



INDIAN OCEAN  
COMMISSION

**South West Indian Ocean Fisheries Governance and Shared Growth  
Program (SWIOFish Regional)**

**First South West Indian Ocean Fisheries Governance and Shared Growth  
Project (SWIOFish1)**

**Terms of Reference for the recruitment of a Consultant to undertake a  
study on Tuna Fisheries direct and indirect Contribution to GDP and  
wealth distribution patterns in the SWIOFC Member countries (Individual)**

<b>Assignment title</b>	<b>Recruitment of a consultant to undertake a study on Tuna Fisheries direct and indirect contribution to GDP and wealth distribution patterns in the SWIOFC Member countries.</b>
<b>Contract duration</b>	<b>90 calendar days following the award of the contract</b>
<b>Assignment location</b>	<b>IOC Hq but with possibility of visit to SWIOFC Hq in Maputo</b>
<b>Financed by</b>	<b>World Bank</b>

## **A. PROJECT BACKGROUND AND OBJECTIVES**

The First South West Indian Ocean Fisheries Governance and Shared Growth Project, commonly known as SWIOFish 1, is a six-year project designed to improve the development and sustainable management of selected priority fisheries at the regional, national and community level of the member-states of the South West Indian Ocean Fisheries Commission (SWIOFC). It is funded mainly by the World Bank. While all these countries are benefiting from the regional intervention under the Component 1 of the Project, which is implemented by the Indian Ocean Commission (IOC), some of the states of the agglomeration namely, Tanzania, Comoros and Mozambique receive funding for targeted activities at the national and community level. Madagascar, Seychelles and Maldives are implementing their National SWIOFish Projects with the World Bank. Kenya and Mauritius are expected to follow suit.

The approach of the SWIOFish1 Component 1 is the enhancement of the Regional Cooperation and Collaboration among the SWIOFC member-states, which is an imperative to advance informed management and responsible governance of the shared marine fisheries resources and ecosystems of common interests. This component consists of two core activities which are interconnected. First, the implementation of a comprehensive and integrated capacity building strategy to empower the beneficiary countries in harnessing the full economic potentials from the shared fisheries resources. The action plan includes the operationalisation of coherent policy and institutional frameworks as well as harmonised Monitoring, Control and Surveillance tools, such as the Minimum Terms and Conditions (MTC) of access to the regional fisheries and the Regional Observers Programme to ensure the adequacy of available fisheries and compliance data for management purposes. Second, the strengthening of the regional institutional mechanisms and operational capacities of the SWIOFC to meet the aspirations of its member states, which is presently considering the establishment of a Regional Fisheries Framework Agreement to consolidate the various initiatives leading to the maximisation of the sustainable benefits to the resource-owners of the region. This SWIO Fisheries Framework Agreement (based on the Pacific Islands Forum Fisheries Agency, or FFA framework) will aim at strengthening the collective negotiation capacities of the member states in engaging with amongst others, the Indian Ocean Tuna Commission (IOTC), including a harmonised implementation of the conservation and management measures at the national and regional level.

In 2011, a Working Party for Collaboration and Cooperation in the Tuna Fisheries was established by the SWIOFC to follow up on the above-mentioned developments. Currently, draft protocols have been produced by the WWF and the African-Union Inter-Agency for Animal Resources (AU-IBAR) and are undergoing the process of consultative validation with the support of SWIOFish 1, IOC-SmartFish and the Regional Fisheries Surveillance Project (IOC-RFSP).

### **Overview of the SWIO Tuna Fisheries**

The global tuna industry is multi-billion-dollar business, the Indian Ocean having the second largest world tuna fisheries after the Western Central Pacific Ocean. It accounts for approximately 1.2 million tonnes of tuna caught per year and consists of four main tuna species namely, Yellowfin, Skipjack, Albacore and Bigeye. The SWIO share of global tuna caught is about 450,000 tonnes and the breakdown is as follows: Industrial tuna fisheries (Purse seine: 300,000 tonnes and Longline: 115,000 tonnes and small-scale chilled tuna fisheries: 35,000 tonnes).

The purse seine or industrial surface tuna fishing activities in the SWIO basin are an extended arm of the European Union's and some Asian countries' such as Thailand's canned tuna value chains, supported by a new generation of Sustainable Fisheries Partnership Agreement (SFPA) between the European Union (EU) and African, Caribbean, and Pacific States. Surface (PS) tuna fisheries are highly localised around the equatorial zones and thus, the PS fleet is based in the region.

The industrial tuna longline (TLL) fishing vessels mostly owned by SE Asian distant water fishing nations led by the Taiwanese fleet, are itinerant within the Indian Ocean and are even trans-oceanic. However, the larger long liners are not active in the SWIO water since they target larger and fatter tunas in the cooler waters of the Southern Hemisphere. Unlike the purse-seine fisheries, the large pelagic fisheries such as swordfish, billfishes and sharks are classified as targeted commercial species of the offshore TLL fishing boats owing to the growing market demands for these fishes and fish products. The catches of the offshore TLL fishing fleets, other than skipjack, which is not a target species, are meant partly for canning, namely Albacore and for high-value direct consumption markets in the developed and emerging economies.

