the contribution by the EU fleet would be reasonable. Information on traceability of fish and fish products does not appear to be available. Such a deficit, if sustained, has implications for the application of Council Regulation (EC) No 1005/2008.
The policy options available, including the risks associated with them Is it relevant to have a new protocol / FPA with the third country? - What alternative instruments could be considered and why is the proposed one chosen? - What risks are involved in the implementation of the intervention and what countermeasures could be proposed?	• An option would be to terminate the FPA for which notice would need to be given by 1st May 2013 (FPA Article 12, 2[104]). If the FPA is terminated by either party, it would bring to an end a 25 year period of tuna fisheries agreements with the Seychelles. EU vessels would be likely to continue to fish but with private licences at rates applying to foreign fishing vessels (about EUR 96 238 or USD 120 000) in 2011 and without the regulatory safeguards in place in the framework provided by the FPA. Without the FPA, it is likely that there would be associated impacts on governance, sustainability, transparency and the regulation of fishing activity. Also, the Seychelles would have fewer resources to build its fisheries sector and to provide the services of an efficient base for the EU fleet. The Seychelles would lose an important support for its exercise of responsible fisheries management. The EU would lose influence over its most important tuna fishery, removing the most significant link in the region's FPA network. • The alternative is to continue with the FPA and negotiate a new Protocol. This would build on and reinforce the progress made in recent decades in the Seychelles and WIO region. The FPA would underpin the supply of tuna to the EU from a sustainable fishery source and it would contribute to responsible fisheries management more generally in the Seychelles and WIO. This would bolster the drive towards the sustainability of WIO resources, the development of the Seychelles' fishing sector, and support to the Seychelles economy through EU port activities linked in turn to the EU's continuing presence and fishing activity in the most important tuna FPA. • It is appropriate to continue with the FPA and negotiate a new Protocol. In the longer term an integrated regional approach could be developed that would cover the whole range of the species involved might become a more appropriate direction to follow.

[104] Requires six months' notice prior to the end of the first period which ends on 1 November 2013.

Ex ante evaluation criteria	Main points for consideration
Lessons learned - What are the lessons of the ex post evaluation (if any) or of past experience / other FPAs in the region? - How can these be applied to improve possible EU intervention?	• Fishing opportunities should be adapted to take into account past utilisation of fishing opportunities. • Access rates have remained static while fish prices have risen quite sharply (Sections 1.2.5.2 and 6.4.1). Access rates should relate to the economic rent associated with the fisheries resources, thus a mechanism should be agreed to relate access rates to price. • Two-thirds of the value added through activities under the Protocol accrues to the EU and one third to the Seychelles. The share of value added could be evened out through the next Protocol if the price per tonne paid by vessel owners was to be raised. This would also contribute to rebalancing the proportions paid for access toward the EU fleet making a greater absolute and proportional contribution (see Table 6.7). This would rebalance the benefits accruing from the FPA in the Seychelles favour, modestly lowering vessel profits and increasing the EU private sector payments to the Seychelles. • Compliance with the requirements of the Protocol have largely been respected, but the difficulties regarding the employment of Seychelles crew on EU vessels and the deployment of observers needs to be addressed and resolved. • The multi-annual programming is an important tool for managing expenditure under the Protocol's sectoral support contribution. However, however, the nature of some of the investments means time is needed for adequate time for planning and approvals, especially of major infrastructural projects.
Consequences on the EU budget /Human resources - cost implications of the proposed options? (direct financial outlays from the EU budget, administrative costs for the Commission, human resources needed and costs for third parties)	• If the option to terminate the FPA was to be selected, it would save the EU EUR 5.6 million per year, plus the administrative and travel costs involved in the its management. • The option of renewing the Protocol would not necessarily require additional financial or administrative support from the EU beyond what is currently required for the functioning of the current Protocol. It would, however, be possible to negotiate a future protocol that may increase the vessel owners' payments for access. This would also have the effect of forcing the industry to take on a larger share of the responsibility for paying for fishing opportunities from which they clearly benefit.

Source: consultants' assessment

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

The EU's FPA with the Seychelles is expected to contribute to several shared objectives considered to be of mutual benefit to both parties: supporting the management and expansion of responsible fisheries; a better use of EU fleet's capacity; employment creation and value-addition along the fisheries supply chain in both the EU and the Seychelles; provision of product to the EU processing industry; and supplying EU markets with finished products. This ex post evaluation assessed the implementation of the FPA and its Protocol from the perspectives of the EU and the Seychelles. It finds that both parties have been highly compliant with the direct provisions of the FPA and Protocol. Where compliance has fallen short, there have been rational and acceptable explanations.

EU fishing fleets have a long history of activity in the Indian Ocean. Today, they rely on a network of FPAs to gain access to all the critical EEZs in the migration path of tuna stocks – the Comoros, Mauritius, Mozambique, Madagascar and Seychelles EEZs. The Seychelles' Port Victoria is the central point in the migration of the tuna and it provides a pivotal base for the 21 EU purse seine vessels fishing under the Seychelles Protocol. These vessels catch about one quarter of their total IO catch from the waters of the Seychelles EEZ. In 2011, this catch for the EU fleet included just over 40 000 t of mainly skipjack and yellowfin tuna. Approximately 20 % of this fish was trans-shipped to the cannery in Port Victoria for processing. The other 80 % was trans-shipped and destined for other markets. The overall value added by the FPA in 2011 was estimated to be over EUR 40 million in total, of which approximately three quarters accrued to the EU compared to the one quarter to the Seychelles. This demonstrates that the Protocol overall provides excellent value for money for the EU vessel owners who paid EUR 61 000 per vessel access authorisation in 2011. This equates on average to EUR 32 per tonne of fish and 19 % of the total EU compensation per tonne of fish at EUR 170.

In 2011, the benefits of the FPA to the Seychelles were estimated to total around EUR 10.5 million. A total of EUR 7.6 million came from upstream value-addition, including port calls and compensation for fisheries access by the EU (EUR 3.38 million), sector support (EUR 2.22 million) and access by vessel owners (EUR 1.3 million), while the value added by processing, mainly from the cannery, stood at EUR 2.9 million. Specifically, the FPA was estimated to contribute around 11 % of the total income generated by the industrial tuna fishery to the Seychelles economy. However, the overall benefits are greater due to the large percentage of income for the Seychelles that can be linked to the EU fleet as the main client for port services. The Seychelles also offers private agreements to purse seiners and to longliners for access to their tuna fishery resources through an agreement with the Taiwan Deep Sea and Tuna Longline Boat Owners and Exporters Association for Asian longliners. Additional private agreements exist with other third nations.

The FPA arrangement is assessed to provide the greatest benefits to the Seychelles and highlights the value of the Protocol for the islands. In evaluating the FPA and the Protocol against the criteria of effectiveness, efficiency, sustainability, coherence and relevance the results have generally been positive when viewed against the dynamic environment in which this framework operates which is constantly open to change. This has been amply demonstrated throughout this evaluation. For example, global recession, market fluctuations, piracy, climate change, and operational constraints have all impacted on all players in this partnership, and these factors presented real challenges to an effective and efficient implementation of the Protocol.

Otherwise, this evaluation demonstrates that there is strong co-operation between the EU and the Seychelles, both under the FPA and in the wider regional context of the Indian Ocean - with benefits being gained by both partners. The tuna species targeted in this region by the EU fleets (i.e. skipjack, yellowfin and bigeye) are generally classified as 'sustainable' by the Seychelles-headquartered IOTC - the regional fishery body that is responsible for the appropriate management, conservation and optimum utilisation of the stocks of tuna and tuna-like species in the Indian Ocean. Overall, the EU and the Seychelles are in a strong position to impact on responsible fishing both through the FPA and their engagement in the IOTC.

There is no competition between EU fishing activity and the artisanal or the semi-industrial Seychellois fisheries. The Protocol provides assistance to the Seychelles' fishing sector through sectoral support. This makes a long-term contribution to fisheries management, for example through science and monitoring, control and surveillance; infrastructure development and capacity building. The new fishing vessel quay in Victoria will certainly be advantageous for the EU fleet and others. The elements of sector support will all benefit the Seychelles in future, as well as regional fisheries, the EU fleet and consumers. Although progress with implementing the sector support has been slower than anticipated, this may be justified by the nature of the interventions. Moreover, major improvements in the uptake of the sectoral support have been noted, for example through the development of the new fishing quay. It is worth bearing in mind that the time required to develop the necessary management systems within the Seychelles' administration has led to delays in the implementation of the sector support programme.

Piracy has been a notable issue for the Seychelles; it is cited as the main reason for no EU longliners taking up the opportunities of the Protocol (opportunities were available for 12 longliners). It has also added to the operational costs of purse seiners, as they need to take onboard security personnel. This has not only impacted upon fleet fishing activities; it has also harmed the Seychelles in economic terms. For example, national revenue from fisheries, port revenues, fuel re-exports and bunkering have fallen by 30 to 35 %, whilst there has been a parallel increase in the cost of imported food, fuel and other essential commodities over the last decade. On a more positive note, it appears that the incidence rate of piracy is decreasing and this may lead to a return of the EU longline fleet to the Seychellois fishery to take advantage again of the opportunities offered by the FPA.

The Protocol requires a minimum number of Seychellois seamen to be employed on EU vessels; however the employment of Seychellois crew on EU fishing vessels has not always been respected. The minimum requirements have for example been hampered by a lack of availability of adequately trained seamen. In 2011, the estimated annual employment created through the FPA was for around 1 072 full-time equivalent positions, of which 145 were for EU citizens. On a wider level, some 3 824 jobs depend for their viability in some way upon the existence of the Protocol, and most notably so those linked to the cannery in Victoria.

The Protocol was evaluated to be coherent with the CFP and IOTC resolutions and management measures and generally with the terms of regional policy such as the SADC Protocol on Fisheries. However, there could be further development of it in respect to clauses on 'regional harmonisation in access conditions'. The FPA was evaluated as working coherently with other EU supported initiatives in the region. These include the Regional Surveillance Plan, a major regional MCS programme and the SmartFish programme, both managed by the IOC, and activities under the ACP Fish II programme.

9.2 Recommendations

9.2.1 General recommendations

With this in mind, the evaluation recommends that:

- A new Protocol should be negotiated between the EU and the Seychelles to facilitate continuation of their mutually-beneficial partnership on fisheries.
- Future co-operation between the two partners should take into account the on-going CFP reform process. This by itself should provide some new directions and guidance on aspects of EU fisheries relations with third countries from the perspective of the EU. Indications on what can be expected have already emerged in the Council Conclusions on the External Dimension of the CFP (19 March 2012). The EU's stakeholders have diverse expectations and means of operating. This means that with new demands for transparency, any new Protocol will be highly scrutinised from various viewpoints.

- Future sector support should be in line with and supportive to the economic reforms that are underway in the Seychelles, together with the associated new national policy directions anticipated in early 2013 and the new fisheries legislation.
- Any future Protocol and its implementation should firmly align sectoral support with the Government's development and sectoral policy through the multiannual plan - including the policies to strengthen the fishery support infrastructure, to grow the local fishing industry, to strengthen private sector engagement and to make Victoria the major regional fishery hub. On-going sector support for the new fishery port facilities at Zone 14 in Victoria in a future Protocol will contribute towards these policies and also offer benefits to both parties. However, the implementation of this plan should take into consideration the capacity of the Seychelles to manage and implement the plan in a satisfactory and attainable manner. Decoupling the sector support from the compensation paid for access, in line with the Council Conclusions on the External Dimension of the CFP may assist this.
- The provisions for embarking seamen should be reviewed to reflect the Seychelles policy on employment and its desire to create an active, engaged and expanding fishery sector workforce. The contracting arrangements for embarking seamen need to be clearly addressed in national legislation and in the wording of a new Protocol. Such steps should ensure that any real or perceived confusion and misinterpretation is removed. To achieve this, all relevant parties, including the seafaring population of the Seychelles, should be engaged in this process.
- Seychellois at-sea observers should be placed on EU purse seiners as the earliest possible opportunity to comply with the provisions of the current Protocol, taking into account the operational constraints of the fleet and need to implement and respect the IOTC Regional Observers programme.
- Open communication channels between the EU and the Seychelles authorities should be maintained in both directions. This will help to ensure that both parties are able share information about changes in their operating environment in a timely manner and to facilitate mutual support and co-operation.

9.2.2 Technical recommendations

When a new Protocol is negotiated the following recommendations from the evaluation should be taken into account:

- In respect to compensation by EU vessel owners for access to fish in the Seychelles EEZ; consideration should be given to the respective benefits of the flat rate fishing compensation system currently in place and the potential benefits of introducing a rate per tonne - with advance payment for a reference tonnage per vessel; and to addressing the currently disproportionate balance of the financial contributions from the EU and the vessel owners. These considerations should refer to the level of fishing activity under the current Protocol and ensure that the Council Conclusions[105] be reflected in the new Protocol financing, where the level that vessels owners should pay, be fair, non-discriminatory and commensurate to the benefits provided through access conditions.
- Fishing opportunities should be considered in relation to the average catches within the Seychelles EEZ and IOTC recommendations.
- Options for an electronic reporting system should be more fully explored, as proposed in the Protocol and as discussed in the Joint Committee Meetings. This system may benefit from considerations for regional harmonisation in connection to the IOTC, links to VMS data and an overall increase in transparency of statistics, vessel lists and non-sensitive fishery information.

[105] Council Conclusions on the External Dimension of the CFP (19 March 2012).

- Combining implementation of the provisions of the IOTC Resolution on regional observers with the provisions on observers in the FPA Protocol[106] should be considered.
- A requirement for all by-catch to be retained and landed in the Seychelles, along with transhipment or offloading should be considered to facilitate the growth of the local processing sector and to contribute to food security in the Seychelles. This would be in-line with the draft Fisheries Act of the Seychelles.
- Any agreements will need to be coherent with the latest Resolutions of the IOTC and the interim ESA EPA.
- Consider giving general support to the development of further regional fisheries management arrangements between the coastal states of the WIO. This could include strengthening mechanisms by co-operation through the regional programmes of the IOC, and other innovative options such as granting support to a regional training centre for WIO seamen or observers.

[106] The evaluation was carried out before the 15th Session of IOTC Scientific Committee held in the week of 10 to 15 December 2012, that recommended that a regional tuna observation programme (an observation programme on compliance to IOTC rules, a programme different or complementary to the current scientific observation programmes carried within the EU data collection framework by the French research institute (IRD) and the Spanish Institute (IEO) on the EU fishing vessels) be implemented from 2013. The EU fleet is preparing to comply with this new requirement.

ANNEXES

Annex A: references

ADAM, J.P. (Hon), 2012. 'The Role of Seychelles in Counter-Piracy'. Chatham House, London, 21 February 2012. Available from URL: http://www.chathamhouse.org/sites/default/files/public/Research/Africa/210212adam.pdf (accessed 21/09/2012).

AFDB, 2011. Seychelles: Country Strategy Paper, 2011-2015. African Development Bank. Available from URL: http://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Seychelles%20-%20CSP%20%202011-2015.pdf (accessed 28/09/2012).

