



Indian Ocean Tuna Commission
Commission des Thons de l'Océan Indien

**iotc
cto**



**REPORT OF THE IOTC PERFORMANCE REVIEW PANEL
JANUARY 2009**

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Indian Ocean Tuna Commission or the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

COVER PHOTOGRAPHS:

Julien Million, Miguel Herrera, Seychelles Tourism Board,
and Yvan Chocloff / Regional Tuna Tagging Programme –
Indian Ocean.

BIBLIOGRAPHIC REFERENCE:

Anonymous (2009). Report of the IOTC Performance
Review Panel: January 2009. *Indian Ocean Tuna
Commission*. 56 pp.

EXECUTIVE SUMMARY

In response to calls from the international community for a review of the performance of Regional Fisheries Management Organisations (RFMOs), the Indian Ocean Tuna Commission (IOTC) agreed in 2007 to implement a process of Performance Review. The IOTC formed a Review Panel, consisting of an independent legal expert, an independent scientific expert, six IOTC Members and a non-governmental organisations observer, which concluded its report to the Commission in January 2009. The Panel's review was based on the criteria developed as a result of a joint meeting of tuna RFMOs, Kobe, Japan, 2007 and concentrated on the following issues:

- Adequacy of the Agreement for the Establishment of the Indian Ocean Tuna Commission (IOTC Agreement) relative to current principles of fisheries management,
- Consistency between scientific advice and conservation and management measures adopted,
- Effectiveness of control measures established by the IOTC; and
- Efficiency and transparency of financial and administrative management.

KEY FINDINGS OF THE PERFORMANCE REVIEW PANEL

I. The legal framework of the IOTC Agreement:

The analysis of the legal text of the IOTC Agreement identified a series of gaps and weaknesses which can be summarized as follows:

- The IOTC Agreement is outdated as it does not take account of modern principles for fisheries management. The absence of concepts such as the precautionary approach and an ecosystem based approach to fisheries management are considered to be major weaknesses. The lack of clear delineation of the functions of the Commission or flag State and port State obligations provide examples of significant impediments to the effective and efficient functioning of the Commission.
- The limitation on participation to this RFMO, deriving from IOTC's legal status as an Article XIV Food and Agricultural Organisation of the United Nations (FAO) body, conflicts with provisions of United Nations Fish Stocks Agreement (UNFSA) and prevents major fishing players in the Indian Ocean from discharging their obligations to cooperate in the work of the Commission.
- The IOTC relationship to FAO, most notably in the budgetary context, negatively affects the efficiency of the work of the Commission, with neither Members nor the Secretariat in full control of the budget. This also raises questions relating to the level of transparency in the Commission's financial arrangements.

The Panel recommends that the IOTC Agreement either be amended or replaced by a new instrument. The decision on whether to amend the Agreement or replace it should be made taking into account the full suite of deficiencies identified in the Review.

II. The criteria-based analysis of the performance of the Commission:

The analysis based on the Performance Review criteria highlighted numerous weaknesses in the workings of the Commission, of which the most important have been identified as:

High levels of uncertainty

The quantitative data provided for many of the stocks under the IOTC Agreement is very limited. This is due to lack of compliance, a large proportion of catches being taken by artisanal fisheries, for which there is very limited information, and lack of cooperation of non-Members of the IOTC. The data submitted to the Commission is frequently of poor quality. This contributes to high levels of uncertainty concerning the status of many stocks under the IOTC mandate.

Poor record of compliance and limited tools for addressing non-compliance

Low levels of compliance with IOTC measures and obligations are commonplace. The Commission to date has taken very limited actions to remedy this situation – there are currently no sanctions/penalties for non-compliance in place. Moreover, the list of illegal, unreported and unregulated (IUU) vessels applies to non-Members only.

Special requirements of developing States

Many developing States are experiencing serious capacity/infrastructure constraints which impede their ability to comply with their obligations, especially in terms of data collection, reporting and processing. A number of developing States also lack appropriate scientific expertise and, even where such expertise is available, budgetary constraints limit their participation in Commission meetings, particularly those of the Scientific Committee and working parties.

III. In light of these findings, and in addition to the specific recommendations made against each of the criteria, the Review Panel draws the Commission's attention to the following overarching issues

Uncertainty

Addressing uncertainty in data and in the stock assessments is one of the most fundamental and urgent actions required to improve the performance of the Commission. This will require a variety of actions of which the most important are: application of scientific assessment methods appropriate to the data/information available, establishing a regional scientific observer programme to enhance data collection for target and non-target species, and improving data collection and reporting capacity of developing States. Also engaging non-Members actively fishing in the area is of critical importance to addressing uncertainty. Equally important are developing a framework to take action in the face of uncertainty in scientific advice and enhancement of functioning and participation in the Scientific Committee and subsidiary bodies.

Compliance

It is imperative to strengthen the ability of the Compliance Committee to monitor non-compliance and advise the Commission on actions which might be taken in response to non-compliance. Sanction mechanisms for non-compliance and provisions for follow-up on infringements should be developed. The Resolution on the establishment of the IUU list should be amended to allow for the inclusion of vessels flagged to Members.

Special requirements of developing States

Increased financial support for capacity building should be provided to developing States. The Commission should enhance already existing funding mechanisms to build developing States' capacity for data collection, processing and reporting, as well as technical and scientific capabilities. In this context, the possibility of establishing a special fund to facilitate participation in the Commission's work, including subsidiary groups should be considered. Strengthening the Secretariat's role/ability to undertake targeted capacity building should be explored.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
TABLE OF CONTENTS	3
ABBREVIATIONS AND ACRONYMS	5
1. INTRODUCTION	6
1.1 BACKGROUND.....	6
1.2 IOTC PERFORMANCE REVIEW	6
<i>The Panel</i>	7
<i>Criteria for Reviewing the Performance of RFMOs</i>	7
<i>The modus operandi of the Performance Review Panel.....</i>	7
<i>The structure of the report</i>	7
2. IOTC AS A TUNA RFMO	11
2.1 INTRODUCTION TO IOTC	11
<i>Area of Competence</i>	11
<i>Objectives and Responsibilities.....</i>	11
<i>Structure of the Commission</i>	12
<i>Scientific Committee.....</i>	12
<i>Working Parties</i>	13
<i>Species under IOTC management</i>	13
2.2 DISTINCTIVE FEATURES OF IOTC COMPARED TO OTHER TUNA RFMOs	14
<i>Relationship to FAO.....</i>	14
<i>High percentage of catch by artisanal fisheries.....</i>	14
3. THE IOTC AGREEMENT – A LEGAL ANALYSIS.....	16
3.1 INTRODUCTION	16
3.2 PANEL ANALYSIS OF THE IOTC AGREEMENT.....	17
<i>General issues and preamble</i>	17
<i>Use of Terms</i>	17
<i>Objectives and Management principles</i>	17
<i>Membership of the Commission</i>	17
<i>Functions of the Commission</i>	18
<i>Subsidiary bodies</i>	18
<i>Members' Obligations.....</i>	18
<i>Financial arrangements</i>	18
<i>Decision making.....</i>	18
<i>Transparency</i>	18
<i>Cooperation with other organisations</i>	19
<i>Special requirements of developing States.....</i>	19
<i>Non-Members.....</i>	19
<i>Dispute settlement procedures</i>	19
4. ANALYSIS OF THE PERFORMANCE REVIEW CRITERIA.....	20
4.1 REVIEW AREA: CONSERVATION AND MANAGEMENT.....	20
4.1.1 <i>Status of living marine resources</i>	20
4.1.2 <i>Data collection and sharing</i>	24
4.1.3 <i>Quality and provision of scientific advice</i>	27
4.1.4 <i>Adoption of conservation and management measures</i>	28
4.1.5 <i>Capacity management.....</i>	31
4.1.6 <i>Compatibility of management measures</i>	32
4.1.7 <i>Fishing allocations and opportunities.....</i>	33
4.2 REVIEW AREA: COMPLIANCE AND ENFORCEMENT	33
4.2.1 <i>Flag State duties.....</i>	33
4.2.2 <i>Port State measures.....</i>	34
4.2.3 <i>Monitoring, Control and Surveillance</i>	35
4.2.4 <i>Follow-up on infringements</i>	36
4.2.5 <i>Cooperative mechanisms to detect and deter non-compliance</i>	36
4.2.6 <i>Market related measures.....</i>	38

4.3	REVIEW AREA: DECISION MAKING AND DISPUTE SETTLEMENT	38
4.3.1	<i>Decision making</i>	38
4.3.2	<i>Dispute settlement</i>	39
4.4	REVIEW AREA: INTERNATIONAL COOPERATION.....	40
4.4.1	<i>Transparency</i>	40
4.4.2	<i>Relationship to cooperating non Members</i>	41
4.4.3	<i>Relationship to non cooperating non Members</i>	41
4.4.4	<i>Cooperation with other RFMOs</i>	42
4.4.5	<i>Special requirements of developing States</i>	43
4.4.6	<i>Participation</i>	44
4.5	REVIEW AREA: FINANCIAL AND ADMINISTRATIVE ISSUES	44
4.5.1	<i>Availability of resources for RFMO activities -efficiency and cost-effectiveness</i>	44
5.	A COMPENDIUM OF THE RECOMMENDATIONS	46
	<i>On the IOTC Agreement – a legal analysis</i>	46
	<i>On Conservation and Management</i>	46
	<i>On Compliance and enforcement</i>	49
	<i>On Decision making and dispute settlement</i>	50
	<i>On International cooperation</i>	51
	<i>On Financial and administrative issues</i>	52
	ANNEX I IMPLEMENTATION OF THE PERFORMANCE REVIEW OF THE IOTC	53

ABBREVIATIONS AND ACRONYMS

B_{MSY}	Biomass corresponding to the MSY
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
(FAO) Code	FAO Code of Conduct for Responsible Fisheries
COFI	FAO's Committee on Fisheries
CPCs	Contracting and Cooperating Non-contracting Parties
CPUE	Catch per unit effort
EEZ	Exclusive economic zone
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization of the United Nations
F_{MSY}	Fishing mortality corresponding to the MSY
GFCM	General Fisheries Commission for the Mediterranean
ICCAT	International Commission for the Conservation of Atlantic Tunas
IOTC	Indian Ocean Tuna Commission
IOTC Agreement	Agreement for the establishment of the Indian Ocean Tuna Commission
IPOA	International Plan of Action
IUU	Illegal, Unreported and Unregulated
LOS	Law of the sea
MCS	Monitoring, control and surveillance
MoU	Memorandum of understanding
MSY	Maximum sustainable yield
NEAFC	North East Atlantic Fisheries Commission
NGO	Non-governmental organization
RFMO	Regional Fishery Management Organization
SEAFO	South East Atlantic Fisheries Organisation
SIOFA	South Indian Ocean Fisheries Agreement
TAC	Total Allowable Catch
TAE	Total Allowable Effort
TRAFFIC	The wildlife trade monitoring network
UN	United Nations
UNGA	United Nations General Assembly
UNSFA	United Nations Fish Stock Agreement
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature

1. Introduction

1.1 Background

In recent years, the international community has called for a review of the performance of Regional Fisheries Management Organisations (RFMO's) as the key bodies responsible for conservation and managements of highly migratory and straddling fish stocks. Such calls have come, inter alia, from the United Nations General Assembly (UNGA), the United Nations Fish Stocks Agreement (UNFSA) Review Conference, the Food and Agriculture Organization's Committee on Fisheries (FAO COFI), the St. John's Conference on the Governance of High Seas Fisheries, and the Ministerially-led High Seas Task Force on Illegal, Unreported and Unregulated (IUU) fishing.

The UNFSA Review Conference in 2006 recommended that members of RFMOs, individually and collectively, urge those bodies to undergo performance reviews on an urgent basis, whether initiated by the organizations themselves or with external partners; encourage the inclusion of some element of independent evaluation in such reviews; and ensure that the results are made publicly available.

At the joint meeting of the five tuna RFMOs in Kobe, Japan in January 2007, it was agreed to develop a common approach to performance reviews across tuna RFMOs. The guiding principles of such an approach were agreed as follows:

- The five tuna RFMOs should have reviews of their performance conducted in accordance with a common methodology and common set of criteria
- Reviews should be conducted by a team of individuals drawn from members of the RFMO and external, independent experts with technical support from the RFMO secretariat
- The results of the performance review should be presented to the tuna RFMO in question for consideration and possible action. The results should also be made available on the RFMO's website
- The performance reviews should commence as soon as practicable following the development of a performance review framework
- Tuna RFMOs should decide on the timing of their first performance review and on subsequent reviews with a view of having them every three to five years.

As a result, following the Kobe meeting, a common set of criteria was developed for consideration when undertaking performance reviews.

To date, the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) are the only tuna RFMOs to have completed their performance reviews. Of the non-tuna RFMOs, the North East Atlantic Fisheries Commission (NEAFC) and the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) have completed the reviews, with the South East Atlantic Fisheries Organisation (SEAFO) having agreed to launch the process in 2010.

1.2 IOTC Performance Review

At the 11th Annual Session of the Indian Ocean Tuna Commission (IOTC), held in Grand Baie, Mauritius on 13-18 May 2007, the Commission adopted a decision (Annex I) to implement a performance review through an evaluation process aimed at identifying weaknesses and gaps in its structure and necessary actions to improve its effectiveness and efficiency in fulfilling its mandate.

The Panel

The Commission agreed to set up a performance review Panel comprising of:

- an independent expert scientist (Dr. Gerald Scott)
- an independent legal expert (Mr. Terje Lobach)
- representatives of six IOTC Members: Australia, European Community, India, Japan, Kenya and Seychelles
- a non-governmental organisation (NGO) observer (Mr. Markus Burgener (World Wide Fund for Nature (WWF) / The wildlife trade monitoring network (Traffic)).

Mr. Terje Lobach served as a Chairperson of the Panel and the European Community served as rapporteur.

The Secretariat was not a part of the Review Panel but provided support to its activities, providing access to the information and facilities that the Review Panel required to conduct its work. The Panel met twice (in February 2008 and January 2009) in Seychelles.

Criteria for Reviewing the Performance of RFMOs

The following set of criteria was based on the performance criteria developed as a result of the joint meeting of the Tuna RFMOs in January 2007 and adapted, as appropriate, to the requirements of the IOTC. This resulted in the addition of a criterion on Participation in Review Area 4: International Cooperation. Commission adopted this revised set of criteria at its 11th Annual Session.

At the first Panel meeting, the Panel, in order to have a comprehensive analysis of the criteria of the Performance Review, considered that it was important to undertake a comparative analysis of the Agreement for the Establishment of the Indian Ocean Tuna Commission (IOTC Agreement) relative to current international instruments concerning fisheries. The independent legal expert was tasked with providing this document. The independent scientific expert's remit was to evaluate the IOTC's scientific processes and procedures with respect to the aspects of: transparency, quality of scientific advice in view of data quality, documentation of analyses supporting the advice provided, adequacy of the scientific methods used in developing advice, characterization of scientific uncertainty, and if actions recommended were designed to reduce the uncertainties in the advice formulated. Subsequent to that evaluation and upon request of the Panel the scientific expert conducted a review of the Scientific Committee's advice and recommendations on the tropical tuna and swordfish stocks over the last five or six years, including observations on the nature of the recommendations and their applicability/operational implementation and an assessment of the degree to which the conservation measures adopted by the Commission responded to that scientific advice and the management recommendations formulated by the Scientific Committee.

