
**FIRST MEETING
OF THE
TECHNICAL AND COMPLIANCE COMMITTEE
OF THE COMMISSION FOR THE CONSERVATION AND MANAGEMENT OF
HIGHLY MIGRATORY FISH STOCKS IN THE WESTERN AND CENTRAL
PACIFIC OCEAN, POHNPEI, FEDERATED STATES OF MICRONESIA,
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**Requests for scientific advice by the Commission
to achieve management objectives**

Prepared by the Secretariat

Introduction

1. This background paper was prepared by the Secretariat, to make a preliminary assessment of the quality of requests by the Commission for the Scientific Committee's advice and to make recommendations for improving the Commission's requests for advice from the Scientific Committee, in consultation with members of the Scientific Committee. This will assist Members in considering Agenda Item 7.3 (Advice and Recommendations from the Scientific Committee to the Commission) during the Second Regular Session of the Commission. It will also assist in framing future requests from the Commission for advice from the Scientific Committee.

Provision of scientific advice

2. Under Article 12, the Convention establishes the Scientific Committee “*to ensure that the Commission obtains for its consideration the best scientific information and advice available*”, with functions of the Committee prescribed under Art. 12(2). These include recommending a research plan, reviewing assessments and analyses, promoting cooperation in scientific research, reviewing the results of research on target and NTAD¹ species, reporting findings to the Commission, making recommendations or reports on conservation and management of target and NTAD stocks, and recommending priorities and objectives of the regional observer programme, in consultation with the Technical and Compliance Committee. Under Article 13, the Convention further provides for the engagement of scientific experts, on the recommendation of the Scientific Committee, to provide reports and recommendations to the SC and the Commission.

3. Prior to the establishment of the Commission, the Preparatory Conference, through its Working Group II, was provided with interim scientific advice by a Scientific Coordinating Group (SCG), which also was tasked with determining procedures for the

¹ Non-target, associated or dependent species

future scientific functions of the Commission. Three meetings of the SCG were held, with most of the interim scientific advice to the SCGs emanating from the Standing Committee of Tuna and Billfish, which met prior to meetings of the SCG. This advice took the form of summary statements on the status of skipjack, yellowfin, bigeye and south Pacific albacore stocks. WG.II also recommended to the 5th Preparatory Conference a provisional science structure² for a transitional period (between the Convention entering into force and the Commission becoming fully functional), with an independent review of this proposed structure and associated functions two years after entry into force of the Convention (i.e. June 2006). WG.II agreed that the Oceanic Fisheries Programme of the SPC (OFP-SPC) should play a key role in the scientific work of the Commission during the transitional period, including data management, and that this role should also be assessed for longer term involvement, consistent with Art. 12(4) of the Convention. Stock assessment for the four major (target) species should be undertaken by the OFP-SPC, in cooperation with other scientists as appropriate, including those from the Inter-American Tropical Tuna Commission (I-ATTC), and Members.

4. The WG. II also recognized a need to receive scientific information and advice from the Interim Scientific Committee (ISC) on the northern stocks (north of 20⁰N), as provided for by Art. 11(7) and prior to the establishment of the Northern Committee. An agreed structure was developed to address this need³, and an MOU will be developed to clarify the relationship between the ISC and the Commission. It is anticipated that the Northern Committee shall meet for the first time during WCPFC2.

Provision of scientific advice from the Scientific Committee to the Commission

5. The first meeting of the WCPFC in December 2004 considered the Final Report of WG.II and the report of the third (and final) meeting of the SCG. SCG3 had addressed a request from PrepCon 6 to advise on “further analyses to support the consideration of management options and how these analyses can be carried out in a timely and effective manner”. PrepCon 6 had earlier considered an outline⁴ of possible management options for bigeye and yellowfin tuna in the western and central Pacific.

