OUTCOMES OF THE THIRTEENTH SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 14 JULY, 2011

PURPOSE

To inform the Working Party on Tropical Tuna (WPTT) of the recommendations arising from the Thirteenth Session of the Scientific Committee, held from 6–10 December 2010, specifically relating to the work of the WPTT.

BACKGROUND

At the 13th Session of the Scientific Committee (SC), the recommendations contained in Attachment A, that relate mainly to the data and research activities of national scientists were endorsed by the SC. The SC considered the recommendations contained in Appendix A as priority items compared to the complete list of data and research activities recommended by the WPTT at its meeting in October 2010. The SC made several other recommendations relevant to the WPTT, outlined below.

DISCUSSION

In addition to the recommendations outlined in Attachment A, the SC made several other recommendations relevant to the WPTT, which participants are asked to consider:

Bigeye tuna:

1) The SC recommended that the efforts put in the development of this assessment using SS3 and including the tag data are continued and refined at the next session of the WPTT. (para 122 of the SC13 report).
2) The SC noted that the increased FAD fishing by purse seiners has resulted in increased catches of small bigeye and skipjack, and probably also of bycatch species. The SC recommended keeping careful track of bigeye catches, and to integrate the changes in fishing pattern and catch into future stock assessments. (para 157 of the SC13 report).

Skipjack tuna:

3) The SC strongly recommended that a formal assessment of the skipjack stock be a priority task at the next session of the WPTT. The SC recalled that the success of this assessment will depend on the preparation of realistic series of standardized CPUE for Maldivian pole and line fleet and for the European purse seine fleet. (para 134 of the SC13 report).

Tagging data:

4) The SC pointed out that tagging data are now routinely used in the assessment of yellowfin stock and for the first time, for bigeye stock, thanks to the use of integrated assessment models. However the SC recalled that external analyses on tag-recovery data are essential to estimate the key input parameters for assessment (*e.g.* natural mortality, growth, exploitation rate, *etc.*) and recommended more analysis before the tagging Symposium planned in 2012. (para 135 of the SC13 report).

Data reporting requirements:

5) The SC endorsed the minimum data requirements for gillnet and pole-and-line fisheries. In order to complete this work, the SC recommended that this minimum requirement are translated into proposals of Resolutions for the recording of catch by gillnet and pole-and line fisheries in the IOTC area for presentation at the next meeting of the Commission. (para 141 of the SC13 report).

Stock assessments by working parties:

6) The SC noted that the complete and detailed stock assessment documents are not always made available at the WPs and requested that for all future WPs, complete stock assessment documents, describing the analysis, its assumption and its results, as well as associated model diagnostics and input/output files are provided and archived so as to facilitate transparency in the process of stock assessment for IOTC stocks. (para 143 of the SC13 report).

7) The SC also requested that choice of particular assumption, *e.g.* steepness of the stock recruitment relationship, are fully justified and described in the report of the relevant WP. (para 144 of the SC13 report).
8) The SC revised the stock assessment guidelines previously agreed to at his 10th Session in 2007, which are applicable to all IOTC WP. The SC reminded scientists conducting stock assessment that these guidelines provide a minimum set of outputs required for WP participants to be able to properly analyse the results presented. As such, scientists and WP participants should ensure that these guidelines are followed to the extent possible, and WP chairs should make every possible effort to make sure this is done so. (para 145 of the SC13 report).

WPTT priorities for 2011:

9) The SC agreed to the following schedule of working party meetings for 2011 and recommended that it be put before the Commission for endorsement at its 15th Session. (para 253 of the SC13 report).
    a. Stock assessment for skipjack (priority 1)
    b. Stock assessment for yellowfin (priority 2)
    c. Stock assessment for bigeye (priority 3)
    d. External analyses on tagging data
    e. Discussion on fishing capacity
10) The SC acknowledged that if the three species of tropical tuna were to be assessed by the WPTT, additional resources, *e.g.* consultant(s) would be needed. (para 254 of the SC13 report).

The Scientific Committee also adopted revised Executive Summaries for each of the tropical tuna species, and these will be discussed under Agenda item 11. The current status, outlook and recommendation for bigeye tuna, skipjack tuna and yellowfin tuna, agreed to by the SC, are provided at Attachment B.

RECOMMENDATION

That the Working Party on Tropical Tuna **NOTE** the recommendations of the Thirteenth Session of the Scientific Committee on data and research, and consider how to progress these issues at the present meeting.