The small-scale chilled tuna fishery encompasses a wide range and types of fishing operations, from the coastal to semi-industrial fishing crafts of less than 24 metres long. While this segment is still nascent in the SWIO, it represents around 55% of the total catch of tuna in the Indian Ocean, which is harnessed by its surrounded northern and western coastal states. The sustainable and responsible development of the small-scale tuna value chains is sought as a viable strategic option for the appropriation of the regional tuna resources by the SWIO states.

### **Economic potentials of the SWIO tuna fisheries**

The landed value tuna harvested in the SWIO basin is estimated at US\$ 1 billion and about US\$ 3 billion at end market price. The overall economic benefits derived by the ESA-IO countries is roughly estimated at US\$ 500 million, approximately 20% of its potential. Around 55% of the total catch is taken in the Exclusive Economic Zones (EEZ) of neighbouring coastal states and the remaining, from the high seas (also known as Areas Beyond National Jurisdiction or ABNJ). The purse seiners or the canned tuna value chains constitute the big chunk of the regional tuna industry and are intimately linked to preferential access to the European markets.

Presently three SWIO states (Madagascar, Mauritius and Seychelles) have entered into a Sustainable Fisheries Partnership Agreement (SFPA) with the EU. The EU also has a total of 9 dormant fisheries agreements, 2 of which were previously active with Comoros and Mozambique up to 2015 and 2016. These prototype fishing agreements are not based on market rationale since they provide for direct subsidies to the EU fleet and financial assistance for technical capacity building in the signatory countries. The financial compensation is meant for the harvest in the EEZ and precludes the ABNJ. While some of the coastal states in the region have denied access to foreign fishing vessels, others provide fee-based and/or SFPA access to fish in their waters

South Korean, Mauritian, Iranian and Seychellois-flagged purse seiner fleets access the SWIO coastal states waters through bilateral fishing agreements.

The South East Asian TLL fleets access the SWIO coastal states waters under private licenses or agreements.

The total financial compensation received by SWIO countries for access of the EU fleet is approximately €20 million per year, which is almost 10% of total landed value of the catch harvested in the EEZ of the coastal states. About 80 % of the tuna caught by the purse-seine fleets are processed into canned products and loins in the region, mainly in Seychelles, Mauritius and Madagascar.

Economic contribution through ancillary activities and the tuna processing activities requires an in-depth analysis as it is a proven fact that one of the SWIO countries not resource blessed is better off in doing sea food businesses across the value chain of the tuna industry at large due to its conducive business environment. In such country tuna operations in port double tuna processing on land value wise.

The largest tuna base of the South-East Asian TLL fleets is in Mauritius, where approximately 65,000 tonnes or nearly 60% of total catch in the Indian Ocean is discharged and/or transhipped annually.

As indicated above, the tuna industry of the SWIO region is a multi-million-dollar industry, yet its real contribution to the ESA-IO countries and regional economies is still poorly documented. The significance of reliable economic indicators for informed policy-making and management strategies can hardly be denied when addressing the prospects and challenges of the sustainable management and responsible governance of the shared tuna resources. These renewable resources can be a game changer for the betterment of the livelihoods and wellbeing of the populations of the ESA-IO region.

The importance of fisheries in a country's economy is traditionally measured as the direct contribution of primary production activities to overall GDP. While national accounts measure the value added of primary production activities, any contributions of the sector extending beyond primary production, in particular through the seafood processing sector, are captured in the value added of other sectors, namely manufacturing, trade, and services. Besides, it is generally recognized that the fisheries sector supports a plethora of economic activity in the service and manufacturing sectors, especially through seafood processing and seafood manufacturing activities, as well as through the hotel, restaurant and tourism sectors.

The fisheries value chains are generally composed of upstream logistics, fishing operations and downstream logistics; while the seafood value chain network is composed of production, marketing, distribution, import and export.

In the SWIOFC states, the value chains include the coastal artisanal tuna fisheries, semi-industrial tuna fisheries, industrial tuna fisheries, tuna processing operations, tuna transshipment and associated services, boat building, repairs, maintenance, dry docking, and others.

### **Objective of the Consultancy**

The rationale behind this consultancy is to undertake a study on Tuna Fisheries direct and indirect contribution to GDP and wealth distribution patterns in the SWIOFC Member countries.

The consultant should develop and apply an appropriate methodology to estimate the impact of the tuna fisheries on GDP, human, natural, and produced capital; and net foreign assets. The methodology has to take into account not only primary production but also forward and backward linkages. For such calculation it is pertinent to understand the multiplier effect for which an input-output matrix of national accounts is needed.

