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**Independent Review
of the
Commission's Transitional Science Structure and Function**

WCPFC6-2009/11
12th November 2009

Prepared by the Secretariat

Introduction

1. The Inaugural Session of the Commission (WCPFC1) in December 2004 adopted the Final Report of Working Group II. Among other matters, the Report recommended:
 - a provisional science structure for the Commission for a transitional period (expected to last some 3 to 5 years and representing the period between the Convention coming into force and a fully functioning Commission);
 - that, during this period, the structure and functions of the science secretariat be flexible and adaptable; and
 - an independent review of the transitional structure and function be carried out two years after entry into force of the Convention, or earlier if required, to determine the effectiveness of the science structure and to recommend changes as appropriate.
2. The First Regular Session of the Scientific Committee (SC1) at Noumea, New Caledonia, 8-19 August 2005 discussed procedural options for supporting the independent review, its scope (with a focus on science data functions and science functions) and reporting options.
3. The SC1 advised the Second Regular Session of the Commission (WCPFC2) that the:
 - a) Scientific Committee recommends a new completion date for the review of June 2007;
 - b) Scientific Committee has forwarded a discussion paper to the Executive Director outlining elements for a draft TOR for the review;
 - c) Scientific Committee participants would provide advice to the Executive Director in writing by 1 April 2006 on the desirable skills and experience of those undertaking the Review;
 - d) reviewer(s) would need to attend the 2006 Scientific Committee meeting;
 - e) Scientific Committee, facilitated by the Secretariat, would finalize its input to the TOR for the Independent Review inter-sessionally, based on input from the Secretariat and the contractor with a view to adopting the final TOR at next regular session of the Scientific Committee (SC2 in August 2006).

4. The Second Regular Session of the Commission, 12-16 December 2005 at Pohnpei, Federated States of Micronesia adopted the advice and recommendations of the Scientific Committee in respect of the proposed review.

5. The Secretariat, which received no advice from SC1 participants in relation to the desired skills and experience for the reviewer(s) as proposed at paragraph 3 (c) (above), drafted the provisional call for Expressions of Interest and draft Terms of Reference on the basis of the discussion paper referred to in paragraph 3(b) above.

6. The draft was considered at the Second Regular Session of the Scientific Committee (SC2), 7-18 August 2006 at Manila, Philippines. An informal small working group met in the margins of the Manila meeting to consider the possible process, terms of reference and schedule for the review.

7. The Plenary of SC2 subsequently formally considered the Terms of Reference, selection criteria and selection process for reviewers and possible schedule for the review. The recommendations to the Commission, adopted by SC2, were appended (as Attachment R) to the Summary Report of the Scientific Committee for forwarding to the Commission for consideration and endorsement.

8. At the Third Regular Session of the Commission (WCPFC3), 11-15 December 2006 Japan submitted a new proposal on the review process in relation to the composition of a steering committee, nomination of reviewers, costs, etc. In response, WCPFC3, noting the need for a review to be cost effective and independent, requested the SC to re-examine the terms of reference for the review of the Commission's science structure and function and to report on the results of the review to WCPFC4 in December 2007.

9. The Third Regular Session of the Scientific Committee (SC3) at Honolulu, USA, 13-24 August 2007 re-examined the work undertaken to that time in relation to the process and scope for the Review. SC3 recommended to WCPFC4 revised Terms of Reference, a process for the selection of reviewers and consultation process (Attachment P to the SC4 Summary Report). WCPFC4 at Guam USA, 3-7 December 2007, subsequently adopted the recommendation of the Scientific Committee.

10. In February 2008, the Secretariat advertised for Expressions of Interest (EoI) to undertake the Review as described in the ToR adopted at WCPFC4 (refer to Annex 1 to Attachment A). One response was received and a contract was subsequently negotiated with the Marine Resources Assessment Group (UK) for the assignment. During 2008, the consultants participated in SC5, ISC8, and NC4. They presented a draft report to WCPFC5 when it met at Busan, Korea in December 2008.

WCPFC5, Busan, Korea, December 2008

11. WCPFC5 received a draft report for the *Independent Review of the Commission's Transitional Science Structure and Functions* (WCPFC5-2008/11). The review encompassed an evaluation of scientific data and information functions; science functions; and institutional analysis. WCPFC5 agreed (Paragraphs 63-64 of the WCPFC5 Summary Report) that the Independent Review:

- i. Be finalised by the consultant following the receipt of any additional comments from CCMs by 1 March 2009;

- ii. Be considered at the 2009 sessions of the ISC, SC, NC and/or Ad Hoc Task Group [Data];
- iii. Be further considered at WCPFC6, taking into account the advice and recommendations of the ISC, SC, NC and/or Ad Hoc Task Group [Data].

12. In addition, WCPFC5 requested:

- i. CCMs to actively work toward removal of domestic barriers to data submission;
- ii. The Secretariat work with ISC, SPC-OFP and relevant CCMs to develop a strategy for the incorporation of ISC data into the Commission's data holdings; and
- iii. The Secretariat prepare for consideration of the 2009 sessions of the ISC, NC and Commission, a proposal that would support the periodic peer review of ISC and SC stock assessments.

13. In addition, WCPFC “adopted the recommendations to enter into a 3-year agreement with SPC as the Science Service Provider.....revisit the MoU with ISC.....” (paragraph 271 WCPFC5 Summary Report).

2009

14. Comments received from CCMs by 1 March 2009 were provided to the consultants with the result that the Final Report of the *Independent Review* was made available to CCMs in May 2009 (WCPFC-SC5-2009/GN-WP07 - <http://www.wcpfc.int/doc/gn-wp-07/mrag-final-project-report-independent-review-commission%C3%A2%E2%82%AC%E2%84%A2s-transitional-science-structur>). The *Final Report* and associated documents prepared by the Secretariat in response to the requests of WCPFC5 were made available to the 2009 sessions of the SC, ISC and NC for review, consideration and development of recommendations to WCPFC6. The documents prepared by the Secretariat and provided to the ISC, SC and NC included:

- i. A summary of issues identified in the *Final Report* and preliminary identification of the appropriate body within the Commission to consider the issue (ISC, NC, SC or the Commission itself) (WCPFC-SC5-2009/WP08 - <http://www.wcpfc.int/doc/gn-wp-08/secretariat-summary-issues-arising-independent-review> and Attachment A);
- ii. A proposal to consider options for harmonisation of ISC and WCPFC data holdings (WCPFC-SC5-2009/IP09 - <http://www.wcpfc.int/doc/gn-ip-09/secretariat-strategy-incorporation-isc-data-wcpfc-data-holdings>);
- iii. A proposal for the periodic peer review of ISC and SC stock assessments (WCPFC-SC5-2009/IP10 - <http://www.wcpfc.int/doc/gn-ip-10/secretariat-a-proposal-peer-review-isc-and-sc-stock-assessments>);
- iv. A proposal to revise the MoU between the ISC and WCPFC (WCPFC-SC5-2009/WP11 - <http://www.wcpfc.int/doc/gn-wp-11/secretariat-draft-revision-memorandum-understanding-mou-between-wcpfc-and-isc> , and
- v. A revised MoU with SPC to provide for a 3-year arrangement for SPC-OFP as the Science Service Provider to the Commission (WCPFC-SC5-2009/GNWP03 - <http://www.wcpfc.int/doc/gn-wp-03/secretariat-scientific-and-data-management-services-revising-agreement-with-spc-ofp>).

