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REVIEW OF THE PERFORMANCE OF THE WCPFC

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WCPFC Performance Review



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List of Acronyms and Abbreviations

1982 Convention	1982 United Nations Convention on the Law of the Sea
CBD	1992 UN Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Atlantic Marine Living Resources
CCM	Members, Cooperating Non-Members and Participating Territories
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CMM	Conservation and Management Measure
COFI	FAO Committee on Fisheries
CWP	FAO Coordinating Working Party on Fisheries Statistics
EAF	Ecosystem Approach to Fisheries
EEZ	Exclusive Economic Zone
ERA	Ecological Risk Assessment
FAO	Food and Agriculture Organization of the United Nations
FAO IPOA- IUU	2001 FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
FAO PSM	2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
FFA	South Pacific Forum and the Pacific Islands Forum Fisheries Agency
GFCM	General Fisheries Commission for the Mediterranean
ICCAT	International Commission for the Conservation of Atlantic Tunas
IUU fishing	Illegal, Unreported and Unregulated fishing
MCS	Monitoring, Control and Surveillance
MHLC	Multilateral High Level Conference
MoU	Memorandum of Understanding
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
NAFO	Northwest Atlantic Fisheries Organization
NCP	Non-Contracting Party
NEAFC	North East Atlantic Fisheries Commission
NGOs	Non-Governmental Organizations

PA	Precautionary Approach
PAF	Precautionary Approach Framework
PRP	WCPFC Performance Review Panel
PSCM	Port State Control Measures
PSM	Port State Measures
RFMOs	Regional Fisheries Management Organizations
RFMO/As	Regional Fisheries Management Organizations/Arrangements
RSN	Regional Fishery Body Secretariats Network
SEAFO	South East Atlantic Fisheries Organisation
SSB	Spawning-Stock Biomass
TAC	Total Allowable Catch
UN	United Nations
UN-DOALOS	United Nations - Division for Oceans Affairs and the Law of the Sea
UNFSA	1995 United Nations Fish Stocks Agreement
UNGA	United Nations General Assembly
VMS	Vessel Monitoring System
VME	Vulnerable Marine Ecosystem
WCPFC	Western Central Pacific Fisheries Commission
WTO	World Trade Organization
WWF	World Wildlife Fund

Executive Summary

Background

The Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western Central Pacific Ocean (the ‘Convention’) is a multilateral agreement with the primary objective of providing for the long-term conservation and sustainable use of highly migratory fish stocks in the Western and Central Pacific Ocean. These stocks include tunas, billfish and other species listed in Annex I of the 1982 UN Convention, but not sauries (Art. 3.3 of the Convention).

The Commission (Western and Central Pacific Fisheries Commission- ‘WCPFC’) established under the Convention comprises 24 members: Australia, Canada, China, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Japan, Kiribati, Republic of Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Tonga, Tuvalu, United States of America, and Vanuatu. The fishing entity of Chinese Taipei, which has agreed to be bound by the Convention, also participates in the work of the Commission. This participation includes decision-making, subject to the provisions of Article 9.2 and Annex I of the Convention.

Seven Territories (American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau, and Wallis and Futuna) and nine Cooperating non-Members (Belize, Ecuador, El Salvador, Indonesia, Mexico, Panama, Senegal, Thailand and Vietnam) also participate in the Commission’s work. Although the territories and Cooperating non-Members do not vote, they have always participated actively in the Commission’s deliberations.

During its fifth meeting (WCPFC 5) in 2008, the WCPFC agreed to undertake a review of the organization’s a performance Review in 2010. However, due to budget constraints, this review was postponed until 2011. The criteria upon which the Performance Review was based were largely recommended by the first 2007 meeting of Tuna RFMOs in Kobe. However, the Kobe criteria were adapted to reflect the WCPFC mandate and membership. The Performance Review Panel (the ‘Panel’) comprised four external experts (Dr. Fábio Hazin, Dr. Denzil Miller, Mr. Ichiro Nomura and Dr. Judith Swann), and three internal members- from the European Union (Mr. John Spencer), Nauru (Hon. Min. Rolland Kun), and the Philippines (Mr. Malcolm Sarmiento). The panel composition reflected the Commission decision that the review team should include independent experts and Commission members, as well as SIDS representatives.

Performance Review process

The performance review was based on interviews and desk study of available WCPFC documents, as well as input from WCPFC CCMs requested through the WCPFC Secretariat. Unfortunately, only one member replied to the request, which could be interpreted as reflecting a lack of commitment to, and/or interest in, the Performance Review process by CCMs.

The Panel urges the Commission to provide a web-based synopsis of the WCPFC Performance Review Report's recommendations and suggestions to track progress in addressing the Report's outcomes. It noted that CCAMLR (http://www.ccamlr.org/pu/E/perf_rev/eng/perfrev_toc.htm) has provided such a synopsis and this has been useful in ensuring that wide consideration is given to sustaining that organisation's reputation at the leading edge of international best practice.

WCPFC structure

Under Article 11 of the Convention, the Commission created three subsidiary bodies: the Scientific Committee (SC), the Technical and Compliance Committee (TCC), and the Northern Committee (NC). These bodies meet once a year, followed by a full session of the Commission. The work of the Commission is assisted by a Secretariat and a Standing Finance and Administration Committee (FAC). Since its foundation, much of the scientific work required by WCPFC has been carried out by the SPC (the Secretariat of the Pacific Community) which is contracted to provide independent scientific advice to be considered by SC members.

In the case of the northern stocks, scientific advice has been usually provided by the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC). Presently, the WCPFC interacts, both informally and formally, with several international organizations active in the region. Formal relations are currently in place under agreements on cooperation, coordination and consultation with SPC, FFA, CCSBT, IATTC, IOTC, ISC, SPREP, ACAP, and NPAFC.

The Convention and other international fisheries instruments, arrangements and initiatives

The Convention was negotiated over four years within the framework of the Multilateral High Level Conference on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific (MHLC). Upon completion of the negotiation process, the Convention was opened for signature in Honolulu on 5 September 2000. The Government of

New Zealand serves as the Depositary for the Convention. The Convention seeks to promote cooperation between coastal States and fishing States “with a view to ensuring conservation and promoting the objective of optimum utilization of highly migratory fish stocks throughout their range”.

The Convention is in general conformity with the 1982 United Nations Convention on the Law of the Sea (1982 Convention), the 1995 United Nations Fish Stocks Agreement (UNFSA) and the best practices of other RFMOs. It is also consistent with the 1995 FAO Code of Conduct for Responsible Fisheries, in terms of providing for a responsible international fisheries regime in the WCPO, and in particular for the application of the Precautionary Approach to managing the fisheries concerned. The Convention, also addresses International Plan of Action (IPOA) requirements. The Panel notes, or recommends, that:

- **IPOA requirements should be addressed in a more consistent manner and, to the extent possible, with consideration being given to their practical implementation;**
- **Although the Convention gives ample scope for development and implementation of the Ecosystem Approach to Fisheries (EAF), the institutional mechanisms established to facilitate implementation should be reviewed. In particular, it is recommended that the terms of reference and functions of the Ecosystem and Bycatch Specialist Working Group (EBSWG) be evaluated to ensure implementation of the 2003 FAO Technical Guidelines on the Ecosystem Approach to Fisheries and the 2010 FAO International Guidelines on Bycatch Management and Reduction of Discards;**
- **The WCPFC should develop a CMM on port State measures to provide for the fullest possible implementation of the FAO Port State Measures Agreement (PSMA), as well as for amendments or other clarifications (e.g. through declarations) to address and overcome limitations in the Convention that do not reflect current international law and practice. These clarifications would include requirement that vessels be voluntarily in Port before active measures are taken to implement management measures;**
- **Commission’s legal responsibilities, and those of its members should be clarified to note their respective responsibilities (e.g. applying principles and measures for conservation and management established in Article 5 of UNFSA, and application the precautionary approach). In providing such clarification, due account should be taken of international law and the practices of other RFMOs. Where gaps are identified, a mechanism for implementing the respective roles and responsibilities of the Commission and its members should be outlined, including through interpretation of the Convention in the form of resolutions, declarations or guidelines;**
- **The Convention refers to cooperating non-parties (CNPs) and provides that they “shall enjoy benefits from participation in the fishery commensurate with their commitment to comply with, and their record of compliance with, conservation and management measures in respect of the relevant stocks”. However, neither the Commission nor its members are specifically empowered to decide on such benefits for non-parties, and the requirement for potential benefits only appears in conjunction with members’ duties. Therefore, it is recommended that members review the functions and legal obligations of the Commission and of individual members with respect to non-parties in the**

Convention under Article 32. Such review should outline the responsibility attached to allocating benefits to non-members contingent on their participation in the fishery and rules developed in relation to the status of, and benefits for, cooperating non-members. In terms of applying the provisions of Article 32.4 and relevant CMMs, common standards should be applied to assess the sufficiency of the commitment to comply with CMMs, and/or the record of compliance. This should aim at ensuring consistency in allocating benefits attached to fishery participation by CNPs;

- **A process for inviting non-parties to accede to the Convention should be established. This process should be mindful of the requirements in Article 35 of the Convention that Contracting Parties may, by consensus, invite other States and regional economic integration organizations, whose nationals and fishing vessels wish to conduct fishing for highly migratory fish stocks in the Convention Area, to accede to the Convention;**
- **From a legal perspective, “compatibility of measures” is probably the most challenging issue faced by the Commission. The ambiguity in the Convention concerning the Area of Application has given rise to different interpretations regarding the inclusion, or not, of territorial and archipelagic waters, particularly in relation to the compatibility requirements of Article 8. However, the WCPFC has to develop cooperative management throughout the Convention Area, including the rights to tuna resources. Conflicts over interpretation of compatible management must thus be resolved to ensure the WCPFC’s ability to effectively manage and conserve the stocks across their full range(s). It is, therefore, recommended that members cooperate through an interpretive declaration to resolve different legal interpretations of the Convention in relation to the Convention Area, as well as in respect of the duty to establish compatible and effective conservation and management measures across the range of the stocks. In this regard, due consideration should be given to the need for assistance to developing coastal States, in particular Small Island Developing States, most notably in application of the provisions of Articles 5, 6 and 7, within areas under national jurisdiction;**
- **Another unsettled legal issue is the lack of criteria for allocating fishing quotas, which is directly linked to the attribution of catches. It is recommended that issues relating to catch allocation be reviewed and, as appropriate, prioritized. The review should address the legal aspects concerning the authority of the Commission and the criteria, or other requirements, for allocation. It is also recommended that the legal elements of catch attribution be reviewed and further developed, based on international instruments, the WCPFC Convention and national law. In particular, it is stressed that a process be established to develop criteria to determine what types of charter arrangements can be covered under particular CMMs. The first step to this aim could be a study of different arrangements for “chartering” applied by WCPFC members;**
- **Legal requirements for inclusion of vessels on the Record of Fishing Vessels and the IUU Vessel List should be reviewed and amended with the aim of securing maximum legal effectiveness, consistency and fairness;**
- **With respect to WCPFC subsidiary bodies, extensive terms of reference exist for the Scientific Committee and the Technical and Compliance Committee, while the authority of the NC is less well defined. Therefore, it is recommended that terms of reference be developed for the NC, which, *inter alia*, align the scope of responsibilities for the NC and the Commission in respect of applicable stocks and species, as well as promoting consistency of the former’s management approaches with those of the Commission; and**

- **The terms of reference for the Special Requirement Fund, established pursuant to Article 30.3 of the Convention and Financial Regulation 7.1, should be clarified to ensure that the Fund is able to address priorities identified by the Commission and possibly expanded in its scope.**

Rules of procedure, decision making and dispute settlement

For the Rules of Procedure, the Panel notes, and/or recommends that:

- **The Rules of Procedure should be included in the printed version of the WCPFC Basic Texts. They should also be amended to:**
 - ✓ **require the Commission’s meeting agenda to include the “Report of the Finance and Administration Committee”;**
 - ✓ **limit the terms of office for the Chairman and Vice-Chairman to one re-election only;**
 - ✓ **confirm that elected office bearers should assume office at the end of the session at which they are elected, as outlined in Rule 8, which should thus supersede Rule 22(4);**
 - ✓ **clarify procedures and considerations relating to the taking of intersessional decisions;**
 - ✓ **explore the possibility for voting by electronic means; and**
 - ✓ **change the term ‘contributor’ in Rule 34 to ‘member’.**
- **With regards to participation in WCPFC meetings, where there are objections to granting observer status to NGOs, the reasons for the objection should be provided to the applicant organization. The participation of academic, or research, institutions, as well as individual experts whose work is relevant to the Commission, are not specifically addressed by the provisions of Rule 36. This should be rectified, since allowing such participation would enhance the expertise, information and external resources available to support the Commission’s work;**
- **The WCPFC is encouraged to ensure that its available list of official contacts is up-to-date and continues to be used in providing the best possible flow of information between the Secretariat, the Commission and CCMs , and**
- **Although never used, the dispute resolution mechanism outlined in Article 31 appears adequate as it invokes Part VIII of UNFSA, *mutatis mutandis*.**

Conservation and management

Southern albacore

The Panel notes that the stock of the South Pacific albacore has been assessed as presently not overfished, or suffering overfishing. The present measure (CMM 20010-05) limits the level of fishing capacity, in terms of the number of vessels allowed to actively fish for southern albacore. This measure seems adequate and commensurate with the status of the stock. However, any catch or effort increases are likely to result in declining catch rates,

especially for longline catches of adult albacore. This will not only affect vessel profitability, but will also mandate management of vessels in strict conformity with CMM 2010-05. Besides, there is probably a need to focus more on albacore longline fisheries north of 25°S, where considerable biomass depletion appears to be occurring with obvious implications for management.

Bigeye

The Panel notes that the stock is presently suffering overfishing and might already be in an overfished state. This is a matter of great concern. Therefore, the Commission should consider adopting measures with provisions additional to those of the current CMM. These should aim to secure further reductions in bigeye fishing mortality, to ensure returning the mortality rate to F_{MSY} . The Commission is also encouraged to consider using a spatial management approach for measures aimed at ensuring sustainable bigeye fishing mortality levels, exploitation rates and depletion from various regions within the WCPFC Regulatory Area. Furthermore, reduction of juvenile catch should be a priority, particularly since bigeye MSY levels could rise if fishing mortality of small fish is reduced. An added concern in this regard is that the harvesting of juvenile fish has led to a greater than 50% reduction in MSY from pre-1970 levels. While a reduction in the catch of small bigeye will allow more sustainable overall yields, recent overfishing will lead to further potential yield losses in the future. There is some indication that 100% observer coverage of the bigeye Purse Seine fleet will allow for fishery discards to be better assessed in the future. The SC and Commission are therefore encouraged to give this notion serious operational consideration.

- **All Members, Cooperating Non-Members and Participating Territories (CCMs) are encouraged to provide data in strict accordance with the WCPFC data rules for scientific data.**

Skipjack

Although the skipjack stock seems to be healthy, the Panel notes that concerns have been expressed about high catches in the equatorial region. These catches could lead to a reduction in the species' availability at high latitudes. However, it should be noted that CMM 2008-01, although directed at bigeye and yellowfin tuna, imposes limits on total purse seine fishing effort. This is likely to impart indirect and positive effects on the skipjack stock as a whole. Considering the multispecies nature of the purse seine fishery, the revision of CMM 2008-1 (currently scheduled for WCPFC 8) is much welcomed, with the expectation that the skipjack

stock yield may also be addressed more directly. However, in reviewing CMM 2008-01, serious consideration should be given to ensure that consequent displacement of fishing effort from one area or for one species will not result in undesirable impacts on another area and/or species. Every effort should also be made to clarify and simplify the CMM's various requirements to ensure compatibility of measures for the EEZs and the High Seas, particularly for bigeye tuna fishing mortality.

Yellowfin

Despite the relatively good condition of the yellowfin stock, the Panel encourages the Commission to give serious consideration to the SC's advice that yellowfin fishing mortality in the western equatorial region should not increase; and to consider ways to reduce yellowfin juvenile fishing mortality. Besides, noting the highly positive results of the external review of the yellowfin tuna assessment by the Center for Independent Experts, the Panel is of the view that such external reviews should be undertaken subject to terms of reference agreed by the Scientific Committee. In this respect, it should be noted that any independent review that does not access all available and relevant information, and/or operates under its own terms of reference, could seriously undermine the WCPF SC's provenance.

- **The Commission is encouraged to reinforce the standing of the SC as the source of the Commission's scientific advice and to ensure that this advice is not challenged by inappropriate, unclear or independently-driven terms of reference that have not been agreed by the SC itself.**

South Pacific swordfish

The Panel notes that although the south Pacific swordfish stock has been assessed as not overfished or suffering from overfishing. When this assessment was undertaken in 2008, the condition of the south-central Pacific stock could not be evaluated. As the last assessment was done about 4 years ago, it should be urgently updated. In this regard, the on-going shortage of data on which to base a comprehensive assessment of SPO Swordfish is a matter of concern. The Panel also notes, with concern, that CMM 2009-03 does not impose an actual limit on the number of vessels actively fishing for swordfish south of 20°S. This measure requires CCMs to exercise restraint through limiting the number of their vessels fishing for the species and the amount of swordfish caught by them.

- **The WCPFC is encouraged to urge relevant members and the SPC to devote all efforts to improving the WCPFC SPO swordfish data holdings; and**

- **With a continuing lack of an updated assessment, in accordance with paragraph 9 of CMM 2009-03, the interim measure shall continue to be applied so as to disallow any increase in the fishing mortality of SPO swordfish.**

Southwest Pacific striped marlin

The Panel notes that the only available assessment for Southwest Pacific striped marlin is now five years old. A new assessment, and utilization of any new information on the stock, are therefore strongly encouraged and should be undertaken as a matter of urgency, particularly considering that the results of the last assessment indicated that the levels of fishing mortality were approximating, or had already exceeded, F_{MSY} . The current spawning stock and biomass levels were also assessed to be close or already below the levels compatible with MSY. Given that the species is taken almost exclusively as bycatch, the measure in place for this stock (CMM 2006-04) is likely to be ineffective, as it does not address the actual catch taken and only limits the number of fishing vessels targeting striped marlin in the Convention Area south of 15°S.

- **The Panel urges the Commission to mandate as new stock assessment of Southwest Pacific striped marlin as matter of priority. This new assessment should be used as a basis for adopting and implementing clear measures to limit the species' future fishing mortality.**

North Pacific striped marlin

The Panel notes that concerns over the continued lack of an assessment for the North Pacific striped marlin stock appear justified. The Panel is also concerned by the fact that information on the assessments undertaken by the ISC is not readily available or accessible. The ISC, SPC and SC should be strongly encouraged to ensure that an assessment of North Pacific striped marlin is collectively undertaken in 2012, ideally in conjunction with that recommended for the Southwest Pacific striped marlin. The Panel notes that CMM 2010-01 is a positive step to reduce the species' fishing mortality. However, the stipulation of a proportionate catch reduction in paragraphs 4 and 5 of that measure makes it difficult to figure out the species' actual catch limit.

- **The Panel recommends that information on the North Pacific striped marlin assessments undertaken by the ISC should be made more readily available and accessible in the interests of improving transparency of such assessments;**
- **Ideally, all assessments undertaken by the ISC should be peer reviewed and the results of these reviews made readily available for scrutiny by both the SPC and WCPFC SC;**

- **To achieve, and expedite an assessment of North Pacific striped marlin in 2012, the Commission's attention is drawn to a need to clarify the ISC's standing in respect of this species, as well as in relation to relevant provisions of the Convention and WCPFC Rules of Procedure in terms of providing information and interacting with the WCPFC SC; and**
- **CMM 2010-01, including eventual catch limits, should be revised based on results from the new assessment of South Pacific striped marlin to ensure that fishing mortality for the species is compatible with Convention objectives.**

North Pacific albacore

The Panels considers that the present measure (CMM 2005-03) for North Pacific albacore seems adequate. This measure limits fishing effort to the 2005 level, and despite being about 7 years old appears commensurate with the stock's as it is presently not overfished nor suffering overfishing.

- **The Panel welcomes the pending independent review of the current ISC North Pacific albacore CMM, to ensure that fishing mortality is actually restrained in any future formulation of the measure, particularly in light of past data shortcomings.**

Pacific bluefin tuna

The Panel notes that the present status of the Pacific bluefin tuna stock is not clear from available documents, particularly with respect to specific biological Reference Points, including current fishing mortality in relation to F_{MSY} or $F_{0.1}$, for instance. This limitation makes it very difficult for the Panel to assess the actual status of the stock and the adequacy of current CMMs.

- **The WCPFC is encouraged to update its Pacific bluefin tuna assessments, to reduce the species' fishing mortality to 2002/2004 levels and to provide for monitoring of fishing mortality for age 0 to 3 fish; and**
- **The Panel also urges the Commission to take account of the results of the new stock assessment and to develop biological reference points and clear harvest rules for this species as a matter of priority.**

North Pacific swordfish

In assessing the effectiveness of CMMs for North Pacific swordfish, the Panel notes two considerations to be pursued. The first relates to compliance with the measures. In this regard, the Panel commends the Commission for the Compliance Monitoring Scheme, outlined in CMM 2010-03. The second consideration requires assessing the effectiveness of a specific CMM. This necessitates some agreed standards against which 'effectiveness' can be assessed.

- **Although the North Pacific swordfish stock was assessed as not overfished nor suffering from overfishing, in 2009, the Panel encourages the Commission to consider the advice by SC 9 on the scheduled NC assessment of North Pacific Swordfish in 2013; and**
- **The Panel suggests that the Commission and the SC develop standards for assessing the effectiveness of CMMs, along lines similar to those addressed with respect to monitoring compliance, in CMM 2010-03.**

Fishing capacity management

The WCPFC has not adopted any measure specifically dealing with fishing capacity, although several CMM do establish effort limits, including limits on the number of vessels targeting certain species. WCPFC members have had numerous workshops to examine and discuss capacity limits options.

- **The Commission is encouraged to continue its work and dialogue concerning fishing capacity management, including strategies to reduce overcapacity.**

The Precautionary Approach and Limit Reference Points

Compared to other tuna RFMOs, WCPFC is among the leaders in advancing development of a formalized PAF. Nonetheless, the Panel sees the Commission's efforts as being a 'work in progress'. The development, and implementation, of future work on stock reference points and Management Strategy Evaluation (MSE) processes should be undertaken with due recognition of the priorities attached to, and the resources available for, other precautionary approach elements, essential for its practical implementation in a management context. The WCPFC is encouraged, for instance, to adopt a working definition for LRPs based on the principles outlined by SC7, including clear Harvest Control Rules. In this regard, the Commission and SC are to be commended on progress made in developing limit reference points, particularly for bigeye, skipjack and yellowfin. The Panel also welcomes the holding of a Management Objectives Workshop in early 2012 which will undoubtedly assist the process of developing limit reference points. It is noted that the attendance of (an) independent international expert(s) in the Workshop will serve to provide guidance on relevant issues needed to identifying management objectives. The Commission should also review the current situation regarding ISC's development of reference points, including for North Pacific albacore.

Finally, in the above terms, the Panel notes that application of a WCPFC PAF has not yet appeared to take into account formal consideration of potential ecosystem effects in the taking of management decisions- for example in the application of bycatch trigger levels to limit fishing when bycatch thresholds are exceeded.

Another key aspect currently being overlooked in the WCPFC's development of precautionary and reference point based management approaches is the need for rules to be in place for developing new and exploratory fisheries, as well as for re-opening previously closed fisheries. These issues should be further explored in the context of an Ecosystem Approach to Fisheries, as discussed below.

- **The Commission is encouraged to continue its work on developing a 'precautionary approach' to the fisheries it manages. Most notable this work is aimed at: (a) a consultative process to develop formal management strategies for a small number of representative case studies for the entire range of WCPFC fisheries; and (b) a technical process to evaluate the robustness of current and alternative assessment, and/or reference, points so as to determine specific technical requirements and costs associated with undertaking a Management Strategy Evaluation (MSE) process for specific fisheries; and**
- **Other key issues to be addressed include moving towards a more formal implementation of the precautionary approach, most notably through development of a reliable fishery data collection program and a research program to address priority information gaps. In this context, the strategic research plan being developed by the SC is greatly welcomed.**

The Ecosystem Approach to Fisheries

The Panel encourages the WCPFC to expand data collection for potential fisheries and ecosystem interactions, to provide priority information on such interactions, to monitor interaction extent, mitigation effects and interaction effects. The WCPFC is further encouraged to further consider other effects likely to arise from fishing operations on the WCPO ecosystem. Such effects include lost, or abandoned, fishing gear and potential marine ecosystems risks. At-sea monitoring may be necessary before such risks are identified.

The question of general biodiversity protection does not appear to have been addressed as yet and the WCPF is encouraged to consider ways (e.g. using spatial protection) how this might be achieved. A number of RFMOs have instituted Scientific Observer Programs to monitor, and gather information on, fisheries-ecosystem interactions/effects. Within the bounds of what may be practicable, the WCPFC is encouraged to consider how such programs may assist its ecosystem work in terms of promoting an Ecosystem Approach to Fisheries Management (EAFM), and the Ecological Risk Assessment (ERA), approach regionally. Some other RFMOs (e.g. the North Atlantic Fisheries Organization- NAFO) have also put policy guidelines in place for their EAFM approaches. These are sufficiently flexible to include recent 'best practice' developments such as those initiated under UNGA Resolution 61/105. The Commission is encouraged to give the development of such tools serious consideration in the interests of strategically 'mapping out' where it is going with its ERA activities.

- **The Panel commends the WCPFC for pursuing a pragmatically-focused ecosystem approach built on Ecological Risk Assessment (ERA) that takes account of direct linkages between fishing and WCPO ecosystem(s) components;**
- **The Commission and SC are also commended for developing various mitigating measures to address fishery-species interactions for seabird, turtles and sharks, in particular;**
- **The WCPFC is encouraged to give consideration to general biodiversity protection;**
- **The Panel suggests that designated area of the WCPFC Website for consolidating discussion on ecosystem issues might be worthwhile; and**
- **The SC is encouraged to develop 'plausible models' of the WCPFC ecosystem to guide strategic development of its EAFM and to focus on key ecosystem components, including through a more structured regional plan of action for sharks and seabirds.**

Data collection and sharing

To a large measure, the Panel considers information on data submission requirements to be adequate. However, some Longline catch data are only provided after a lag of several months, some CMMs lack the necessary infrastructure to ensure accurate/timely data submissions and data are sparse for species other than billfish or tuna. The Commission is urged to rectify these shortcomings and to encourage the Secretariat to make such information easily accessible, particularly with respect to ensuring that data deadlines are met, and especially for fisheries subject to CMMs in force, and/or requiring assessment. In this context, serious consideration should be given to providing an enduring, and detailed, 'Data Submission' item on the WCPFC Website as a 'one-stop shop' for all data submission information. To improve transparency attached to the timely submission of data, submission dates should also be monitored by the Secretariat with the attached information being made available on the password protected portion of the WCPFC Website.

The on-going and timely publication of the WCPFC Tuna Fishery Yearbook is to be commended. The Commission and SC may wish also to give thought to protecting the intellectual property contained in various assessment reports in the event of publication of such reports outside the organization (e.g. in scientific journals).

The WCPFC is to be commended on the way in which it compiles and manages its data and information holdings, particularly in respect to the levels of access it provides, whilst also providing for data confidentiality when necessary. The WCPFC, SPC-OFP and CCMs are, therefore, to be congratulated on the comprehensive data holdings now available for WCPFC stocks. Consideration should however be given to ensure that the provenance of the WCPFC data holdings and the data held by the OFP are complementary and compatible.

With regard to the data gaps still existing, WCPFC is encouraged to give serious consideration to SC7 concerns regarding data issues, as well other data interests. In particular:

- ✓ All CCMs are encouraged to provide data in a timely manner, and in strict accordance, with WCPFC *Scientific Data to be Provided to the Commission*;
 - ✓ Indonesia and the Philippines are encouraged to submit complete 2010 data for their bigeye surface fisheries, including Purse-Seine effort data;
 - ✓ Indonesian archipelagic waters catches should be included in the annual catch estimates between 2000 and 2010, and data inputs into pre-2000 Indonesian tuna fisheries annual catch estimates should be reviewed;
 - ✓ Continuing difficulties attached to submission of ROP data should be noted, and submission of such data is to be encouraged;
 - ✓ Improving estimates of Purse-Seine catch species composition is very much supported, as are associated sampling and data collection efforts;
 - ✓ WCPFC is encouraged to urge CCMs to provide annual bigeye and yellowfin catch and effort data, as well as size composition, for all fleets in the format required by WCPFC as “*Scientific Data to be Provided to the Commission*”;
 - ✓ The on-going shortage of data on which to base a comprehensive assessment of SPO swordfish is a matter of concern. WCPFC is therefore encouraged to urge the EU and SPC to devote all efforts to improving the WCPFC SPO swordfish data holdings;
 - ✓ WCPFC is encouraged to expand data collection for potential fisheries and ecosystem interactions to provide priority information on such interactions, to monitor its extent and effects, as well as the mitigation measures adopted and their results;
 - ✓ Historical annual catch estimates using data from each of the domestic Vietnamese fisheries should be reconstructed, and logbook and port sampling data collection for Vietnamese Purse-Seine and Gillnet fisheries should be established. Vietnamese observer data should also be reviewed to ensure their collection is in line with observer data collected elsewhere;
 - ✓ Coastal States, fishing States, Chinese Taipei and Korea should be encouraged to specifically indicate whether double-counting of reported catch is occurring or not;
 - ✓ The four CCMs concerned (Japan, Korea, China, and Chinese Taipei) should be encouraged to notify their intent to provide operational catch/effort data on longline fishing targeting bigeye and yellowfin to the WCPFC;
 - ✓ Submission of aggregated Chinese catch and effort data in the Pacific Ocean for 2003 to 2007 should be encouraged; and
 - ✓ Capacity building should continue in Philippines, Vietnam and Indonesia, through the WPEA program.
- **The Commission is urged to rectify identified data submission shortcomings and to encourage the Secretariat to make data submission information easily accessible, particularly with respect to ensuring that data deadlines are met, and especially for fisheries subject to CMMs in force, and/or requiring assessment;**
 - **Serious consideration should be given to providing an enduring, and detailed, 'Data Submission' item on the WCPFC Website as a 'one-stop shop' for all data submission information;**

- **To improve transparency attached to the timely submission of data, submission dates should be monitored by the Secretariat with the attached information being made available on the password protected portion of the WCPFC Website, and**
- **The WCPFC is encouraged to give serious consideration to SC7 concerns regarding data issues as listed above.**

Quality and provision of scientific advice

Due recognition should be given to the vibrancy and high quality of scientific advice being provided to WCPFC by the SC and SPC-OFP. However, the Commission is encouraged to formally define the SC's provenance as the key supplier of scientific advice to the Commission. The Commission is also encouraged to resolve the remaining issues still outstanding from the 2008 *'Independent Review of the Commission's Transitional Science Structure and Functions'*, in particular, the need to:

- ✓ strengthen confidence in data custodianship service so as to improve data submission shortfalls;
- ✓ update guidelines for processing the WCPFC SC work program;
- ✓ provide a mechanism to allow the SC to request scientific information directly to the ISC;
- ✓ clarify the respective roles of the WCPFC SC and ISC in providing advice to the NC and SC (as the statutory WCPFC scientific advisory body, the SC should lead endorsement of work done by the Commission's scientific advisors); and
- ✓ establish an *Ad Hoc* Group on Socio-economic Issues;

Subject to the above, the Commission is encouraged to clarify the role of the ISC, and its associations with the Commission and the SC, particularly in respect to direct exchanges of scientific information and advice. To encourage scientific transparency with respect to assessments being undertaken, the same rigor should be applied to all the scientific advice provided to the Commission, to the extent possible, in a standardized manner.

