ADOPTION OF CONSERVATION AND MANAGEMENT MEASURES

PREPARED BY: IOTC SECRETARIAT, 14 JANUARY 2015

REVIEW AREA: *Conservation and management*

GENERAL CRITERION: *Adoption of conservation and management measures*

DETAILED CRITERIA:

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.

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.

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

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.

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 minimise 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.

SUPPORTING INFORMATION

The following sections provide a brief summary of the actions taken to date, as well as references for the panel to consider in detail.

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.

The complete list and text of Active and superseded IOTC Conservation and Management Measures (CMMs) are available in the public domain, in the IOTC website: http://iotc.org/cmms.

Albacore

Scientific basis for management intervention	**Conservation and management measure**	**Operational component/s of the measure to address the scientific advice**
2013: The current level of catches is likely to result in further declines in albacore biomass, productivity and catch-per-unit-effort (CPUE); the impacts of the piracy in western Indian Ocean have resulted in the displacement of a substantial portion of the longline fishing effort into the traditional albacore fishing grounds in the southern and eastern Indian Ocean and therefore it is likely that catch-and-effort on albacore will decline in the future unless management action is taken	Resolution 13/09 *On the conservation of albacore caught in the IOTC area of competence*	To advise the Commission, by end of 2014 at the latest: a) On Target Reference Points (TRPs) and Limit Reference Points (LRPs) used when assessing the albacore stock status and when establishing the Kobe plot and Kobe matrices; b) On potential management measures having been examined through the Management Strategy Evaluation (MSE) process. These management measures will therefore have to ensure the achievement of the conservation and optimal utilisation of stocks as laid down in article V of the Agreement for the establishment of the IOTC and more particularly to ensure that, in as short a period as possible and no later than 2020, (i) the fishing mortality rate does not exceed the fishing mortality rate allowing the stock to deliver MSY and (ii) the spawning biomass is maintained at or above its MSY level. **Active**
2012: A reduction in catches by all gears, eventually to the level of MSY, be started as soon as possible and that fishing effort should be reduced or, at least, that it should not increase further.	Resolution 12/11 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Active**
2009: See 2012 above.	Resolution 09/02 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Superseded** by Resolution 12/11
2007: On the basis of concerns about concerns on the status of the swordfish stock in the IOTC Area and because significant quantities of swordfish are taken by the longline	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 on 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. Superseded by Resolution 09/02

fisheries targeting albacore.		

Bigeye tuna

Scientific basis for management intervention	Conservation and management measure	Operational component/s of the measure to address the scientific advice
2014: N/A	Resolution 14/01 *On the removal of obsolete Conservation and Management Measures*	Nil. Removes redundant/obsolete CMMs. **Active**
2014: Establish an allocation process	Resolution 14/02 *For the conservation and management of tropical tunas stocks in the IOTC area of competence*	Sets up an allocation process.
2013: to minimise the take of juveniles, particularly by FAD associated purse seine fished schools	Resolution 13/11 *On a ban on discards of bigeye tuna, skipjack tuna, yellowfin tuna and a recommendation for non-targeted species caught by purse seine vessels in the IOTC area of competence*	Contracting Parties and Cooperating Non-Contracting Parties shall require all purse seine vessels to retain on board and then land all bigeye tuna, skipjack tuna, and yellowfin tuna caught, except fish considered unfit for human consumption. **Active**
2012: A reduction in catches of bigeye tuna by all gears, eventually to the level of MSY, be started as soon as possible and that fishing effort should be reduced or, at least, that it should not increase further.	Resolution 12/11 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Active**
2009: See 2012 above.	Resolution 09/02 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Superseded** by Resolution 12/11
2006: See 2012 above.	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 on 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. **Superseded** by Resolution 09/02
2005: Acknowledging that the limitation of fishing capacity alone will not be sufficient to limit effort or total catch of tuna and tuna-like species, particularly bigeye tuna; and because the assessment of the status of the stock is likely to be overly	Resolution 05/01 *On conservation and management measures for bigeye tuna*	Limiting catches of bigeye tuna to recent levels. Catches of Taiwan Province of China to be limited to 35,000 t. **Active**