CENTRAL BANK OF SEYCHELLES, 2006. Fisheries Industry of the Seychelles: At a crossroad. Extracted from First Quarterly Review 2006, Volume XXIV NO.1. Available at URL: http://www.cbs.sc/acro/PapersforWebiste/FisheriesIndustry.pdf (accessed 5/10/2012).

CAMPLING, L. 2012. 'The Tuna 'Commodity Frontier': Business Strategies and Environment in the Industrial Tuna Fisheries of the Western Indian Ocean, *Journal of Agrarian Change*, 12, 252-278.

EUROPEAN COMMISSION 2010. Council Regulation (EU) No 1263/2010 of 20 December 2010 concerning the allocation of the fishing opportunities under the Protocol setting out the fishing opportunities and the financial contribution provided for by the Fisheries Partnership Agreement between the EU and the Republic of Seychelles. Available from URL: http://eur-ex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:345:0020:0021:EN:PDF (accessed 5/10/2012).

EUROPEAN COMMISSION, 2002. Communication from the Commission of 23 December 2002 - An Integrated Framework for Fisheries Partnership Agreements with Third Countries COM (2002) 637. Available from URL: http://ec.europa.eu/development/icenter/repository/fisheries_Communication_FPAs_en.pdf (accessed on 5/10/2012).

EUROPEAN COMMISSION, 2002. Communication from the Commission on an Integrated Framework for Fisheries Partnership Agreements with Third Countries. COM (2002) 637 final, Brussels 23/12/2002. Available from URL: http://ec.europa.eu/development/icenter/repository/fisheries_Communication_FPAs_en.pdf (accessed 21/09/2012).

EUROPEAN COMMISSION, 2002. Council Regulation (EC, Euratom) No 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities. Available from URL: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002R1605:20071227:EN:PDF (accessed on 5/10/2012).

EUROPEAN COMMISSION, 2004. Evaluating EU Activities – a Practical Guide for the Commission Services. Available from URL: http://ec.europa.eu/dgs/secretariat_general/evaluation/docs/eval_activities_en.pdf (accessed on 30/11/2012).

EUROPEAN COMMISSION, 2006. Fisheries Partnership Agreement between the EU and the Republic of the Seychelles, L 290/2. Available from URL: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:290:0002:0005:EN:PDF (accessed on 21/09/2012).

EUROPEAN COMMISSION, 2008. Council Regulation of 29 September 2008 concerning authorisations for fishing activities of Community fishing vessels outside Community waters and the access of third country vessels to Community waters, amending Regulations (EEC)No 2847/93 and (EC) No 1627/94 and repealing Regulation (EC) No 3317/94. Available from URL: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:286:0033:0044:EN:PDF (accessed on 5/10/2012).

EUROPEAN COMMISSION, 2010. Council Decision of 20 December 2010 on the signing, on behalf of the European Union, and provisional application of the Protocol setting out the fishing opportunities and the financial contribution provided for by the Fisheries Partnership Agreement between the EU and the Republic of Seychelles (2010/814/EU). Available from URL: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:345:0001:0002:EN:PDF (accessed 5/10/2012).

EUROPEAN COMMISSION, 2010. Council Regulation (EC) No 1562/2006 of 5 October 2006, OJ L290 of 20 October 2006). Fisheries Partnership Agreement between the EU and the Republic of the Seychelles.

EUROPEAN COMMISSION, 2010. Protocol setting out the fishing opportunities and the financial contribution provided for by the Fisheries Partnership Agreement between the EU and the Republic of Seychelles, L 345/3. Available from URL: http://ec.europa.eu/world/agreements/downloadFile.do?fullText=yes&treatyTransId=14481 (accessed 28/09/2012).

EUROPEAN COMMISSION, 2011. Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee and the Committee of the Regions of 13 July 2011 on External Dimension of the Common Fisheries Policy COM (2011) 424. Available from URL: http://ec.europa.eu/fisheries/reform/com_2011_424_en.pdf (accessed 5/10/2012).

EUROPEAN COMMISSION, 2011. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee Of The Regions on External Dimension of the Common Fisheries Policy, COM (2011) 424 final. Available from URL: http://ec.europa.eu/fisheries/reform/com_2011_424_en.pdf (accessed 28/09/2012).

EUROPEAN COMMISSION, 2012. Council Conclusions on a Communication from the Commission on the External dimension of the Common Fisheries Policy on 19 and 20 March 2012. Available from URL: http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/agricult/129052.pdf (accessed on 5 October 2012).

EUROPEAN UNION, 2010. Combating Somali Piracy: the EU's Naval Operation Atalanta. The European Union Committee of the House of Lords, London. Available from URL: http://www.publications.parliament.uk/pa/ld200910/ldselect/ldeucom/103/103.pdf (accessed 28/09/2012).

FAO, 2005. Profile of fishing by country: The Republic of Seychelles. Available from URL: http://www.fao.org/fi/oldsite/FCP/en/SYC/profile.htm (accessed 5/10/2012).

FAO, 2006. New agreement governing high seas fishing in Indian Ocean. FAO Newsroom, Rome. Available from URL: http://www.fao.org/newsroom/en/news/2006/1000360/index.html (accessed 12/10/2012).

FAO, 2012a. Regional Fishery Bodies' summary descriptions. Indian Ocean Tuna Commission (IOTC). Fishery Governance Fact Sheets. In: FAO Fisheries and Aquaculture Department [online]. Rome. Updated 15 July 2010. (Accessed 12/10/2012).

FAO, 2012b. Regional Fishery Bodies summary descriptions. South Indian Ocean Fisheries Agreement (SIOFA). Fishery Governance Fact Sheets. In: FAO Fisheries and Aquaculture Department [online]. Rome. Updated 15 July 2010. (Accessed 12/10/2012). Available from URL: http://www.fao.org/fishery/rfb/siofa/en

FAO, 2012c. Regional Fishery Bodies summary descriptions. South-West Indian Ocean Fisheries Commission (SWIOFC). Fishery Governance Fact Sheets. In: FAO Fisheries and Aquaculture Department [online]. Rome. Updated 15 July 2010. Available from URL: http://www.fao.org/fishery/rfb/iotc/en (accessed 12/10/2012).

FAO, 2012d. The State of World Fisheries and Aquaculture 2012. Rome. 209 pp.

FLOCHA L., A. DELGADO DE MOLINAB, C. ASSANC, P. DEWALSD, J.J. ARESOE, E. CHASSOT. 2012. Statistics of the European purse seine fishing fleet and associated flags targeting tropical tunas in the Indian Ocean (1981-2011). Available from URL: http://www.iotc.org/files/proceedings/2012/WPTT/IOTC-2012-WPTT14-22.pdf.

GAUDIN, C., 2012. Accompanying developing countries in complying with the Implementation of Regulation 1005/2008 on Illegal, Unreported and Unregulated (IUU) Fishing EuropeAid/129609/C/SER/Multi. Country Evaluation Report: Seychelles. European Union, Brussels.

GOVERNMENT OF SEYCHELLES, 1991. Seychelles Fisheries Act. Available from URL: http://faolex.fao.org/docs/pdf/sey2117.pdf (accessed 24/09/2012).

GOVERNMENT OF SEYCHELLES, 2000. Initial National Communications under the United Nations Framework Convention on Climate Change; Ministry of Environment and Transport, Republic of Seychelles.

GOVERNMENT OF SEYCHELLES, 2005. The Fisheries Policy of Seychelles. Available from URL: http://www.investinseychelles.sc/media/products/downloads/2/Fisheries%20policy2005.pdf (accessed 21/09/2012).

GOVERNMENT OF SEYCHELLES, 2007. Seychelles national plan of action for the conservation and management of sharks. Seychelles Fishing Authority, Victoria, Seychelles, 2007. 59 p. Available from URL: ftp://ftp.fao.org/fi/document/IPOAS/national/seychelles/SeychellesNPOA_Sharks.pdf (accessed 21/09/2012).

GOVERNMENT OF SEYCHELLES, 2010. Constitution of the Republic of Seychelles. Available from URL: http://www.ilo.org/dyn/travail/docs/2159/constitution%20version%202011.pdf (accessed 28/09/2012).

GOVERNMENT OF SEYCHELLES, 2011a. Fourth National Report to the United Nations Convention on Biological Diversity. Environment Department, P.O. Box 445, Botanical Gardens, Mont Fleuri, Victoria, Republic of Seychelles.

GOVERNMENT OF SEYCHELLES, 2011b. The Comprehensive Africa Agriculture Development Programme (CAADP): Seychelles CAADP Compact Signing Ceremony. Available from URL: http://www.caadp.net/pdf/Seychelles.pdf (accessed 28/09/2012)

GOVERNMENT OF SEYCHELLES, no date. National ICT Policy for Seychelles. Available from URL: www.ict.gov.sc/resources/policy.pdf (accessed 21/08/2012).

INDIAN OCEAN TUNA COMMISSION (IOTC), 2005. Evelyne Meltzer and S. Fuller, working copy (internet). Available at URL: http://www.dfo-mpo.gc.ca/fgc-cgp/documents/meltzer/IOTCfinal.pdf (accessed 5/10/2012).

INDIAN OCEAN TUNA COMMISSION (IOTC), 2012. Collection of Active Conservation and Management Measures for the Indian Ocean Tuna Commission. Last updated: 20 June, 2012. Available at URL: http://www.iotc.org/files/CMM/IOTC%20-%20Collection%20of%20ACTIVE%20CMMs%2020%20June%202012.pdf (accessed 5/10/2012).

INDIAN OCEAN TUNA COMMISSION– WPEB08 (IOTC), 2012b. Report of the Eighth Session of the IOTC Working Party on Ecosystems and By-catch. Cape Town, South Africa, 17–19 September, 2012. IOTC–2012–WPEB08–R[E]: 77 pp.

INFOSA, no date. Seychelles Country Profile. Available from URL: http://www.infosa.org.na/www.infosa.org.na /dloads/restrict/country%20profile/Seychelles.pdf (accessed 28/09/2012).

LAIPSON, E. & PANDYA, A., EDS, 2009. The Indian Ocean: Resource and Governance Challenges. The Henry L. Stimson Center, Washington. Available from URL: http://www.stimson.org/images/uploads/research-pdfs/Indian_Ocean-Front_Matter.pdf (accessed 28/09/2012).

MIYAKE, M., P. GUILLOTREAU, C.-H., ISHIMURA, G. (2010). Recent developments in the tuna industry: stocks, fisheries, management, processing, trade and markets. FAO Fisheries and Aquaculture Technical Paper. No. 543. Rome, FAO. 2010. 125p.

MURILLAS-MAZA, A. (2011) Spatial and Inter-temporal Economic Sustainability Assessment: A Case Study of the Open Oceans Basque Purse seine Fleets. In: *Proceedings of the 1st World Sustain. Forum, 1-30 November 2011*; Sciforum Electronic Conferences Series, 2011.

NATIONAL BUREAU OF STATISTICS, 2010. National Accounts Estimates 2004 -2009. Available from URL: http://www.nbs.gov.sc (accessed 28/09/2012).

NATIONAL BUREAU OF STATISTICS, 2011. Seychelles in Figures: 2011 Edition. Available from URL: http://www.nbs.gov.sc (accessed 28/09/2012).

OCEANIC DEVELOPMENT & MEGAPESCA LDA, 2008. Specific contract No. 4 – Establishment of a Framework Contract Management Unit (FCMU) to manage, monitor and coordinate the activities under the framework management unit and the relevant specific agreements - Specific Methodological Guidelines for Evaluation of Fisheries Partnership Agreements (under Framework Contract FISH/2006/11).

ORR P., POMAREDE M., MARTIN S., IDDRISSI M., QUIROZ J. C., ROBINSON J., CLARISSE R., BEECHING A., BEGGREN P., JIDDAWI N., KANGWE J., DAVIES S. & PILLING G., 2010. A report review of Third Country Agreements. EU FP7 project n°212188 TXOTX, Deliverable 2.4, 282 pp.

PAYET, R., 1996. Artisanal Fishing Boats in Seychelles. SFA/R&D/041. Available from URL: www.sfa.sc/technical%20reports/sfard041.pdf (accessed 21/09/2012).

ROCAMORA, G. & A. SKERRETT, 2001. Pp751-768 in Fishpool L.D.C. & Evans M.I., eds. Important Bird Areas in Africa and associated islands: Priority sites for conservation. Newbury and Cambridge, UK: Pisces Publications and BirdLife International (BirdLife Conservation Series No 11).

SEYCHELLES FISHING AUTHORITY, 2009. SFA Technical Report: Seychelles Artisanal Fisheries Statistics for 2008. Available from URL: http://www.sfa.sc/technical%20reports/artisanal%20stat%202006.pdf (accessed 28/09/2012).

SEYCHELLES FISHING AUTHORITY, 2010. Seychelles Tuna Bulletin Year 2010. Available from URL: (accessed 29/09/2012). Available from URL: www.sfa.sc/tuna%20bulletins/tuna2010.pdf (accessed 29/09/2012).

SEYCHELLES FISHING AUTHORITY, 2011. SFA Annual Report 2007 – 2010. Available from URL: http://www.sfa.sc/Annual%20Reports/Annual%20Report%202007-2010.pdf (accessed 28/09/2012).

STOP ILLEGAL FISHING, 2007. Hosch, G. IPOA-IUU Implementation Status Report for the SADC Region, Volume 2 – Report. Gaborone, Botswana.

SWIOFP-WWF, 2012. Swan, J. Harmonization of Fisheries Legislation and Assessment of the Implementation of Fisheries Management Plans and Rights Based Management in the South West Indian Ocean, Draft Report. Kenya.

U.S. NAVY JAG, 2011. Seychelles summary of claims, March 2011. Available from URL: http://www.jag.navy.mil/organization/documents/mcrm/seychelles.pdf (accessed 28/09/2011).

United Nations Development Programme, 2011. Human Development Report 2011. Sustainability and Equity: A Better Future for All. New York, NY, USA. Available at URL: http://www.undp.org.bz/wp-content/uploads/2011/11/HDR_2011_EN_Compressed.pdf (accessed 02/11/2012).

UNITED NATIONS, 2012. Report of the Secretary-General on specialized anti-piracy courts in Somalia and other States in the region, S/2012/50. Available from URL: oceansbeyondpiracy.org/sites/default/files/somalia_s_2012_50.pdf (accessed 24/09/2012).

WORLD BANK, 2012. Doing Business in a more transparent world. Economy Profile: Seychelles. Available from URL: http://www.doingbusiness.org/~/media/fpdkm/doing%20business/documents/profiles/country/SYC.pdf (accessed 21/09/2012).

EU legislation

Consolidated versions of EU legal texts presented below are available on the European website EUR-Lex[107].