The SC is encouraged to develop a summary document (i.e. 'Blind Freddy's Guide') to provide easily digestible information on the assessment it undertakes, as well as on the underlying science being pursued. This document should be produced in lay and easy-to-follow language aimed at enhancing understanding across all WCPFC participants (not just scientists).

The question of broadening scientific capacity available within CCMs should be considered further, possibly with a view to developing a WCPFC institutional policy on the matter, which would identify ways how such capacity could be grown within the region. It is noted that a number of RFMOs (e.g. CCAMLR, ICCAT) have such policies in place to augment scientific capacity and build scientific expertise available to members from developing countries

(as per the 1995 United Nations Fish Stocks Agreement Articles 25.1(c) and 25.2). The SC is also encouraged to continue developing a WCPFC Strategic Research Plan.

The Panel was unable to determine exactly to what extent the WCPFC receives and uses social, economic, or other data in the formulation of scientific advice and the Commission's execution of its management responsibilities/policies.

- **The Commission is encouraged to formally define the SC's provenance as the key supplier of scientific advice to the Commission;**
- **The Commission is also encouraged to resolve the remaining issues still outstanding from the 2008 *'Independent Review of the Commission's Transitional Science Structure and Functions'*;**
- **In particular, the Commission should clarify the ISC's role, as well as its associations with the Commission and the SC, particularly in respect to direct exchanges of scientific information and advice with the SC;**
- **The SC is encouraged to develop a summary document (i.e. 'Blind Freddy's Guide') to provide easily digestible information on the assessment it undertakes; and**
- **Further and detailed consideration should be given to developing an institutional policy on capacity, especially scientific capacity, development.**

Compliance and enforcement

The Panel commends the Technical and Compliance Committee (TCC) for its work and encourages the Committee to continue striving to fulfill its mandate. Despite some shortcomings, addressed below, the WCPFC's general approach to compliance and enforcement is comparable to that of other tuna RFMOs. Nonetheless, and in specific instances, actual compliance with some conservation and management measures remains problematic for the WCPFC, particularly with regard to meeting data submission requirements. The Panel notes, with concern, that several requirements with regard to data provision established in various CMMs, including timeliness, are not being adequately observed by CCMs. Many members do not provide, or are late in providing, scientific/fishery operational data. There is also a systematic failure to provide Part 2 of members Annual Reports on Compliance before the required deadlines as well in the manner and format required by the Convention and CMMs concerned. It is also unclear to the Panel to what extent the Secretariat validates the fisheries data submitted to it and the steps adopted to rectify obviously incorrect data (e.g. fishing taking place on land, due to misreporting of geographic position).

The Panel does not see evidences of particular serious problems in Members' implementation of their flag State duties in respect to the control of fishing vessels/cargo vessels/suppliers flying their flag, and the marking and identification of fishing vessels.

However, the WCPFC should assess whether the relevant CMM has been effectively implemented. It should also assess whether and how the FFA and the WCPFC registers of fishing vessels could become consistent with each other. Members also encouraged to submit all necessary vessel marking and identification data to the WCPFC before their vessels commence fishing. The Panel recommends that the maintenance and provision of the Register of Fishing Vessels (RFV) be improved, including, as appropriate, by the introduction of a Lloyd's Fairplay Unique Vessel Identifier (UVI/ IMO) for large vessels of 24 meters or more in length.

With regard to Port State Measures, WCPFC is lagging behind other RFMOs. Given the globally-shared view that port State measures are a useful tool to combat IUU fishing, the Panel is encouraged that WCPFC has afforded the issue a priority. It is recommended that a new CMM on port State measures be, therefore, adopted and implemented within the Convention Area at the earliest opportunity. Furthermore, it is recommended that the training and technical assistance for developing and small island CCMs be provided where needed to facilitate implementation of a WCPFC-wide port State measures scheme. To address concerns that may arise in adopting, and/or implementing, a CMM on port State measures, a cost-benefit analysis of such measures should be undertaken. This analysis should take into account the effectiveness of port State measures in combating IUU fishing, the benefits of global international minimum standards (taking into account the terms and effectiveness of related instruments such as the 1982 Paris Memorandum of Understanding on Port Controls, as well as port State measures schemes in other RFMOs), the costs of alternative controls (such as the use of patrol vessels) and the legal basis for linkages with other compliance tools (such as observer programs and VMS). As appropriate, regional special assistance mechanisms could also be developed to support the implementation by developing States parties of the FAO Port State Measures Agreement (PSMA). As such, access to PSMA Article 21 funds should be facilitated once these funds are made available.

The Panel commends the WCPFC for setting up an electronically-based VMS to monitor the location of authorized vessels fishing in the Convention Area, although there appears to be some implementation problems. The Panel recommends, therefore, that WCPFC follow up the recommendations of the FFA & WCPFC VMS Review as prioritized by TCC 7 (Attachment F, WCPFC TCC7/2011/ 33) for the purpose of establishing more efficient and cost effective VMS system. In this regard, the Panel welcomes the information received from the Secretariat that VMS costs have already been substantially reduced. It is recommended that ways be explored and established for VMS information within EEZs to be shared by the WCPFC Secretariat with appropriate confidentiality requirements. It is also recommended that the Northern Committee

(NC) resolves a VMS implementation date for the Convention Area north of 20°N and west of 175°E. Not only should a fixed date be proposed for consideration by the TCC and the Commission, but any phased approach or any suggested exemptions should only be considered if strong justification for such deviations is provided.

The Panel welcomes the WCPFC High Seas Boarding and Inspection Scheme and its significant growth, since its establishment. Although serious problems with the Scheme were not evident from the data available to the Panel, there was not sufficient information to judge how effectively the Scheme is being implemented.

With regards to the Regional Observer Programme (ROP), the Panel recommends that all outstanding issues related to its effective implementation (i.e. data flow, access to observer data, draft observer report submission and reduction in cost) be expeditiously resolved. It also recommends that a ROP be agreed at WCPFC 8 as a matter of priority for vessels fishing exclusively for fresh fish in the area north of 20°N. The Panel commends the audit of national observer programmes as a significant development, in this context.

Furthermore, the Panel commends the WCPFC for developing a transshipment regime. Every encouragement is given to both the WCPFC and Members to ensure that the transshipment regime is consistently and universally applied within the Convention Area, and to all WCPFC-regulated fish stocks. The WCPFC and Members are also encouraged to review whether or not the current scheme on transshipment verification and regulation is adequate or needs improvements, including reporting and monitoring of transshipment. The Panel noted that the Commission may wish to consider the issue of in-port transshipment, particularly in conjunction with any CMM on Port State Measures.

The Panel recommends that clearer mechanisms be established to ensure that CCMs follow-up on CMM infringements and regularly submit information on actions taken in respect to non-compliance with CMMs. It also recommends that the Commission establishes guidelines for a range of penalties to be applied to various infringements, including consideration of a need for equity in the value of fines being applied.

The Panel recommends that the IUU Vessel List continue to be compiled, and utilized as part of the WCPFC's efforts to combat and eliminate IUU fishing. The IUU Vessel List should be shared, however, and, to the extent possible, harmonized with other RFMO lists, as recommended by KOBE III.

The Panel recognizes the importance of port sampling of purse-seine vessel landings for proper identification of species composition and recommends that a cannery sampling programme be initiated based on the CMM 2009-10.

The intersessional Working Group is encouraged to complete the TOR for a WCPFC Catch Documentation Scheme (CDS) as soon as possible, with the understanding that a WCPFC CDS should unroll in phases, commencing with a limited number of species with higher concerns attached to their impending sustainability (e.g. bigeye tuna).

The Panel recommends that CCMs review if the current CMM is adequate to address the issue of charter vessel arrangements and, if they conclude it is not, establish additional measures, including a new CMM (e.g. Charter Arrangement Scheme) to address pending issues. It is also recommended that WCPFC solve the issue of attribution of catch caught by chartered vessels as soon as possible.

The Panel recommends that the Compliance Monitoring Scheme, established by CMM 2010-03, be faithfully implemented as a top priority and that a process to identify a range of possible responses to non-compliance be added, as appropriate, to a revised CMM. The Panel also recommends that CCMs and the Secretariat review if there is room for improvement in the Compliance Report prepared by the Secretariat, which may contribute more effectively to the monitoring of compliance issues without giving excessive burden on CCMs reporting.

The Panel is unable to make a concrete recommendation on the potential efficacy of WCPFC market-related measures at this time. However, the Commission is encouraged to continue considering the role that such measures may play in addressing IUU and unsustainable fishing.

- **The Panel recommends that a common understanding be sought among CCMs on the TCC's priorities. The Committee's agenda should then be adjusted accordingly and its working schedule carefully tailored to ensure that it provides all its required outputs;**
- **The WCPFC should note the lack, and/or lateness, of many Members' provision of scientific/fishery operational data. There is also a systematic failure in the submission of Part 2 Annual Reports on compliance, before the required deadlines and in a manner and format as required by the Convention and CMMs concerned. These are serious problems which should be rectified as a matter of urgency;**
- **Members are encouraged to submit all necessary vessel marking and identification data to the WCPFC before their vessels commence fishing;**
- **The WCPFC should assess whether and how the FFA and the WCPFC registers of fishing vessels could become consistent with each other;**
- **The Panel recommends that a new CMM on port State measures be adopted and implemented within the Convention Area at the earliest opportunity;**
- **As appropriate, regional special assistance mechanisms should be developed to support implementation by developing States parties of the FAO Port State Measures Agreement. As such, access to PSMA Article 21 funds should be facilitated once these funds are made available;**

- **The High Seas Boarding and Inspection Scheme should be assessed when more information becomes available on the Scheme's implementation;**
- **The Panel recommends that all outstanding issues related to the ROPs effective implementation (i.e. data flow, access to observer data, draft observer report submission and reduction in cost) should be expeditiously resolved;**
- **The Commission may wish to consider the issue of in-port transshipment, particularly in conjunction with any CMM on Port State Measures;**
- **The Panel recommends that clearer mechanisms should ensure that CCMs follow-up on CMM infringements and regularly submit information on actions taken in terms of non-compliance with WCPFC CMMs. A comparable range of penalties for non-compliance should be developed;**
- **The IUU Vessel List should be shared and, to the extent possible, harmonized with other RFMO lists, as recommended by KOBE III;**
- **A cannery sampling programme should be initiated based on the CMM 2009-10;**
- **Consideration should be given to a new CMM (i.e. a Charter Arrangement Scheme), to address pending charter-related issues. In this respect, the WCPFC needs to solve the issue of attribution of catch caught by chartered vessels as a matter of priority;**
- **The Compliance Monitoring Scheme (CMM 2010-03) should be faithfully implemented as a top priority. A process to identify a range of possible responses to non-compliance should be added, as appropriate, to a revised CMM;**
- **The Secretariat should review its Compliance Report with a view to improving its impact in terms of being a tool that contributes more effectively to the monitoring of compliance without imparting an excessive burden on CCMs reporting requirements; and**
- **The Commission is encouraged to continue considering the role that market-related measures may play in addressing IUU and unsustainable fishing.**

International cooperation

The Commission is to be commended on its efforts to engage with a wide range of observers and the general public. It is also encouraged to continue its efforts to promote transparency in its work and to solicit broad input in the interests of improving the representativeness, and ownership, of decisions. Widespread availability of contextual information on inputs used for decisions is also advocated. In this regard, the Commission is encouraged to explore suitable mechanisms/processes to achieve maximal access to information used for the decision making.

The WCPFC, especially the Secretariat, is also commended on its efforts to make information available to Members, observers and the public, in a timely manner. Wherever possible, the Panel encourages the Commission to make all input information, and the context of

some outcomes, publicly available. To this aim, the WCPFC's Website content, structure and accessibility should be kept under constant review not only to ensure the necessary support to Commission's work, but to continue to serve as a useful tool for educational and broader outreach purposes.

The Commission is encouraged to maintain a proactive approach in engaging with Cooperating Non-Members (CNMs), particularly in relation to ensuring the effectiveness of CMMs and the meeting of the Convention's objectives, including by establishing a clear process to invite non-Parties to accede to the Convention.

The Commission may wish to ensure that details of engagements with third-party States, under Article 32 of the Convention, be formally brought to the attention of FAO and any other relevant international organization or State, on a regular basis. The Panel also notes that direct approaches, such as diplomatic demarches, to NCP Flag States whose vessels are involved in IUU fishing have been successful in other RFMOs to combat the effects of such fishing. Therefore, the WCPFC is encouraged to adopt such approaches wherever IUU fishing is detected in the Convention Area. Overall, the Commission is encouraged to develop strategies and policy to outline a common approach to be followed in promoting cooperation with non-parties.

The WCPFC should consider critically re-examining its relationship with a range of organizations, including by providing meeting observers to ensure that the exchange of information is maximized and the working relationships with the bodies represented are transparent, effective and dynamic. WCPFC should also continue to examine the need for concluding agreements with other organisations to enhance its own effectiveness and the pursuance of Convention objectives. Possible candidates could include environmental organizations, such as CITES.

The Commission is encouraged to urgently resolve the outstanding issues relating to cooperation with the IATTC as they are extremely important for ensuring harmonious management of the area shared by the two organizations, including the cost-effective deployment of observers. In this regard, the Panel welcomes the recent developments between both institutions.

The Panel also suggests that the WCPFC continue to examine its own regulatory provisions and measures against contemporary developments in other RFMOs. Wherever relevant (e.g. UNGA Resolution 61/015), it should also examine other instruments, or agreements, applicable to fisheries, the environment and broader governance to ensure that the WCPFC continues to pursue international best practice.

Finally, the Commission is encouraged to continue consideration of the special requirements of developing States and territories with a view to meeting their fishing interests and aspirations.

- **The Commission is encouraged to explore suitable mechanisms/processes to achieve maximal access to information used for the decision making;**
- **Wherever possible, all input information and the context of some outcomes should be made publicly available;**
- **The WCPFC's Website content, structure and accessibility should be kept under constant review;**
- **The Commission should consider developing its relationships with third party states and non-cooperating non-Contracting Parties along the lines suggested above;**
- **The WCPFC should consider critically re-examining its relationship with a range of organizations;**
- **The WCPFC should continue to examine its own regulatory provisions and measures against contemporary developments in other RFMOs and the UN general assembly; and**
- **Continued consideration should be given to the special requirements of developing States and territories with a view to meeting their fishing interests and aspirations.**

Financial and administrative issues

The various statutory requirements for effective management of the WCPFC's financial and administrative arrangements have been adequately addressed in the relevant documents and procedures, examined by the Panel. In general, the WCPFC's financial arrangements appear adequate and in keeping with international best practice. In the interest of financial transparency, however, the Commission may wish to establish a limit on the number of times the auditors may be reappointed consecutively.

The WCPFC's budget has grown substantially since the Commission assumed its responsibilities. This is largely attributable to the many significant activities that the Organization has initiated since its inception. Members, however, appear to be currently providing the necessary financial resources required to achieve the Convention's aims, as well as to implement Commission decisions and to source contemporary scientific advice. Nonetheless, potential budgetary instability arising from late contributions is a cause for concern. Therefore, timely payment of annual contributions should remain a high priority to ensure that the WCPFC remains cash-stable and that financial support for the Organization's functions are equitably shared, as envisaged in the contribution formula (Article 18(2) of the Convention and Financial Regulation 5.2). The reimbursement of any surplus funds from one year to the next should be

discouraged if it rewards those in contribution arrears equally to Members who have paid their contributions on time.

The WCPFC is commended for considering ways to address budget savings, including cost-recovery, without compromising service delivery. The Panel is particularly encouraged by the anticipated savings of more than 50% for the VMS from 2012 onwards, although the potential, and proportionately significant, impost of new activities on the WCPFC budget is also noted.

The various administrative arrangements and structures attached to the Secretariat's responsibilities and functioning are good. The Secretariat appears to function well and the organization/support of meetings, the production of essential documentation and attached communication are satisfactory. The increasing Secretariat task list appears to have been well and efficiently handled, up to this point. However, it is essential that a 'critical mass' of Secretariat skills be sustained, particularly when senior professional staff leaves. The career development of staff is therefore encouraged, as is the sharing of, and cross training in, essential task execution. Any future reorganization or expansion of the WCPFC's work is likely to affect how the Secretariat organizes its work so that it continues to sustain a high service-delivery standard. Under such circumstances, clear direction needs to be given so that the Secretariat's work priorities are clearly identified and that any need for additional resources (human or fiscal) is adequately addressed sooner rather than later.

The Executive Director's role in disseminating high-quality information about the WCPFC, and its work, should be recognized, along with that of other senior staff. However, an organizational communications strategy and media policy should be developed. In this context, the Executive Director's responsibilities, along with those of other office bearers, for the communication of such information, should be clarified.

To better determine how well Secretariat staff delivers their required services, metrics should be developed for assessing their various duties/tasks. These could be based on a schedule of tasks/activities to be undertaken, the completion of tasks against identified guidelines/deadlines, and the final service outputs, in terms of delivery efficiency/standards. Such metrics would also serve to identify 'exceptional performance' as well as performance requiring remediation. The former would serve to retain and reward high performing, good and efficient staff. With regards to the second, the Panel suggests that the Commission may wish to task the Executive Secretary with developing a procedure to target training needs to improve staff performance. The Panel commends the Secretariat outreach initiatives with regard to the local community and the region.

Despite an increasing workload, and the increased complexity of WCPFC's scientific advice and fisheries management activities, the Secretariat continues to support the Organization's work in a highly professional and effective manner. The WCPFC Secretariat is therefore commended for its work in support of the WCPFC. The Executive Director, in particular, should be commended for facilitating the professional development of Secretariat staff and linking this to assessment of staff performance. It may be worthwhile also encouraging the Executive Director to develop a Professional Internship Program along the lines identified above.

Although Secretariat office space, and the attached infrastructure, appears adequate for current and future needs, the Commission's attention is drawn to the fact that future expansion of WCPFC activities, particularly data collection/sharing and MCS activities, may require the expansion of Secretariat staff capabilities. It may also necessitate the acquisition/deployment of new communication and information technologies. It is therefore recommended that staff capabilities be continually monitored and, wherever necessary, rigorous professional/skills training programs, and/or opportunities for Secretariat staff, be identified and addressed. The Panel also draws the Commission's attention to the fact that any future expansion of the Secretariat's work will entail timely consideration of attendant staff needs or skills. This implies that adequate planning and priority setting is essential to provide the Secretariat with the necessary human, financial and other resources it may need for its future work. Following the above, the Panel notes that the matrix currently being developed by the Secretariat for FAC's consideration is likely to provide a cost-effective approach to planning the WCPFC's future activities in terms of financial commitments, skills availability and infrastructure implications.

The Executive Director should be tasked with developing a generically-based and standardized cross-Secretariat staff performance appraisal system. This would aim at providing stipulated, common-format, task lists to facilitate priority setting for individual staff and across the Secretariat. It will also improve monitoring of staff skills and outputs.

Finally, consideration needs to be given to producing a meeting schedule, and associated meeting sites, that are convenient for all Members in terms of both available accommodation and convenient accessibility. The Panel understands that a list of requirements for hosting meetings has been compiled. This should form the basis for drawing up the meeting site and schedule referred to immediately above.

- **The WCPFC's financial arrangements appear adequate and in keeping with international best practice;**
- **In the interest of financial transparency, the Commission may wish to establish a limit on the number of times the auditors may be reappointed;**
- **Potential budgetary instability arising from late contributions remains a cause for concern;**
- **The various administrative arrangements and structures attached to the Secretariat's responsibilities and functioning are good;**
- **To better determine how well Secretariat staff deliver their required services, metrics should be developed for assessing their various duties/tasks;**
- **Staff capabilities should be continually monitored and wherever necessary rigorous professional/skills training programs, and/or opportunities for Secretariat staff, should be identified and addressed;**
- **The Executive Director should be tasked with developing a generically-based and standardized cross-Secretariat staff performance appraisal system;**
- **An organizational communications strategy and media policy should be developed;**
- **Future reorganization or expansion of the WCPFC's work should be accompanied by timely, and clear, direction on the Secretariat's work priorities, as well as on identifying additional resource (human or fiscal) needs; and**
- **Consideration needs to be given to producing a meeting schedule, and associated meeting sites, that are convenient for all Members in terms of both available accommodation and convenient accessibility.**

1. Introduction

1.1. Background of the Performance Review

The Performance Review of the Western and Central Pacific Fisheries Commission (WCPFC) was first discussed during the Fourth Regular Session of the Commission (WCPFC 4), in December 2007, as a response to the recommendations stemming from the first joint meeting of tuna RFMOs, held in Kobe, Japan, in January of the same year. At that opportunity, however, it was considered premature and the discussion on the matter was therefore postponed to the following session. During WCPFC 5, held in 2008, then, the issue was again discussed and a decision was taken to carry out the Performance Review in 2010, a decision which was reiterated in WCPFC 6, held in December 2009. In 2010, however, the review of WCPFC Performance could not happen due to budget constraints. Finally, in December 2010, during WCPFC 7, the Commission took the following decision to review its performance:

WCPFC7 agreed that a performance review of the Commission would be undertaken in 2011, and tasked the Executive Director with (i) developing criteria for the review based on input received from members, and reflective of characteristics of the WCPFC; and (ii) proposing a review panel to members for their approval that reflects the input received.

It also agreed that (i) the review should include both independent experts (support was variously raised for inclusion of legal, general fisheries, scientific and civil society experts) and members of the Commission, including SIDS representation; and (ii) it should be undertaken in 2011.

1.2. Terms of Reference and criteria of the Performance Review

The Terms of Reference of the Performance Review, as well as the criteria on which it should be based are attached (Appendix I). The criteria were largely those recommended by the first meeting of Tuna RFMOs, held in Kobe, in 2007, adapted, however, to reflect the WCPFC mandate and membership. The criteria were grouped in 6 areas: conservation and management, compliance and enforcement, decision-making and dispute settlement, the role and performance of subsidiary bodies, international cooperation and financial and administrative issues. The Performance Review Panel was requested to evaluate the convention texts and supporting structure developed and adopted by the Commission, including the science, the status of the stocks, the conservation and management measures and the role of the Committees. The review was also required to be transparent and objective and to provide advice on areas where and how the Commission could be improved.

1.3. The Performance Review Panel

The Performance Review Panel ('the Panel') was composed by four external experts (Dr. Denzil Miller, Dr. Fábio Hazin, Mr. Ichiro Nomura and Dr. Judith Swann), and three internal members from the European Union (Mr. John Spencer), Nauru (Hon. Min. Rolland Kun), and the Philippines (Mr. Malcolm Sarmiento). The panel composition reflected the Commission decision that the review team should include independent experts and Commission members, including SIDS representation (a short curriculum vitae of external and internal expert is provided in Appendix II).

1.4. Methodology of the Performance Review Panel

The Performance Review was based on the Terms of Reference approved by WCPFC and followed the criteria thereby established (see Section 1.2). Part of the Performance Review Panel (PRP) (Dr. Fábio Hazin, Dr. Denzil Miller and Dr. Judith Swan) met the first time in San Diego, USA, at the margins of the Kobe III Meeting, in July, 2011. At that time, the Performance Review Panel was composed only by the 4 external members. During San Diego Meeting it was possible to discuss the distribution of tasks and a tentative schedule for the accomplishment of the Review was prepared. A short, informal, meeting with representatives of WCPFC Members that were also attending the Kobe III Conference was held there, as well.

On July 28th, the PRP, through the WCPFC Secretariat, then requested the views and contributions of all WCPFC Members on the points they considered relevant to the Performance Review, including, but not restricted to, the Performance Review criteria and the items listed in the report structure, with a deadline of August 31st. A list of the addresses can be found in Appendix III. Unfortunately, by September 30th, only one member had responded and its response was therefore the only one considered in the review.

In early September, Mr. Nomura attended the meeting of the Northern Committee, held in Sapporo, Hokkaido, Japan, and of the Technical and Compliance Committee, held in Pohnpei, Federated States of Micronesia, from September 28 to October 4.

In middle September, the 3 internal experts (Mr. John Spencer, Mr. Malcolm Sarmiento and Hon. Min. Rolland Kun) joined the Performance Review Panel and the tasks were redistributed amongst all the members.

In October 10th and 11th, the four external members, plus Mr. Rolland Kun, met in FAO Headquarters, to consolidate the first draft of the Performance Review Report and to re-schedule the work, due to the redistribution of tasks required by the entrance of the new members in the Panel. Comments from Panel members on version 1 of the report were received by October 26th and a second preliminary version of the Report was then generated by November 8th. A second round of contributions by panel members was then submitted, by November 14th, and a third version was then prepared by December 8th, with a deadline of December 31st for new contributions. Version 4 was then prepared by January 4th and distributed to members. Then a new meeting of the Performance Review Panel was convened from January 31st to February 4th, at the WCPFC headquarters, in Pohnpei, Federated States of Micronesia, with 3 of the external Performance Review Panel members present (Dr. Fabio Hazin, Dr. Denzil Miller and Mr. Ichiro Nomura) and representatives from WCPFC Secretariat.

1.5. The structure of the report

In conformity with the Terms of Reference, the general structure of the performance review report was largely based on the general model already followed by several other RFMOs (CCMLR, CCSBT, GFCM, ICCAT, NEAFC, SEAFO; Appendix IV).

2. Background and brief history of WCPFC

The Western and Central Pacific Ocean (WCPO) is the largest tuna fishing ground in the World. For centuries, tuna, notably yellowfin, albacore, bigeye, skipjack and other migratory species such as marlins and swordfish have abounded in its waters. The WCPO has provided food and livelihood not only to the peoples living in countries along its rim but also fishermen from more distant places. Years of exploitation by a growing number of countries, however, has caused increasing concern among governments, scientific communities and the stakeholders themselves (for further discussion, see Section 5). The establishment of the WCPFC, therefore, was a major development in conformity with principles outlined in the 1995 United Nations Fish Stock Agreement (UNFSA)¹.

Before the creation of the WCPFC, there were no arrangements for conserving and managing the tuna stocks in international waters and in the high seas of the Western and Central Pacific. The Pacific island countries, however, collaborated among themselves through the Pacific Island Forum Fisheries Agency (FFA), an organization comprised of independent Pacific islands countries which sought to harmonize management efforts but this was limited to cover only their exclusive economic zones. This approach of the FFA was supported by the Oceanic Fisheries Program (OFP) of the Secretariat of the Pacific Community (SPC) who provided scientific advice on the tuna stocks to the FFA members. A multilateral treaty between the U.S. and 16 Pacific islands countries was also existing at the time the WCPFC was being negotiated but the former was more on fisheries access and for fisheries development of the Pacific islands.

The WCPFC was among the first international fisheries agreement to be adopted, following the conclusion of the 1995 United Nations Fish Stocks Agreement (UNFSA) which represented a global attempt to implement the provisions of the 1982 United Nations Convention on the Law of the Sea (The 1982 Convention) to straddling and highly migratory fish stocks.

2.1. The foundation

In order to address the concerns and implement the requirements of the UNFSA as well as relevant provisions of the 1982 UN Convention and some other instruments, seven negotiating sessions, known as the Multilateral High Level Conference (MHLC), began in 1994

¹ 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

towards the formulation of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (The Convention).

In the 7th and final MHLC Meeting, which took place in Honolulu, Hawaii, in 2000, the Convention was adopted and opened for signature to countries which participated in the MHLC negotiations. The Convention established a Commission with membership open to those countries referenced in Article 34 (see Section 2.3). Other countries, however, through invitation and upon a decision by consensus of the Commission, could also become members. Chinese Taipei participates in the work of the Commission, including decision making, subject to Article 9.2.

With the adoption of the Convention, a preparatory conference process (PrepCon) was adopted by the MHLC participants in a form of resolution. Over seven meetings, from 2001 to 2004, this process laid out the necessary framework for establishing the Commission and developing the necessary administrative, financial and procedural mechanisms for its work. Most importantly, the PrepCon not only paved the way for the commission but prevented a vacuum from being created between the time the Convention was adopted and the time it entered into force, in June 19, 2004, six months after the deposit of the thirteenth instrument of ratification.