ISC9, Koashiung, Chinese Taipei, 22-27 July 2009

15. The Report of the 9th Meeting of the ISC (Section 11.5) reported comments on the *Final Report* for the Independent Review were solicited from ISC members, consolidated and circulated to ISC members during the Meeting. Comments were requested by 18 September 2009 following which they would be submitted to the WCPFC. Comments were received in November and have been posted separately as an information paper for WCPFC6 (WCPFC6-2009/IP10).

16. In respect of the proposals prepared by the Secretariat in response to the requests from WCPFC5, the ISC9 Meeting Report notes:

In respect of the proposal to harmonize the data holdings of ISC and Commission:

17. ISC9 concluded that it would be inappropriate to proceed with development of the type of strategy proposed because i) most of the ISC members are also WCPFC members, it is expected that they already submit the relevant data to both organizations, ii) data release must comply with the ISC Operations Manual which states that Category I, II and III data shall only be made available to contributors and members of ISC Working Groups for use in the work of the Working Groups. Release of these data to other parties could be considered if presented in the form of a specific data request, but approval and conditions for release would have to be obtained from the contributors of the specific data to be released.

18. ISC9 considered it more appropriate for ISC and WCPFC to exchange data inventories and identify data gaps as a first step. ISC9 reported that an inventory of data may be available for stock assessments that will be finalized over the coming months and that could be shared with WCPFC as part of a process of periodic consultation to review overall consistency between datasets.

In respect of proposal for periodic peer review of SC and ISC stock assessments:

19. While expressing support for the concept of peer review, ISC members recommended that the WCPFC proposal be revised to clearly specify the objectives for the peer reviews, particularly given the existing review functions provided by the ISC organizational structure. However, for the peer review itself, a focus on the stock assessment results, rather than the process, was recommended. ISC Members made several observations in relation to costs, particularly with regard to costs associated with a coordinator to select peer reviewers and define terms of reference, timing, potential conflicts of interest of peer reviewers and suggested further research in relation to professional peer review providers such as CIE, and the peer review processes SEDAR, STAR, and those used at ICCAT.

In respect of the proposed revision of the WCPFC-ISC MOU:

20. The ISC Chairman advised the ISC9 that the proposal involved the creation of an additional line of reporting between the ISC and the WCPFC SC (Section 11.6 of the ISC9 Report). It was noted that:

“...under the current MOU the ISC reports to the WCPFC only through the NC. The ISC Chairman noted that the ISC is structured to be an independent provider of information to the NC for use in NC decision-making. The proposed change in the MOU would alter the relationship between the ISC and the WCPFC as the ISC would then report to the SC which has a much broader membership than the NC;

this could result in conflicting requests and demands. The proposed addition would also create an administrative issue since the current scheduling of ISC meetings does not allow sufficient time to prepare documents before the SC document submission deadline. Other issues related to the proposed MOU revision, i.e. potential increases in workload and costs for ISC members and a clear mechanism for cost recovery, were also noted.

ISC9 agreed to provide formal comments on the proposal to revise the WCPFC-ISC MOU after considering the views of the NC during discussions of this topic at NC5”.

SC5, Port Vila, Vanuatu, 10-21 August 2009

In respect of the proposal to harmonize the data holdings of ISC and Commission:

21. SC5 (from paragraph 420 of the SC5 Summary Report) noted that WCPFC and ISC use different operating procedures for assembly of data for stock assessments. The WCPFC pools data in a central repository (located with the Commissions data contractor in Noumea) before it is analysed; ISC members do not submit fine scale operational data to a central repository. Instead each member uses its own operational data (for CPUE standardisation and other relevant studies) and brings the results to the stock assessment meeting for discussion and incorporation into model runs. The ISC does hold aggregated data, but this is the same data that CCMs should also have submitted to WCPFC; the only exception to this noted as being that the ISC holds some aggregated data for Mexico, which is a cooperating non-member of the WCPFC.

22. The SC recommended:

- i. The Secretariat provides an inventory of Commission data holdings for north Pacific stocks to ISC by ISC10.
- ii. The Secretariat, ISC, SPC-OFP, and interested CCMs complete a reconciliation of ISC and Commission data holdings, for north Pacific stocks, to identify any data gaps by 1st October 2010.
- iii. The Secretariat and ISC collaborate to exchange data, to address data gaps for north Pacific stocks, subject to the Commission’s Rules and Procedures for the Protection of, Access to, and Dissemination of Data Provided to the Commission and the rules and procedures governing data exchange that are contained within ISC’s Operations Manual.
- iv. The ISC and the Secretariat establish a mechanism for the periodic exchange of data to address gaps in the data for north Pacific stocks.
- v. The Secretariat provides a report of progress on these matters to SC6.

In respect of proposal for periodic peer review of SC and ISC stock assessments:

23. SC5 (from paragraph 487 SC5 Summary Report) agreed to the following points for consideration by the Commission:

- i. A periodic peer review was seen as strengthening assessments and their outcomes, improving transparency, building understanding and confidence, and helping to ensure best practice in the delivery of stock assessments to the Commission.
- ii. The results or absence of a peer review may not be used as an excuse to delay conservation and management actions.
- iii. The SC recommends to undertake a peer review of a single stock assessment initially and use the outcomes of this review to inform the scope and resource demands that would be considered in formulating subsequent reviews.

- iv. The SC recommends that an OFP assessment be selected for the initial review, in particular, the bigeye assessment undertaken for the WCPO;
- v. Given the perceived difficulties in completing the assessment by May for the review to be undertaken in June and the report made available in July (as recommended by MRAG), the SC proposed the following process for undertaking the review:
 - a. undertake a detailed review of the selected stock assessment considered by the SC the previous year;
 - b. provide an interim report to the Preparatory SA Workshop;
 - c. undertake a short review of the completed stock assessment report;
 - d. provide report on completed review to SC;
 - e. stock assessment group to provide comments on interim report provided to the Preparatory SA Workshop.
- vi. Participation by reviewer(s) in the Scientific Committee (and possibly the Preparatory SA Workshop) was seen to be possibly beneficial but would have additional cost implications.
- vii. In the selection of reviewers, the need to consider the independence and expertise of reviewers would need to be balanced against costs.
- viii. As range of options for selecting reviewers were noted. These included:
 - a. CCMs
 - b. other RFMOs (e.g. IATTC)
 - c. the Center for Independent Experts - CIE is a group affiliated with the University of Miami that provides independent peer reviews of NMFS (USA) science nationwide, including reviews of stock assessments for fish and marine mammals
 - d. the Marine Resource Assessment Group (MRAG).
- ix. A recommendation on a specific reviewer is difficult to make at this time until the costs associated with each of these options are more fully understood. However, the SC saw much benefit in the independence of the selected reviewer.