optimistic.		
2003: A reduction in catches of bigeye tuna from all gears should be implemented. Also, that catches of yellowfin tuna are close to or possibly above MSY, that catches by all main gears have been increasing in recent years and that the increase in the fishing pressure on juvenile yellowfin by purse seiners fishing on floating objects is likely to be detrimental to the stock if it continues.	Resolution 03/01 *On the limitation of fishing capacity of Contracting Parties and Cooperating non-Contracting Parties*	Limits on the number of their fishing vessels larger than 24 meters length overall. **Active**
2002: See 2003 above	Resolution 02/08 *On the conservation of bigeye and yellowfin tuna in the Indian Ocean*	Seeks specific advice from the Scientific Committee regarding reducing fishing mortality on juvenile bigeye and yellowfin tuna; controlling fishing effort and catches of yellowfin and bigeye tunas by all gears and the likely effects of such measures. **Superseded** by Resolution 14/01
2001: A reduction of the catching of Bigeye Tuna by all the fishing gears should be applied as soon as possible. **2001:** Also because of the uncertainty on the catch of bigeye tuna in the Convention Area and that the availability of trade data would greatly assist in reducing such uncertainty.	Resolution 01/04 *On limitation of fishing effort of non members of IOTC whose vessels fish bigeye tuna* Resolution 01/06 *Concerning the IOTC bigeye tuna statistical document programme*	Non-Members of IOTC were requested to reduce their fishing effort in 2002 in relation to 1999 levels. **Superseded** by Resolution 14/01 Requires that all frozen bigeye tuna (except that caught by purse seiners and pole and line (bait) vessels that is destined principally for the canneries in the Convention Area), when imported into the territory of a Contracting Party, be accompanied by an IOTC Bigeye Tuna Statistical Document or an IOTC Bigeye Tuna Re-export Certificate. **Active**
1999: Current capacity may exceed the level of fishing effort appropriate for sustainable use of the high value tuna resources of the Indian Ocean.	Resolution 99/01 *On the Management of Fishing Capacity and on the Reduction of the Catch of Juvenile Bigeye Tuna by Vessels, Including Flag of Convenience Vessels, Fishing for Tropical Tunas in the IOTC Area of Competence*	Initiated a process requesting further advice from the Scientific Committee and signalled that concerted actions to limit the fishing capacity of the fleet of large-scale vessels fishing for tropical tunas in the IOTC Area and possible season and area closure of the use of floating objects in the IOTC Area would be considered conditional on the advice received. **Superseded** by Resolution 14/01

Skipjack tuna

Scientific basis for management intervention	**Conservation and management measure**	**Operational component/s of the measure to address the scientific advice**

2014: N/A	Resolution 14/01 *On the removal of obsolete Conservation and Management Measures*	Nil. Removes redundant/obsolete CMMs. **Active**
2014: Establish an allocation process	Resolution 14/02 *For the conservation and management of tropical tunas stocks in the IOTC area of competence*	Sets up an allocation process.
2013: to minimise the take of juveniles, particularly by FAD associated purse seine fished schools	Resolution 13/11 *On a ban on discards of bigeye tuna, skipjack tuna, yellowfin tuna and a recommendation for non-targeted species caught by purse seine vessels in the IOTC area of competence*	Contracting Parties and Cooperating Non-Contracting Parties shall require all purse seine vessels to retain on board and then land all bigeye tuna, skipjack tuna, and yellowfin tuna caught, except fish considered unfit for human consumption. **Active**
2012: A reduction in catches of bigeye tuna by all gears, eventually to the level of MSY, be started as soon as possible and that fishing effort should be reduced or, at least, that it should not increase further.	Resolution 12/11 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Active**

Yellowfin tuna

Scientific basis for management intervention	**Conservation and management measure**	**Operational component/s of the measure to address the scientific advice**
2014: N/A	Resolution 14/01 *On the removal of obsolete Conservation and Management Measures*	Nil. Removes redundant/obsolete CMMs. **Active**
2014: Establish an allocation process	Resolution 14/02 *For the conservation and management of tropical tunas stocks in the IOTC area of competence*	Sets up an allocation process.
2013: to minimise the take of juveniles, particularly by FAD associated purse seine fished schools	Resolution 13/11 *On a ban on discards of bigeye tuna, skipjack tuna, yellowfin tuna and a recommendation for non-targeted species caught by purse seine vessels in the IOTC area of competence*	Contracting Parties and Cooperating Non-Contracting Parties shall require all purse seine vessels to retain on board and then land all bigeye tuna, skipjack tuna, and yellowfin tuna caught, except fish considered unfit for human consumption. **Active**
2012: A reduction in catches of bigeye tuna by all gears, eventually to the level of MSY, be started as soon as possible and that fishing effort should be reduced or, at least, that it should not increase further.	Resolution 12/11 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Active**