Specifically, the Preparatory Conference (PrepCon) prepared the draft rules and regulations concerning the financial management and internal administration of the Commission, a draft organizational structure for the commission, a draft scheme of contribution to the budget, and a draft provisional agenda for the first meeting of the Commission. In addition, the PrepCon was to make recommendations concerning the establishment of the headquarters of the commission and on mechanisms to promote participation in the Convention.

PrepCon I, which was held in Christchurch, New Zealand, on April 2001, established two working groups to consider matters related to organizational and budget matters and the provisions of scientific advice to the commission. PrepCon II, held in Madang, Papua New Guinea, established a third working group on Monitoring, Control and Surveillance. In PrepCon III, held in Manila, Philippines, in November 2002, after voting, agreement was reached to recommend the Federated States of Micronesia to be the location of the headquarters of the Commission.

The succeeding PrepCons undertook the process of finalizing the working drafts in relation to the proposed organizational structures of the Commission Secretariat, the rules of procedures for the commission, including those for the working committees, the budget for the early years of the Commission and the way it would be financed.

PrepCon VII, which preceded the inaugural session of the Commission, held in December 2004, formally adopted the final report and recommendations of the Preparatory Conference thus, paving the way for the operationalization of the Commission.

2.2. Objectives and mandate

Article 2. The objective of this Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 Convention and the Agreement

The WCPFC is a multilateral agreement, the primary objective of which is the long-term conservation and sustainable use of highly migratory fish stocks, such as tunas, billfish, and other species listed in Annex I of the 1982 UN Convention, except sauries (Art. 3.3 of the Convention), in the Western and Central Pacific Ocean. Key principles in the Convention (Art. 5) acknowledges that effective conservation and management require the application of the precautionary approach (Art. 6) and should be based on the best scientific information available. The Convention also emphasizes the need to avoid adverse impacts on the marine environment, protect biodiversity, maintain the integrity of marine ecosystems and minimize the risk of long term or irreversible effects of fishing operations. These key principles are balanced by the need to take measures to prevent or eliminate overfishing or excess fishing capacity, taking into account the interests of artisanal and subsistence fisheries. They are complemented by a need to collect and share complete and accurate data concerning fishing activities, to implement effective Monitoring, Control and Surveillance, and to enforce Conservation and Management Measures. In addressing these principles the Convention recognizes the special requirements of developing States, particularly Small Island Developing States (SIDS), taking into account the following aspects:

- a) the vulnerability of developing States, including SIDS, that are dependent on the exploitation of living marine resources;
- b) the need to avoid adverse impacts and ensure access to fisheries, by subsistence, small scale and artisanal fishers and fish workers, as well as indigenous people in developing States, particularly SIDS, territories and possessions.
- c) the need to ensure that conservation and management measures do not result in a disproportionate burden of conservation action onto developing states, particularly SIDS, territories and possessions.

2.2.1. Area of competence

Article 3.(1) Subject to Article 4, the area of competence of the Commission (herein after referred to as “the Convention Area”) comprises all waters of the Pacific Ocean bounded to the south and to the east by the following line: From the south coast of Australia due south along 141⁰ meridian of east longitude to its intersection with the 55⁰ parallel of south latitude; thence due east along the 55⁰ parallel of south latitude to its intersections with the 150⁰ meridian of east longitude; thence due south along the 150⁰ meridian of east longitude to its intersection with the 60⁰ parallel of south latitude; thence due east along the 60⁰ parallel of south latitude to its intersection with the 130⁰ meridian of west longitude; thence due north along the 130⁰ meridian of west longitude to its intersections with the 4⁰ parallel of south latitude; thence due west along the 4⁰ parallel of south latitude to its intersection with the 150⁰ meridian of west longitude; thence due north along the 150⁰ meridian of west longitude.

(2) Nothing in this Convention shall constitute recognition of the claims or positions of any of the members of the Commission concerning the legal status and extent of waters and zones claimed by any such members.

(3) This Convention applies to all stocks of highly migratory fish within the Convention Area except sauries. Conservation and management measures under this Convention shall be applied throughout the range of the stocks, or to specific areas within the Convention area, as determined by the Commission.

Figure 1 illustrates the Commission’s area of competence (The Convention area), as outlined in Article 3.1. Further discussion can be found in Section 3.4.1.

To the east, the Convention area overlaps the area of competence of the Inter American Tropical Tuna Commission (IATTC). Because of the need to immediately address issues and concerns relating to management measures, registration of vessels, Fish Aggregating Devices (FADs) closure, etc. that would arise as a result of the overlap, the two organizations recognized the importance of cooperation and moved forward to creating the appropriate mechanisms to that effect.

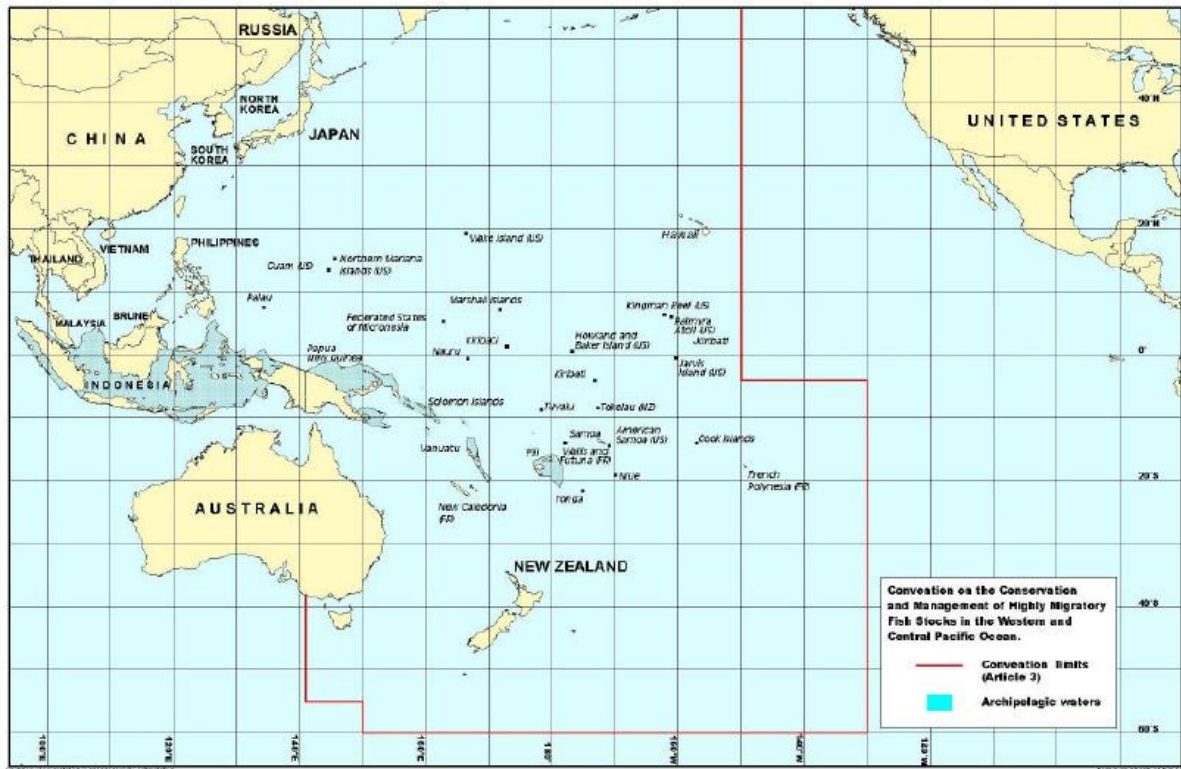


Figure 1- WCPFC Convention Area (red line).

Towards this end, a memorandum was executed by IATTC and WCPFC at Apia, Samoa, in December 2006. Furthermore, a Memorandum of Cooperation on the cross endorsement of WCPFC and IATTC approved observers on the high seas of the convention areas of both organizations was agreed in August 2011. To further strengthen cooperation between the WCPFC and the IATTC, the creation of a joint Working Group was proposed in an informal Workshop in La Jolla, California on July 11, 2011, specifically to:

- 1) compile and analyze the data available in regard of the overlapping area, in order to assess the extent of the problem and to identify the most urgent issues requiring cooperation;
- 2) develop mechanisms to ensure better scientific cooperation between both organizations and to ensure that the conservation and management measures stemming from the scientific information and advice are compatible and comparable in their effectiveness;
- 3) propose concrete and pragmatic actions to ensure the effectiveness of the conservation and management measures adopted by both organizations, in regard to the overlapping area as well as to the trans-Pacific migratory stocks;
- 4) consider means for the harmonization, compatibility and cooperation, as appropriate, of the Monitoring, Control and Surveillance (MCS) measures adopted by both organizations;
- 5) develop ways to facilitate and expedite the granting of cooperating nonmember status to those who are members of only one of the organizations; and

- 6) investigate the possibility of moving towards a more formal cooperation between both organizations through a memorandum of understanding.

2.2.2. Species and fisheries covered

The convention applies to all highly migratory fish stocks, within the area, except sauries (Article 3.3), as defined in Article 1.f:

Article 1(f). Highly migratory fish stocks means all fish stocks of the species listed in Annex I of 1982 UN Convention occurring in the Convention Area and such other species of fish as the Convention may determine.

In order to fulfill its mandate, the Commission has adopted measures to ensure the long term sustainability of highly migratory fish stocks in the Convention Area and to promote the objective of their optimum utilization. Furthermore, the Commission has adopted, where necessary, conservation and management measures and recommendations for non-target species and species dependent on or associated with the target stocks. The WCPFC is primarily concerned with the various fishing methods that target highly migratory species, including longlining, purse seining, pole-lining, and trolling.

2.3. Membership

Article 34 (1) This Convention shall be open for signature by Australia, Canada, China, Cook Islands, Federated States of Micronesia, Fiji Islands, France, Indonesia, Republic of Kiribati, republic of the Marshall Islands, Republic of Nauru, New Zealand, Niue, Republic of Palau, Independent State of Papua New Guinea, Republic of the Philippines, Republic of Korea, Independent State of Samoa, Solomon Islands, Kingdom of Tonga, Tuvalu , United Kingdom of Great Britain and Northern Ireland in respect of Pitcairn, Henderson, Ducie and Oeno Islands, United States of America and Republic of Vanuatu and shall remain open for signature for twelve months from the fifth day of September 2000.

(2) This Convention is subject to ratification, acceptance or approval by the signatories.

(3) Instruments of ratification, acceptance and approval shall be deposited with the depositary.

(4) Each Contracting party shall be a member of the Commission established by the Convention.

Article 35 (1) This Convention shall remain open for accession by the States referred to in Article 34, Paragraph 1, and by any entity referred to in article 305, paragraph 1, subparagraph (c), (d) and (e) of the 1982 Convention which is situated in the Convention Area.

(2) After the entry into force of this Convention, the contracting Parties may, by consensus, invite other States and regional economic integration organizations, whose nationals and fishing vessels wish to conduct fishing for

highly migratory fish stocks in the Convention Area to accede to this Convention.

(3) Instruments of accession shall be deposited with the depositary.

As the governing body of the Convention, the Commission is composed of member countries. Together with the members, fishing entities, cooperating non-members, and participating territories are collectively known as CCM's. A Chairman and a Vice Chairman elected from among the membership presides over its meeting which is held annually.

The Commission comprises the following 24 members: Australia, Canada, China, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Japan, Kiribati, Republic of Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Tonga, Tuvalu, United States of America, and Vanuatu. The European Union, although not included in Article 34.1., acceded to the Convention, under Article 35.2, in 2008. The fishing entity of Chinese Taipei, which has agreed to be bound by the Convention, also participates in the work of the Commission, including decision making, according to the provisions of Article 9.2 and Annex I. Besides these, 7 Territories (American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau, and Wallis and Futuna) and 9 Cooperating non-members (Belize, Ecuador, El Salvador, Indonesia, Mexico, Panama, Senegal, Thailand and Vietnam) also participate in the work of the Commission. Although the territories and Cooperating non-members do not vote, they have always participated actively in the discussions. The dates of signature, ratification/ accession and entry into force of all members are indicated in Table 1, below.

The Panel noted that, according to Article 35.2., the Contracting Parties may, by consensus, invite other States and regional economic integration organizations, whose nationals and fishing vessels wish to conduct fishing for highly migratory fish stocks in the Convention Area to accede to this Convention. The Panel also noted that Article 11 of UNFSA outlines various considerations to be attached to determining the nature and the extent of participatory rights for new members of sub-regional or regional fisheries management organization. The Panel finally noted that, in accordance with Article 32.4., cooperating non-parties to the Convention shall enjoy benefits from participation in the fishery commensurate with their commitment to comply with, and their record of compliance with, conservation and management measures in respect of the relevant stocks. For further discussion on the membership issue, refer to Section 3.3.2. The Panel notes that since the foundation of WCPFC, seven Cooperating non-Members have become members of the Commission and that is a positive development (Table 2).

Table 1- Dates of signature, ratification/ accession and entry into force of all WCPFC members².

COUNTRY	SIGNATURE	RATIFICATION, ACCESSION (A)	ENTRY INTO FORCE
Australia	30/10/2000	22/09/2003	19/06/2004
Canada	02/08/2001	01/11/2005	01/12/2005
China ¹		02/11/2004 (A)	02/12/2004
Cook Islands	05/09/2000	01/10/2003	19/06/2004
European Union ²		20/12/2004 (A)	19/01/2005
Federated States of Micronesia	05/09/2000	20/12/2002	19/06/2004
Fiji Islands	05/09/2000	13/03/2001	19/06/2004
France (extends to French Polynesia, New Caledonia and Wallis and Futuna) ³		12/05/2005 (A)	11/06/2005
Indonesia	31/08/2001		
Japan		08/07/2005 (A)	07/08/2005
Republic of Kiribati		09/06/2003 (A)	19/06/2004
Republic of Korea		26/10/2004 (A)	25/11/2004
Republic of the Marshall Islands	05/09/2000	23/04/2001	19/06/2004
Republic of Nauru	05/09/2000	13/08/2003	19/06/2004
New Zealand (extends to Tokelau) ⁴	05/09/2000	19/12/2003	19/06/2004
Niue	30/10/2000	17/12/2003	19/06/2004
Republic of Palau	05/09/2000	02/11/2005	2/12/2005
Independent State of Papua New Guinea	17/01/2001	17/10/2001	19/06/2004
Republic of the Philippines	05/09/2000	17/06/2005	17/07/2005
Independent State of Samoa	05/09/2000	09/02/2001	19/06/2004
Solomon Islands	23/04/2001	09/06/2003	19/06/2004
Kingdom of Tonga	23/04/2001	09/06/2003	19/06/2004
Tuvalu	05/09/2000	13/04/2004	19/06/2004
United Kingdom of Great Britain and Northern Ireland (for Pitcairn, Henderson, Ducie and Oeno Islands)			
United States of America ⁵	05/09/2000	27/06/2007	27/07/2007
Republic of Vanuatu	05/09/2004	06/10/2005	05/11/2005

¹ Upon accession, the Government of the People's Republic of China advised that the Convention shall apply to the Macao Special Administrative Region of the People's Republic of China but not to the Hong Kong Special Administrative Region of the People's Republic of China prior to further notice by the Government of the People's Republic of China.

² On 28 January 2010, the General Secretariat of the Council of the European Union advised that, as from 1 December 2009, the European Community has been replaced and succeeded by the European Union in respect of the Convention.

³ On 12 May 2005, the Government of France advised that, in accordance with Article 43, French Polynesia, New Caledonia and Wallis and Futuna, are authorised by the Government of France to participate in the Commission and its subsidiary bodies.

⁴ On 19 December 2003, the Government of New Zealand advised that, in accordance with Article 43, Tokelau is authorised by the Government of New Zealand to participate in the Commission and its subsidiary bodies.

⁵ Upon ratification, the Government of the United States of America advised that, in accordance with Article 43, American Samoa, Guam and the Commonwealth of the Northern Mariana Islands are authorised by the Government of United States of America to participate in the Commission and its subsidiary bodies.

² On 5 September 2000, a representative of Chinese Taipei signed an Arrangement for the Participation of Fishing Entities. On 2 November 2004, in accordance with that arrangement, Chinese Taipei advised the Depository that it had fulfilled its domestic requirements and that it agreed to be bound by the regime established by the Convention in accordance with its Article 9(2) and to participate as a Member in the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Table 2- Dates of granting WCPFC Cooperating non-Members status, by country.

COUNTRY	Initial Date CNM STATUS Granted
Canada	1 st Regular Session of WCPFC on 9-10 Dec. 2004
France	1 st Regular Session of WCPFC on 9-10 Dec. 2004
Indonesia	1 st Regular Session of WCPFC on 9-10 Dec. 2004
Japan	1 st Regular Session of WCPFC on 9-10 Dec. 2004
Palau	1 st Regular Session of WCPFC on 9-10 Dec. 2004
Philippines	1 st Regular Session of WCPFC on 9-10 Dec. 2004
USA	1 st Regular Session of WCPFC on 9-10 Dec. 2004
Vanuatu	1 st Regular Session of WCPFC on 9-10 Dec. 2004
Belize	4 th Regular Session of WCPFC on 2-7 Dec. 2007
El Salvador	5 th Regular Session of WCPFC on 8-12 Dec. 2008
Senegal	5 th Regular Session of WCPFC on 8-12 Dec. 2008
Mexico	5 th Regular Session of WCPFC on 8-12 Dec. 2008
Ecuador	6 th Regular Session of WCPFC on 7-11 Dec. 2009
Vietnam	6 th Regular Session of WCPFC on 7-11 Dec. 2009
Panama	7 th Regular Session of WCPFC on 6-10 Dec. 2010
Thailand	7 th Regular Session on WCPFC on 6-10 Dec. 2010
<i>Note: Above highlighted countries are now Members of WCPFC. All other countries are still cooperating non members granted annually by the WCPFC.</i>	

2.4. Institutional structure³

2.4.1. Subsidiary bodies (SC, TCC, NC, FAC).

Under Article 11, the Commission created three subsidiary bodies: the Scientific Committee [Article 12], the Technical and Compliance Committee [Article 14], and the Northern Committee [paragraph 7 of Article 11]. Each committee shall meet as often as is required for the efficient exercise of its functions [Paragraph 3, Article 11]. By actual operation, the meetings of these subsidiary bodies are held once a year, followed by a full session of the Commission. The work of the Commission is assisted by a Secretariat (see Section 8.1.1) and a Standing Finance and Administration Committee (FAC) (see also Sections 3.4.5 and 8.1).

The functions of the Scientific Committee are enumerated under Article 12. The functions of this committee are supported by the provisions on the “Obligations of members of the Commission” [Article 23]. These are found in paragraph 2, to wit:

- (a) provide annually to the Commission statistical, biological and other data and information in accordance with Annex I of the Agreement and, in addition, such data and information as the Commission may require;
- (b) provide to the Commission in the manner and at such intervals as may be required by the Commission, information concerning its fishing activities in the Convention Area, including fishing areas and fishing vessels in order to facilitate the compilation of reliable catch and

³ See also Section 8

effort statistics; and

- (c) provide to the Commission at such intervals as may be required information on steps taken to implement the conservation and management measures adopted by the Commission.

The ability to function as a Science Committee is therefore dependent upon the scientific and political commitment by the members. Notwithstanding, it is noteworthy that much of the scientific work is done by the SPC (the Secretariat of the Pacific Community) which is contracted to provide independent scientific advice which is then considered by SC members.

The functions of the Technical and Compliance Committee [TCC] are enumerated under Article 14 and are supported by the provisions on the “Obligations of members of the Commission” [Article 23]. These are found in paragraphs 3, 4, & 5, to wit:

3. The members of the Commission shall keep the Commission informed of the measures they have adopted for the conservation and management of highly migratory fish stocks in areas within the Convention Area under their national jurisdiction. The Commission shall circulate periodically such information to all members.
4. Each member of the Commission shall keep the Commission informed of the measures it has adopted for regulating the activities of fishing vessels flying its flag which fish in the Convention Area. The Commission shall circulate periodically such information to all members.
5. Each member of the Commission shall, to the greatest extent possible, take measures to ensure that its nationals, and fishing vessels owned or controlled by its nationals fishing in the Convention Area, comply with the provisions of this Convention. To this end, members of the Commission may enter into agreements with States whose flags such vessels are flying to facilitate such enforcement. Each member of the Commission shall, to the greatest extent possible, at the request of any other member, and when provided with the relevant information, investigate any alleged violation by its nationals, or fishing vessels owned or controlled by its nationals, of the provisions of this Convention or any conservation and management measure adopted by the Commission. A report on the progress of the investigation, including details of any action taken or proposed to be taken in relation to the alleged violation, shall be provided to the member making the request and to the Commission as soon as practicable and in any case within two months of such request and a report on the outcome of the investigation shall be provided when the investigation is completed.

As with the Science Committee, the Technical and Compliance Committee’s ability to function is therefore very much dependent upon the compliance by the members of the above provisions aside from all other obligations. Further to the functions of the TCC, in addition thereto, there are obligations of Flag States enumerated in Article 24 which determine whether the WCPFC has complied with its mandates. These are:

1. Each member of the Commission shall take such measures as may be necessary to ensure that:
 - (a) fishing vessels flying its flag comply with the provisions of this Convention and the conservation and management measures adopted pursuant hereto and that such vessels do not engage in any activity which undermine the effectiveness of such measures; and

- (b) fishing vessels flying its flag do not conduct unauthorized fishing within areas under the national jurisdiction of any Contracting Party.
- 2. No member of the Commission shall allow any fishing vessel entitled to fly its flag to be used for fishing for highly migratory fish stocks in the Convention Area beyond areas of national jurisdiction unless it has been authorized to do so by the appropriate authority or authorities of that member. A member of the Commission shall authorize the use of vessels flying its flag for fishing in the Convention Area beyond areas of national jurisdiction only where it is able to exercise effectively its responsibilities in respect of such vessels under the 1982 Convention, the Agreement and this Convention.

2.4.2. Affiliated bodies and service providers (SPC, ISC, etc.)

Article 9.1 of WCPFC Convention establishes that the Commission may, where appropriate, enter into contractual arrangements with relevant institutions to provide expert services necessary for its efficient functioning, while Article 13 allows the Commission to engage the services of scientific experts to provide information and advice on the fishery resources under its responsibility. It also requires WCPFC, to the greatest extent possible, to utilize the services of existing regional organizations and any other fisheries management, technical or scientific organization with expertise in matters related to its work.

Accordingly, since its foundation, much of the scientific work required by WCPFC has been done by the SPC (the Secretariat of the Pacific Community) which is contracted to provide independent scientific advice which is then considered by SC members. A revised MOU between the WCPFC and SPC was adopted in Papeete, French Polynesia, in December 2009⁴ (see Appendix XI).

In the case of the northern stocks, scientific advice has been usually provided by the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC). Based on recommendations from the *Independent Review of Interim Arrangements for Science Structure and Function* (Appendix IX), adopted at the Fifth Regular Session of the Scientific Committee, the Secretariat prepared a draft revised MOU with the ISC. However, this draft was not accepted by the NC and the current MOU has not yet been reviewed, although it may be presented to WCPFC8 (Appendix XI). Further discussion on the relationship between the SC, the NC and the ISC can be found in Section 5.6.

Presently, WCPFC interacts with several international organizations which are active in the region, both informally and formally. Formal relations are currently in place under agreements on cooperation, coordination and consultation with SPC, FFA, CCSBT, IATTC, IOTC, ISC, SPREP, ACAP, and NPAFC (see Sections 4.4 and 7.4, and Appendix XI).

⁴ <http://www.wcpfc.int/doc/wcpfc-spc-ofp-revised-memorandum-understanding>

3. The Convention and other international fisheries instruments, arrangements and initiatives

3.1. Introduction and background

The Convention was negotiated over four years in the framework of the Multilateral High Level Conference on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific (MHLC). Coastal States of the Western and Central Pacific and States fishing in that region participated in the negotiations.⁵ Upon completion of the negotiation process, the Convention was opened for signature at Honolulu on 5 September 2000 (See Section 2.1). The Depository for the Convention is the Government of New Zealand.

The Convention seeks to promote cooperation between coastal States and fishing States “with a view to ensuring conservation and promoting the objective of optimum utilization of highly migratory fish stocks throughout their range”. The Convention is comprised of the Parts listed below. It is in general conformity with the 1982 United Nations Convention on the Law of the Sea (1982 Convention), the 1995 United Nations Fish Stocks Agreement (UNFSA) and the best practices of other RFMO conventions, particularly those established after UNFSA was concluded.

- I General provisions
- II Conservation and management of highly migratory fish stocks
- III Commission for the conservation and management of highly migratory fish stocks in the Western and Central Pacific Ocean
- IV Obligations of Members of the Commission
- V Duties of the flag State
- VI Compliance and enforcement
- VII Regional observer programme and regulation of transshipment
- VIII Requirements of developing States
- IX Peaceful settlement of disputes
- X Non-parties to this Convention
- XI Good faith and abuse of rights
- XII Final provisions

Reciprocally, UNFSA framework also includes topics contained in Parts II, V, VI, VIII, IX, X, and XII of the Convention.

⁵ Australia, Canada, China, Cook Islands, Federated States of Micronesia, Fiji Islands, France, Indonesia, Japan, Republic of Kiribati, Republic of the Marshall Islands, Republic of Nauru, New Zealand, Niue, Republic of Palau, Independent State of Papua New Guinea, Republic of the Philippines, Republic of Korea, Independent State of Samoa, Solomon Islands, Kingdom of Tonga, Tuvalu, United Kingdom of Great Britain and Northern Ireland in respect of Pitcairn, Henderson, Ducie and Oeno Islands, United States of America and Republic of Vanuatu

During the negotiation of the Convention there were some areas where agreement could not be reached. Compromises were therefore made in order to conclude negotiations and move forward, with the result that some provisions did not fully address their respective areas and it was expected that these difficult issues could be elaborated through agreed legal interpretation in the implementation phase. This was a sound solution to the challenges of the time, but the gaps have given rise to some issues in implementation, as described below.

This Section reviews the Convention and its relationship with other international instruments, including those upon which it was based and those concluded since the adoption of the Convention, and identifies consistencies and gaps. In addition, the review describes the legal consequences of the division of certain responsibilities under the Convention between members and the Commission and addresses key legal issues in the Convention of current and future significance.

3.2. Convention consistency with relevant international fisheries instruments

3.2.1. Introduction

As noted above, the key international fisheries instruments upon which the Convention was based were the 1982 Convention and the UNFSA. This is reflected in:

- the objective of the Convention which is to “ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 Convention and the Agreement” (Article 2); and
- the requirement that the Convention “shall be interpreted and applied in the context of and in a manner consistent with the 1982 Convention and the Agreement” (Article 4).

International law in both of these instruments was further elaborated after 2000, when the Convention was opened for signature. New instruments adopted around that time and during the past decade include the voluntary FAO International Plans of Action (IPOAs)⁶ concluded under the 1995 FAO Code of Conduct for Responsible Fisheries and the 2009 FAO Agreement on port State measures to prevent, deter and eliminate illegal, unreported and unregulated fishing (Port State Measures Agreement). The annual UN General Assembly Resolutions on

⁶ The 1999 IPOAs on Sharks (<http://www.fao.org/fishery/ipoa-sharks/en>), Seabirds (<http://www.fao.org/fishery/ipoa-seabirds/en>), and Fishing Capacity (<http://www.fao.org/fishery/ipoa-capacity/en>) were concluded at the end of the negotiating process for the Convention, and the 2001 IPOA to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (<http://www.fao.org/fishery/ipoa-iuu/en>) was adopted afterwards. They are addressed in Section 3.2.7, below

Sustainable Fisheries, while non-binding, reflect emerging developments in international fisheries laws and practice. All of the foregoing instruments are reflected as appropriate in RFMOs Conventions and practices since 2000.

In addition, guidelines, principles and approaches for fisheries conservation and management have been developed since 2000, such as the 2003 FAO Technical Guidelines on the Ecosystem Approach to Fisheries and the 2010 FAO International Guidelines on Bycatch Management and the Reduction of Discards.

Other international and regional developments that figure in this evaluation include agreements among tuna organizations reached through the joint meetings of tuna organizations (the Kobe process), as well as continued implementation and development of regional fisheries agreements in the WCPFC Area such as the implementing arrangements to the Parties to the Nauru Agreement (PNA) Group. Broader international instruments that may be relevant to the work of the WCPFC, but which do not directly relate to fisheries, do not form part of this evaluation.⁷

The Convention provides some legal bases for implementing the more recent instruments, but further elaboration or measures may be needed, as described below. Evaluation of the performance of WCPFC in implementing conservation and management measures (CMMs) and taking other actions and measures governed by the new instruments are evaluated in other sections of this document (see Sections 5 and 6).

The objectives and key provisions of the international fisheries instruments referenced above are summarized below. The status of ratification by WCPFC Members and Cooperating Non-Members (CNMs) of the 1982 Convention, UNFSA, the FAO Compliance Agreement (all of which have entered into force) and the status of signatures of the FAO Port State Measures Agreement (not yet in force) is shown in Table 3.

Of the 25 members⁸ and nine CNMs, as at 1 August 2011, the 1982 Convention is binding on 29, the UNFSA on 24 (although an additional two members have signed but not yet ratified) and the FAO Compliance Agreement on 13. Eight have signed the FAO Agreement on Port State Measures. These instruments are briefly described below and the consistency of the Convention with their provisions is evaluated.

⁷ For example, the 1992 Convention on Biological Diversity

⁸ The members include one fishing entity, but note that the fishing entity is not a Contracting Party (Article 34 and Annex I of the Convention)

Table 3- WCPFC CCM's who have ratified international fisheries instruments, as at 3 June 2011, or for the FAO Agreement on Port State Measures 1/12/2011.