24. SC5 noted that if the peer review of the OFP assessment was undertaken during 2010, there may be additional cost implications. SC5 requested that this proposal for peer reviewing an OFP assessment be passed to the Northern Committee and ISC as an information paper for their consideration.

In respect of the proposed revisions to existing arrangements with SPC and ISC:

25. Among other matters concerning relations with other organisations, SC5 (paragraphs 458-461 SC5 Summary Report) considered:

- i. A recommendation of the *Independent Review of Interim Arrangements for Science Structure and Function* (IRIASSF) for the Commission to enter into three-year agreements with SPC-OFP as the Science Services Provider as adopted by WCPFC5; and
- ii. A recommendation of the IRIASSF to revise the existing MOU between WCPFC and ISC in order to allow the Scientific Committee to directly request advice from ISC on the status of North Pacific stocks as adopted by WCPFC5 (WCPFC5 Summary Report, para. 254(c), 259).

26. SC5 endorsed the revisions to the MOU with SPC to provide for a three-year arrangement as directed by the Commission.

27. While all non-ISC CCMs supported the proposed changes to the MOU with ISC, most ISC members of the SC did not support the proposal, advising that ISC members are currently considering the implications of the proposed change and that the NC would be asked to also provide comments.

NC5, Nagasaki, Japan, 7-10 September 2009

In respect of the proposal to harmonize the data holdings of ISC and Commission:

28. The WCPFC Secretariat reported that SC5 had adopted a work programme that involved preparing existing data inventories, identifying data gaps, and considering procedures to harmonize data inventories in the broader WCPFC and ISC to be undertaken in advance of ISC10. The results of these efforts will be reported to NC6.

29. Japan, Chinese Taipei, Korea and the USA considered it time to examine the feasibility of establishing all of the WCPFC's data management functions in the Commission Secretariat in Pohnpei. The USA added that if this was to be considered, it could only occur if the Secretariat received adequate resources from CCMs to effectively support that function. WCPFC's Executive Director responded that this was considered during PrepCon when the principles of avoiding duplication by using the services provided by existing institutional arrangements were agreed to. In addition, an assessment of the effectiveness and efficiency of existing arrangements for data administration were included in the terms of reference of the Independent Review of Interim Arrangements for Science Structure and Function. The conclusion of the review was that existing arrangements were efficient and cost effective. NC5 decided that further consideration of this issue should occur at the Commission level.

In respect of proposal for periodic peer review of SC and ISC stock assessments:

30. NC5 noted that several options had been proposed by SC5 for both ISC and SC assessments. Japan considered the ISC process to be quite different from the SC assessment process, and that a form of peer review was already accommodated for within the ISC process. The WCPFC Secretariat noted that the concept presented in the *Independent Review* was for an independent review, and not one to be undertaken by those directly involved in the assessments. NC5 requested ISC10 to further consider this matter.

In respect of the proposed revisions to existing arrangements with SPC and ISC:

31. NC5 agreed that the scientific structure involving ISC should be unchanged, although transparency of ISC work should be enhanced through i) data exchange, ii) inviting SC representatives to its meetings, iii) strengthening the website, and iv) data administration. NC5 decided to recommend to WCPFC that the existing MoU between it and ISC remain unchanged at this stage.

32. NC5 noted that the proposed changes to the MoU with SPC had been adopted by SC5. Japan suggested an amendment to the proposed MoU (Attachment F NC5 Summary Report) in order to avoid duplication of work between ISC and SPC. Korea and Chinese Taipei supported the proposal. The USA did not agree with this proposal. However NC5 agreed to send the proposal to the WCPFC for its consideration in December 2009.

AHTG [Data]

33. The AHTG [Data] did not have an opportunity to consider the Final Report for the Independent Review during its session in 2009.

Advice and recommendations

34. The Commission is invited to:
- i. review the advice and recommendations contained in the final Review Report (Attachment A);
 - ii. taking into account the advice from the SC, the ISC and the NC consider appropriate responses to each recommendation presented in the Review Report;
 - iii. consider a process for implementation of recommendations from the Review, refined as considered necessary, and adopted by the Commission; or
 - iv. consider alternative action.

Independent Review of Transitional Arrangements for Science Structure and Function: Executive Summary prepared by the Secretariat

Executive Summary text	Issues	Responsible body
1. The basis for this Independent Review of the Commission's Transitional Science Structure and Functions is Articles 10 to 15 of the Convention covering: Functions of the Commission; Subsidiary bodies of the Commission; Functions of the Scientific Committee; Scientific Services; Functions of the Technical and Compliance Committee; and the Secretariat.	No issues	
2. The review was conducted by a team of three persons from MRAG Ltd, principally through wide correspondence and interviews conducted during attendance at the 2008 meetings of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), the Scientific Committee (SC4) and the Northern Committee (NC4). The project team also collected information relating to other RFMOs and conducted independent analysis of all information collected in order to derive conclusions and recommendations for the post transitional period.	Research approach	
3. The project team took an inclusive approach to the review, meeting with and interviewing as many people as possible within the timeframe of the project. There was, however, no intention to use a questionnaire or structured sampling approach. The conclusions reached are those of the expert team, based on evidence collected and assessment of opinions and ideas expressed by respondents. Where the latter have been influential in reaching conclusions and recommendations, it is mentioned in the report. However, we have not made any specific attributions of these opinions and ideas to either individuals or delegations. This approach was used, and explained in advance to respondents, so as to encourage a review process that was as open and wide ranging as possible.	Research approach	
4. The institutional structure involved in the science and data functions of the WCPFC are complex; roles and responsibilities set out in the Convention and operating in practice were mapped out and used to inform subsequent analysis and recommendations.	No issues	
5. In this Executive Summary we present the main recommendations arising from the review, using the same chapter structure as appears in the full report. Paragraphs are numbered for ease of reference.	No issues	

