

TERMS OF REFERENCE FOR THE PROVISION OF SCIENTIFIC SERVICES TO THE IOTC: COLLABORATIVE ANALYSIS TO PREPARE CPUE INDICES

Scientific Services to be provided:

Following the development in 2015 of methods for joint standardisation of catch and effort data, and adjustment for target change, the IOTC requires a short term consultancy for the following activities:

COLLABORATIVE ANALYSES TO PREPARE CPUE INDICES

- To organise a series of meetings between data holders and the consultant.
- To validate and improve methods for developing indices of abundance for tropical tunas.
- To develop methods for providing indices of abundance for albacore tuna.
- To provide indices of abundance for albacore tuna, and draft a working paper to be presented at the 2016 WPTmT06 (18 – 21 July 2016).
- To provide indices of abundance for bigeye and yellowfin tunas and to draft a working paper to be presented at the WPTT18 (30 October – 3 November 2016).
- To provide support and training to national scientists in their analyses of catch and effort data.
- The analyses will consider data to be provided by Japanese, Taiwanese and Korean research agencies.
- Analyses will be carried out in a series of meetings in March and April, and in a final meeting focusing on tropical tunas following update of the data. After preliminary meetings between the consultant and each participating data provider to prepare each dataset and develop methods, there will be a first joint meeting between all participating countries and the consultant. This joint meeting will develop indices for albacore tuna and develop draft indices for bigeye and yellowfin tunas. A second joint meeting will occur in July or August to prepare final indices for bigeye and yellowfin tuna, and to provide training to national scientists in their analyses of catch and effort data.

Data analysis tasks will include the following:

- Load, prepare, and check each dataset, given that data formats and pre-processing often change between years and data extracts, and important changes to fleets and reporting sometimes occur in new data. The format of the Japanese data is expected to change before the second joint meeting which will require additional time during this meeting.
- Explore albacore catch and effort data from each CPC to check the reliability and coverage of reporting, as we did for tropical tunas
- Apply cluster analyses and bigeye tuna and yellowfin tuna CPUE standardisation using reliable data from each CPC. Change regional structures from the generic 2015 approach to regions that are appropriate for each assessment, including alternate options.
- Address outstanding issues from 2015 tropical tuna analyses, including a) adjusting for the introduction of vessel effects in late-1970s Japanese data, and b) producing joint indices for temperate areas.
- Add functionality to provide estimates of relative observation error (Confidence Intervals) by time period.
- Extend the approach to albacore standardisation, i.e. cluster analyses and CPUE standardisation with appropriate spatial structures.
- Thoroughly check all code and results in order to validate indices.
- All work is subject to the agreement of the respective fisheries agencies to make the data available.
- To document the analyses in accordance with the IOTC “*Guidelines for the presentation of CPUE standardisations and stock assessment models*”, adopted by the IOTC Scientific Committee in 2014; and to provide draft reports to the IOTC Secretariat no later than 60 days prior to the meetings

of the WPTmT06, i.e. **18 May 2016**, and WPTT18, i.e. **30 August 2016**, and the final report no later than 15 days prior to the meeting of the WPTT18, i.e. **15 October 2016**.

- To undertake any additional analyses deemed relevant by the WPTT18 or the IOTC Secretariat up to 60 days after the start date of the contract.

Conditions and payment

In total this Service will require 70 days of work.

Honorarium is determined by FAO based on previous earnings and pre-approved consultant daily rates in Category A.

The IOTC Secretariat will pay the cost of return airfares (based on FAO travel regulations) from the contractor's home to the meetings in Shimizu and Taipei. A Daily Subsistence Allowance will also be paid in accordance with FAO procedures for attendance at meetings.

KEY PERFORMANCE INDICATORS

Expected Outputs:	Required Completion Date:
<ul style="list-style-type: none"> • To provide a first draft report of the joint CPUE meetings to the IOTC Secretariat no later than 60 days prior to meeting of the WPTmT06, i.e. 18 May 2016. 	18 May 2016
<ul style="list-style-type: none"> • To provide an updated draft report of the joint CPUE meetings to the IOTC Secretariat no later than 60 days prior to meeting of the WPTT18, i.e. 30 August 2016. 	30 August 2016
<ul style="list-style-type: none"> • To provide the final report of the joint CPUE meetings to the IOTC Secretariat no later than 15 days prior to the meeting of the WPTmT06, i.e. 15 October 2016. 	15 October 2016
<ul style="list-style-type: none"> • To present the results of the work undertaken to the WPTmT06 to be held from the 18-21 July 2016. 	18 November 2016