Contracting Party	1982 Convention	UN Fish Stocks Agreement	FAO Compliance Agreement	FAO Agreement on Port State Measures
Australia				
Canada				
China				
Cook Islands				
European Union				
Federated States of Micronesia				
Fiji				
France				
Japan				
Kiribati				
Republic of Korea				
Republic of Marshall Islands				
Nauru				
New Zealand				
Niue				
Palau				
Papua New Guinea				
Philippines				
Samoa				
Solomon Islands				
Tonga				
Tuvalu				
United States of America				
Vanuatu				
Member				
Chinese Taipei				
Cooperating non-Members				
Belize				
Ecuador				
El Salvador				
Indonesia				
Mexico				
Panama				
Senegal				
Thailand				
Vietnam				

3.2.2. 1982 United Nations Convention on the Law of the Sea

Twenty-seven WCPFC Members and CNMs were party to the 1982 Convention as at 1 August 2011.

The 1982 Convention provides a framework for the rights and duties of coastal States and flag States applicable to fisheries in areas within and beyond national jurisdiction, including the internal waters and archipelagic zones, territorial sea and EEZs. It refers to use of the best scientific evidence for the conservation of fisheries, the objective of optimum utilization and the duties of flag States. It specifically addresses highly migratory fish stocks and the rights and responsibilities for high seas fishing in general terms.

The Convention is expressly based, *inter alia*, on the 1982 Convention. It refers in a number of places to the 1982 Convention and is consistent with its provisions. In particular, reference is made in the Convention to the following.

- The objective of the Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and Central Pacific Ocean in accordance with the 1982 Convention and the UNFSA (Article 2).
- The Convention is to be interpreted and applied in the context of and in a manner consistent with the 1982 Convention (Article 4).
- The Commission, in establishing compatible conservation and management measures for highly migratory fish stocks in the Convention Area, must take into account:
 - the conservation and management measures adopted and applied in accordance with article 61 of the 1982 Convention in respect of the same stocks by coastal States within areas under national jurisdiction and ensure that measures established in respect of such stocks for the Convention Area as a whole do not undermine the effectiveness of such measures (Article 8(2)(b)(i));
 - previously agreed measures established and applied in respect of the same stocks for the high seas which form part of the Convention Area by relevant coastal States and States fishing on the high seas in accordance with the 1982 Convention and the Agreement; (Article 8(2)(b)(ii)); and
 - previously agreed measures established and applied in accordance with the 1982 Convention and the Agreement in respect of the same stocks by a sub-regional or regional fisheries management organization or arrangement (Article 8(2)(c)).
- The Scientific Committee must encourage and promote cooperation in scientific research, taking into account the provisions of article 246 of the 1982 Convention, relating to marine scientific research in the exclusive economic zone and on the continental shelf, in order to improve information on highly migratory fish stocks, non-target species, and species belonging to the same ecosystem or associated with or dependent upon such stocks in the Convention Area (Article 12(2)(c)).

- Where there are reasonable grounds for believing that a fishing vessel on the high seas has engaged in unauthorized fishing within an area under the national jurisdiction of a member of the Commission, the flag State of that vessel, at the request of the member concerned, must immediately and fully investigate the matter. The flag State must cooperate with the member concerned in taking appropriate enforcement action in such cases and may authorize the relevant authorities of such member to board and inspect the vessel on the high seas. These provisions are without prejudice to article 111 of the 1982 Convention, relating to the right of hot pursuit. (Article 25(6)).
- The provisions of Article 25 of the Convention, relating to compliance and enforcement, are without prejudice to the rights of any of the members of the Commission in relation to any provision relating to compliance and enforcement contained in any relevant bilateral or multilateral fisheries access agreement not inconsistent with the provisions of the 1982 Convention (Article 25(9)).
- Part XII of the Convention, relating to final provisions, adopts references to Article 305, Paragraph 1, Subparagraphs (c), (d) and (e) of the 1982 Convention, which provides that the Convention is open for signature by all States, as well as:
 - (c) all self-governing associated States which have chosen that status in an act of self-determination supervised and approved by the United Nations in accordance with General Assembly resolution 1514 (XV) and which have competence over the matters governed by this Convention, including the competence to enter into treaties in respect of those matters;
 - (d) all self-governing associated States which, in accordance with their respective instruments of association, have competence over the matters governed by this Convention, including the competence to enter into treaties in respect of those matters; and
 - (e) all territories which enjoy full internal self-government, recognized as such by the United Nations, but have not attained full independence in accordance with General Assembly resolution 1514 (XV) and which have competence over the matters governed by this Convention, including the competence to enter into treaties in respect of those matters.

Panel Assessment and Recommendations

The Convention is consistent with the 1982 Convention,

3.2.3. 1993 FAO Compliance Agreement

Eleven WCPFC Members and CNMs were party to the FAO Compliance Agreement, as at 1 August 2011.

The Compliance Agreement applies to high seas fishing and focuses on duties of flag States to exercise effective jurisdiction and control over its fishing vessels, as well as the consequences of reflagging that undermine fisheries conservation and management. It aims to ensure the adequate flow of information on high seas fisheries activities. The Compliance Agreement has generally been superseded by the UNFSA, in regard of highly migratory fish species, so no recommendations are necessary.

3.2.4. 1995 United Nations Fish Stocks Agreement (UNFSA)

Twenty-three WCPFC Members and CNMs were party to the UNFSA as at 1 August 2011.

The UNFSA was developed to elaborate provisions relating to high seas fishing for straddling fish stocks and highly migratory fish stocks in the 1982 Convention, and is directly relevant to the conservation and management of fisheries in the WCPFC Area. It encompasses areas of high seas and areas under national jurisdiction, particularly in respect of applying the general principles, the precautionary approach and developing compatible measures within and beyond areas of national jurisdiction, as well as specific duties e.g. for flag States to establish regulations ensuring that their vessels do not conduct unauthorized fishing within areas of national jurisdiction of other States. The objective of the UNFSA is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the 1982 Convention.

The UNFSA (Article 5) contains a list of twelve general principles for the conservation and management of fisheries on straddling and highly migratory fish stocks. The principles refer, inter alia, to biodiversity, ecosystems, bycatch and discards and monitoring, control and surveillance (MCS). These principles reinforce a preambular paragraph and many of the provisions in UNFSA stating the need to avoid adverse impacts on the marine environment, preserve biodiversity, maintain the integrity of marine ecosystems and minimize the risk of long-term irreversible effects of fishing operations.

Among other things, the UNFSA also elaborates provisions on compatibility of measures within and beyond national jurisdiction, the precautionary approach to fisheries management, flag State duties, port State measures, compliance and enforcement, including sub-regional and regional cooperation, boarding and inspection procedures, new members, non-members, transparency and recognition of the special requirements of developing States.

The **Convention** was based extensively on the UNFSA, and the relationship between the two instruments is elaborated in Table 4. Comments are provided which note areas of consistency between the Convention and the UNFSA and identify areas where there may be difficulties in interpretation or where further elaboration of the Convention through a range of mechanisms may be beneficial. The provisions where the panel feels that further clarification or other action may be necessary are indicated in the Table 4 in bold. They are further discussed in the following sections.

Table 4- Consistency of the Convention with the UNFSA

Convention Title of Article	Comment	Convention Article	UNFSA Article
Use of terms	Relevant definitions in the UNFSA that do not appear in the Convention are “conservation and management measures”, “fish”, “arrangement”. However, the Convention is interpreted and applied in a manner consistent with the UNFSA (Art. 4) so these definitions would not be necessary.	1	1
Objective	Consistent with the UNFSA.	2	2
Area of Application	<p>The UNFSA applies to the <i>conservation and management</i> of fish stocks in areas beyond national jurisdiction, except for Article 6 (precautionary approach) and Article 7 (compatibility), and coastal State’s duty to apply Article 5 (principles).</p> <p>The Convention applies to <i>all waters</i> of the Pacific Ocean bounded to the south and east, as described in Section 2.2.1, and to <i>all stocks</i> of highly migratory fish except sauries. CMMs are to be applied throughout the range or to specific areas. Nothing constitutes recognition of members’ claims or positions regarding the legal status of waters and zones claimed.</p> <p>Concerning the Area of Application, the ambiguity in the Convention has given rise to different interpretations regarding the inclusion of territorial and archipelagic waters, particularly in relation to the compatibility requirements in Article 8. These issues are discussed in Section 3.4.1.</p>	3	3, 9(1)(a), 9(1)(b)
Relationship between this Convention and the 1982 Convention	The Convention is consistent with the UNFSA which requires provisions to be interpreted and applied in the context of and consistent with the 1982 Convention. The Convention also refers to the UNFSA.	4	4
Principles and measures for conservation and	The Convention is generally consistent with the UNFSA. However, a serious concern is that it is the <i>members</i> that are obliged to apply the principles and	5	5

Convention Title of Article	Comment	Convention Article	UNFSA Article
management	measures, not the <i>Commission</i>. This is addressed in Sections 3.3 and 3.4.2.		
Application of the precautionary approach	<p>The UNFSA requires States to apply the precautionary approach as a principle/ measure in Article 5, and in Article 6 provides that “States shall apply the precautionary approach widely...” and lists several requirements for applying this approach. It also requires the improvement of decision-making by, <i>inter alia</i>, implementing improved techniques for dealing with risk and uncertainty.</p> <p>The Convention requires members to apply the precautionary approach as a principle/ measure under Article 5, but unlike the UNFSA Article 6 is phrased more indirectly: “In applying the precautionary approach, members shall...” It is not of great significance, but may be considered a nuance which indicates a softer approach. The Convention does not refer to risk and uncertainty, but is otherwise consistent with the UNFSA.</p> <p>It is significant that the <i>members</i> are required to apply the precautionary approach, and not the <i>Commission</i>, unlike requirements in conventions of other RFMOs. This is discussed in Sections 3.3 and 3.4.3.</p>	6	6
Implementation of principles in areas under national jurisdiction	<p>This is an area particular to the Convention, requiring the coastal States to apply principles and measures in Article 5 of the Convention to areas under national jurisdiction “in the exercise of their sovereign rights for the purpose of exploring and exploiting, conserving and managing highly migratory fish stocks”. In this sense it aims to balance requirements under the Convention with sovereign rights in the EEZ.</p> <p>The term “sovereign rights” and subsequent language is consistent with the 1982 Convention reference to the EEZ. However, the title refers to “areas under national jurisdiction”, which implies all maritime zones including territorial seas and archipelagic zones. This gives rise to some controversy, considering that the Convention applies to all waters, and is discussed in Section 3.4.4.</p>	7	N/A
Compatibility of conservation and	The UNFSA requires compatibility of CMMs established for the high seas and in areas under national jurisdiction. States have a duty to cooperate and must make every effort to	8	6

Convention Title of Article	Comment	Convention Article	UNFSA Article
management measures	<p>agree on compatible CMMs within a reasonable period of time. Certain criteria must be taken into account in establishing these CMMs.</p> <p>The Convention is consistent with this provision in the UNFSA and balanced to the extent that it applies to members, who have a duty to cooperate to achieve compatible measures and not to undermine measures on the high seas, and the Commission which <i>inter alia</i> must take into account measures adopted by coastal States within areas of national jurisdiction.</p> <p>The Convention adds an important requirement, not appearing in the UNFSA, that the Commission must pay special attention to ensure compatibility between CMMs adopted for the high seas and those established by coastal States in accordance with Article 61 of the 1982 Convention in areas where the high seas are entirely surrounded by the EEZs of Commission members.</p> <p>In practical terms, the Commission must, in determining compatibility, take into account recent developments such as the Third Implementing Arrangement for the Parties to the Nauru Agreement (PNA). The legal implications are addressed below in Section 3.4.1.</p>		
Establishment of the Commission	<p>The Convention is consistent with the UNFSA. The Convention does not adopt the language in Article 8(3) and (4) of the UNFSA that refers to States which may become members of an organization (those having a “real interest”).</p>	9	8
Functions of the Commission	<p>The Convention sets out 15 functions for the Commission which are generally consistent with UNFSA. However, concerning the requirements to agree on participatory rights under the UNFSA, although the Convention, in Articles 10.1.g and 10.3, sets out considerations to be taken into account when developing criteria for allocations, such criteria have not yet been developed.</p> <p>In addition, the Convention refers in this Article to promoting cooperation between members to ensure compatibility of CMMs applicable to the high seas and areas under</p>	10	10

Convention Title of Article	Comment	Convention Article	UNFSA Article
	national jurisdiction. Each of these areas has been subject to different interpretations and are discussed in Section 3.4.4.		
Subsidiary bodies of the Commission	Standard provision in RFMO Conventions, consistent with the functions of WCPFC. A Scientific Committee, Technical and Compliance Committee and Northern Committee are established, the latter to make recommendations on the implementation of CMMs for a designated northern area, upon which the Commission must base its decisions. Extensive terms of reference exist for the Scientific Committee and the Technical and Compliance Committee, but the authority of the Northern Committee is less well defined, as elaborated in Section 3.4.5.	11	N/A
Functions of the Scientific Committee	The Convention is consistent with the UNFSA. The Convention specifically requires representatives of the Oceanic Fisheries Program (OFP) of the Secretariat of the Pacific Community (SPC) and the Inter-American Tropical Tuna Commission (IATTC) to participate in the work of the Committee.	12	10(d), 10(e), 10(f), 10(g)
Scientific services	The Convention is consistent with the UNFSA. It takes into account the availability of other regional organizations for such services and avoids duplication of effort.	13	9(1)(d)
Functions of the Technical and Compliance Committee	The Convention is consistent with the UNFSA.	14	10(h)
The Secretariat	Standard provision in RFMO Conventions.	15	N/A
The staff of the Commission	Standard provision in RFMO Conventions.	16	N/A
Funds of the	Standard provision in RFMO Conventions.	17	N/A

Convention Title of Article	Comment	Convention Article	UNFSA Article
Commission			
Budget of the Commission	Standard provision in RFMO Conventions.	18	N/A
Annual audit	Standard provision in RFMO Conventions.	19	N/A
Decision-making	Consistent with the UNFSA. The provision on chambered voting is unique to the Convention, and the decision-making process reflects recent developments in RFMO Conventions (see Section 4.1.5).	20	10(j)
Transparency	Standard provision in RFMO Conventions, consistent with the UNFSA.	21	12
Cooperation with other organizations	Consistent with the UNFSA, sets out requirements and refers to organizations of relevance to WCPFC (see Section 7).	22	9(1)(c), 12(2)
Obligations of members	Standard provision in RFMO Conventions.	23	N/A
Flag State duties	Consistent with the UNFSA (see Section 6).	24	18
Compliance and enforcement	Consistent with the UNFSA (see Section 6).	25	19, 20
Boarding and inspection	Consistent with the UNFSA (see Section 6).	26	21, 22
Measures taken by a port State	Consistent with the UNFSA. However, should be elaborated through regional agreement to promote implementation of the 2009 FAO Agreement on Port State Measures (see Section 6).	27	23
Regional observer programme	Consistent with the UNFSA, but considerably more robust. (see Section 6)	28	6(b), 18(3)(g)
Transshipment	Consistent with the UNFSA (see Section 6).	29	18(3)(f)

Convention Title of Article	Comment	Convention Article	UNFSA Article
			18(3)(h)
Recognition of the special requirements of developing States	Consistent with the UNFSA (see Section 3.4.6).	30	24, 25
Procedures for the settlement of disputes	Refers to procedures set out in the UNFSA (see Section 4.3).	31	30
Non-parties to this Convention	<p>Consistent with the UNFSA.</p> <p>The Convention refers to cooperating non-parties, and provides that they “shall enjoy benefits from participation in the fishery commensurate with their commitment to comply with, and their record of compliance with, conservation and management measures in respect of the relevant stocks”. However, neither the Commission nor its members are specifically empowered to decide on such benefits for non-parties, and the requirement for potential benefits only appears in conjunction with members’ duties.</p> <p>The legal obligation of members to ensure benefits to cooperating non-parties could therefore become an issue. This is discussed in Section 3.3.2 below.</p>	32	10(i), 11, 17

3.2.5. 2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate IUU Fishing (PSMA).

Seven WCPFC Members and CNMs had signed the PSMA as at 1 August 2011 and one Member, the European Union (EU) had ratified it.

The PSMA aims to deter IUU fishing through establishing minimum standards and requirements for vessels to provide information prior to entry into port, denial of entry into port and denial of use of port by the port State, inspections, reports of inspections, information sharing and training.

The PSMA integrates RFMOs in its provisions, including in the cooperation and exchange of information and denying the use of a port to a vessel on an IUU Vessel list of an RFMO and requiring the flag State to confirm that the catch was taken in accordance with measures of an RFMO. It encourages parties to agree on minimum levels of inspection through RFMOs. There are also requirements to notify RFMOs of certain things, including the results of an inspection. The role of the flag State is also included, as well as the special requirements of developing States. It will become binding when ratified by 25 countries.

The Convention generally implements in Article 27 the provisions of the UNFSA (Article 23) regarding port State measures in respect of vessels of a member at the port of another member. The UNFSA and the Convention both provide, *inter alia*, that a port State has the “right and duty to take measures ...to promote the effectiveness of ... regional and global conservation and management measures”.

There is, however, a fundamental difference between the relevant provisions in the UNFSA, the Convention and the PSMA because the two former instruments allow the port State to inspect documents, fishing gear and catch on board such fishing vessel only when a fishing vessel “voluntarily” enters a port or offshore terminal of the port State.⁹ Although used in previous international instruments, the Port State Measures Agreement does not use this term, and in practice many coastal States do not favor this restriction for a range of reasons, including:

- it prejudices the sovereignty of the port State;
- it is inconsistent with the authorities given under boarding and inspection schemes on the high seas which do not require a vessel to “voluntarily” allow such inspections;
- it is inconsistent with other international precedent including requirements for merchant vessels, e.g. under the 1982 Paris Memorandum of Understanding on Port Control, which does not require vessels to be “voluntarily” in port;

⁹ The Convention is applicable only to the vessels of members in the port of another member

- where a vessel claims force majeure it could be argued that the situation is not voluntary and inspections must therefore be disallowed, although it is well known that fishing vessels sometimes claim force majeure on false pretenses in order to secure the use of a port; and
- it would disallow inspections where a fishing vessel has been suspected of committing an offence and is ordered to port – and is therefore not voluntarily in port.

The use of the word “voluntarily” can therefore be seen as a potentially limiting and controversial reference and, although this has been addressed in at least one forum in connection with vessels entering in distress, State practice has favored an approach that is based on the absolute sovereignty of the port State.¹⁰

The Convention does not refer to the minimum standards in the PSMA for, *inter alia*, reporting, information exchange, inspection or the mandatory denial of the use of port under specified circumstances. It permits, but does not require, members to prohibit the use of port only for landing and transshipping (Article 27(3)). The Convention does not prohibit other uses referenced in the PSMA- packaging, processing and port services, including re-fuelling and resupplying, maintenance and dry-docking.

The WCPFC CMM 2008-1 on Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean provides that each CCM must prohibit landings, transshipment and commercial transactions in tuna and tuna products that are positively identified as originating from fishing activities that contravene any element of the Commission’s CMMs, that monitoring must be conducted at landing and transshipping ports to assess the amount of catch by species and that the outcomes must be reported annually to the Commission. This is a first positive step towards agreeing on broader measures and is discussed further in Section 5.2 of this document.

The Draft Work Programme for 2012-2014 presented to TCC7 includes for 2012 the tasks to develop a CMM on port State measures and consider mechanisms for the implementation of port State measures in a harmonized manner.¹¹ The outcome of TCC7 is discussed further in Section 6.2 of this document.

¹⁰ “Voluntarily” has been interpreted to mean that a vessel entered port on its own volition and not under distress. See *Anklagemyndigheden v. Peter Michael Poulsen and Diva Navigation* (European Court Reports, 1992, pp 1-06019), where the European Court of Justice held, among other things, that the prosecution of the defendants by Denmark for breach of Community fisheries conservation measures was unlawful because the vessel entered the Danish port in distress. However, State practice includes processes where the coastal State decides whether to admit a vessel claiming distress into port (e.g. it may not wish to do so, *inter alia*, for reasons of security or potential pollution of the port) and then reserving the right, based on sovereignty, of inspection and further action as may be necessary

¹¹ <http://www.wcpfc.int/node/3824>

Another tuna organization, IOTC, has adopted a binding resolution on Port State Measures almost identical to the PSMA¹², and capacity development to implement the measure is underway. As a tuna management organization, WCPFC should consider a similar measure.

It is recommended that, when developing the CMM, members consider the fullest implementation possible of the PSMA and provide for amendments or clarifications (e.g. through declarations) that address and overcome limitations in the Convention that do not reflect current international law and practice.

Panel Assessment and Recommendations

- **It is recommended that, when developing a CMM on port State measures, members consider the fullest implementation possible of the FAO PSMA and provide for amendments or other clarifications (e.g. through declarations) that address and overcome limitations in the Convention that do not reflect current international law and practice, such as the requirement that vessels be voluntarily in Port before measures can be taken.**
- **In considering Port State Measures, the Commission should take into account minimum standards in the PSMA, measures and practices of other RFMOs, in implementing such standards, and developments in the broader system of Port controls.**
- **WCPFC should consider a recommendation along the lines of the binding resolution adopted by IOTC on Port State Measures, including capacity development to implement such measures.**

3.2.6. 1995 FAO Code of Conduct for Responsible Fisheries (Code of Conduct)

The Code of Conduct is a voluntary instrument that elaborates on responsible fishing and aquaculture and forms the basis for a wide range of actions and measures of RFMOs. It is clearly interlinked with and complementary to other fisheries instruments, both voluntary and binding. The Code makes numerous references to the role of RFMOs in establishing a responsible international fisheries regime. Some relevant provisions are:

- the Code is global in scope, and directed towards stakeholders that include RFMOs;
- RFMOs are charged with collaborating in the implementation of the objectives and principles in the Code;
- RFMOs should apply a precautionary approach to the conservation, management and exploitation of living aquatic resources;
- the role of RFMOs in attaining fisheries management objectives, providing a management framework and procedures, data gathering and management advice, application of the precautionary approach, describing management measures and implementation of the Code itself.

¹² Resolution 10/11 on port State measures to prevent, deter and eliminate illegal, unreported and unregulated fishing

Panel Assessment and Recommendations

- **The Convention is consistent with the Code of Conduct, in terms of providing for a responsible international fisheries regime in the WCPO. In particular, the functions of the Commission and the Scientific Committee promote the Precautionary Approach to the conservation and management of the living marine resources.**

3.2.7. 1999/2001 International Plans of Action (IPOAs) elaborated under the Code of Conduct

There are four voluntary IPOAs elaborated under the Code of Conduct, the first three were endorsed by the FAO Committee on Fisheries (COFI) in 1999 and the last was endorsed by the COFI in 2001:

- Reducing Incidental Catch of Seabirds in Longline Fishing (IPOA-Seabirds)
- Conservation and Management of Sharks (IPOA-Sharks)
- Management of Fishing Capacity (IPOA-Capacity)
- Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU)

Of all the IPOAs, the IPOA-IUU has the deepest focus on the role of RFMOs and encourages States and RFMOs to fulfill the obligations or provisions of the other international fisheries instruments.

Panel Assessment and Recommendations

- **The Convention, generally addresses IPOAs requirements and WCPFC has already adopted various CMMs to this effect;**
- **The Panel recommends, however, that all IPOAs should be addressed in a more consistent manner, to the extent possible, with consideration being given to their practical implementation.**

3.2.8. 2003 FAO Technical Guidelines on the Ecosystem Approach to Fisheries (EAF)

The purpose and definition of the EAF are presented in the Technical Guidelines:

The purpose of an ecosystem approach to fisheries *is to plan, develop and manage fisheries in a manner that addresses the multiple needs and desires of societies, without jeopardizing the options for future generations to benefit from the full range of goods and services provided by marine ecosystem.*

From this purpose, the definition of EAF follows: *an ecosystem approach to fisheries strives to balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries.*

The focus of the EAF Guidelines is on fisheries management, with some coverage of research, integration of fisheries into coastal area management and special requirements of developing countries. The need to prevent pollution from fishing activities and the impact of polluters on fishing is also included, but was not fully elaborated.

They are not seen as a replacement for, but rather an extension of, current fisheries management practices that need to be broadened to take into account the components of ecosystems in which fisheries operate.

The principles and measures for conservation and management in Article 5 of the Convention, requires *members*, not the *Commission*, to “(d) assess the impacts of fishing, other human activities and environmental factors on target stocks, non-target species, and species belonging to the same ecosystem or dependent upon or associated with the target stocks”.

Article 12 of the Convention (Functions of the Scientific Committee) provides that the Committee shall “(c) encourage and promote cooperation in scientific research, taking into account the provisions of Article 246 of the 1982 Convention, in order to improve information on highly migratory fish stocks, non-target species, and species belonging to the same ecosystem or associated with or dependent upon such stocks in the Convention Area”.

Article 13 (Scientific Services) empowers the scientific experts, as directed by the Commission, to: “(b) conduct assessments of highly migratory fish stocks, non-target species, and species belonging to the same ecosystem or associated with or dependent upon such stocks, within the Convention Area; and (c) assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or dependent upon or associated with the target stocks”.

A WCPFC Ecosystem and Bycatch Specialist Working Group (EB-SWG) was established and first met in 2005 to provide information to fulfill Articles 5 (d) and (e) of the Commission’s *Principles and measures for conservation and management*. The functions of the EB-SWG are related to bycatch, ecosystem analysis and monitoring and linkages with other SWGs and other organizations. To achieve this, the EB-SWG must review:¹³

- ✓ the impact of fishing on components of the ecosystem not targeted by fisheries;
- ✓ the interactions between climate and environmental factors and the target and non-target species; and
- ✓ the development of ecosystem-based models to assist the Commission with the development of management decisions.

¹³ Second Session of the Scientific Committee, 2006. Consolidated terms of reference of the specialist working groups. WCPFC-SC2-2006/GN IP-1

Panel Assessment and Recommendations

- **The Convention gives ample scope for development and implementation of the EAF. However, the institutional mechanism established to facilitate implementation should be reviewed. Relevant recommendations relating to the need for review of the terms of reference and functions of the EB-SWG are made in Section 3.2.9, also taking into account the issues relating to bycatch and discards.**
- **A technical evaluation of the implementation of the EAF is provided in Section 5.4.2 of this document. Implementation of the EAF for Pacific Island developing States, which are also members of WCPFC, is supported by FFA. The FFA has completed Ecosystem Approach to Fisheries Management (EAFM) reports for Cook Islands, Federated States of Micronesia, Palau, Tonga and Vanuatu.**

3.2.9. 2010 FAO International Guidelines on Bycatch Management and Reduction of Discards

These International Guidelines, a negotiated instrument, are to be interpreted and applied in conformity with the relevant rules of international law, as reflected in the 1982 Convention and to be applied to complement bycatch measures addressed in the IPOA-Seabirds and its related Best Practices Technical Guidelines, the IPOA-Sharks and the Guidelines to Reduce Sea Turtle Mortality in Fishing Operations.

The scope of these Guidelines is global, covering all fishing activities in all seas, oceans and inland waters. Their stated purpose is to assist States and RFMO/As in implementing the Code and an ecosystem approach to fisheries through effective management of bycatch and reduction of discards. The objective of these Guidelines is to promote responsible fisheries by:

- minimizing the capture and mortality of species and sizes which are not going to be used in a manner that is consistent with the Code;
- providing guidance on measures that contribute towards more effective management of bycatch and reduction of discards; and
- improving reporting and the accounting of all components of the catch of which bycatch and discards are subsets.

The Convention, in Article 5(e), Principles and measures for conservation and management, provides that the members shall:

“adopt measures to minimize waste, discards, catch by lost or abandoned gear, pollution originating from fishing vessels, catch of non-target species, both fish and non-fish species, (hereinafter referred to as non-target species) and impacts on associated or dependent species, in particular endangered species and promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques;”

This duty is placed on *members*, and not on the *Commission* and it is beyond the scope of this document to evaluate the performance of members. Nonetheless the CMMs adopted by the Commission have included those on seabirds, sharks and sea turtles.¹⁴

As noted above, the EB-SWG has been established to address relevant issues related to ecosystem and bycatch. Technical evaluation of the performance of the Working Group is addressed under conservation and management in Section 5.4.2 of this document.

For purposes of the legal review, it is noted that new standards for the management tools involved, i.e. the EAF, bycatch management and reduction of discards, have been developed through international fisheries instruments and practice.

Panel Assessment and Recommendations

- **It is recommended that the terms of reference and functions of the Ecosystem and Bycatch Specialist Working Group should be evaluated with a view to the implementation of the 2003 FAO Technical Guidelines on the Ecosystem Approach to Fisheries and the 2010 FAO International Guidelines on Bycatch Management and Reduction of Discards and that priorities be agreed for the SWG as appropriate. In addition, it is recommended that CMMs should reflect the implementation of these instruments, including provisions on management and reporting.**¹⁵

3.2.10. United Nations General Assembly (UNGA) Annual Resolutions on Sustainable Fisheries and the Law of the Sea

These Resolutions are non-binding. They constitute “soft law” and address fisheries issues, calling upon RFMOs to consider specific actions or measures to achieve sustainable fisheries within their areas of competence.

The 1982 Convention and UNFSA are the key international fisheries instruments relevant to the Convention and the ongoing work of the Commission. Similar to the situation in other negotiations, there were some areas where compromises were made in the Convention; in order to conclude negotiations and move forward, some provisions did not fully address their respective areas and it was expected that difficult issues could be elaborated through agreed legal interpretation in the implementation phase. This was a sound solution to the challenges of the time, but has given rise to some issues in implementation. Further discussion in respect to such resolutions is provided in Section 5.4.2.