Scientific data and information functions		
Roles and Responsibilities		
6. Data are central to the Commission's strategy to conserve and manage highly migratory fish stocks in the Convention Area and the Convention text places a number of obligations on the Commission itself with respect to data. Under Article 5, the Commission has the responsibility to collect and share, in a timely manner, complete and accurate data concerning fishing activities on, <i>inter alia</i> , vessel position, catch of target and non-target species and fishing effort, as well as information from national and international research programmes. In addition, under Article 6, the Commission is required to develop data collection and research programmes to assess the impact of fishing on non-target and associated or dependent species and their environment. One of the main functions of the Commission (Article 10) is to compile and disseminate accurate and complete statistical data to ensure that the best scientific information is available, while maintaining confidentiality, where appropriate.	Description on the Commission's data requirements – no issues	
7. The provision of accurate data to the Commission is a responsibility of CCMs, and this obligation is expressed in Article 23 of the Convention. Paragraph 2(a) states that CCMs shall provide annually to the Commission statistical, biological and other data and information in accordance with Annex I of the Agreement ¹ and, in addition, such data and information as the Commission may require. To support CCMs in meeting this obligation, Annex III sets out terms and conditions for fishing that include recording and reporting of data (Article 5).	Description on the Commission's data requirements – no issues	
Data Submission		
8. The Data Gaps Report ² shows that the majority of the annual summary catch and effort data have been submitted, but most of the CCMs that collect operational level data have not reported them to the Commission. Australia, NZ, French Polynesia, New Caledonia and the US for the purse seine fleet have provided operational level data, although in most cases it is only since 2005 (i.e. not the historical data). 11 countries have submitted aggregate catch and effort data. Currently, no size and tagging data have been provided to the Commission.	<ul style="list-style-type: none"> • Insufficient submission of required data – data gaps to be resolved <ul style="list-style-type: none"> ✓ Operational data – 5 CCMs submitted ✓ Aggregate catch and effort data – 11 CCMs submitted ✓ No size and tagging data have been submitted 	ST-SWG TCC Commission
9. Outreach activities coordinated by the Secretariat should be continued for CCMs experiencing difficulties with understanding and meeting their data reporting obligations. This is particularly important where both raised and unraised data are being reported. A set of practical guidelines should be developed.	<ul style="list-style-type: none"> • Continue to coordinate outreach activities • Develop practical guidelines for data reporting and submission 	Secretariat ST-SWG
10. The Commission should consider the development of targeted sanctions that would apply to CCMs	<ul style="list-style-type: none"> • Compliance and sanctions 	TCC

¹ The "Agreement" referred to here is the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. Annex I of the Agreement contains standard requirements for the collection and sharing of data. This document is available at <http://daccessdds.un.org/doc/UNDOC/GEN/N95/274/67/PDF/N9527467.pdf?OpenElement>.

² Final report on Causes of Data Gaps. Report to WCPFC. Prepared by FINNZ, October 2008.

that do not meet their data submission obligations. The TCC is currently examining compliance issues through the formation of a Compliance with Conservation and Management Measures (CCMM) working group. This issue should be progressed through that forum. Examples are available in other RFMOs and regional organisations.		Commission
Data management and confidentiality		
11. In this section we discuss the performance of the Commission's data service provider (SPC). SPC has a dual role in terms of data custodianship; it both receives data from the CCMs under its service agreement with the Commission and receives data from the Members of SPC as their science provider ³ . This creates at least the perception of both a conflict of interest and risk with respect to data confidentiality. The issue of conflict of interest is taken up in a later section.	SPC's dual role between WCPFC CCMs and SPC members may create a conflict of interest and risk with respect to data confidentiality	
12. We conclude that the Commission's data service provider is providing high quality services and the Commission has benefitted from the considerable institutional knowledge and expertise existing within the organisation. SPC plays a significant and important role in assisting SPC members with their data submission obligations under the Convention.	WCPFC get benefits from the SPC's existing expertise and SPC members get assistance from SPC with their data submission obligations.	
13. SPC should review its available resources with respect to the expectation of increasing demands from WCPFC and its membership within its medium to long term planning process, particularly with respect to the servicing of multiple clients (i.e. the Commission and the SPC Members) with limited resources. Recommendations in the following section, such as a longer term service agreement, should help with this.	<ul style="list-style-type: none"> • SPC-OFP should cope with increasing demands from WCPFC and its members – develop a longer term service agreement 	SPC SC Commission
14. A data exchange agreement with SPC covering operational level data as well as aggregate data should be considered by the Commission.	<ul style="list-style-type: none"> • WCPFC's data exchange agreement with SPC 	SPC Commission
Options for future data custodianship services		
15. The Terms of Reference (Annex 1) set out a series of alternative options to be considered for the Commission's data services. The specific question from the Terms of Reference is as follows: <i>What would be the advantages and disadvantages of each of the following options for the provision of data custodianship services to the Commission?</i> (i) <i>Provision from within the Secretariat;</i> (ii) <i>Provision by a regional fisheries management organisation outside the Commission;</i> (iii) <i>Provision by an agency within the Government of a member or participating territory;</i> (iv) <i>Provision by a private agency.</i> (v) <i>Provision by SPC/OFP</i>	No issues	

³The OFP provides scientific services relating to oceanic (primarily tuna) fisheries management to its membership. These services include fishery monitoring and data management, ecosystem and biological research relevant to the fisheries, and stock assessment and evaluation of species- and ecosystem-based management options. These services are provided at both the national and regional levels.

16. The significant balance of opinion, both from respondents, and the review team, is that the most viable option, from the perspective of effectiveness and efficiency, is for SPC to continue as the Commission's service provider for data custodianship services. The advantages gained by utilising SPC's existing capacity significantly outweigh any disadvantages, although more needs to be done to engender confidence in data custodianship, such that barriers to data submission are removed.	<ul style="list-style-type: none"> Consult with SPC on possible means to address perceived concerns with respect to data custodianship in an attempt to remove some barriers to data submission. 	AHTG [Data] Commission Secretariat
17. The existing service provider arrangement should be formalised in a longer term service agreement (at least three years) that allows SPC to undertake longer term fiscal planning, thereby enabling more efficient allocation of resources. This agreement should include clear, enforceable requirements and responsibilities, such that there are no questions or uncertainties regarding the service to be provided, and the Commission's capability to monitor and ensure satisfactory performance.	<ul style="list-style-type: none"> Develop a three-year service agreement with SPC for review by SC 	Secretariat SC
18. At the same time, the Commission needs to take additional steps to improve the reporting of data in accordance with the existing rules and procedures, to support SPC in their efforts to compile the most comprehensive dataset possible to underpin stock assessments and other scientific analyses in support of decision making (see earlier recommendations).	<ul style="list-style-type: none"> Develop additional steps other than the issues in paragraph 9 to improve data reporting – no specific steps were recommended 	Secretariat SPC
19. The Commission derives significant benefits from having both its scientific data and science services handled by a single organisation with the requisite capacity to fulfil these requirements. If these services are to remain contracted out, a separation of the service provision would likely result in increased costs and a decrease in efficiency.	Support continued service from SPC – no issues	
20. A central data facility for storage and handling of the data on which the ISC assessments (i.e. those required by WCPFC) are based should be developed. Options should be considered by the Commission and SC in conjunction with the ISC. Whichever solution is found, the database must be accessible to the WCPFC, and be made available to the Scientific Committee for the purposes of reviewing ISC stock assessments as needed.	<ul style="list-style-type: none"> SPC will identify data gaps required for stock assessment of northern stocks WCPFC consult with ISC for the incorporation of ISC data into WCPFC data holdings 	Secretariat SPC ISC
Science functions		
21. The report describes two main RFMO models for research, assessment and data analysis: the Working Group Structure and the Science Secretariat Structure. Articles 12 and 13 of the Convention enable the WCPFC to operate both of these models, thereby making most effective use of existing capacity in the region, while at the same time setting up the more traditional RFMO type structures of the Scientific Committee and its subsidiary groups.	No issues	
Contracted Research <i>Contracting process</i>		
22. The Commission's main contractor for research is SPC-OFP. Several other contractors are also used. The Service Contract set up between SPC-OFP and WCPFC was transparent at the time of negotiation (2005). Its existence has been transparent since then, but it has not been let to tender because of the decision taken by the Commission that the most suitable organisation to undertake the work was SPC-OFP.	Contract with SPC – no issues	
23. The other scientific research contracted out by the WCPFC would seem to be attracting interest	Contract with non-SPC – no issues	