6. WCPFC then adopted a Resolution on Conservation and Management Measures (Annex II of the Summary record of the First Session of the Commission) which resolved that the following activity be addressed during 2005:

- (1) work be undertaken by the Scientific Committee and Technical Compliance Committees to provide advice to the WCPFC2
- (2) adoption by WCPFC2 of conservation measures necessary to address sustainability concerns
- (3) consideration by the TCC of the regional observer programme and VMS programme as a matter of priority at its 2005 meeting
- (4) application of previous resolutions by the MHLG and PrepCon calling for

² Annex II of the Final Report of WG II (WCPFC/PrepCon/38)

³ Annex III of the Final Report of WG11 (WCPFC/PrepCon/38)

⁴ Management options for bigeye and yellowfin tuna in the western and central Pacific Ocean (WCPFC/PrepCon/WP. 24)

restraint in the expansion of fishing effort and capacity in the Convention Area.

7. The request for the provision of scientific advice by the Scientific Committee was worded as follows:

“1. *Utilising the transitional arrangements⁵ for the provision of the Commission’s scientific advice and taking into consideration **the management options identified as feasible by the Scientific Coordinating Group⁶**, the following advice shall be given to the Commission at its second annual session:*

(a) Estimates of both sustainable catch and effort levels for bigeye, yellowfin and South Pacific albacore;

(b) Five and ten year projections of total biomass and spawning stock biomass for bigeye and yellowfin tuna under: 2003 catch and effort levels, and possible scenarios of changes in catch and effort (i.e. separate analysis of catch limits and effort limits) in the Convention Area for the purse seine, longline and other surface fisheries which have a major impact on bigeye tuna and yellowfin tuna (both separately and combined); including the effects on the stocks of possible time/area closures by fishing method for bigeye and yellowfin tuna;

(c) The effects on the stocks of measures to mitigate the catch of juvenile bigeye and yellowfin including controls on setting on floating objects; and

(d) Estimates of the mortality of non-target species with an initial focus on seabirds, turtles and sharks.

2. *The preliminary analyses shall be completed, reviewed by the Scientific Committee, and made available to the Commission at least sixty (60) days in advance of its second session”.*

8. Subsequent analysis undertaken by OFP and cooperating scientists, in response to parts 1 (b) and 1(c) of the Resolution (above), drew on 12 model scenarios over a ten-year time horizon which addressed most if not all of the 8 (of 17) management options evaluated as feasible by SCG 3. With other information addressing parts (a) and (d) of the Resolution, this was submitted to the Commission as information on status of stocks and management information. These analyses and their implications for the adoption of conservation and management measures at WCPFC 2 are discussed in a companion paper.

Possible changes to existing mechanisms for the provision of scientific advice

9. The Scientific Committee, in forwarding its advice to the Commission following its First Regular Meeting, and 60 days in advance of the Second Session, as required,

⁵ Transitional arrangements agreed by WGII involved OFP/SPC playing a key role in the scientific work of the Commission, including data management, with the OFP, in cooperation with other scientists, undertaking stock assessments for the four main tuna species.

⁶ Technical feasibility of analyzing a range of management options was evaluated by SCG 3, with 9 of the 17 management options considered not feasible given current data availability.

constructively recommended that “*some additional enhancements to the stock projection analysis might be undertaken in future. These included:*

- a) The incorporation of uncertainty in various population state variables, future recruitment and catchability, through stochastic simulation, would provide a means of evaluating the robustness of the relative performance of potential management measures⁷*
- b) The specification of management objectives, particularly with respect to desired levels of stock biomass, would provide a more explicit basis for comparing potential management measures;*
- c) Future stock projection analyses should use a multi-year average fishery condition (such as 2001-2003 in the case of the current analysis) as a base for the projections. This would reduce the risk of bias resulting from projections based on an atypical year⁸;*
- d) An examination of the effects of purse-seine measures on skipjack catches; and*
- e) Assessment of specific combinations of the management options evaluated in the present study can be undertaken on request”*

10. In line with the second recommendation above, it is generally recognized that management advice sought by the Commission should relate back to clearly established management objectives, which is currently not the case. As noted by SCG 3, “quantitative evaluation of the effectiveness of a given management option will require determination of benchmarks, targets or reference points against which to evaluate the effectiveness of the management option” being contemplated. It is therefore suggested that **the Commission needs to develop a set of management objectives for the fishery, or components thereof.** These might include limit (and target) reference points involving fishing mortality levels, or biomass targets, present or future, achieved through the application of a variety of management measures, which can be duly evaluated.