ATTACHMENTS

Attachment A: Summary of the Scientific Committee recommendations on data and research in 2010, relevant to the Working Party on Tropical Tuna.

Attachment B: Current status, outlook and recommendation for bigeye tuna, skipjack tuna and yellowfin tuna.

ATTACHMENT A

Extract of the Report of the Thirteenth Session of the Scientific Committee

(IOTC-2010-SC13-R; SECT. 16.1, PAGES 41-42)

16. SUMMARY OF THE SC RECOMMENDATION IN 2010

16.1. RECOMMENDATIONS – ON DATA AND RESEARCH

278. The following recommendations relate mainly to data and research activities of WPs and national scientists. They should be considered as priority items compared to the complete list of data and research activities recommended by the WPs (Appendix IV).

5. The SC noted that Mauritius had not reported data for its coastal fisheries in 2009, asking if this information could be sent as soon as possible. (paragraph 27)

26. The SC recommended that the efforts put in the development of this assessment using SS3 and including the tag data are continued and refined at the next session of the WPTT (paragraph 122).

27. The SC strongly recommended that a formal assessment of the skipjack stock be a priority task at the next session of the WPTT. (paragraph 134).

28. The SC recalled that external analyses on tag-recovery data are essential to estimate the key input parameters for assessment (*e.g.* natural mortality, growth, exploitation rate, *etc.*) and recommended more analysis before the tagging Symposium planned in 2012. (paragraph 135).

32. The SC noted that the complete and detailed stock assessment documents are not always made available at the WPs and requested that for all future WPs, complete stock assessment documents, describing the analysis, its assumption and its results, as well as associated model diagnostics and input/output files are provided and archived so as to facilitate transparency in the process of stock assessment for IOTC stocks (paragraph 143).

33. The SC also requested that choice of particular assumption, *e.g.* steepness of the stock recruitment relationship, are fully justified and described in the report of the relevant WP. (paragraph 144).

34. It also noted that the size-frequency sampling effort remains inadequate for some distant water longline fleets, and recommended this to be addressed as a matter of priority. The SC recognized that ecosystem modelling has yet to be fully implemented in IOTC area, largely because of it requirements for data and expertise, and encouraged such development in the near future as well as collaboration with programs integrating ecosystem and socio-economic approaches (such as CLIOTOP) to support the conservation of multi-species resources. (paragraph 148).

35. The SC recommended keeping careful track of bigeye catches, and to integrate the changes in fishing pattern and catch into future stock assessments (paragraph 157).

36. The SC supported the development of a MSE under the IOTC framework, and recommended that a meeting is organized in 2011 that will gather the scientist, managers and representative of the Industry (paragraph 251).

37. The SC recommended that a Steering Committee [for the Tagging Symposium], including Dr. A. Fonteneau, Dr. J.P. Hallier, the IOTC Executive Secretary, the Chairs of the SC and the WPTT as well as other experts, should be appointed soon. (paragraph 269)

38. The SC supported the principle of peer-reviews of stock assessments made by the WP. It was suggested that the chair of the SC with the chair of the WP set up a proposal for such a procedure, that will be discussed with the Secretariat in terms of budget and funding (paragraph 273).

ATTACHMENT B

Extract of the Report of the Thirteenth Session of the Scientific Committee

(IOTC-2010-SC13-R; SECT. 9.1, PAGES 27-30)

9.1.2 BIGEYE TUNA (*Thunnus obesus*)

Current status

169. The central tendencies of the stock status results from the WPTT 2010 were similar to those presented in 2009, while the uncertainty was recognized to be greater. The weighted results suggest that the stock is probably not overfished, and overfishing is probably not occurring (relative to MSY reference points). However, the stock is probably near full exploitation, and the possibility of overfishing cannot be ruled out on the basis of the estimated uncertainty, and the continuing observed decline in CPUE.

Outlook

170. The recent declines in longline effort, particularly from the Taiwanese longline fleet, are thought to be causing the recent declines in catches, and this is relieving some of the pressure on this stock. Changes in purse seine effort in the west Somali basin are expected to be less important than those of the longline fleet for this stock.

171. The changes imposed on the operation of the purse seine fleets by the security situation in their fishing grounds has increased the effort directing to fishing around FADs. This has led to an increase in the catches of juvenile bigeye which could have a negative effect on the outlook for the stock. These changes in the pattern of exploitation should be carefully monitored, and if they persist they should be incorporated in future analyses.

