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IMPLEMENTATION OF IOTC CONSERVATION AND MANAGEMENT MEASURES PART A

UNDERSTANDING IOTC AND THE INTERNATIONAL FISHERIES MANAGEMENT FRAMEWORK

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SUMMARY

The objective of this manual is to provide a working document for CPCs to use in the implementation of the IOTC Resolutions. The content is divided into two chapters.

The first chapter provides a broad overview of the international regime within which the Indian Ocean Tuna fisheries has evolved, then it looks at the role of specific key international legal instruments (conventions and agreements) and the Indian Ocean tuna fisheries. It delves into the realm of RFBs and RFMOs, and explains what the IOTC is, how it is supposed to work, who drives it and what results are expected of it.

The second chapter summarizes the principles and measures provided by international instruments that define and rule fisheries matters. It then describes the fisheries management tools from the perspective of the coastal State, the flag State, the port State and the market State.

This manual should be viewed as a living document that can be revised and improved by all parties as experience is expanded in the implementation of the IOTC Conservation and Management Measures.

CHAPTER 1: THE BIG PICTURE

11/54

CHAPTER 2: KEY INTERNATIONAL INSTRUMENTS AND MECHANISMS

57/80

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ACRONYMS

ACP	African, Caribbean and Pacific Group of States
ALB	Albacore Tuna
BET	Bigeye Tuna
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CDS	Catch Documentation Scheme
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMM	Conservation and Management Measure
CNCP	Cooperating Non-Contracting Party
CPC	IOTC Contracting Party (or "Member") and Cooperating Non-Contracting Party
DWFN	Distant Water Fishing Nation
EDF	European Development Fund
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAOCA	FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (1993) commonly called the FAO Compliance Agreement
FFA	Forum Fisheries Agency
FDP	Fleet Development Plan (Resolution 12/11)
FMC	Fisheries Monitoring Centre
IOSEA MoU	Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia
IOTC	Indian Ocean Tuna Commission
IPOA	International Plan of Action

IUU	Illegal, unreported and unregulated (fishing)
LOA	Length Overall
LSTLV	Large-scale tuna longline fishing vessel
MCS	Monitoring, Control and Surveillance
MSY	Maximum Sustainable Yield
NCP	Non-contracting Party
nm	Nautical Mile
NPOA	National Plan of Action
OFCF	Overseas Fisheries Cooperation Foundation of Japan
PSMA	Port State Measures Agreement
RAV	Record of Authorised Vessels
RECOFI	Regional Commission for Fisheries
RFB	Regional Fishery Bodies
RFMO	Regional Fisheries Management Organisations
RTTP	Regional Tuna Tagging Project
SBT	Southern Bluefin Tuna
SKJ	Skipjack Tuna
UN	United Nations Organization
UNCLOS	United Nations Convention on the Law of the Sea (of 10 December 1982)
UNFSA	1995 Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks
USD	United States Dollar
VMS	Vessels Monitoring System
WECAFC	Western Central Atlantic Fishery Commission
WPEB	Working Party on Ecosystems and Bycatch
YFT	Yellowfin Tuna

CHAPTER 1

THE BIG PICTURE

What the IOTC is, how it is supposed to work, who drives it and what results are expected of it.

This first chapter provides a broad overview of the international regime within which the Indian Ocean Tuna fisheries has evolved. In doing so, the basic international principles ruling high seas fisheries and more specifically the fisheries of highly migratory, straddling and transboundary stocks, such as tuna and billfish are highlighted. This naturally leads us to look at the role of specific key international legal instruments (conventions and agreements) that have been created to provide a management framework for these fisheries, and the institutions – such as the IOTC – which have been born of them. This is important to understand where we stand today, and why we are organizing and managing things the way we do today.

This chapter will also take a look at the Indian Ocean tuna fisheries themselves, in order to define them, and to highlight their complexity and their diversity. Understanding the various dimensions of these fisheries is essential to underscore the challenges inherent to efforts directed at managing them successfully.

Finally, the chapter delves into the realm of RFBs and RFMOs, and explains what the IOTC is, how it is supposed to work, who drives it and what results are expected of it. At the end of this chapter, the reader should have a basic, but solid understanding of international fisheries governance, how this applies to Indian Ocean tuna fisheries and how IOTC is set up to accomplish its mandate.

INTERNATIONAL MARITIME REGIME

Large scale tuna longline vessel operating on the high seas

Historically, coastal States were endowed with a territorial sea, extending 12nm out to sea from the coast. Countries exercised sovereign rights (or jurisdiction) over these waters. Any waters beyond this thin coastal strip of sovereign space were part of the so called "High Seas". Resources of the High Seas, including fisheries resources, belonged to nobody (principle of *res nullius*), and could therefore be freely exploited by anybody coveting them.

Today, all coastal States enjoy the right of a 200nm EEZ, as provided for under international law.

Today, all coastal States enjoy the right to a 200nm EEZ, as provided for under international law. The EEZ includes the territorial sea, which continues to exist as a zone over which coastal States exert sovereign rights. All rights and duties for the exploitation and management of resources within the EEZ (including fisheries resources) fall exclusively to the coastal State. No Nation may exploit the resources within a third States' EEZ, unless specific agreements to that affect have been signed between the concerned parties.

In the EEZ, specific rules apply. One of these is the rule of innocent passage. No coastal State may bar or hinder the passage of ships through its EEZ, if it is for the mere purpose of passing through. This does not however, hinder the coastal State from requiring a vessel to notify that coastal State that it is on innocent passage, and provide details of its entry position and time and its intended exit position and time.

Worldwide, EEZs include over 90% of the continental shelves, and, therefore, contains most of the shelf-associated fisheries resources. Important demersal fisheries resources, such as snappers, groupers or shrimps, thus fall into the almost exclusive management and exploitation dominion of coastal States. However, highly migratory pelagic fisheries resources, such as tuna, are much less shelf-associated, and are hence management measures must note that the stocks are bound to a much lesser degree by continental shelf and EEZ boundaries. Due to the wider migratory patterns of these species, the management measures, to be successful, must endeavor to achieve compatibility between the EEZ and high seas management regimes. The high seas, initially starting at 12nm offshore, have thus moved outward to 200nm offshore in recent history. And the resources of the high seas have gone from being *nobody's resources*, to becoming *everybody's resources* (principle of *res omnis*). The latter has important implications for high seas fisheries and their management.

HIGH SEAS FISHERIES

Transhipment operations are conducted on the high seas and regulated by IOTC

High Seas fisheries are fishing operations which extend beyond the EEZ. Such operations are generally heavily industrialised, and typically include tuna fisheries. High Seas fisheries other than tuna fisheries are few. The fishing vessels used in these operations are generally large-scale steel hulled and highly mechanised.

Transhipment operations conducted on the high seas are monitored by IOTC observers embarked on board carrier vessels

There are few fisheries that are exclusively high seas based. High seas fisheries typically straddle EEZs and the high seas, in the same way as the targeted resources do. These fisheries are often carried out by so-called Distant Water Fishing Nations (DWFNs), which operate fleets far away from their shores and home ports. In the Indian Ocean tuna fisheries, typical DWFNs are the Chinese, the Republic of Korean, the Japanese and the EU fleets.

High seas fisheries typically straddle EEZs and the high seas, in the same way as the targeted resources do.

The typical attributes of high seas fisheries, and tuna fisheries in particular, is the fact that vessels follow the migratory patterns of the resource, and often end up fishing throughout entire ocean basins, moving in and out of third Nation EEZs for which they would typically hold licenses authorising them to fish. It would not be unusual for a purse seiner operating in the Western Indian Ocean, for instance, to seek fishing licences with the majority of coastal States of East Africa, ranging from Kenya to Mozambique, and including Madagascar, Mauritius and the Seychelles. In some specific fisheries, like the longline fisheries, fish is often transhipped at sea, fishing vessels may be resupplied at sea, and they stay out for months without calling to port. Fish can be offloaded in numerous ports across the ocean basin. Given this wide-ranging mobility of DWFN fleets, the monitoring of these operations is a difficult undertaking.

This difficulty in managing high seas fisheries was high on the agenda in the nineties. The FAO Code of Conduct for Responsible Fisheries, for instance, was developed, to some extent, with high seas fisheries in mind.

UNCLOS AND UNFSA

Lay the modern foundations for the international management of high seas fisheries resources, and highly migratory and straddling stocks in particular.

Gillnet fishing vessels, Iranian fleet

It is the United Nations Convention on the Law of the Sea of 10 December 1982, commonly called UNCLOS, and its related instrument, the 1995 Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, commonly called the United Nations Fish Stocks Agreement (UNFSA), that lay the modern foundations for the international management of high seas fisheries resources, and highly migratory and straddling stocks in particular. Both instruments remain relatively recent, considering the fact that the UNCLOS entered into force in 1994, and the UNFSA in 2001. In that sense, the formal and binding international legal framework has been "up and running" for less than a generation – which may be considered as recent by most standards.

It is UNCLOS that provides the formal basis for 200nm EEZs, that establishes the fact that high seas fisheries resources belong to all Nations, and that provides the basic tenets compelling Nations to cooperate in the management of highly migratory and straddling fisheries resources. It is also UNCLOS that establishes the right of coastal States to exploit their fisheries resources on one side, and the duty to conserve and manage them on the other. The duality between rights and duties is extremely important. UNCLOS firmly establishes the principle that fisheries resources, whether belonging entirely to a Nation, or whether shared with neighbouring Nations (transboundary) or with the high seas (straddling), must be managed. The objective of management under UNCLOS is the optimum utilisation of resources.

UNFSA provides a blueprint for how RFMOs should function; it requires flag States to assume tight control over their fishing vessels, and also provides for enhanced mechanisms in collaborative enforcement with coastal and port States.

UNFSA on the other hand specifies the framework for the conservation and management of straddling and highly migratory fish stocks. Its very long formal title implies that it sets out to regulate specific UNCLOS provisions, relating to those goals (i.e. UNCLOS articles 63 and 64). UNFSA is therefore the key international instrument in the domain of managing fish stocks shared by more than one Nation, and whose natural range of occurrence includes the high seas.

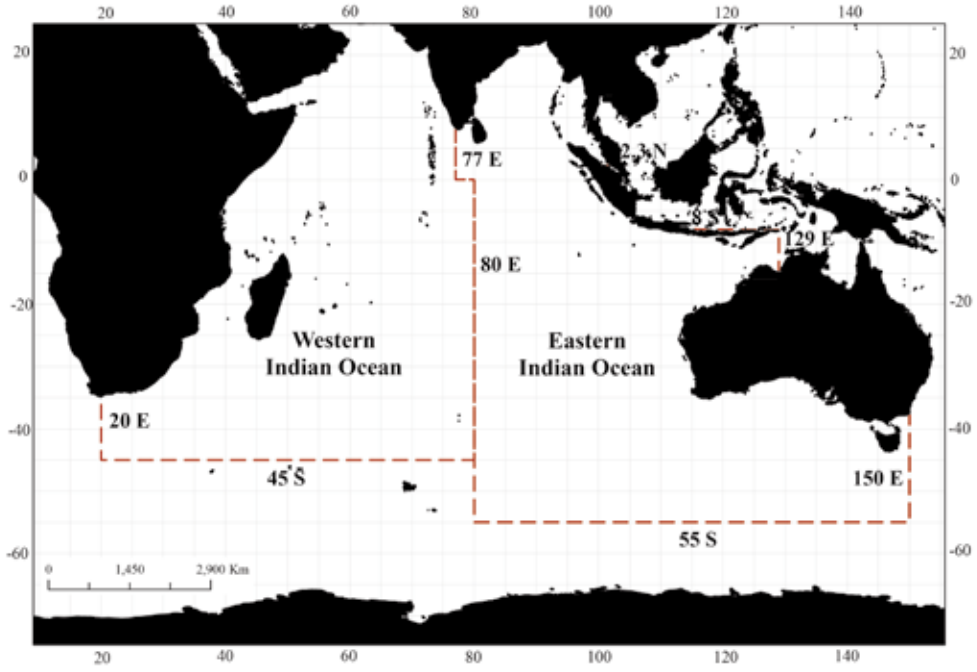
UNFSA establishes rights and obligations for coastal States and States fishing on the high Seas to conserve and manage fish stocks, associated and dependent species, and to protect the biodiversity of the marine environment. It lays out mechanisms for international cooperation and identifies RFMOs as the preferred mechanism through which States can fulfil their obligations. States having a real interest in the fisheries concerned are encouraged by the agreement to become members of such RFMOs. States fishing such stocks, as well as coastal States in which they occur can be considered to have such a "real interest".

UNFSA provides a blueprint for how RFMOs should function; it requires flag States to assume tight control over their fishing vessels, and also provides for enhanced mechanisms in collaborative enforcement with coastal and port States. These mechanisms also relate to fisheries operations taking place on the high seas. Port States are provided enforcement obligations concerning vessels entering their ports with relevant catches onboard.