The modus operandi of the Performance Review Panel

The review focused on the effectiveness of the Commission to fulfil its mandate, in accordance with the criteria set out above. The aim was to evaluate if the IOTC, in its current legal and operational structure, fulfils its basic objective and, on the basis of this evaluation, identify any weaknesses and present possible actions to address the issues. It was also to evaluate how up to date the Agreement is in relation to other international fisheries instruments.

The structure of the report

The report is divided into the following sections:

1. An introduction to the review.
2. An overview of the IOTC.
3. A legal analysis of the IOTC Agreement undertaken by the Review Panel on the basis of the comparative study of the provisions in the IOTC Agreement with those in other international instruments provided by the independent legal expert.

4. Analysis and consideration of the performance review criteria adopted by the Commission under the categories: conservation and management, compliance and enforcement, decision-making and dispute settlement, international cooperation and financial and administrative issues. The discussion on each criterion contains:
 - Brief introduction to the issue
 - Panel analysis
 - Recommendations/options for future consideration and possible action by the IOTC.
5. A compendium of the recommendations of the Panel.

IOTC PERFORMANCE REVIEW CRITERIA	
CONSERVATION AND MANAGEMENT	
1. Status of living marine resources	• Status of major fish stocks under the purview of the RFMO in relation to maximum sustainable yield or other relevant biological standards. • Trends in the status of those stocks. • Status of species that belong to the same ecosystems as, or are associated with or dependent upon, the major target stocks (hereinafter “non-target species”). • Trends in the status of those species.
2. Data collection and sharing	• Extent to which the RFMO has agreed formats, specifications and timeframes for data submission, taking into account UNFSA Annex I. • Extent to which RFMO members and cooperating non-members, individually or through the RFMO, collect and share complete and accurate fisheries data concerning target stocks and non-target species and other relevant data in a timely manner. • Extent to which fishing data and fishing vessel data are gathered by the RFMO and shared among members and other RFMOs. • Extent to which the RFMO is addressing any gaps in the collection and sharing of data as required.
3. Quality and provision of scientific advice	• Extent to which the RFMO receives and/or produces the best scientific advice relevant to the fish stocks and other living marine resources under its purview, as well as to the effects of fishing on the marine environment.
4. Adoption of conservation and management measures	• Extent to which the RFMO has adopted conservation and management measures for both target stocks and non-target species that ensures the long-term sustainability of such stocks and species and are based on the best scientific evidence available. • Extent to which the RFMO has applied the precautionary approach as set forth in UNFSA Article 6 and the Code of Conduct for Responsible Fisheries Article 7.5, including the application of precautionary reference points. • Extent to which the RFMO has adopted and is implementing effective rebuilding plans for depleted or overfished stocks. • Extent to which the RFMO has moved toward the adoption of conservation and management measures for previously unregulated fisheries, including new and exploratory fisheries. • Extent to which the RFMO has taken due account of the need to conserve marine biological diversity and minimize harmful impacts of fisheries on living marine resources and marine ecosystems. • Extent to which the RFMO has adopted measures to minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species, in particular endangered species, through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques.
5. Capacity management	• Extent to which the RFMO has identified fishing capacity levels commensurate with long-term sustainability and optimum utilization of relevant fisheries. • Extent to which the RFMO has taken actions to prevent or eliminate excess fishing capacity and effort.
6. Compatibility of management measures	• Extent to which measures have been adopted as reflected in UNFSA Article 7.

7. Fishing allocations and opportunities

- Extent to which the RFMO agrees on the allocation of allowable catch or levels of fishing effort, including taking into account requests for participation from new members or participants as reflected in UNFSA Article 11.

COMPLIANCE AND ENFORCEMENT

1. Flag State duties

- Extent to which RFMO members are fulfilling their duties as flag States under the treaty establishing the RFMO, pursuant to measures adopted by the RFMO, and under other international instruments, including, inter alia, the 1982 Law of the Sea Convention, the UNFSA and the 1993 FAO Compliance Agreement, as applicable.

2. Port State measures

- Extent to which the RFMO has adopted measures relating to the exercise of the rights and duties of its members as port States, as reflected in UNFSA Article 23 and the Code of Conduct for Responsible Fisheries Article 8.3.
- Extent to which these measures are effectively implemented.

3. Monitoring, control and surveillance (MCS)

- Extent to which the RFMO has adopted integrated MCS measures (e.g., required use of VMS, observers, catch documentation and trade tracking schemes, restrictions on transshipment, boarding and inspection schemes).
- Extent to which these measures are effectively implemented.

4. Follow-up on infringements

- Extent to which the RFMO, its members and cooperating non-members follow up on infringements to management measures.

5. Cooperative mechanisms to detect and deter non-compliance

- Extent to which the RFMO has established adequate cooperative mechanisms to both monitor compliance and detect and deter non-compliance (e.g., compliance committees, vessel lists, sharing of information about non-compliance).
- Extent to which these mechanisms are being effectively utilized.

6. Market-related measures

- Extent to which the RFMO has adopted measures relating to the exercise of the rights and duties of its members as market States.
- Extent to which these market-related measures are effectively implemented.

DECISION-MAKING AND DISPUTE SETTLEMENT

1. Decision-making

- Extent to which RFMO has transparent and consistent decision-making procedures that facilitate the adoption of conservation and management measures in a timely and effective manner.

2. Dispute settlement

- Extent to which the RFMO has established adequate mechanisms for resolving disputes.

INTERNATIONAL COOPERATION

1. Transparency

- Extent to which the RFMO is operating in a transparent manner, as reflected in UNFSA Article 12 and the Code of Conduct for Responsible Fisheries Article 7.1.9.
- Extent to which RFMO decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials are made publicly available in a timely fashion.

2. Relationship to cooperating non-members

- Extent to which the RFMO facilitates cooperation between members and non-Members, including through the adoption and implementation of procedures for granting cooperating status.

3. Relationship to non-cooperating non-members

- Extent of fishing activity by vessels of non-members that are not cooperating with the RFMO, as well as measures to deter such activities.

4. Cooperation with other RFMOs

- Extent to which the RFMO cooperates with other RFMOs, including through the network of Regional Fishery Body Secretariats.

5. Special requirements of developing States

- Extent to which the RFMO recognizes the special needs of developing States and pursues forms of cooperation with developing States, including with respect to fishing allocations or opportunities, taking into account UNFSA Articles 24 and 25, and the Code of Conduct of Responsible Fisheries Article 5.
- Extent to which RFMO members, individually or through the RFMO, provide relevant assistance to developing States, as reflected in UNFSA Article 26.

6. Participation

- Number of member coastal states / total number of coastal states
- Number of member countries / total number of countries

FINANCIAL AND ADMINISTRATIVE ISSUES**1. Availability of resources for RFMO activities**

- Extent to which financial and other resources are made available to achieve the aims of the RFMO and to implement the RFMO's decisions.

2. Efficiency and cost-effectiveness

- Extent to which the RFMO is efficiently and effectively managing its human and financial resources, including those of the Secretariat.

2. IOTC as a Tuna RFMO

2.1 Introduction to IOTC

The IOTC is an intergovernmental organization established under Article XIV of the FAO Constitution and is located within the FAO framework. It is mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas. The IOTC Agreement was concluded in 1993 and entered into force in 1998.

Area of Competence

The area of competence of the Commission is the Indian Ocean (defined for the purpose of the Agreement as being FAO statistical areas 51 and 57) and adjacent seas, north of the Antarctic Convergence, insofar as it is necessary to cover such seas for the purpose of conserving and managing stocks that migrate into or out of the Indian Ocean. In 1999, the Commission extended the western boundary of the IOTC statistical area from 30°E to 20°E, thus eliminating the gap between the areas covered by IOTC and ICCAT.



Objectives and Responsibilities

The objective of the Commission is to promote cooperation among its Members with a view to ensuring, through appropriate management, the conservation and optimum utilisation of stocks covered by the IOTC Agreement and encouraging sustainable development of fisheries based on such stocks.

In accordance with Article V of the IOTC Agreement, the Commission has, inter alia, the following functions and responsibilities in accordance with the principles expressed in the relevant provisions of the United Nations Convention on the Law of the Sea:

“(a) to keep under review the conditions and trends of the stocks and to gather, analyse and disseminate scientific information, catch and effort statistics and other data relevant to the conservation and management of the stocks and to fisheries based on the stocks covered by this Agreement;

(b) to encourage, recommend, and coordinate research and development activities in respect of the stocks and fisheries covered by this Agreement, and such other activities as the Commission may decide appropriate, including activities connected with transfer of technology, training and enhancement, having due regard to the need to ensure the equitable participation of Members of the Commission in the fisheries and the special interests and needs of Members in the region that are developing countries;

(c) to adopt, on the basis of scientific evidence, conservation and management measures to ensure the conservation of the stocks covered by this Agreement and to promote the objective of their optimum utilisation throughout the Area of competence;

(d) to keep under review the economic and social aspects of the fisheries based on the stocks covered by this Agreement bearing in mind, in particular, the interests of developing coastal states.”

Structure of the Commission

Membership of the IOTC is open to Indian Ocean coastal countries and to countries or Regional Economic Integration Organisations which are members of the United Nations (UN) or one of its specialised agencies and are fishing for tunas in the Indian Ocean. Parties eligible to accede to the Commission may do so by depositing with the Director-General of FAO an instrument formally accepting to be bound by the conditions of the IOTC Agreement. Sessions of the Commission are normally held annually. The officers of the Commission are elected from the delegates or alternates present at Commission meetings and hold office for a biennium.

The current Members and cooperating non-contracting parties of the IOTC are as follows:

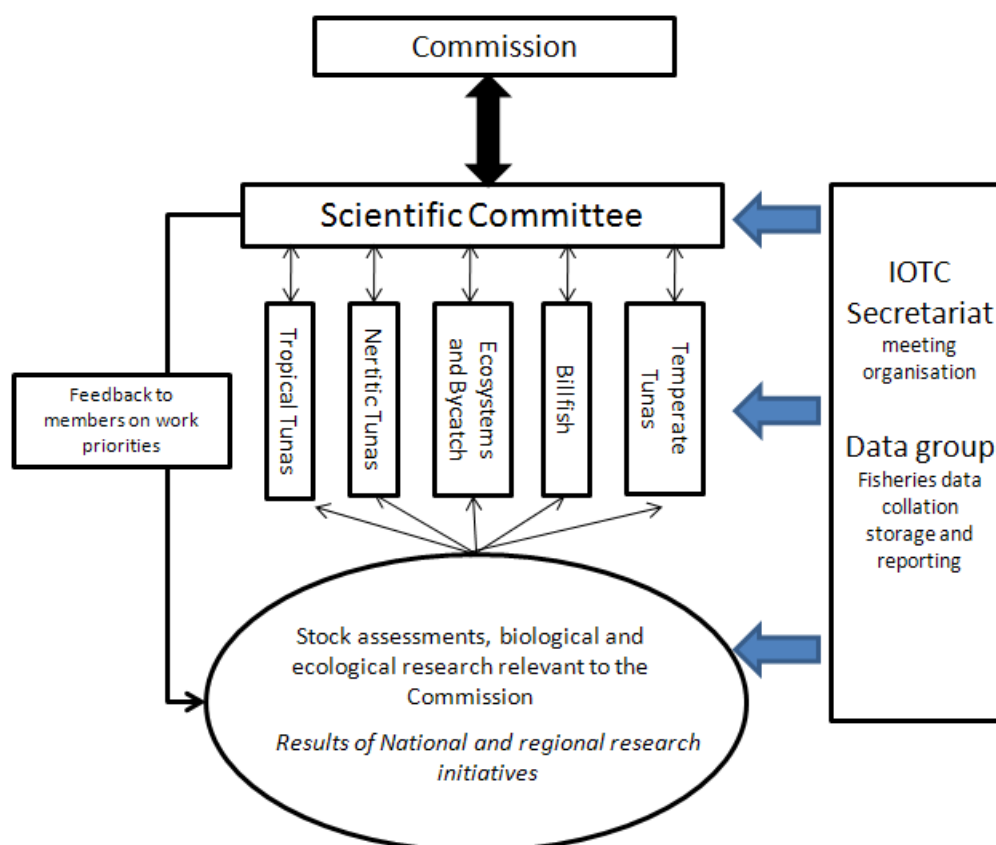
MEMBER	ACCESSION DATE
Australia	November 1996
Belize	May 2007
China	October 1998
Comoros	August 2001
Eritrea	August 1994
European Community	October 1995
France Overseas Territories	December 1996
Guinea	January 2005
India	March 1995
Indonesia	July 2007
Iran, Islamic Republic	January 2002
Japan	June 1996
Kenya	September 2004
Korea, Republic of	March 1996
Madagascar	January 1996
Malaysia	May 1998
Mauritius	December 1994
Oman	April 2000
Pakistan	April 1995
Philippines	January 2004
Seychelles	July 1995
Sierra Leone	July 2008
Sri Lanka	June 1994
Sudan	December 1996
Tanzania	April 2007
Thailand	March 1997
United Kingdom Overseas Territories	March 1995
Vanuatu	October 2002
COOPERATING PARTIES	COOPERATING SINCE
Senegal	May 2006
South Africa	June 2005
Uruguay	May 2007

Scientific Committee

The Scientific Committee was formally created at the First Session of the Commission. This body 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 annually in advance of the annual Commission meeting. Participants in the Scientific Committee are associated with the delegations from the Contracting Parties and Cooperating Non-Contracting Parties (CPCs), observer organisations and invited experts.

The IOTC Agreement does not give any guidance on the functions or tasks of the Scientific Committee, nor does it establish any formal link between the Scientific Committee and the Commission. The Rules of Procedure subsequently adopted by the Commission establish the functions of the Scientific Committee and its mode of operation.

The scientific bodies of the Commission comprise a permanent Scientific Committee and a range of ad hoc and permanent technical working parties. The relationship between the Commission, the Scientific Committee and the working parties is illustrated below.



Working Parties

The primary function of the working parties is to analyse, in detail, technical issues related to the management goals of the Commission. For example, working parties related to the different species analyse the status of the stock and offer options to the Scientific Committee for management recommendations to the Commission.

The working parties are open to interested and technically-competent participants and their reports are directed to the Scientific Committee.

Species under IOTC management

The species listed below are specified in the IOTC Agreement. In addition, the Commission has adopted a number of resolutions that require Members to collect and submit data on certain non-target, associated and dependent species affected by tuna fishing operations.