Council Regulation (EC, Euratom) No 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities (OJ L 248, 16.9.2002, p. 1). Note: amended by: Council Regulation (EC, Euratom) No 1995/2006 of 13 December 2006 (OJ L 390, 30.12.2006, p. 1); Council Regulation (EC) No 1525/2007 of 17 December 2007 (OJ L 343, 27.12.2007, p. 9). Corrected by: Corrigendum, OJ L 025, 30.1.2003, p. 43 (1605/2002); Corrigendum, OJ L 099, 14.4.2007, p. 18 (1605/2002); Corrigendum, OJ L 048, 22.2.2008, p. 88 (1995/2006)

Commission Regulation (EC, Euratom) No 2342/2002 of 23 December 2002 laying down detailed rules for the implementation of Council Regulation (EC, Euratom) No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities (OJ L 357, 31.12.2002, p. 1). Note: amended by: Commission Regulation (EC, Euratom) No 1261/2005 of 20 July 2005 (OJ L 201, 2.8.2005, p. 3); Commission Regulation (EC, Euratom) No 1248/2006 of 7 August 2006 (OJ L 227, 19.8.2006, p. 3); Commission Regulation (EC, Euratom) No 478/2007 of 23 April 2007 (OJ L 111, 28.4.2007, p. 13). Corrected by: Corrigendum, OJ L 345, 28.12.2005, pp. 35-38 (2342/2002)

Council Regulation (EC) No 1006/2008 of 29 September 2008 concerning authorisations for fishing activities of Community fishing vessels outside Community waters and the access of third country vessels to Community waters.

Council Regulation (EC) No 1562/2006 of 5.10.2006, OJ L290 of 20.10.2006) on the Fisheries Partnership Agreement between the EU and the Republic of the Seychelles

Council Regulation (EU) No 1263/2010 of 20 December 2010 on fishing opportunities, OJ L345/20 of 30.12.2010

Council Decision (2010/814/EU) of 20 December 2010 on signing and provisional application, OJ L345/1 of 30.12.2010

[107] http://eur-lex.europa.eu.

Annex B: currency exchange rates used in this report

EUR exchange rate (1 =)	2006	2007	2008	2009	2010	2011	2012
USD	1.25	1.35	1.58	1.40	1.22	1.44	1.26
SCR (Seychelles rupee)	6.7	8.5	12.5	19.07	13.78	16.91	17.23

Rates at year mid-point (30 June) rates
Source: Oanda, 2012[108]

[108] www.oanda.com.

Annex C: list of acronyms/abbreviations

AAS	Atomic Absorption Spectrophotometer
ACP	African, Caribbean, Pacific
AFDB	African Development Bank
AFIA	The Agriculture and Fisheries Incentives Act
ASCLME	Agulhas and Somali Current Large Marine Ecosystem
CBD	Convention on Biological Diversity
CBS	Central Bank of Seychelles
CCA	Credit Concessionary Agency
CCS	Catch Certificate Scheme
CFFA	Coalition for Fair Fisheries Arrangements
CFP	Common Fisheries Policy
CGIAR	Consortium of International Agricultural Research Centers
CIF	Cost, Insurance and Freight
CMM	Conservation and Management Measures
CMS	Convention on Migratory Species
COFI	UN Committee on Fisheries
COMESA	Common Market for Eastern and Southern Africa
CPUE	Catch Per Unit Effort
DBS	Development Bank of the Seychelles
DG MARE	Directorate General for Maritime Affairs and Fisheries
DWFN	Distant Water Fishing Nation
EC	European Commission
EDF	European Development Fund
EDF	European Development Fund
EEZ	Exclusive Economic Zone
EP	European Parliament
EPA	Economic Partnership Agreement
ESA-IO	Eastern and Southern Africa and the Indian Ocean
EU	European Union
EUR	Euro
FAD	Fish Aggregation Device
FAO	Food and Agriculture Organisation
FBOA	Seychelles Fishing Boat Owners Association
FIQCU	Fish Inspection and Quality Control Unit
FMC	Fisheries Monitoring Centre
FOB	Free on Board
FPA	Fisheries Partnership Agreement
GDP	Gross Domestic Product
GEF	Global Environment Facility
GOP	Gainful Occupation Permit

GRT	Gross Registered Tonnage
GST	Goods and Services Tax
HDI	Human Development Index
HPLC	High-Performance Liquid Chromatography
HS	High Seas
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICT	Information and Communication Technology
IEO	Instituto Español Oceanografico
IGAD	Intergovernmental Authority on Development
IMB	International Maritime Bureau
IMF	International Monetary Fund
IOC	Indian Ocean Commission
IOSSS	Indian Ocean Swordfish Stock Structure Project
IOT	Indian Ocean Tuna Ltd.
IOTC	Indian Ocean Tuna Commission
IPTP	Indo-Pacific Tuna Development and Management Programme
IRCC	Inter-Regional Coordinating Committee
IRD	Institut de Recherche pour le Développement
ISSF	International Seafood Sustainability Foundation
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unregulated or Unreported
KM	Kilometre
MADE	Mitigating Adverse Ecological Impacts of Open Ocean Fisheries
MCS	Monitoring, Control and Surveillance
m	Million
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
NATO	North Atlantic Treaty Organization
NDEA	National Drug Enforcement Agency
NGO	Non-governmental Organisation
NIP	National Indicative Programme
NPOA	National Plan of Action
OPAGAC	Organización de Productores Asociados de Grandes Atuneros Congeladores
ORTHONGEL	Organisation de Producteurs de Thon Congelé
PEW	The PEW Environmental Group
PSMA	Port State Measures Agreement
RAPPICC	Regional Anti-Piracy Prosecution & Intelligence Coordination Centre
REC	Regional Economic Community
RFMO	Regional Fisheries Management Organisation
RIP	Regional Indicative Programme
SADC	Southern African Development Community

SBS	Seychelles Bureau of Standards
SC	Science Committee
SCG	Seychelles Coastguard
SCR	Seychelles rupees
SEnPA	Small Enterprise Promotion Agency
SFA	Seychelles Fishing Authority
SFP Project	Strengthening Fishery Products Health Conditions in ACP/OCT Countries
SIDS	Small Island Developing States
SIF	Stop Illegal Fishing
SIOFA	South Indian Ocean Fisheries Agreement
SLA	Seychelles Licencing Authority
SMSA	Seychelles Maritime Safety Authority
SPA	Seychelles Ports Authority
SPPF	Seychelles People's Progressive Front
SPS	Sanitary and Phytosanitary Regulation
SST	Sea-Surface Temperatures
SWIOFC	South West Indian Ocean Fisheries Commission
SWIOFP	South-West Indian Ocean Fisheries Project
t	Tonnes
TC	Maritime Training Centre
TNDS	Medium Term National Development Strategy
TRACES	Trade Control and Expert System
UNCBD	United Nations Convention on Biological Diversity
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNFCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VMS	Vessel Monitoring System
WIO-LaB	West Indian Ocean Land Based Activities Project
WPTT	Working Party on Temperate Tuna
WWF	World Wide Fund for Nature

Annex D: main characteristics of Indian Ocean waters related to highly migratory pelagic species

The geophysical characteristics of the Indian Ocean that impact upon the range of highly migratory pelagics are complex. There are two principal areas of abundance in surface chlorophyll in the Indian Ocean contributing to higher levels of primary production than elsewhere. These influence to an extent the distribution of tuna in the Indian Ocean.

The first is driven by the monsoon winds north of 10º N[109]. Intense winds drive coastal upwelling along the eastern African coast adjacent to the NW Indian Ocean during the south-west monsoons and convective mixing occurs as a result of the north-east monsoon[110]. In the northern hemisphere spring and autumn (the inter-monsoon period) this area is less productive.

The second area of surface chlorophyll variability is associated with the Indian Ocean Dipole phenomenon[111], an aperiodic oscillation of sea-surface temperatures that occurs every few years. During a positive phase, the sea-surface temperatures rise in the region 50º-70º E and between 10º S and 10º N, and cool in the eastern Indian Ocean and the 20 C thermocline is found at a greater depth[112]. Three recent positive events were identified in 1998 and 2007, and were associated with weakened Somali upwelling, lower levels of sea-surface chlorophyll and lower catch per unit of effort (CPUE) for the purse seine fleet[113].

A further influence on the productivity of the Indian Ocean is the Madden-Julian Oscillation (MJO), a phenomenon characterized by intra-seasonal large-scale coupling of atmospheric circulation and oceanic convection[114]. This produces high variability of surface chlorophyll in the tropical Indian Ocean thermocline ridge, known as the Seychelles-Chagos Thermocline Ridge (SCTR)[115], and is characterized by open-ocean upwelling.

Three of the four main species of tropical tuna caught in the Indian Ocean are bigeye (*Thunnus obesus*), yellowfin (*T. albacores*) and albacore (*T. alalunga*). Pei-Fen, L. et al.[116] correlated SST and surface chlorophyll data with Taiwanese catch data of these species over a 30-year period. They concluded that the three species are distributed throughout the Indian Ocean but with distinct abundance patterns. They found Albacore to be distributed across the ocean, but it is more concentrated between 30ºS – 45ºS latitude, with stocks moving northwards during the southern hemisphere winter. Bigeye tuna is more abundant between about 10ºN and 10ºS of the equator. Yellowfin tuna are caught mainly in the northern Indian Ocean (Arabian Sea) and in the region north of the Mozambique Channel[117]. The fourth species skipjack tuna (*Katsuwonus pelamis*) have a SST preference of 20C-32C[118] and they are widely distributed in the northern and western Indian Ocean.

[109] Resplandy, L., J. Vialard, M. Lévy, O. Aumont, and Y. Dandonneau (2009), Seasonal and intra-seasonal biogeochemical variability in the thermocline ridge of the southern tropical Indian Ocean, *J. Geophys. Res.*, 114, C07024, doi:10.1029/2008JC005246.

[110] Ibid.

[111] ibid

[112] Marsac, F. Outline of climate and oceanographic conditions in the Indian Ocean: an update to August 2011. IOTC-2011-WPTT13-11 Rev_2. Found at: http://www.iotc.org/files/proceedings/2011/wptt/IOTC-2011-WPTT13-11%20Rev_2.pdf

[113] Ibid, slide 15.

[114] Zhang, C. (2005), Madden-Julian Oscillation, Rev. Geophys., 43, RG2003, doi:10.1029/2004RG000158.

[115] Resplandy, L. et al. 2009.

[116] Pei-Fen, L. et al.

[117] Ibid.

[118] J.D. ARDILL, 1984, TUNA FISHERIES OF THE SOUTH WEST INDIAN OCEAN. FOUND AT: HTTP://WWW.FAO.ORG/DOCREP/FIELD/255095.HTM

Annex E: status of key species including by-catch of EU fishing vessels in the Indian Ocean

Skipjack tuna (*Katsuwonus pelamis*)

Skipjack tuna is fast-growing, with a short lifespan (maximum age of around three years) and a rapid population turnover. Its life history characteristic allows the skipjack tuna to be highly resilient to fishing pressure and a relatively high maximum sustainable yield (MSY) threshold. The Working Party on Tropical Tuna (WPTT) considers the skipjack stock in the Indian Ocean to be not overfished nor have overfishing.

The most recent stock assessment used data from 2009 and estimated the MSY to be at 594 000 t based on the 2011 stock assessment model (IOTC, 2012). The stock is considered to be healthy, as the 2009 catch to MSY ratio is 0.81 (0.54 – 1.16) and the spawning biomass to MSY spawning biomass ratio is 2.56 (1.09 – 5.83). The 2010 catch is 420 729 t, slightly below the 2005 – 2010 average catch of 486 164 t.

The decline in catch in the last few years is attributed to reduced effort from the purse seine fleet. The WPTT recommends that the catch level should not exceed the 2005 – 2010 average and there is a low risk of the catch level exceeding MSY if the current levels are maintained. If the current trend of declining catch and effort continues, no extra management measures need to be implemented.

Yellowfin tuna (*Thunnus albacares*)

The total catch for yellowfin tuna peaked during the 2004–2005 season with an annual catch of around 515 611 t, driven by an increase in catch across all fisheries, primarily the purse seine fisheries. Total catches declined after that to about 300 000 t annually during the 2007–2010 seasons. Total catch in 2009–2010 season is the lowest for the species since the early 1990s, with an estimated catch of 291 356 t, following a period of low recruitment.

Six model options were used by the WPTT for the 2011 stock assessment with no single model promoted as the preferred option and the stock assessment takes into account the range of results from each model. The biomass for yellowfin tuna in the Indian Ocean was estimated to be around 3 000 000 t for 2010 and it has been on a declining trend since 1990.

The MSY for yellowfin tuna is estimated to be in the region of 300 000 - 400 000 t based on most of the model options. The 2010 catch is very close to the lower threshold of the MSY. Some of the decline in catch maybe attributed to recent operational constraints on purse seine and longline fleets due to piracy. However, if the recruitment level stays the same, the lower MSY threshold should be applied.

Bigeye tuna (*Thunnus obesus*)

Total bigeye catch in 2010 is at a 10-year low at 88,887 t, significantly lower than the 2000 – 2010 average of 120 425 t. The WPTT consider the stock to be currently not overfished nor have overfishing.

The 'SS3' and 'ASPM' models were used by WPTT for the stock assessment of bigeye tuna in the Indian Ocean using data up to 2009. They estimated MSY to be 114 000 t and 102 900 t respectively. The current biomass is sufficient to ensure that the bigeye tuna population stays above MSY levels in the long-term and the current fishing level is comfortably below the MSY threshold.

The recent decline in annual catch has been attributed to declines in longline effort from the Japanese, Taiwanese, Chinese and South Korean fleets, thus reducing pressure on the bigeye stock. The WPTT recommends that the MSY should be set at between 102 000 and 114 000 t, and that no further management measures should be required if the declining trend in fishing effort continues.

Albacore (*Thunnus alalunga*)

Albacore annual catch in the Indian Ocean remained relatively stable from 2000 to 2010, fluctuating around an average of 36 710 t per annum (IOTC, 2012). The WPTT considers the stock to be currently overfished and is highly likely to have overfishing.

The most recent stock assessment (2011) utilizes data up to 2010. Only one model is used for the stock assessment. The 2010 catch is 42 950 t, only marginally higher than the average catch for the recent 5 years (2006 – 2010) of 39 766 t.

However, the model estimates the MSY to be around 29 990 t (21 500 – 33 100 t), almost 10 000 t lower than the 2010 catch and the average for 2006 – 2010. The 2010 biomass to MSY biomass ratio is around 1. The WPTT is of opinion that the substantial increase in catch effort since the previous stock assessment pose a high risk that $SB<SB_{MSY}$. It is highly likely that recent catches exceed the MSY and there is moderate risk that the total biomass is below B_{MSY}.

The WPTT warns that maintaining the current effort or increasing the effort will most likely result in further decline in biomass, productivity and CPUE of the Indian Ocean albacore stock.

Swordfish (*Xiphias gladius*)

The Spanish longline fleet targeting swordfish in the Indian Ocean is one of the most important EU longline fleets. The total catch for swordfish in the Indian Ocean in 2010 is 20 835 t, slightly lower than the 5 year average (2006 – 2010) of 23 386 t (IOTC, 2012). The Working Party on Billfish (WPB) considers the stock is not overfished nor has overfishing.

The latest (2011) stock assessment uses data up to and including 2009. Four models are used in the stock assessment and the MSY suggested by all four models range from 29 990 – 34 200 t. The stock looks relatively healthy with a F_{2009}/F_{MSY} ratio of 0.50 – 0.63 and a SB_{2009}/SB_{MSY} ratio of 1.07 – 1.59. All models suggest that the stock biomass is slightly above the threshold to sustain a MSY population.

The decrease in longline catch effort in the recent years reduced the pressure on the Indian Ocean swordfish stock. There is a low risk of exceeding MSY reference points if the current catch trend is maintained or declines between now and 2019. Current management measures are sufficient and pre-emptive measures are not required.