RFBs AND RFMOs

Regional Fisheries Bodies (RFBs) and Regional Fisheries Management Organisations (RFMOs) are two types of international organisations whose primary objective is the management of shared fisheries resources and their wider environment. The Members of such organisations are States and State-like entities (such as the European Union, for instance). Both RFMOs and RFBs generally operate within a clearly delimited Area of Competence, meaning that the boundaries of the sea or ocean basin within which they set out to manage – or contribute to managing – fisheries resources, are defined. The mandate of certain RFMOs, such as the IOTC, can extend to adjacent seas, to ensure the coverage of the entire stock under their mandate.

Figure 1: Map of the IOTC Area of Competence



Regional Fisheries Bodies (RFBs) and Regional Fisheries Management Organisations (RFMOs) are two types of international organisations whose primary objective is the management of shared fisheries resources and their wider environment.

A Regional Fisheries Management Organisations (RFMO), sometimes also called a Regional Fisheries Organisations (RFO), is an international organisation dedicated to the sustainable management of highly migratory and straddling fishery resources in a particular Area of Competence. RFMOs may focus on specific species (*e.g.* the Commission for the Conservation of Southern Bluefin Tuna CCSBT) or have a wider remit related to living marine resources in general within a region (*e.g.* the Commission for the Conservation of Antarctic Marine Living Resources - CCAMLR).

RFMOs are endowed with a management mandate. This means that RFMOs may develop legally binding conservation and management measures (or rules) – often referred to as CMMs – which their Members are expected to implement. CMMs can cover a wide range of fisheries management measures; ranging from the collection of statistics to the types of fishing gears that may or may not be deployed within its Area of Competence.

The fundamental difference between RFBs and RFMOs is that RFBs are not endowed with a management mandate that is legally binding upon its Members. RFBs are limited to providing advice to their Members. Like RFMOs, RFBs often function through a number of so called working groups or working parties, which may include delegates from Member nations, or experts in their individual capacity, discussing fisheries science and specific management topics – *e.g.* fisheries statistics and their use – in order to contribute to better management decisions at the national level.

RFBs and RFMOs are generally funded by the annual financial contributions of their Members, and employ a generally rather limited number of permanent staff, which is financed through core funding. Quite a few RFBs and RFMOs have been set up under the auspices of the FAO, and several, such as RECOFI or WECAFC, are directly run through the FAO itself.

MAP OF WORLD TUNA RFMOs

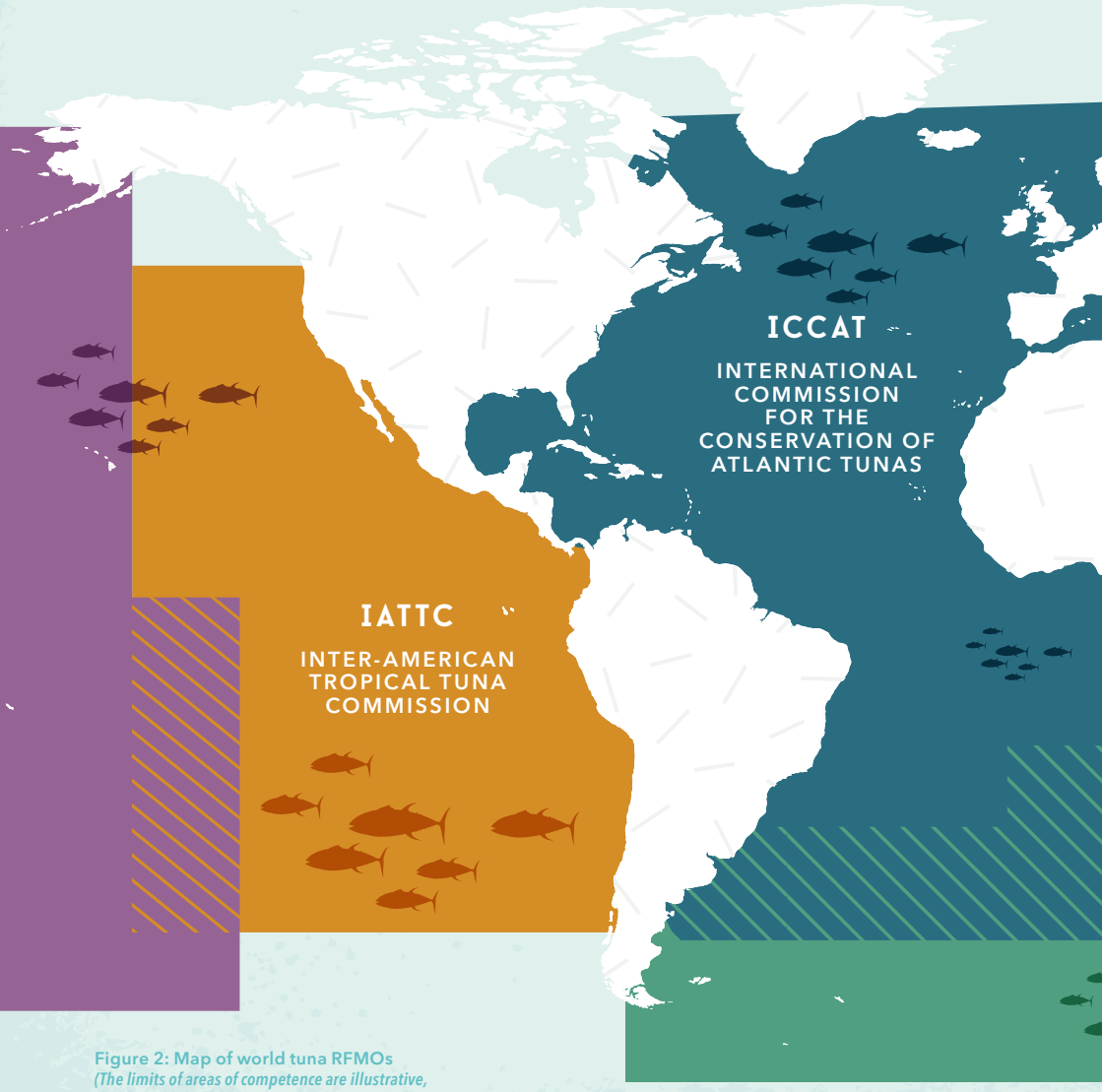
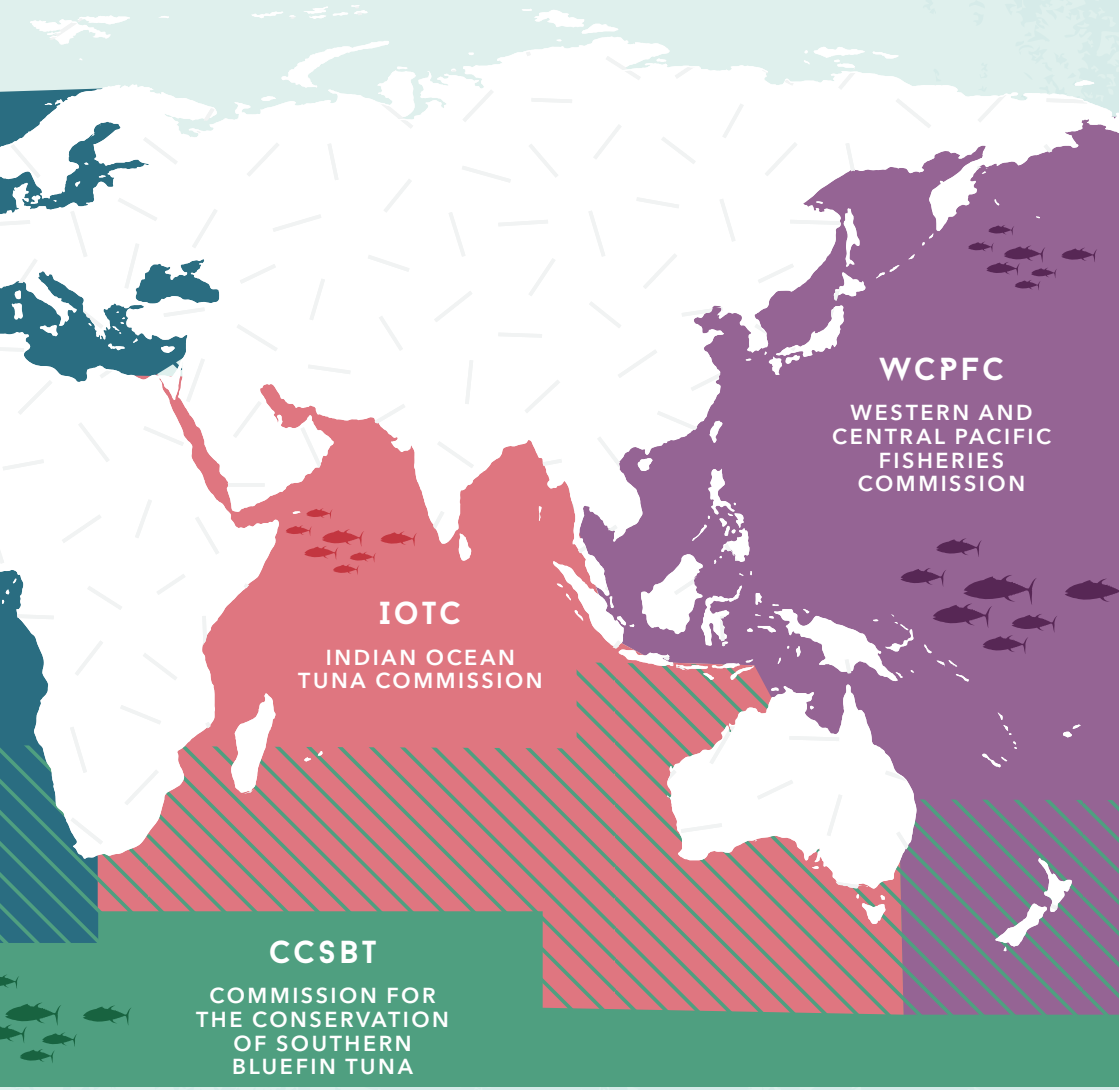


Figure 2: Map of world tuna RFMOs
(The limits of areas of competence are illustrative, for accurate limits of tuna RFMO areas of competence consult the basic texts of the concerned tuna RFMO).


WCPFC
WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION
IOTC
INDIAN OCEAN TUNA COMMISSION
CCSBT
COMMISSION FOR THE CONSERVATION OF SOUTHERN BLUEFIN TUNA

TUNA AND TUNA-LIKE SPECIES OF THE INDIAN OCEAN

Yellow fin tunas caught by a pole and line vessel

Of the 16 species under IOTC management, nine are tuna, two are mackerel, and five are billfish species.

The Indian Ocean is a vast expanse of maritime space, which borders east Africa, the Indian subcontinent, south-east Asia, and the shores of western and southern Australia. It is subdivided into a western and an eastern portion, which correspond approximately to FAO statistical areas 51 and 57, respectively.

Over a dozen species of tuna and billfishes – falling under the management mandate of the IOTC – roam the Indian Ocean. Many of these species have high commercial values, and large-scale industrial exploitation of tunas in the Indian Ocean has developed since the second half of the twentieth century.

Of the 16 species under IOTC management, nine are tuna, two are mackerel, and five are billfish species. The tuna species which are the target of the large industrial fleets are the yellowfin tuna, skipjack tuna, bigeye tuna and albacore. Southern bluefin tuna occurs in the southern range of the IOTC Area of Competence. SBT is managed through the

Commission for the Conservation of Southern Bluefin Tuna (CCSBT), another RFMO, whose management mandate is limited to this single species.

All of these Indian Ocean species display highly migratory behaviour – to varying degrees – straddling EEZ boundaries between States, and between EEZs and the high seas. Migrations throughout the Indian Ocean are following cyclical, annual patterns, and stock movements and distribution will vary between species. Migrations are often classified into feeding and spawning migrations. They are influenced by oceanic circulation patterns of water masses, eddies, the distribution of sea surface temperature, vertical and horizontal nutrient distribution, and the occurrence of phyto and zooplankton blooms – fuelling the lower trophic levels of the food chain.

Many of these migratory patterns have not been fully studied, and remain poorly understood for many species.