¹⁴ Note the report of the Bycatch Mitigation Workshop held by the Bycatch Joint Technical Working Group (following up recommendations by Kobe II) in September 2011, at <http://www.wcpfc.int/doc/wcpfc-tcc7-2011-26/catch-workshop>

¹⁵ For example, to improve, as appropriate, the reporting and accounting of all components of the catch of which bycatch and discards are subsets

Panel Assessment and Recommendations

- **The Convention is based on the 1982 Convention and UNFSA and is therefore consistent with the objectives of the UNGA Resolutions. Care should be taken in ensuring that the CMMs implement UNGA Resolutions as appropriate.**

3.3. Division of Responsibilities under the Convention for the Commission and for Members

3.3.1. General

Within the Convention's framework, duties and responsibilities are assigned variously to members and to the Commission. In only one case are obligations assigned to members 'individually or jointly', indicating that they may be discharged also through the Commission (Article 32(4)), otherwise they are clearly members' responsibilities and not of the Commission.

This distinction is an important consideration for several reasons. First, this Performance Review focuses mostly on the Commission. Second, many RFMOs are doing their best to serve the members according to the terms of their respective Conventions and agreed rules and procedures, but in many cases the members are unwilling or unable to fulfill their obligations. Although States are obliged by the international fisheries instruments to give effect to their duty to cooperate through RFMOs, where such cooperation within the RFMO is not forthcoming it should be clear that the responsibility is not that of the organization. The organization may - or may not - be in a position to address the situation.

Members' responsibilities are shown in Table 5. Many of these responsibilities more logically should be discharged by the members but it is a concern that the Commission itself does not have any responsibility to, for example, implement the principles and measures for conservation and management, apply the precautionary or ecosystem approach or take action with respect to cooperating non-parties, as discussed below. This departs from provisions in other post-Agreement RFMOs, which designate full or partial responsibility to the Commission at least in respect of fisheries management.¹⁶

Mindful that it is a function of the Commission, not of the members, to adopt conservation and management measures (Article 10(1)(a)), the assignment to members of the requirements, *inter alia*, to adopt measures to ensure long-term sustainability of fish stocks, apply the precautionary approach, protect biodiversity, etc. (Article 5), without reference to effecting this through the Commission or without according these functions to the Commission even by reference in Article 10 results in a legal lacuna.

¹⁶ For example, the Conventions establishing the South-East Atlantic Fisheries Organization (SEAFO) and the South Pacific Regional Fisheries Management Organization (SPRFMO)

Table 5- Responsibilities of WCPFC Members pursuant to the Convention

WCPF Convention Article	Responsibilities of WCPFC Members
5	Principles and measures for conservation and management
6	Application of the precautionary approach
7	Implementation of principles in areas under national jurisdiction
8(1) and (3)	Compatibility of conservation and management measures
23	Obligations of members of the Commission
24	Flag State duties
25 (1)-(11)	Compliance and enforcement
27	Measures taken by a port State
29(1)	Transshipment
32(1), (2), (4)	Non-parties to this Convention

The consequences of this, in practical terms, may not be significant if the members in fact implement these requirements through the Commission as well as under national law. However, it needs to be clear for purposes of this Performance Review that it is not the Commission’s responsibility to, *inter alia*, apply the principles and measures– not even in exercising its functions under Article 10, nor to adopt the precautionary approach, agree on port State measures or take measures relating to non-parties, except drawing certain matters to the attention of the flag State.

For future clarity and understanding of obligations under the Convention, it would be useful for members to address this lacuna and state their understanding of the role and responsibilities of the Commission. In this context, it would be appropriate to take note of the practice in other RFMOs and of Article 10(o), which designates as a function of the Commission to “discuss any question or matter within the competence of the Commission and adopt any measures or recommendations necessary for achieving the objective of this Convention”. This does not go so far as to allow the Commission to, for example, to exercise any other function and take any other decisions that may be necessary for achieving the objective of the Convention.

Panel Assessment and Recommendations

- **The legal responsibilities of the Commission and of members under the Convention should be made clearer, taking note of the gaps in their responsibilities (e.g. applying principles and measures for conservation and management; applying the precautionary approach), according to international law and practice of other RFMOs. Where gaps are identified, the role and responsibilities of the Commission and members should be clarified and, as appropriate, a mechanism for implementing such role and responsibilities should be identified, including by means of Convention interpretation, for example through the adoption of resolutions, declarations or guidelines.**

3.3.2. Responsibilities relating to non-Parties to the Convention

A particularly troublesome issue in the Convention relates to the responsibilities of the Commission and members in respect of non-parties to the Convention (Article 32¹⁷). It sets many requirements for members, but provides a minimal role for the Commission. This is not consistent with similar provisions in other RFMO Conventions, which give authority to the Commission or, if authority is given to members it is on an “individual or collective” basis, not just as individual members.¹⁸

In the Convention, Article 32 allows *members* to: take measures to deter non-parties from undermining the effectiveness of CMMs (32(1)), exchange information on non-parties fishing in the Convention Area (32(2)) and request non-parties fishing in the area to cooperate (32(4)). The *Commission* is empowered by Article 32(3) to draw non-parties’ attention to activities by its nationals which, “in the opinion of the Commission, affects the implementation of the objective of this Commission”. If *members* concur, non-parties may be invited to attend meetings of the Commission as observers (32(5)). This is clearly not framed as a function of the *Commission*, as provided in other RFMO Conventions.¹⁹

Strangely, Article 32(4) – which focuses on the responsibility of *members* to request the cooperation of non-parties – also provides that cooperating non-parties “shall enjoy benefits from participation in the fishery commensurate with their commitment to comply with, and their record of compliance with, conservation and management measures in respect of the relevant stocks”. This should be framed as a *Commission* decision, not a legal right of the cooperating non-party vis-à-vis members. Otherwise a non-party could seek to legally exercise this right against any member individually or jointly.

A key issue in recent years has been the admission of new cooperating non-members (CNMs) and the implications that would have for allocations as well as support to the Commission. This is discussed in greater depth in Section 3.4.4.1 of this document, but it is important not to overlook, in the legal context, the difficulty with which this issue has been addressed in recent years. A cautious approach to new entrants is evident in Article 35 of the Convention, which permits States that participated in negotiations for the Convention - who are

¹⁷ Loosely based on Article 17 of the UNFSA

¹⁸ e.g. see SEAFO Convention (Article 22) and SPRFMO Convention (Article 32)

¹⁹ e.g. The NAFO Convention requires as a function of the Commission that it adopt rules to provide for the participation of the representatives of non-contracting parties as observers at its meetings and requires that the rules not be restrictive and provide timely access to reports and records of the Commission. (Article VI(5)(g))

referred to in the Convention as Contracting Parties and are also members²⁰ - to accede at any time, whereas others could only be invited to accede after entry into force of the Convention by a consensus decision of the Contracting Parties.

At the time, this addressed potential problems of overcapacity and the fact that most parties are small island developing States for which the fisheries are an important resource. The restrictive CMM 2004-02 “Cooperating non-Members” granted such status for one year at a time, and CMM 2008-02 “Cooperating non-Members”, while continuing the one-year rule, separated the issue of CNM status from that of allocation and invited CNMs to make a financial contribution commensurate with what its obligations would be as a member under Article 18(2) of the Convention. In CMM 2009-11, CNMs were required to make financial contributions.

Despite these developments and for the purposes of this section, it is noted that the Convention does not address the *Commission’s* possible role of developing rules for CNM status under the Convention. In fact, unlike the Conventions of other RFMOs,²¹ the Commission’s functions (Article 10) do not refer to obligations in respect of non-parties or CNMs although they do include in agreement on means by which the fishing interests of any *new member* of the Commission may be accommodated (subparagraph (1)(k)). By implication/omission, this excludes cooperating non-members.

The Convention does not expressly require allocations to be made exclusively to members, but requires the Commission to take into account certain considerations for “participants” in developing criteria for allocations (Article 10(3)(b)(e) and (f)) – e.g. interests, fishing patterns and practices in the fishery, contribution to conservation and management, provision of data, compliance. It would be difficult to argue that a cooperating non-member with no allocations, fishing patterns, provision of data, etc., is a participant.

Although CNM status is not directly addressed under Article 32(2), it is indirectly affected because members are not expressly required to cooperate through the Commission in exchanging information on the fishing activities of non-parties’ fishing vessels. Instead, members have the responsibility to “exchange information” on such activities. They are not obligated to inform the Commission or exchange information through the Commission.

The Convention therefore empowers Members to interact with each other but not with the Commission as such and the option of doing so “individually or collectively” within the Commission, as referenced in Article 32(4), is not offered. This is clearly a gap in the

²⁰ This is not explicitly stated, but is evident from the preamble and Article 34(4)

²¹ e.g. the functions of the SEAFO Commission include the adoption of measures to promote the compliance by non-parties Article 6(5), and the SPRFMO Commission’s functions include the development of rules for cooperating non-Contracting Party status under the Convention (Article 8(j))

Convention, particularly in an area where the Commission could be legally tasked with playing a valuable coordinating role. In practice, the use of IUU Vessel Lists and Authorized Vessel Lists, *inter alia*, addresses the gap, but the members may wish to clarify the ongoing legal role and responsibilities of the Commission in this regard.

A related concern is that, as noted above, under Article 35 of the Convention only Contracting Parties (as opposed to members) can invite non-parties to accede. There is no procedure established for such a process. Several CNMs have sought clarification on this to no avail.

Panel Assessment and Recommendations

- **It is recommended that members review the functions and legal obligations of the Commission and of individual members with respect to non-parties in the Convention under Article 32, including the responsibility to allocate benefits to non-members from participation in the fishery and developing rules relating to the status of and benefits for cooperating non-members.**
- **In terms of applying the provisions of Article 32.4 and relevant CMMs, common standards should be applied to assess the sufficiency of the commitment to comply with CMMs, and/ or the record of compliance, when allocating benefits attached to fishery participation by cooperating non-contracting parties.**
- **A process for inviting non-parties to accede to the Convention should be established, mindful of the requirements in Article 35 of the Convention that Contracting Parties may, by consensus, invite other States and regional economic integration organizations, whose nationals and fishing vessels wish to conduct fishing for highly migratory fish stocks in the Convention Area to accede to the Convention.**

3.4. Key Convention legal issues

Key legal issues in the Convention are described below, and recommendations made to address them. Some of these issues remain unresolved among members, and it is hoped that the analysis provided below will offer a basis for resolving differences. Other issues could become more problematic if they are not addressed.

3.4.1. Area of application/ compatibility of measures

There is an ambiguity in the Convention concerning its Area of Application. This has given rise to different interpretations regarding the inclusion of territorial and archipelagic waters, particularly in relation to the requirements relating to the Area of Application (Article 3) and the compatibility requirements (Article 8).

Article 3 (Area of Application) provides that the Convention applies to *all waters* of the Pacific Ocean bounded to the south and east as described and to *all stocks* of highly migratory fish within the Convention Area except sauries. CMMs are to be “applied throughout the range of the stocks, or to specific areas, as determined by the Commission”. Besides, nothing in the Convention “constitutes recognition of the claims or positions of any of the members of the Commission concerning the legal status and extent of waters and zones claimed by any such Members”.

The above is balanced by the sovereign rights of the coastal States, expressed in two key places in the Convention. Article 7(1) requires principles and measures for conservation and management in Article 5 to be applied by coastal States “in the exercise of their sovereign rights”. Article 10(1) assigns functions to the Commission “without prejudice to the sovereign rights of coastal States for the purpose of exploring and exploiting, conserving and managing highly migratory fish stocks within areas under national jurisdiction”. Such functions include determining and adopting CMMs.

The compatibility of measures thus becomes a key requirement. In this regard, Article 8(1) requires CMMs established for the high seas and those adopted for areas under national jurisdiction to be compatible, and places a duty on members to cooperate to achieve compatible measures.

The difficulties of this issue in the region were highlighted in the report of the 2010 Resumed Review Conference on the UN Fish Stocks Agreement which stated that “Delegations highlighted the need for progress in achieving compatibility of measures, including in the South Pacific, to ensure the conservation of species and the biological integrity of stocks. There was a need in that regard for regional fisheries management organizations and arrangements to adopt and integrate the necessary measures to deal with the continued deterioration of high-seas fish stocks.”

Article 8 aims to achieve a balanced approach between the Commission and its members in giving the Commission certain responsibilities in establishing *compatible CMMs in the Convention Area* (Article 8(2)) and requiring coastal States to ensure that the measures adopted and applied by it to highly migratory fish stocks within areas of its national jurisdiction do not undermine the effectiveness of measures adopted by the Commission in respect of the same stocks (Article 8(3)).

However, unlike UNFSA Article 7 on compatibility, the language of Article 8 does not indicate that the balance is one where the Commission establishes measures for the high seas (compatible with in-zone measures) and the members establish measures in-zone (compatible

with high seas measures). As noted above, the Commission must establish compatible CMMs in the Convention Area (which includes “all waters” in the area), and members “have a duty to cooperate in achieving compatible measures”.

A strong legal argument, apart from the sovereignty issue, is that the very notion of “compatibility” is founded on the recognition of sovereignty and sovereign rights of the coastal State.

Interestingly, there is another significant difference between the compatibility requirements under the UNFSA and the Convention. The UNFSA provision contains a “without prejudice” clause relating to the coastal State’s sovereign rights – which implies that, although the Article applies to areas under national jurisdiction, it does not apply to areas over which the full sovereignty of the coastal State may be exercised – i.e. the territorial seas and archipelagic zone. The Convention does not contain such a “without prejudice” clause in its compatibility provision.

The issue is whether the Convention’s area of application includes territorial seas and archipelagic zones, and if not, whether coastal States are obligated to apply compatible measures within such waters. The aim is to ensure management of the stocks throughout their range.

The practical consequences of excluding territorial seas and archipelagic zones is that CMMs would not be applied or enforced in such areas and the relevant obligations for fishing - e.g. allocations, reporting - would not be met. This is especially problematic in respect of sizeable archipelagic zones.

There are different interpretations among members, with the Pacific Island States and archipelagic States claiming complete sovereignty over these areas (especially in view of their efforts to develop their fishing industries) and others emphasizing the need to manage the fish stocks throughout their range and the fact that the area of application is comprised of “all waters”.

A fundamental basis for resolving this difficulty should be the 1982 Convention, which expressly recognizes the sovereignty of a coastal State over the territorial sea and, in the case of an archipelagic State its archipelagic waters (Article 2). The Convention provides in Article 4 that nothing in the Convention shall prejudice the rights, jurisdiction and duties of States under the 1982 Convention, and shall be interpreted in the context of and in a manner consistent with the 1982 Convention and the UNFSA.

Additionally and importantly, Articles 63 and 64 in the 1982 Convention relating to straddling fish stocks and highly migratory species - on which UNFSA and in turn the Convention are based - are included in “Part V: Exclusive Economic Zone”. In this way, it is

arguably clear that these provisions were not intended to refer to the territorial sea or archipelagic waters.

So, the sovereignty of coastal States is maintained under the Convention, and this is further strengthened by consistent reference in the Convention to the “sovereign rights” (not sovereignty) of coastal States, which implies application to areas other than those over which sovereignty is exercised.

Notwithstanding the problematic interpretations, a form of accommodation seems to have been reached in relation to territorial seas and archipelagic zones, for example, at the seventh session of WCPFC. In approving Indonesia’s application for renewal of its CNM status and determining its participatory rights, the Commission “*encouraged* Indonesia to apply compatible measures within its archipelagic waters given the significance of these waters for juvenile yellowfin and bigeye catch”. This constitutes implicitly recognition of Indonesia’s sovereignty over its waters.

Conversely, CMM 2008-01 on bigeye and yellowfin tuna was compatible with the Third Implementing Arrangement for the PNA on terms and conditions of access to the fisheries zones to the parties and the Palau Arrangement for the vessel day scheme for the purse seine fishery.

There is additional support for the approach that compatibility applies in a legal sense only to EEZs. It is worth noting that several CMMs are increasingly using the language referring specifically to the EEZs and high seas. Article 18 of the Convention, “Budget of the Commission”, refers to the “catch taken within EEZs and in areas beyond national jurisdiction” as a basis for fees. In a like manner, the WCPFC Financial Regulations refer specifically to the EEZs, and not to “areas under national jurisdiction”.²²

Taking into account the importance of, and need for, robust management of all fish stocks throughout their range and the various provisions in the Convention that achieve this aim to a very great extent, it would in the end seem preferable not to erode entrenched laws of State sovereignty, especially for developing countries, but to find ways of accommodating the situation as evidenced by the Commission’s encouragement to Indonesia.

²² See Financial Regulations 5.2 on contribution formulae: “70 per cent fish production component based upon a three-year average of the total catches taken within EEZs and in areas beyond national jurisdiction in the Convention Area of all the stocks covered by the Convention for which data are available (including the main target tuna species, as well as the four main billfish species (black marlin, blue marlin, striped marlin and swordfish)), subject to a discount factor of 0.4 being applied to the catches taken within the EEZ of a member of the Commission which is a developing State or territory by vessels flying the flag of that member. In the case of a member that has part of its EEZ inside the overlapping area, and is a member of the Inter-American Tropical Tuna Commission and contributes to the budgets of both IATTC and WCPFC, only 50% of catches made by its flag vessels in the overlap area between the two Commissions shall be included in the calculation of a member’s contribution based on catch”

It is understood that some members do not acknowledge there is a legal problem, which has prevented resolution of the issue to date. Unless there is such acknowledgement, the common ground needed to move towards a resolution cannot be identified.

It would be useful to formally address and resolve the legal ambiguities involved in implementing provisions relating to the Convention Area, including compatible measures, without dispute resolution procedures. It is recommended that members cooperate to reach an understanding of agreed interpretation, principles, measures and/or actions.

There is a separate issue relating to the Commission's authority to manage the entire Area: the eastern boundary of the Convention Area overlaps with the IATTC Convention Area. The seventh session of WCPFC tasked the Executive Director to work with the IATTC Director in development of draft terms of reference for a proposed Joint Management Scheme, and to present those TORs to the Commission intersessionally, in mid-2011. This was done at the Kobe III meeting, and is reported in Section 2.2.1 of this document.

An issue related to the area of application and compatibility of measures arises in Article 7 of the Convention, "Implementation of principles under areas of national jurisdiction". It requires coastal States (interestingly, not "coastal State members") to apply the Article 5 principles and measures for conservation and management within areas under national jurisdiction in the Convention Area "in the exercise of their sovereign rights...". In addition, the need for assistance to developing coastal States (again, not "coastal State members") in the Convention Area is recognized. This could open the door to assistance to non-parties.

Another issue is the use of the term "areas under national jurisdiction". Does this refer to application of compatible measures to all maritime zones or just the EEZ of such coastal States?

The reference to "sovereign rights" would seem to indicate that the implementation of such principles is restricted to EEZs (areas under national jurisdiction except for territorial seas and archipelagic zones), for which sovereignty would be the appropriate term. On the other hand, as elaborated in Section 3.4.1, the counterargument is the application of the Convention to "all waters". This issue should be clarified, and the recommendation in Section 3.4.1 is therefore also applicable here.

Panel Assessment and Recommendations

- **A critical issue for the WCPFC is to develop cooperative management throughout the Convention area, including the rights to tuna resources. Conflicts over interpretation of compatible management must be thus resolved to ensure the ability of WCPFC to effectively manage and conserve the stocks across their range.**

- **It is, therefore, recommended that members cooperate to resolve different legal interpretations of the Convention in relation to the Convention Area and the duty to establish compatible and effective conservation and management measures across the range of the stocks. This could be achieved through agreement on an interpretive declaration.**²³
- **Due consideration should be given to the need for assistance to developing coastal States, in particular Small Island Developing States, in the application of the provisions of Articles 5, 6 and 7, within areas under national jurisdiction.**

3.4.2. Conservation and management principles and measures

The Convention is generally consistent with the conservation and management principles for highly migratory fish stocks established by UNFSA (Article 5). The Convention only requires *members* to apply such principles and measures, not the *Commission* as a whole²⁴.. This requirement is different to that of other RFMOs, which require implementation by the members “individually or collectively”²⁵ or the “Contracting Parties where appropriate through the Organization”²⁶ or “the Contracting Parties, the Commission and subsidiary bodies”²⁷.

Interestingly, a subsidiary body of the Commission, the Northern Committee (NC), is required to ensure consistency with the principles and measures in Article 5 of the Convention in making recommendations to the Commission for conservation and management measures in respect of stocks which occur mostly in the Northern Area (Article 11(7)). Otherwise, the Commission itself has no obligation to do so under the Convention.

In fact, the CMMs reflect implementation of many of the principles, so unless members believe that the Commission needs legal authority or obligation it would seem enough to flag the issue. In such a case, it may be useful for the Commission and its subsidiary bodies to refer to relevant principles, as appropriate, in their measures and actions.

Panel Assessment and Recommendations

- **It is recommended that the legal obligations of members and the Commission with regard to the application of the principles and measures for conservation and management established in Article 5 of UNFSA be made clearer, with an aim to ensuring the maximum application and effectiveness of their implementation.**

²³ Article 31.3 of the Vienna Convention on the Law of Treaties acknowledges the practice of States in interpreting a treaty: “There shall be taken into account, together with the context, (a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions; (b) any subsequent practice in the application of the treaty which established the agreement of the parties regarding its interpretation; (c) any relevant rules of international law applicable in the relations between the parties”

²⁴ As noted above in Section 3.3 above

²⁵ e.g. NAFO Convention, Article III

²⁶ e.g. SEAFO Convention, Article 3

²⁷ e.g. SPRFMO Convention, Article 3

3.4.3. Application of the Precautionary Approach

It is significant that the *members* are required to apply the precautionary approach (Article 6), and not the *Commission*, unlike requirements in conventions of other RFMOs. This has not affected the work of the Commission, but similarly to the recommendation for Section 3.4.2, it could be useful to take steps to affirm that it is voluntarily acting in accordance with the precautionary approach. It is noted that the Northern Committee has not yet adopted a precautionary approach, but plan to consider this in 2012. Further discussion concerning the Precautionary approach is provided in 4.3.2.

3.4.4. Commission Functions

3.4.4.1. Allocations

The functions of the Commission are described in Article 10, and the Convention is generally consistent with the UNFSA. However, concerning the UNFSA requirement (Article 10) for RFMOs to agree on participatory rights, the Convention sets out considerations to be taken in developing criteria for allocations (Article 10(1)(g) and 10(3))²⁸ rather than reflecting final agreement on participatory rights. In addition, the Convention refers in this Article to promoting cooperation between members to ensure compatibility of CMMs applicable to the high seas and areas under national jurisdiction. The compatibility issue was discussed above in Section 3.4.1.

The Convention, in Article 10(3) directs the Commission to take into account various considerations “in developing criteria for the allocation of the total allowable catch or the total level of fishing effort” (other complementary provisions are in Articles 8 and 30). This represents a negotiated compromise to the allocation issue, and does not oblige the Commission to take the stated considerations into account. In fact, the legal role of WCPFC is not identified and is subject to different interpretations between coastal States and distant water fishing nations. However, WCPFC has no authority to allocate rights to fish in any manner that undermines the sovereign rights or sovereignty of coastal States.

The allocation issue remains a source of division among WCPFC members where Pacific island members (including those who are members of the PNA and the FFA) do not agree with the distant water fishing nations that capacity reduction should only be in the number of vessels. This has spillover effects so Pacific island countries are adopting measures among themselves,

²⁸ Article 10(3) has never been implemented by the Commission because of the zone-based, rather than flag-based basis for allocations

for example, to limit high seas fishing by foreign fleets that wish also to fish in the EEZs. These measures have legal implications for development and application of the criteria for allocations.

Other RFMOs set criteria for the Commission to take into account in determining fishing opportunities (including the nature and extent of participatory rights), the objectives of measures to be adopted (e.g. to ensure the long-term sustainability of fishery resources, prevent or eliminate overfishing and excess fishing capacity, maintain or restore populations of non-target and associated or dependent species, protect the habitats and marine ecosystems), what may be determined in the management measures (e.g. precautionary reference points) and factors to take into account in determining a total allowable catch or total allowable fishing effort.²⁹

The Commission addressed the allocation issue at its third Session, where a report was presented, but some CCMs stated they were not in a position to negotiate the basic legal framework of highly migratory species in relation to allocation. The Commission agreed on the need to prioritize various issues and considered allocations at the fourth Session. During the fifth Session, although it agreed to retain allocations as an agenda item, but not as a top priority, it did not appear in the agenda.

Panel Assessment and Recommendations

- **It is recommended that the issues relating to allocation be reviewed and as appropriate prioritized, including the legal aspects concerning the authority of the Commission and the criteria or other requirements for allocations.**

3.4.4.2. Catch Attribution

A function of the Commission is to develop criteria for the allocation of the total allowable catch or the total level of fishing effort (Article (10)(1)(g), and in developing criteria the Commission must take into account, *inter alia*, the respective interests, past and present fishing patterns and fishing practices of participants and the historic catch in an area (Article 10(3)(b) and (c)).

In this context, the “nationality” of the catch is an important consideration for States seeking allocations, but it also has important implications for the Scientific Committee, the effectiveness of the management interventions and other aspects of the Commission that are

²⁹ e.g., SEAFO Convention, Article 20 ; NAFO Convention, Article VI(12) ; SPRFMO Convention, Article 20. Of particular relevance is ICCAT Resolution 01-25 on Criteria for the allocation of fishing possibilities, which addresses the following general themes : I- Qualifying Criteria; II- Stocks to Which the Criteria Would be Applied; III- Allocation Criteria (A- Criteria Relating to Past/ Present Fishing Activity of Qualifying Participants, B- Criteria Relating to the Status of the Stock(s) to be Allocated and the Fisheries, C- Criteria Relating to the Status of the Qualifying Participants, D- Criteria Relating to Compliance/ Data Submission/ Scientific Research by Qualifying Participants) and IV- Conditions for Applying Allocation Criteria

based on the concept of national catches³⁰. The issue has legal underpinnings, and binding requirements for catch attribution need to be agreed and implemented at national and regional levels.

The issue of catch attribution is currently being addressed by the Commission, and there are some clear legal implications. A study on catch attribution (addressed in Section 3.4.4.2. of this document) was prepared in 2011 and considered by TCC7.³¹ The study shows that WCPFC members are inconsistent in dealing with catch attribution. There are different situations where the assignment of the nationality of the catch is not straightforward, for example:

- Foreign-flagged vessels domestically-based in Pacific island countries, including domestic charter arrangements;
- Vanuatu-flagged purse seine vessels fishing under the FSM Arrangement under the “home party” of Papua New Guinea.

A number of coastal States have provided notifications over the past few years that locally-based foreign fleets should be considered as chartered vessels and the data assigned to the coastal state. However, several issues remain to be resolved before the data can be re-assigned (from flag-state to coastal-state), in particular, confirmation from the “flag” state that they have removed the data corresponding to the chartered vessels from their aggregate data to ensure “double-counting” does not occur.

In 2010 a CMM on chartering procedures for assignment of catch data to national entities was being developed. These procedures are required to ensure that “double counting” of catch and effort data provided by the flag and chartering entities does not occur. The study on catch attribution concluded that the principal international legal instruments in fisheries are mostly silent with respect to assigning nationality to catches. However, some members claim that the UNFSA provisions relating to flag State control of vessels operating on the high seas and flag State responsibility for reporting of catches on the high seas, would justify attributing catches by vessels on the high seas to the flag State of the vessel (and not to a chartering State). Other views have been put forward, as reported in the study:

- One country put forward the principle of “he who provides catch data (i.e. the coastal State), owns that data- and therefore should be attributed that data”.
- One country cited the linkage between onshore processing facilities and the vessels fishing into that facility to justify attributing all catches by those vessels (regardless of fishing zone) to the country where the facility is located.

³⁰ It is recognized that catch data can be used for a number of purposes, and the primary consideration is to ensure that data are collected in an efficient manner to underpin conservation and management measures. Attribution is especially important where it relates to allocations of fishing opportunities based on historic criteria, or where it is caught in an EEZ

³¹ Available at <http://www.wcpfc.int/node/3870>

- Some country representatives stated the catch attribution practices of RFMOs in other parts of the world provided guidance. In this respect, ICCAT was the organization most often cited³².

Many coastal States have adopted legislation that claims ownership of all information from fishing operations in their waters, including reports and data from foreign vessels. This is based on sovereign rights of the coastal State over the resources and prevents situations where the foreign country may claim a higher level of allocation than the coastal State based on attribution or other related criteria.

Where chartered vessels are involved, a legal problem arises because there are many types of chartering which are largely undefined in laws, instruments or CMMs. The term can cover demise chartering at one extreme to very informal chartering/leasing for a few days at the other. To resolve this issue, including in the context of catch attribution, a process to develop criteria to determine what types of charter arrangements can be covered under particular CMMs is recommended. The first step could be to recommend a study of the different arrangements for “chartering” in different WCPFC members.

Further discussion of catch attribution issues in the context of data submission is provided in Section 5.5.4 and Appendix VII, Section 2.

Panel Assessment and Recommendations

- **It is recommended that the legal elements of catch attribution be reviewed and further developed, based on international instruments, the WCPFC Convention and national law.**
- **In particular, it is recommended that a process to develop criteria to determine what types of charter arrangements can be covered under particular CMMs be established. The first step could be a study of the different arrangements for “chartering” in different WCPFC members.**

3.4.4.3. Monitoring compliance

The Commission is tasked with establishing appropriate cooperative mechanisms for effective monitoring, control, surveillance and enforcement (Article 10(1)(i)). The Executive Director is charged with administering agreed arrangements for monitoring, control and surveillance and the provision of scientific advice (Article 15(4)(d)).

