



ON INTERIM TARGET AND LIMIT REFERENCE POINTS AND A DECISION FRAMEWORK

SUBMITTED BY: EUROPEAN UNION, 26 MARCH 2015

Explanatory Memorandum

Progress made on stock assessment has allowed the IOTC Scientific Committee to deliver advice supported by MSY-based reference points in a number of species: tropical tunas (yellowfin tuna, bigeye tuna, skipjack tuna), albacore and longtail tuna, kawakawa, narrow-barred Spanish mackerel, swordfish, sailfish and marlins (black marlin, blue marlin and striped marlin). In addition, progress has been made on target and limit reference points adopted in 2013 for the tropical tuna species, albacore and swordfish. This EU proposal recommends adopting specific target and limit reference points for all these stocks.

Following discussions held at the IOTC Scientific Committee and following subsequent recommendations, the EU proposal includes a possibility for the IOTC Scientific Committee to use possible alternatives to MSY-based reference points when the latter are considered as insufficiently robust. In line with material made available in the last IOTC Scientific Committee report, the proposal refers to B_0 -based reference points. B_0 is generally considered either as the historical biomass before the beginning of the fishing activities or as the biomass under the assumption of a termination of any fishing activities.

In addition, considering these reference points, the EU proposal introduces management objectives which would allow the IOTC Scientific Committee to discuss projections and outlooks associated to possible management options, more particularly when implementing Management Strategy Evaluations.

RESOLUTION 15/XX13/10

ON INTERIM TARGET AND LIMIT REFERENCE POINTS AND A DECISION FRAMEWORK

Keywords: Limit reference points, Management Strategy Evaluation, Kobe plot, Maximum Sustainable Yield

The Indian Ocean Tuna Commission (IOTC),

BEING MINDFUL of Article XVI of the IOTC Agreement regarding the rights of Coastal States and of Article 87 and 116 of the UN Convention of the Law of the Sea regarding the right to fish on the high seas;

RECALLING that Article 6, paragraph 3, of the Agreement for the Implementation of the Provisions of the United Nations Convention of the Law of the Sea of December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA), establishes the application of precautionary reference points as a general principle for sound fisheries management;

FURTHER RECALLING that Annex II of UNFSA provides guidelines for the application of precautionary reference points in the conservation and management of straddling fish stocks and highly migratory fish stocks, including the adoption of provisional reference points when information for establishing reference points is absent or poor;

NOTING that Article 7.5.3 of the FAO Code of Conduct for Responsible Fisheries also recommends the implementation of stock specific target and limit reference points, *inter alia*, on the basis of the precautionary approach;

NOTING that recommendations 37 and 38 of the Performance Review Panel, adopted by the Commission as Resolution 09/01, indicate that pending the amendment or replacement of the IOTC Agreement to incorporate modern fisheries management principles, the Commission should implement the precautionary approach including, *inter alia*, precautionary reference points, as set forth in the UNFSA;

NOTING [Resolution 12/01](#) *On the implementation of the precautionary approach* that recommends adoption of provisional reference points, and that the IOTC Scientific Committee proposed provisional values at its 14th Session;

RECALLING ALSO that the IOTC Scientific Committee has initiated a process leading to a management strategy evaluation (MSE) process to improve upon the provision of scientific advice on Harvest Control Rules (HCRs);

HIGHLIGHTING that the IOTC Scientific Committee is now in a position to provide advice based on reference points, such as B_{MSY} and F_{MSY} , for several stocks of tropical, temperate or neritic tunas and in relation to billfish.

FURTHER HIGHLIGHTING that the IOTC Scientific Committee made recommendations on possible alternatives to limit and target reference points derived from B_{MSY} and F_{MSY} , particularly when considered as insufficiently robust, suggesting even to derive these alternates from B_0 considered as the virgin biomass or the unfished biomass estimate.