from only a few capable institutions. Only one project (and only 2% of the total contracted out research budget) was let to a truly competitive tender. One project had to be advertised twice because there was no response to the first advert. Only one project received more than one expression of interest (it received 2).		
24. The WCPFC should endorse the decision of SC4 (Report Attachment M) to formalize the method by which the work programme and budget of the Scientific Committee is agreed, including review of research proposals by a Research Sub-Committee (for example, Secretariat (coordinator), SWG Convenors, and Expert Advisors, as noted in Attachment M) or its equivalent made up of relevant SC officers. This should be augmented by formal feedback reporting to the Scientific Committee. We note that the decision of SC4 above was endorsed at WCPFC5.	<ul style="list-style-type: none"> Review Attachment M of SC4 Report and update the procedure at SC5 	Secretariat SC
25. To address the concern that very little interest has been generated by many of the EOIs, and much of the contract work has been taken by the WCPFC's institutional research organizations, wider advertisement of EOIs on the website (proposed by SC4) should be augmented by direct mailing to responsible officers in all CCMs, and elsewhere. The level of funding and the overall size of projects is a critical factor in attracting interest from consultants and other potential research providers.	<ul style="list-style-type: none"> Improve the level of advertisement, funding and scope of project for enhanced attraction 	Secretariat SC
Science quality		
26. The Commission should establish a programme of funded periodic external peer review of all contracted assessments; these should take place at suitable intervals, for instance once every 3 years. This process could include an element of reciprocity with other tuna RFMOs, particularly IATTC, however, we also recommend that expressions of interest are sought from leading stock assessment scientists worldwide. The peer review should include their participation in the stock assessment process as well as their review of the models and results. In order for such review to be undertaken within the current year of an assessment the actual assessment timetable for that year may need to be advanced by some months to allow the results to be available for discussion at the SC meeting.	<ul style="list-style-type: none"> Improve quality of science through <ul style="list-style-type: none"> ✓ Implementing periodic external peer review process on stock assessment, including reciprocal review with other tuna RFMOs ✓ Widening advertisement for EOIs ✓ Allow sufficient time for review and reporting of assessment 	Review panel SPC ISC IATTC SC
27. The Commission should consider widening participation at the stock assessment preparatory workshops (SAPWs) conducted by SPC-OFP (currently in February each year). This will require WCPFC to take ownership of the workshops and provide the funding required to run them. Further comments on this option are presented in later recommendations.	<ul style="list-style-type: none"> Promote wider participation at the SAPW: <ul style="list-style-type: none"> ✓ Ownership by WCPFC and funding support 	SPC SC Commission
28. CCMs should be encouraged to request copies of software and data to undertake duplicate assessments. This activity should be undertaken in the context of generating better understanding of the assessments and testing their sensitivity to different model assumptions. The results of alternative model runs should inform the discussion and review of the assessments by the SC. This should not be allowed to confuse the existing process of generating science and management advice for the Commission. Should this activity result in the SC agreeing there is additional uncertainty in the assessment outputs, the advice from the SC should be more precautionary.	<ul style="list-style-type: none"> Develop a standard procedure for CCM to undertake duplicate assessments 	SPC SA-SWG
Conflicts of Interest		

29. With such a small pool of contractors, many of whom are from Government departments, there is a potential for conflict of interest in two ways: (i) the national interest of contractors could act to bias the results of their work, and (ii) the recommendations and decisions of the Scientific Committee could be influenced by organisations seeking to obtain financial benefit from contracted work.	Two conflicts of interest – national interest and financial benefit	
30. The main recommendation of relevance to conflicts of interest is to maintain transparency with respect to all research inputs and outputs. The WCPFC web site provides access to a considerable collection of documentation arising from the work of its science provider and other contractors, which would tend to reveal any apparent biases in the analyses undertaken. Expanding participation in stock assessment meetings (see paragraphs 27 and 43) would help to alleviate concern, and the specific recommendation to conduct periodic external peer review of the assessments (paragraph 26) is also relevant here.	To resolve such conflicts, 1) Maintain transparency 2) Expand participation in SA meetings 3) Conduct periodic peer review	Secretariat SPC SC Commission
31. The Commission should also ensure that potential contractors, including SPC-OFP, are not part of the decision-making process of the SC when it is deciding project priorities and funding. One of the difficulties with this approach will be that so much of the science knowledge is invested in SPC-OFP that it may be difficult to adequately discuss science needs and priorities without consulting them. SPC-OFP is entitled, under the Convention, to participate in the SC discussions but has no formal voting powers. Although the Research Sub-Committee will need to call on their expertise, and that of other existing or potential contractors, the Secretariat should continue to monitor potential conflict of interest issues and put in place processes to avoid them, such as standard committee declarations of interests. Attachment M of the SC4 report may need to be reviewed and further refined, as needed, to ensure that the conflict of interest issue is adequately addressed.	Additional points to resolve such conflicts, 4) Develop a strategy (Standard Committee Declarations of Interests) to maximise the use of science knowledge of the SPC-OFP and other existing or potential contractors in deciding science needs and priorities 5) Elaborate <u>Attachment M</u> of the SC4 to ensure that the conflict of interest issue is adequately addressed	Secretariat Research Sub-Committee SC
Cost effectiveness		
32. The total contracted research budget for WCPFC in 2008 was \$650,000, \$325,000 of which was the SPC-OFP Science Service agreement. \$388,104 was contributed by SPC as a direct subsidy to the Science Service in 2008.	No issues	
33. Overall, the Commission is getting good value for money. The science budget is currently rather low compared to the value of the fishery (\$650,000 compared to some \$4bn fishery value; less than 0.02%). Even accounting for the individual Member costs of scientific contribution to the ISC and SC, this appears to be a very small proportion of the fishery value. Additional funding (suggested following our concluding recommendations below) would be a responsible investment and would improve the process by which high quality science is delivered to the Commission (for example with respect to the peer review of assessments).	<ul style="list-style-type: none"> Develop approaches to attain high quality science – e.g., peer review assessment 	Secretariat SPC SC Commission
Non-contracted research		
34. In addition to the work conducted under Commission contracts, non-contracted research that contributes to the Scientific Committee process is undertaken by CCMs and also by the ISC and its Members.	No issues	