IOTC SPECIES	
Tuna	Striped marlin (<i>Tetrapturus audax</i>)
Albacore tuna (<i>Thunnus alalunga</i>)	Swordfish (<i>Xiphias gladius</i>)
Bigeye tuna (<i>Thunnus obesus</i>)	Neritic tuna
Skipjack (<i>Katsuwonus pelamis</i>)	Bullet tuna (<i>Auxis rochei</i>)
Southern bluefin tuna (<i>Thunnus maccoyii</i>)	Frigate tuna (<i>Auxis thazard</i>)
Yellowfin tuna (<i>Thunnus albacares</i>)	Indo-Pacific king mackerel (<i>Scomberomorus guttatus</i>)
Billfish	Kawakawa (<i>Euthynnus affinis</i>)
Black marlin (<i>Makaira indica</i>)	Longtail tuna (<i>Thunnus tonggol</i>)
Indo-Pacific blue marlin (<i>Makaira mazara</i>)	Narrow barred Spanish mackerel (<i>Scomberomorus commersoni</i>)
Indo-Pacific sailfish (<i>Istiophorus platypterus</i>)	

2.2 Distinctive features of IOTC compared to other tuna RFMOs

Relationship to FAO

IOTC is the only tuna RFMO located within the FAO framework. There is one other RFMO, namely General Fisheries Commission for the Mediterranean (GFCM) which is a FAO body under article XIV of the FAO Constitution.

One of the consequences of being part of FAO, which is a UN body, is the specific requirements for membership. In general, membership of the IOTC is restricted to members and associate members of FAO, but members of the UN, or any of its Specialised Agencies, or of the International Atomic Energy Agency, might be admitted to become Members of IOTC provided that their application receives the support of two-thirds of the IOTC Members.

IOTC operates according to a range of FAO procedures which fundamentally impact its operations. These include:

- Financial and budgetary issues: the IOTC Agreement places responsibilities on FAO, or its Director-General, that represent a delegation of authority from the Members that does not exist in any other tuna RFMO. For example, the Commission is required to transmit the accounts and the autonomous budget to the Director General, who is in charge of administering the Trust Funds where all contributions and donations from Members are required to be deposited. Moreover, the Finance Committee of FAO has the power to disallow the IOTC financial regulations and any amendments thereto if it finds them inconsistent with FAO financial regulations. Project support costs are charged by FAO at a rate of 4.5% assessed against the expenditures.
- Administrative issues: the Secretary of the Commission is appointed by the FAO Director-General with the approval of the Commission. The Secretary and the staff are, for administrative purposes, responsible to the FAO Director-General.
- Amendments: any Member of the Commission or the FAO Director-General may make proposals for amending the IOTC Agreement. Any amendment to the Agreement may be disallowed by the Council of FAO if considered clearly inconsistent with the objectives and purposes of FAO or the provisions of the Constitution of FAO.

High percentage of catch by artisanal fisheries

Over 50% of the total catch of IOTC species is taken by artisanal fisheries (as indicated below); however, there is a high level of uncertainty with respect to the total catch. Some species such as bigeye tuna are caught mainly by the industrial fleets and the current catches are well known. By

contrast, a considerable amount of yellowfin tuna and skipjack is caught by artisanal fleets and the catch estimates are less reliable.

IOTC species	Average catch 2003-07 (t)		% in 2003-07	
	Industrial	Artisanal	Industrial	Artisanal
Yellowfin tuna	284,858	149,926	66	34
Bigeye tuna	120,090	1,894	98	2
Skipjack tuna	194,645	314,365	38	62
Albacore	25,362	136	99	1
Swordfish	29,321	1,807	94	6
Marlins	12,189	6,915	64	36
Indo-Pacific sailfish	1,485	23,819	6	94
Neritic tunas	3,309	384,972	1	99
Total catch	659,938	883,829	43	57

Source: IOTC data extracted January 2009

3. The IOTC Agreement – a legal analysis

3.1 Introduction

Since the IOTC Agreement was concluded in 1993 a number of developments in the international practice of fisheries management has taken place. Firstly, the United Nations Convention on the Law of the Sea (LOS Convention) entered into force in 1994, following its conclusion in 1982. Secondly, and more importantly, several international instruments have been developed in the field of management of world fishery resources. In addition, there has been an increase in attention to the effectiveness of fisheries management. Most important amongst these developments are:

- UNFSA signed in 1995 with entry into force in 2001
- Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement) adopted in 1993 with entry into force in 2003
- FAO Code of Conduct for Responsible Fisheries (the FAO Code) adopted in 1995
- Four International Plans of Action: the FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), the FAO International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds), the FAO International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) and the FAO International Plan of Action for the Management of Capacity (IPOA-Capacity)
- UNGA has for some years addressed fisheries issues in specific resolutions on sustainable fisheries, including calling upon RFMOs to address specific topics in order to achieve sustainable fisheries within their areas of competence
- World Summit on Sustainable Development (WSSD), held in Johannesburg, South Africa, in 2002 undertook, inter alia, to bring fish stocks to levels that can produce the maximum sustainable yield (MSY) within a defined time period.

UNFSA and the FAO Compliance Agreement entail legally-binding obligations on parties, which are highly relevant to States that are members of RFMOs such as IOTC.

The table below shows which IOTC Members have ratified or acceded to UNFSA and/or the FAO Compliance Agreement.

Member	UNFSA	FAO Compliance Agreement	Member	UNFSA	FAO Compliance Agreement
Australia			Madagascar		
Belize			Malaysia		
China			Mauritius		
Comoros			Oman, Sultanate of		
Eritrea			Pakistan		
European Community			Philippines		
France		*	Seychelles		
Guinea			Sierra Leone		
India			Sri Lanka		
Indonesia			Sudan		
Iran, Islamic Rep. of			Tanzania		
Japan			Thailand		
Kenya			United Kingdom		*
Korea, Rep. of			Vanuatu		

* France and the United Kingdom have ratified the FAO Compliance Agreement as a Member State of the European Union; however, they have not ratified it on behalf of their overseas territories.

Fifteen IOTC Members are bound by UNFSA and ten by the FAO Compliance Agreement, while eight are parties to both instruments. Eleven IOTC Members are not bound by any of these instruments. Instruments other than UNFSA and the FAO Compliance Agreement are voluntary and serve rather as guidelines for conservation and management of fisheries, including some specific options for RFMOs. Consequently, there now exist several tools for management purposes, which were absent when the IOTC Agreement was developed.

Considering the abundance of developments that have taken place in the field of fisheries management since 1993, and the fact that the IOTC Agreement has not been in any way updated following its signing and entry into force, it is quite evident that the Agreement fails to take the above mentioned provisions into account. The legal analysis conducted by the Panel, following the advice of the independent legal expert, has broadly identified the following weaknesses and gaps in the Agreement.

3.2 Panel analysis of the IOTC Agreement

General issues and preamble

The IOTC Agreement does not refer to the concepts of an ecosystem based approach to fisheries management and the precautionary approach which are now widely accepted as the main principles of sustainable fisheries management. On the contrary, the Agreement refers to optimum utilisation of stocks, which is considered to be an outmoded goal for fisheries management following the developments at the WSSD in 2002. The WSSD undertook to bring fish stocks to levels that can produce the MSY within a defined time period. The IOTC Agreement also lacks a reference to a commitment to halt IUU fishing, although this has been the key area of focus for the Commission.

The preamble to the IOTC Agreement, for obvious, abovementioned reasons, is outdated as it does not recognise important international instruments developed post 1993.

Use of Terms

The IOTC Agreement lacks elements such as definitions for terms used in the Agreement. In this respect, the lack of definitions of important elements such as fishing, fishing operations and fishing vessels is considered a significant impediment to the efficient implementation of the Agreement which could lead to inconsistency in measures or approaches adopted as well as problems of compliance. The inclusion of those and other definitions is crucial to strengthen the effective functioning of the Commission.

Objectives and Management principles

The objectives of the IOTC Agreement can be considered as narrow; at best, as they rely on the outdated concept of the “conservation and optimum utilisation of stocks”. Moreover, management principles are incomplete, lacking reference to the FAO Code or UNFSA, which include such general management principles as the application of the precautionary approach, the establishment of management measures as well as their implementation, and the principle of “long-term sustainability”. Furthermore, fisheries management should refer to the ecosystem based approach to fisheries management and the protection of biodiversity in the marine environment. The lack of the principles in the Agreement constitute an impediment to the implementation of more modern approaches/principles.

Membership of the Commission

The Membership of IOTC is generally restricted to members and associate members of FAO. This restriction is not only in stark contrast with Articles 8-17 of UNFSA, which advocate open membership and oblige cooperation of States and fishing entities with RFMOs of relevance to them, but, more importantly, presents a significant obstacle for the Commission to take measures to ensure effective conservation and management of stocks. Currently, a substantial component of fishing activity in the IOTC Area is conducted by the Taiwan, Province of China, which, as a fishing entity, is not able to become a Member of IOTC and so discharge its obligations to cooperate. Moreover, the

current arrangement leaves few avenues to address non-cooperation or non compliance of fishing entities.

Functions of the Commission

The IOTC Agreement is rather basic and adding supplementary functions, such as application of the precautionary approach and ecosystem based considerations such as the adoption of conservation and management measures for non-target species and species dependent on or associated with target stocks, seems highly desirable.

Subsidiary bodies

The Agreement does not provide any basic provision concerning the structure, functions or tasks of the Scientific Committee, nor a formal link between the Scientific Committee and the Commission. Moreover, despite the fact that the Agreement refers to establishment of sub-commissions, it does not provide any basis for delineating their functions or establishing a relationship between the Scientific Committee and the sub-commissions. There is therefore a need for detailed provisions for those bodies to be contained in the basic Agreement, and not in the Rules of Procedure, as is currently the case.

Members' Obligations

The IOTC Members have few standing obligations under the Agreement, which proves to be a weakness of the Agreement. The most fundamental duties missing are those relating to Members as flag States and port States.

Financial arrangements

The Panel analysis revealed that the relationship of IOTC to FAO in terms of financial issues is negatively affecting the workings of the Organisation. Under this arrangement, the budget is not entirely under control of its Members or the Secretariat. While the Secretariat is a budget holder, execution of the budget depends on FAO, which puts both a constraint on and reduces transparency in IOTC's financial management. All contributions and donations from Members to the autonomous budget have to be deposited in a Trust Fund which is administered by the FAO Director General. Moreover, the Finance Committee of FAO has the power to disallow the IOTC financial regulations and amendments thereto if it finds them inconsistent with the FAO Financial Regulations. This arrangement limits the ability of the Secretariat to manage the budget independently, and overall, limits the control of IOTC Members over it. It should also be noted that FAO has not provided any contributions to the IOTC as foreseen in Article VIII.3 of the Agreement. It is therefore clear that a modification of the financial management status quo is needed.

Decision making

The Agreement follows a rather modern approach to decision making (that is a recourse to voting procedures), yet it contains a weak and out-dated objection procedure. Objection procedures contained in more modern RFMO conventions include obligations such as clear and limited admissibility of the objection for specific reasons, for example when the content of a decision discriminates in any form against a Member or is inconsistent with the Convention, and/or obligations to take equivalent measures. By contrast, the objection procedure in the IOTC Agreement allows Members to opt out of any measure at their will, with no justification and consequences. This is considered to be a fundamental flaw of this Agreement, with the potential to severely weaken the implementation and compliance mechanisms. It is therefore imperative to amend the objection procedure so that it is far more rigorous and, in line with other RFMO conventions, includes more restricted grounds for the rights to object.

Transparency

The IOTC Agreement offers an adequate level of transparency and openness, providing for participation of observers, such as FAO/UN Members and Associated Members, intergovernmental organisations and NGOs.

Cooperation with other organisations

The IOTC Agreement contains provisions for cooperation with other international organisations and institutions. However, the grounds and reasons for cooperation under this Agreement can be read quite narrowly and therefore potentially impede cooperation with other RFMOs. This is particularly relevant for the relations of IOTC with RFMOs with areas of overlapping competencies. This is a weakness in the Agreement that needs to be addressed.

Special requirements of developing States

The provisions concerning special requirements of developing States are not detailed enough in the text of the Agreement. While this issue has been addressed over the past years in the texts of certain Resolutions, given the high membership of developing States in IOTC it is advisable that this issue is treated in the main Agreement text, with more structured and explicit obligations.

Non-Members

The provisions for non-Members fail to take account of UNFSA, which equally obliges non-Members of RFMOs to cooperate, in accordance with the LOS Convention and UNFSA, in conservation and management of fish stocks. Moreover, the IOTC Agreement does not provide for cooperation with fishing entities, in conflict with UNFSA. It is therefore imperative that this part of the Agreement be amended accordingly.

Dispute settlement procedures

The dispute settlement procedure in Article XXIII represents a major gap in the Agreement with no reference to a compulsory/binding dispute settlement mechanism. This conflicts with the UNFSA which places an obligation on RFMOs to either introduce compulsory and binding dispute settlement procedures or to agree to apply, as between the Contracting Parties, the dispute settlement procedures laid down in part VIII of UNFSA. This aspect of the Agreement requires substantial amendment in order to have in place a comprehensive system drawing on the provisions of UNFSA.

In summary

There are weaknesses and shortcomings in the IOTC Agreement compared to other international instruments, in particular those of more recent RFMO agreements. Some of the weaknesses are due to the structure and the degree of details of the Agreement.

Panel Recommendations / options

- 1. The final conclusion of the Panel is that the Agreement is outdated and there are many areas for improvement. The weaknesses and gaps identified are, or have a potential to be, major impediments to the effective and efficient functioning of the Commission and its ability to adopt and implement measures aimed at long-term conservation and sustainable exploitation of stocks, according to model fisheries management instruments. More fundamentally, these deficiencies are likely to prevent the Commission from achieving its basic objectives.*
- 2. Consequently, the Panel recommends that the IOTC Agreement either be amended or replaced by a new instrument. The decision on whether to amend the Agreement or replace it should be made taking into account the full suite of the deficiencies identified.*

4. Analysis of the Performance Review Criteria

4.1 Review Area: Conservation and Management

4.1.1 General criterion: Status of living marine resources

- 1. *Status of major fish stocks under the purview of the RFMO in relation to maximum sustainable yield or other relevant biological standards.***
- 2. *Trends in status of those stocks.***

As stated above there are 16 species identified in the IOTC Agreement. The major commercial fish stocks under the purview of the IOTC are as follows: albacore, bigeye tuna, yellowfin tuna, skipjack and swordfish.

The Commission's Scientific Committee and its technical working parties provide advice on the stock status of the target species and other species which fall under the IOTC's mandate.

The status of the major stocks is provided to the IOTC Plenary by the Scientific Committee. The Scientific Committee has repeatedly stressed that these analyses are affected by a constant insufficient knowledge of the main and basic parameters used to elaborate a stock assessment. The major consequence is a high degree of uncertainty in the evaluations of stock status.

The Scientific Committee provides stock status advice, when available, with respect to the commonly used biological reference points, Biomass corresponding to the maximum sustainable yield (BMSY) and Fishing mortality corresponding to the maximum sustainable yield (FMSY). BMSY is the long-term (spawning) biomass needed to produce MSY for the mix of fisheries harvesting the stock. BMSY results when the fishing mortality rate, if applied constantly, is equal to FMSY. Whenever the fishing mortality rate exceeds FMSY, the stock is being overfished. If biomass is less than BMSY, which can result when fishing mortality rate exceeds FMSY for some time, the stock is overfished.