2009: See 2012 above.	Resolution 09/02 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Superseded** by Resolution 12/11
2006: Concerns on the status of the main tuna stocks in the IOTC Area.	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 on 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. **Superseded by Resolution 09/02**
2003: A reduction in catches of bigeye tuna from all gears should be implemented as soon as possible; that the stock of yellowfin tuna is being exploited close to, or possibly above MSY; and that the level of fishing effort of swordfish should not be increased,	Resolution 03/01 *On the limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on the number of their fishing vessels larger than 24 meters length overall. **Active**
2002: Catches of yellowfin tuna are close to or possibly above MSY, that catches by all main gears have been increasing in recent years and that the increase in the fishing pressure on juvenile yellowfin by purse seiners fishing on floating objects is likely to be detrimental to the stock if it continues.	Resolution 02/08 *On the conservation of bigeye and yellowfin tuna in the Indian Ocean*	Seeks specific advice from the Scientific Committee regarding reducing fishing mortality on juvenile bigeye and yellowfin tuna; controlling fishing effort and catches of yellowfin and bigeye tunas by all gears and the likely effects of such measures. **Superseded by Resolution 14/01**

Swordfish

Scientific basis for management intervention	**Conservation and management measure**	**Operational component/s of the measure to address the scientific advice**
2012: A reduction in catches of swordfish by all gears, eventually to the level of MSY, be started as soon as possible and that fishing effort	Resolution 12/11 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Active**

should be reduced or, at least, that it should not increase further.		
2009: See 2012 above.	Resolution 09/02 *On the implementation of a limitation of fishing capacity of Contracting Parties and Cooperating Non-Contracting Parties*	Limits on 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. **Superseded** by Resolution 12/11
2007: A reduction in catches of swordfish by longline gear, eventually to the level of MSY, be started as soon as possible and that fishing effort should be reduced or not increase further. That management measures focused on controlling and/or reducing effort in the fishery targeting swordfish in the Indian Ocean, and, in particular, in the SW Indian Ocean, be implemented.	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 on 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. Superseded by Resolution 09/02
2006: That management measures focused on controlling and/or reducing effort in the fishery targeting swordfish in the SW Indian Ocean be implemented.	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 on 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. **Superseded by Resolution 09/02**

Marine turtles

Scientific basis for management intervention	**Conservation and management measure**	**Operational component/s of the measure to address the scientific advice**
2014: the IOTC Scientific Committee's concern that the lack of data from Contracting Parties and Cooperating Non-Contracting Parties (CPCs) on the interactions and mortality of marine turtles from fisheries under the mandate of the	Resolution 12/04 *On the conservation of marine turtles*	Para. 6 CPCs shall require fishermen on vessels targeting species covered by the IOTC Agreement to bring aboard, if practicable, any captured marine turtle that is comatose or inactive as soon as possible and foster its recovery, including aiding in its resuscitation, before safely returning it to the water. CPCs shall ensure that fishermen are aware of and use proper mitigation, identification, handling and de-hooking techniques and keep on board all necessary equipment for the release of marine turtles, in

IOTC undermines the ability to estimate levels of marine turtle bycatch and consequently IOTC's capacity to respond and manage adverse effects of fishing on marine turtles; the IOTC Scientific Committee's concern that the expansion of gillnet fishing from traditional fishing grounds into high seas might increase the interaction with marine turtles and lead to increased mortality;		accordance with handling guidelines in the IOTC Marine Turtle Identification Cards. **Active**
2005: The need to improve the collection of scientific data on marine turtles That at the 26th FAO-COFI Session in March 2005, *the Guidelines to Reduce Sea Turtle Mortality in Fishing Operation* (hereinafter referred to as "the Guidelines") was adopted.	Recommendation 05/08 *On sea turtles*	Measures to increase the amount of data on marine turtles. Guidelines to mitigate marine turtle bycatch. **Superseded by Resolution 12/04**

Seabirds

Scientific basis for management intervention	**Conservation and management measure**	**Operational component/s of the measure to address the scientific advice**
2012: The FAO International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries. That some species of seabirds, notably albatross and petrels, are threatened with global extinction.	Resolution 12/06 *On reducing the incidental bycatch of seabirds in longline fisheries*	In the area south of 25 degrees South latitude, CPCs shall ensure that all longline vessels use at least two of the three mitigation measures in **Table 1**. These measures should also be considered for implementation in other areas, as appropriate, consistent with scientific advice. **Active**
2006: As above.	Resolution 06/04 *On reducing incidental bycatch of seabirds in longline fisheries*	Further measures to increase the amount of data on fisheries-seabird interactions. All vessels (except surface longline vessels, whilst targeting swordfish, utilising the "American longline system and equipped with a line-

		throwing device) fishing south of 30°S to carry and use bird-scaring lines (tori poles) **Superseded by Resolution 12/06**
2005: As above.	Recommendation 05/09 *On incidental mortality of seabirds*	Measures to increase the amount of data on fisheries-seabird interactions. **Superseded by Resolution 12/06**