<i>CCM research presented at the SC</i>		
35. There were about 50 working or information paper contributions to SC4 arising from non-contracted research, generated through a variety of mechanisms. Member authored papers comprised significant contributions from national research institutes in a number of CCMs, including Australia, Chinese Taipei, the EU, Japan, New Zealand, the People's Republic of China, the Republic of Korea and the United States. Additional contributions were made by NGOs (3 papers) and other organisations (ACAP, FFA, IATTC, 7 contributions).	No issues	
36. Time is particularly short during the SC meeting, and one has to question the benefit derived from the time allocated to reviewing the papers presented to it through the BI-SWG and ME-SWG. A more appropriate time and place for these papers to be considered would be during the preparation for stock assessments.	Time constraint at SC meeting.	
37. If a decision is taken to formalise the Stock Assessment Preparatory Workshop (SAPW), the most appropriate place for papers on biology and methods to be considered is at that meeting. The hypotheses and data that they contribute can then be fully analysed and integrated into the stock assessment process. This would relieve pressure on the SC meeting, but could have the unintended consequence of making the SAPW meeting unwieldy and less effective. Therefore, while we recommend the BI-SWG and ME-SWG cease to convene routinely as part of the SC meeting, we suggest the following alternatives for such an approach which should be discussed by the SC (see also section on institutional analysis): (i) dissolve the BI-SWG and ME-SWG and encourage papers on biology and methods to be presented to the preparatory stock assessment workshop (SAPW), or other stock assessment workshops; (ii) as per (i), but have biology papers submitted to the SAPW and methods papers submitted to the SA-SWG; this would allow the SC to consider developments in stock assessment methods each year; (iii) agree on only biennial meetings of the BI-SWG and ME-SWG, these meetings taking place either adjacent to the SC or adjacent to the SAPW; require that the reports of these SWG meetings are forwarded to the stock assessment workshops rather than to the SC; and consider re-creating the SWGs as Ad-hoc Working Groups.	<ul style="list-style-type: none"> Consider re-structuring of the SWG sessions, with a special deal with BI-SWG and ME-SWG 	SC
38. SPC should consider specific actions to train and mentor talented individuals from developing CCMs that would directly enhance their national participation in and contribution to the scientific process, including the preparation of scientific papers.	<ul style="list-style-type: none"> SPC should continue capacity building for SIDS for their full participation in the work of SC 	SPC SC

<i>International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC)</i>		
39. As previously noted, the ISC works on a different model to the SC, in that all the assessments are conducted in international working groups by Members' scientists rather than through a contract with a single research organisation. Working groups are organised by species, maintain species-specific datasets and conduct direct assessments of these species. The data used to undertake assessments are not held by WCPFC or SPC-OFP.	Structure and functions of ISC WGs	
40. The relationship between the WCPFC and the ISC is defined by the MOU. This allows for the provision of advice to the NC, WCPFC and the SC based on the results of ISC assessments. However, only the NC can directly request information and advice from the ISC. We recommend that the MOU be updated to include an understanding that the SC can request the ISC to undertake additional work. This is discussed further in the section dealing with institutional issues	<ul style="list-style-type: none"> Update MOU that SC can request ISC to undertake additional work 	Secretariat ISC SC NC Commission
41. As with our enquiries regarding the SPC-OFP assessments, none of our interviews suggested that there were specific problems with the current ISC assessments in terms of science quality. However, several (within both the NC and the SC) did emphasise that in order to be assured that the science was robust, additional review by the SC, external peer review, transparency and validation were required.	<ul style="list-style-type: none"> Ensuring the robustness of the ISC science requires <ul style="list-style-type: none"> i) additional review by the SC and external peer reviewers ii) transparency and iii) validation 	Secretariat ISC SC NC Commission
42. In accordance with Article 13 paragraph 4 of the Convention, the Commission should establish a programme of funded external peer review of all ISC assessments of relevance to the Commission's work (see Paragraph 26 for additional detail). The Commission will have to make funding available for this purpose, and since these reviews will be in regard of northern stocks, then all costs might be defrayed by the NC members.	<p>Issue i)</p> <ul style="list-style-type: none"> Implement funded external peer review of all ISC assessments on northern stocks 	Secretariat ISC SC NC Commission
43. Streamlining the process by which non-ISC members can attend the ISC working groups would help to build greater confidence in the research outputs among non-participants (paragraph 41). There needs to be an effort to ensure that experts from across the WCPFC membership are broadly invited. WCPFC should consider widening participation through funded attendance of SPC-OFP scientists and independent SC representatives at ISC stock assessment workshops. Again this would be subject to the availability of relevant experts to attend and sufficient funding.	<p>Issue ii)</p> <ul style="list-style-type: none"> Promote wider participation in ISC's assessment activities, require <ul style="list-style-type: none"> ✓ Availability of relevant experts ✓ Sufficient funding 	Secretariat ISC SC Commission
44. The SC and NC should request, or fund, validation work on key ISC assessments, and request the ISC to test alternative hypotheses and model implementations of key ISC assessments.	<p>Issue iii)</p> <ul style="list-style-type: none"> Funding for validation of key ISC assessment 	Secretariat ISC SC NC Commission
45. In order for external validation to be possible, and to improve the understanding of ISC analyses, copies of the data sets used by the ISC should be systematically made available to the Commission, and preferably incorporated in the Commission's data holdings.	<ul style="list-style-type: none"> Incorporation of ISC data in the WCPFC data holdings 	Secretariat ISC SC Commission

Institutional analysis <i>Resourcing of the WCPFC Secretariat</i>		
<p>46. The Secretariat needs to pro-actively support the new procedures developed under recommendations to improve data reporting and delivery of science to the SC and advice to the NC and Commission. While this has implications for staff activities, it is not anticipated that this will require additional human resources within the Secretariat at this time. Experience from other RFMOs, however, shows that the workload always increases over time as management procedures become more sophisticated and the demand for scientific advice increases commensurately. The situation should therefore be kept under close review by the Executive Director.</p>	<p>Possibility of enforcing human resources in science</p>	
The Scientific Committee <i>Relationship between the SC and ISC</i>		
<p>47. According to our interviews conducted during all three meetings, confidence in the assessments conducted by SPC-OFP and the ISC is impacted for the following reasons:</p> <ul style="list-style-type: none"> • in the case of SPC-OFP assessments, confidence is undermined by a perception held by some delegates of conflicts of interest and the apparent closed nature of the analyses, with few scientists attending the SAPW or taking part in the assessments themselves; • in the case of ISC assessments confidence is undermined for several reasons: most SC participants are not able to be present at the ISC stock assessment working groups, working papers presented to the working groups are not readily available⁴, the data used in assessments are not accessible outside of the working groups, and there is insufficient detail in the reports to review the assessments in detail at the SC meeting. 	<p>Source of impacting confidence?</p>	
<p>48. On the other hand there are features of both systems which are positive:</p> <ul style="list-style-type: none"> • there is considerable scientific and regional knowledge and expertise invested in both SPC-OFP and the ISC; it is logical for the Commission to use both of these existing institutional resources to obtain the best scientific evidence on which to base its management decisions; • the working group structure of the ISC is open to participation by scientists from all eligible Members and the science benefits from the inclusion of Pacific-wide expertise (e.g. Mexico, IATTC⁵); and • the efficient working structure of the SPC-OFP, which by limiting outside participation in assessments to individual specialists, allows a wide range of alternative hypotheses to be investigated. 	<p>Positive features for SPC-OFP and ISC</p>	

⁴ The papers are not posted on ISC website but can be obtained through written request to the authors.