Table 1: Table of tuna and tuna-like species under IOTC management

English vernacular name	Scientific name	FAO Apha-3 Species Code
Yellowfin tuna	*Thunnus albacares*	YFT
Skipjack tuna	*Katsuwonus pelamis*	SKJ
Bigeye tuna	*Thunnus obesus*	BET
Albacore	*Thunnus alalunga*	ALB
Southern bluefin tuna	*Thunnus maccoyii*	SBT
Longtail tuna	*Thunnus tonggol*	LOT
Kawakawa	*Euthynnus affinis*	KAW
Frigate tuna	*Auxis thazard*	FRI
Bullet tuna	*Auxis rochei*	BLT
Narrow-barred Spanish mackerel	*Scomberomorus commersoni*	COM
Indo-Pacific king mackerel	*Scomberomorus guttatus*	GUT
Blue Marlin	*Makaira nigricans*	BUM
Black Marlin	*Makaira indica*	BLM
Striped Marlin	*Tetrapturus audax*	MLS
Indo-Pacific Sailfish	*Istiophorus platypterus*	SFA
Swordfish	*Xiphias gladius*	SWO

Tunas mainly feed on fish, crustaceans and cephalopods. They consume prey found in large quantities in their habitat and feed mainly during daytime in a non-selective manner. Composition of stomach contents changes substantially between areas, and also between seasons.

Tuna stocks in the Indian Ocean are considered as single units, when it comes to their management.

At the level of the Indian Ocean – as an expanse of maritime waters – most species of tuna and billfish are considered to belong to single stocks. For those stocks where there could be a formation of semi-permanent sub-stocks (e.g. one population of a species spends its feeding migration more to the east, while another population spends it separately more to the west), interbreeding between such sub-populations is high enough as to not allow for any genetic distinction between such groups to occur. Therefore, tuna stocks in the Indian Ocean are considered as single units, when it comes to their management.

Every year, around 40.000 tons of tuna species are transhipped by large scale tuna longline vessels to carrier vessels on the high seas

Of the 16 species managed by the IOTC, five are the object of fully quantitative stock assessment methods. These are the key commercial species of yellowfin tuna, skipjack tuna, bigeye tuna, albacore and swordfish. It results that in general terms, these key commercial stocks continue to be in reasonable shape, even though no catch limitations have been put in place to date (note: discussions to define and implement a catch limitation scheme are ongoing).

Of the 16 species managed by the IOTC, five are the object of fully quantitative stock assessment methods. These are the key commercial species of yellowfin tuna, skipjack tuna, bigeye tuna, albacore and swordfish.

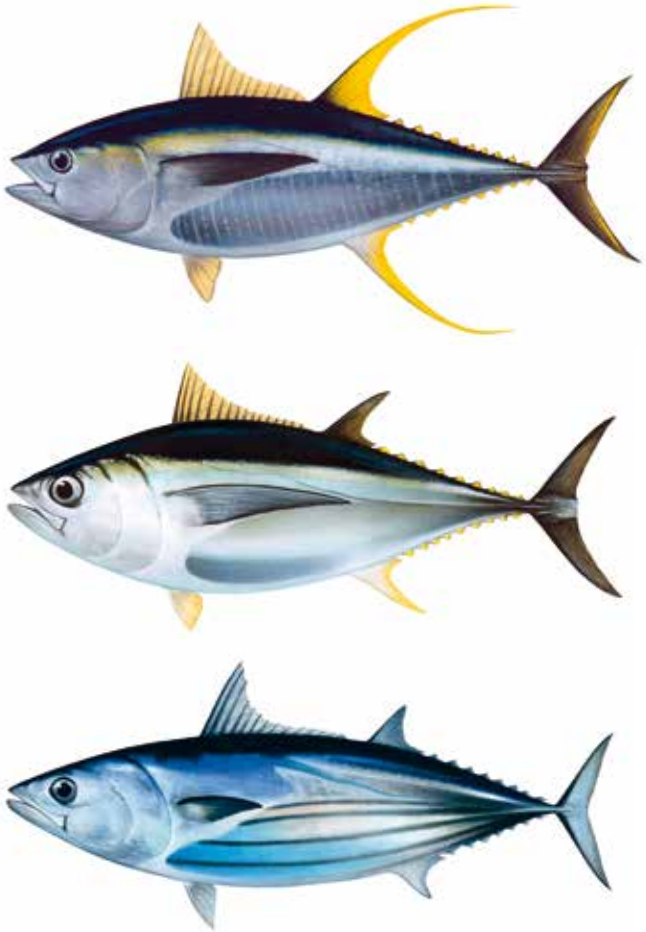


Figure 3: Tropical tunas from top to bottom - YFT, BET and SKJ
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STOCK STATUS SUMMARY FOR THE IOTC SPECIES: 2014

Table 2*. Status summary for species of tuna and tuna-like species under the IOTC mandate, as well as other species impacted by IOTC fisheries.

Stock	Indicators		2014*
Albacore *Thunnus alalunga*	Catch 2013: Average catch 2008–2013: MSY (1,000 t) (80% CI): F_{MSY} (80% CI): SB_{MSY} (1,000 t) (80% CI): F_{2012}/F_{MSY} (80% CI): SB_{2012}/SB_{MSY} (80% CI): SB_{2012}/SB_{1950} (80% CI):	38,297 t 37,525 t 47.6 (26.7–78.8) 0.31 (0.21–0.42) 39.2 (25.4–50.7) 0.69 (0.23–1.39) 1.09 (0.34–2.20) 0.21 (0.11–0.33)	
Bigeye tuna *Thunnus obesus*	Catch in 2013: Average catch 2009–2013: MSY (1,000 t) (range): F_{MSY} (range): SB_{MSY} (1,000 t) (range): F_{2012}/F_{MSY} (range): SB_{2012}/SB_{MSY} (range): SB_{2012}/SB_0 (range):	109,343 t 105,924 t 132 (98–207) n.a. (n.a.–n.a.) 474 (295–677) 0.42 (0.21–0.80) 1.44 (0.87–2.22) 0.40 (0.27–0.54)	
Skipjack tuna *Katsuwonus pelamis*	Catch 2013: Average catch 2009–2013: MSY (1,000 t) (80% CI): F_{MSY} (80% CI): SB_{MSY} (1,000 t) (80% CI): C_{2013}/C_{MSY} (80% CI): SB_{2013}/SB_{MSY} (80% CI): SB_{2013}/SB_0 (80% CI):	424,580 t 401,132 t 684 (550–849) 0.65 (0.51–0.79) 875 (708–1,075) 0.62 (0.49–0.75) 1.59 (1.13–2.14) 0.58 (0.53–0.62)	

Advice to the Commission

Catches have increased substantially since 2007, attributed to the Indonesian and Taiwan,China longline fisheries although there is substantial uncertainty remaining on the catch estimates. It is considered that recent catches are approaching MSY levels. Fishing mortality represented as F_{2012}/F_{MSY} is 0.69. Biomass is considered to be at or very near to the SB_{MSY} level ($SB_{2012}/SB_{MSY} = 1.09$). Considerable uncertainty remains in the assessments, indicating that a precautionary approach to the management of albacore should be applied by reducing fishing mortality or capping total catch levels to those taken in 2012 (34,000 t).

No new stock assessment was carried out in 2014, thus, stock status is determined on the basis of the 2013 assessment and other indicators presented in 2014. All the runs (except 2 extremes) carried out in 2013 indicate the stock is above a biomass level that would produce MSY in the long term (i.e. $SB_{2012}/SB_{MSY} > 1$) and in all runs that current fishing mortality is below the MSY-based reference level (i.e. $F_{2012}/F_{MSY} < 1$). Current spawning stock biomass was estimated to be 40% of the unfished levels. Catches in 2013 (≈109,000 t) remain lower than the estimated MSY values from the 2013 stock assessments. The average catch over the previous five years (2009–13; ≈106,000 t) also remains below the estimated MSY.

The 2014 stock assessment model results did not differ substantively from the previous assessments. All the runs indicate the stock is above a biomass level that would produce MSY in the long term (i.e. $SB_{2013}/SB_{MSY} > 1$) and that the current proxy for fishing mortality is below the MSY-based reference level (i.e. $C_{current}/C_{MSY} < 1$). Current spawning stock biomass was estimated to be 57% of the unfished levels. Catches in 2014 (≈424,000 t) remain lower than the estimated MSY values from the 2014 stock assessments. The average catch over the previous five years (2009–13; ≈401,000 t) also remains below the estimated MSY.

Stock	Indicators		2014*
Yellowfin tuna *Thunnus albacares*	Catch 2013:	402,084 t	
	Average catch 2008–2013:	339,359 t	
		344 (290–453)	
	MSY (1,000 t) (80% CI):	n.a (n.a.–n.a.)	
	F_{MSY} (80% CI): SB_{MSY} (1,000 t) (80% CI): F_{curr}/F_{MSY} (80% CI):	881 (784–986)	
		0.69 (0.59–0.90)	
	SB_{curr}/SB_{MSY} (80% CI):	1.24 (0.91–1.40)	
	SB_{curr}/SB_0 (80% CI):	0.38 (0.28–0.38)	
Swordfish (whole Indian Ocean) *Xiphias gladius*	Catch in 2013:	31,804 t	
	Average catch 2009–2013:	26,510 t	
	MSY (1,000 t) (range):	39.40 (33.20–45.60)	
	F_{MSY} (range): SB_{MSY} (1,000 t) (range):	0.138 (0.137–0.138)	
		61.4 (51.5–71.4)	
	F_{2012}/F_{MSY} (range): SB_{2012}/SB_{MSY} (range): SB_{2012}/SB_0 (range):	0.34 (0.28–0.40)	
		3.10 (2.44–3.75)	
		0.74 (0.58–0.89)	
Swordfish (southwest Indian Ocean) *Xiphias gladius*	Catch 2013:	7,349 t	
	Average catch 2009–2013:	7,265 t	
	MSY (1,000 t) (80% CI):	9.86 (9.11–10.57)	
	F_{MSY} (80% CI): SB_{MSY} (1,000 t) (80% CI):	0.63 (0.59–0.70)	
		12.68 (12.52–12.78)	
	C_{2013}/C_{MSY} (80% CI):	0.89 (0.61–1.14)	
	SB_{2013}/SB_{MSY} (80% CI): SB_{2013}/SB_0 (80% CI):	0.94 (0.68–1.23)	
		0.16 (n.a.)	

Of the 16 species managed by the IOTC, five are the object of fully quantitative stock assessment methods. These are the key commercial species of yellowfin tuna, skipjack tuna, bigeye tuna, albacore and swordfish.

*For the most up-to-date stocks status, consult the information at the following link: http://www.iotc.org/science/status-summary-species-tuna-and-tuna-species-under-iotc-mandate-well-other-species-impacted-iotc

Advice to the Commission

No new stock assessment was carried out in 2014, thus, stock status is determined on the basis of the 2012 assessment and other indicators presented in 2014. Total catch has continued to increase with 400,292 t and 402,084 t landed in 2012 and 2013, respectively, well in excess of previous MSY estimates (≈17% above the MSY level of 344,000 t), in comparison to 327,453 t landed in 2011 and 299,713 t landed in 2010. Therefore it is difficult to know whether the stock is moving towards a state of being subject to overfishing.

The SS3 model, used for stock status advice indicated that MSY-based reference points were not exceeded for the Indian Ocean population as a whole ($F_{2013}/F_{MSY} < 1$; $SB_{2013}/SB_{MSY} > 1$). All other models applied to swordfish also indicated that the stock is above a biomass level that would produce MSY and current catches are below the MSY level. Spawning stock biomass in 2013 was estimated to be 58–89% of the unfished levels.

The assessments carried out in 2014 produced substantially conflicting results (ASIA, BBDM and ASPIC). The southwest Indian Ocean region has been subject to localised depletion over the past decade and biomass remains below the level that would produce MSY (B_{MSY}). In 2013, 7,349 t of swordfish catches were recorded from this region, which equals 110% of the recommended maximum catch of 6,678 t agreed to by the SC in 2011. If catches are maintained at 2013 levels, the probabilities of violating target reference points in 2016 are ≈ 81% for F_{MSY} and ≈ 40% for B_{MSY}.

THE TUNA FISHERIES OF THE INDIAN OCEAN

Most of the Indian Ocean tuna catch is offloaded in ports located in the IOTC area of competence

The Indian Ocean currently provides about 20% of the global tuna catch. The tuna resources of the Indian Ocean are the second largest in the world.

Global tuna production has tended to increase continuously from less than 600,000t in 1950 to above 6,000,000t in 2010.

The Indian Ocean currently provides about 20% of the global tuna catch. The tuna resources of the Indian Ocean are the second largest in the world and make a significant contribution to food security throughout the region. The Indian Ocean tuna economy is estimated by some to be worth six billion USD.

Approximately half (50%) of the tuna caught in the Indian Ocean is by small-scale (artisanal) fishing fleets, within the EEZ of coastal States. This contrasts with other ocean basins, such as the Western and Central Pacific, where catches are predominantly made by large-scale (industrial) fleets. Small-scale fleets in the Indian Ocean are prominent in countries like Indonesia, I.R. Iran, the Comoros, Yemen, the Maldives, Sri Lanka, Pakistan and India. Although much of the tuna landed by small-scale fishers is directed at local markets for national consumption, a portion of the catch may also be exported to other countries.