The consultancy work consists of an Economic Impact Assessment of the regional tuna fisheries to determine their contribution to national and regional economies in terms of Turnover, Gross Value-Added or Gross Domestic Products, Employment and its distributional effects along the value chain and among the economic agents (individuals, households, firms, governments), Net Foreign Exchange Earnings and Economic Integration, including the value of Fisheries Agreements with DWFN by SWIOFC nations as well as private licenses, and other factors. The study should adopt a value-chain approach to examine the upstream and downstream operations of the key segments of the regional tuna industry to include the followings:

- i) Financial revenue derived from sale of fishing rights to the DWFN fleets,
- ii) Direct and indirect economic contribution to national and regional economies derived from DWFN fleets (*i.e.* Purse seiners, TLL and others), domesticated industrial tuna fishing fleets (*i.e.* Purse seiners, TLL and others) and small-scale fresh and chilled tuna fleets and value chains, including coastal FAD<sup>1</sup> fisheries, including through:
  - a. Tuna landings, transshipment and containerization, onshore services and other ancillary services;
  - b. Tuna processing and marketing operations;
  - c. Any other relevant segments.

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<sup>1</sup> Fish Aggregating Devices

## **SPECIFIC TASKS**

In keeping with objectives of the policy makers in relation to the sustainable management and governance of the regional tuna resources, the assignment will focus on the following interrelated tasks:

1. Submission of a detailed methodology to estimate the economic impact of the tuna fisheries on GDP, human, natural, and produced capital; and net foreign assets.
2. Obtain country data from the national accounts and other sources of the direct and indirect importance of tuna and ancillary activities.
3. Collect historical data in each SWIOFC's EEZ and on high seas on declared tuna and breakdown by species and prices, including the following:
  - For these data differentiate by industrial, semi-industrial and artisanal vessels by flag of origin.
  - For each country get estimates of tuna that goes into processing plants in situ, exports and re-exports.
  - Estimate fishing effort of DWFN in each SWIOFC's EEZ and on high seas. Estimate per ton value of access fees. Estimate net value of tuna fisheries by EEZ.
4. Conduct an economic analysis of the key segments of the tuna value chain, comprising fishing, tuna base operations, processing and distribution/marketing, incorporating:
  - Ancillary activities integrating value chain analysis upstream and downstream - inputs, equipment port expenditure, crew expenditure and victualling; crew airfares, vessel repair. that these activities generate.
  - Country revenues generated by tuna vessels and associated activities: license and access fees, direct and indirect tax revenues from vessels, processing and other vessel expenditure liable to tax in country.
  - Estimate expenditure to obtain net forex benefits to the country.
5. To implement a preliminary Economic Impact Assessment of SWIO tuna Industry as per above tasks for the establishment of a baseline for a regional dashboard.
6. Any other works that may be necessary to perform the above tasks.

## **Data acquisition**

The assignment will be carried out on the basis of existing tuna fisheries statistics and secondary economic data from national and regional sources (e.g. IOTC). Additional data will be collected through interviews, focus group discussions and expertise advice. Data reconstruction tools and techniques will be used to develop standardised business models, operating accounts, and cash flows for calculating the financial and economic impacts of the key segments of the industry, including direct and indirect local value-added (VA) and shares of domestic and exported VA, and distribution of the VA among the economic agents.

The institutional players and the representative of the tuna enterprises will be sensitised by the Consultant through visits, on the strategic importance of the study to ensure their cooperation. The confidentiality of the financial data shared by the tuna enterprises will be safeguarded. The consultant will be required to visit the main player of the tuna industry and the Regional Fisheries Management Organisation in the ESA-IO for consultation and data collection.

## **Duration of Assignment**

The assignment will cover a period of 90 days to complete by April 15, 2019.

## **B. DELIVERABLES/SPECIFIC OUTPUTS EXPECTED FROM CONSULTANT**

### **Inception Report**

Within 20 working days from date of signature of the service contract, the consultant will submit an Inception Report unfolding the following:

- i) Comments relevant to Terms of Reference
- ii) Methodological frameworks of Economic Impact Assessment (including scoping the tuna industry, data requirements and acquisition strategy, mapping of key public and private stakeholders)
- iii) Assumptions and Risks pertaining to availability and accessibility of financial/economic data
- iv) Work Plan (including visit to some of the SWIO states)
- v) Table of Content of the final EIA Report.

### **Final Report**

A final report and annexes covering the areas discussed in the Terms of Reference.

## **C. SPECIAL TERMS AND CONDITIONS**

### **Consultative Validation Workshop**

At the completion of the assignment, the Project will consider the opportunity for organising a regional consultative validation workshop for the presentation of the findings, conclusions and way forward to key stakeholders of the regional tuna industry. This event will be discussed and planned timely in collaboration with the consultant.

### **Qualifications**

- i) An advance degree (MSc or PhD) in Economics, Finance or related field.
- ii) A minimum of 10 years of experience, working on value chains, Cost-Benefit, and Economic Impact Analysis and economic modelling allowing estimates of direct and indirect VA, domestic and exported VA and VA distribution among economic agents, along the value chain.
- iii) Relevant experience in the fisheries sector. Experience in the tuna sector and in the ESA-IO region will be considered as advantages.
- iv) Demonstrated effective skills in conducting analytical and research works
- v) Demonstrated capacity to develop multidisciplinary and integrated approach across institutional boundaries
- vi) Excellent verbal and written communication skills
- vii) Fluency in English and French.

### **Starting Date**

The proposed starting date is January 15, 2019.

Duration of work: Calendar 90 days

### Schedule of Payments

- As defined in the contract with IOC