A number of IOTC conservation and management measures are in place for tuna and billfish species:

- Resolution 08/04 concerning the recording of catch by longline fishing vessels in the IOTC area.
- Resolution 09/02 on the implementation of a limitation of fishing capacity of contracting parties and co-operating non-contracting parties.
- Resolution 10/01 for the conservation and management of tropical tunas stocks in the IOTC area of competence.
- Resolution 10/02 concerning mandatory statistical requirements for IOTC Members and co-operating non-Contracting Parties (CPC's).
- Resolution 10/03 concerning the recording of catch by fishing vessels in the IOTC area.
- Resolution 10/07 concerning a record of licenced foreign vessels fishing for tunas and swordfish in the IOTC area.
- Resolution 10/08 concerning a record of active vessels fishing for tunas and swordfish in the IOTC area.
- Recommendation 10/13 on the implementation of a ban on discards of skipjack tuna, yellowfin tuna, bigeye tuna, and non-targeted species caught by purse seiners.
- Recommendation 11/06 concerning the recording of catch by fishing vessels in the IOTC area of competence.

By-catch species

In the Thirteenth Session of the Scientific Committee, members raised concerns about the lack of progress in the data reporting on by-catch species. The SC recommended three options for amendment to Resolution 08/04 regarding the catch recording by longline vessels in IOTC jurisdiction with the aim of improving data collection and statistics on sharks in order to allow the development of stock status indicators for the species.

In the Fourteenth Session, the SC concluded that the status of all the sharks commonly present as by-catch in the Indian Ocean tuna fishery are highly uncertain. The shark species commonly caught in the IOTC tuna fisheries include blue sharks (*Prionace glauca*), oceanic whitetip shark (*Carcharhinus longimanus*), scalloped hammerhead shark (*Sphyrna lewini*), shortfin mako sharks (*Isurus oxyrinchus*), bigeye thresher sharks (*Alopias superciliosus*), silky sharks (*Carcharhinus falciformis*) and pelagic thresher sharks (*Alopias spp*).

A recurring trend amongst the shark species present as by-catch is the lack of a quantitative stock assessment and a basic fishery indicator for those species, thus making the status of the species highly uncertain. Furthermore, piracy in the western parts of the Indian Ocean have recently driven longline fishing efforts east- and southwards in the Indian Ocean, which is one of the reasons why the SC concludes that the shark stocks might experience a localised decline in biomass, productivity and CPUE.

The following IOTC conservation and management measures are in place for black marlin, blue marlin, striped marlin, and Indo-Pacific sailfish.

- Resolution 08/04 concerning the recording of catch by longline fishing vessels in the IOTC area.
- Resolution 09/02 on the implementation of a limitation of fishing capacity of contracting parties and co-operating non-contracting parties.
- Resolution 10/02 mandatory statistical requirements for IOTC Members and Co-operating non-Contracting Parties (CPC's).
- Resolution 10/03 concerning the recording of catch by fishing vessels in the IOTC area.
- Resolution 10/08 concerning a record of active vessels fishing for tunas and swordfish in the IOTC area.
- Recommendation 11/06 Concerning the Recording of Catch by Fishing Vessels in the IOTC Area of Competence.

The following IOTC conservation and management measures are in place for pelagic shark species:

- Resolution 05/05 Concerning the conservation of sharks caught in association with fisheries managed by IOTC includes minimum reporting requirements for sharks, calls for full utilization of sharks and includes a ratio of fin-to-body weight for shark fins retained onboard a vessel (although for thresher sharks this has been largely superseded by Resolution 10/12 as it is prohibited to retain any part).
- Resolution 08/04 Concerning the recording of catch by longline fishing vessels in the IOTC area sets out the minimum logbook requirements for longline fishing vessels over 24 m length and under 24 m if they fish outside the EEZ of their flag State. As per this resolution, catch of all sharks must be recorded.
- Resolution 10/03 Concerning the recording of catch by fishing vessels in the IOTC area sets out minimum logbook requirements for all purse seine vessels 24 m length overall or greater and those under 24 m if they fish outside the EEZs of their flag States. As per this resolution, catch and discard of all shark species should be recorded.
- Resolution 10/12 On the Conservation of Thresher Sharks (Family Alopiidae) caught in Association with Fisheries in the IOTC Area of Competence prohibiting Fishing Vessels flying the flag of IOTC Members and Co-operating non-Contracting Parties (CPCs) from retaining on board, transhipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family Alopiidae.
- Resolution 11/04 on a Regional Observer Scheme requires data on blue shark interactions to be recorded by observers and reported to the IOTC within 150 days. The Regional Observer Scheme (ROS) started on 1st July 2010.

Black marlin (Makaira indica)

No quantitative stock assessment is currently available for black marlin in the Indian Ocean and, due to a lack of fishery data for several gears, only preliminary stock indicators can be used. Therefore the stock's status

remains uncertain. However, aspects of the biology, productivity and fisheries for this species, when combined with the lack of data upon which to base a more formal assessment, leave cause for considerable concern. Research emphases on improving indicators and exploration of stock assessment approaches for data poor fisheries are warranted.

The decrease in longline catch and effort in recent years has lowered the pressure on the Indian Ocean stock as a whole, but there is insufficient information for evaluating the effect this will have on the resource.

Indo-Pacific blue marlin (Makaira mazara)

No quantitative stock assessment is currently available for Indo-Pacific blue marlin in the Indian Ocean. Due to a lack of reliable fishery data for several gears, only very preliminary stock indicators can be used. The standardised CPUE suggest that there was a decline in the early 1980s, followed by an increase in abundance over the last 20 years. This contrasts with the majority of non-standardised indicators which suggest a decline in abundance since the 1980s. Therefore the stock status is determined as being uncertain. However, aspects of species biology, productivity and fisheries combined with a lack of fisheries data on which to base a quantitative assessment is a cause for concern.

The decrease in longline catch and effort in recent years has lowered the pressure on the Indian Ocean stock as a whole, but there is insufficient information for evaluating the effect this will have on the resource.

Striped marlin (Tetrapturus audax)

No quantitative stock assessment is currently available for striped marlin in the Indian Ocean, and due to a lack of fishery data for several gears, only preliminary stock indicators can be used. Therefore stock status remains uncertain. However, aspects of the biology, productivity and fisheries for this species combined with the lack of data on which to base a more formal assessment are a cause for considerable concern. Research emphasis on improving indicators and exploration of stock assessment approaches for data poor fisheries are warranted.

The decrease in longline catch and effort in recent years has lowered the pressure on the Indian Ocean stock as a whole, but there is not insufficient information to evaluate the effect this will have on the resource.

Indo-Pacific Sailfish (Istiophorus platypterus)

No quantitative stock assessment is currently available for Indo-Pacific sailfish in the Indian Ocean, and due to a lack of fishery data for several gears, only preliminary stock indicators can be used. Therefore stock status remains uncertain. However, aspects of the biology, productivity and fisheries for this species combined with the lack of data on which to base a more formal assessment are a cause for considerable concern. Research emphasis on improving indicators and exploration of stock assessment approaches for data poor fisheries are warranted.

The decrease in longline catch and effort in recent years has lowered the pressure on the Indian Ocean stock as a whole, but there is insufficient information for evaluating the effect this will have on the resource.

Blue shark (Prionace glauca)

The conservation status of the Indian Ocean blue shark is rated by the IUCN as 'Near Threatened'. The blue shark catch in the Indian Ocean is estimated to be at 9 941 t in 2009 and 9 416 t in 2010, with an average catch over the recent 5 years (2006 – 2010) standing at 8 924 t. It should be noted that these figures are considered to be incomplete as catches of sharks are not usually reported. When they are reported they may only represent those retained on board. SC considers the status of the stock to be highly uncertain as no quantitative stock assessment has been performed on the species and there are limited basic fishery indicators for the stock.

<u>IOTC Management measures:</u>

Oceanic whitetip shark (Carcharhinus longimanus)

The oceanic whitetip shark is one of the most common large shark species in warm oceanic waters. It is typically found in the open ocean and also close to reefs or within proximity of oceanic islands. The IUCN classifies the Indian Ocean whitetip shark's status as 'Vulnerable'. Like the blue shark, data on the oceanic whitetip shark is deficient and the SC does not expect the data availability to improve in the short to medium term. Limited basic fisheries indicators are currently available for this species, although no stock assessment has been done. The catch in 2009 is estimated to be at 245 t and the 2010 catch at 450 t, but the shark catch records are thought to be incomplete and only cover the sharks retained on board.

Scalloped hammerhead shark (Sphyrna lewini),

The scalloped hammerhead shark is commonly found in warm temperate and tropical waters. The IUCN currently lists the species as 'Endangered'. No quantitative stock assessment has been performed on for the scalloped hammerhead shark and there are no existing basic fishery indicators. The SC considers the stock's status to be highly uncertain.

Shortfin mako sharks (Isurus oxyrinchus)

The shortfin mako shark is widely found in tropical and temperate waters warmer than 16°C. The IUCN rates the shortfin mako shark as 'Vulnerable' globally. As with the other shark species, there is barely any data available on the stock status, there is no established fishery indicator for the shortfin mako shark in the Indian Ocean and no quantitative stock assessment has been performed. The estimated catch in 2009 and 2010 are 561 t and 738 t respectively, with a 5-year mean catch of 990 t. As with the other shark species, the recorded catches are thought to be incomplete as they only represent those individuals retained on board and the recorded weight most likely refers to the weight of the processed catch rather than live weights.

Silky shark (Carcharhinus falciformis)

The silky sharks are one of the most abundant shark species in the warm tropical and subtropical waters throughout the world. The species is classified by the IUCN as 'Threatened' globally, including in in the WIO and the EIO. There is insufficient information on this species and no quantitative stock assessment has been performed. The SC concludes the stock status to be highly uncertain.

Thresher shark (Alopias spp.)

The bigeye thresher shark (*A. superciliosus*) inhabits pelagic coastal and oceanic waters around the tropical and temperate oceans worldwide. The IUCN categorizes the conservation status of this species as 'Vulnerable'. There is no quantitative stock assessment or established fishery indicator for this species and hence the SC considers the stock status to be highly uncertain. The bigeye thresher is a common by-catch species in the longline fisheries. Hooking mortality is very high for the species, leading to the establishment of IOTC regulation 10/12 prohibiting the retention of any part of thresher sharks on board and encouraging the release of live thresher sharks. However, the regulation has been viewed as ineffective for the conservation of the species. Furthermore, the regulation has been thought to increase the reluctance of fishers in reporting information on discards/non-retained catch. The reported catch for bigeye thresher shark in 2009 and 2010 is a mere 5 t in both years.

The pelagic thresher shark (*A. pelagicus*) is ubiquitous in the pelagic coastal and oceanic waters throughout the tropical Indo-Pacific. It is commonly confused with the common thresher shark (*A. vulpinus*), to the point where most tropical records of common thresher sharks are allegedly misidentified pelagic threshers. Pelagic thresher is listed as 'Vulnerable' under the IUCN threat status. There is no quantitative stock assessment and no basic fishery indicator for the species and the SC rates the stock status as highly uncertain. Like the bigeye thresher shark, the pelagic thresher shark is affected by IOTC regulation 10/12, which prohibits the retention of any part of thresher sharks on board and encourages the release of live thresher sharks. Only 2 t of pelagic thresher sharks were reported in both 2009 and 2010. The SC considers the data to be incomplete.

Annex F: summary of international fisheries management agreements

International instruments

The 1982 **United Nations Convention on the Law of the Sea**[119] (UNCLOS) sets the framework within which states must manage their fisheries. It includes rules relating to the EEZ, the high seas and to highly migratory species. Within the EEZ, the coastal state has "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living..." (UNCLOS, Art. 56).

The UNCLOS establishes rights and duties for coastal states in both the conservation and utilisation of marine fisheries resources. UNCLOS permits the coastal state to determine the total allowable catch for each species within its EEZ (Art.61 (1)) on the basis of the best scientific evidence available to it (Art.61 (2)). Available scientific information and other data relevant to the conservation of fish stocks should be contributed and exchanged between states through competent international organisations (Art.61 (5)).

A coastal state must promote the optimum utilisation of its fisheries resources within its EEZ without prejudice to conservation (Art. 62). It must determine its capacity to harvest its total allowable catch and grant access to other states to that part of its TAC which it is not able to harvest (Art. 62 (2)). The coastal state has the right to determine the conditions under which foreign vessels are allowed access to the surplus of the TAC and has full regulatory powers (Art. 62 (4)) within its EEZ.

In the exercise of its sovereign rights over the living resources of its EEZ, a coastal state may "take such measures, including boarding, inspection, arrest and judicial proceedings, as may be necessary to ensure compliance with the laws and regulations adopted by it in conformity with this Convention" (Art. 73 (1)).

Where the same stocks occur within the EEZ of more than one state (trans-boundary stocks) or within the EEZ and "in an area beyond and adjacent to the zone" (straddling stocks), the coastal states and those states fishing these stocks have a duty to agree on measures for the conservation and management of such stocks (Art.63 (1), (2)).

There are particular provisions relating to highly migratory species. The coastal state and other states which harvest highly migratory species listed in Annex 1 of the Convention "shall co-operate... with a view to ensuring conservation and promoting the objective of optimum utilisation ... both within and beyond the EEZ" (UNCLOS 1982, Art.64). Annex 1 includes the species in the Indian Ocean of interest to the European fleet. Further rules relating to straddling stocks and highly migratory species were agreed at UN Conference on Straddling Stocks and Highly Migratory Species and will be further discussed below.

UNCLOS lays down a duty on states to co-operate in the management and conservation of high seas fishery resources (Art 117 - 120). The "*Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks (UN 1995)*", generally referred to as the UN Fish Stocks Agreement, seeks to strengthen these provisions.

The **UN Fish Stocks Agreement**[120] provides for the establishment of regional or sub-regional management organisations (Part III). States with a "real interest in the fisheries concerned may become members of such organisations" (Art. 8(3)) and only states which agree to apply the management measures can have access (8(4) to the fisheries. They need not be members of the organisation.

The Agreement sets out comprehensive areas in which such a management organisation will have competence covering scientific research, stock assessment, monitoring, control, surveillance and enforcement (Art. 10).

---

[119] United Nations, 1982, **United Nations Convention on the Law of the Sea** (UNCLOS).

[120] United Nations, 1995. Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks. http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N95/274/67/PDF/N9527467.pdf?OpenElement

Compliance with the Agreement builds on flag state jurisdiction contained in UNCLOS Art. 90-98. A state may authorise a vessel flying its flag to fish on the high seas only where it is able to exercise effectively its responsibilities of enforcement under the Agreement (Art. 18(2)). However, provision is made for the flag state to permit access by inspectors from other states (Art. 18(3)(g)(i)) and the use of onboard observers from other states ((Art. 18(3)(g)(ii)).

Article 21 provides for inspectors from a member state of a regional organisation established under the Agreement to board and inspect any vessel of another state party to the Agreement. The flag state must take action against a vessel reported to have committed a serious violation, detailed in Article 21 (11). Failure to do so gives the inspecting state the right to take action and the procedures for doing so are detailed in Article 22.