⁵ IATTC has contributed to a number of the assessments done by the working groups of the ISC, such as those for northern bluefin tuna, northern albacore tuna, and some billfish assessments.

<p>49. The Commission needs to take action that reverses the apparent trend towards two completely separate, and non-cooperating streams of scientific advice. The SC should remain the primary source of scientific advice on all stocks, both for the Commission and the NC. The SC therefore needs the opportunity to effectively evaluate the science arising from all sources, including SPC-OFP, ISC and others.</p>	<ul style="list-style-type: none"> • Consider establishing a unilateral system that SC only provides scientific advice to NC and the Commission based on those from SPC-OFP, ISC, and other sources 	<p>SC NC Commission</p>
<p>Organisation of the SC Structural changes</p>		
<p>50. The proposal to restructure the SC work plan to hold a SAPW each year, funded by WCPFC, hosted by SPC-OFP, at which all Members would be invited should create more time for discussion at the SC and also build confidence, transparency and openness within the stock assessment process. The first day or so of the workshop would be set aside for the consideration of papers presenting new information and methods that might be introduced into the assessments that will be conducted that year, which previously would have been presented to the BI-SWG and ME-SWG. We suggested previously that these two SWGs could cease to exist as separate entities. They could be retained to meet at the start of the SAPW, but in our view the former is the simplest and probably the most efficient option. The SAPW would agree on the data inputs and model runs to be undertaken by the SPC-OFP and an appropriate timetable for the work. The assessments themselves should still be conducted by SPC-OFP alone, with occasional expert assistance, as specifically required.</p>	<ul style="list-style-type: none"> • SC consider the expansion of SAPW funded by WCPFC <ul style="list-style-type: none"> ✓ Incorporation of BI-SWG and ME-SWG into SAPW ✓ TOR of SAPW – agree on data inputs, model runs and timetable 	<p>SPC Secretariat SC Commission</p>
<p>51. This recommendation carries a risk of creating a more unwieldy meeting of the SAPW, and will require more funding for meeting attendance by CCMs and preparation and management by the WCPFC Secretariat and SPC-OFP. There needs to be consideration as to whether CCMs have the capacity to attend another formal meeting and absorb the increased costs. Opening the meeting to wider attendance may also risk increased political influence in setting the assessment agenda. We would strongly suggest that if this course is followed, the meeting remains a specialist stock assessment meeting and attendees be required to have scientific credentials and/or experience concomitant with this objective. Wherever possible, the SAPW should be attended by the SC Chair and international peer reviewers, in years when a peer review is taking place.</p>	<ul style="list-style-type: none"> • Identify risks and seek solution to address the risks when SAPW be expanded 	<p>SPC Secretariat SC Commission</p>
<p>52. A closer working relationship with IATTC and ISC should be developed. The two organisations should be routinely invited as observers to the SAPW, and specific ocean-wide stock assessment workshops should be organized between the SC, ISC and IATTC to study ocean-wide assessment issues. Where appropriate, approaches to the assessment of northern stocks should be included in the SAPW agenda.</p>	<ul style="list-style-type: none"> • Participation of ISC and IATTC in SAPW • Coordinate Ocean-wide assessment • Consider approaches to the assessment of northern stocks 	<p>ISC IATTC SPC SC</p>
<p>53. WCPFC should consider providing assistance for external experts to attend its meetings, including those from other organizations and those undertaking auditing or peer review activities recommended in earlier sections.</p>	<ul style="list-style-type: none"> • WCPFC assist participation of external experts in WCPFC meetings 	<p>SC Commission</p>
<p>54. Other workshops may be held on species not included in the main SPC-OFP work programme, soliciting their own input papers on biology and methods. If the Biology and Methods SWGs are</p>	<ul style="list-style-type: none"> • Consider other workshops on species not included in the main SPC-OFP work 	<p>SPC Secretariat</p>

retained, the logistics of the relationship between these groups and the other workshops would have to be explored further.	programme	SC Commission
55. The SA-SWG should explicitly consider the report of the SAPW, the report of subsequent assessments performed by SPC-OFP, other assessments conducted independently by CCMs or other workshops, the assessments undertaken by ISC stock assessment working groups, their reports and that of the ISC, and provide advice to the SC on these assessments. The SA SWG will require significantly more time in its meeting to consider these issues in addition to the assessments provided by the SPC-OFP.	<ul style="list-style-type: none"> Allocate significantly more time to SA-SWG to thoroughly review all assessment-related outputs from SPC-OFP, ISC and CCMs 	
56. We propose the following restructuring of the SWGs:		
57. Only the EB-SWG and the SA-SWG should meet regularly. <ul style="list-style-type: none"> The FT-SWG, ST-SWG and other <i>ad hoc</i> groups (such as the PTTTP Steering Committee⁶) should meet only when they need to and for shorter periods of time than the SA- and EB-SWGs. Normally these groups should consider biennial meetings, but there will be times (such as when there are ongoing projects that need to be monitored, and at present for the ST-SWG as Allocate significantly more time to SA-SWG to thoroughly review all assessment-related outputs from SPC-OFP, ISC and CCMs WCPFC data gaps are being analysed) that they need to meet annually. However, working groups that meet annually often have a tendency to continually justify their continuation on an annual basis, and the SC needs to be aware of this. The BI-SWG and ME-SWG should be either dissolved (with papers being considered either by the SAPW or the SA-SWG as appropriate) or retained as groups that meet occasionally as SWGs or <i>ad-hoc</i> Working Groups. 	<ul style="list-style-type: none"> Consider recommendation on having an annual meeting for EB-SWG and SA-SWG only and biennial or occasional meeting for FT-SWG and ST-SWG. BI-SWG and ME-SWG are absorbed into SAPW (or SA-SWG) or have occasional meetings. 	SC
58. We also suggest that the SWGs are held in a less formal atmosphere than is currently the case (e.g. without national name plates). It is likely that this will only be possible if the attendance is significantly less than the SC plenary. Given the complex nature of the deliberations we recommend that CCMs send only those delegates with specialist scientific expertise, and those that are part of capacity building activities to this meeting. Any CCMs not sending delegates to the SWGs will retain the opportunity to contribute to the scientific debate through participation at the SC plenary meeting. This is similar to practice in other RFMOs and will help to reduce the overall time that many delegates need to spend at the SC.	<ul style="list-style-type: none"> Consider efficient SWG meeting procedure by restructuring participation <ul style="list-style-type: none"> ✓ No national representation ✓ Involvement of experts 	SC
59. Current levels of Secretariat support for the ISC, and the provision of a NC fund for ISC research on behalf of the NC, should be encouraged and improved.	<ul style="list-style-type: none"> Consider improvement of supporting ISC and its research 	Secretariat ISC SC NC Commission
60. An <i>ad-hoc</i> group should be established that could convene during the SC meeting with a view to identifying for the Commission the socio-economic issues that are likely to be of importance, how	<ul style="list-style-type: none"> Consider establishment of an ad-hoc group that identifies 	SC Commission

⁶ We note that funding commitments for activities such as the PTTTP and the IPDCP may require an annual review mechanism, and it is logical for this to take place during the SC meeting.