³² *Vis-à-vis* ICCAT Recommendation 02-21, on vessel chartering, Paragraph 5: Catches taken pursuant to the chartering arrangement of vessels that operate under these provisions shall be counted against the quota or fishing possibilities of the chartering Contracting Party

The Secretariat has no authority to implement the CMMs and no direction as to a reporting procedure where there is non-compliance by members' vessels, although the Secretariat does support WCPFC parties in the implementation of measures. In practical terms, the incident is brought to attention of the flag State, but the obligations of members of the Commission only require the flag State, at the request of any other member, to investigate any alleged violation by its nationals (Article 23(5) and 25(2)). In this sense, the Commission has been powerless and has no authority even to bring the matter to the attention of other members. CMM 2010-03 on a Compliance Monitoring Scheme endeavors to address this situation, but is only valid for 2011. This measure is fully discussed in Section 6.5.6.

A related issue is whether members submit their compliance reports on time or at all. It is fundamental for RFMOs to have robust legal authority to promote and strengthen compliance with its measures, both by members and non-members. In this context, it would be important to strengthen the Commission's functions, along the lines of precedent in the conventions of other RFMOs. For example the functions of the SPRFMO include (Article 8):

- (g) develop and establish effective monitoring, control, surveillance, compliance and enforcement procedures, including non-discriminatory market-related and trade-related measures;³³
- (h) develop processes in accordance with international law to assess flag State performance with respect to the implementation of their obligations under this Convention and adopt proposals, if appropriate, to promote implementation of such obligations;
- (i) adopt measures to prevent, deter and eliminate IUU fishing.

The SEAFO Convention requires the Commission to (Article 6(11)):
draw the attention of all Contracting Parties to any activity which in the opinion of the Commission undermines:

- (a) the implementation by a Contracting Party of the objective of this Convention, or the compliance of that Contracting Party with its obligations under this Convention; or
- (b) the compliance of that Contracting Party with its obligations under this Convention.

It is clear that the effectiveness of WCPFC CMMs would be strengthened if the Commission's authority in relation to compliance monitoring and actions were broader, similar to the functions of other RFMOs. It would also bolster the outputs of the boarding and inspection scheme, the Regional Observer Programme and the VMS requirements. In this context, it is noted that the TCC has extensive functions under Article 14 of the Convention, and an assessment of the extent to which the TCC is fully discharging its functions would be useful in evaluating the legally-binding functions of the Commission as a whole.

³³ The Commission may develop procedures for non-discriminatory trade measures under Article 25(12)

For discussion on issues related to the implementation of the already existing monitoring and compliance measures, see Section 6.3.

Panel Assessment and Recommendations

- **It is recommended that legally-binding functions of the Commission be clarified, taking into account the functions of the TCC under Article 14 of the Convention as well as its effective discharge of such functions, and the best practices of other RFMOs, with the aim of improving the Commission’s authority and ability to monitor and take action in relation to compliance by members and non-parties with measures and activities under the Convention. Alternatively, CMMs should address this issue but ensure that the Commission has such authority and ability for an effective period of time.**

3.4.4.4. WCPFC IUU Vessel List and the Record of Fishing Vessels (RFV)

The legal basis for establishment of an authorized vessel list and IUU vessel list is in Article 10(i), which empowers the Commission to establish appropriate cooperative mechanisms for effective monitoring, control, surveillance and enforcement. Article 25(11) provides that members may take action... “including through procedures adopted by the Commission for this purpose, to deter fishing vessels which have engaged in activities which undermine the effectiveness of or otherwise violate the conservation and management measures adopted by the Commission from fishing in the Convention Area until such time as appropriate action is taken by the flag State.” In addition, Article 24(7) requires the Commission to maintain its own record of fishing vessels, and to circulate periodically the information contained in such record to all members of the Commission, and, on request, individually to any member.

CMM 2009-1 on a WCPFC record of fishing vessels (RFV) and authorization to fish provides in Part D, “WCPFC Interim Register of non-Member Carrier and Bunker Vessels”, that if vessels on the Interim Register appear on the IUU vessel list of another RFMO they can be removed from the WCPFC list according to a stated process. However, this does not apply to vessels on the WCPFC RFV, and this is inconsistent with general practice of tuna organizations that provide for automatic removal of a vessel on its record if it is on an IUU vessel list of another RFMO.

CMM 2010-6, which establishes the WCPFC IUU vessel list, provides in paragraph 25 for its modification. One requirement, in subparagraph (e), is that “the case regarding the vessel or vessels that conducted IUU fishing activities has been settled to the satisfaction of the CCM that originally submitted the vessel for listing and the flag State involved”. This is alternative to the change in ownership of the vessel in subparagraph (d) but it should be a stand-alone requirement.

In addition, this CMM provides that it is the CCMs and non-CCMs with a vessel on the list that may request the removal of the vessel. This leaves the vessel without recourse if the relevant CCM or non-CCM takes no action.

Further, a conflict arises with respect to the RFV because only the CCM is permitted to request that a vessel be placed on the RFV - authorizing it to fish - and to request its removal. If a vessel is put on the IUU vessel list and the CCM does not request removal from the RFV, it is both authorized to fish and prohibited from fishing at the same time.

These procedures should be reviewed for consistency with other tuna organizations and to obtain maximum legal effectiveness, consistency and fairness, including requirements to deal with a vessel on the RFV (preferably by removal) if it is on an IUU vessel list of another RFMO, the settlement of a case where IUU fishing was alleged, action available to a listed vessel where the CCM or non-CCM takes no action to remove it where, for example, there has been settlement, and to ensure consistency in vessel listing procedures between the RFV and the IUU vessel list so that a vessel does not appear on both lists.

Panel Assessment and Recommendations

- **It is recommended that legal requirements for inclusion of vessels on the Record of Fishing Vessels and the IUU Vessel List be reviewed and amended with an aim of securing maximum legal effectiveness, consistency and fairness, including, as appropriate:**
 - ✓ **procedures to deal with a vessel on the RFV (preferably by removal) if it is on an IUU vessel list of another RFMO;**
 - ✓ **procedures that treat as a stand-alone issue actions to be taken upon the settlement of a case where IUU fishing was alleged;**
 - ✓ **action available to a listed vessel where the CCM or non-CCM takes no action to remove it where, for example, there has been settlement; and**
 - ✓ **procedures to ensure consistency in vessel listing procedures between the RFV and the IUU vessel list so that a vessel does not appear on both lists.**

3.4.4.5. Data collection and sharing³⁴

One of the Commission's functions is to obtain and evaluate economic and other fisheries-related data and information relevant to the work of the Commission (Article 10(1)(j)). Article 23(1) of the Convention, on obligations of members of the Commission, requires members to provide annually to the Commission statistical, biological and other data and information in accordance with Annex 1 of the UNFSA and in addition such data and information that the Commission may require.

A report on data gaps and progress in addressing data gaps was prepared in 2010 for the Scientific Committee, and the legal implications of outstanding data issues identified by that Committee should be reviewed (see also Section 5.5.4., and Appendix VII). It is understood that some members have domestic legal constraints and many don't have the resources to comply. The Scientific Committee forwarded the report in 2010 to the TCC for consideration, which recommended that CCMs with issues in providing data should identify them to the Commission. Legal implications for members should be explored.

Panel Assessment and Recommendations

- ✓ **The legal basis and constraints for data collection should be reviewed and addressed as appropriate.**

3.4.5. Subsidiary bodies of the Commission³⁵

The Convention provides for subsidiary bodies in Article 11. There are currently four such bodies: the Scientific Committee (SC), the Technical and Compliance Committee (TCC), the Northern Committee (NC) and the Standing Finance and Administration Committee (FAC). The functions of the Scientific Committee appear in Article 12, Scientific Services are provided for in Article 13 and the functions of the TCC are elaborated in Article 14. The terms of reference are generally satisfactory and in keeping with the best practices of other RFMOs. An evaluation of the performance of the subsidiary bodies is described in Sections 5 and 6 of this document.

³⁴ This is "work in progress": WCPFC7 acknowledged the importance of providing complete and accurate data in a timely way and urged CCMs to improve the provision of data to the Commission. WCPFC7 requested that CCMs that have issues in providing accurate and complete data in a timely manner should identify those issues clearly to the Commission. At TCC7 CCMs were encouraged to provide a draft plan of how impairments to the provision of data will be dealt with as rapidly as possible. CCMs were encouraged to assist others as they are able to do so and the Commission should continue to evaluate methods to assist in this matter. The catch data scheme is related to complex EU requirements

³⁵ See also Section 2.4

The functions of the NC are described in Article 11(7) and its responsibilities are slightly anomalous. The NC is established “to make recommendations on the implementation of such conservation and management measures as may be adopted for the (applicable northern area) and on the formulation of such measures in respect of *stocks which occur mostly* in this area”.

The terms of reference for the NC are limited to the provisions of Article 11.7 only. Bearing in mind the political nature of such matters, it would be useful to adopt clear terms of reference for the NC for improved coordination and to ensure that the scope of its activities, including implementation of Commission requirements, is consistent with that of the Commission and of the other subsidiary bodies. Further recommendations are made in relation to the NC under Section 4, Rules of Procedure, below.

Panel Assessment and Recommendations

- ✓ **It is recommended that terms of reference be developed for the Northern Committee which, *inter alia*, align the scope of responsibilities for the Committee and the Commission in respect of applicable stocks and species, as well as promote the consistency of management approaches with those of the Commission.**

3.4.6. Special requirements of developing States

The special requirements of developing States are recognized in Article 30 of the Convention, which *inter alia* provides for the establishment of a fund to facilitate the effective participation of developing States in the work of the Commission, including its meetings and those of its subsidiary bodies. It is generally modeled on UNFSA Article 25(3).

This Article is generally consistent with international instruments and the practice of other RFMOs, except that the areas for which assistance should be directed are very heavily oriented towards information, scientific and MCS-related areas (Article 30(4)).

This Article excludes reference to overarching matters addressed in UNFSA Article 25(1), which includes a requirement to cooperate to enhance the ability of developing States to conserve and manage fish stocks and to develop their own fisheries for such stocks.

Also not included are references to enhancing their ability to develop a legal basis and capacity for the effective implementation of effective measures (e.g. Port State Measures Agreement Article 21(1)(a)).

Article 5.2 of the FAO Code of Conduct for Responsible Fisheries advocates that full recognition be given to the special circumstances and requirements of developing countries, including, in particular, the least developed among them, and small island developing countries.

States should work for the adoption of measures to address the needs of these countries especially in the areas of financial and technical assistance, technology transfer, training and scientific cooperation and in enhancing the abilities of these countries to develop their own fisheries as well as to participate in high seas fisheries, including access to such fisheries. The Panel considers Article 30 and Article 10 of the WCPFC Convention to be compatible with Article 5.2 of the FAO Code of Conduct.

The Convention allows, through use of the term *inter alia* in Article 30(4), some room for targeted assistance to be provided for activities such as development of capacity for fisheries management and legal matters, but such priorities are not indicated even in the WCPFC Financial Regulations, Regulation 7.1 on the Special Requirements Fund. It states that (a) the fund shall be established for purposes identified in Article 30 of the Convention, including assisting with human resources development in relation to conservation, management and development of fish stocks and (c)³⁶ building capacity for activities in key areas such as effective exercise of flag State responsibilities, MCS, data collection and scientific research.

In addition, the Principles, Guidelines and Operational Procedures for the Commission's Special Requirement Fund incorporate by reference the purpose of the fund as stated in Regulation 7.1 and further states that the Fund will be applied to "areas of national priority not currently covered by existing arrangements, or through collaboration...". It is noted that national priorities play a role, but what was "not currently covered by existing arrangements" at the time of adoption of the principles is more difficult to determine.

Further comments on the Fund are provided in Section 8 of this document. As appropriate from a legal standpoint the availability of, and demand for, funds for activities other than those referenced in the Convention, the Financial Regulations and the Principles, Guidelines and Operational Procedures for the Commission's Special Requirement Fund should be reviewed and such clarifications made as may be necessary.

Panel Assessment and Recommendations

- ✓ **The terms of reference for the Special Requirement Fund, established pursuant to Article 30.3 of the Convention and Financial Regulation 7.1, should be clarified to ensure it addresses the priorities identified by the Commission and possibly expanded in its scope, if necessary.**

³⁶ Interestingly, there is no subparagraph (b) in the Financial Regulations

3.4.7. Process for adopting CMMs

There is concern because the CMMs adopted by the Commission are not always legally accurate. For example, there has been discussion in the TCC about the need to define certain terms such as those in the Regional Observer Programme, and there are conflicts in the operation of the RFV and the IUU vessel list as discussed in Section 3.4.4.4, above. Although on the whole the CMMs are technically sound, it could be useful to establish or strengthen a process for consideration and adoption of CMMs to ensure they are technically sound from a legal point of view as well and consistent with other CMMs and instruments of WCPFC. Reviews are carried out by other RFMOs, including GFCM and IOTC, to ensure clarity and consistency in their decisions, also with a view to strengthening transparency.

Panel Assessment and Recommendations

- ✓ **It is recommended that a process be established for consideration and adoption of CMMs to ensure that they are technically sound from a legal point of view and consistent with other CMMs and instruments of WCPFC.**

4. Rules of Procedure, Decision-Making and Dispute Settlement

4.1. Rules of Procedure and Decision-Making

The WCPFC Rules of Procedure³⁷ were adopted at the Inaugural Session of the Commission in 2004. They are on the whole satisfactory and consistent with RFMOs' best practices. They also incorporate Rules of Order for the conduct of meetings.

4.1.1. Reference to the Finance and Administration Committee (FAC)

Rule 2(2) requires certain items to appear in the Commission's provisional agenda for each session, including recommendations of the SC, TCC and NC. There is no reference to the FAC in Rule 2(2)(d), even though that rule clearly alludes to the FAC's work³⁸, stating: "Items pertaining to the budget for the next financial year, the report on accounts for the last financial year and the auditor's report" In fact, the agenda for the annual sessions includes an item "Report of the Finance and Administration Committee".

4.1.2. Official contacts

Rule 7 requires each member and territory to notify the Executive Director of Official Contacts for purposes of official communications. It is the practice of other RFMOs to include the responsibilities of official contacts, such as liaising with responsible agencies of their government, facilitating coordination as appropriate and advising the Commission of certain information to promote maximum effectiveness in the discharge of their duties.³⁹

4.1.3. Functions and powers of the Chairman and Vice-Chairman

The Chairman and the Vice-Chairman shall be of different nationalities. They are elected for a 2-year term and may be eligible for re-election. Nevertheless, since the rules of procedure are silent in terms of how many times a Chairman and Vice-chairman can be re-elected, they may in fact remain in power for unlimited time, a risk that may be greatly prejudicial for the work of the Commission. Such a possibility also raises a question concerning equal opportunities for all Commission members to serve as office bearers.

³⁷ <http://www.wcpfc.int/guidelines-procedures-and-regulations>

³⁸ Further discussion of the WCPFC's financial and administrative arrangements are contained in Section 8.

³⁹ For example, the European Inland Fisheries and Aquaculture Advisory Commission (EIFAAC) and the Central Asia and Caucasus Fisheries Commission (CACFish).

The Chairman main functions are established in rule 9. They include: a) declaring the opening and closing of each plenary meeting of the Commission, b) directing the discussions in plenary meeting, c) ensuring observance of these rules, d) according the right to speak, e) announcing the list of speakers and, with the consent of the Commission, f) declaring the list of speakers closed, g) putting questions, and h) announcing decisions. The Chairman also rules on points of order and, subject to the rules of procedure, has complete control of any meeting proceedings, and over the maintenance of order. Furthermore, the Chairman may, in the course of discussion of an item, propose to the Commission the time limits allowed to speakers, limits on the number of times each representative may speak, the closure of the list of speakers or the closure of the debate. The Chairman may also propose suspension or adjournment of a meeting or the adjournment of debate on a item under discussion.

4.1.4. Quorum

Rule 14 empowers the Chairman to “declare a meeting of the Commission open and permit the debate to proceed, when at least three-fourths of the members of the Commission are present”. Rule 14 defines a quorum for a meeting of the Commission as being three-fourths of Commission Members present. This compares to two thirds of the members present as a quorum in many other RFMOs. However, “Meeting of the Commission” is not defined, but it can be interpreted as only the Commission session because Rule 15, refers to the “meetings of the Commission and its subsidiary bodies”. However, this discrepancy does not accommodate the application of the Rules to the subsidiary bodies unless those bodies agree otherwise, as provided in Rule 31.

The Panel notes that Rule 14 specifically refers to “meetings of the Commission” and not of the subsidiary bodies, for which other formulae may be adopted. For example, the approach agreed by the FAC in 2007 set the quorum at 10 Committee members (five FFA members and five non-FFA members). This type of approach may be relevant for consideration by other Committees.

Alternatively, in the absence of a stipulated quorum, as provided in the above example for a subsidiary body, it could be assumed that Rule 14 applies, *ipso facto*, to subsidiary bodies of the Commission.

4.1.5. Decision-making

As a general rule, decision-making in the Commission shall be by consensus. For the purposes of the rules of procedure, “consensus” means the absence of any formal objection made at the time the decision was taken, as established in Rule 22(1). Rule 22(2) continues to say that if all efforts to reach a decision by consensus have been exhausted, decisions by voting in the Commission on questions of procedure shall be taken by a majority of those present and voting. Decisions on questions of substance shall be taken by a three-fourths majority of those present and voting provided that such majority includes a three-fourths majority of the members of the South Pacific Forum Fisheries Agency present and voting and a three-fourths majority of non-members of the South Pacific Forum Fisheries Agency present and voting and provided further that in no circumstances shall a proposal be defeated by two or fewer votes in either chamber. This rule of procedure reflects Article 20 of the Convention.

The Panel notes that Rule 22(4) and Rule 8 may be interpreted as contradictory in terms of applying the decision-making process as stipulated in Article 20 of the Convention. In particular, Article 20(5) of the Convention indicates that decisions adopted by the Commission shall become binding 60 days after the date of adoption. In the case of rule 22(4), rule 8 indicates that the Chairman and Vice-Chairman shall assume office at the end of the session at which they are elected. The Panel, therefore, assumes that in the instance relating to election of individuals to positions of office, the provisions of Rule 8 would in fact apply.

4.1.5.1. Intersessional decisions

Rule 30 provides for the taking of decisions intersessionally, and provides for voting by rapid means such as electronically via the internet or other means of communication. Rule 30(6) provides that a member abstains if no response is received within 40 days of transmittal. It is not clear in these procedures what would constitute a quorum, for example whether the abstaining members were deemed to be “present and voting” as required under Article 20(2) of the Convention. A process to calculate a majority of three fourths of members “present and voting” is not detailed as well. It is also unclear on whether decision-making could be carried out by consensus using this procedure.

4.1.5.2. Method of voting

Rule 21 indicates that ‘those present and voting’ means members of the Commission present and casting an affirmative or a negative vote. Members of the Commission that abstain from voting should be considered as not voting. Rule 24 provides that the Commission shall vote by a show of hands or by standing, but does not provide for voting by electronic means where this might be available. For example, this is done by various FAO statutory bodies.

4.1.5.3. Suspension of the exercise of voting rights

Rule 34 requires that a “contributor” to the budget of the Commission which is in arrears of the payment of its financial contributions to the Commission shall not participate in Commission decisions under certain conditions. The Panel noted that if Rule 34 is directed at “members” it may be better to use this term rather than “contributor”. The term contributor could be applied to cooperating non-members that contribute to the Commission's budget. However, non-members do not participate in decision-making or voting.

4.1.6. Observers

Rule 36 sets out the range of States, organizations, etc., that may participate as observers in the Commission and its subsidiary bodies. Rule 36.1 identifies these observers as follows: (a) States, entities and fishing entities that participated in the Multilateral High Level Conference on the Conservation and Management of the Highly Migratory Fish Stocks, which are not members of the Commission; (b) Any entity referred to in article 305, paragraph 1, subparagraphs (c), (d) and (e) of the 1982 United Nations Convention on the Law of the Sea which is situated in the Convention Area, which is not a member of the Commission; (c) Any regional economic integration organization whose nationals and fishing vessels conduct or wish to conduct fishing for highly migratory fish stocks in the Convention Area; (d) Other States and fishing entities with an interest in the work of the Commission, invited by the Commission, which are not members of the Commission; (e) The Food and Agriculture Organization of the United Nations and other relevant intergovernmental organizations and South Pacific regional organizations invited by the Commission; (f) Non-governmental organizations concerned with matters relevant to the implementation of the Convention admitted by the Commission pursuant to paragraph 4 of this rule which have demonstrated their interest in matters under consideration by the Commission.

Subject to Rule 36.2, the observers referred to in (a), (b) (c) and (d), above, might participate in the deliberations of the Commission and its subsidiary bodies. However, they are not entitled to participate in the taking of decisions. Written statements submitted by such observers are distributed by the Secretariat to Commission members.

Observers in category (e) may participate in the deliberations of the Commission and its subsidiary bodies by invitation of the Chairman. Such participation should relate to questions within the observers scope of competence, but the observers in this category shall not be entitled to participate in taking of decisions. Written statements submitted by such observers are distributed by the Secretariat to Commission members.

Non-Governmental Organizations (under category (f) above), that wish to participate as an observer are required to follow the procedure outlined in Rule 36(4). This process for inviting and approving the participation of NGOs is lengthy and lacks transparency. The observer status granted to an NGO remains in effect for future sessions, unless the Commission decides otherwise.

Under Rule 36(5), NGO observers may sit at meetings of the Commission and its subsidiary bodies. They may make oral statements on matters within the scope of their activities upon invitation by the Chair and subject to the approval of the Commission or relevant subsidiary body. Written statements submitted by such observers within the scope of their activities, and which are relevant to the Commission's work, may be distributed at meetings of the Commission and its subsidiary bodies, subject to the approval of the Chairman.

The Panel notes that academic or research institutions, as well as individual experts, whose work is relevant to the Commission, are not specifically addressed by the provisions of Rule 36.

Panel Assessment and Recommendations on the Rules of Procedure

- ✓ **The Panel suggests that the Rules of Procedure should be included in the printed version of the basic texts;**
- ✓ **It is recommended that Rule 2(2) be amended to require the agenda to include the "Report of the Finance and Administration Committee";**
- **The WCPFC is encouraged to ensure that its available list of official contacts is up-to-date and continues to be used in providing the best possible flow of information between the Secretariat, the Commission and CCMs;**
- **The Panel recommends that the Rules of Procedure be amended in order to limit the terms of office for the Chairman and Vice-Chairman to one re-election only;**
- **The Commission may wish to confirm that elected office bearers should assume office at the end of the session at which they are elected, as outlined in Rule 8. This interpretation should then supersede Rule 22(4);**

- **The Commission may wish to clarify procedures and considerations relating to the taking of intersessional decisions;**
- **The Commission may wish to explore the possibility for voting by electronic means;**
- **The Panel recommends that the term ‘contributor’ in Rule 34 be changed to ‘member’;**
- **The Panel recommends that, where there are objections to granting observer status, the reasons for the objection be provided to the applicant organization;**
- **The Panel notes that academic or research institutions, as well as individual experts, whose work is relevant to the Commission, are not specifically addressed by the provisions of Rule 36. The Panel, further notes that allowing such participation would enhance the expertise, information and external resource availability to support the Commission’s work.**

4.2. Use of language

The panel notes that no provisions in the Convention provides for an official language of its text or for the undertaking of the Commission’s business. It is therefore assumed that the English version of the Convention is the authentic text and that the Commission working language is also English.

The use of language in the Rules of Procedure is generally consistent and of a good standard, but if amendments are to be made, it is recommended that the following words be amended just to tighten the meaning:

- ✓ Rule 17: Refers to the statements that can be made by the Executive Director to the Commission concerning any “question” under consideration by it. The use of the word “issue” in this case would broaden the legal basis for intervention by members.
- ✓ Rule 20: Requires that proposals and amendments shall be “circulated” in writing to the Executive Director, who shall “circulate copies to the delegations”. Use of the word “provided” to the Executive Director would more accurately describe the process.
- ✓ Rule 22(1): Defines “consensus” as the absence of any formal objection made at the time the decision “was” taken. This should refer to the time that the decision “is” taken.
- ✓ Rule 22(4): Refers to the conduct of election of “individuals”. This is vague, and might be replaced by 'officers' or references to rules for election of the Chair and Vice-Chairs.
- ✓ Annex II: Provides that Territories listed in the Convention “would be Participating Territories” once they have the relevant authorization. This should be amended to “shall be”.

Panel Assessment and Recommendations

- **It is recommended that the Rules of Procedure be generally reviewed and updated or clarified as appropriate to reflect the concerns expressed in this report.**

4.3. Dispute settlement

Part IX of the Convention, on the peaceful settlement of disputes, sets out procedures for the settlement of disputes. Quite simply, Article 31 incorporates the provisions relating to the settlement of disputes in UNFSA. The Convention's provision on dispute settlement is satisfactory and reflects RFMOs' best practices. It has not been invoked as yet.

4.4. Legal basis for cooperation with other organizations and institutions

Article 22 of the Convention requires the Commission to collaborate with other intergovernmental organizations which may contribute to the attainment of the objective of the Convention. The UN Food and Agriculture Organization (FAO), the Commission for the Conservation of Antarctic Marine Living Resources (CCALMR), the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), the Inter-American Tropical Tuna Commission (IATTC), the Indian Ocean Tuna Commission (IOTC), the Secretariat of the Pacific Community (SPC) and the Pacific Islands Forum Fisheries Agency (FFA) are identified as some of the organizations that the Commission may enter into agreements for collaboration, cooperation, consultation and avoiding duplication.

A document was prepared for TCC7 on cooperation with other organizations⁴⁰ that refers to the status of relations with other organizations, other existing arrangements and other potential arrangements. The performance of the WCPFC in such cooperation is evaluated in the following session (Section 7) of this document, but generally the TCC7 document indicates deep, broad and positive cooperation with ongoing attention being paid to this area.

The Memoranda of Understanding (MOU), directed by the Commission and upon which the cooperation has been based are all available on the WCPFC website.⁴¹ Formal relations are currently in place under agreements on cooperation, coordination and consultation with SPC, FFA, CCSBT, IATTC, IOTC, ISC, SPREP, ACAP, and NPAFC (Appendix XI).

They generally provide for exchange of information, data, reports, plans documents, etc., holding of meetings and consultations and reciprocal participation in relevant meetings of the

⁴⁰ WCPFC-TCC7-2011-27.

⁴¹ Available at <http://www.wcpfc.int/relations-with-other-organisations>.

other organization. Greater detail is sometimes provided including development of systems for data/information collection and exchange, design of measures, development of training and awareness raising. The Agreements are legally satisfactory and no further review is recommended at this time.

Panel Review and Recommendations

- **The WCPFC is to be commended for its effort to forge cooperative arrangements with various RFMOs and associated institutions. It is also encouraged to continue developing such arrangements where required, particularly when such bodies are able to contribute to meeting the Convention's objectives or to participate in the Commission's work.**

5. Conservation and Management

5.1. Background

Fisheries in the Western Central Pacific Fisheries Commission (WCPFC) Statistical Area (Figure 2) largely target four tuna species: albacore (*Thunnus alalunga*), bigeye (*Thunnus obesus*), skipjack (*Katsuwonus pelamis*) and yellowfin (*Thunnus albacares*). The major billfish species being targeted are black marlin (*Makaira indica*), blue marlin (*Makaira nigricans*), striped marlin (*Tetrapturus audax*) and swordfish (*Xiphias gladius*).

Estimates of southern bluefin tuna (*Thunnus maccoyii*) catches are compiled by the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). The compilation of Pacific bluefin tuna (*Thunnus orientalis*) catch estimates only commenced recently. The WCPFC will consolidate catch records for this species when historical catch estimates have been resolved.

Catches of other species are not explicitly monitored by the WCPFC, and discards (other than tuna) are not considered. For a full listing of WCPFC fisheries Data refer to Table 17.

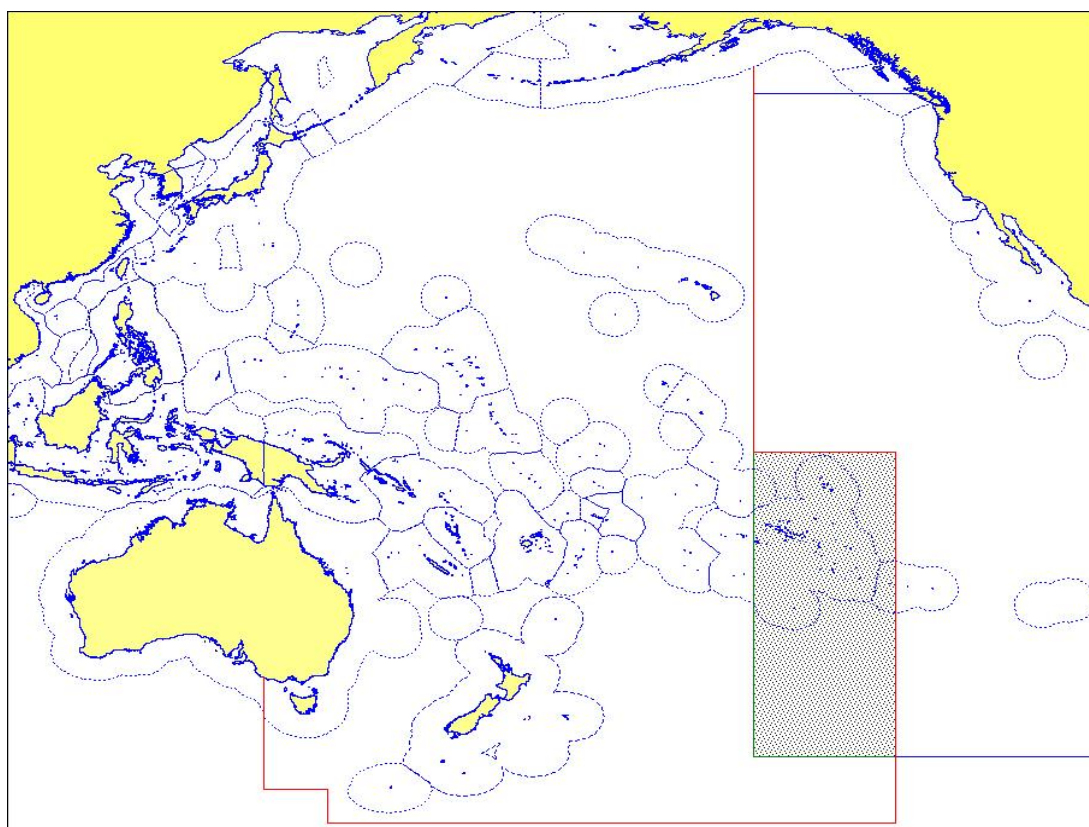


Figure 2- WCPFC Statistical Area (WCPFC SA) (red line), the Western and Central Pacific Ocean (WCPO) and the Eastern Pacific Ocean (EPO) Overlap Area (shaded). (Source: WCPFC-SC7-2011/ST IP-01).