A significant addition to the set of legal instruments is the 2009 **Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.** The Agreement has not yet entered into force but the IOTC, recognising its usefulness for the region, anticipated its enforcement by adopting a binding Resolution 10/11[121], which is almost identical to the FAO Agreement. Port state compliance and enforcement measures are a relatively cost-effective element of an MCS system. The Agreement establishes a duty on port states to designate ports for use by foreign-flagged fishing vessels and vessels supporting or servicing fishing vessels; to require specific information from vessels in advance of entry into port; to inspect foreign-flagged fishing and support vessels; to deny port entry or port use and services to IUU vessels and, in co-operation with flag states, other coastal states and RFMO's, to take other enforcement measures. The effective enforcement of port state measures depends on the establishment of and well-trained and motivated fisheries port inspectorate and good communication and co-operation between national agencies and with regional and global fisheries bodies[122].

The **Southern Indian Ocean Fisheries Agreement[123],** which entered into force on 21 June 2012, and to which the EU, the Comoros and the Seychelles are all party, would be of interest if there is a decision to target species other than tuna and tuna-like species. The Agreement covers the Indian Ocean areas beyond national jurisdiction for species other than tuna and tuna-like species.

Voluntary Instrument

The Code of Conduct for Responsible Fisheries (1995) is a global voluntary instrument that provides principles and standards for the conservation, management and development of fisheries. Although voluntary, parts of it have been give binding effect though other international legal instruments such as UNCLOS. The Articles of the Code cover all the major thematic areas of fisheries, including fisheries management, fishing operations, aquaculture development, integration of fisheries into coastal area management, post-harvest practices, trade, and fisheries research. It also contains general principles, provisions relating to its implementation, monitoring, updating, and special requirements of developing countries.

Agreements that form an integral part of the Code of Conduct include the 1993 FAO Compliance Agreement and various international plans of action (IPOAs), which were all in force in 1999, in particular; the 2001 IPOA to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing; the IPOA for Reducing Incidental Catch of Seabirds in Longline Fisheries; the IPOA for the Conservation and Management of Sharks; and the IPOA for the Management of Fishing Capacity.

[121] IOTC, 2011. Resolution 10/11, On Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. http://www.iotc.org/files/CMM/Resolution%2010-11.pdf

[122] FAO, 2009. Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. Found at: http://www.fao.org/fileadmin/user_upload/legal/docs/1_037t-e.pdf

[123] FAO. 2006. Southern Indian Ocean Fisheries Agreement http://ec.europa.eu/world/agreements/downloadFile.do?fullText=yes&treatyTransId=11941

Annex G: IOTC conservation and management measures applicable to vessels under the FPA

Table 9.1: IOTC CMM relevant to the fisheries under assessment and compliance data requirements

CMM Resolution no.	Name of Resolution	Information required to ensure compliance (as per IOTC compliance reporting system)
1. Implementation obligation		
10/09	*Concerning the functions of the compliance committee*	• *Compliance questionnaire*
2. Management standards		
01/02	*Relating to control of fishing activities*	• *Documents listed in resolution found on board* • *Marking of vessels and gears* • *Logbook on board*
09/05	*To prohibit the use of large-scale driftnets on the high seas in the IOTC area*	• *Ban on large-scale driftnets*
10/01	*Time area closure for longliners in February 2012*	• *Legal and administrative measures to implement the area Closure*
3. Reporting on Vessels		
10/08	*Concerning a record of active vessels fishing for tunas and swordfish in the IOTC area*	• *List of Active vessels*
09/02	*On the implementation of a limitation of fishing capacity of contracting parties and co-operating non-contracting parties*	• *Fleet Development Plan (FDP)* *Reference Capacity* • *List of vessels for Tropical Tuna during 2006* • *List of vessels3 for SWO and ALB during 2007*
07/02	*Concerning the establishment of an IOTC record of vessels authorised to operate in the IOTC area*	• *List of Authorized vessels 24 m in length overall or more* • *List of Authorized vessels (less than 24m, operating in waters outside EEZ of the flag state)*
10/07	*Concerning a record of licenced foreign vessels fishing for tunas and swordfish in the IOTC area*	• *List of foreign vessels licenced in EEZ* • *List of foreign vessels denied a licence*
4. Vessel Monitoring System		
06/03	*On establishing a vessel monitoring system programme*	• *Adoption VMS for all vessels greater than 15 m in length overall* • *VMS report on the progress and implementation*
10/01	*Time area closure for longliners in February 2012*	• *Summary of VMS record*
5. Mandatory statistical requirement		
Res. 10/02	*Mandatory statistical requirements for IOTC members and co-operating non-contracting parties (CPC's)*	*Nominal catch* • *Coastal fisheries* • *Surface fisheries* *Catch & Effort* • *Coastal fisheries* • *Surface fisheries* *Size Frequency* • *Coastal fisheries* • *Surface fisheries* *Fish Aggregating Devices (FAD)*

CMM Resolution no.	Name of Resolution	Information required to ensure compliance (as per IOTC compliance reporting system)
		• *Supply vessels* • *Days at sea by supply vessels* • *FADs set by type*
6. Implementation of mitigation measures and by-catch of non-IOTC species		
05/05	*Concerning the conservation of sharks caught in association with fisheries managed by IOTC*	• *Submission of data regarding Sharks*
10/12	*On the conservation of thresher sharks (Family Alopiidae) caught in association with fisheries in the IOTC area of competence*	• *Prohibition on thresher sharks of all the species of the family Alopiidae*
09/06	*On marine turtles*	• *Sea turtles report* • *Carry line cutters and de-hookers on board*
10/06	*On reducing the incidental by-catch of seabirds in longline fisheries*	• *Seabirds report* • *Implementation of mitigation* • *measures south of 25°S*
7. Illegal, Unreported and Unregulated (IUU) Vessels		
11/03	*On establishing a list of vessels presumed to have carried out illegal, unreported and unregulated fishing in the IOTC area of competence*	• *IUU listing*
07/01	*To promote compliance by nationals of contracting parties and co-operating non-contracting parties with IOTC conservation and management measures*	• *Compliance by nationals*
8. Transhipments		
11/05	*On establishing a programme for transhipment by large-scale fishing vessels*	• *At sea transhipments – CPC report* • *Transhipments in port report* • *List of Authorized carrier vessels*
9. Observers		
11/04	*On a regional observer scheme*	• *Regional Observer Scheme (No. of vessels monitored and coverage by gear type)* • *5% Mandatory, at sea (> 24m)* • *5% Phasing in, at sea (< 24m)* • *5 % Phasing in Artisanal landings* • *Observer reports*
10. Statistical document programme		
01/06	*Concerning the IOTC Bigeye tuna statistical document programme*	• *1st Semester report* • *2nd Semester report* • *Annual report*
11. Port inspection		
05/03	*Relating to the establishment of an IOTC programme of inspection in port*	• *Port inspection programme*
10/11	*On port State measures to prevent, deter and eliminate illegal, unreported and unregulated fishing*	• *List of designated ports* • *Designated competent Authority* • *Prior notification periods* • *Inspection report*

Source: IOTC, 2012.[124] [125]

[124] http://www.iotc.org/files/CMM/IOTC%20-%20Collection%20of%20ACTIVE%20CMMs%2020%20June%202012.pdf

Annex H: summary of key priorities and strategies of the fisheries policy

Table 9.2: summary of the national fisheries policy (2005)

Priorities	Strategies
Research and Development	• Ensure that research is conducted into all aspects of fisheries • Ensure the availability of research facilities and provide appropriate training, staffing, institutional building and financial resources to conduct research • Ensure that data generated by research are analysed and that the results of such analyses are published, respecting confidentiality • Promote responsible research and development of aquaculture
Resource Management	• Promote the use of satellite imagery and geographical information systems as an aid for fisheries research, decision making and management • Promote responsible fishing practices through appropriate use of information technologies and technical know-how • Develop appropriate operational resource management plans for the different fisheries • Actively promote research activities • Encourage co-operation where appropriate and beneficial with international and regional organisations • Establish mechanisms for fisheries monitoring, enforcement aspects and surveillance to ensure compliance with conservation and management measures and legislation, as well as those adopted by regional or international organizations or arrangements
Monitoring, Control and Surveillance (MCS)	• Improve the monitoring, control and surveillance activities • Ensure that monitoring, control and surveillance as well as law enforcement are reinforced through the provision of sufficient budgetary allocation, capacity building and training • Participation in regional or international MCS initiatives
International Agreements and Co-operation	• Reinforce international co-operation at bilateral and international levels; including monitoring, control and surveillance, scientific research, trade and development. • Sign fishing agreements with other countries and fishing entities giving due regards to the sustainability of the stocks and grant licences to foreign fishing vessels until such time the country is capable of harvesting the tuna resources in its EEZ
Legislative Framework	• An effective legal and administrative framework at the national level for fisheries resource conservation and management • Ensure that laws and regulations provide for sanctions applicable in respect of violations
Institutional Framework	• Put in place institutional structures that will minimise bureaucracy and improve timeliness and effectiveness of service delivery • Ensure that user groups and stakeholders have adequate opportunities to raise their concerns and actively take part in decision making • Make clear distinctions between the responsibilities related to policy decisions, administration, MCS, research and scientific advice, to the consultation process with resource user groups and other stakeholders • Make adequate resources available for the reinforcement of institutional capacity building

[125] http://www.iotc.org/files/proceedings/2012/coc/IOTC-2012-CoC09-CR23_Rev2[E].pdf

Priorities	Strategies
Investment	• Active encouragement and facilitation of fisheries related investments • Ensure that any fisheries related investment does not compromise the sustainable and responsible use of marine resources • Create an enabling environment to further encourage and promote private investment in processing, value addition and commercialising of fisheries products
Trade and Commerce	• Ensure that international trade in fish and fishery products does not compromise the sustainable development of fisheries and responsible utilisation of the marine resources • Pursue a trade policy in fish and fish products in accordance with internationally agreed trade rules • Revision of laws, regulations and administrative procedures applicable to international trade in fish and fish products • Encourage new initiatives in market research and product development, marketing and distribution channels
Infrastructure Development	• Support initiatives to improve port services and increase labour productivity • Investigate the possibility of making the Port Victoria a 24 hour operational port • Consultation with other parties to constantly review the tariff structure for port services • Encourage private sector initiatives or joint ventures for the provisions of shore based facilities and services • Identify funds either locally or abroad, for the development and improvement of the existing port infrastructure, services and facilities • Identify locations for the development of a new port and the development of shore - based installations for the benefit of local fishers
Human Resources Development	• Identify the long-term manpower and training requirements with regard to fishing and fisheries related activities • Provide opportunities for formal and informal training in all fisheries related matters

Source: summarised from the Fisheries Policy of the Seychelles (http://www.sfa.sc/policy/policy2005.pdf)

Annex I: objectives of the FPA

The objectives of the FPA are largely based on the Conclusions of the European Council regarding the fisheries partnership agreements in 2004.

"Objectives of Fisheries Partnership Agreements

Strategic objectives

- to safeguard the EU distant-water fishing and the employment linked to the fleets operating within FPAs;
- to ensure sustainable exploitation of surpluses of marine living resources in fisheries outside EU waters, in accordance with the general principles as defined for the conservation and sustainable management of fisheries resources under the CFP;

General objectives

- to contribute towards rational and sustainable exploitation of the surplus of coastal states marine resources thereby preventing the overfishing ;
- to facilitate the integration of developing coastal states into the global economy;
- to foster better global governance of fisheries by contributing to capacity building of Coastal States
- to ensure coherence between the political initiatives of the Community, notably with the environmental, trade and development policy.

Specific objectives

- to improve scientific and technical knowledge;
- to contribute towards combating illegal, unregulated and unreported (IUU) fishing;
- to pay regard to the interests of the local fisheries sector and the promotion of fair employment conditions in a secure environment ;
- to encourage the creation of an environment that is favourable to private investment and to the development of a dynamic, viable and competitive private sector.
- to promote the respect of human rights and democratic principles, taking into account the relevant provisions of the Cotonou Agreement

Tools

- policy dialogue with third countries consolidated by a binding instrument laying down the rights and obligations of both Parties to the FPA;
- transparent and binding legal framework encompassing all fishing activities by EU vessels operating in waters under the sovereignty of a third country exclusively under an FPA and to discourage reflagging ;
- EU financial contribution
- licence fees for the fishing activities of EU vessels that are fair, non-discriminatory and commensurate with the benefits gained from the access conditions.
- procedures for implementing, monitoring and reviewing the FPA"

Source: Terms of Reference of the ex post evaluation of the current Protocol to the Fisheries Partnership Agreement between the European Union and the Republic of Seychelles and ex ante evaluation including an analysis of the impacts of the future Protocol on sustainability (Framework contract MARE/2011/01 – Lot 3, specific contract 4).

Annex J: compliance with obligations in the Agreement, Protocol and Annex

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
Art, para	**The Agreement**			
	Statistical co-operation			
4.1	During the period covered by this Agreement, the Community and Seychelles shall monitor the evolution of resources in Seychelles' fishing zone; a joint scientific meeting shall be held annually to that end, alternately in the Community and in Seychelles.	Yes	The Science Committee of the IOTC has taken over this function as the SFA does not make independent evaluation of the resources beyond the IOTC Science Committee. Meetings have been held annually and attended by both parties.	IOTC reports.
5.0	**Access by Community vessels to fisheries in Seychelles' waters**			
5.1	Seychelles hereby undertakes to authorise Community vessels to engage in fishing activities in its fishing zone in accordance with this Agreement, including the Protocol and Annex thereto.	Yes	The Seychelles Licencing Authority (SLA) has issued to EU vessels authorisations. No report of an EU vessel being refused an authorisation under the Protocol.	Discussion with vessel owners/agents, SFA. JC records.
5.2	The fishing activities governed by this Agreement shall be subject to the laws and regulations in force in Seychelles. The Seychelles authorities shall notify the Commission of any amendments to that legislation.	Yes	Commission aware of the proposed new fisheries law.	Commission confirmation.
5.3	Seychelles shall assume responsibility for the effective application of the fisheries monitoring provisions in the Protocol. Community vessels shall co-operate with the Seychelles authorities responsible for carrying out such monitoring.	Yes	Have operational VMS. Observers not on board vessels due to piracy necessitating armed personal occupying accommodation and other operational issues.	Consultant's visit.
5.4	The Community hereby undertakes to take all the appropriate steps required to ensure that its vessels comply with this Agreement and the legislation governing fisheries in the waters over which Seychelles has jurisdiction.	Yes	No complaint of non-compliance by Commission.	Consultant's visit.
	Licences			
6.1	Community vessels may fish in Seychelles' fishing zone only if they are in possession of a fishing licence issued under this Agreement.	Yes	All vessels applied and issued with licences.	List of licenced vessels from Commission. Record of JC.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
	Financial contribution			
7.1	The Community shall pay Seychelles a financial contribution in accordance with the terms and conditions laid down in the Protocol and Annexes.	Yes	Contribution paid in December 2011 following ratification by Seychelles and entry into force of protocol. 5.6 million EUR paid.	Record of JC. Information from Central Bank of Seychelles and SFA.
7.2	The component of the financial contribution for access by Community vessels to the Seychelles' fisheries shall be determined and managed in the light of objectives identified by common accord between the Parties in accordance with the Protocol, to be achieved in the context of the sectoral fisheries policy in Seychelles and an annual and multi-annual programme for its implementation.	Yes	Implementation behind schedule but progressing.	JC meeting reports, discussions with SFA and Commission.
7.3	The financial contribution granted by the Community shall be paid each year in accordance with the Protocol.	Yes	The financial contribution has been paid on schedule, although fishing authorisations granted well ahead of the entry into force of the protocol due to the Agreement reached to provisionally implement the Protocol from the 18.01.2011.	Commission, Seychelles confirmation.
	Promoting co-operation among economic operators and in civil society			
8.1	The Parties shall encourage economic, commercial, scientific and technical co-operation in the fisheries sector and related sectors. They shall consult one another with a view to coordinating the different measures that might be taken to this end.	Yes	Steps have been taken to encourage co-operation at both a political and operational level. For economic co-operation this is demonstrated through the interim EPA (20120, the EU is the Seychelles' largest export market totalling just over EUR 3 billion euros worth of goods in 2011, mainly canned tuna, also fresh and frozen fish, medical appliances, rum, cinnamon bark and other products. Co-operation through the IOTC and its associated committees were reported to have been positive and provide a forum for general co-operation. Technical co-operation has mainly been through the	EU website. Project reports.