Recommendation

172. Given the uncertainty on estimated MSY values and the levels of error in the nominal catch data for bigeye, the SC recommended than catches are kept at a level not above the catch estimated at the moment of the assessment for 2009, *i.e.* 102,000 t. This value should give low probability of catches exceeding MSY.

9.1.3 SKIPJACK TUNA (*Katsuwonus pelamis*)

Current status

173. Skipjack tuna are widely regarded to be resilient to over-exploitation due to their life-history characteristics (*i.e.* rapid growth, early maturation and high reproductive potential). However, this does not exclude completely the possibility for skipjack to become overfished. Recent trends in certain fisheries suggest that the situation of the stock should be closely monitored and, thus, WPTT recommends that new attempts are made to assess the status of the stock during the next Session of the WPTT in 2011.

Outlook

174. Although there is no scientific basis for urgent concern about the status of the population of skipjack and the recent catches are considered to be sustainable, taking into account *i)* the Precautionary Approach for fishery management, *ii)* the rapid development of some artisanal and semi-industrial fleets and *iii)* that the catches could not be increased continuously; the SC highlights that some management options should be considered. It is also noted that increasing catches of skipjack could lead to corresponding increase in fishing mortality for other species that are harvested in combination with skipjack in certain fisheries.

Recommendation

175. Given the limited nature of the work carried out on the skipjack in 2010, no management advice is provided for the stock.

9.1.4 YELLOWFIN TUNA (*Thunnus albacares*)

Current status

176. Estimates of total and spawning stock biomass show a marked decrease over the last decade, accelerated in recent years by the high catches of 2003-2006. It appears that the stock is currently overfished or approaching an overfished state, and overfishing has probably been occurring over recent years. The effect on the standing stock of the high catches of the 2003-2006 period is still noticeable as biomass appears to be decreasing despite catches returning to pre-2003 levels.

177. The estimates of MSY are between 250,000 t and 350,000 t in different stock assessment models and for different stock-recruitment relationships and spatial model structures. The mean catch over the 2007-2009 period of 310,000 t is in the middle of that range while annual catches over the period 2003-2006 (averaging 464,000 t) were substantially higher than any of the MSY estimates.

178. The main mechanism that appears to be behind the very high catches in the 2003-2006 period is an increase in catchability by surface and longline fleets due to a high level of concentration across a reduced area and depth range. This was likely linked to the oceanographic conditions at the time generating high concentrations of suitable prey items that yellowfin exploited. A possible increase in recruitment in previous years, and thus in abundance, cannot be completely ruled out, but the signal estimated by the assessment models implies that the contribution of recruitment to the increase in catches is likely to be minor. This means that those catches probably resulted in substantial stock depletion.

179. Various indicators of catch rates for different fleets and areas appear to confirm this downward trend in abundance. Recruitment is estimated by the model to have been low over the course of the last five years.

Outlook

180. Catches in 2009 (288,000 t) were on the mid-range of MSY values. Improvements in the status of the stock, even with those lower catches, are dependent of future recruitments returning to the higher levels observed in the past.

181. The reduction in catches observed has been influenced by the reduction in effort and the decline of efficiency for most industrial fleets, consequence of the security situation in the Somali area. An improvement in this situation could rapidly reverse these changes in fleet activity and lead to an increase in effort that the stock might not be able to sustain in its current state, as catches would then be likely to exceed MSY levels.

182. Fishing mortality is likely to have exceeded the MSY-related levels in recent years, therefore some reduction in catch or fishing effort could be required to return to exploitation rates comparable to those related to MSY levels.

Recommendation

183. The SC considers that the stock of yellowfin has recently become overexploited or is very close to be so. Management measures should be continued that allow an appropriate control of fishing pressure to be implemented.

184. At this moment, the effect of time-area closures cannot be directly translated into management quantities of direct effect on the status of the stock, such as catches or fishing mortality, so their possible effect on the future evolution of the stock cannot be evaluated.

185. The SC recommends that catches of yellowfin tuna in the Indian Ocean should not increase beyond 300,000 t in order to bring the stock to biomass levels that could sustain catches at the MSY level in the long term. If recruitment continues to be lower than average, catches below 300,000 t would be needed to maintain stock levels.

186. The SC recommends that the situation of this stock is closely monitored.