Sharks

Scientific basis for management intervention	**Conservation and management measure**	**Operational component/s of the measure to address the scientific advice**
2013: the WPEB noted paper IOTC–2011–WPEB07–08, paragraph 163: 'recommended that the recommendations from the KOBE bycatch technical working group are considered to encourage research and development of best practice with regard to setting nets on whale sharks to determine the impacts of the practice' and that the WPEB also recommended developing best practice methods for extraction of whale sharks from purse seine nets through direct collaboration with the Western and Central Pacific Fisheries Commission;	Resolution 13/05 *On the conservation of whale sharks (Rhincodon typus)*	Para. 2 Contracting Parties and Cooperating Non-Contracting Parties (collectively, CPCs) shall prohibit their flagged vessels from intentionally setting a purse seine net around a whale shark in the IOTC area of competence, if it is sighted prior to the commencement of the set. **Active**
2013: the ecological risk assessment (ERA) by fishing gears made by the IOTC Scientific Committee recognises the oceanic whitetip sharks (*Carcharhinus longimanus*) as vulnerable species in IOTC fisheries.	Resolution 13/06 *On a scientific and management framework on the Conservation of sharks species caught in association with IOTC managed fisheries*	Para. 3. Notwithstanding paragraphs 1 and 2, CPCs shall prohibit, as an interim pilot measure, all fishing vessels flying their flag and on the IOTC Record of Authorised Vessels, or authorised to fish for tuna or tuna-like species managed by the IOTC on the high seas to retain onboard, tranship, land or store any part or whole carcass of oceanic whitetip sharks with the exception of paragraph 7. The provisions of this measure do not apply to artisanal fisheries operating exclusively in their respective Exclusive Economic Zone (EEZ) for the purpose of local consumption. **Active**

2012: the international scientific community points out that the bigeye thresher shark (*Alopias superciliosus*) is particularly endangered and vulnerable; it is difficult to differentiate between the various species of thresher sharks without taking them onboard and that such action might jeopardise the survival of the captured individuals.	Resolution 12/09 *On the conservation of thresher sharks (family Alopiidae) caught in association with fisheries in the IOTC area of competence*	Para 2. Fishing Vessels flying the flag of an IOTC Member or Cooperating Non-Contracting Party (CPCs) are prohibited from retaining on board, transhipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family Alopiidae, with the exception of paragraph 7. Para. 5. Recreational and sport fishing shall release alive all caught animals of thresher sharks of all the species of the family Alopiidae. In no circumstances specimen shall be retained on board, transhipped, landed, stored, sold or offered for sale. The CPCs shall ensure that both recreational and sport fishermen carrying out fishing with high risk of catching thresher sharks are equipped with instruments suitable to release alive the animals. **Active**
2005: The need to improve the collection of scientific data on sharks. That many sharks are part of pelagic ecosystems in the IOTC area, and that tunas and tuna-like species are captured in fisheries targeting sharks.	Resolution 05/05 *Concerning the conservation of sharks caught in association with fisheries managed by IOTC*	Measures to increase the amount of data on fisheries-shark interactions. Retention by the fishing vessel of all parts of the shark excepting head, guts and skins, to the point of first landing. CPCs shall require their vessels to not have onboard fins that total more than 5 % of the weight of sharks onboard, up to the first point of landing. Encourage the release of live sharks, especially juveniles and pregnant sharks. **Active**

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.

With respect to UNSFA Article 6 – Appendix 1 (FAO Code of Conduct for Responsible Fishing (Appendix 2) is consistent with UNSFA):
1. States shall apply the precautionary approach widely to conservation, management and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment.

The IOTC Agreement is consistent with UNSFA for the tuna and tuna-like species listed in the agreement i.e., Article V Objectives, functions and responsibilities of the Commission para 2(c) 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 this Agreement and to promote the objective of their optimum utilisation throughout the Area;

However, the IOTC Agreement is species based i.e. it does not explicitly refer to the preservation of the marine environment. Furthermore it precedes the elaboration of the precautionary principles given in UNSFA and as such does not refer to this aspect.