Article, Chapter, Section, Para.	Covenant	Compliance status (yes, no, partial, n/a, unknown)	Justification, explanation, evidence and any additional comments	Basis for evaluation of compliance status, for example source of information
			EU supported programmes; the SmartFish project, the ACP Fish II project and the Regional Plan for Fisheries Surveillance in the South-West Indian Ocean. They have contributed additional technical co-operation between the EU and Seychelles in areas of governance, policy, trade, MCS and specifically in training and implementing PSM and MCS.	
8.2	The Parties shall encourage exchanges of information on fishing techniques and gear, preservation methods and the industrial processing of fisheries products.	Yes	General exchanges take place at various committee and technical meetings. Concrete examples of exchange are through the workshops of the ACP Fish II and SmartFish projects. The Sector development fund has also funded a value addition feasibility project with a local processing plant to improve preservation of processed by-catch and other species. The European Investment Bank (EIB) has also granted a loan of 12 million EUR to the local processor for hardware and equipment to implement the feasibility plan findings.	Project reports. Consultants field work and interviews. SFA records.
8.3	The Parties shall endeavour to create conditions favourable to the promotion of relations between enterprises from the Parties in the technical, economic and commercial spheres, by encouraging the establishment of an environment favourable to the development of business and investment.	Yes	The Seychelles was ranked 103rd out of 183 countries for ease of doing business, and in the Strategy 2017 providing an efficient and transparent service to facilitate the private sector was a priority. The main investment example is the IOT cannery, with Thai Union as the main shareholder of MW Brands (MWB), a French based company, which holds 60% shares in IOT, while the Seychelles government through Société Seychelloise D'Investissements (SSI) holds the remaining 40%. Other examples of investment opportunity are in smaller scale projects focusing on the niche markets of eco-friendly, high quality products targeting the European markets.	Consultants field work and interviews with processors and SFA.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
8.4	The Parties shall encourage, in particular, the setting-up of joint enterprises in their mutual interest. The creation of joint enterprises in Seychelles and the transfer of Community vessels to joint enterprises shall systematically comply with the Seychelles and the Community legislation.	Yes	The IOT factor (see 8.3) is an example of a joint venture between the government of Seychelles and a company with EU interest. Re-flagging of EU vessels has not included any joint venture arrangements to date but in the draft fisheries Act special provision is made for joint ventures with a minimum ownership of 20% to Seychellois citizens.	Consultants visit. Draft Fisheries Act 2012.
9.	**Joint Committee**			
9.1	The Joint Committee shall perform the following functions: monitoring performance of agreement, particularly the definition of the annual and multi-annual programming referred to in Article 7(2) and evaluation of its implementation, liaison, forum for dispute settlement, assessing level of fishing opportunities and financial contributions and other functions mutually agreed upon by the Parties.	Yes	The JC appears to function as an effective forum for discussion and resolution of issues of concern to the parties.	Record of JC meetings.
9.2	The Joint Committee shall meet at least once a year, alternately in the Community and in Seychelles, and shall be chaired by the Party hosting the meeting. It shall hold a special meeting at the request of either of the Parties.	Yes	The JC met Mauritius in 9-11 February 2011 and in Seychelles 16-27 February 2012 and in Brussels in November 2012. Also technical meetings are held on an ad-hoc basis – these are useful and less formal. So far two meetings have been held with SFA and Fisheries Attaché, Commission Delegation, Mauritius.	Record of JC meetings.
11.	**Duration**			
11.1	This Agreement shall apply for six years from the date of its entry into force; it shall be renewable for additional periods of six years, unless notice of termination is given in accordance with Article 12.	Yes	Following some confusion, the dates were agreed through an exchange of letters. The FPA entered into force 02.11.07 for a period of six years, i.e. until 01.11.13.	Official Journal, 25.10.2012, L 295/24 [EN]

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
Art, para	**Protocol**			
1.	**Period of application and fishing opportunities**			
1.3	Vessels flying the flag of a Member State of the European Union may engage in fishing activities in Seychelles' waters only if they are in possession of a fishing authorisation issued under this Protocol.	Yes	Fishing authorisations issued in terms of the Protocol for 21 PS for 2011 and for 20 PS vessels in 2012 by the SLA.	JC reports. IOTC compliance reports, SFA MCS reports.
2.	**Financial contribution — Methods of payment**			
2.4	The European Union shall pay the total amount fixed in paragraph 2 (a) and 2 (b) of this Article (i.e. respectively EUR 3 380 000 and EUR 2 220 000) each year during the period of application of this Protocol. Payment shall be made no later than 30 days after this Protocol's entry into force for the first year, and no later than the anniversary date of this Protocol for the following years.	Yes	Payments up to date and on time.	Commission. SFA.
2.5	If the overall quantity of catches of tuna by EU vessels in Seychelles' EEZ exceeds 52 000 t per year, the amount of the annual financial contribution for access rights shall be increased by EUR 65 for each additional tonne caught. However, the total annual amount paid by the EU shall not be more than twice the amount indicated in paragraph 2 a. (EUR 6 760 000).	n/a	Not applicable because the catch by EU vessels in the Seychelles EEZ for 2011 was 40 545 t.	Catch data provided by DG Mare. SFA.
2.6	Seychelles shall have full discretion regarding the use to which the financial contribution specified in Article 2 paragraph 2 (a) is put.	Yes	Ministry responsible for finance confirmed that these funds are used at national discretion for development and infrastructure and priority public goods. They are audited by the Office of the Attorney General with oversight from the Finance and Public Accounts Committee of the National Assembly.	Confirmed by member of the national Assembly of Seychelles.
2.7	The financial contribution shall be paid into a single Seychelles' Public Treasury account opened with the Central Bank of Seychelles. The account number shall be provided by the Seychelles authorities.	Yes	Payments are made into a single Seychelles Public Treasury account opened with the Central Bank of Seychelles.	Confirmed by Central Bank of Seychelles.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
3.	**Promoting responsible fishing and sustainable fisheries in Seychelles' waters**			
3.1	As soon as this Protocol enters into force and no later than 3 months after that date, the EU and Seychelles shall agree, within the Joint Committee on a multiannual sectoral programme and detailed implementing rules covering, in particular…	Yes	Annual and multiannual guidelines were presented and agreed at the Feb 2011 JC meeting. At the February 2012 JC meeting, information was found to be missing from the annual plan for 2012 but the missing information was added and both Parties agreed that it be adopted Plan agreed for sectoral support.	JC Meeting Records.
3.2	Any proposed amendments to the multiannual sectoral programme shall be approved by both Parties within the Joint Committee.	n/a	No amendments proposed.	
4.	**Scientific co-operation on responsible fishing**			
4.1	The two Parties hereby undertake to promote responsible fishing in Seychelles' waters based on the principle of non-discrimination between the different fleets fishing in those waters.	Yes	Both parties have so agreed by adoption of the Protocol. No evidence of discrimination in conditions for different fleets.	Consultant's visit.
4.2	During the period covered by this Protocol, the EU and Seychelles shall endeavour to monitor the state of fishery resources in the Seychelles' EEZ.	Yes	Monitoring takes place through the IOTC, their Scientific Committee and their Annual Sessions.	Discussions with IOTC, SFA and evidence in the IOTC documents including the Report of the 14th Session of the IOTC Scientific Committee.
4.3	Both Parties shall endeavour to respect the resolutions and recommendations of the IOTC regarding conservation and responsible management of fisheries.	Partial	Evidence suggests that both Parties do endeavour to do so, although they fall sort in certain respects.	IOTC compliance reports
4.4	Parties may consult each other within the Joint Committee and, where necessary, agree on the measures to ensure sustainable management of Seychelles' fisheries resources.	Yes	Parties have consulted each other in this respect. E.g. over regional VMS issues	JC meeting records.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
5.	**Adjustment of fishing opportunities by mutual agreement**			
5.1	The fishing opportunities may be adjusted by mutual agreement insofar as the recommendations and resolutions of IOTC support that such an adjustment will secure the sustainable management of tuna and tuna-like species in the Indian Ocean.	n/a	Fishing opportunities have not been increased, although there was an indication that this may become more relevant in the 2012 year.	SFA, vessel agents, EU catch data.
6.	**New fishing opportunities**			
6.1	In the event that EU fishing vessels become interested in engaging in fisheries not provided for in Article 1 of the FPA, the Parties shall consult each other before any possible authorisation is granted for any such activities and, where appropriate, agree on the conditions for such fishing including effecting corresponding amendments to this Protocol and the Annex thereto.	n/a	Additional fishing activities to those provided for in Article 1 have not been sort by EU vessels.	SFA and vessel agents.
7.	**Conditions governing fishing activities – Exclusivity clause**			
7.1	Without prejudice to Article 6 of the FPA, EU's vessels may fish in Seychelles' waters only if they are in possession of a valid fishing authorisation issued by Seychelles under this Protocol and the Annex hereto.	Yes	No evidence of illegal fishing by EU vessels in the Seychelles EEZ.	IOTC Compliance reports, SFA MCS reports.
	Suspension and review of the payment of the financial contribution			
8.1	Notwithstanding the provisions laid out in Article 9 of this Protocol, the financial contribution referred to in Article 2 paragraph 2 (a) and (b) shall be reviewed or suspended after consultation between the two Parties provided that the EU has paid in full any amounts due at the time of suspension….	n/a	No suspension or review of the payment of the financial contribution has been requested from the EU.	Discussions with the SFA and Central Bank of Seychelles.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
8.2	The EU reserves the right to suspend, totally or partially, the payment of the specific contribution provided for in Article 2, paragraph 2 (b) where the results of the sectoral policy support obtained are found to be materially inconsistent with the budgeted programming following the evaluation carried out and consultations within the Joint Committee as provided by Article 3 of this Protocol.	n/a	The EU has evaluated and carried out the consultations with respect to the use of the sectoral policy support funds during the Joint Committee and during visits to the Seychelles and has found them to be consistent with the budgeted programming. However, concerns have been expressed by the Commission regarding the slow uptake of sectorial policy support funding. It should be noted, however, that (1) the largest element is infrastructure (the quay), for which funding needed to be accumulated and (2) the first payment was made nearly a year after the effective start of the Protocol, due to delays in ratification.	SFA and EU consultations. JC Meeting Records
9.	**Suspension of the implementation of the Protocol**			
9.1	Implementation of this Protocol shall be suspended at the initiative of either one of the Parties subject to consultations between and agreement of the Parties within the Joint Committee.	n/a	Neither party has requested a suspension of the Protocol.	Record of Joint Committees.
10.	**National Law**			
10.2	The authorities of Seychelles shall inform the European Commission of any changes or new legislation regarding the fishery policy.	Yes	New draft Act available on the SFA website for stakeholder comments. EU informed in Joint Committee.	Consultant's visit and SFA website.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
Ch, Sect, para	**Annex**			
I.	**Chapter I: Management measures**			
1.	**Application and issue of fishing authorisations**			
1.4	All European Union vessels applying for a fishing authorisation shall be represented by an agent resident in Seychelles. The name and address of that agent shall be stated in the application.	Yes		SFA and Agent consultations.
1.5	The relevant European Union authorities shall submit to the competent authority of Seychelles a fishing authorisation application for each vessel wishing to fish under the Fisheries Partnership Agreement at least 20 days before the date of commencement of the period of validity.	Yes	Issued to SFA and approved then passed to the SLA for issuing of fishing authorisation.	SFA and Agent consultations.
1.7	Each application for a fishing authorisation shall be submitted to the competent authority of Seychelles ….	Yes		SFA and Agent consultations.
1.10	Fishing authorisations for all vessels shall be issued to ship-owners or their agents within 15 days of receipt of all the documents referred to in point 7 by the competent authority of Seychelles.	Yes	No records or reports of this not occurring.	SFA and Agent consultations.
1.15	The fishing authorisation must be kept on board at all times.	Yes	No reported infringements.	SFA and Agent consultations.
2.	**Fishing authorisation conditions fees and advance payments**			
2.1	A fishing authorisation is valid for 1 year, from the commencement date of the Protocol's provisional implementation, and is renewable subject to fulfilment of application conditions as laid out in Section 1 above.	Yes		SFA.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
2.2	Fishing authorisations shall be issued by the Seychelles competent authorities as follows: tuna seiners a flat rate amount EUR 61 000 per vessel per year payable in two instalments, 50 % at the time of application of fishing authorisation, and 50 % within 100 days after the start of the validity period of the fishing authorisation…	Yes	Provided authorisations in January 2011	JC records. CBS meeting.
2.4	The Seychelles authorities shall draw up a statement of fees due in respect of the previous calendar year on the basis of catch declarations submitted by European Union vessels and other information in the possession of the Seychelles authorities.	Yes		Commission Official.
2.5	The statement shall be sent to the Commission before 31 March of the current year. The Commission shall transmit it before 15 April simultaneously to ship-owners and national authorities of the concerned Member States.	Partial	It was received in May rather than the end of March. The Commission transmitted it and there were no divergences.	Commission Official.
3.	**Supply vessels**			
3.2	Supply vessels flying the flag of a Member State of the European Union shall be subject to the same procedure governing transmission of fishing authorisation applications as described in Section 1 above, to the extent applicable to them.	n/a	Two EU supply vessels were authorised by the Seychelles to operate in terms of the Protocol in 2011.	JC Meeting reports.
III	**Chapter III: Monitoring**			
1.	**Catch recording**			
1.1	All vessels authorised to fish in Seychelles' waters under the FPA shall be obliged to communicate their catches to the competent authority of Seychelles.	Yes	SFA inspectors collect logbooks from vessels in port that contain time, position and catch by species for each fishing event. Catch reports are also submitted every three days to SFA by email.	SFA, FMC.
1.3	The Parties shall endeavour to introduce a catch data system based exclusively on the electronic exchange of all the information described above. Therefore, the two Parties shall consider replacing the paper version of the statement of catches form into its electronic format as soon as possible.	Yes	Electronic log books discussed at Feb 2012 JC meeting, but not in place yet. Catch reports are currently emailed.	Record of JC meeting. SFA, FMC.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
2.	**Catch communication: entering and leaving Seychelles' waters**			
2.2	EU vessels shall notify the Seychelles authorities at least 3 hours in advance of their intention to enter or leave Seychelles' waters and every 3 days during their fishing activities in Seychelles' waters of their catches during this period.	Yes	It is also an obligation under the Fisheries Act (subsidiary regulations) to declare the position on entry and exit.	SFA and Agent consultations.
2.3	When notifying entry/leaving, vessels shall also communicate their position at the time of communication and the volume and species in catches kept on board. These communications shall be made in the format set out in appendix 5, by fax or e-mail, to the addresses provided therein.	Yes	This system is reported to be in place; however the reporting of catch on board is not a requirement in the current Fisheries Act.	SFA and Agent consultations.
3.	**Landing**			
3.1	All vessels wishing to land catches in Seychelles' ports shall notify the names of the landing fishing vessels, the tonnage by species to be landed, the day of landing and the recipient of landed catch to the competent authority of Seychelles at least 24 hours in advance.	Yes	This system is in place and the agents do report to SFA. However, it was noted that in some cases this is difficult as SFA does not function 24/7. SFA acknowledges this difficulty.	SFA and Agent consultations.
3.2	Tuna seiners shall endeavour to supply tuna to the Seychelles' cannery and/or the local industry at international market price.	Yes	Tuna seiners do supply tuna to IOT and less frequently to the other processors.	SFA, Agent and Processor consultations.
3.3	Tuna seiners landing in Port Victoria will endeavour to make their by-catches available locally at the local market price.	Yes	By-catch species are sold to two other local processors, the Spanish seiners were reported to sell more by-catch to these processors than the French.	SFA, Agent and Processor consultations.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
4.	**Transhipment**			
4.1	All vessels wishing to trans-ship catches in Seychelles' waters shall do so only within Seychelles' ports.	Yes	No infringements recorded and transhipments within port taking place.	IOTC compliance records, SFA MCS report.
4.2	The ship-owners or their agents must notify the following information to the competent authority of Seychelles at least 24 hours in advance: the names of the transhipping fishing vessels, the names of the cargo vessels, the tonnage by species to be trans-shipped and, the day of transhipment.	Yes	This system is in place and the agents do report to SFA. However, it was noted that in some cases this is difficult as SFA does not function 24/7. SFA acknowledges this difficulty.	SFA and Agent consultations.
5.	**Vessels monitoring system**			
5.1	Vessels shall be monitored, inter alia, by vessel monitoring systems, without discrimination, in accordance with the provisions set out below.	Yes		SFA and Agent consultations.
IV	**Chapter IV: Embarking seamen**			
1.	Each tuna seiner shall take on board during its trip in Seychelles' waters at least two Seychelles seamen designated by the agent of the vessel, in agreement with the ship-owner, from the names on a list submitted by the competent authority of Seychelles.	Partially	It was reported that there is no list of seamen in circulation although the SFA keeps in regular contact with the ship owners via the agent to discuss and monitor the situation. There are also a limited number of seamen wishing to go to sea at this time, due mainly to issues described below and also due to competition for qualified seamen from the tourist industry. A job that is generally considered less demanding, better paid and with better conditions of work.	Current situation not discussed at 2011, 2012 JC meetings. SFA, Agent and seamen organisation consultations.
3.	The ship-owner or agent shall inform the competent authority of Seychelles of the names and particulars of the Seychelles seamen taken on board the vessel concerned, mentioning their position in the crew.	Yes	The agent reports to the SFA when Seychellois crew are taken on board.	SFA, Agent and seamen organisation consultations.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
4.	The International Labour Organisation's Declaration on Fundamental Principles and Rights at Work shall apply as of right to seamen signed on by EU vessels…..	Partial	The manner in which to apply the ILO standards is not agreed between all parties. Seychelles authorities do not regard the conditions of service of its seamen on at least some EU vessels as meeting ILO standards and expressed this view at the February 2012 JC meeting. The ILO sets a standard basic salary for seamen. The Seychelles seamen in some cases get this with bonuses as extra (for tasks like bird spotting, chef assistant etc.) while over's only receive this minimum inclusive of bonuses.	SFA, MFA, Agent and seamen organisation consultations.
5.	Seychelles seamen's employment contracts, a copy of which shall be given to the signatories, shall be drawn up between the ship-owners' agent(s) and the seamen and/or their trade unions or representatives in consultation with the competent authorities of Seychelles. These contracts shall guarantee the seamen the social security cover applicable to them, including life insurance, sickness and accident insurance and the pension benefits.	Yes	Contracts are drawn up and the SFA and possibly other competent authorities do oversee this but it has been acknowledged that the Seychelles authorities need to provide better support to this through their legislation. At the February JC it is recorded that the meaning and scope of 'minimum wage' from the Seychelles legislation should be considered in this case.	Record of JC Meeting. SFA, MFA, Agent and seamen organisation consultations.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
9.	Where the number of Seychelles seamen on board of tuna seiners does not reach the minimum level as provided in point 1 for reasons other than that referred to in the previous point, each ship-owner shall be obliged to pay a flat-rate amount equivalent to a figure based on the number of days that his fleet operated in Seychelles' waters, taking the entry of the first vessel and exit of the last one as a reference, multiplied by the amount per day which is fixed at EUR 20. The flat rate amount shall be paid to the Seychelles authorities at the latest within 90 days from the end of the validity period of the fishing authorisation.	Partially	For 2010, the last year that payment has been made, the Spanish seiners paid USD 28,620 and the French USD 11,380. The invoices for 2011 have not been sent yet as the SFA still needs to calculate from the VMS records how many days each vessel was in the Seychelles EEZ. SFA reported that there are still outstanding payments due from the period 2007 to 2009 for the Spanish seiners as the SFA and the companies have not agreed on the calculation of the days. However, at the February 2012 JC Meeting, it was reported that all outstanding amounts for the years 2005-2009 had been paid. The agreement in place between SFA and vessels owners is that at the end of the fishing period all the days fished in the Seychelles EEZ are totalled by fleet (i.e. Spanish and French) and the total number of sea days for Seychellois calculated per fleet. The payment due is calculated from these totals, not per each vessel per day.	Consultant's field visit, consultations with SFA and Agents. Annex 8 of JC meeting record.
10.	That sum shall be used for the training of seamen/fishermen in Seychelles and shall be paid into an account provided by the Seychelles authorities.	Yes	A civil society group representing some seamen, expressed concern about the use of the money claimed, however SFA confirmed that although the payments are made to the CBS they are then transferred to SFA for training and use at the Maritime Training Centre.	Consultant's field visit and consultations with SFA and stakeholders.