The stocks of skipjack, albacore and swordfish outside the south-western Indian Ocean appear moderately exploited and there is some room for increasing harvests for these stocks while maintaining biomass at or above BMSY. The stocks of swordfish in the south-western Indian Ocean and of bigeye tuna throughout the Indian Ocean appear to be at least fully exploited and fishing pressure is near FMSY. High levels of juvenile bigeye tuna (and yellowfin tuna) harvest have reduced the long-term maximum sustainable catch and associated optimal fishing effort for these stocks. The Scientific Committee has recommended a reduction in catch by all gears for these stocks.

For yellowfin tuna, conservation measures thus far adopted by the Commission have not prevented the stock from being overfished and stock biomass may now be below the BMSY.

For the remaining stocks of concern to the Commission, there is little quantitative information on stock status available and their status is uncertain. However, there are worrying signs in catch rate patterns for some stocks of marlins, which may indicate decline to well below the BMSY.

The Scientific Committee, in December 2008 provided the following assessments on the status and trends of the stocks:

Albacore (*Thunnus alalunga*)

STOCK STATUS SUMMARY

Stock size and fishing pressure are considered to be within acceptable limits. Catches, mean weight and catch rates of albacore have been stable for over 20 years.

STOCK STATUS IN FULL

Based on the preliminary analyses undertaken in 2008 there are no indications that the albacore stock is over-fished ($B_{2007}/B_{MSY} > 1$) and overfishing is currently likely not occurring for the scenarios envisaged. Point estimates of MSY ranged from 28,260 t to 34,415 t. This indicated that continuous annual catches at a level approaching 38,000 t (equivalent to the historically high level of catch experienced over the period 1998 to 2001) may not be sustainable in the long term.

Albacore catches have been around 26,000 t annually over the past five years (2003-2007) and this level is only slightly higher than the historical average annual catch taken for the past 50 years (23,000 t). Other fisheries-based indicators show considerable stability over long periods. The mean weight of albacore in the catches has remained relatively stable over a period of more than 50 years. Furthermore, the average weight of albacore in the Indian Ocean is higher than that reported in the other oceans and is likely to result in a higher yield per recruit. The catch rates of albacore have also been stable over the past 20 years.

Because of the low value of albacore and, as a likely result, low profitability of the albacore longline fishery compared to the fisheries for other tuna species, there is likely to be very little incentive for an increase in fishing effort on this species in the immediate future.

On balance of the information available, albacore is considered to be not overfished and overfishing is not occurring.

Bigeye (*Thunnus obesus*)

STOCK STATUS SUMMARY

Stock size and fishing pressure in 2004 were within acceptable limits. Catch rates have gradually declined since 1980. In 2008, preliminary assessment results based on tagging data suggest a high probability that the stock is not in an overfished state.

STOCK STATUS IN FULL

The results of the stock assessments conducted in 2006 were broadly similar and, in general, were more optimistic than previous ones. The model results indicate that the 2005 catch is close to the MSY. Furthermore, spawning stock biomass seems to be above the level that would produce MSY, and the fishing mortality in 2004 seems to be below the MSY level. Current (2004) catches of juveniles bigeye by the surface fleets are also less detrimental in terms of yield-per-recruit than previous patterns.

However, the current outlook could revert to a more pessimistic one, if the exploitation pattern is to return to the pre-2003 levels, as expected. Changes in the fishery occurred in 2003 and 2004, but these were due to the exceptional catches of yellowfin, which seem to be the result of anomalous conditions. In 2005, the fishery is already showing a return to the previous pattern of exploitation, which is likely to increase the catches of bigeye tuna associated with floating objects.

If the level in catch in numbers of juvenile bigeye tuna by purse seiners fishing on floating objects returns to pre-2003 levels, this is likely to be detrimental to the stock, as fish of these sizes are below the optimum size for maximum yield-per-recruit.

The Scientific Committee also noted that juvenile bigeye tuna are caught in the FAD purse-seine fishery that targets primarily skipjack tuna. Some measures to reduce the catches of bigeye tuna in this fishery could be expected to result in a decrease in the catches of skipjack tuna.

Skipjack (*Katsuwonus pelmis*)**STOCK STATUS IN FULL**

Skipjack is a highly productive species. Catches have increased with increasing fishing pressure with no symptoms for concern in the status indicators. Stock size and fishing pressure are considered to be within acceptable limits.

Yellowfin (*Thunnus albacares*)**STOCK STATUS SUMMARY**

Stock size is close or has possibly entered an overfished state. Fishing pressure has been too high in recent years, but somewhat lower in 2007.

STOCK STATUS IN FULL

Estimates of current status of the stock in relation to biomass and fishing mortality reference points were sensitive to the value assumed for steepness of the stock-recruitment relationship so the following results are reported with respect to a range of plausible steepness values (0.6 to 0.8).

Estimates of total and spawning stock (adult) biomass are above or just below their respective MSY-based reference points i.e. B_{2007}/B_{MSY} ranged from 1.13 to 0.93 and SB_{2007}/SB_{MSY} ranged from 1.18 to 0.61, indicating that the stock is close to, or possibly has recently entered, an over-fished state.

Current (2007) fishing mortality estimates were above their respective MSY-based reference points for all but one of the assessments examined, i.e. F_{2007}/F_{MSY} ratios range from 0.9 to 1.60 indicating that overfishing is occurring. This current degree of overfishing is somewhat lower than that estimated occurred during the 2003-2006 period when the $F_{2003-2006}/F_{MSY}$ ratio ranged from 1.22 to 1.75.

The stock assessments, including independent analyses of the tagging data, indicate that recruitment has declined in recent years.

The estimates of MSY ranged between 250,000 t and 300,000 t based on the integrated assessment that used the tagging data, although other model results expand this range to 360,000 t. The 2007 catch of 317,000 t may have been above the MSY while annual catches over the period 2003-2006 (averaging 464,000 t) were substantially higher than this range of MSY estimates.

Catches in 2007 (317,000 t) were slightly lower than the average catch taken in period 1998-2002 (336,000 t) i.e. preceding the 2003 to 2006 period when extraordinarily high catches of yellowfin were taken. Purse seine catches in the first nine months of 2008 were slightly higher than those reported for the corresponding period in 2007 indicating that catch levels might be returning to pre-2003 levels. While there is a large amount of uncertainty about likely future catches, recent events in 2008 where some vessels have left the fishery, together with fleets avoiding the historically important fishing grounds in the waters adjacent to Somalia for security reasons, may reduce catches in the short-term to below the pre-2003 levels.

Two hypotheses have been put forward in the past to explain the very high catches in the 2003-2006 period: (i) an increase in catchability by surface fleets due to a high level of concentration across a reduced area and depth range, and (ii) increased recruitment over the 1999-2001 period. Recent analyses of environmental and oceanographic conditions appear to be consistent with the first hypothesis, which would mean that the catches likely resulted in a depletion of the stock. Conversely, the integrated assessment accounts for the period of higher catches by estimating substantially higher than average levels of recruitment in 2001, 2002 and 2003. Environmental anomalies also appear to be a factor linked to the lower catches in 2007.

The range of model runs indicates that overfishing is currently occurring. Under equilibrium conditions, the recent (2003-2006) and current (2007) levels of fishing mortality will result in the stock becoming overfished ($B_{CURRENT} < B_{MSY}$ and $SB_{CURRENT} < SB_{MSY}$) in the medium term (3-5 years). Recent recruitments (in 2005, 2006 and possibly 2007) are estimated to be below the equilibrium (long-term average) level and if lower recruitment persists then the stock will decline below the MSY level more rapidly. Similarly, overfishing may continue to occur even if fishing pressure returns to pre-2003 catch levels, especially if recruitment continues to be low and the expected decrease in some age classes due to recent low recruitments eventuates.

Swordfish (*Xiphias gladius*)

STOCK STATUS

The overall stock size and fishing pressure are within acceptable limits. However, there have been some localised declines possibly related to high fishing pressure in some areas (e.g. in the southwest Indian Ocean area).

STOCK STATUS TRENDS

The overall standardized catch per unit effort (CPUE) of swordfish for the Japanese fleet for all areas of the Indian Ocean shows a general continuous decline over the period 1980 to 2006; however, the last five years have been relatively stable. By contrast the standardized CPUE of swordfish for the Taiwanese fleet is variable but shows no consistent trend. The apparent fidelity of swordfish to particular areas is a matter for concern as this can lead to localised depletion. The CPUE of the Japanese fleet in the south west Indian Ocean has the strongest decline of the four areas examined in 2008; furthermore, the La Reunion CPUE series shows a declining trend in this area over the last 10 years. In previous years, localised depletion was inferred on the basis of decreasing CPUEs following fine scale analyses of the catch effort data. Therefore the Scientific Committee cannot discount the possibility that localised depletion is still occurring in some areas. Localised depletion has occurred in other parts of the world where swordfish have been heavily targeted. The annual average sizes of swordfish in the respective Indian Ocean fisheries are variable but show no trend. It was considered encouraging that there are not yet clear signals of declines in the size-based indices, but these indices should be carefully monitored. It was noted that since females mature at a relatively large size, a reduction in the biomass of large animals could potentially have a strong effect on the spawning biomass.

The results of the 2008 stock assessment were more optimistic than those from 2006 when overfishing was considered to have occurred. Based on the point estimates and confidence limits, on balance the assessment model results indicate that overfishing of the swordfish stock in Indian Ocean is not occurring ($F_{2006}/F_{MSY} < 1$) and the stock appears not to be in an overfished state ($B_{2006}/B_{MSY} > 1$). Recent catch levels (averaging 31,900 t per year over the five year period 2002-2006) have been around the current estimate of MSY (31,500 t, 80% confidence limits 24,500 t - 34,400 t).

3. Status of species that belong to the same ecosystems as, or are associated with or dependent upon, the major target stocks (hereinafter referred to as non-target species).

4. Trends in the status of those species.

Information on the status of non-target species is relatively poor compared to that on target species and no quantitative stock assessments for non-target species have been undertaken by the IOTC Working Party on Ecosystems and Bycatch. As a consequence, uncertainties remain in regard to many of these species, most notably sharks.

Panel analysis

The Panel analysis concluded that the data available for IOTC stock assessments is limiting the scientific advice that can be provided. The high level of artisanal catch and high frequency of CPCs with inadequate data collection and reporting mechanisms make the development of an accurate and comprehensive database of catch, effort and size statistics very difficult. The establishment of a complete and comprehensive data set is also hampered by lack of cooperation of some of the main players in the area, which are non-Members of IOTC. In one particular case, this is determined by the current legal structure of the organisation. Data collection mechanisms for the non-target species and the neritic tunas are more limited than for the major commercial species and therefore the ability of the Scientific Committee to provide scientific advice with a reasonable degree of confidence on the impact of fisheries on these species is quite limited.

It appears that until recently, biomass levels of some of the major commercial species, while in decline, were still at levels above B_{MSY} . However, swordfish in the south-western Indian Ocean may have declined to a lower than optimal level and the stock of yellowfin may have declined to below

B_{MSY} . Catch levels of south-western swordfish, bigeye, and yellowfin have likely been excessive. If unabated, excessive catches are expected to accelerate biomass declines to levels below B_{MSY} , especially as biomass closely approaches that level. The newest stock assessment for yellowfin indicates that conservation measures adopted by the Commission have not prevented the stock from being overfished and the biomass may now be below B_{MSY} .

It is likely that, given uncertainties in the available information for the IOTC stocks, biomass levels would have to decline substantially below B_{MSY} , before scientists could identify, with high confidence, that resource levels were in fact below B_{MSY} .

While the IOTC's scientific bodies have not undertaken separate assessments of certain ecologically related species, available scientific information on seabirds, notably albatrosses and petrels, as well as sea turtles indicate that these species' groups are of conservation concern.

4.1.2 General criterion: Data collection and sharing

1. Extent to which the RFMO has agreed formats, specifications and timeframes for data submission, taking into account UNFSA Annex I.

Article XI of the IOTC Agreement requires that the Members of the Commission shall, on the request of the Commission, provide such available and accessible statistical and other data and information as the Commission may require for the purposes of the Agreement. The Commission shall decide the scope and form of such statistics and the intervals at which they shall be provided. The Commission shall also endeavour to obtain fishing statistics from fishing States or entities that are not Members of the Commission.

IOTC has adopted a range of management measures relating to the provision of fisheries data; including fisheries statistics for all species under the IOTC mandate (nominal catch, catch and effort and size data for all the species under the IOTC mandate, and the activities of supply vessels and use of fish aggregating devices (FADs). Additional requirements are in place for provision of information on sharks (Resolution 05/05), seabirds (Resolution 08/03) and sea turtles (Recommendation 05/08).

IOTC also obtains a range of information on vessel characteristics of authorised vessels (Resolution 07/04), vessel activities relating to the vessel monitoring programmes (Resolution 06/03) and transshipment operations (Resolution 08/02).

Each management measure prescribes the formats, specifications and timeframes for data submissions.

Each year the Secretariat produces reports to the Commission on the extent to which CPCs (and some non-Members) report data in accordance with IOTC Resolutions. More detailed reports are provided to the IOTC technical bodies which highlight completeness and accuracy issues as they relate to their utility for stock assessments.

Over 50% of the total catch of IOTC species is taken by artisanal fisheries (as indicated below); however, there is a high level of uncertainty with respect to the total catch. Some species such as bigeye tuna are caught mainly by the industrial fleets and the current catches are well known. By contrast, a considerable amount of yellowfin tuna and skipjack is caught by artisanal fleets and the catch estimates are less reliable.

Data are shared widely in accordance with data confidentiality rules (Resolution 98/01).

Data gaps are identified by the working parties and/or the Scientific Committee and drawn to the attention of scientists, individual Members, and the Commission as appropriate. The Secretariat and Members participate in a range of initiatives to address data gaps.

Panel analysis

IOTC has adopted formats, specifications and timeframes for data submission through various IOTC Resolutions (on fisheries statistics as well as on vessel information)

IOTC is very weak in terms of provisions on data requirements for non-target species. No binding measures are in force for sea turtles, and resolutions adopted on sharks and seabirds are partially implemented.

There are doubts on the reliability of some of the available information on vessels.

Due to the IOTC institutional and legal framework, Taiwan, Province of China is not bound by IOTC measures.

2. Extent to which RFMO members and cooperating non-members, individually or through the RFMO, collect and share complete and accurate fisheries data concerning target stocks and non-target species and other relevant data in a timely manner.

3. Extent to which fishing data and fishing vessel data are gathered by the RFMO and shared among members and other RFMOs.

Panel analysis

The timeframe and deadlines for the submission of data are not sufficient to allow the organisation to adopt conservation and management measures on the basis of the most up to date and relevant stock status data,

Detailed catch and effort data, including size frequency data, is difficult to obtain from artisanal fleets. This results in high level of uncertainty concerning the status of many stocks under the IOTC mandate, especially the neritic tunas.