Countries like the Seychelles and Mauritius derive substantial economic benefits and revenue from the tuna industry. Economic benefits may be generated directly through employment (especially in the processing industry), or indirectly in terms of port State economy earnings. Important tuna canneries in the western Indian Ocean are located in the Seychelles, Mauritius, Kenya and Madagascar. In the eastern Indian Ocean, Indonesia and Thailand are important tuna processors. While tuna processors in the western Indian Ocean source tuna almost exclusively from Indian Ocean fisheries, South-East Asian processors have a history of switching sources of tuna supplies between ocean basins, according to commercial logic. Their strategic location between the Indian and the Pacific Ocean basins allows them to do so with relative ease.

Approximately half (50%) of the tuna caught in the Indian Ocean is by small-scale (artisanal) fishing fleets, within the EEZ of coastal States.

Key markets for Indian Ocean tuna are the European Union for canned tuna, and the Japanese and wider Asian markets for sashimi-grade (fresh or frozen) tuna. Western Indian Ocean canneries are almost exclusively targeting the EU market, not least because of their preferential trade ties with the EU under the ACP and Cotonou Agreement framework.

The total tuna catch of the Indian Ocean has been estimated in the order of 1,700,000t in 2013.

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The total tuna catch of the Indian Ocean has been estimated in the order of 1,700,000t in 2013.

Tens of thousands of fishers and their dependents around the Indian Ocean basin derive sustenance and income from these fisheries. Artisanal fleets targeting tuna operate exclusively within their EEZs, and this catch is derived from mostly coastal waters bordering the entire Indian Ocean basin. Statistics on species composition, size frequencies and CPUE are poor, and dynamics in these fisheries are poorly understood. A 5-year IOTC tuna tagging program, which ran from 2005-2009, found it very difficult to recover tags from artisanal operators, owing to the fact that raising awareness about the program in remote fishing communities across the ocean basin proved to be a significant challenge for the artisanal sector.

The larger-scale tuna fisheries fall into several categories, of which the overall make-up has been shifting and evolving gradually throughout the years, in response to technological developments, but also due to market demand for specific types of products.

The pole and line fishery (Maldives) captures around 100,000 tons every year

Firstly, there are the industrial-scale purse seiners, of which the majority are flagged to the EU, and a number of other countries such as Seychelles, Iran, the Philippines, Japan and Republic of Korea. They account for about 20% of the total Indian Ocean catch. In recent years, there has been a gradual shift in the EU Indian Ocean fleet, with longliners becoming an important part of the fleet. There were some 64 industrial-scale purse seiners actively operating in the Indian Ocean in 2014[1].

Industrial-scale purse seiners, the majority are flagged to the EU, Seychelles, Iran, the Philippines, Japan and Republic of Korea, account for about 20% of the total Indian Ocean tuna catch.

The second category of industrial-scale fishing vessels is made up of long-range longliners (often referred to as "LSTLVs" in IOTC official documents). These fall into either fresh-tuna or frozen-tuna longliner categories. The majority of these vessels fly the flags of countries like China, Japan, India, Indonesia, Seychelles or Spain. They account for about 13% of the total Indian Ocean catch in 2013[2]. Some 1127 longliners of 24m or above in length were listed on IOTCs record of authorised vessels in late 2014[3]; around 750 vessels were reported as active in the Indian Ocean in 2014[4].

Then there is the third category of intermediate-scale (or semi-industrial) short range south Asian tuna fleets, which consist of several types of vessels. These include pole-and-line vessels (Maldives), gillnetters (mostly Iran and Pakistan), multipurpose longline and gillnet vessels (Sri Lanka), and purse seine and longline vessels (Indonesia). There are several thousands of these intermediate sized vessels, the majority less than 24m in length and which account for a significant portion of the total Indian Ocean catch.

The remaining proportion of total Indian Ocean catch (≈50%) is attributed to artisanal fleets operated by bordering coastal States.

1. IOTC Record of Active Vessels
2. http://www.iotc.org/documents/nominal-catches-fleet-year-gear-iotc-area-and-species-6
3. http://www.iotc.org/vessels/current for longliners equal or greater than 24m
4. IOTC Record of Active Vessels

62% of the overall tuna catch in the Indian Ocean is attributed to bordering coastal States (artisanal and semi-industrial fleets), while the remaining 38% of the catches are realised by industrial-scale purse seine and longline vessels mostly operated by DWFNs

It emerges from this brief characterisation of the large-scale fleets that the industrial segments of purse seiners and longliners are operated mostly by DWFNs. Few coastal States bordering the Indian Ocean operate sizeable industrial-scale fleets. And instead are composed primarily of artisanal and semi-industrial fleets.

In summary, 62% of the overall tuna catch in the Indian Ocean is attributed to bordering coastal States (artisanal and semi-industrial fleets), while the remaining 38% of the catches are realised by industrial-scale purse seine and longline vessels mostly operated by DWFNs[5].

5. http://www.iotc.org/documents/nominal-catches-fleet-year-gear-iotc-area-and-species-6

WHOSE TUNA AND WHO TO MANAGE?

IOTC plenary, Commission meeting, where conservation and management measures are adopted by Members

UNCLOS grants all States the right to fish on the high seas. Any State has the sovereign right to fish tuna on the high seas.

One of the most important questions – and clearly also one of the most justified – is the question about who the tuna resources belong to; and in direct relationship to that question, the question about who has got the mandate to manage tuna resources inside the EEZs of coastal States. The question is of importance, because sedentary living and fossil natural resources, such as trees, ores, or stocks of shrimp – when not shared with neighbouring countries – are managed by individual States, mostly without interference from the outside world, and under the premise of sovereign rights to manage and exploit the Nation's resources as it best deems fit.

With tuna, the central issue is the fact that the resource is highly mobile, and that it merely spends a part of its migratory cycle in any coastal State's waters. In addition to this, a significant amount of time is spent beyond the EEZ of any State, on the high seas. UNCLOS grants all States the right to fish on the high seas. Any State has the sovereign right to fish tuna on the high seas, with the caveat that this right is "*subject to the rights, duties and interests of coastal States*" (UNCLOS art. 116).

This implies that the exploitation of highly migratory resources on the high seas shall not be conducted without taking into account the rights and interests of coastal States. The same primacy of coastal State interests (and rights) is reflected in UNFSA, notably in articles 7.2 (on compatibility of management measures), and most clearly in article 16 (on fishing in enclosed high seas pockets entirely surrounded by coastal States).

In conclusion to the tuna ownership conundrum, it may be said that coastal States have special rights and interests in the resources which regularly pass through their EEZ, but in terms of exploitation or use rights, States fishing the same resources on the high seas have an equal entitlement to do so.

However, this begs one question: Are coastal States not entitled to manage tuna resources within their EEZ as they deem fit? Due to the fact that tuna stocks represent single units, evolving under shared, collective "ownership", it only makes sense to subject these single units to single, consistent and coherent management regimes. This can only be done if all interested coastal and flag States sign up to the process – and this process takes place within the IOTC.

Reefer hold - Filling of a cargo net with tuna during an offloading operation to a cannery

Members are the Commission. They own a stake in the Commission.

The more resource owners and exploiters sign up to the process, the more consistent the effort will become, and the more chances the process will have in producing sustainably managed stocks. While the migratory nature of the tuna between EEZs and the high seas are of little consequence from a biological point of view, it is critical from a legal point of view. If States interested in the exploitation of specific migratory resources managed through an RFMO refuse to join that RFMO, and/or refuse to apply its conservation and management rules, it weakens the work of that RFMO, and its chances to produce sustainable fisheries management solutions for any of its Members. The chances of successfully managing a highly migratory resource as a coastal State, on its own without consideration of what is happening in the wider region, are almost impossible.

In recognizing the greater benefits behind the process of developing and implementing consistent management regimes applicable to the unit, in accepting the provisions enshrined in international law on the matter, encouraging coastal and flag States to sign up to such processes, and in becoming a full Member of an RFMO such as the IOTC, sovereign States sign up to guiding, influencing and respecting the decisions of such a Commission on applicable conservation and management measures. Most importantly, in becoming a full Member, States sign up to apply these measures to their fisheries, within their EEZ, and also beyond according to the conservation management measures to which they have agreed.

Members are the Commission. They own a stake in the Commission, in the same way as they own a stake in the stocks. The important part for individual States is to ensure that they are properly represented at the Commission, guide its work, defend national interests and propose management measures which are in the interest of the Nation, e.g., the collectivity and the sustainable benefits that the Nation hopes to derive from the resource today and in the long term.

IOTC – IN A NUTSHELL

Compliance Committee, Colombo, Sri Lanka (2011)

The Agreement for the Establishment of the Indian Ocean Tuna Commission was adopted by the FAO Council at its 105 Session in Rome on 25 November, 1993, and represents the founding document of the organisation.

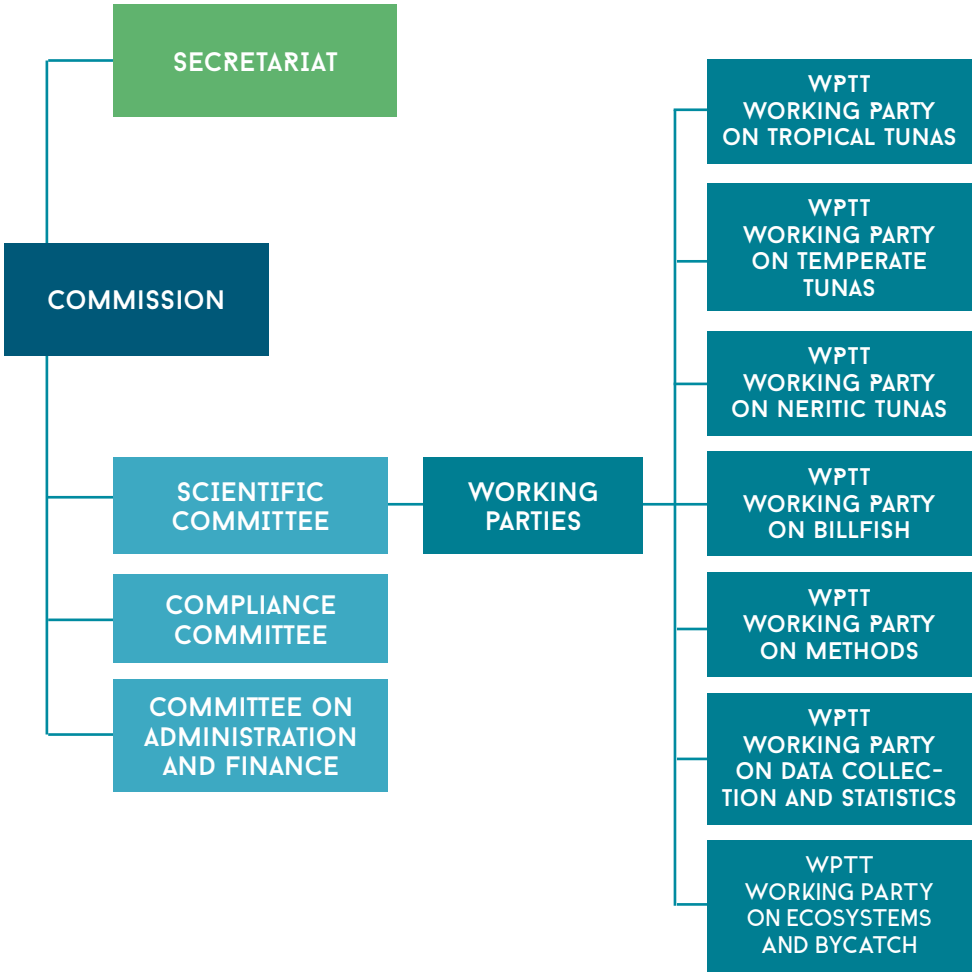
The Indian Ocean Tuna Commission has been established through an international agreement, which is signed up to by sovereign States. The *Agreement for the Establishment of the Indian Ocean Tuna Commission, henceforth called the Agreement,* was adopted by the FAO Council at its 105th Session in Rome on 25 November, 1993, and represents the founding document of the organisation. The Agreement entered into force on 27 March 1996. The IOTC is an intergovernmental organisation established under Article XIV of the FAO Constitution, and is hence placed within the FAO framework. It is the only one of the five tuna RFMOs worldwide that is established under the FAO Constitution. In practical terms though, IOTC is meant to operate largely independently from FAO save from its financial controls and is guided by, and responds to its Members alone.

Under the Agreement, the IOTC is mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas. The objective of the IOTC is to promote cooperation among its Members with a view to ensuring, through appropriate management, the conservation and optimum utilization of stocks covered by the Agreement and encourages sustainable development of fisheries based on these stocks.