On the other hand, the IOTC has taken a range of precautionary measures; for example, it put in place conservation and management measures relating to species that interact the IOTC fisheries, including sharks, seabirds and marine turtles.

In 2012, the IOTC adopted Resolution 12/01 *On the implementation of the precautionary approach*.

Para. 1. of Resolution 12/01 states: *To apply the precautionary approach, in accordance with relevant internationally agreed standards, in particular with the guidelines set forth in the UNFSA, and to ensure the sustainable utilisation of fisheries resources as set forth in Article V of the IOTC Agreement.*

2. States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.

Precautionary approach is demonstrated above with respect to management measures being taken on stocks that are not considered to be overfished.

3. In implementing the precautionary approach, States shall:
(a) improve decision-making for fishery resource conservation and management by obtaining and sharing the best scientific information available and implementing improved techniques for dealing with risk and uncertainty;
(b) apply the guidelines set out in Annex II and determine, on the basis of the best scientific information available, stock-specific reference points and the action to be taken if they are exceeded;
(c) take into account, inter alia, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities on non-target and associated or dependent species, as well as existing and predicted oceanic, environmental and socio-economic conditions; and
(d) develop data collection and research programmes to assess the impact of fishing on non-target and associated or dependent species and their environment, and adopt plans which are necessary to ensure the conservation of such species and to protect habitats of special concern.

Processes for obtaining the best scientific advice are in place for IOTC (refer to paper IOTC–2015–PRIOTC02-CM03). Scientific techniques are developing on an ongoing basis to address uncertainty and risk.

The IOTC adopted Resolution 13/10 *On interim target and limit reference points and a decision framework*, which contains
Para. 1 of Resolution 13/10: *When assessing stock status and providing recommendations to the Commission, the IOTC Scientific Committee should apply the following interim target and limit reference points for the species of tuna and tuna-like species listed in* ***Table 1****.* B_{MSY} *refers to the biomass level for the stock that would produce the Maximum Sustainable Yield;* F_{MSY} *refers to the level of fishing mortality that produces the Maximum Sustainable Yield.*

Table 1. Interim target and limit reference points.

Stock	Target Reference Point	Limit Reference Point
Albacore	B_{MSY}; F_{MSY}	$B_{LIM} = 0.40\ B_{MSY}$; $F_{LIM} = 1.40\ F_{MSY}$
Bigeye tuna	B_{MSY}; F_{MSY}	$B_{LIM} = 0.50\ B_{MSY}$; $F_{LIM} = 1.30\ F_{MSY}$

Skipjack tuna	B_{MSY}; F_{MSY}	B_{LIM} = 0.40 B_{MSY}; F_{LIM} = 1.50 F_{MSY}
Yellowfin tuna	B_{MSY}; F_{MSY}	B_{LIM} = 0.40 B_{MSY}; F_{LIM} = 1.40 F_{MSY}
Swordfish	B_{MSY}; F_{MSY}	B_{LIM} = 0.40 B_{MSY}; F_{LIM} = 1.40 F_{MSY}

Preordained management triggers and actions are not part of the management approach currently used by IOTC, but are in development via the Management Strategy Evaluation process, mandated via para. 3 of Resolution 13/10.

4. States shall take measures to ensure that, when reference points are approached, they will not be exceeded. In the event that they are exceeded, States shall, without delay, take the action determined under paragraph 3 (b) to restore the stocks.

5. Where the status of target stocks or non-target or associated or dependent species is of concern, States shall subject such stocks and species to enhanced monitoring in order to review their status and the efficacy of conservation and management measures. They shall revise those measures regularly in the light of new information.

Precautionary approach is demonstrated above with respect to management measures being taken on stocks that are not considered to be overfished.

6. For new or exploratory fisheries, States shall adopt as soon as possible cautious conservation and management measures, including, inter alia, catch limits and effort limits. Such measures shall remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment shall be implemented. The latter measures shall, if appropriate, allow for the gradual development of the fisheries.

Not applicable because no new fisheries have been added to the Commissions purview.

7. If a natural phenomenon has a significant adverse impact on the status of straddling fish stocks or highly migratory fish stocks, States shall adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impact. States shall also adopt such measures on an emergency basis where fishing activity presents a serious threat to the sustainability of such stocks. Measures taken on an emergency basis shall be temporary and shall be based on the best scientific evidence available.