The data (on fisheries and vessels) at the disposal of the organisation are not complete, and compliance with all the obligatory data requirements seems to be very low, especially in relation to artisanal fisheries (major impact on skipjack and yellowfin tuna, and possibly swordfish assessments) and sharks. The proportion of catches made by coastal nations with insufficient data collection and reporting mechanisms is high.

Several Members do not comply with their data collection obligations in terms of quantity and quality of data, despite the existence of clear guidelines for data reporting.

IOTC used to have a Working Party on Data Collection and Statistics which was discontinued in 2004. Its work is now handled by the plenary meeting of the Scientific Committee; however, this arrangement means that the analyses lack the previous depth.

Information on the Taiwan, Province of China fleet of small longliners fishing in international waters is not reported, as well as information on relevant fleets of non-cooperating non-Members (Maldives and Yemen). In longliners fisheries, the situation of Taiwan, Province of China and the consequent lack of data, has significant effects on the IOTCs ability to evaluate some high value target species.

The submission of compliance data, most notably data on active vessels to the Compliance Committee does not allow for timely assessment of compliance. The data on active vessels appear not to be fully provided by some Members.

Panel Recommendations / options

The Panel identified a poor level of compliance by many IOTC Members. with their obligations, notably those related to the statistical requirements on artisanal fisheries and sharks, and recommends that:

- 3. The timing of data reporting be modified to ensure that the most recent data are available to the working parties and the Scientific Committee.*
- 4. The deadline to provide data on active vessels be modified to a reasonable time in advance of the meeting of the Compliance Committee. This deadline is to be defined by the Compliance Committee.*
- 5. The scheduling of meetings of the working parties and Scientific Committee be investigated based on the experience of other RFMOs. This should bear in mind the optimal delivery of*

scientific advice to the Commission.

- 6. The Commission task the Scientific Committee with exploring alternative means of communicating data to improve timeliness of data provision.*
- 7. Non-compliance be adequately monitored and identified at individual Member level, including data reporting.*
- 8. The causes of non-compliance be identified in cooperation with the Member concerned.*
- 9. When the causes of non-compliance are identified and all reasonable efforts to improve the situation are exhausted, any Member or non-Member continuing to not -comply be adequately sanctioned (such as market related measures).*
- 10. There is a need to improve the quality and quantity of the data collected and reported by the Members, including the information necessary for implementing the ecosystem approach. The most immediate emphasis should be placed on catch, effort and size frequency. The Panel also recommends that:*
- 11. Support for capacity building be provided to developing States - the Commission should enhance funding mechanisms to build developing country CPCs' capacity for data collection, processing and reporting infrastructures, in accordance with the Commission requirements.*
- 12. A regional scientific observer programme to enhance data collection (also for non-target species) and ensure a unified approach be established, building on the experience of other RFMOs, Regional standards on data collection, data exchanged and training should be developed.*
- 13. Actions be taken so that non-Members, especially Maldives, Taiwan, Province of China and Yemen participate in data collection and reporting.*
- 14. A relationship with Taiwan, Province of China be developed in order to have data access when needed, to all its fleet data as well as historical series, and address the problems deriving from the current legal framework.*
- 15. The Secretariat's capacity for data dissemination and quality assurance be enhanced, including through the employment of a fisheries statistician.*
- 16. A statistical working party be established to provide a more efficient way to identify and solve the technical statistical questions.*
- 17. The obligation incumbent to a flag State to report data for its vessels be included in a separate Resolution from the obligation incumbent on Members to report data on the vessels of third countries they licence to fish in their exclusive economic zones (EEZs).*

In relation to non-target species, the Panel recommends that:

- 18. The list of shark species for which data collection is required in Recommendation 08/04 be expanded to include the five species identified by the Scientific Committee (blue shark, shortfin mako, silky shark, scalloped hammerhead, oceanic whitetip), and apply to all gear types.*

4. Extent to which the RFMO is addressing any gaps in the collection and sharing of data as required.

Panel analysis

As already mentioned, a considerable gap in data reporting exists, notably for the artisanal fleets' activities. However, the problems of compliance persist also with respect to some industrial fleets.

Despite some efforts, IOTC has not been in a position to support all Members in fulfilling these gaps, notably developing countries, of which some do not have the internal capacity to solve the problem of lack of statistical data collection.

IOTC has not undertaken sufficient actions to address the problem of fishing activities by fleets that are not flagged to IOTC Members and do not report basic statistical data to the organisation.

Panel Recommendations / options

- 19. The Secretariat's capacity to provide support to developing States' Members should be enhanced.*
- 20. Cooperative capacity building efforts amongst Members and, as appropriate external organisations, should be encouraged.*
- 21. Innovative or alternative means of data collection (e.g. port sampling) should be explored and, as appropriate, implemented.*
- 22. Avenues to collect data from non-Members should be explored.*

4.1.3 General criterion: Quality and provision of scientific advice

1. Extent to which the RFMO receives and /or produces the best scientific advice relevant to the fish stocks and other living marine resources under its purview as well as to the effects of fishing on the marine environment.

For the discussion on functions and arrangements of the scientific bodies of the IOTC, please refer to Chapter 2.1.

Panel analysis

The level of attendance at and participation, in particular from developing States, to the Working Parties as well as to the Scientific Committee Plenary is very low and inconsistent from one meeting to another.

The Secretariat's capacity to assist across the range of scientific processes required is limited.

IOTC relies on research and analysis undertaken by individual national scientists. This approach relies on the good will and the availability of the scientists and it does not ensure that the work requested by the Scientific Committee is undertaken or meets the standards expected.

The calendar of the Scientific Committee work is not structured to address the needs of sound and rational management of the stocks. The Scientific Committee typically meets well in advance of the IOTC Plenary. This is linked to the deadlines of the fisheries data reporting requirements, meaning that the Commission receives advice on the status of the stocks that is two and a half years old.

The advice provided is of high quality, yet the low level of participation in the meetings may negatively affect the credibility (broad acceptance) of the scientific conclusions.

Some data is only of limited accessibility due to confidentiality provisions which may impede replication of work.

The Ad Hoc Working Party on Methods has met only once between 2004 and 2008 (in October 2008).

Given the significant gaps in data, the data intensive, integrated statistical models are not always appropriate for developing the best scientific advice.

Panel Recommendations / options

- 23. For species with little data available, the Scientific Committee should be tasked with making use of more qualitative scientific methods that are less data intensive.*
- 24. More emphasis should be given to adherence to data collection requirements.*
- 25. Confidentiality provisions and issues of accessibility to data by the scientists concerned needs to be clearly delineated, and/or amended, so that analysis can be replicated.*
- 26. The resources of the IOTC Secretariat should be increased. Even though some progress will be made with recruitment of the stock analysis expert, some additional professional staffing is required.*
- 27. To enhance the quality of scientific advice and the technical soundness of the papers being considered by the Scientific Committee and its working parties, and to encourage publication of IOTC scientific papers in relevant journals, future consideration should be given to the establishment of a scientific editorial board within the Scientific Committee.*
- 28. An online IOTC Data Summary should be established.*
- 29. Ongoing peer review by external experts should be incorporated as standard business practice of working parties and the Scientific Committee.*
- 30. New guidelines for the presentation of more user friendly scientific reports in terms of stock assessments should be developed. In this respect, Kobe plots are considered to be the most desirable method of graphical presentation, especially to non-technical audience.*
- 31. A special fund to support the participation of scientists from developing States should be established.*
- 32. The Commission should renew efforts to convene meetings of the Working Party on Neritic Tunas.*

4.1.4 General criterion: Adoption of conservation and management measures

1. Extent to which the RFMO has adopted conservation and management measures for both target stocks and non-target species that ensures the long-term sustainability of such stocks and species and are based on the best scientific evidence available.

Article V of the IOTC Agreement requires the Commission to adopt, in accordance with Article IX and on the basis of scientific evidence, conservation and management measures, to ensure the conservation of the stocks covered by the Agreement and to promote the objective of their optimum utilization throughout the Area.

Panel analysis

The IOTC has adopted relatively few conservation and management measures on the basis of the scientific advice provided by its Scientific Committee. The most significant measures adopted to-date

relate to the regulation of fishing effort, with the creation of records of IOTC authorised vessels and active vessels, and measures to limit fishing capacity.

The lack of adoption of adequate conservation and management measures could also be attributed to the uncertainties in the scientific advice and a lack of willingness by Members to address urgent issues

There is a lack of an explicit framework under which the Commission takes decisions in light of uncertainty.

Another element identified was that the Commission has only once resorted to the voting procedure, and its over-reliance on reaching consensus may hamper adoption of adequate measures.

Within the system of the freezing of fishing effort in terms of number of vessels and correspondent capacity in gross tonnage, developing countries were allowed to present fleet development plans with no deadline for their implementation.

Panel Recommendations / options

- 33. As the IOTC has faced the management of the main targeted stock under its purview only through a regulation of the fishing effort; other approaches should be explored, such as those envisioned in Resolution 05/01, including catch limits, total allowable catch (TAC) or total allowable effort (TAE).*
- 34. Within the system of the freezing of fishing effort in terms of number of vessels and correspondent capacity in gross tonnage, a deadline should be agreed for the implementation of fleet development plans.*
- 35. IOTC should consider developing a framework to take action in the face of uncertainty in scientific advice.*
- 36. IOTC should use the full range of decision making processes available to it under the Agreement.*

2. Extent to which the RFMO has applied the precautionary approach as set forth in UNFSA Article 6 and the Code of Conduct for Responsible Fisheries Article 7.5, including the application of precautionary reference points.

Panel analysis

The concept of the precautionary approach has been elaborated at international level, after the conclusion of the IOTC Agreement in 1993, therefore this concept was not explicitly included in the Agreement. However, some precautionary actions, especially in relation to some non-target species, have been taken in the form of resolutions and non-binding recommendations. The Scientific Committee has started framing its advice around MSY with respect to assessing stock status and recommending management responses. However, the Commission has not explicitly adopted any interpretation of its “optimum utilisation” objective.

Panel Recommendations / options

- 37. The IOTC Agreement needs to be amended or replaced in order to incorporate modern fisheries management principles, such as the precautionary approach.*
- 38. Pending the amendment or replacement of the Agreement, the Commission should implement the precautionary approach as set forth in the UNFSA.*

3. Extent to which the RFMO has adopted and is implementing effective rebuilding plans for depleted or overfished stocks

To date, the Commission has not implemented any rebuilding plans as none of the stocks had been assessed to be in a depleted state although only less than one third of the IOTC stocks have been analysed. However, the Commission has not yet established agreed levels for stock status, against which any such plans would be required. This issue could become relevant in the future if the stocks are identified to be declining and proactive consideration should be given to how to respond to advice that a stock is depleted or in overfished state.

In 2008, the Scientific Committee concluded that the yellowfin tuna stock is very close to an overfished state or already overfished. This is the first time this condition has been identified for an IOTC species and the analysis will be provided to the Commission for its consideration in 2009.

4. Extent to which the RFMO has moved toward the adoption of conservation and management measures for previously unregulated fisheries, including new and exploratory fisheries.

Not applicable as no new fisheries have been developed since the establishment of the Commission for the IOTC species. Some fisheries and fishing methods are being expanded by developing States under their fleet development plans. These are considered to be under the same obligations as existing fisheries.

Panel analysis

The Commission placed the emphasis, for the first three or four years of its work, on the three main tropical tuna species, and then moved also to the regulation of other species such as swordfish.

Fishing for sharks is largely unregulated.

Panel Recommendations / options

39. *Measures to regulate shark fisheries should be considered by the Commission.*

5. Extent to which the RFMO has taken due account of the need to conserve marine biological diversity and minimize harmful impacts of fisheries on living marine resources and marine ecosystems.

6. Extent to which the RFMO has adopted measures to minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species, in particular endangered species, through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques.

The IOTC Agreement does not contain specific provisions concerning conservation of marine biodiversity and minimization of harmful impacts on ecosystems. No specific measures have been adopted to minimize pollution, waste and discards.

The Commission has taken some actions on ecosystem issues. The Working Party on Ecosystems and Bycatch was set up in 2005 to provide advice on this area, and efforts to collect data started in earlier years. The IOTC has recently and relatively expanded its data collection requirements and taken management measures relating to sharks, seabirds and sea turtles (some of them non-binding).

In 2006, IOTC introduced Resolution 06/04 *On reducing incidental bycatch of seabirds in longline fisheries*, with recommended action to mitigate incidental mortality of seabirds. The provisions of this resolution were further expanded in 2008 with the adoption of Resolution 08/03

In 2005, IOTC adopted Recommendation 05/08 (non-binding) *on sea turtles*. This Recommendation listed measures for vessels fishing for tuna and tuna-like species recommended for mitigation of the impact of fishing operations on sea turtles.

In 2005, IOTC adopted Resolution 05/05 *Concerning the conservation of sharks caught in association with fisheries managed by IOTC* containing guidelines for handling sharks, and recommending that stock assessments be conducted on shark species, following the compilation of the required data.

Panel analysis

As mentioned, the IOTC Agreement predates, and has not been updated to take into account the concepts referred to in criteria 5 and 6 above. Consequently at this stage the extent to which IOTC has dealt with these issues is not sufficient.

Notwithstanding, the IOTC has established a Working Party on Ecosystem and Bycatch.

Panel Recommendations / options

40. There is a need to develop and take into account modern principles for fisheries management, including ecosystem based approach, protection of marine biodiversity and reducing the harmful impacts of fishing on marine environment.

41. These concepts should be integrated in the IOTC Agreement.

4.1.5 General criteria: Capacity management

While the provision of advice on fishing capacity (e.g. estimating optimal fishing capacity) is technically difficult, the IOTC Scientific Committee has provided advice to the Commission on bigeye tuna, yellowfin tuna, albacore and swordfish and to a lesser degree skipjack tuna that recommend the need to limit fishing effort to specified levels (as dates) based upon best available information. To date, IOTC has implemented measures to limit vessels targeting tropical tunas, swordfish and albacore.

In 2008, the Scientific Committee recommended to the Commission that a working party be set up to further consider the matter of fishing capacity for the purposes of the Commission.

1. Extent to which the RFMO has identified fishing capacity levels commensurate with long-term sustainability and optimum utilization of relevant fisheries.

The Scientific Committee has identified the technical difficulties involved in the estimation of optimal fishing capacity, indicating to the Commission that it was not in a position to produce an accurate estimate. Nevertheless, it has often cast its advice to the Commission in terms of fishing capacity, recommending that increases in fishing effort be prevented or maintained at levels that the Committee considered are sustainable.

In 2008, the Scientific Committee again discussed again this issue and proposed that a Working Party on Fishing Capacity be established in 2009 to review the technical aspects of the estimation of fishing capacity.

Panel analysis

To date, IOTC has not identified precise fishing capacity levels. Accurate estimates of the levels of fishing capacity operating in the Indian Ocean are not available. As a result, the Commission has not linked fishing capacity to the desirable levels of exploitation of the stocks. Because of the lack of precise information on fishing capacity, it is unlikely that capacity conservation alone is sufficient to maintain the stocks above B_{MSY} .