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
V.	**Chapter V: Observers**			
2.	For compliance purposes, provisions for observers are as follows, except in case of space limitations due to security requirements. Vessels authorised to fish in Seychelles' waters under the FPA shall take on board compliance observers appointed by the Seychelles authorities on the terms set out below. 2.1.1. European Union fishing vessels shall, at the request of the Seychelles authorities, take on board one observer, and when the Seychelles authorities think it appropriate and necessary, two observers, designated by the said authorities. 2.1.2. The Seychelles authorities shall draw up a list of vessels designated to take an observer on board and a list of the appointed observers. These lists shall be kept up to date. They shall be forwarded to the European Commission as soon as they have been drawn up, and every 3 months thereafter where they have been updated. 2.1.3. The Seychelles authorities shall inform the ship-owners concerned, or their agents, of the name of the observer appointed to be taken on board their vessel no later than 15 days before the observer's planned embarkation date.	No	No observers have been placed on the EU seiners by the SFA. Eight observers were training by the SWIOFP. Three are no longer working for SFA. Those remaining only received equipment in July 2012. They are now reported available to go to sea. However, the issue of piracy and the space used on the vessel for security personnel is critical and makes space for observers sparse.	Consultant's field visit and consultations with SFA and stakeholders.
VII	**Chapter VII: Control**			
1.	The European Union shall keep an up-to-date list of the vessels to which a fishing authorisation has been issued under this Protocol. This list shall be notified to the authorities of Seychelles responsible for fisheries inspection as soon as it is drawn up and each time it is updated.	Yes		Commission Official

Article, Chapter, Section, Para.	*Covenant*	*Compliance status (yes, no, partial, n/a, unknown)*	*Justification, explanation, evidence and any additional comments*	*Basis for evaluation of compliance status, for example source of information*
2.	Control procedures: 2.1. Masters of European Union fishing vessels engaged in fishing activities in Seychelles' waters shall co-operate with any Seychelles authorised officer carrying out inspection and control of fishing activities. 2.2. In order to facilitate safer inspection procedures, without prejudice to the provisions of the written laws of Seychelles, boarding should be conducted in such a way that the inspection platform and the inspectors can be identified as Seychelles authorised officers. 2.3. Seychelles may allow the European Union, or a body designated by it, to send EU inspectors to observe the activities of EU vessels, including transhipments, during onshore based controls.	Yes	Port inspections are made on vessels offloading or transhipping. In 2011 the patrol vessel (rented from the coastguard with fishery inspector onboard) spent 49 days at sea and for joint regional patrols 28 days were spent on these 'regional' patrols including the Seychelles EEZ. In 2012 no sea patrols have been made. EU vessels are reported to have complied with all requests for inspections.	SFA.
VIII	**Chapter VIII: Enforcement**			
1.1	Failure to observe any one of the provisions of the above chapters, the management and conservation of marine living resources measures, or the Seychelles' written laws, shall be subject to the penalties as laid down by the Seychelles' written laws.	n/a	No violations reported.	SFA.
2.	The Seychelles authorities shall inform the Delegation of the European Union responsible for the Seychelles and the flag State, within 48 hours, of the arrest and/or detention of any fishing vessel flying the flag of a Member State of the European Union fishing under the Fisheries Partnership Agreement in Seychelles' EEZ and shall transmit a copy of the inspection report, detailing the circumstances and reasons of the arrest and/or detention.	n/a	No arrests made.	SFA.

Source: consultants own realisation

Annex K: ex post model methodology description

The model takes input data from a variety of sources. These are:

- Ship owner FPA fees by vessel and year, provided by the Commission;
- EU FPA fees by year, taken from the FPA Protocol;
- Species specific catch by vessel and year, provided by the Commission;
- Data used for the estimation of prices of tuna were provided by Globefish. Table 9.3 shows the CIF price paid for three main species between 2009 and 2011. The CIF prices in were converted to Free on Board (FOB) prices by accounting for transportation costs, assumed to be 108 EUR per tonne, an estimate based on stakeholder interviews. More specifically skipjack price estimates were based on annual averages of CIF prices of frozen skipjack in Thailand. Yellowfin and bigeye tuna price estimates were based on annual averages of CIF prices of frozen yellowfin and bigeye tuna in Spain. Exchange rates were taken from an annual average of values from www.oanda.com.

  Table 9.3: prices of tuna used in the model

	EUR per tonne		
	SKJ	**YFT**	**BET**
2009	848	1 338	1 209
2010	969	1 767	1 425
2011	1 258	1 951	1 640

- Annual fleet segment specific cost and earnings data. These were based on three sources: costs and earnings data taken from a 2008 survey of French purse seiners in the Indian Ocean (survey by P. Guillotreau, as used in Miyake *et al*., 2010), 2011 Annual Economic Report data, using data for 2009; and costs and earnings data for 2006 from a survey of Basque-based purse seiners operating in the Indian Ocean (Murillas-Maza, 2011). Estimated costs and earnings profiles were presented to the producer organisations, providing an opportunity for input and comment;
- Catching sector social data (employment by EU and Seychelles) obtained from in-country visits and information provided by producer organisations; and,
- Market supply and value-chain information, based on information obtained from in-country visits and that provided by producer organisations.

The basis for the estimation of the economic and financial impacts of the Protocol presented in this report is as follows[126]:

- Separate costs and earnings profiles were developed for the EU purse seine vessels operating in Seychelles.
- No model has been constructed for longline vessels as none have used the Protocol (and there is no perceived possible usage under a future Protocol);
- Data for each profile is presented to show an average yearly costs and earnings profile for the Protocol period, *i.e.* the data presented is for 2011 only. Each profile calculates profit margins;

[126] The model structure is based on that used for the Kiribati FPA evaluation, and summarised again here for completeness.

- Each profile first provides some operational information on vessel size, fishing days in the Seychelles and elsewhere (based on data and information provided by the vessel operators), crew nationalities, the total estimated yearly catch and the catch in the Seychelles waters taken from vessel and species specific catch data provided by the Commission. This allows calculation of the dependency on Seychelles;
- Sales revenue is then estimated based on fish prices by species (with all yearly prices adjusted to reflect Free On Board (FOB) prices), to arrive at an average annual turnover, and average fish price per tonne;
- Variable and fixed costs are presented and broken down as far as is possible into different line items. These costs are best estimates based on data presented in Miyake *et al.*. (2010), which provides a costs and earnings profile for French purse seine vessels[127] operating in the Indian Ocean in 2007, the balance of costs shown in French Annual Economic Report (AER) data for the over 40 m purse seine fleet, and consultations with the EU industry. Spanish AER data were not used due to concerns as to whether the data were representative for Spanish purse seiners operating in the Seychelles[128]. For some Spanish vessels, costs and earnings profiles were also compared to available costs and earnings data for Basque based purse seiners in the Indian Ocean (Murillas-Maza, 2011)[129];
- Fuel costs per vessel (in 2009) for the French PS vessels were taken from AER data and then indexed to account for the change in fuel price from 2009 to 2011, an increase of 79 %. Fuel prices were then increased for larger vessels as appropriate (see below).

The resulting operational information and costs and earning profiles are given in Table 9.3.

- The cost-earnings profiles make a number of assumptions with regards to input costs as follows:
  - The 104+m Spanish vessels are larger in both length and weight and have higher catch rates than the French vessels and therefore input costs for the 104+m Spanish vessels were scaled up where appropriate based on best-estimates;
  - Costs and earnings for the 70 to 96 m Spanish vessels were in the first instance based on those for the French purse seine vessels. The costs and earnings profile of Spanish purse seiners 70 to 96 m will likely be different to that estimated for the French purse seine vessels due to differences in fishing strategy. This has been taken in to account to the greatest extent possible;
  - The method for estimating depreciation was taken from the Kiribati FPA evaluation, *i.e.* depreciation costs were based on the lifespan of the capital item (vessel and gear), and an estimated new build cost. The profiles estimate a net profit per class of vessel, or earnings, before interest and tax i.e. (EBIT – a commonly-used financial indicator).
- The five individual vessels models are then used as the basis for estimating total value-added resulting from the Protocol based on the total fleet operating in Seychelles waters, and its dependency on Seychelles relative to fishing in other areas. For each of the variable and fixed cost items, value-added to the upstream/input sub-sector is estimated. Estimates are made of:
  - The percentage of the total value-added derived/generated in both the EU and in Seychelles, and;

[127] The length range of vessels surveyed suggests that the vessels were similar in characteristics to those authorised for the Seychelles, if not the same vessels.
[128] See discussion in the 2011 AER Report, available here: http://stecf.jrc.ec.europa.eu/reports/economic.
[129] It is problematic to use the economic costs data of Murillas-Maza (2011) as a direct model input dataset due to differences in the costs breakdown.