ACKNOWLEDGING that continuing dialog between scientists and managers is necessary to define appropriate HCRs for the IOTC tuna and tuna-like stocks;

ADOPTS in accordance with paragraph 1 of Article IX of the IOTC Agreement, that:

1. 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		
Yellowfin tuna		
Kawakawa		
Longtail tuna		
Swordfish	$B_{TARGET} = B_{MSY};$	$B_{LIM} = 0.40 B_{MSY}$
Black marlin	$F_{TARGET} = F_{MSY}$	$F_{LIM} = 1.40 F_{MSY}$
Blue marlin		
Striped marlin		
Indo-Pacific sailfish		
Narrow-barred Spanish mackerel		
Bigeye tuna	$B_{TARGET} = B_{MSY}$ $F_{TARGET} = F_{MSY}$	$B_{LIM} = 0.50 B_{MSY}$ $F_{LIM} = 1.30 F_{MSY}$
Skipjack tuna	$B_{TARGET} = B_{MSY}$ $F_{TARGET} = F_{MSY}$	$B_{LIM} = 0.40 B_{MSY}$ $F_{LIM} = 1.50 F_{MSY}$

2. When the IOTC Scientific Committee considers that MSY-based reference points are not robustly estimated, reference points based on depletion ratios (i.e. reference points with respect to B_0) may be used to fix B_{LIM} , F_{LIM} , B_{TARGET} and F_{TARGET} . In those cases, B_{LIM} and F_{LIM} could be set at $0.2 B_0$ and $F_{0.2 B_0}$, respectively, and B_{TARGET} and F_{TARGET} at $0.4 B_0$ and $F_{0.4 B_0}$, respectively, B_0 being either the virgin biomass or the unfished biomass estimate.
3. These interim target and limit reference points shall be assessed and further reviewed by the IOTC Scientific Committee and the results shall be presented to the Commission for adoption of species-specific reference points.
4. If applicable, the IOTC Scientific Committee should endeavour to apply the interim reference points in the provision of advice on the status of stocks and on recommendations for management measures.
5. The IOTC Scientific Committee shall assess, as soon as possible and more particularly through the management strategy evaluation process (MSE) process, the robustness and the performance of the interim reference points, specified under paragraph 1 and paragraph 2, where relevant, and other reference points based on the guidelines of international agreements taking into account: i) the nature of these reference points – target or limits, ii) the best scientific knowledge on population dynamics and on life-history parameters, iii) the fisheries exploiting them, and iv) the various sources of uncertainty.
6. In addition the IOTC Scientific Committee shall develop and assess potential harvest control rules (HCRs) to be applied, considering the status of the stocks against the reference points assessed in paragraph 3 for albacore, bigeye tuna, skipjack tuna, yellowfin tuna and swordfish. Based on the results of the MSE and considering the guidelines set forth in the UNFSA and in Article V of the IOTC Agreement, the IOTC Scientific Committee will recommend to the Commission HCRs for these tuna and tuna-like species, which among other factors, taking account of the following objectives:
 - a) Maintaining the biomass above B_{LIM} and the fishing mortality below F_{LIM} at any time;
 - b) For stocks whose assessed status will match with the lower right (green) quadrant of the Kobe Plot, aim at maintaining the stocks in a high probability within this quadrant;
 - c) For stocks whose assessed status will match with the upper right (orange) quadrant of the Kobe Plot, aim at ending overfishing with a high probability in as short a period as possible;
 - d) For stocks whose assessed status will match with the lower left (yellow) quadrant of the Kobe plot, aim at rebuilding these stocks in as short a period as possible;



- e) For stocks whose assessed status will match with the upper left quadrant (red), aim at ending overfishing with a high probability and at rebuilding the biomass of these stocks in as short a period as possible.
7. Bearing in mind Article 64 of UNCLOS and Article 8 of UNFSA, the entirety of this Resolution is subject to Article XVI (Coastal States' Rights) of the IOTC Agreement for the Establishment of the Indian Ocean Tuna Commission, and Articles 87 and 116 of the UN Convention of the Law of the Sea regarding the right to fish on the high seas;
8. This Resolution supersedes Resolution 13/10 *On interim target and limit reference points and a decision framework*.