2. Extent to which the RFMO has taken actions to prevent or eliminate excess fishing capacity and effort.

The Commission has adopted the following conservation and management measures that limit fishing capacity recognising the FAO Code and the IPOA-Capacity.

Resolution 01/04 *On limitation of fishing effort of non members of IOTC whose vessels fish bigeye tuna* requests non-Members of IOTC to reduce their fishing effort in 2002 in relation to 1999 levels.

Resolution 03/01 *On the limitation of fishing capacity of Contracting Parties and Cooperating non-Contracting Parties* limits the number of their fishing vessels larger than 24 meters length overall.

Resolution 06/05 *On the limitation of fishing capacity, in terms of number of vessels, of IOTC contracting parties and co-operating non contracting parties* limits the number of their vessels, by gear type, of 24 m overall length and over, and under 24 metres if they fish outside their EEZ, fishing for tropical tunas in the IOTC Area.

Resolution 07/05 *Limitation of fishing capacity of IOTC Contracting Parties and Cooperating non-Contracting Parties in terms of number of longline vessels targeting swordfish and albacore* limits the number of their vessels, by gear type, of 24 m overall length and over, and under 24 metres if they fish outside their EEZ, fishing for swordfish and albacore tuna in the IOTC Area.

Panel analysis

IOTC employs effort-based controls i.e. controls on fishing capacity (e.g. controlling the numbers and tonnages of vessels) as opposed to catch based controls (catch limits etc).

On this basis IOTC has adopted Resolutions designed to limit fishing capacity. These are however deemed not sufficient to limit the capacity at a level commensurate with long term sustainability of fisheries.

Developing Members are allowed to submit capacity development plans, however as there are no deadlines for submission of such plans, there is no stable projection of fishing capacity, against which management controls can be considered.

The provisions of the IPOA-Capacity have been considered.

Panel Recommendations / options

42. *IOTC should establish a stronger policy on fishing capacity to prevent or eliminate excess fishing capacity.*
43. *Loopholes in the current systems of fishing capacity limitation, such as the establishment of fleet development plans and exemptions for vessels less than 24 metres, should be closed.*
44. *IOTC should endorse the recommendation of the Scientific Committee to create a Working Group on Fishing Capacity.*

4.1.6 General criteria: Compatibility of management measures

1. *Extent to which measures have been adopted as reflected in UNSFA Article 7.*

Article II of IOTC Agreement defines the area of competence as the Indian Ocean and adjacent seas.

Panel analysis

Article 7 of UNFSA does not seem relevant as management measures for stocks falling under IOTC competence are applied throughout their range of distribution by IOTC Members.

Given the highly migratory nature of tuna and tuna-like species, the conservation and management measures adopted by IOTC are, necessarily, designed to apply to both the high seas and EEZs in order to be effective.

Panel Recommendations / options

45. IOTC Members should be invited to promptly implement IOTC conservation and management measures through their national legislation.

4.1.7 General criteria: Fishing allocations and opportunities.

1. Extent to which the RFMO agrees on the allocation of allowable catch or levels of fishing effort, including taking into account requests for participation from new members or participants as reflected in UNFSA Article 11.

The Commission has adopted several resolutions aimed at controls on fishing capacity (e.g. controlling the numbers and tonnages of vessels) as opposed to catch limits. The Commission has not made any explicit decisions on allocation of TAC or TAE.

Panel analysis

The lack of a TAC or TAE and their subsequent allocation is a significant gap with regards to the functions of the Commission.

As the Commission has not determined any allocations to Members, the issue of accounting for new Members or participants has not arisen.

Panel Recommendations / options

46. IOTC should explore the advantages and disadvantages of implementing an allocation system of fishing quota, expressed as TAC or TAE system. Such an investigation should include consideration of how significant catches by current non-Members would be accounted for.

4.2 Review Area: Compliance and enforcement

4.2.1 General criterion: Flag State duties

1. Extent to which RFMO members are fulfilling their duties as flag States under the treaty establishing the RFMO, pursuant to measures adopted by the RFMO, and under other international instruments, including, inter alia, the 1982 Law of the Sea Convention, the UNFSA and the 1993 FAO Compliance Agreement, as applicable.

IOTC has adopted two resolutions which include some of the flag State requirements deriving from UNFSA, and the LOS Convention.

In 2007, IOTC adopted Resolution 07/02 *Concerning the establishment of an IOTC record of vessels authorised to operate in the Indian Ocean area*. This superseded related resolutions i.e. 05/02 and 02/05 and 01/02.

Resolution 07/02 requires, inter alia:

- The maintenance an IOTC Record of fishing vessels that are authorised to fish for tuna and tuna-like species in the IOTC Area
- The flag CPCs to authorise vessels only if they are able to fulfil the IOTC's requirements and responsibilities; ensure that the vessels comply with all the relevant IOTC conservation and management measures; and ensure that vessels have no history of IUU fishing activities

- CPCs shall take measures, under their applicable legislation, to prohibit the fishing for, the retaining on board, the transshipment and landing of tuna and tuna-like species by the vessels which are not entered into the IOTC Record
- Each CPC shall notify the Secretary of any factual information showing that there are reasonable grounds for suspecting a vessel not on the IOTC Record to be engaged in fishing for and/or transshipment of tuna and tuna-like species in the IOTC Area.

In the same vein, in 2001, IOTC adopted Resolution 01/02 *Relating to the control of fishing activities*. This supports Resolution 07/02 to require that, inter alia

- Fishing vessels to carry on board documents issued and certified by a competent authority with respect to License to fish; vessel name; port in which registered and the registration number; international call sign; names and addresses of owner; and various vessel details
- Vessels and fishing gear are marked appropriately (vessels as per FAO Standard Specification for the Marking and Identification of Fishing vessels)
- Fishing vessels to use a bound fishing logbook.

Panel analysis

Although flag State duties are not reflected in the IOTC Agreement, the IOTC has included a number of provisions relevant to flag State duties in above mentioned resolutions.

Panel Recommendations / options

47. Any amendment to or replacement of the IOTC Agreement should include specific provisions on Member's duties as flag States, drawing on the relevant provisions of the UNFSA.

4.2.2 General criterion: Port State measures

1. Extent to which the RFMO has adopted measures relating to the exercise of the rights and duties of its members as port States, as reflected in UNFSA Article 23 and the Code of Conduct for Responsible Fisheries Article 8.3.

2. Extent to which these measures are effectively implemented.

In 2002, IOTC adopted Resolution 02/01 *Relating to the establishment an IOTC programme of inspection in port*. This was superseded in 2006 by Resolution 05/03 *Relating to the establishment of an IOTC programme of inspection in port*.

This enables inspections of documents, fishing gear and catch on board fishing vessels, and adoption of regulations to prohibit landings and transshipments of illegally caught fish.

Panel analysis

In terms of port States duties, IOTC has adopted a rather vague resolution (Resolution 05/03 *Relating to the establishment of an IOTC programme of inspection in port*) relating to the establishment of inspection in port.

This Resolution is out dated and will require amendments in the near future following the international developments on this issue, most notably the process for establishment of a globally binding agreement on port State measures, currently ongoing in FAO.

To date the level of compliance with this Resolution has been low.

The port State duties are not contained in the IOTC Agreement.

Panel Recommendations / options

48. *Any amendment to or replacement of the IOTC Agreement should include specific provisions on member's duties as port States.*
49. *IOTC should explore the possible implementation of the FAO Model Scheme on Port State Measures.*
50. *The IOTC should duly note the outcome of the current process for establishment of a globally binding agreement on port State measures.*

4.2.3 General criterion: Monitoring, Control and Surveillance

1. Extent to which the RFMO has adopted integrated MCS measures (e.g., required use of VMS, observers, catch documentation and trade tracking schemes, restrictions on transshipment, boarding and inspection schemes).

2. Extent to which these measures are effectively implemented.

In 2002, IOTC adopted Resolution 02/02 *Relating to the establishment of a vessel monitoring system Pilot programme.*

In 2006, the IOTC adopted Resolution 06/03 *On establishing a vessel monitoring system programme requiring each Contracting Party and Cooperating Non Contracting Party to adopt a satellite-based vessel monitoring system (VMS) for all vessels greater than 15 metres in length overall registered on the IOTC Record of Vessels which operate in the IOTC Area and which fish on the high seas (outside the fisheries jurisdiction of any coastal state) for species covered by the IOTC Agreement by 1 July 2007.*

The Commission has adopted Resolution 01/06 that establishes a Bigeye Statistical Document Programme, a trade tracking system that applies to frozen tuna exports and re-exports.

The Commission has adopted Resolution 06/02 and only Resolution 08/02 that ban transshipment at sea for all vessels except large-scale tuna vessels that participate in IOTC Regional Observer Programme.

Panel analysis

IOTC has recently adopted an obligatory VMS; however, its implementation is still to be verified.

In 2006 IOTC adopted a programme for transshipments, which is recently entered into force.

A bigeye tuna statistical document scheme has been implemented for frozen products, excluding purse seine and pole and line catch destined for canneries

IOTC has no observers scheme (except the scheme limited to transshipments), no catch documentation scheme and no inspection and boarding scheme.

Panel Recommendations / options

51. *IOTC should develop a comprehensive monitoring, control and surveillance (MCS) system through the implementation of the measures already in force, and through the adoption of new measures and tools such a possible on-board regional observers' scheme, a possible catch documentation scheme as well as a possible system on boarding and inspection.*

4.2.4 General criterion: Follow-up on infringements

1. Extent to which the RFMO, its members and cooperating non-members follow up on infringements to management measures.

The Commission agreed in 2001 that a clear procedure to follow in the case of a potential violation needs to be developed, in accordance to international agreements. The Commission adopted an IUU Resolution 06/01 *On establishing a list of vessels presumed to have carried out illegal, unregulated and unreported fishing in the IOTC area.*

Panel analysis

Few technical and conservation and management measures have been adopted by IOTC that require follow-up by CPCs on infringements.

There are currently no procedures in any resolutions to address non-compliance by CPCs.

The current IUU Resolution only applies to non-Members.

Detailed provisions on follow-up on infringements are not reflected in the in the IOTC Agreement.

Panel Recommendations / options

52. *The current IUU resolution should be amended to allow the inclusion of vessels flagged to Members.*

53. *IOTC should explore options concerning the possible lack of follow-up on infringements by CPCs.*

54. *IOTC should establish a sanction mechanism for non-compliance, and task the Compliance Committee to develop a structured approach for cases of infringement.*

55. *Provisions for follow-up on infringement should be included in any amended/replaced Agreement.*

4.2.5 General criterion: Cooperative mechanisms to detect and deter non-compliance

1. Extent to which the RFMO has established adequate cooperative mechanisms to both monitor compliance and detect and deter non-compliance (e.g. compliance committees, vessel lists, sharing of information about non-compliance).

2. Extent to which these mechanisms are being effectively utilized

The Compliance Committee

The IOTC Compliance Committee was established in 2002 (Resolution 02/03 *Terms of reference for the IOTC Compliance Committee*). The Committee reports, inter alia, to the Commission on the status of member compliance with a range of Compliance and Enforcement related management measures for example: Resolution 07/02 on the IOTC record of authorised vessels, Resolution 05/04 on the IOTC list of active vessels, Resolution 05/03 on port inspections, Resolution 01/06 concerning the IOTC bigeye tuna statistical document programme and Resolution 06/01: *On establishing a list of vessels presumed to have carried out illegal, unregulated and unreported fishing in the IOTC area.*

Vessel Lists

The IOTC uses the following lists:

Vessels authorised to fish in the IOTC Area – available on the IOTC website. This record is used by Members to identify whether vessels are operating legally in the fishery and/or whether fish being landed or imported has been taken by a vessel that is authorised to fish.

IUU Vessels – available on the IOTC website. This list is used by Members and other RFMOs to identify and take action against IUU Vessels; and by Members when considering applications for authorised vessel status

Active Vessels. This list is used by Members to regulate the numbers and tonnages of vessels in their fleets in conformity with capacity limit related management measures.

Sharing of information about non-compliance

Various resolutions call on Members to provide information relating to a range of compliance matters to the Secretariat for dissemination. For example:

Resolution 01/03 *Establishing a scheme to promote compliance by Non-Contracting Party vessels with resolutions established by IOTC* — obliges Members to notify of any vessel fishing contrary to IOTC conservation and management measures.

Resolution 07/02 *Concerning the establishment of an IOTC record of vessels authorised to operate in the IOTC area* — obliges Members to provide factual information when there are reasonable grounds for suspecting that a fishing vessel not on the IOTC Record of Authorised Vessels is engaged in fishing or transshipment of tuna or tuna-like species in the IOTC Area.

Resolution 05/04 *Concerning registration and exchange of information on vessels, including flag of convenience vessels, fishing for tropical tunas and swordfish in the IOTC Area of competence* — obliges Members to provide information on any vessels not on the active vessels list but known or presumed to be fishing for tropical tunas and swordfish in the Area

Resolution 06/01 *On establishing a list of vessels presumed to have carried out illegal, unregulated and unreported fishing in the IOTC area* — obliges Member to list vessels presumed to be carrying out IUU fishing activities in the IOTC Area, with supporting evidence – 120 days before the next Commission meeting.

Panel analysis

Members have a poor record of providing information against cooperative mechanisms such as, inter alia, the vessels list, the positive list (i.e. the list of vessels authorised to fish), and the port inspection scheme. Additionally, the IUU list is only applicable to non-Member vessels.

The Compliance Committee work is hampered by poor reporting by Members both on actions taken pursuant to Article X of the Agreement and individual resolutions.

There is a lack of commitment to implement IOTC measures, as well as a low level of compliance.

Panel Recommendations / options

56. *A structured, integrated approach to evaluate the compliance of each of the Members against the IOTC Resolutions in force should be developed by the Compliance Committee.*
57. *CPCs should be reminded of their duty to implement in their national legislations the conservation and management measures adopted by IOTC.*
58. *The requirement to present national reports on the implementation of IOTC measures should be reinforced.*

59. *The sense of accountability within IOTC seems to be very low; therefore more accountability is required. There is probably a need for an assessment of the performance of CPCs.*

60. *Establishment of formal mechanisms of MCS (e.g. observers programmes) should be considered.*

4.2.6 General criterion: Market related measures

1. *Extent to which the RFMO has adopted measures relating to the exercise of the rights and duties of its Members as market States.*

2. *Extent to which these market-related measures are effectively implemented.*

IOTC has adopted management measures (one of them non-binding) that may affect trade. IOTC Recommendation 03/05 *Concerning Trade Measures* recommends a process of identification which identifies States (rather than an individual vessel) as failing to discharge their obligations under the IOTC Agreement.

The IOTC Record of Authorised Vessels enables market States to identify whether a vessel offering of tuna or tuna-like species from the Indian Ocean is legally entitled to do so. States may accept or reject shipments on this basis.