11. Annex II of UNFSA provides quite specific guidance (and a useful starting point) on this issue, suggesting that “*the fishing mortality rate which generates maximum sustainable yield should be regarded as the minimum standard for limit reference points. For stocks which are not overfished, fishery management strategies shall ensure that fishing mortality does not exceed that which corresponds to MSY, and that the biomass does not fall below a predefined threshold. For overfished stocks, the biomass which will produce MSY can serve as a rebuilding target*”.

12. There may also be a need to collect additional data for those management options for which data are currently insufficient to support feasible analyses of those options e.g. capacity limits based on vessel characteristics, or most options based on technical characteristics of vessels.

⁷ recognizing however that such an exercise, moving into the realm of Management Strategy Evaluation will require considerably more resources than are currently available

⁸ 2003 was the baseline specified in the present projections, and was an atypical year in many respects eg pure seine catch distribution, high yellowfin catch etc

13. In terms of future approaches to management, SCG 3 recommended that the Commission conduct a review of existing operational and management strategy evaluation models (MSEMs). Again, well defined management objectives are a critical prerequisite for the application of such models. Although this approach was not discussed further by the SC, the Commission should commission such a study.

14. The Scientific Committee has recommended the independent review of the science structure and functions of the Commission be scheduled for June 2007, arguing that the original schedule of June 2006 would be premature. The Scientific Committee discussed the means to undertake the review, key issues for consideration during the review and delivery of the resulting report, and developed an outline of the key issues that would need to be covered in the review relating to i) science data functions, and ii) science function. These will be forwarded to the Executive Director to assist in the conduct of the review.

15. The Scientific Committee also considered its *modus operandi*, after the first meeting, and concluded that no major changes were necessary to the present structure i.e. Committee and subsidiary Specialist Working Groups (6) or the present means of discharging its mandate of ensuring that the Commission has access to the best available scientific advice.

16. The Scientific Committee is also required to consult with the Technical and Compliance Committee, with a view to making recommendations to the Commission on issues such as the priorities and objectives of the regional observer programme, verification and validation of fisheries data, and gear technology issues. Mechanisms for consultation are under consideration.

17. As earlier noted, the Convention provides for the engagement of scientific experts, taking account of any recommendation of the Scientific Committee, to provide reports and recommendations to the SC and the Commission. Under the interim science and data arrangements with OFP-SPC, such services have been provided on an essentially *ad hoc* basis within the current framework of the Scientific Committee and its predecessors, to the extent that funding will be provided from the 2006 budget of the Commission to support agreed activities. An MOU is currently being developed between OFP-SPC and the Commission to govern the relationship between the two. Detailed annual service agreements are likely to be appended to the MOU.

18. The Scientific Committee noted that cooperation with other organizations would be beneficial to its work, and that similar working arrangements should be developed with a range of such organizations, but with perhaps I-ATTC and ISC attracting the highest priority in the short term. The likely inauguration of the Northern Committee during WCPFC2 has been noted.

19. The Resolution from WCPFC on Conservation and Management Measures (WCPFC/Comm.1/8, Annex II) provides that the Commission may also respond to “*any information provided by members* (as well as advice from the SC and TCC) *at least 30*

days in advance of the second session". It is understood that at least one NGO will also take advantage of that opportunity to provide non-binding scientific advice, which should be formalized in Commission procedures.

Conclusions

20. It is suggested that the Commission develop and enunciate a clear statement of management objectives for the WCPO fishery, which will enable requests to the Scientific Committee and other bodies to be related to such objectives. In the longer term, the Commission may wish to review existing operational and management strategy evaluation models (MSEMs), with a view to adapting this approach for Commission use.

21. The present system of providing scientific advice to the Commission is in its early stages of development, and will have another yearly cycle to evolve, as linkages with the TCC, cooperating bodies and scientific experts are developed and formalized.

22. None of the above should preclude taking action on conservation and management issues whilst all possible structures and processes are evaluated and fine-tuned.