<p>they might be addressed, the types of information and analyses required to generate appropriate management advice, and perhaps most importantly, the availability of expertise within the CCMs and/or potential service providers to undertake the necessary work.</p>	<ul style="list-style-type: none"> ✓ socio-economic issues and how they might be addressed ✓ types of information and analyses required to generate appropriate management advice ✓ availability of expertise within the CCMs and/or potential service providers to undertake the necessary work 	
Confidence-building		
<p>61. To assist with building confidence in the assessments presented to the SC, the recommendations in previous sections on exchanges between the SC, SPC-OFP and ISC and ISC WGs, should be implemented. Furthermore, the chairs or principal investigators of the ISC WGs should attend meetings of the SA SWG so as to fully explain in detail the data, models, parameter sets, results and assessment diagnostics for ISC assessments. ISC working papers of relevance to the work of the Commission should be made available in the same way as those submitted directly to the SC and its working groups.</p>	<ul style="list-style-type: none"> • Tactics to build confidence between WCPFC and ISC, through the modified MOU, include <ul style="list-style-type: none"> ✓ ISC officers' attendance at SC/SWG meetings to explain their assessment, and funding support for the additional attendance ✓ On-time submission of ISC document to SC 	<p>Secretariat ISC SC Commission</p>
<p>62. Implementation of this recommendation will depend largely on the availability of personnel and the willingness of their CCM to support the additional attendance and funding required.</p>	<p>Covered under 61</p>	
<p>63. The timetabling of intersessional work should be eased by providing a longer period between the meetings of the ISC and the SC (ideally 3-4 weeks), to allow for consolidation of the ISC report and preparation for the SC, particularly the SA-SWG, meeting.</p>	<p>Covered under 61</p>	
<p>64. The SC should consider the research requirements for all stocks under the purview of the Commission, developing its own Research Plan as at present and extending this to include explicit consideration of the workplan developed by the ISC and its working groups. This will promote the harmonization of the Commission's science provision, which will become increasingly important as requirements for the development of Ecosystem Based Management increase. However, it would be most beneficial if this harmonization was extended further through the MOU with ISC (see below).</p>	<ul style="list-style-type: none"> • SC consider research requirements for all stocks – research plan includes ISC's work plan 	<p>Secretariat ISC SC Commission</p>
Process		
<p>65. Where appropriate, the SC should explicitly endorse the assessments of the ISC, in the same way as it currently endorses the SPC-OFP advice. The SC needs to develop explicit advice to the Commission and the NC based on this advice. This can only be done if the SA-SWG and the SC have more time to understand and consider the ISC assessments and advice, and this in turn will require there to be more time between the meetings of the ISC and the SC.</p>	<ul style="list-style-type: none"> • Endorsing ISC's assessment require sufficient time for SC's review 	<p>ISC SC</p>
<p>66. The roles of the SC and the ISC in advising the NC need to be clarified. Our proposal is that the</p>	<ul style="list-style-type: none"> • SC should take the lead in providing 	<p>CCM</p>

<p>SC, as the statutory WCPFC body, should take the lead in endorsing the scientific work done by the Commission's science providers and SWGs, and providing advice to the NC and Commission, even if this advice is a simple endorsement of the advice of other bodies such as the ISC. In order for this to happen the SC chair should ideally attend the NC meetings and introduce the SC report, which should include statements of endorsement of the assessments and advice to the NC. However, to ensure a high level of technical explanation of the science, and to fulfil the mandate of the MOU, the ISC should also continue to attend the NC to present its report, although care will have to be taken that any points of contention between the ISC and the SC are discussed beforehand by the chairs of the SC and ISC, and reported to the NC in as clear and non-confrontational way as possible.</p>	<p>scientific advice to NC and the Commission through revised MOU</p> <ul style="list-style-type: none"> ✓ SC chair introduces SC report to NC ✓ ISC chair provides technical explanation as well as introduce ISC report to NC in a non-confrontation way between SC and ISC 	<p>ISC SC NC Commission</p>
<p>67. The MOU with the ISC should be amended to allow for ISC work to be requested by the SC as well as the NC. This will create a formal relationship directly between the SC and the ISC for the first time, and suggests the need for a clearer charter for the ISC, including terms of reference, membership and rules of procedure. Related to this, the Commission will need to determine the extent to which the cost of ISC activities undertaken on behalf of the SC would be funded by the broader WCPFC membership.</p>	<ul style="list-style-type: none"> • Amend MOU to allow for ISC work to be requested by the SC as well as the NC ✓ Funding the cost of ISC activities 	<p>Secretariat ISC SC Commission</p>
<p>68. Should the SC not come to an agreement on stock assessment advice for northern stocks the NC could act on the advice of the ISC directly. However, this course of action should only be taken <i>in extremis</i> and with the overriding application of the precautionary approach. The ISC would of course also reserve the right to conduct its own business as it sees fit, including developing its own work programme. However, enabling the SC to request specific advice from the ISC would mean that the work programme of the ISC in respect of its work for the SC and NC became harmonized with the work programme of the SC itself.</p>		
<p>69. SPC-OFP should be encouraged to continue its series of Tuna Stock Assessment Training Workshops, funded externally to the WCPFC, as a means of engaging PIC and Participating Territories including other developing States such as Philippines and Indonesia more fully in the assessment process. It is possible that once the training starts to deliver increased capacity, attendance at the SAPW will increase, and the need for the training workshops may be reduced to every two years rather than every year.</p>	<ul style="list-style-type: none"> • Continuity of SPC-OFP's SA training workshop 	<p>SPC Commission</p>
<p>Workplan</p>		
<p>70. Many of the changes suggested above will require considerable discussion prior to being endorsed by the Commission, the SC, the NC and the ISC. We propose a work plan to develop the proposals in detail which will allow their implementation in December 2009. We believe that early action to change the method of working of the SC and ISC as suggested in this review will be required to reverse the trend towards a two-track science system within the WCPFC.</p>	<ul style="list-style-type: none"> • Develop a work plan for the implementation of these recommendations 	<p>Secretariat SC Commission</p>
<p>71. We estimate the total additional annual cost of these recommendations to be approximately US\$100,000.</p>		