Shipments of frozen bigeye tuna must be accompanied by fully completed IOTC bigeye statistical documentation (including shipment details and authorised signatures and seals). States may accept or reject shipments on this basis.

Panel analysis

A bigeye tuna statistical document scheme has been implemented for frozen products, excluding purse seine and pole and line catch destined for canneries. The statistical document scheme in itself contains certain loopholes as it covers only traded catches. A Catch Documentation Scheme provides such a solution and is therefore a more stringent control approach.

Panel Recommendations / options

61. *As IOTC action in terms of measures relating to the exercise of rights and duties of its Members as market States are very weak, the non-binding market related measure should be transformed into a binding measure.*

62. *-The bigeye statistical document programme should be applied to all bigeye products (fresh and frozen). Catch documentation schemes for target species of high commercial value should be considered. Alternatively, expanding the scope of the current statistical document programme to address current loopholes should be considered.*

4.3 Review Area: Decision making and dispute settlement

4.3.1 General criterion: Decision making

1. *Extent to which RFMO has transparent and consistent decision-making procedures that facilitate the adoption of conservation and management measures in a timely and effective manner.*

In the IOTC Agreement provisions concerning decision-making are found in four different articles; Article VI on sessions of the Commission, Article IX regarding procedures concerning conservation and management measures, in the finances provision in Article XIII and in Article XX on

amendments. Many other RFMO agreements contain stand-alone provisions for decision-making, underpinning their importance.

The general rule under the IOTC Agreement is that decisions and recommendations be taken by a majority vote. Adoption of conservation and management measures as well as the adoption and amendments of Rules of Procedure require, however, two-thirds majority, while the budget shall be adopted by consensus. If consensus cannot be reached, the budget shall be adopted by two-thirds majority. Finally a three-quarters majority may amend the IOTC Agreement.

Members of IOTC have a straightforward opportunity to object to a conservation and management measure, and thereby not be bound by that measure.

Panel analysis

The Agreement follows a rather modern approach to decision making (that is a recourse to voting procedures), yet it contains a weak and out-dated objection procedure. Objection procedures contained in more modern RFMO conventions include obligations such as clear and limited admissibility of the objection for specific reasons, for example when the content of a decision discriminates in any form against a Member or is inconsistent with the Convention, and/or obligations to take equivalent measures. By contrast, the objection procedure in the IOTC Agreement allows Members to opt out of any measure at their will, with no justification and consequences. This is considered to be a fundamental flaw of this Agreement, with the potential to severely weaken the implementation and compliance mechanisms. It is therefore imperative to amend the objection procedure so that it is far more rigorous and, in line with other RFMO conventions, includes more restricted grounds for the rights to object.

While efforts should be made to achieve consensus in decision making, seeking consensus may in certain cases weaken the measures adopted and the use of voting procedure is advisable.

Panel Recommendations / options

63. In order to improve the IOTC practices of decision making and adoption of measures, when every effort to achieve consensus has been exhausted, invoking the procedure of voting should be explored

64. Amending the objection procedure so that it is more rigorous, and in line with other RFMO Conventions, featuring restricted grounds for the bases to object is recommended.

4.3.2 General criterion: Dispute settlement

1. Extent to which the RFMO has established adequate mechanisms for resolving disputes.

Article XXIII of the IOTC Agreement sets out how possible disputes shall be settled. Any dispute regarding the interpretation or application of the agreement shall be referred for settlement to a conciliation procedure to be adopted by the Commission. If a dispute is not settled by the conciliation procedure, it may be referred to the International Court of Justice, unless the involved Members agree to another method of settlement.

Panel analysis

The dispute settlement procedure in Article XXIII represents a major gap in the Agreement with no reference to a compulsory/binding dispute settlement mechanism. This conflicts with the UNFSA which places an obligation on RFMOs to either introduce compulsory and binding dispute settlement procedures or to agree to apply, as between the Contracting Parties, the dispute settlement procedures laid down in part VIII of UNFSA. This aspect of the Agreement requires substantial amendment in order to have in place a comprehensive system drawing on the provisions of UNFSA.

Panel Recommendations / options

65. A provision on dispute settlement should be amended in line with the requirements of UNFSA.

4.4 Review Area: International cooperation

4.4.1 General criterion: Transparency

1. Extent to which the RFMO is operating in a transparent manner, as reflected in UNFSA Article 12 and the Code of Conduct for Responsible Fisheries Article 7.1.9.

2. Extent to which RFMO decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials are made publicly available in a timely fashion.

Article VII of the IOTC Agreement deals with the role of observers, giving non-Members, intergovernmental and non-governmental organisations the possibility to attend IOTC meetings.

All IOTC processes are described in IOTC Agreement, the IOTC Rules of Procedure and the various Management Resolutions and Recommendations adopted by the Commission. These documents are publically available on the IOTC website.

Available technical meeting documents are posted on the IOTC website prior to the commencement of the meeting. All documents and the report from the meeting are made permanently available after the meeting. Available Commission meeting documents are posted on the IOTC website prior to the commencement of the meeting.

Documents describing the status of the stocks (Executive Summaries) are updated annually and are publically available on the IOTC website.

IOTC conservation and management measures (resolutions and recommendations; IUU Vessels List / Record of Authorised vessels) are available on the IOTC website.

Panel analysis

The IOTC Agreement offers a good level of transparency and openness, providing for participation of observers, IGOs and NGOs in the IOTC meetings. This is in line with the UNFSA and the FAO Code.

All IOTC processes are described in the IOTC Agreement, the IOTC Rules of Procedure and the various management resolutions and recommendations adopted by the Commission as well as other documents are publicly available on the IOTC website.

Data sets for replicating some of the analysis of the Scientific Committee (catch, effort, and size frequency) are generally available through the IOTC web site. However, some data critical to the construct of scientific advice to the Commission, including high resolution catch-effort and size frequency are unavailable at the IOTC, which can prevent replication of the work of the Scientific Committee and thus result in diminished transparency in the process of developing scientific advice.

The only exception to the public availability of information is the IOTC active vessels list.

While the open participation model for scientific work promotes transparency, it also results in low and sometimes inconsistent participation by the scientific delegations from the CPCs, and work largely conducted at intercessional meetings, with an annual plenary review. This approach is considered appropriate but tends to aggravate the already low participation rate by scientists.

Panel Recommendations / options

66. *The active vessels list should be made available on the IOTC website.*

67. *The Commission, in consultation with the Scientific Committee, should review the availability of critical data sets used in development of scientific advice and take steps to assure that these data are held at the Secretariat and available for validation of analyses, subject to the appropriate confidentiality requirements.*

4.4.2 General criterion: Relationship to cooperating non Members

1. Extent to which the RFMO facilitates cooperation between Members and non-Members, including through the adoption and implementation of procedures for granting cooperating status.

Since 1999, IOTC has had a mechanism to assess and grant/reject cooperating status as well as a mechanism to allow non-Members to participate in IOTC meetings.

IOTC has mechanisms to allow non-Members to participate in IOTC meetings and IOTC meetings are typically well attended by a range of non-Member countries and bodies.

Some fishing fleets with significant catches of IOTC species are not flagged to IOTC Members and it is not clear whether these fisheries are being operated in accordance with IOTC management measures.

Panel analysis

A major weakness is represented by the fact that important fishing countries (such as Yemen and Maldives) are not cooperating with the organisation.

The IOTC/FAO situation has so far impeded attempts to find any solution on the Taiwan, Province of China issue. The IOTC is in a unique situation among all tuna RFMOs due to its position under United Nations system.

Panel Recommendations / options

68. *The legal framework of the IOTC Agreement should be amended or replaced in order to enable fishing entities active in the area to discharge their obligations in line with the UNFSA.*

4.4.3 General criterion: Relationship to non cooperating non Members

1. Extent of fishing activity by vessels of non-Members that are not cooperating with the RFMO, and measures to deter such activities.

A non cooperating non Member typically operates in a manner that is not consistent with the IOTC management and conservation measures; does not participate at IOTC meetings and /or does not participate at IOTC technical meetings; and does not provide vessel information and/or does not provide any fisheries statistics and vessels information.

IOTC IUU Vessels List

In 2002, the IOTC adopted Resolution 02/04 *On establishing a list of vessels presumed to have carried out illegal, unregulated and unreported fishing in the IOTC Area*. This was superseded by Resolution 06/01 (in 2006). These resolutions defined IUU activities and outlined the process to be used for handling IUU cases (leading to listing on the IUU Vessels List).

The IUU Vessels List contains the names of vessels which have operated illegally and after consideration of the evidence against them, the Commission has placed them into the IUU Vessels Lists.

The first IOTC IUU Vessels List was adopted in 2005 and included 12 vessels. In 2006, the list included six vessels and in 2007 it included two vessels

Compared to other tuna organisations IOTC has fewer IUU vessels in its list (as of January 2009).

IOTC	ICCAT	IATTC	CCSBT	WCPFC
3	22	22	0	3

Vessels on the IOTC IUU Vessels List have a range of restrictions imposed including transshipment, chartering, flagging, not being authorized to land, tranship, re-fuel, re-supply, or engage in other commercial transactions (in the ports of IOTC Members). See paragraph 13 of Res 07/01.

Panel analysis

Non-Member, non-cooperating vessels catch a significant amount of the species of highest commercial value, and whilst Taiwan, Province of China remains a unique case, other non Members are important fishing players and they have not yet joined the Commission.

Panel Recommendations / options

69. Although the IOTC has strengthened its action towards non-Members in order to have all important fishing players included under its remit, diplomatic approaches be made by IOTC Members to non-Members with active vessels in the area.

70. When non-cooperation is identified and all reasonable efforts to improve the situation are exhausted, any non-Members continuing not to cooperate should be adequately sanctioned by, for example, market related measures.

4.4.4 General criterion: Cooperation with other RFMOs

1. Extent to which the RFMO cooperates with other RFMOs, including through the network of Regional Fishery Body Secretariats.

Due to a limitation in resources and time, IOTC Secretariat staff attend very few of the meetings held by other RFMOs. However, the reports of such meetings are received by the Secretariat. On the other hand, other RFMOs regularly attend IOTC meetings. Overall, there are commonalities in how the tuna RFMOs conduct business and in the management measures adopted. It should be noted that the Kobe meeting recommended the creation of a global IUU list. A global list vessels authorized to fish for tuna and tuna-like species has already been established. There is a memorandum of understanding (MOU) established between the Secretariats of IOTC and Western and Central Pacific Fisheries Commission (WCPFC).

Panel analysis

The IOTC Secretariat does not attend many other RFMO's meeting due to limitation of resources. No mutual recognition of IUU list with other RFMOs has been so far established.

As to cooperation with other organisations, the IOTC Agreement contains provision for cooperation with other RFMOs Yet it seems that the cooperation with other tuna RFMOs could be improved to address the issue of overlapping competences, including both geographical areas and species. This is particularly relevant for the relations of IOTC with RFMOs with areas of overlapping competences such as WCPFC and CCSBT. Moreover, the Panel notes the imminent entry into force of the South

Indian Ocean Fisheries Agreement (SIOFA) which will manage non-highly migratory fish stocks in largely the same area as that of IOTC.

Panel Recommendations / options

- 71. IOTC should establish mechanisms for a mutual recognition of IUU lists with other RFMOs.*
- 72. IOTC should develop cooperative mechanisms, such as MoUs, to work in a coordinated manner on issues of common interest, in particular non-target species and an ecosystem approach with other RFMOs especially with SIOFA.*
- 73. IOTC should annually agree on a Member attending other tuna RFMO meetings as an observer on its behalf and reporting back to the Commission on matters of interest.*

4.4.5 General criterion: Special requirements of developing States

1. Extent to which the RFMO recognises the special needs of developing States and pursues forms of cooperation with developing States, including with respect to fishing allocations or opportunities, taking account UNFSA Articles 24 and 25, and the Code of Conduct of Responsible Fisheries Article 5.

2. Extent to which RFMO Members, individually or through the RFMO provide relevant assistance to developing States, as reflected in UNFSA Article 26.

There are numerous examples of the needs of developing States being acknowledged and taken into account by IOTC in the development of its management and conservation measures.

Various forms of assistance have been and continue to be provided to developing States by the IOTC and its Members.

Panel analysis

The needs of developing States are taken into account by the Commission in the development of its management and conservation measures (example: fleet development plans) as well as in the IOTC scheme for calculation of contributions to the administrative budget.

There is no specific IOTC fund to assist developing Member States.

However, developing States have been assisted through the IOTC-Overseas Fisheries Cooperation Foundation (of Japan) Project, the Secretariat has assisted them on a case by case basis, and by the European Community through the Indian Ocean Commission (MCS project for Comoros, Madagascar, Mauritius and Seychelles).

The Panel considers that the special requirements of developing States are not properly addressed in the IOTC Agreement, compared to other RFMO agreements as well as global instruments.

Panel Recommendations / options

- 74. A specific fund to assist capacity building should be put in place.*
- 75. Members, that are Parties of UNFSA, should make use of the part VII Fund, established under UNFSA.*

4.4.6 General criterion: Participation

1. Number of Member coastal states / total number of coastal states.

In 2008, IOTC membership comprised 20 coastal States out of a total of 39 and IOTC membership comprised 20 Indian Ocean coastal States and eight States from outside the Indian Ocean.

Panel analysis

Membership of IOTC has increased over time but it is noted that Commission meetings are not always attended by all Members. Several developing countries/coastal States are rarely present at the Commission's meeting, notably the scientific meetings but also the plenary.

Panel Recommendations / options

76. Financial support, in particular for attendance in the scientific activities to developing States is needed.

77. The legal framework of the IOTC should be amended or replaced in order to enable fishing entities active in the area to discharge their obligations in line with the UNFSA.

4.5 Review Area: Financial and administrative issues

4.5.1 General criterion: Availability of resources for RFMO activities -efficiency and cost-effectiveness

1 Extent to which financial and other resources are made available to achieve the aims of the RFMO and to implement the RFMO's decisions.

2. Extent to which the RFMO is efficiently and effectively managing its human and financial resources, including those of the Secretariat.

The IOTC operates on the basis of an autonomous budget, and, at the same time, it retains administrative links to the FAO and FAO has some responsibilities associated with the operation of the Commission. The Secretary and all the staff are FAO employees. The financial regulations, staff rules, and procurement procedures of FAO apply to IOTC.

There are difficulties arising from the operations being divided between the IOTC Headquarters in Seychelles and in Rome, although the relationship with FAO is based on preserving the functional autonomy of the Secretariat.

The preparation of the budget and the financial reports are done by the Secretariat on the basis of the reports supplied by FAO via an Internet-based facility. The preparation of accurate budgets has been hampered by the interannual variability of FAO-related charges to cover the costs of entitlements.

Contributions by Members are deposited in FAO accounts, and FAO maintains the accounting of the Commission. Project support costs are charged by FAO at the rate of 4.5%, assessed over the expenditures.

An FAO internal audit has been conducted in 2005, but the results provided by FAO were deemed insufficient by the Members. In recent months, it has been agreed in FAO that the Commission can undertake an external financial audit at the expense of IOTC.