- The rate of value-added i.e. labour inputs represent 100 % value-added, while value-added from other physical inputs is the sum of the profit and labour made by suppliers of those inputs. The rates of value-added are acknowledged as necessarily best estimates only.

- Value-added in the catching sub-sector is estimated based on the crew earnings and the net profits before interest and tax; and,
- Based on all of the above, the economic model constructed allows for an estimation of the value-added directly attributable to the Protocol to both the EU and to Seychelles, in the upstream sub-sector and the catching sub-sector.

Table 9.3: operational information and costs and earnings profiles used in the model

Operational information					
MS and Owner	Profile 1	Profile 2	Profile 3	Profile 4	Profile 5
Size	<100m	≥100m	<100m	≥100m	<100m
Number of authorised vessels	6	4	2	1	8
Number of active vessels	6	4	2	1	8
Average length (m)	82	106	80	116	76
Average GT (tonnes)	2 397	4 018	2 215	4 406	1 878
Vessel and engine cost (EUR)	24 000 000	28 000 000	24 000 000	28 000 000	24 000 000
Vessel and engine lifespan (yrs)	20	20	20	20	20
Gear cost (EUR)	600 000	600 000	600 000	600 000	600 000
Gear lifespan (yrs)	5	5	5	5	5
EU crew	15	15	15	15	15
Seychelles crew	0	0	0	0	0
Other crew	10	15	10	15	10
Total crew	25	30	25	30	25
Total fishing days per year in IO	300	300	300	300	300
Total Skipjack catch in Seychelles (tonnes)	634	1 367	1 007	247	588
Total yellowfin catch in Seychelles (tonnes)	858	1 654	566	556	905
Total bigeye catch in Seychelles (tonnes)	142	263	154	48	166
Total catch in Seychelles (tonnes)	1 634	3 284	1 727	851	1 663
Total catch all areas for agreement period (tonnes)	8 000	12 000	8 000	12 000	8 000
Dependency on Seychelles for catch	20.4%	27.4%	21.6%	7.1%	20.8%
Average catch per day	27	40	27	40	27
Financial information					
Sales revenue Seychelles zone					
Skipjack	729 889	1 572 271	1 158 040	284 167	676 267
Yellowfin	1 581 095	3 049 851	1 043 591	1 025 277	1 668 588
Bigeye	217 782	402 925	236 246	73 737	254 257
Total sales revenue Seychelles zone	2 528 766	5 025 047	2 437 877	1 383 180	2 604 763
Total sales revenues all areas	11 554 003	16 570 255	11 587 688	17 021 322	10 946 348
Average price per tonne (EUR/t)	1 444	1 381	1 448	1 418	1 368
Operational costs					
Fuel	2 081 677	3 122 516	2 081 677	3 122 516	2 081 677
Crew	1 579 298	1 895 158	1 579 298	1 895 158	1 579 298
Port calls	250 000	300 000	250 000	300 000	250 000
Yearly fishing related repairs and maintenance	500 000	750 000	500 000	750 000	500 000
Fishing rights	140 000	210 000	140 000	210 000	140 000
Other	150 000	150 000	150 000	150 000	150 000

Operational information					
Total operational costs	4 700 976	6 427 674	4 700 976	6 427 674	4 700 976
Operational costs/day	15 670	21 426	15 670	21 426	15 670
Fixed costs					
Insurance	231 080	331 405	231 754	340 426	218 927
Bi-annual major repairs/refit	500 000	750 000	500 000	750 000	500 000
Vessel depreciation	1 200 000	1 400 000	1 200 000	1 400 000	1 200 000
Gear depreciation	120 000	120 000	120 000	120 000	120 000
Overhead	346 620	497 108	347 631	510 640	328 390
Total fixed costs	2 397 700	3 098 513	2 399 384	3 121 066	2 367 317
TOTAL COSTS	**7 098 676**	**9 526 187**	**7 100 360**	**9 548 740**	**7 068 293**
Net profit/earnings before interest and tax (EUR)	**4 455 328**	**7 044 068**	**4 487 328**	**7 472 582**	**3 878 055**
Net profit as % of turnover	**39%**	**43%**	**39%**	**44%**	**35%**
Cost of fishing rights as % of average price/t	**2.42%**	**2.53%**	**2.42%**	**2.47%**	**2.56%**

Source: consultants' compilation

Annex L: people consulted

The consultants are grateful to all stakeholders who shared their time, thoughts, information and data with the consulting team which completed this specific contract.

Table 9.4: people consulted in the Seychelles

Organisation	Department Position	First name	Surname
Ministry of Investment, Natural Resources and Industry	Minister	Peter	Sinon
Seychelles Fishing Authority	Chief Executive Officer	Finley	Racombo
	Deputy CEO	Roy	Clarisse
	Project Manager	Michel A	Marguerite
	Fisheries Oceanographer	Calvin	Gerry
Ministry of Foreign Affairs	Chairman	Philippe	Michaud
Central Bank of Seychelles	First Deputy Governor	Christophe	Edmond
	Director – Research and Statistics	Hilda	Palconit
	Economist	Naddy	Marie
IOTC	Executive Secretary	Alejandro	Anganuzzi
	Compliance Officer	Florian	Giroux
	Head of Compliance	Gerard	Domingue
Ministry of Finance, Trade and Investment	Minister	Pierre	Laporte
	Officer	Andrew	Esparon
Aquarius Shipping Agency Ltd (Agent for French PS)	General Manager	Antony	Savy de St. Maurice
	Operations Manager	Robin	Dogley
Sea Harvest	Managing Director	David	Bentley
Oceana Fisheries	Managing Director	Joseph	Tirant
Indian Ocean Tuna	Managing Director	Adolfo	Valsecchi
Apostle of the Sea	Reverend	Albert	Napier
Seychelles Chamber of Commerce	Chairman	V.	Ramadoss
Seychelles Chamber of Commerce	Secretary General	Germaine	Michaud
National Assembly	Leader of Government Business Chairperson -Media Committee	Marie Antoinette	Rose
Hunt, Deltel & Co Ltd	Managing Director	Edmond H.	Houareau
Seychelles Bureau of Standards	Chief Fish Inspector Fish Inspection & Quality Control Unit	Christopher	Hoareau

Organisation	Department Position	First name	Surname
British High Commission Victoria	High Commissioner	Lindsay	Skoll
Fishing Boat Owners Association	Chairman FBOA,	Mr Joseph	Dingwall

Table 9.5: people consulted in Europe

Organisation	Department Position	First name	Surname
European Commission, evaluation and impact assessment coordination	DG MARE. F.2.	Atilla	Schoebaum
European Commission	Deputy Head of Unit	Emmanuel	Berck
	International Relations Officer	Patrick	Daniel
	DG MARE. B.3 Bilateral agreements and fisheries control in international waters	Alan	Gray
		Marek	Beran
		Isabelle	Viallon
European Commission	DG DEVCO	Veronique	Dehandschutter
European Commission	Fishing Authorization and catch Data Officer, DG MARE. B.2	Yann	Davalo
European Commission	DG MARE B.4. (Trade)	Pawel	Swiderek
European Commission	DG MARE. A.4	Ana-Maria	Caraman
European Commission, **Information, communication, inter-institutional relations, evaluation and programming**	Planning and Programming Officer DG MARE. F.2	Ms L.	Van Nerom
EC, DG MARE A: Policy development and coordination	A3: Structural policy and economic analysis	Christian	Tritten
Ministry in charge of Fisheries, Maritime Fisheries and Aquaculture Directorate, France	Head of European and International Affairs Unit	Jonathan	Lemeunier
Ministère de l'agriculture, de l'alimentation, de la pêche, de la ruralité et de l'aménagement du territoire (MAAP), Direction des Pêches Maritimes et de l'Aquaculture (DPMA), Sous-direction des Ressources Halieutiques, France	Bureau des affaires internationales et européennes, Affaires européennes, Chargé de Missions	Nicolas	Gorodetska
Ministère en charge de la Pêche, Direction Générale des Pêches et de l'Aquaculture (DGPA), Portugal / ***Ministério da Agricultura, do Mar, do Ambiente e do Ambiente e do Ordenamento de Território, Direcção-Geral das Pescas e Aquicultura (DGPA)***	Director of the External Resources Unit / *Chefe de Divisão de Recursos Externos*	Susanna	Salvador
Ministère en charge de de l'Agriculture et de la Pêche, Direction des Ressources Halieutiques et de	Sous-secrétariat général des accords et organisations régionales de pêche, Chef de Section Technique, */ Sub.Gral.*	Juan M.	Elices Lopez

l'Aquaculture, Espagne *I Ministerio de Agricultura, Alimentación y Medio Ambiente* (MAGRAMA*), Secretaría General de Pesca, D. G. de Recursos Pesqueros y Acuicultura*	*Acuerdos y Organizaciones Regionales de Pesca, Jefe de Sección Técnica*		
Seafish Conservation Division, DEFRA Area 2D Nobel House, 17 Smith Square, London, UK	DEFRA	Andy	Carrol
ANABAC (Professional organisation), Spain	Managing Director	Juan Pablo	Rodriguez Sah agun
OPAGAC (Professional organisation), Spain	Managing Director	Julio	Moron
ORTHONGEL (Professional organisation), France	Director	Michel	Goujon
Edificio Vasco da Gama, Bloco C, Piso-1 Rua General Gomes de Araújo 1399-055 LISBOA		Antonio	

ANNEX 2

QUALITY ASSESSMENT FORM[1]

Title of the evaluation: **Ex-post evaluation of the current Protocol to the Fisheries Partnership Agreement (FPA) between the European Union and the republic of the Seychelles and an ex-ante evaluation including an analysis of the impacts of the future Protocol on sustainability**

- Draft final report: 11/1/2013
- Final report: 22/1/2013

DG/Unit: DG MARE, Unit B3

- Official(s) managing the evaluation: Alan GRAY

Evaluator/contractor: COFREPECHE / MRAG / POSEIDON /IRD5

Assessment carried out by [1]:

- Steering group: YES
- Evaluation Function:
- Other (please specify):

[1] Multiple crosses possible

Date of the Quality Assessment: 23/01/2013

(1) RELEVANCE

Does the evaluation respond to information needs, in particular as expressed in the terms of references?

SCORING	Poor	Satisfactory	Good	Very Good	Excellent
			X		

Arguments for scoring: The evaluation provide for the information requested in the Terms of reference and responds to the evaluation questions. The scope covers the requested period of time, geographical area, target group etc. Effects on other policies / programs and groups (i.e. Seychellois stakeholders) are considered. Piracy in the Indian Ocean and the fisheries in the Indian Ocean were both considered.

If relevant: **Contextual** (such as deficient terms of references) and **contractual constraints** (such as lack of time, insufficient resources) **The collection of some information has been difficult and has delayed the finalisation of the interim and final report. Furthermore, due to reviews , re-editing and necessary related revisions of the text throughout the evaluation process, which did not initially meet the requirements of the terms of reference, the production of the report has experienced a significant delay .**

(2) APPROPRIATE DESIGN

Is the design of the evaluation adequate for obtaining the results needed to answer the evaluation questions?

SCORING	Poor	Satisfactory	Good	Very Good	Excellent
			X		

Arguments for scoring: The evaluator took well into account the specificities of this FPA (i.e. role of the processing industry and other stakeholders) and collected the corresponding information. Sources and methodology used are specified.

If relevant: **Contextual** (unexpected issues) and **contractual constraints** (such as lack of time and resources)

(3) RELIABLE DATA

Are data collected adequate for their intended use and have their reliability been ascertained?

SCORING	Poor	Satisfactory	Good	Very Good	Excellent
			X		

Arguments for scoring: The stock evaluation and assessments are based on the most recent IOTC data and on catch declarations provided by DG MARE.

Economic data proved to be difficult to collect and this provided uncertainty on the true economic value of the agreement. However, a methodology was developed that addressed the uncertainty which provided an acceptable level of robustness in the results of the economic assessment of cost benefits of the agreement. It has to be noted that the development of this methodology also impacted on the time available for the preparation of the evaluation.

If relevant: **Contextual** (such as lack of data or access to data base) and **contractual constraints** (such as lack of time and resources) **The economic analysis is very delicate in the absence of detailed data on economic results of the EU operators (i.e. Net Added Value, capacity for operators to pay higher fees).**

(4) SOUND ANALYSIS

Are data systematically analysed to answer evaluation questions and cover other information needs in a valid manner?

SCORING	Poor	Satisfactory	Good	Very Good	Excellent
		X			

Arguments for scoring: The evaluations questions have been properly answered in chapter 8, on the basis of all the information contained in chapter 1 to 8.

The evaluator met the fishing sector of the different member states.

If relevant: **Contextual** and **contractual constraints** (such as lack of resources and time)

(5) CREDIBLE FINDINGS

Do findings follow logically from and are justified by, the data/information analysis and interpretations based on pre-established criteria and rational?

SCORING	Poor	Satisfactory	Good	Very Good	Excellent
			X		

Arguments for scoring: Findings are based on relevant data and scientific advice. Findings corroborate existing knowledge. Stakeholder opinions are considered and reflected.

If relevant: **Contextual and contractual constraints**

(6) VALID CONCLUSIONS

Are conclusions non-biased and fully based on findings?

SCORING	Poor	Satisfactory	Good	Very Good	Excellent
			X		

Arguments for scoring: Conclusions are clear and straightforward, based on the analysis conducted in chapter 9.

If relevant: **Contextual and contractual constraints**

(7) HELPFUL RECOMENDATIONS

Are areas needing improvements identified in coherence with the conclusions? Are the suggested options realistic and impartial?

SCORING	Poor	Satisfactory	Good	Very Good	Excellent
				X	

Arguments for scoring: Recommendations are concrete and can easily be followed during the negotiations of the new protocol.

If relevant: **Contextual and contractual constraints**

(8) CLARITY

Is the report well structured, balanced and written in an understandable manner?

SCORING	Poor	Satisfactory	Good	Very Good	Excellent
				X	

Arguments for scoring: The structure is clear (collection of information -> analysis based on the evaluation criteria -> conclusions -> recommendations). The conclusions and recommendations are easy to understand, even for a non-specialist.

The report includes a relevant and concise executive summary. Tables / graphs are used to illustrate and facilitate understanding.

The length of the report is proportionate.

If relevant: **Contextual and contractual constraints**

OVERALL ASSESSMENT

OF THE FINAL EVALUATION REPORT

Is the overall quality of the report adequate, in particular: YES

- Does the evaluation fulfil contractual conditions? YES, however the original deadline of 3 December 2012 for production of the final report was not respected as a result of the revisions and modification required by the Commission.
- Are the findings and conclusions of the report reliable, and are there any specific limitations to their validity and completeness? YES, even if some uncertainties remain concerning the added value generated by the Protocol (especially net added value) and capacity for the industry to pay higher fees.
- Is the information in the report potentially useful for designing intervention, setting priorities, allocating resources or improving interventions? YES

Given the contextual and contractual constraints encountered:

- What lessons can be learned from the evaluation process?
  - Sufficient time is needed to produce a well-documented and well-drafted evaluation.
  - when possible, interview of other stakeholders (local fishermen, NGOs etc) could provide extra information.
  - A common methodology / template should be developed for all FPA evaluations, based on recent experiences.