In order to carry out its mandate, the IOTC has provided itself with a specific organic structure. This structure consists of four key bodies. These are the Commission, three Committees (the Scientific Committee, Standing Committee on Administration and Finance and the Compliance Committee) and a number of Working Groups, supported by a Secretariat.

Figure 4: Organic layout of the IOTC covering technical functions

Organic layout of the IOTC covering technical functions



MEMBERS AND NON-MEMBERS

As of July 2015, the IOTC has been counting 32 full Members and 5 Cooperating Non-Contracting Parties, with Vanuatu withdrawing from the Commission on 31 December 2015, and Belize having given notice of its withdrawal effective 31 December 2016. The most recent new Members are the Yemen, Mozambique and the Maldives, all important Indian Ocean coastal States. The current membership of the Commission is summarized in the table 3.

Artisanal fishing vessels, Yemen

Table 3: IOTC Members as of 2015

CONTRACTING PARTIES TO THE INDIAN OCEAN TUNA COMMISSION (DATE OF ACCEPTANCE)

	**Australia**	(13 Nov 1996)		**Maldives**	(13 July 2011)
	**Belize**	(May 2007)		**Mauritius**	(27 Dec 1994)
	**China**	(14 Oct 1998)		**Mozambique**	(13 Feb 2012)
	**Comoros**	(14 Aug 2001)		**Oman, Sultanate of**	(5 April 2000)
	**Eritrea**	(9 Aug 1994)		**Pakistan**	(27 Apr 1995)
	**European Community**	(27 Oct 1995)		**Philippines**	(9 Jan 2004)
	**France (Territories)**	(3 Dec 1996)		**Seychelles**	(26 Jul 1995)
	**Guinea**	(31 Jan 2005)		**Sierra Leone**	(01 Jul 2008)
	**India**	(13 Mar 1995)		**Somalia**	(22 May 2014)
	**Indonesia**	(09 July 2007)		**Sri Lanka**	(13 Jun 1994)
	**Iran, Islamic Republic of**	(28 Jan 2002)		**Sudan**	(3 Dec 1996)
	**Japan**	(26 Jun 1996)		**Tanzania**	(18 Apr 2007)
	**Kenya**	(29 Sep 2004)		**Thailand**	(17 Mar 1997)
	**Republic of Korea**	(27 Mar 1996)		**United Kingdom (Territories)**	(31 Mar 1995)
	**Madagascar**	(10 Jan 1996)		**Vanuatu**	(25 Oct 2002)
	**Malaysia**	(22 May 1998)		**Yemen**	(20 Jul 2012)

COOPERATING NON-CONTRACTING PARTIES TO THE INDIAN OCEAN TUNA COMMISSION

	**Bangladesh** (Since 2015)		**Senegal** (Since 2006)
	**Djibouti** (Since 2014)		**South Africa** (Since 2005)
	**Liberia** (Since 2015)		

Contracting and Cooperating Non-Contracting Parties are designated as "CPCs". CMMs generally address both types of parties.

The countries with "Cooperating Non-Contracting Party" (CNCP) status are, Bangladesh, Djibouti, Liberia, Senegal and South Africa. By resolution 14/01, the criteria for obtaining the status of Cooperating Non-Contracting Party has been moved to the IOTC Rules of Procedure, Appendix III. These Rules set the obligations of such parties, which includes the commitment to respect the Commission's CMMs. This status is obtained following an official application to the Secretary, and approval by the Commission annually.

Together, Contracting and Cooperating Non-Contracting Parties are designated as "CPCs". Many resolutions specifically refer to CPCs in their titles, implying that both types of parties are targeted by the resolution and its provisions. CMMs generally address both types of parties, and the expected level of "cooperation" for any CNCP is all encompassing and very high.

Non-CPCs of the Commission operating in the area have no direct obligations under the Agreement, although they would be considered as engaging in IUU fishing in the Area. However, they are still obliged to fulfil their duties under international law, which does include an obligation to cooperate with the IOTC in the conservation and management of tuna and tuna-like species that they might be targeting and also not undermine such measures as per Article VIII of the FAO Compliance Agreement.

Also, certain resolutions may introduce mechanisms that non-members will have to comply with, if they intend to develop certain forms of interactions with CPCs. An example of such a mechanism is Resolution 01/06 on the IOTC Bigeye Tuna Statistical Programme, which provides for a documentation and certification scheme which applies to all countries (including non-CPCs) wishing to export BET to CPC territories.

THE COMMISSION

The Commission adopt, on the basis of scientific evidence, conservation and management measures (CMMs) to ensure the conservation of the stocks.

In order to achieve its objective, the Commission has the following technical functions and responsibilities, in accordance with the principles expressed in the relevant provisions of UNCLOS;

a) to keep under review the conditions and trends of the stocks and to gather, analyse and disseminate scientific information and data relevant to the conservation and management of the stocks;
b) to encourage, recommend, and coordinate research and development activities of the stocks and fisheries;
c) to adopt, on the basis of scientific evidence, conservation and management measures to ensure the conservation of the stocks;
d) to keep under review the economic and social aspects of the fisheries.

The Commission meets once a year during an Annual Session

The Commission normally meets once a year during an Annual Session. The officers of the Commission are elected from the delegates present at Commission meetings and hold office for a biennium. Rules of Procedure, developed by the Commission itself, define its decision-making processes. The management powers of the IOTC are vested in the Commission, and converge during the Sessions. The Commission takes cognisance of the reports of the various Committees and the Secretariat, and debates and votes on proposals for new conservation and management measures. Proposals for new conservation and management substance are generally submitted or sponsored by a Member of the Commission.

The meetings of the Scientific Committee are held ahead of the Commission meeting. It advises the Commission on research and data collection, on the status of stocks and on management issues

CMMs that will become binding upon its Members must be adopted by a two-thirds majority of Members present and voting. Individual members may file a formal objection to a decision and will not be bound by it. Recommendations concerning conservation and management of the stocks for furthering the objectives of this Agreement need only be adopted by a simple majority of its Members present and voting. Recommendations – as their name implies – ought to be followed, but are not binding.

Sub-commissions can be created. They will be open to those Contracting Parties which are coastal States lying on the migratory path of the stocks considered by a sub-commission, or are States whose vessels participate in the fisheries of those stocks. They provide a forum for consultation and cooperation on matters related to the management of the stocks concerned. In particular, they will examine management options and recommend to the Commission appropriate management measures. To date, no sub-commissions have been constituted. They could become necessary if the Commission determined that management of specific stocks is needed.

The work of the Commission is supported directly by the Secretariat and a number of Committees, including the Scientific, the Compliance and the Administration and Finance Committees. The roles of these are described in the next section.

THE COMMITTEES

Committees are subsidiary bodies of the Commission. The function of the Committees, supporting the Commission, is to prepare the work of the Commission. Committees do much of the technical work, and prepare matter in the form of advice for the Commission to act upon. Committees generally meet ahead of Commission meetings in order to complete their tasks.

Committees are subsidiary bodies of the Commission. The function of the Committees is to prepare the work of the Commission.

Committees currently in existence are the Scientific Committee (SC), the Compliance Committee (CoC), and the Standing Committee on Administration and Finance (SCAF). The former two cover technical tasks, while the latter is administrative in nature.

THE SCIENTIFIC COMMITTEE

Its creation as a subsidiary body is the only one that is specifically provided for in the Agreement (article XII, para. 1). Terms of Reference of the SC are further detailed in the IOTC Rules of Procedure approved at the 18th Session of the Commission in 2014 as noted in Appendix IV of the Session Report. It advises the Commission on research and data collection, on the status of stocks and on management issues. The meetings of the Scientific Committee are held ahead of the Commission meeting.

The Scientific Committee itself is supported by a number of individual Working Parties (see figure 4). The primary function of these is to analyse in more detail technical problems related to the management goals of the Commission. For example, working parties covering different species analyse the status of the stock and propose options to the Scientific Committee for management recommendations it – in turn – will make to the Commission. Others, such as the Working Party on Data Collection or Methods, deal with matters related to due scientific process.

Working Party participation is open to interested and technically competent individuals. The reports of the Working Parties are directed to the Scientific Committee. By way of example, six different Working Parties met formally in 2011, producing a total of 302 working and information papers.

THE COMPLIANCE COMMITTEE

This Committee, whose terms of reference were first established in 2002 through resolution 02/03 (superseded since by resolution 10/09, and then resolution 14/01 which effectively included these terms of reference in the IOTC Rules of Procedure approved at the 18th Session of the Commission in 2014 and are included in Appendix V of that annual report. The Compliance Committee primarily deals with the monitoring of compliance of CPCs with binding CMMs. Therefore, its action on compliance is primarily an "inward looking" function determining the compliance of the Commission's Members with their own rules. Like the Scientific Committee, the Compliance Committee meets ahead of the Annual Session.

The Compliance Committee primarily deals with the monitoring of compliance of CPCs with binding CMMs.

The Compliance Committee is assisted in its work by the Compliance Section, which is seated within the Secretariat's structure. The compliance monitoring is done primarily on the basis of a questionnaire which is circulated by the Secretariat, and which has to be responded to on an annual basis. In addition to this, many resolutions contain reporting requirements, which CPCs must honour. Reporting requirements relate to various aspects of CMM implementation, such as providing the Commission with specific information on CMM implementation, or with data and statistics.

Compliance related activities have increased in recent years, and for the Secretariat these are comparable to the workload generated in support of scientific activities.

It pertains to the Compliance Committee to review the compliance monitoring information and resulting reports prepared by the Secretariat, and to make recommendations to the Commission.

THE STANDING COMMITTEE ON ADMINISTRATION AND FINANCE

This Committee advises the Commission on matters of administrative and financial character. It is also tasked to examine the programme of work and budget for the coming biennium and to examine the activities conducted in the previous year.

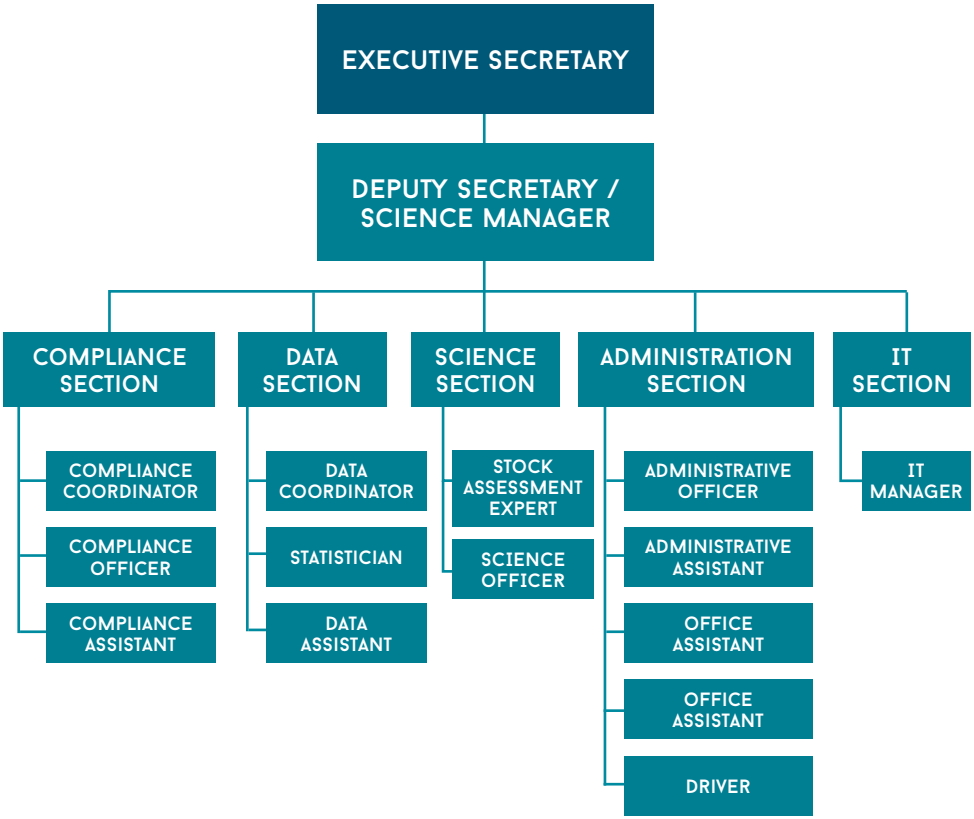
The meetings of the SCAF are held just before the Commission meeting

THE IOTC SECRETARIAT

The offices of the IOTC Secretariat are located in Victoria, the capital of the Seychelles, on the island of Mahé. The office started its operations on first of January, 1998. In 2015 the Secretariat was composed of 16 posts, covering technical and administrative positions. The organigram of the Secretariat is reflected in the figure below.