Longlining, Purse Seining, Pole-and-Lining and Trolling are the most common industrial fishing methods. Other Gears also take significant catches, particularly in the Indonesian⁴² and Philippine domestic fisheries. Albacore Drift-Net fishing ended in 1991 in the South Pacific Ocean. Various small-scale and recreational fisheries are also undertaken.

As highlighted by Harley and Hampton (2009)⁴³, catches of the four WCPFC tuna species have demonstrated a steady increase since the fisheries began in the 1950s. This has been attributed to increasing catches by the Purse-Seine fishery (Figure 3a), which resulted in a significant rise in the catches of skipjack tuna and, to a lesser degree, of bigeye tuna (Figure 3b).

The provisional 2010 WCPFC total tuna catch (2,414,994 t) in Western Central Pacific Convention Area (WCP- CA) is similar to the catch in 2008 (2,414,808 t), but slightly less than that in 2009 (2,494,112 t). These three years' catches are the highest recorded in the past 50 years. They are some 183,000 t higher on average than the previous three years (2004 to 2006).

Catches by species during 2010 amounted to 129,670 t of albacore, 108,997 t of bigeye, 1,706,166 t of skipjack and 470,161 t of yellowfin tuna.

During 2010, the tuna catches by the Purse Seine fishery was 1,182,844 t (75% of total 2010 catch), the longline catch 239,853 t (10% of total), the pole-and-line catch 171,604 t (7% of total) and the troll catch 9,988 t (<1% of total). A further 172,705 t (7% of total) was taken by other, largely artisanal, gear types.

Skipjack accounted for 81% (the average for recent years) of the 2010 purse-seine tuna catch (1,476,819 t) and was the second highest on record, although significantly lower (130,000 t) than the record catch in 2009. The longline tuna catches were composed mainly of albacore (104,482 t, 44%), followed by yellowfin tuna (76,067 t, 32%) and bigeye (58,324 t, 24%).

Between 1960 and 2009, most tuna longline catches came from 10°N to 20°S (Figure 4), while the bulk of Purse-Seine catches was taken between 10°N and 10°S (Figure 5).

The WCPFC tuna catch (2,414,994 t) in 2010 represented 84% of the total Pacific Ocean catch (2,875,909 t), and 60% of the global tuna catch in that year (provisionally 4,017,660 t⁴⁴). Global catches by tuna species and ocean area are given in Figure 6 for the period between 1960 and 2010.

⁴² Although fishing in the WCPF Convention Area, Indonesia is a Co-Operating Non-Member of the WCPFC and not a full Member

⁴³ Harley, S. and Hampton, J. (2009). Status of Tuna Stocks in the Western Central Pacific. In: *Navigating Pacific Fisheries*. Haninch, Q. and Tsamenyi, M. (Eds). Ocean Publications, ANCORS, University of Wollongong, Wollongong. p. 187-203

⁴⁴ The lowest estimate for 8 years

Commercial catches of the major billfish species in the WCPFC Statistical Area between 1990 and 2010 are shown in Figure 7. It is noticeable that billfish catches in the WCPFC Statistical Area have steadily declined from a peak of 56,139 t in 2003 to 43,195 t in 2010. Catches are generally dominated by blue marlin and swordfish.

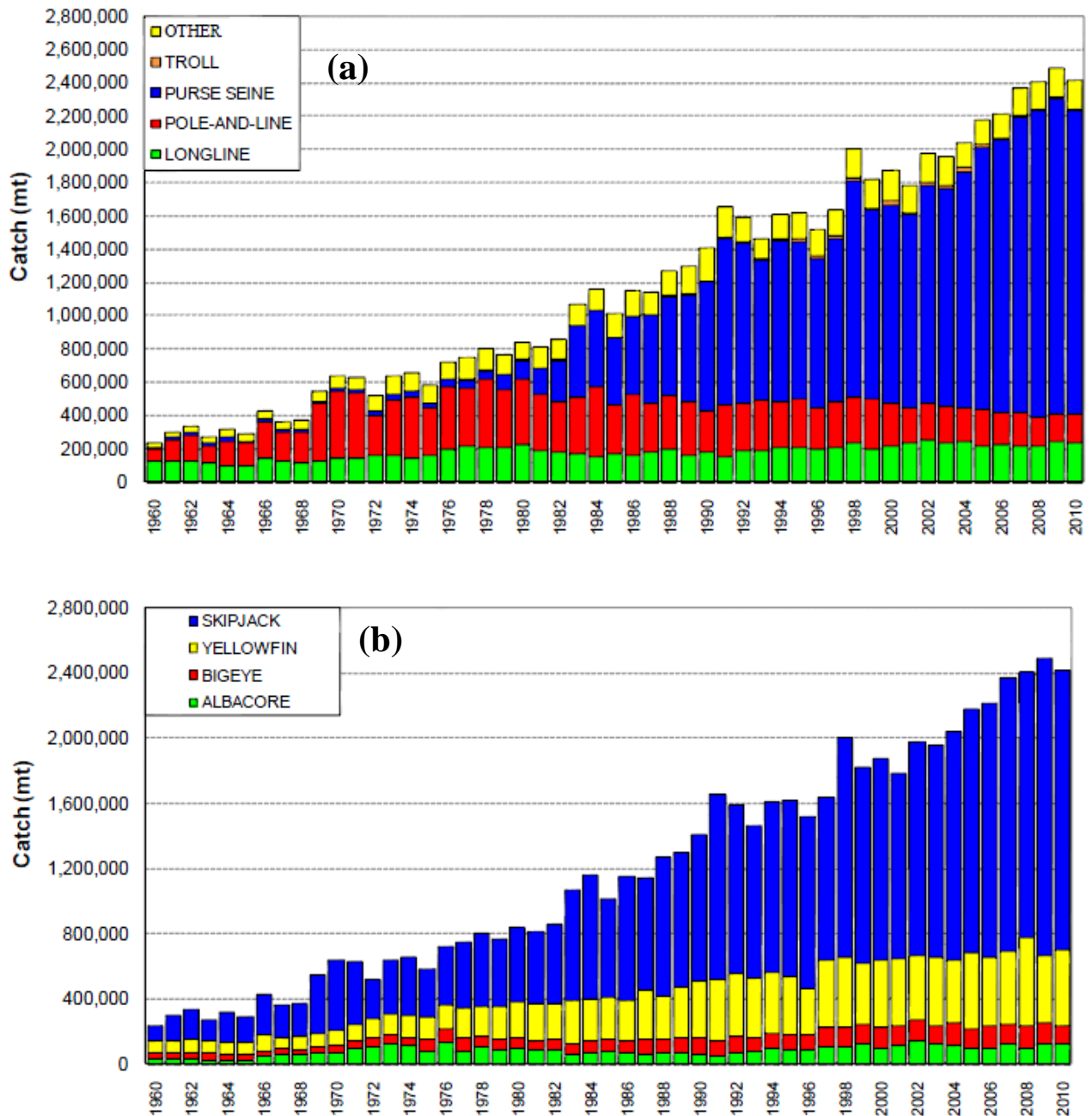


Figure 3- (a) Tuna Catches in the WCPFC Statistical Area by gear type. (b) Tuna Catches in the WCPFC Statistical Area by species (Source: WCPFC-SC&-2011/ST IP-1).

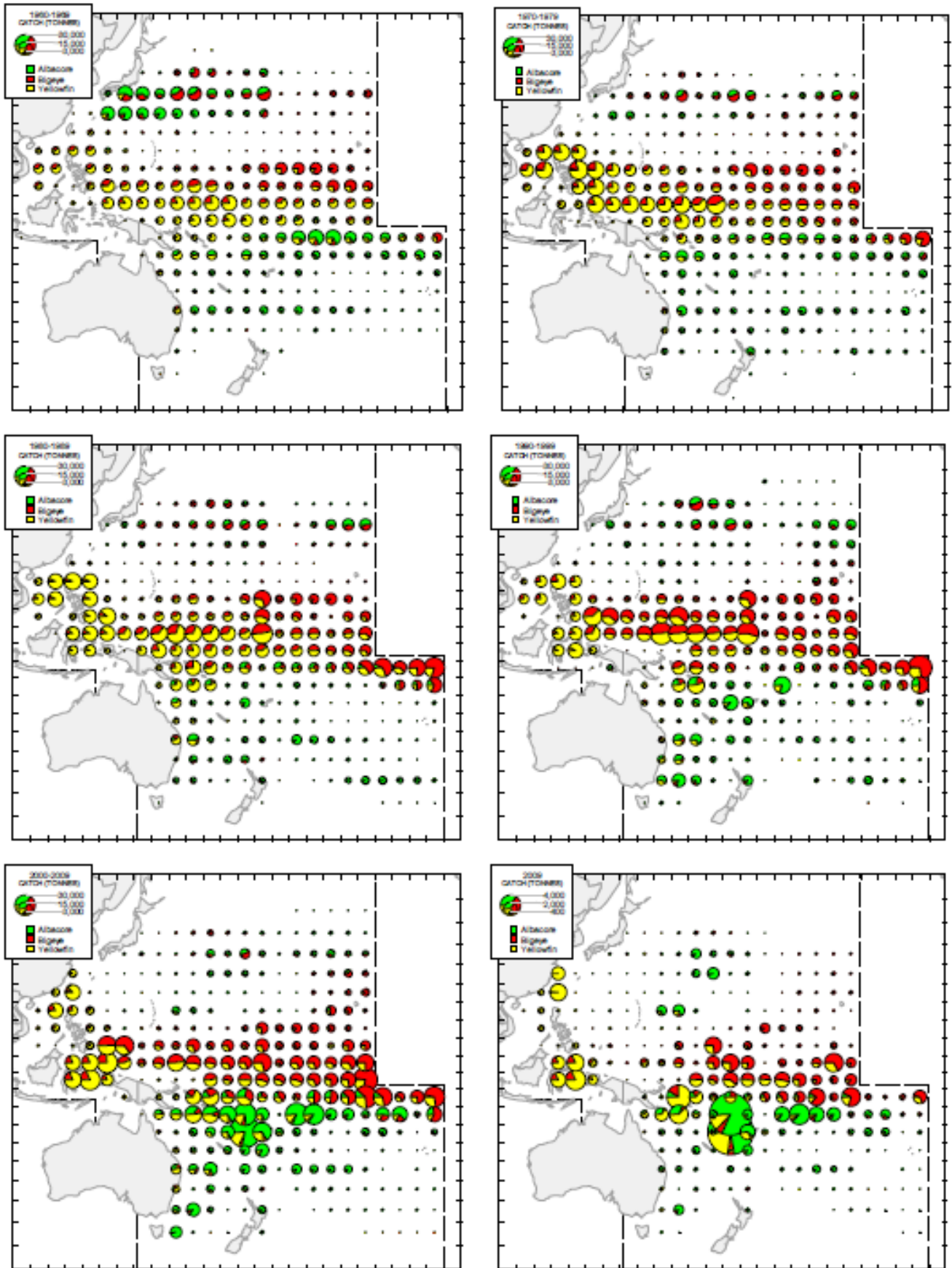


Figure 4- Distribution of target WCPFC Tuna Longline catches by decade between 1960 and 2009. (Source: WCPFC Tuna Fishery Yearbook, 2009- <http://www.wcpfc.int/node/1759>).

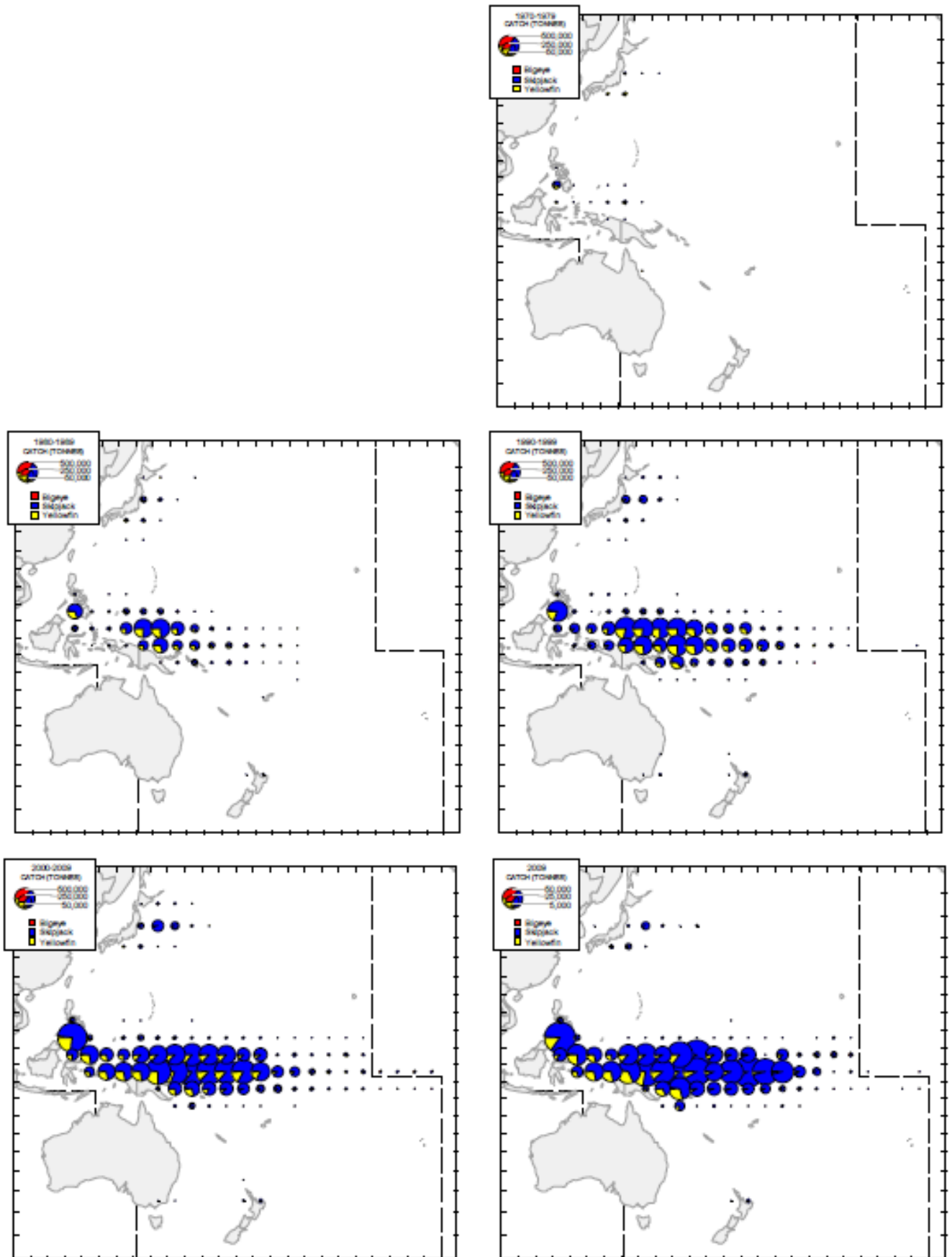


Figure 5- Distribution of target WCPFC tuna Purse Seine catches by decade between 1960 and 2009. (Source: WCPFC Tuna Fishery Yearbook, 2009- <http://www.wcpfc.int/node/1759>).

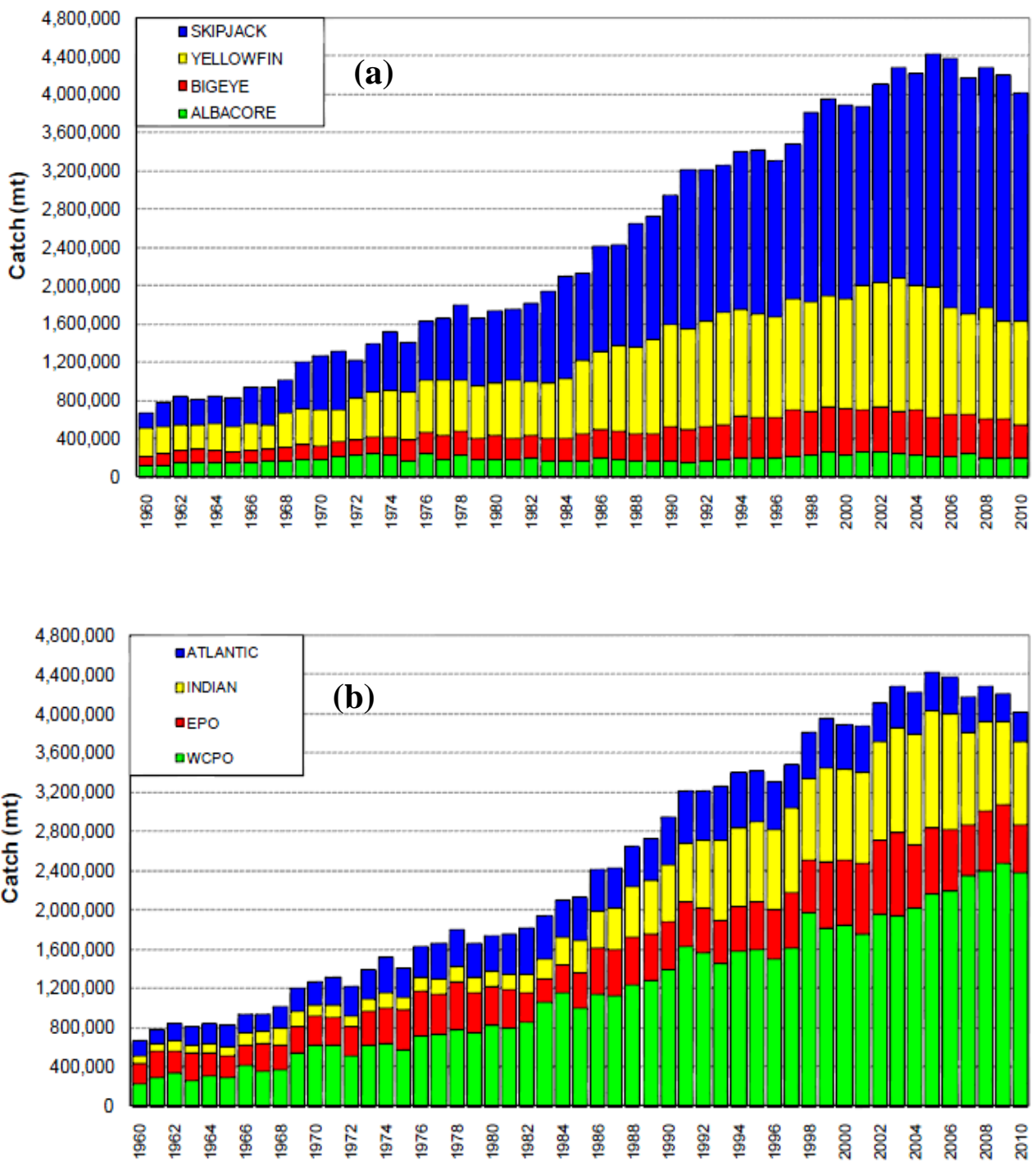


Figure 6- (a) Global tuna catches by species, and (b) by ocean area for the period 1960 to 2010.(EPO - Eastern Pacific Ocean; WCPO- Western Central Pacific Ocean) (Source: WCPFC-SC&-2011/ST IP-1).

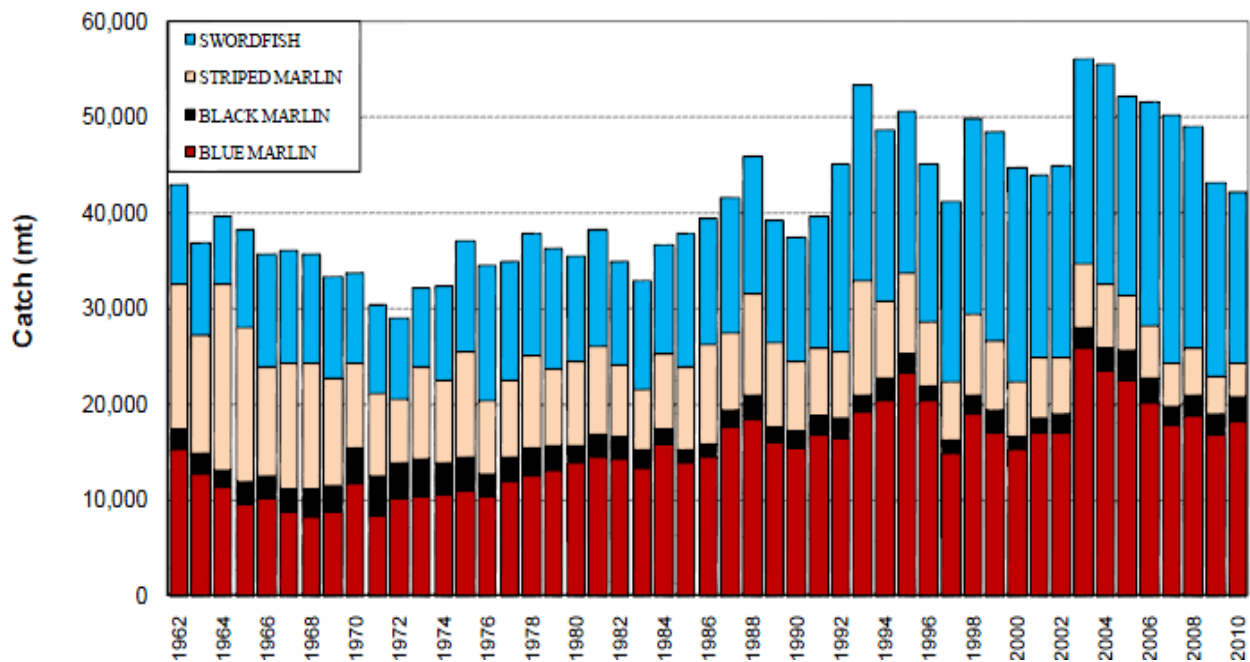


Figure 7- Commercial catches of major billfish species in the WCPFC Statistical Area between 1960 and 2010. (Source: WCPFC-SC&-2011/ST IP-1).

Further details of WCPFC fisheries catches can be found in the annual *WCPFC Tuna Fishery Yearbook* and in an annual paper (e.g. WCPFC-SC&-2011/ST IP-1) presented to the Scientific Committee by the Oceanic Fisheries Programme (OFP) of the Secretariat of the Pacific Community (SPC)(see further discussion below).

5.2. Status of living marine resources

The performance of any RFMO is to be judged, in the end, by the status of the stocks it is responsible to manage; and the management of any stock can be only as good as the data available for the assessment of its status. As discussed in this section, WCPFC still faces serious difficulties related to the quality, quantity and timeliness of the data available for assessments of the stocks for which it is responsible. Many of the data provided by the members are late (in some instances with a time lag over 18 months), aggregated and with none or very little information on operational aspects of the fishing sets, greatly hampering the ability to accurately estimate trends in abundance and, consequently, increasing the uncertainty of the stock assessments. These deficiencies are aggravated by the fact that many members do not have the necessary infrastructure to adequately monitor the fishing operations and to consequently gather the data needed for the assessments, and by the lack of fisheries independent data. Furthermore, the dynamics of the fleets operating in WCPFC Convention Area have changed significantly in

the last decade, consequently changing fishing efficiency, an aspect that has not yet been adequately considered in the assessment of the stocks neither in the conservation and management measures adopted. There is also an acute need of biological information of the species caught, such as natural mortality, growth, and reproductive biology. Some of the biological information available is over 40 years old. This situation contrasts with the very low investment done for research on the exploited species, estimated to be yearly around 0.02% only of the value of the fish caught (Harley and Hampton, 2009).

Finally, the dialogue between the Scientific Committee and the Commission has not been as efficient as it should, requiring significant improvements and clarifications in terms of management objectives, target and reference points (see Section 5.3). As a consequence of this situation, some of the exploited stocks have been suffering overfishing for several years and might already be in an overfished state (e.g. bigeye tuna), as discussed further on this section (see Table 15).

The WCPFC currently contracts the Oceanic Fisheries Programme of the Secretariat for the Pacific Community (SPC-OFP) to undertake assessments⁴⁵ (see also Section 5.5 below). Stock assessments for all species are not undertaken every year.

The WCPFC Scientific Committee (WCPFC SC) typically summarizes stock status in relation to three interim reference points:

- Level of fishing mortality likely to result in the *Maximum Sustainable Yield* (F_{MSY});
- Biomass capable of supporting the *Maximum Sustainable Yield* (B_{MSY}), and
- Predicted biomass in the absence of fishing ($B_{CURR(F=0)}$).

According to Harley and Hampton (2009), the first two reference points are commonly MSY-related and based on equilibrium conditions⁴⁶. They are essentially pre-ordained by Annex II of the UNFSA and Article 6(1)(a) of the Convention. They also form the basis of the so called '*Kobe Plots*' (Figure 8).

Developed at the 2007 *First Joint Meeting of Tuna RFMOs* in Kobe, Japan, the *Kobe Plot* is a matrix used to evaluate stock status in relation to fishing mortality (F) and biomass (B) in association with MSY (i.e. F_{MSY} and B_{MSY}). If F is above F_{MSY} , overfishing is judged to be occurring. If current biomass, or some measure of spawning output, is below B_{MSY} , the stock is also judged to be overfished. The *Plot* places B/B_{MSY} on the x-axis, and F/F_{MSY} on the y-axis (Figure 8) so that the vertical and horizontal lines intersect at a value of 1.0. This splits the *Plot* into four sections with the upper left portion encompassing a situation where overfishing occurs

⁴⁵ Largely of tuna (albacore, bigeye, skipjack and yellowfin) stocks

⁴⁶ Such conditions are static, or 'on-average'. For further discussion on reference points, refer to Section 5.3.3

and a stock is overfished. The *Plot's* lower right represents a healthy stock, where overfishing does not occur and the stock is under-fished (i.e. $B/B_{MSY} > 1$ and $F/F_{MSY} < 1$). The stock trajectory with time is plotted so that the historical status of the stock can be illustrated. Typically, a stock is originally placed in the lower right portion of the *Plot*. As the fishery develops, the harvested stock moves first into the *Plot's* upper right, when overfishing begins to happen but the stock is not yet overfished (i.e. $B/B_{MSY} > 1$, but $F/F_{MSY} > 1$), and then to the upper left, with the population becoming progressively overexploited (i.e. $B/B_{MSY} < 1$ and $F/F_{MSY} > 1$). As appropriate and effective management measures are applied, a stock moves progressively to the lower left quadrant and closer to the *Plot's* centre. Substantial uncertainties, however, may be associated with the quantities used in generating a *Kobe Plot*, and these tend to be reflected by the position of the consolidated current situation (e.g. the white crosshairs in Figure 8). More recently, a so called Kobe matrix has been proposed which consists of a Table with the different probabilities of ensuring stock recovery or sustainability in relation to respective catch levels, as an alternative to guide management decisions on the basis of the level of uncertainty (risk) that the managers are willing to take.

The third interim reference point is essentially a more up-to-date formulation which attempts to reconcile modern perceptions of fish population dynamics with the more realistic non-equilibrium patterns observed. It basically represents the level of biomass predicted to exist today, if fishing had not occurred ($B_{CURR(F=0)}$).

The remainder of this section summarizes stock status for key WCPFC commercially-exploited stocks. The summary is based on the 2011 WCPFC SC Report, and commentary is provided by the Review Panel (in bold) where necessary on whether WCPFC objectives are being met, or on any matters considered to be important.

Yellowfin Tuna – Kobe Plot

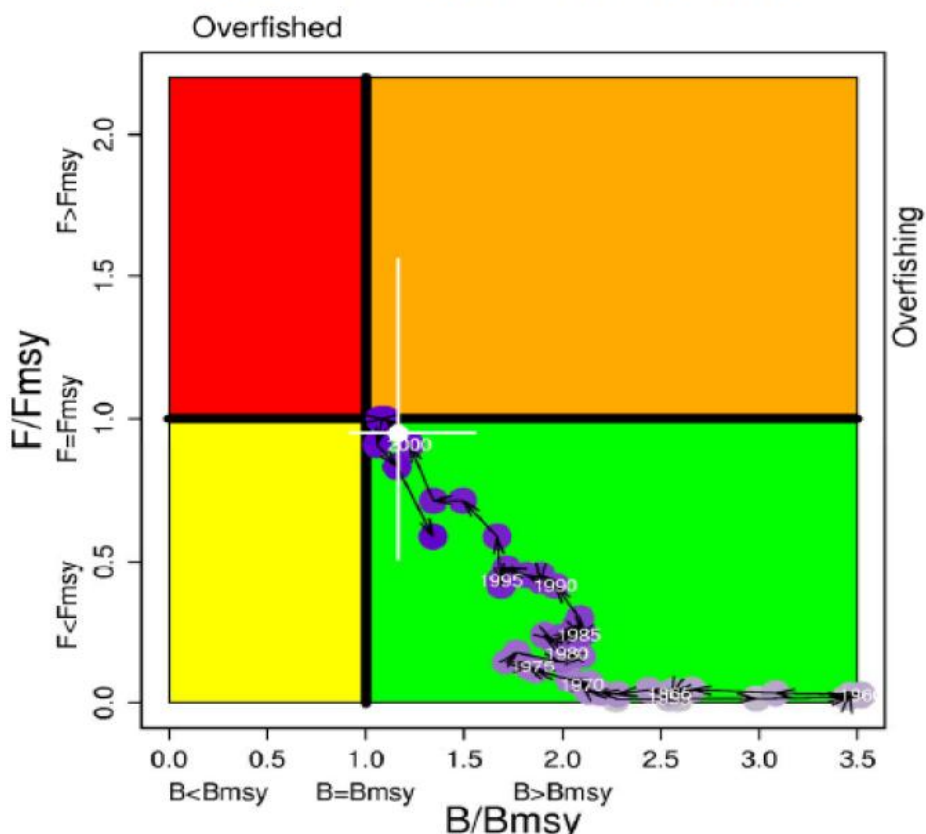


Figure 8- A 'Kobe Plot' for yellowfin tuna in the United States' EEZ off the coast of Washington, Oregon and California managed by Pacific Fishery Management council (Source: http://www.pcouncil.org/bb/2009/0409/ D4b_SUP_MCISAAC_PPT_0409.pdf)

South Pacific albacore

Adult albacore are distinguishable from other tuna by a very long pectoral fin, although color and shape may be similar (Figure 9).