Not tested

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

No effective plan has been implemented to date. Resolution 10/01 *For the conservation and management of tropical tunas stocks in the IOTC area of competence* was adopted and implemented, however the Scientific Committee has indicated that the measure in its original form was ineffective. Alternatives were recommended, however the Commission in 2014 revoked the conservation elements (time-area closures) contained with the Resolution.

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 because no new fisheries have been added to the Commissions purview.

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.

The Working Party on Ecosystems and Bycatch was set up in 2005 to provide advice on this area. While there is a paucity of data currently available in this area, the IOTC has expanded its data collection requirements and taken management measures relating to sharks, seabirds and marine turtles (see above). The WPEB webpage, including recent activities and Program of Work is available on the IOTC website: http://iotc.org/science/wp/working-party-ecosystems-and-bycatch-wpeb

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.

MARPOL Article 5 = covers obligations with respect to leakage and the disposal of old fishing gear on IMO registered vessels (noting not all fishing vessels have this registration).

Resolution 13/11 *On a ban on discards of bigeye tuna, skipjack tuna, yellowfin tuna and a recommendation for non-targeted species caught by purse seine vessels in the IOTC area of competence*, was adopted with the intention of ceasing the wasteful discard of small/juvenile tropical tunas caught in the purse seine fishery. Retention of other species remains voluntary. This Resolution superseded a previous non-binding Recommendation 10/13 on the same topic.

Minimising catches of non-target species

Marine turtles, seabirds and sharks: see sections above.

APPENDIX I

UNSFA

Article 6

Application of the precautionary approach

1. States shall apply the precautionary approach widely to conservation, management and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment.

2. States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.

3. In implementing the precautionary approach, States shall:

(a) improve decision-making for fishery resource conservation and management by obtaining and sharing the best scientific information available and implementing improved techniques for dealing with risk and uncertainty;

(b) apply the guidelines set out in Annex II and determine, on the basis of the best scientific information available, stock-specific reference points and the action to be taken if they are exceeded;

(c) take into account, inter alia, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities on non-target and associated or dependent species, as well as existing and predicted oceanic, environmental and socio-economic conditions; and

(d) develop data collection and research programmes to assess the impact of fishing on non-target and associated or dependent species and their environment, and adopt plans which are necessary to ensure the conservation of such species and to protect habitats of special concern.

4. States shall take measures to ensure that, when reference points are approached, they will not be exceeded. In the event that they are exceeded, States shall, without delay, take the action determined under paragraph 3 (b) to restore the stocks.

5. Where the status of target stocks or non-target or associated or dependent species is of concern, States shall subject such stocks and species to enhanced monitoring in order to review their status and the efficacy of conservation and management measures. They shall revise those measures regularly in the light of new information.

6. For new or exploratory fisheries, States shall adopt as soon as possible cautious conservation and management measures, including, inter alia, catch limits and effort limits. Such measures shall remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment shall be implemented. The latter measures shall, if appropriate, allow for the gradual development of the fisheries.

7. If a natural phenomenon has a significant adverse impact on the status of straddling fish stocks or highly migratory fish stocks, States shall adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impact. States shall also adopt such measures on an emergency basis where fishing activity presents a serious threat to the sustainability of such stocks. Measures taken on an emergency basis shall be temporary and shall be based on the best scientific evidence available.

APPENDIX II

FAO Code of Conduct for Responsible Fishing
Article 7.5
Precautionary approach

7.5.1 States should apply the precautionary approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.

7.5.2 In implementing the precautionary approach, States should take into account, inter alia, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities, including discards, on non-target and associated or dependent species, as well as environmental and socio-economic conditions.

7.5.3 States and subregional or regional fisheries management organizations and arrangements should, on the basis of the best scientific evidence available, inter alia, determine:
a. stock specific target reference points, and, at the same time, the action to be taken if they are exceeded; and
b. stock-specific limit reference points, and, at the same time, the action to be taken if they are exceeded; when a limit reference point is approached, measures should be taken to ensure that it will not be exceeded.

7.5.4 In the case of new or exploratory fisheries, States should adopt as soon as possible cautious conservation and management measures, including, inter alia, catch limits and effort limits. Such measures should remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment should be implemented. The latter measures should, if appropriate, allow for the gradual development of the fisheries.

7.5.5 If a natural phenomenon has a significant adverse impact on the status of living aquatic resources, States should adopt conservation and management measures on an emergency basis to ensure that fishing activity does not exacerbate such adverse impact. States should also adopt such measures on an emergency basis where fishing activity presents a serious threat to the sustainability of such resources. Measures taken on an emergency basis should be temporary and should be based on the best scientific evidence available.