Figure 5: Structure of the IOTC Secretariat in 2015 (source: SCAF Doc IOTC)

Structure of the IOTC Secretariat in 2015



The mission of the Secretariat is to facilitate the processes required to implement the policies and activities of the Commission.

The mission of the Secretariat is to facilitate the processes required to implement the policies and activities of the Commission, whose goal is to achieve the objectives stated in the IOTC Agreement. In essence, these processes include the acquisition, processing and dissemination of information that constitutes the basis for the Commission's decisions, as well as supporting the actions taken by the CPCs to effectively implement those decisions.

To facilitate planning, the activities of the Secretariat have been grouped into six major functional areas:

1. **Support to scientific activities.** The acquisition and processing of scientific data, as required by the Scientific Committee to conduct stock status analyses. Supply of stock assessment services as required by the working groups.

2. **Support to compliance activities.** Maintenance of lists of vessels and compliance databases, reporting on compliance by Members. Providing support to CPCs in the implementation of IOTC Resolutions.

3. **Communications and public information.** Considered essential in allowing CPCs to follow the progress of the Commission's work in a transparent way, and to increase the visibility of the Commission's activities to the general public and also share experiences, information and strengthen liaison between t-RFMOs and RFBs.

4. **Support to meetings.** Logistic support in the facilitation of meetings, preparation of reports and maintenance of the meetings calendar

5. **Information Technology.** Provide basic computer infrastructure, including maintenance of the network and servers, as well as Internet support.

6. **Administration.** Financial administration in conjunction with FAO, administration of extra-budgetary funds, travel arrangements, general logistical support to the activities of the technical sections.

In order to provide support to the scientific activities of the Commission and its subsidiary bodies, there is close cooperation between the Data Section and the Science Section in the production of datasets and analyses that will assist the Scientific Committee and its Working Parties to formulate its advice to the Commission. Similarly, the Data Section and the Compliance Section cooperate in the maintenance and analyses of the databases needed to monitor the effectiveness of the implementation of the measures adopted by the Members and recommend operational support or capacity building to enhance implementation, thus supporting the work of the Commission.

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The Secretariat can also become involved in the implementation of projects that further the objectives of the Commission. In the five years from 2005 to 2009, the IOTC Secretariat hosted the EDF-funded Regional Tuna Tagging Programme (RTTP), whose aim was to tag tuna, and enhance scientific knowledge about the stocks and the species through a tag recovery program. Certain parts of the project were implemented by the IOTC Secretariat directly. This project, which managed to tag in excess of 160,000 individual tunas throughout the Western Indian Ocean, was rated a full success, and managed to substantially enhance the state of knowledge on tuna biology available to tuna scientists working on Indian Ocean tuna stocks. The Science Committee is also working on, or linked to several other projects, and to mention some would include: the OFCF Japanese Project, the CSIRO Australian Wealth from Oceans Project; the EU Mitigating Adverse Ecological Impacts of Open Ocean Fisheries (MADE) Project; the UMR 212 Ecosystems Project; IRDs Monitoring of Tuna Purse Seiners in the Indian Ocean; the Climate Impacts on Oceanic Top Predators (CLITOP) Project; and the Phase II of the Electronic Tagging of Yellowfin and Bigeye Tunas Project.

Screen grab of IOTC's web page listing tools available to users

With respect to providing public information, the Secretariat has developed a website in which comprehensive information resources converge. The website, which is found under www.iotc.org pools resources such as reports, and databases (complete with web-based query interfaces), in order to provide CPCs with all the information they may (or must) use in order to honour their duties under the agreement. Figure 6 provides a screen grab of the tools page of the IOTC website, on which are concentrated the access to the IOTC record of authorised vessels, the list of IUU vessels, validation of IOTC statistical documents and the collection of IOTC documents.

By 2015 the IOTC had upgraded their website to meet the requirements of the rules of confidentiality for data that would be available for CPCs, but not available to the general public. The new website is more user friendly and the search engine is particularly efficient

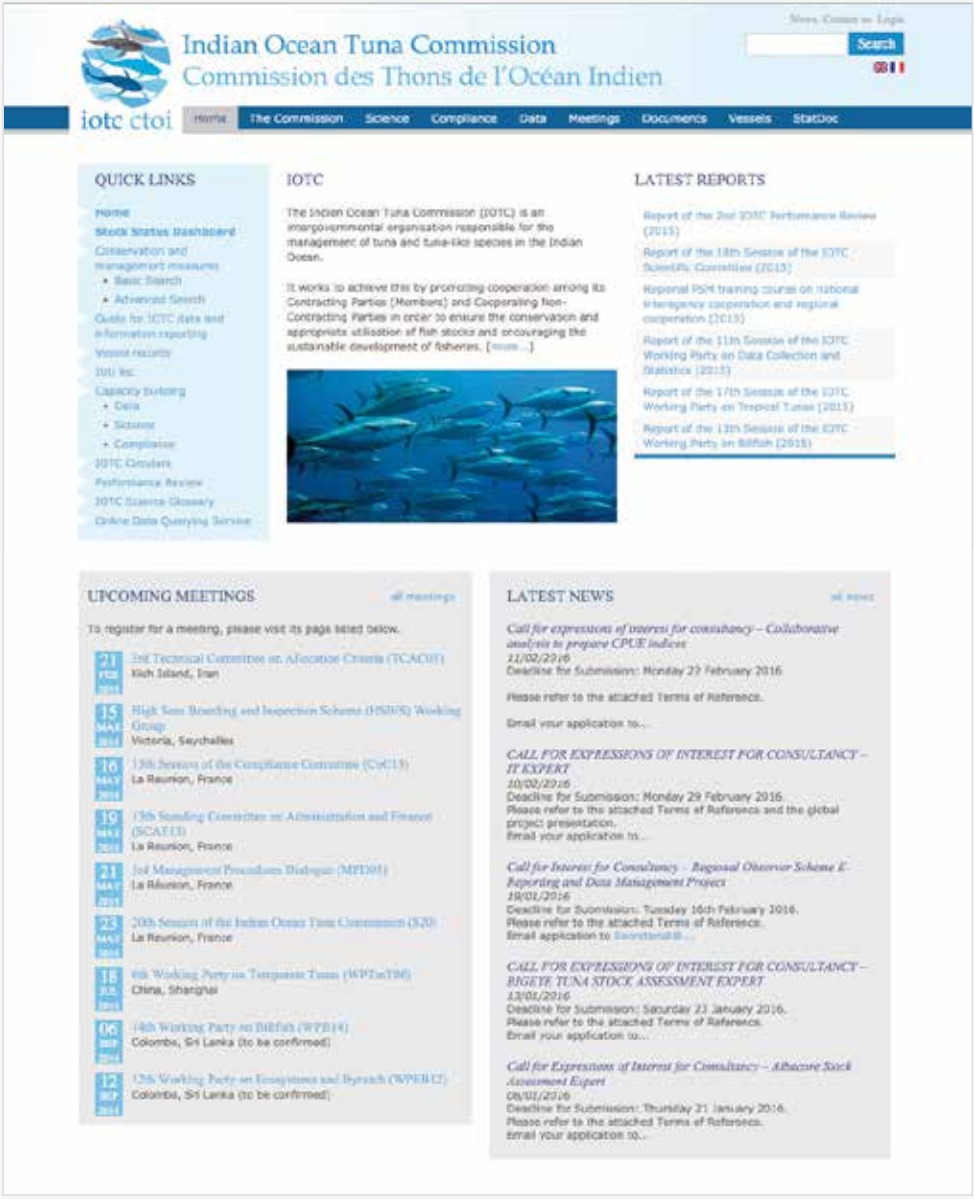


Figure 6: Screen grab of IOTC's web page listing tools available to users

OBLIGATIONS: RESOLUTIONS, REPORTING BACK & NAVIGATING FORWARD

Both resolutions and recommendations passed by the Commission are to be implemented by the CPCs. However, recommendations correspond more to statements of good intent, while resolutions are binding upon the CPCs. This implies that it is the responsibility of CPCs to ensure that action is taken under their national legislation to implement binding conservation and management measures – where such legislative action is necessary – and otherwise to give full effect to such resolutions at the national level. Under the current gambit of existing CMMs, such action is required of all States, covering coastal, port, flag and market State jurisdictions.

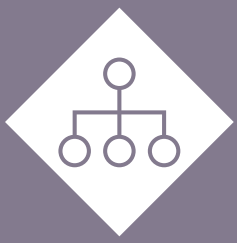
It is the responsibility of CPCs to ensure that action is taken under their national legislation to implement binding conservation and management measures.

A lot of technical requirements, for vessels to comply with, are formulated in the IOTC CMMs

Mandatory information to be submitted on a recurrent or event-related basis is vast, and requires dedicated resources within national fisheries administrations for compliance purposes.

Many of the resolutions that are currently in force provide for active reporting requirements, which CPCs must honour. These specific resolutions are presented and discussed in detail in Manual B of this series of capacity building manuals. While they are clearly not the only resolutions that CPCs have got to actively implement, they also call for information to be sent back through the Secretariat to the Commission or one of its subsidiary bodies. Such information can be related to events (*e.g.* a foreign vessel in port of a CPC is convicted of having engaged in IUU fishing), or it is recurrent and has to be submitted on an annual, or bi-annual basis (*e.g.* information on the vessels actively fishing for tunas and tuna-like species in the IOTC Area of Competence). The information to be submitted on a recurrent or event-related basis is vast, and requires dedicated resources within national fisheries administrations for compliance purposes. Submission (and non-submission) of this mandatory information is monitored by the Compliance Committee – as one of its several functions. A guide to IOTC data and information reporting requirements is produced annually by the Compliance Section for CPCs, in order to facilitate their planning to gather, to record and to submit information in a timely fashion. The non-submission of certain types of information can seriously undermine the Commission's potential to fulfil its mandate, hence the Secretariat's annual report on CPC Compliance with reporting. The latter also serves to identify resolutions where there are common compliance concerns which can be assessed as being due to the requirements or wording of the resolution, or alternatively, highlight capacity building needs.

Finally, a crucial role of the Members of the Commission is to propose new conservation and management measures. CMMs are developed and sponsored by Members, who propose them for consideration to the Commission. It is this activity that allows the IOTC to evolve, and to adapt its management framework to current needs, as they arise in the fisheries. This process also allows aligning the IOTC management framework with the evolving nature of the international legal framework. The international legal instruments relating to fisheries constitute the broader legal context, of which IOTC CMMs must be mindful, within which IOTC CMMs must inscribe themselves, and to which they must – in specific cases – provide an answer.



CHAPTER 2

KEY INTERNATIONAL INSTRUMENTS AND MECHANISMS

In order to develop a good sense of how IOTC works, and what action or measures it can, cannot, or should potentially adopt, it is important to understand and to bear in mind what principles and measures are provided by international instruments that define the rules on fisheries matters. The importance attached to this international legal framework cannot be understated, and trying to properly understand the current make-up of IOTC CMMs without a proper understanding of this supra-national guiding framework would invariably lead to frustrations. IOTC CMMs are conditioned by, respond to, and are also sometimes limited by the principles and provisions that are enshrined in this overarching international matrix.

THE KEY INSTRUMENTS

The FAO Compliance Agreement (Binding) and the IPOA- IUU (Voluntary) are two of the keys international fisheries instruments

There are a limited number of key international instruments which deal directly with fisheries, or cover fisheries also. These range from the United Nations Convention on the Law of the Sea of December 1982, to the recent Agreement on Port State Measures (2009). While most of these instruments are binding, some of them are not; namely the 1995 FAO Code of Conduct for Responsible Fisheries, and its related instruments – the so-called International Plans of Action, or IPOAs. The beauty of the Code of Conduct is that it regroups many, if not most, of the principles and measures provided for in the binding instruments and laces them into a clear and succinct compendium of best practice to follow when regulating fisheries.

The following paragraphs will provide brief summaries of the various instruments, in order to explain what their key drivers for fisheries are, and specifically – where necessary or appropriate – looking at them from an RFMO perspective.

UNCLOS (1982) & UNFSA (1995)

UNCLOS entered into force in 1994, UNFSA entered into force in 2001 and FAOCA entered into force 2003.

The place and importance of the United Nations Convention on the Law of the Sea of December 1982, (UNCLOS), and of the United Nations 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 the Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA), generally referred to as the "Fish Stocks Agreement", are highlighted in Chapter 1 of this manual. UNCLOS entered into force in 1994, and UNFSA entered into force in 2001.

FAOCA (1993)

The FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAOCA), generally referred to as the "Compliance Agreement", entered into force in 2003. It provides a set of provisions for States to take effective action, consistent with international law, to ensure compliance of their vessels with conservation and management measures relating to living marine resources on the high seas. Hinging squarely on the principle of flag State responsibility, the instrument places the onus on flag States to assume full responsibility for, and control over vessels flying their flags, while operating on the high seas.