Panel analysis

The evolution of the workload and the needs for capacity building would probably have to be addressed with the availability of additional financial resources to IOTC.

In the current institutional and legal IOTC framework, notwithstanding the budget is funded directly by Members, the Executive Secretary is not in a position to fully control all the budget components, in particular the more relevant one which is the staff costs.

The IOTC Agreement places responsibilities on FAO, or its Director-General, that represent a delegation of authority from the Members that does not exist in any other tuna RFMO. For example, the Commission is required to transmit the accounts and the autonomous budget to the Director-General, who is in charge with administering the trust fund where all contributions and donations from Members are to be deposited. Moreover, the Finance Committee of FAO has the power to disallow the IOTC financial regulations and any amendments thereto if it finds them inconsistent with FAO financial regulations. FAO de facto controls the IOTC budget, and retains 4.5% of it, which raises concerns regarding the efficiency and effectiveness of such an arrangement.

The modification in terms of staff costs is in the hands of the FAO, and the Executive Secretary is not always informed of these modifications in due time to elaborate its budget forecast and consequently inform the IOTC Members. This situation results in a lack of transparency and accountability.

The auditing of the financial management has been undertaken recently internally by FAO, with partial information made available, after an explicit request by IOTC.

In recent years, the Commission's consideration of the budget has not occurred until well into the financial year to which that budget relates.

Panel Recommendations / options

- 78. The IOTC Agreement as well as financial management rules should be amended or replaced in order to increase Members' as well as Secretariat's control of all the budget elements, including staff costs of the budget. This would also improve transparency.*
- 79. Prior to the Commission assuming full control of the budget, the Commission meeting at which the budget is considered should be held as close as possible to the commencement of the financial year to which this budget relates and if possible in advance of that year.*
- 80. A fee system should be considered as a possible funding mechanism for possible new activities.*
- 81. The agreed external financial audit should be implemented as soon as possible, and should include a focus on whether IOTC is efficiently and effectively managing its human and financial resources, including those of the Secretariat.*

5. A Compendium of the Recommendations

ON THE IOTC AGREEMENT – A LEGAL ANALYSIS

1. *The final conclusion of the Panel is that the Agreement is outdated and there are many areas for improvement. The weaknesses and gaps identified are, or have a potential to be, major impediments to the effective and efficient functioning of the Commission and its ability to adopt and implement measures aimed at long-term conservation and sustainable exploitation of stocks, according to model fisheries management instruments. More fundamentally, these deficiencies are likely to prevent the Commission from achieving its basic objectives.*
2. *Consequently, the Panel recommends that the IOTC Agreement either be amended or replaced by a new instrument. The decision on whether to amend the Agreement or replace it should be made taking into account the full suite of the deficiencies identified.*

ON CONSERVATION AND MANAGEMENT

Data collection and sharing

The Panel identified a poor level of compliance by many IOTC Members, with their obligations, notably those related to the statistical requirements on artisanal fisheries and sharks, and recommends that:

3. *The timing of data reporting be modified to ensure that the most recent data are available to the working parties and the Scientific Committee.*
4. *The deadline to provide data on active vessels be modified to a reasonable time in advance of the meeting of the Compliance Committee. This deadline is to be defined by the Compliance Committee.*
5. *The scheduling of meetings of the working parties and Scientific Committee be investigated based on the experience of other RFMOs. This should bear in mind the optimal delivery of scientific advice to the Commission.*
6. *The Commission task the Scientific Committee with exploring alternative means of communicating data to improve timeliness of data provision.*
7. *Non-compliance be adequately monitored and identified at individual Member level, including data reporting.*
8. *The causes of non-compliance be identified in cooperation with the Member concerned.*
9. *When the causes of non-compliance are identified and all reasonable efforts to improve the situation are exhausted, any Member or non-Member continuing to not -comply be adequately sanctioned (such as market related measures).*
10. *There is a need to improve the quality and quantity of the data collected and reported by the Members, including the information necessary for implementing the ecosystem approach. The most immediate emphasis should be placed on catch, effort and size frequency. The Panel also recommends that:*
11. *Support for capacity building be provided to developing States - the Commission should enhance*

funding mechanisms to build developing country CPCs' capacity for data collection, processing and reporting infrastructures, in accordance with the Commission requirements.

- 12. A regional scientific observer programme to enhance data collection (also for non-target species) and ensure a unified approach be established, building on the experience of other RFMOs, Regional standards on data collection, data exchanged and training should be developed.*
- 13. Actions be taken so that non-Members, especially Maldives, Taiwan, Province of China and Yemen participate in data collection and reporting.*
- 14. A relationship with Taiwan, Province of China be developed in order to have data access when needed, to all its fleet data as well as historical series, and address the problems deriving from the current legal framework.*
- 15. The Secretariat's capacity for data dissemination and quality assurance be enhanced, including through the employment of a fisheries statistician.*
- 16. A statistical working party be established to provide a more efficient way to identify and solve the technical statistical questions.*
- 17. The obligation incumbent to a flag State to report data for its vessels be included in a separate Resolution from the obligation incumbent on Members to report data on the vessels of third countries they licence to fish in their exclusive economic zones (EEZs).*

In relation to non-target species, the Panel recommends that:

- 18. The list of shark species for which data collection is required in Recommendation 08/04 be expanded to include the five species identified by the Scientific Committee (blue shark, shortfin mako, silky shark, scalloped hammerhead, oceanic whitetip), and apply to all gear types.*
- 19. The Secretariat's capacity to provide support to developing States' Members should be enhanced.*
- 20. Cooperative capacity building efforts amongst Members and, as appropriate external organisations, should be encouraged.*
- 21. Innovative or alternative means of data collection (e.g. port sampling) should be explored and, as appropriate, implemented.*
- 22. Avenues to collect data from non-Members should be explored.*

Quality and provision of scientific advice

- 23. For species with little data available, the Scientific Committee should be tasked with making use of more qualitative scientific methods that are less data intensive.*
- 24. More emphasis should be given to adherence to data collection requirements.*
- 25. Confidentiality provisions and issues of accessibility to data by the scientists concerned needs to be clearly delineated, and/or amended, so that analysis can be replicated.*
- 26. The resources of the IOTC Secretariat should be increased. Even though some progress will be made with recruitment of the stock analysis expert, some additional professional staffing is required.*

27. *To enhance the quality of scientific advice and the technical soundness of the papers being considered by the Scientific Committee and its working parties, and to encourage publication of IOTC scientific papers in relevant journals, future consideration should be given to the establishment of a scientific editorial board within the Scientific Committee*
28. *An online IOTC Data Summary should be established*
29. *Ongoing peer review by external experts should be incorporated as standard business practice of working parties and the Scientific Committee.*
30. *New guidelines for the presentation of more user friendly scientific reports in terms of stock assessments should be developed. In this respect, Kobe plots are considered to be the most desirable method of graphical presentation, especially to non-technical audience.*
31. *A special fund to support the participation of scientists from developing States should be established.*
32. *The Commission should renew efforts to convene meetings of the Working Party on Neritic Tunas.*

Adoption of conservation and management measures

33. *As the IOTC has faced the management of the main targeted stock under its purview only through a regulation of the fishing effort; other approaches should be explored, such as those envisioned in Resolution 05/01, including catch limits, total allowable catch (TAC) or total allowable effort (TAE).*
34. *Within the system of the freezing of fishing effort in terms of number of vessels and correspondent capacity in gross tonnage, a deadline should be agreed for the implementation of fleet development plans.*
35. *IOTC should consider developing a framework to take action in the face of uncertainty in scientific advice.*
36. *IOTC should use the full range of decision making processes available to it under the Agreement.*
37. *The IOTC Agreement needs to be amended or replaced in order to incorporate modern fisheries management principles, such as the precautionary approach.*
38. *Pending the amendment or replacement of the Agreement, the Commission should implement the precautionary approach as set forth in the UNFSA.*
39. *Measures to regulate shark fisheries should be considered by the Commission.*
40. *There is a need to develop and take into account modern principles for fisheries management, including ecosystem based approach, protection of marine biodiversity and reducing the harmful impacts of fishing on marine environment.*
41. *These concepts should be integrated in the IOTC Agreement.*

Capacity management

42. *IOTC should establish a stronger policy on fishing capacity to prevent or eliminate excess fishing capacity.*
43. *Loopholes in the current systems of fishing capacity limitation, such as the establishment of fleet development plans and exemptions for vessels less than 24 meters, should be closed.*
44. *IOTC should endorse the recommendation of the Scientific Committee to create a Working Group on Fishing Capacity.*

Compatibility of management measures

45. *IOTC Members should be invited to promptly implement IOTC conservation and management measures through their national legislation.*

Fishing allocations and opportunities.

46. *IOTC should explore the advantages and disadvantages of implementing an allocation system of fishing quota, expressed as TAC or TAE system. Such an investigation should include consideration of how significant catches by current non-Members would be accounted for.*

ON COMPLIANCE AND ENFORCEMENT

Flag State duties

47. *Any amendment to or replacement of the IOTC Agreement should include specific provisions on Member's duties as flag States, drawing on the relevant provisions of the UNFSA.*

Port State measures

48. *Any amendment to or replacement of the IOTC Agreement should include specific provisions on Member's duties as port States.*
49. *IOTC should explore the possible implementation of the FAO Model Scheme on Port State Measures.*
50. *The IOTC should duly note the outcome of the current process for establishment of a globally binding agreement on port State measures.*

Monitoring, Control and Surveillance

51. *IOTC should develop a comprehensive monitoring, control and surveillance (MCS) system through the implementation of the measures already in force, and through the adoption of new measures and tools such as a possible on-board regional observers' scheme, a possible catch documentation scheme as well as a possible system on boarding and inspection.*

Follow-up on infringements

- 52. *The current IUU resolution should be amended to allow the inclusion of vessels flagged to Members.*
- 53. *IOTC should explore options concerning the possible lack of follow-up on infringements by CPCs.*
- 54. *IOTC should establish a sanction mechanism for non-compliance, and task the Compliance Committee to develop a structured approach for cases of infringement.*
- 55. *Provisions for follow-up on infringement should be included in any amended/replaced Agreement.*

Cooperative mechanisms to detect and deter non-compliance

- 56. *A structured, integrated approach to evaluate the compliance of each of the Members against the IOTC Resolutions in force should be developed by the Compliance Committee.*
- 57. *CPCs should be reminded of their duty to implement in their national legislations the conservation and management measures adopted by IOTC.*
- 58. *The requirement to present national reports on the implementation of IOTC measures should be reinforced.*
- 59. *The sense of accountability within IOTC seems to be very low; therefore more accountability is required. There is probably a need for an assessment of the performance of CPCs.*
- 60. *Establishment of formal mechanisms of MCS (e.g. observers programmes) should be considered*

Market related measures

- 61. *As IOTC action in terms of measures relating to the exercise of rights and duties of its Members as market States are very weak, the non-binding market related measure should be transformed into a binding measure.*
- 62. *-The bigeye statistical document programme should be applied to all bigeye products (fresh and frozen). Catch documentation schemes for target species of high commercial value should be considered. Alternatively, expanding the scope of the current statistical document programme to address current loopholes should be considered.*

ON DECISION MAKING AND DISPUTE SETTLEMENT

Decision making

- 63. *In order to improve the IOTC practices of decision making and adoption of measures, when every effort to achieve consensus has been exhausted, invoking the procedure of voting should be explored*
- 64. *Amending the objection procedure so that it is more rigorous, and in line with other RFMO Conventions, featuring restricted grounds for the bases to object is recommended.*

Dispute settlement

65. *A provision on dispute settlement should be amended in line with the requirements of UNFSA.*

ON INTERNATIONAL COOPERATION**Transparency**

66. *The active vessels list should be made available on the IOTC website.*

67. *The Commission, in consultation with the Scientific Committee, should review the availability of critical data sets used in development of scientific advice and take steps to assure that these data are held at the Secretariat and available for validation of analyses, subject to the appropriate confidentiality requirements.*

Relationship to cooperating non Members

68. *The legal framework of the IOTC Agreement should be amended or replaced in order to enable fishing entities active in the area to discharge their obligations in line with the UNFSA.*

Relationship to non cooperating non Members

69. *Although the IOTC has strengthened its action towards non-Members in order to have all important fishing players included under its remit, diplomatic approaches should be made by IOTC Members to non-Members with active vessels in the area.*

70. *When non-cooperation is identified and all reasonable efforts to improve the situation are exhausted, any non-Members continuing not to cooperate should be adequately sanctioned by, for example, market related measures.*

Cooperation with other RFMOs

71. *IOTC should establish mechanisms for a mutual recognition of IUU lists with other RFMOs.*

72. *IOTC should develop cooperative mechanisms, such as MoUs, to work in a coordinated manner on issues of common interest, in particular non-target species and an ecosystem approach with other RFMOs especially with SIOFA.*

73. *IOTC should annually agree on a Member attending other tuna RFMO meetings as an observer on its behalf and reporting back to the Commission on matters of interest*

Special requirements of developing States

74. *A specific fund to assist capacity building should be put in place.*

75. *Members, that are Parties of UNFSA, should make use of the part VII Fund, established under UNFSA.*

Participation

76. *Financial support, in particular for attendance in the scientific activities to developing States, is needed.*
77. *The legal framework of the IOTC should be amended or replaced in order to enable fishing entities active in the area to discharge their obligations in line with the UNFSA.*

ON FINANCIAL AND ADMINISTRATIVE ISSUES

Availability of resources for RFMO activities -efficiency and cost-effectiveness

78. *The IOTC Agreement as well as financial management rules should be amended or replaced in order to increase Members' as well as Secretariat's control of all the budget elements, including staff costs of the budget. This would also improve transparency.*
79. *Prior to the Commission assuming full control of the budget, the Commission meeting at which the budget is considered should be held as close as possible to the commencement of the financial year to which this budget relates and if possible in advance of that year.*
80. *A fee system should be considered as a possible funding mechanism for possible new activities.*
81. *The agreed external financial audit should be implemented as soon as possible, and should include a focus on whether IOTC is efficiently and effectively managing its human and financial resources, including those of the Secretariat.*

Annex I

Implementation of the Performance Review of the Indian Ocean Tuna Commission

From the Report of the 2007 Commission meeting (IOTC-2007-S11-R)

Composition of the Review Panel:

1. A scientist expert, with expertise on tuna and not affiliated to any of the IOTC Members.
2. Six representatives of IOTC Members as follows: Australia, European Community, India, Japan, Kenya, Seychelles.

The Secretariat will not be a part of the Review Panel but it will act as a facilitator of its activities, providing access to the information and facilities that the Review Panel will require to conduct its work. Panel meetings will take place in Seychelles. Member countries will cover the costs associated with the participations of their representatives.

Scope of the review:

The review will focus on the effectiveness of the Commission to fulfil its mandate, in accordance to the criteria set forth below. The review will not include an audit of the finances of the Commission, as a separate external audit will be conducted independently.

Work schedule:

The report of the Review Panel will be completed and be made available 60 days prior to the next Session of the Commission and published in the IOTC website.