The Compliance Agreement provides for one fundamental mechanism, which is for flag States to formally authorise their fishing vessels before allowing them to leave their EEZ and to operate on the high seas. The Agreement also makes provision for cooperation between parties to the Agreement to exchange information concerning vessels of signatory parties that have been reported to have engaged in IUU fishing.

A record of high seas fishing vessels authorised under the terms of the Agreement has been put in place by FAO, in the form of an online database, and can be accessed under the following url: http://www.fao.org/fishery/collection/hs-var/en.

PSMA (2009)

The Port State Measures Agreement (PSMA) of 2009 is the first binding instrument that provides a clear and novel alternative to the classic model of flag State enforcement, by putting the onus on port States to ensure that fishing vessels entering its port for business – whether this be related to landing, bunkering or maintenance works – have not engaged in IUU fishing operations on their most recent trip, or are not listed on internationally recognised IUU vessel black lists. By the end of 2015 14 States had ratified, accepted, approved or acceded to the PSMA. Twenty five so-called instruments of ratification, acceptance, approval or accession are necessary for the agreement to enter into force, however, this has not occurred to date[6].

The basic tenets of the PSMA are for port States to designate their ports where fisheries operations may be conducted, to put in place formal port entry request and authorization schemes, and to provide sufficient resources to implement encompassing port State inspection schemes. The fundamental drive behind the instrument is to increase detection rates of fisheries fraud at port level and to deny suspected IUU vessels port entry and services – two powerful incentives to deter IUU fishing operators from indulging in illegal behaviour.

The basic tenets of the PSMA are for port States to designate their ports where fisheries operations may be conducted, to put in place formal port entry request and authorization schemes, and inspection schemes.

The port State Agreement is sometimes interpreted as a new line of defence, intended to counter the negative effects of faltering or weak flag State responsibility and/or enforcement.

6. It is an interesting note that the IOTC CPCs have agreed to be bound by and implement Resolution 10/11 which mirrors the PSMA, consequently if these same CPCs could provide appropriate ratification instruments, it would come into force.

CODE OF CONDUCT (1995) & IPOAs (1999 & 2001)

The Code is the first and only international instrument of its type to have been developed for fisheries.

The Code "*provides principles and standards applicable to the conservation, management and development of all fisheries*." The Code was originally conceived with marine, and especially high seas fisheries in mind. This was partly due to the fact that the Code integrated principles and provisions of three international instruments (UNCLOS, the Compliance Agreement and the Fish Stocks Agreement), which all deal with ocean regimes and marine fisheries exclusively.

The Code provides principles and standards applicable to the conservation, management and development of all fisheries.

A set of instruments, in the form of international plans of action (IPOAs), has been developed in the years following the adoption of the Code. To date, IPOAs address four domains of specific global concern. They are voluntary in nature. FAO Members are encouraged to translate them into national plans of action (NPOAs), and to implement them. The following are the IPOAs currently in existence (with years of adoption in brackets):

1. International Plan of Action for Conservation and Management of Sharks (1999)
2. International Plan of Action for Reducing Incidental Catch of Seabirds in the Longline Fisheries (1999)
3. International Plan of Action for the Management of Fishing Capacity (1999)
4. International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (2001)

The Code's substance is broad and encompassing. Much of its substance – with the exception of its articles dealing with aquaculture and integrated coastal zone management – is directly relevant to the business of RFMOs, and their efforts in conserving and managing shared fisheries resources.

MECHANISMS OF STATE JURISDICTION UNDER MARITIME LAW

Tuna purse seine vessels while in port are subject to the port State jurisdiction

In the law of the sea, and in fisheries law, it is common practice to look at the State from the perspective of the roles and responsibilities that the State can or must assume in fisheries matters. There are four classic categories that are used to segment the State's responsibilities and jurisdiction into; these are the coastal State, the port State, the flag State and the market State.

With respect to the tuna fisheries of the Indian Ocean, individual States involved in the exploitation of the tuna and tuna-like resources can be endowed with all four of these dimensions, or only with a single one of them. Invariably, States will have to fulfil their obligations under those categories of State jurisdiction which apply to them – and only those.

By way of an example; an Indian Ocean rim country in whose waters tuna and tuna-like species are being harvested automatically is a *de facto* coastal State. As a coastal State, it has a number of duties regarding the exploitation and management of those resources. However, the same country might not receive fishing vessels in its ports landing tuna, and therefore, it would not be a port State. In that case, port State matters would not affect the country.

In the following sections, the basic principles of coastal, port, flag and market State control – as applicable to the particular situation of the Indian Ocean Tuna fisheries – are summarised. The intention is to acquaint the reader with the most important basic principles of control, as enshrined in international law, that condition IOTC CMMs (*i.e.* CMMs must conform to these provisions), and which have got to be implemented by the States to which the various categories of jurisdiction apply. As is often the case, basic principles are often provided for (or mirrored) in different pieces of legislation. The sections below generally limit themselves to providing reference to one or two relevant references and present some of the most important principles.

In the law of the sea, and in fisheries law, it is common practice to look at the State from the perspective of the roles and responsibilities that the State can or must assume in fisheries matters.

Radio buoys stored on board a tuna longline vessel

COASTAL STATE CONTROL

Fisheries patrols are frequently conducted by coastal States as a surveillance tool of fishing activities of licensed tuna fishing vessels

The foundations for coastal State jurisdiction in fisheries is largely derived from UNCLOS, under part V, dealing with the Exclusive Economic Zone. In the EEZ, the coastal State is provided "*sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living.*" (art. 56).

From this provision is derived the coastal States' sovereign right to exploit, to conserve and to manage its living marine resources. In doing so, a number of key principles apply, and are briefly highlighted below. Note that the "right to conserve and to manage" is generally understood as a "duty".

ACCESS TO TUNA STOCKS

The coastal State has sovereign rights to exploit living marine resources in its EEZ and it also has the right to grant access to its EEZ to fleets that are interested in exploiting a portion of those resources, namely that portion that is surplus to its harvesting capacity, but not in excess of the commitment to maintain the sustainability of the stocks. In addition to this, UNCLOS encourages States that do not manage to exploit their resources fully to grant such access to interested third parties (art. 62.2).

The coastal State has sovereign rights to exploit living marine resources in its EEZ and it also has the right to grant access to its EEZ to fleets that are interested in exploiting a portion of those resources.

When providing access, there ought to be in place a licensing regime which establishes clear rules for access and operations. In UNCLOS, licensing is the first listed point in the elements to be made to bear on foreign entrants in a national fishery (art. 62.4). Licensing is the key tool in the management framework for any targeted species. In this sense, and with respect to foreign fleets, the coastal State could also be referred to as the "Licensing State". It authorises a fishing operation to take place in its waters under a carefully designed set of rules. These rules ought to be in line with those applicable and already established by IOTC, and may contain any additional rules that the coastal State may deem fit.

A couple of these are highlighted in the following sections.

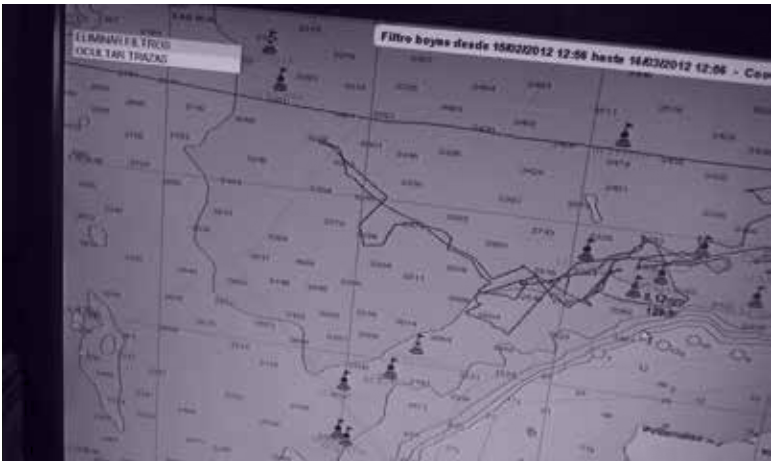
Whale sharks are often found in coastal waters. Interactions with whales sharks are regulated in Indian Ocean tuna fisheries

PRE-LICENSING INSPECTION

Vessels that seek to exploit tuna resources in the EEZ of a coastal State ought to undergo a so-called pre-licensing inspection in one of the ports of the coastal State at least once, ideally preceding the first time a vessel is granted a license. The Code provides that "*States should establish, within their respective competences and capacities, effective mechanisms for fisheries monitoring, surveillance, control and enforcement to ensure compliance with their conservation and management measures* (…)" (art. 7.1.7). The pre-licensing inspection is not a mandatory provision in any international instrument, but it is considered good practice and part of good MCS.

The fisheries laws vary from coastal State to coastal State jurisdiction; also within the remit of Indian Ocean tuna fisheries. The pre-licensing inspection is crucial for coastal States to ascertain that the vessel they license is the vessel that is actually going to operate in their waters, that it is rigged and fitted according to the application received, that it is not carrying illegal gear on board, that its vessel and gear markings are in good order, that the captain has received all relevant documentation and a full briefing from the director of fisheries (or his alternate designate), etc.

Further, pre-licensing and pre-fishing inspections enable the coastal State to verify the Master's declaration on zone entry of the fish on board by species and weight, thus reducing the potential of IUU fishing from a false declaration. Without a pre-licensing inspection, one of the most relevant elements of control for coastal States over foreign fleets is forfeited. In practice, we often find that countries where pre-licensing inspections do not take place, administrations often do not have an idea what a vessel licensed to fish in their waters looks like.



Monitoring entry and exit of EEZ is an important MCS tool for coastal States

ENTRY AND EXIT OF VESSELS FROM EEZ

A second very important element of control is the monitoring of entries and exits of fishing vessels in and out of the EEZ. In many licensing agreements, masters are to report to the coastal State what species have been caught and in what quantities, from their waters. In many agreements, royalty payments are partly determined by the quantities fished within the EEZ of the coastal State – introducing a *de facto* incentive for the Master to under-report his catches, or over report the catch on board on entry, thus enabling additional IUU fishing in the EEZ. Other reasons could exist why masters would want to under- or to over-declare catches. When vessels are made to report on entry into, and on exit from the EEZ, they must declare the estimated amount of fish by species that they carry in their holds. If a difference arises between entry and exit, it means that the difference has been fished within the EEZ of the coastal State requiring the reporting. The existence of such reports enables boarding parties during sea patrols to verify the accuracy of these statements. If misreporting is coupled with stiff sanctions under national law, a strong encouragement is created for masters to supply correct data.

It is up to coastal States to require the same reporting from unlicensed fishing vessels passing through the EEZ on innocent passage. An entry/exit monitoring arrangement requires a well organised FMC and an operating VMS.

VMS AND DATA

The IOTC has put in place stringent requirements for VMS, and vessels registered on the IOTC Record of Authorised Vessels are not permitted to operate in the IOTC area of competence anymore unless they are fitted with VMS (Resolution 15/03).

Coastal States that do grant access to foreign tuna fishing vessels ought to be in a position to register the VMS transponders of those vessels on their land-based systems, so that they are in a position to monitor the movements of the vessels they license when they start to approach – and enter – their EEZ. The existence of a capable FMC that can monitor vessel movements in this way allows a coastal State to assert a certain degree of control over the activities that are taking place within its EEZ.

The IOTC has put in place stringent requirements for VMS, and vessels registered on the IOTC Record of Authorised Vessels are not permitted to operate in the IOTC area of competence anymore, unless they are fitted with VMS.

It is essential for coastal States to have in place legislation that reflect the provisions of the IOTC resolutions in place, and that stipulate relevant sanctions for tampering with the VMS installation aboard the vessel.

Coastal States should always require foreign entrants into the tuna fisheries to submit data on a regular basis to the fisheries administration, in the form of prescribed logbooks, and in line with IOTC data reporting templates. Coastal States should contribute to the general effort of cross-checking data from different sources in order to ascertain the accuracy of submitted data, or to establish reporting fraud.

PORT STATE MEASURES

Port inspection conducted by fisheries protection officers, Port Louis, Mauritius

In 2009, the FAO PSMA was born as a pure fisheries instrument. The agreement has been translated in full into IOTC Resolution 10/11 which is already binding on its Members.

UNCLOS did not provide for any port State jurisdiction in fisheries. Under UNCLOS, port State enforcement is largely limited to functions of the port State in the protection and preservation of the marine environment (Part XII). The Code introduces the idea that port States should provide assistance to flag States – upon request of the latter – to investigate vessels deemed to have engaged in IUU fishing when voluntarily in their ports (art. 8.3.2). With UNFSA, the port State assumes an active part. UNFSA establishes that the port State has "*the duty to take measures*", and spells out actions to be taken by the Port State to directly promote the effectiveness of RFMO CMMs (art. 23). The most notorious amongst these are to prohibit landings and/or transhipments by vessels in port where IUU fishing has been established. In 2009, the Agreement on Port State Measures was born as a pure fisheries instrument, providing ports with a full gambit of enforcement tools. The agreement has been translated in full into IOTC resolution 10/11, and is already binding upon its members, while the PSMA itself has not yet entered into force.

The core elements of port State control are described in detail in another manual. They are briefly outlined here for completeness.

DESIGNATION OF PORTS

Port States ought to designate the ports within which fishing operations, such as landing and transhipment of catches may occur, and publicise this list. Access to all other ports should be denied to foreign fishing vessels except in cases of *force majeure*. In the designated ports, national authorities should ensure that an adequate fisheries inspectorate is in place and can execute its functions.

PORT ENTRY

Port entry procedures are to be put in place, which require foreign fishing vessels to submit an advance request for port entry, in which they submit relevant information about the vessel.

Port entry procedures are to be put in place, which require fishing vessels to submit an advance request for port entry, in which they submit relevant information about the vessel, licenses and permits onboard, the object of the port call, and catch onboard. If no grounds for suspicion exist, port entry should be formally granted. If clear evidence is established that the vessel has engaged in IUU fishing, port entry should be denied. If there is a case of doubt, the port State may permit the vessel to enter port, but deny the use of any port services until the vessel is cleared by the Fisheries Inspectors. The advantage of the last option is to clarify evidence of IUU fishing, and if denied port services, the vessel can be detained until the IUU issue is resolved. Successful application of the Port State Measures Resolution requires very close liaison and cooperation of all port authorities to ensure that Fisheries maintains priority with respect to port access and access to port services at all times for fishing vessels and applicable carrier vessels.

Only in the case of *force majeure* may a vessel enter port without the above permissions – but the vessel will enter port only to be allowed to address the emergency and to head back out to sea. After addressing its emergency, it is liable for a port inspection if so determined by the fisheries authorities.

DENIAL OF PORT SERVICES

When a vessel is in port, and a port inspection establishes that the vessel has engaged in any form of meaningful IUU fishing, all port services, including those to land and to tranship catch, are to be denied – with the exception of those essential for the health and safety of the crew.

This measure, in combination with denial of port entry above, are two extremely potent deterrents to would-be IUU fishing vessels, because they essentially deny the IUU operators to turn illegal catch into currency.

INSPECTIONS & RESULTS

Port States are to ensure the existence of a properly trained corps of port inspectors, and to ensure the inspection of a minimum amount of vessels on an annual basis. Port States are encouraged to develop benchmarks for the number and types of vessels to inspect on an annual basis.

Results of inspections shall always be reported to the IOTC Executive Secretary and on the finding of alleged IUU activities to the flag State, and any other relevant parties, such as the State of which the master is a national, RFMOs and/or the FAO.

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FLAG STATE CONTROL

UNCLOS establishes that "every State shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag"

Under Part VII (High Seas), UNCLOS establishes that "*every State shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag*" (art. 94) – irrespective of the type of vessel, and hence including fishing vessels. No specific mention of flag State jurisdiction in fisheries conservation and management is made, if making abstraction in article 64 of the "*other States whose nationals fish in the region for the highly migratory species*" that coastal States are summoned to cooperate with directly; in essence, it can be argued that those "*other States*" are none other than "flag States".

In fisheries which are predominantly taking place in far offshore waters and on the high seas, the need for flag State control is central to responsible and sustainable management. In purely high seas fisheries, flag State action is, with a few exceptions, the almost exclusive channel to exercise jurisdiction over – and hence to monitor and control – fishing vessels.

The FAOCA and UNFSA introduced a number of clauses which aimed to dramatically enhance the control that flag States exert over their fishing vessels on the high seas, and in the case of UNFSA, it also defined the framework of international collaboration between parties through RFMO-type organisations. At this level, the requirement for the active participation of the flag State in the conservation and management of highly migratory fish stocks fully comes to the fore.

The first function of the flag State is to confer its flag to a vessel through an act of registration to guarantee that a genuine link exists between the vessel and its flag

FLAGGING OF VESSELS

The first function of the flag State is to confer its flag to a vessel through an act of registration. In doing so, the State ought to guarantee that a genuine link exists between the vessel and its flag (UNCLOS; art. 91).

Flag States ought to refrain from re-flagging fishing vessels across to their registry in cases where vessel operators are seeking to escape the jurisdiction of a responsible and stringent flag State under whose flag they are currently operating. Flag States should also refuse to register fishing vessels which appear on any international IUU vessel black lists, unless they are satisfied that the vessel has changed ownership, and that links to former beneficiaries of IUU fishing operations have been severed.

AUTHORISATION TO FISH ON THE HIGH SEAS

The FAOCA (art. III.2) provides for a formal authorisation scheme, through which fishing vessels must obtain prior formal authorisation from the flag State before they are allowed to operate on the high seas. This provision marks an end to the historical practice where any vessel could fish on the high seas without any form of authorisation whatsoever. The provision is re-iterated under the UNFSA (art. 18.2).

The FAOCA provides for a formal authorisation scheme, through which fishing vessels must obtain prior formal authorisation from the flag State before they are allowed to operate on the high seas.

The authorisation scheme enables the flag State to formally endorse the authorisation with conditions and rules reflecting subregional and regional conservation and management measures that ought to be respected by the vessel. Established State practice often sees high seas fishing vessels issued with authorisations that stipulate the ocean basin or the FAO fishing zones within which the vessels are authorised to operate in.

The Code suggests that "*Flag States should ensure that no fishing vessels entitled to fly their flag fish on the high seas or in waters under the jurisdiction of other States unless such vessels have been issued with a Certificate of Registry and have been authorised to fish by the competent authorities*." (art. 8.2.2). Although the wording is slightly ambiguous, one mainstream interpretation of the provision is that flag States should consider to always formally authorise their fishing vessels to operate beyond national waters, whether it be for fishing on the high seas, or for fishing in the EEZ of a third State. Doing so makes a lot of sense, as the authorisation process enables the flag State to understand where and under what other licenses a vessel intends to operate. Without this information, the flag State will have difficulty in effectively monitoring and controlling its fleet as required under UNFSA, Article18, para 2.

IOTC Members have adopted, since 2003, a Record of Authorised Vessels, accessible through the IOTC website, which lists the vessels that have been authorised by their flag States to fish for tuna and tuna-like species in the IOTC Area. Any addition, deletion, or modification to any vessel by the flag State is to be promptly notified to the Executive Secretary at any time the chances occur.

Flag States are given the responsibility to ensure that their vessels abide with applicable national and international conservation and management measures

MONITORING AND DISCIPLINING OF FLEETS

Flag States are given the special responsibility to reign in their operators, and to ensure that they abide with applicable national and international conservation and management measures, whether they fish on the high seas, or in waters under the jurisdiction of other States. For this reason, the UNFSA dedicates two entire parts of the agreement to the duties of the flag State (Part V), and compliance and enforcement (Part VI). By 1995, the dynamics of IUU fishing – on the high seas in particular – had become obvious enough to lawmakers to understand that management frameworks needed to go hand in hand with stringent compliance and enforcement mechanisms if results were to be achieved.

Generally accepted minimum elements for the monitoring of a high seas fishing vessel by its flag State include the following:

- The existence of a functional VMS registered with the flag State's FMC;
- The submission of copies of all licenses held for fishing in third party EEZs;
- The submission of regular and complete data on all catches, transhipments and landings.

A flag State that does not operate a capable VMS/FMC is missing the most basic technological element to monitor its fleet, and international law establishes that it should therefore refrain from operating fishing vessels on the high seas.

COLLECTION AND SUBMISSION OF CATCH STATISTICS

Catch statistics are a crucial element of fisheries management. Without catch and landing statistics, fisheries management is blind, and cannot function properly. In the fisheries of highly migratory species, catch statistics are primarily derived from the flag State. This is so, because fishing vessels can provide the finest level of detail of where and when what catches have been realised. The more data are detailed, the more scientific value they have.

Without catch and landing statistics, fisheries management cannot function properly. In the fisheries of highly migratory species, catch statistics are primarily derived from the flag State.

Data flows back from the vessels to the flag State. In the case of IOTC, the form the data is recorded in is not prescribed, but minimum requirements have been established (Resolution 15/01). In addition to this, minimum requirements for data to be submitted to IOTC by the flag State are clearly defined (Res. 10/02). The latter clearly conditions the form in which data must be collected by flag States from their vessels. Flag States then submit the data in prescribed, generally aggregated manner, to the IOTC.

Other State jurisdictions, such as coastal, port and market States, may also be required to submit landings and market data, but these data more often serve the purpose to cross-check flag State submissions, identify reporting errors, and sometimes also serve the purpose to detect fraud.

The duty of the flag State to collect such data is provided for in the FAOCA under article III.7. under the following terms: "*Each Party shall ensure that each fishing vessel entitled to fly its flag shall provide it with such information on its operations as may be necessary to enable the Party to fulfil its obligations under this Agreement, including in particular information pertaining to the area of its fishing operations and to its catches and landings*." This provision is mirrored in the UNFSA under article 18.3. as follows: "*Measures to be taken by a State in respect of vessels flying its flag shall include: (e) requirements for recording and timely reporting of vessel position, catch of target and non-target species, fishing effort and other relevant fisheries data in accordance with subregional, regional and global standards for collection of such data*;" It is evident that the subregional and regional standards referred to in this provision are those adopted by the relevant RFMO.

MARKET STATE CONTROL

The concept of the market State as a specific type of jurisdiction, entrusted with a particular part to play in fisheries conservation and management, is quite recent

The concept and place of the market State as a specific type of jurisdiction, entrusted with a particular part to play in fisheries conservation and management, is quite recent. UNCLOS, the FAOCA and UNFSA make no single direct mention of the market State, and the same is true of the PSMA.

The Code introduces principles for responsible international trade in fisheries products (art. 11.2) and regarding laws and regulations relating to fish trade (art. 11.3), but does not make any specific mention of the "market State" either. Provisions generally relate to compatibility of trade measures, trade liberalisation, non-discrimination issues, etc. While these provisions have merit in domains unrelated to the conservation and management of fisheries resources, they introduce few elements that bear any direct impact on the sustainable management of fisheries resources through the action of the market State.

Code article 11.2.12, however, also introduces the short, but all important notion that "*States should not undermine conservation measures for living aquatic resources in order to gain trade or investment benefits*." In other words, IUU fishing and related operations should not be tolerated – or facilitated – by market States, simply because gains thus accruing to the national economy might appear attractive. The IPOA-IUU, under the header "*Internationally Agreed Market-Related Measures*" provides twelve articles (65 to 76) which detail the action that market States should take in order to ensure that they play their full part in combatting IUU fishing.

Two, key market State control measures are briefly highlighted in the following sections.

Market States are to ensure that fish products originating from known IUU sources be prohibited from being traded in the territory of the market State, preventing their import, as well as their export

RESTRICTIONS TO MARKET ACCESS

A key action that is expected of market States is to ensure that fish products originating from known IUU sources (*e.g.* vessels listed on international IUU vessel black lists) be prohibited from being traded in the territory of the market State, preventing their import, as well as their export, or their trading within the national markets. (IPOA-IUU art. 66)

In adopting this stance, market States ought to collaborate with other States, and assist interested third States in implementing market measures against products that have been harvested illegally in such third States. (IPOA-IUU art. 68)

Large scale tuna longline vessels catching bigeye tunas are subject to the IOTC statistical document programme (Resolution 01/06)

CATCH DOCUMENTATION SCHEMES

Implementation of multilateral catch documentation and certification schemes is a key tool to assist States in applying market State control measures against IUU fishing products.

One of the key tools to assist States in applying market State control measures against IUU fishing products is the development and implementation of multilateral catch documentation and certification schemes (IPOA-IUU art. 69). These schemes generally serve the purpose to discourage IUU fishing operations, to strengthen the relevant conservation and management regimes, and to identify and trace the legality of products from the vessel (origin) to the final retailer (destination). In addition to this, trade documentation schemes can play a major part in the collection of fisheries data – as is the case under the IOTC Bigeye Tuna Statistical Programme provided for under resolution 01/06.

Catch documentation schemes (CDS), such as CCAMLR's CDS for Patagonian Toothfish, can be potent deterrents, if they are well designed, and properly implemented and enforced by the relevant parties and stakeholders.

IOTC Members have also adopted a resolution to open the possibility of restricting access to markets from Parties who undermine the conservation and management efforts of IOTC.

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INDIAN OCEAN TUNA COMMISSION
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