Figure 9- Albacore tuna (Source: <http://www.spc.int/oceanfish/en/tuna-fisheries/tuna-species>).

There are two distinct albacore stocks in the WCPO, with the equatorial area⁴⁷ separating the southern component from that in the north. The age-at-first-maturity is between 4 and 5 years, with mature albacore spawning in tropical and sub-tropical waters in a swathe of 10 to 25 degrees of latitude from the Equator. Individual fish become available to surface fishing one or two years later, at a size between 45 and 50 cm. These fish are located within about 40 degrees of latitude from the Equator. From here, albacore appear to gradually disperse towards lower latitudes, but undertake seasonal migrations between tropical and sub-tropical waters.

A 2011 assessment of the Southern Pacific Ocean (SPO) albacore stock (Hoyle, 2011) compared the 2009 alternate assessment model case with the 2011 model reference case. Key outcomes show that:

- Estimated SPO albacore stock status in 2011 to be similar to the 2009 estimates (Figures 10a to 10d);
- Biological research indicates different growth curves for male and female albacore. These were not taken into account in the models and any associated growth curve errors may bias Biomass and Fishing Mortality estimates. This means that caution needs to be exercised when estimating, or applying, management-related parameters;
- Considerable uncertainty surrounds early trends in the stock biomass, although this has negligible implications for management parameters, or the advice being offered on stock status;
- Estimates of $F_{2007-2009}/F_{MSY}$ (0.26) and SB_{2009}/SB_{MSY} (2.25) indicate that no overfishing is happening (F above F_{MSY}), nor the stock is in an overfished state (SB below SB_{MSY}) (Figure 10d);
- The 2009 assessment results suggest that considerable management parameter variation is attributable to steepness⁴⁸, for which there is no information. This variation renders management advice based on MSY relatively uninformative. Alternative metrics such as expected Catch-Per-Unit-Effort (CPUE), relative to a target CPUE, may be less affected by such uncertainty. Furthermore, such metrics may be more relevant to fishery management needs;
- There is no indication that current catch levels are causing recruitment overfishing, particularly given the age-selectivity of the fisheries; and
- Albacore longline catch rates appear to be declining, with catches over the past 10 years being at historically high levels. The CPUE trend may have significant management implications.

⁴⁷ Where albacore are rare

⁴⁸ Put simply, 'steepness' is a parameter defining the shape of the stock-recruitment relationship. As highlighted by Preece *et al.* (2011), it is a measure of stock productivity, and is interpreted as a measure of stock resilience to fishing pressure. Steepness ranges from 0.2 to 1.0 for the most commonly used Beverton-Holt model. Higher steepness values equate to more productive and resilient stocks. At the lower end of the steepness range, a value of 0.2 indicates that at a spawning stock biomass level of 20% of the unfished state (SSB_0), recruitment is 20% of the virgin unfished level. Essentially, this reflects a linear relationship between recruitment and spawning biomass. At a steepness of 0.7, if the spawning stock is reduced to 20% SSB_0 , recruitment is still on average 70% of the unfished level

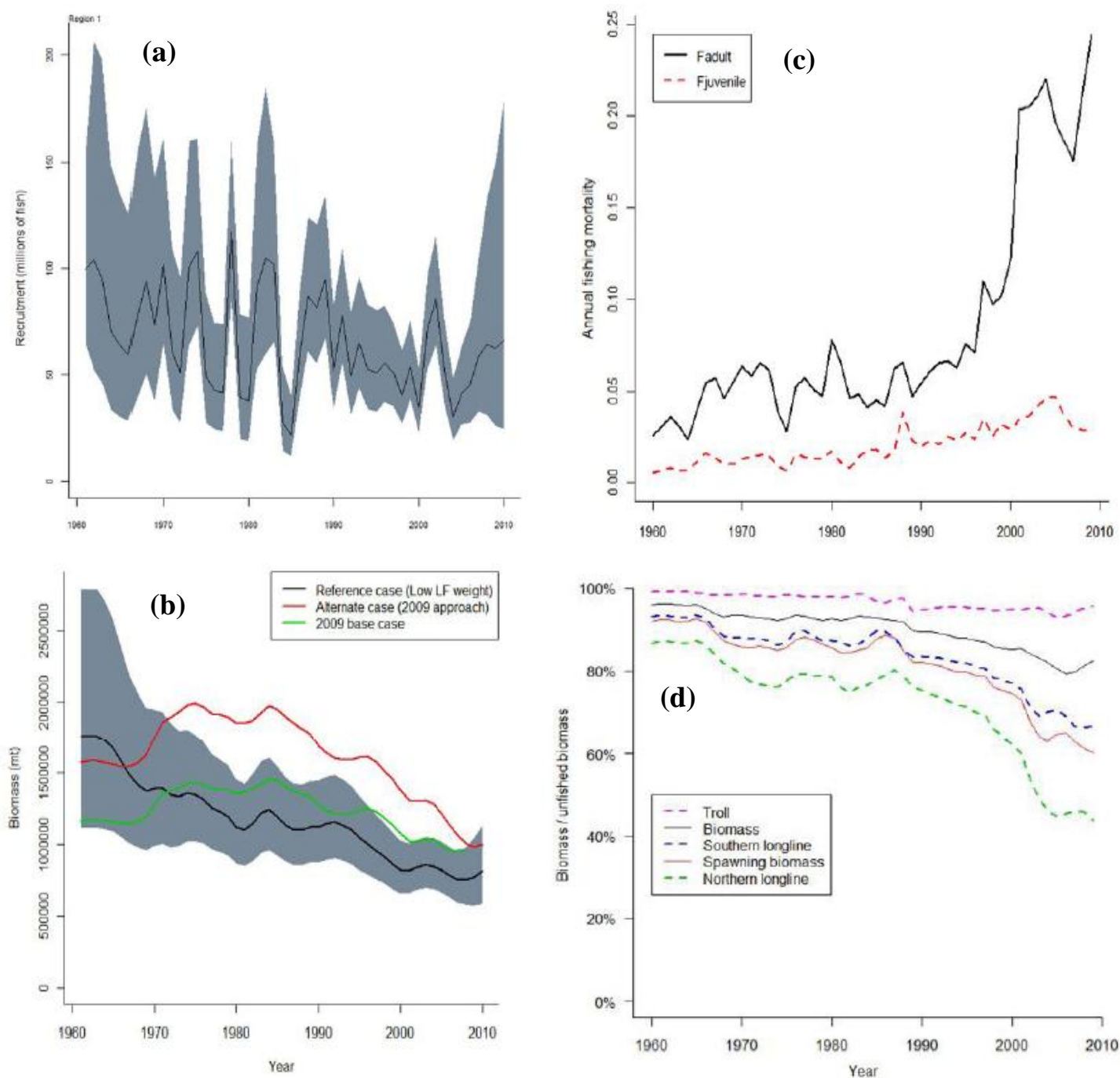


Figure 10- South Pacific albacore assessments- (a) Annual recruit (number of fish) estimates; (b) Annual total biomass estimates (thousands of t). Scenarios illustrate estimates from the 2011 reference case, alternate case using the 2009 approach, and the 2009 base case biomass estimates. Comparisons illustrate conflicts between CPUE and length frequency (LF) data.; (c) Annual fishing mortality estimates for juveniles and adults, and (d) Biomass declines from fishing mortality for the exploitable biomass targeted by the Troll, southern Longline and northern Longline fisheries, as well as for total biomass and spawning biomass (Grey shading reflects parameter uncertainty) (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

The assessment also shows that the SPO albacore fishery predominantly targets the adult as opposed to the juvenile portion of the stock. This explains some of the South Pacific albacore stock's resilience.

The assessment of SPO albacore *Kobe Plot* trajectory (Fig. 11) showed that current Spawning Stock Biomass ($SB_{Current}$) is still well above SB_{MSY} (by the order of 2, although B/B_{MSY} is closer to 1), while current Fishing Mortality ($F_{Current}$) is well below F_{MSY} (around one fourth). Differently from other species, however, SPO albacore $B_{current}$ seems to be already approaching B_{MSY} , despite $F_{current}$ remains well below F_{MSY} . The WPFC SC was advised by the expert from the Secretariat of the Pacific Community (SPC), responsible for the assessment, that because fishing effort is not high enough to explain the decline in CPUE (i.e. fishing effort is low relative to F_{MSY}), the model may be compensating by estimating declining recruitment (and subsequently declining biomass). This might also result in an overestimation of the overall level of biomass. However, there are other possible explanations for the observed trends and further analyses are needed in this regard.

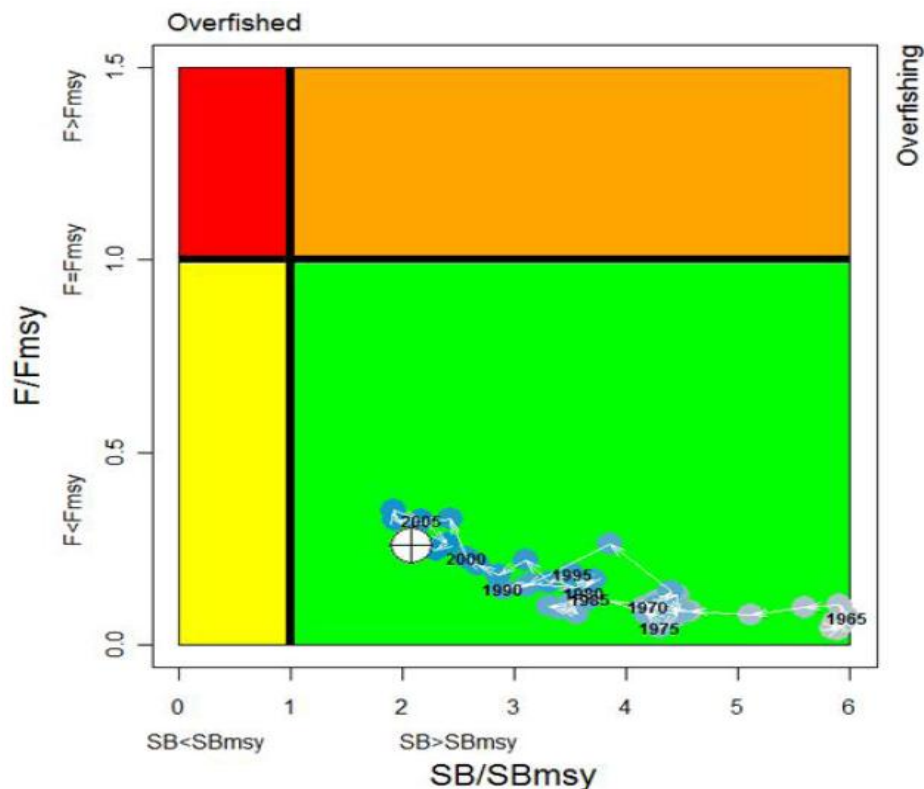


Figure 11- Temporal trend in annual South Pacific albacore stock status, relative to SB_{MSY} (x-axis) and F_{MSY} (y-axis) reference points, for the model period from 1960. The color of the points is graduated from pale blue (1960) to blue (2009). Points are labeled at five-year intervals and the model's latest last year (2010) is excluded due to uncertainty (Summary Report for the Seventh Regular Session of the Scientific Committee. At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Overall, the 2011 southern albacore assessment is almost identical to that for 2009 (Table 6).

Table 6- Management parameters estimated from the 2011 Southern albacore Reference Case Model compared to estimates from the 2009 Assessment (see text for explanation). (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Management quantity	Reference case		2009 Base	2009 Median
$C_{2007-2009}$	54,520	$C_{2005-2007}$	66,869	65,801
$YF_{2007-2009}$	57,130	$YF_{2005-2007}$	64,490	58,955
MSY	85,200	MSY	97,610	81,580
$YF_{2007-2009} / MSY$	0.67	$YF_{2005-2007} / MSY$	0.66	0.72
$C_{2007-2009} / MSY$	0.64	$C_{2005-2007} / MSY$	0.69	0.80
F_{MSY}	0.14	F_{MSY}	0.14	0.16
$F_{2007-2009} / F_{MSY}$	0.26	$F_{2005-2007} / F_{MSY}$	0.25	0.29
B_0	1,141,000	B_0	1,309,000	1,098,500
B_{MSY}	605,900	B_{MSY}	692,100	553,200
B_{MSY} / B_0	0.53	B_{MSY} / B_0	0.53	0.49
$B_{2007-2009}$	762,240	$B_{2005-2007}$	965,860	863,665
$BF_{2007-2009}$	903,500	$BF_{2005-2007}$	1,041,000	836,300
$B_{2007-2009}F_0$	950,947	$B_{2005-2007}F_0$	1,159,433	1,084,933
SB_0	400,700	SB_0	460,400	406,600
SB_{MSY}	104,200	SB_{MSY}	120,000	101,700
SB_{MSY} / SB_0	0.26	SB_{MSY} / SB_0	0.26	0.24
SB_{2009}	234,537	SB_{2007}	273,557	236,793
SBF_{2009}	251,500	SBF_{2007}	292,500	235,250
$SB_{2009}F_0$	372,043	$SB_{2007}F_0$	402,873	390,193
$B_{2007-2009} / B_0$	0.67	$B_{2005-2007} / B_0$	0.74	0.76
$BF_{2007-2009} / B_0$	0.79	$BF_{2005-2007} / B_0$	0.80	0.74
$B_{2007-2009} / B_{MSY}$	1.26	$B_{2005-2007} / B_{MSY}$	1.40	1.53
$BF_{2007-2009} / B_{MSY}$	1.49	$BF_{2005-2007} / B_{MSY}$	1.50	1.49
$B_{2007-2009} / B_{2007-2009}F_0$	0.80	$B_{2005-2007} / B_{2005-2007}F_0$	0.83	0.80
SB_{2009} / SB_0	0.59	SB_{2007} / SB_0	0.59	0.60
SBF_{2009} / SB_0	0.63	SBF_{2007} / SB_0	0.64	0.59
SB_{2009} / SB_{MSY}	2.25	SB_{2007} / SB_{MSY}	2.28	2.44
SBF_{2009} / SB_{MSY}	2.41	SBF_{2007} / SB_{MSY}	2.44	2.36
$SB_{2009} / SB_{2009}F_0$	0.63	$SB_{2007} / SB_{2007}F_0$	0.68	0.64

The key conclusion from the assessment is that overfishing of southern albacore is not occurring and the stock is not in an overfished state (Figure 11). Reference point levels estimated in the 2011 assessment are very similar to those estimated in the 2009 assessment and albacore depletion levels are moderate, at ~37%. However, WCPFC SC notes that southern albacore depletion levels available to longline fisheries north of 25°S stand above 50%.

Panel Assessment and Recommendations for southern albacore

- Other explanations are possible for observed southern albacore biomass trends and further analyses appear justifiable;
- Despite the apparent appropriateness of the 2011 southern albacore assessment, the resultant conclusions are somewhat more pessimistic than previous assessments (i.e. B/B_{MSY} closer to 1). Uncertainty still surrounds the current levels of fishing mortality and there appears to be justification for further research to improve the assessment model, as well as a need for an updated assessment in 2012;
- The South Pacific albacore stock is neither currently overfished, nor is overfishing occurring. Current biomass levels appear sufficient to support contemporary catch levels. However, any catch or effort increases are likely to result in declining catch rates, especially for longline catches of adult albacore. This will not only affect vessel profitability, but will also mandate management of vessels in strict conformity with CMM 2010-05; and
- There is probably a need to focus more on albacore longline fisheries north of 25°S, where considerable biomass depletion appears to be occurring with obvious implications for management.

References

Hoyle, S. (2011). Stock assessment of albacore tuna in the South Pacific Ocean. WCPFC-SC7-2011/SA-WP-06.

Bigeye

Bigeye (Figure 12) is one of the largest tuna species. Adults are distinguishable by a deep body, an iridescent blue longitudinal band on the body and smaller anal, as well as dorsal, fins than yellowfin tuna. However, juvenile bigeye (~50cm) are difficult to distinguish from juvenile yellowfin.



Figure 12- Bigeye tuna (Source: <http://www.spc.int/oceanfish/en/tuna-fisheries/tuna-species>).

Bigeye tunas are quite broadly distributed in the WCPO, being found from 40°N to 40°S. They are usually encountered between the surface and 500 m, occurring as deep as 1,000 m. The species' wide depth distribution is attributed to its tolerance to low oxygen concentrations and temperatures.

In WCPO tropical and subtropical waters, adult bigeye migrate from their daytime habitat in cooler deeper waters (i.e. beneath the thermocline) to shallower warmer waters (i.e. above the thermocline) at night. Juvenile bigeye tend to inhabit shallower waters and form mixed schools with skipjack and yellowfin tuna. This results in catches of juvenile bigeye by the surface fishery, particularly in association with floating objects, such as fish aggregating devices (FADs). WCPO Purse Seine fishery landings of juvenile bigeye tuna increased during the latter part of the 1990s (Figure 3), probably due to the growing use of FADs.

A 2010 bigeye assessment (Harley *et al.* 2010) estimated the species' biomass as only slightly above the MSY level. However, estimated fishing mortality rates (F) are far greater than F_{MSY} . This suggests that the bigeye stock is close to, and moving towards, being overfished; i.e. the current exploitation rate will reduce bigeye stock levels below MSY. Therefore, the future of bigeye stocks is likely to be linked with the Purse Seine fishery targeting skipjack and yellowfin.

A similar 2011 assessment (Harley and Davies, 2011) compared Bigeye, skipjack and yellowfin stock status at various reference points (Figure 13).

The assessment shows that the bigeye $F_{SPR40\%}$ limit reference point⁴⁹ has been exceeded since 1990 at a high level of probability. This situation is projected to continue into the future, with a high level of probability, if fishing is maintained at *status quo* levels for the two recruitment scenarios illustrated in Figure 13.

Bigeye is also assessed to have been above the 20% SB_0 level⁵⁰ historically. The assessment predicts that there is a very low probability of the stock declining below the 20% SB_0 level, given recent average recruitment levels (4 to 7%).

The WCPFC SC's 2011 bigeye assessment is comparable to recent assessments (Table 7). However, there have been a number of data updates, and some structural assumptions have been changed. Most noticeably, the structure of Indonesian and Philippine-based fisheries has been revised to incorporate recent *Pacific Tuna Tagging Programme* (PTTP) data. In addition standardized longline CPUE derived from operational-level data has been used, while Purse Seine size frequency data (corrected for grab sample selectivity bias using experimental spill sample data) have also been incorporated.

⁴⁹ SPR is the Spawning Stock Biomass-per-Recruit and $F_{SPR40\%}$ is the fishing mortality which produces a Spawning Stock Biomass-per-Recruit, corresponding to 40% of SPR under unfished conditions

⁵⁰ SB_0 is the Spawning Biomass at B_0 , which corresponds to the biomass under unfished conditions

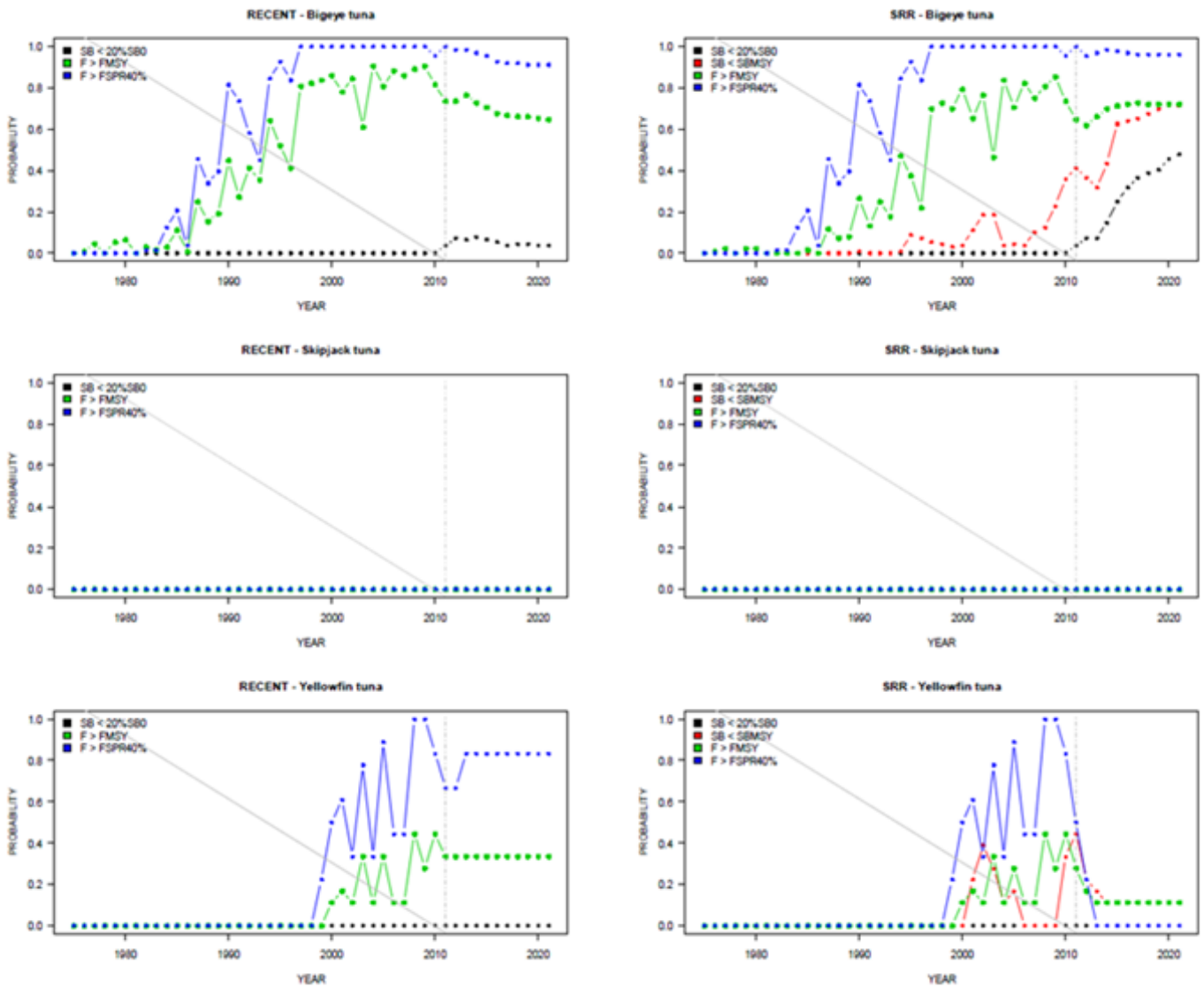


Figure 13- Annual probability of Bigeye, skipjack and yellowfin exceeding alternative limit reference point levels. The graphs are based on deterministic projections for each model subject to recent average recruitment (left) and spawner-recruitment relationship (SRR) predicted recruitment (right). (Source: Harley and Davies, 2011).

Table 7- Comparison of Bigeye tuna reference points from the WCPFC SC 2011 reference ('base') case model and the range of six models shown in Table 8. The 2010 base case model (estimated steepness= 0.98) outputs are compared to (in parenthesis) to an alternative 2010 model run (assumed steepness= 0.75), the ranges of six sensitivity analyses from the 2009 assessment, and the base case model, including sensitivity analyses, from the 2008 assessment. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Management quantity	2011 assessment Base case (uncertainty)	2010 assessment Run3d (Run4b)	2009 Assessment	2008 Assessment
Most recent catch	116,868 mt (2010)	126,769 mt (2009)	134,315 mt (2008)	143,059 mt (2007)
MSY	76,760 mt (68,360 – 83,720)	73,840 mt (65,640 mt)	Range: 52,120 ~ 67,800 mt	Base case: 64,600 mt Range: 56,800~65,520 mt
$F_{current}/F_{MSY}$	1.46 (1.16-2.10)	1.41 (1.97)	Range: 1.51 ~ 2.55	Base case: 1.44 Range: 1.33 ~ 2.09
$B_{current}/B_{MSY}$	1.25 (0.96-1.48)	1.39 (1.09)	Range: 1.11 ~ 1.55	Base case: 1.37 Range: 1.02 ~ 1.37
$SB_{current}/SB_{MSY}$	1.19 (0.86-1.49)	1.34 (0.97)	Range: 0.85 ~ 1.42	Base case: 1.19 Range: 0.76 ~ 1.20
$Y_{Fcurrent}/MSY$	0.89 (0.34-0.99)	0.94 (0.56)	Range: 0.12 ~ 0.92	Base case: 0.94 Range: 0.50 ~ 0.97
$B_{current}/B_{current, F=0}$	0.29 (0.25-0.30)	0.23 (0.24)	Range: 0.18 ~ 0.29	Base case: 0.26 Range: 0.20 ~ 0.28
$SB_{current}/SB_{current, F=0}$	0.23 (0.19-0.23)	0.17 (0.18)	Range 0.11 – 0.19	Not available

An assessment model run⁵¹ (the 'base case') output has been taken to best reflect current Bigeye stock status. To characterize assessment uncertainty, additional models have been based on alternate values of steepness and standardized CPUE derived from either operational or aggregate longline data (Table 8).

Figures 14 to 18 illustrate the temporal trends in estimated bigeye recruitment, biomass, fishing mortality and depletion. The main conclusions of the 2011 assessment were as follows:

- a) total and spawning biomass for the bigeye are estimated to have declined to about half of their initial levels by the mid-1970s, with total biomass remaining relatively constant since then ($B_{Current}/B_0 = 44\%$), while spawning biomass has continued to decline ($SB_{Current}/SB_0 = 35\%$). Declines are larger for models that exclude the early periods of the CPUE time series.
- b) It is estimated that spawning potential is at 26% of the level predicted to exist in the absence of fishing, considering the average over the period 2006-09, and that value is reduced to 23% for the 2010 spawning potential levels.
- c) $F_{Current}/F_{MSY}$ is estimated to be 1.46 (range 1.16 to 2.10) for the assessment Base Case. Fishing mortality for adult and juvenile bigeye tuna is estimated to have increased continuously since the beginning of industrial tuna fishing. For all of the model runs $F_{Current}/F_{MSY}$ is considerably greater than 1.

⁵¹ The model had an assumed steepness of 0.8 and was based on standardized CPUE derived from operational-level longline data

Table 8- Estimates of management quantities for selected bigeye stock assessment models from the 2011 base case model (Run 3j – H80-OP) and five steepness/ longline CPUE series combinations. (For the assessment – ‘Current’ = Average over the period 2006 to 2009, and ‘Latest’= 2010). (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

	H80-op (Base case)	H65-op	H95-op	H80-agg	H65-agg	H95-agg
$C_{current}$	141,160	141,365	141,029	141,561	141,805	141,356
C_{latest}	116,868	117,118	116,712	117,558	117,843	117,320
MSY	76,760	70,080	83,720	74,120	68,360	80,360
$C_{current}/MSY$	1.84	2.02	1.68	1.91	2.07	1.76
C_{latest}/MSY	1.52	1.67	1.39	1.59	1.72	1.46
F_{mult}	0.68	0.54	0.86	0.60	0.48	0.75
$F_{current}/F_{MSY}$	1.46	1.84	1.16	1.67	2.10	1.33
SB_0	739,900	810,000	698,500	688,400	762,000	644,200
SB_{MSY}/SB_0	0.29	0.33	0.24	0.29	0.33	0.24
$SB_{current}/SB_0$	0.35	0.33	0.36	0.30	0.29	0.32
SB_{latest}/SB_0	0.31	0.30	0.32	0.26	0.24	0.26
$SB_{current}/SB_{MSY}$	1.19	0.98	1.49	1.05	0.86	1.32
SB_{latest}/SB_{MSY}	1.08	0.89	1.36	0.88	0.72	1.10
$SB_{curr}/SB_{currF=0}$	0.23	0.23	0.22	0.20	0.20	0.19
$SB_{latest}/SB_{latestF=0}$	0.21	0.22	0.21	0.17	0.18	0.17
Steepness (h)	0.80	0.65	0.95	0.80	0.65	0.95

Based on these results, the assessment concluded that overfishing is occurring in the bigeye tuna stock and that a 32% reduction in fishing mortality was required from 2006 to 2009 levels to reduce fishing mortality to F_{MSY} (Figure 18).

The Base Case indicated that the current total, and spawning, bigeye biomasses are still higher than associated MSY levels ($B_{Current}/B_{MSY} = 1.25$ and $SB_{Current}/MSY_{SB} = 1.19$). However, two of the alternate models found that $SB_{Current}/SB_{MSY} < 1.0$; the range across the six models (paragraph 4.2.24) being 0.86 to 1.49. This further raises the possibility that bigeye are currently in an overfished state.

Historical analysis of fishing gear patterns indicates that MSY has been reduced to less than half of its prior-1970 levels through increased harvesting of juvenile bigeye (Figure 19). Furthermore, recent overfishing could lead to further losses of potential yield in the future (see Table 8).

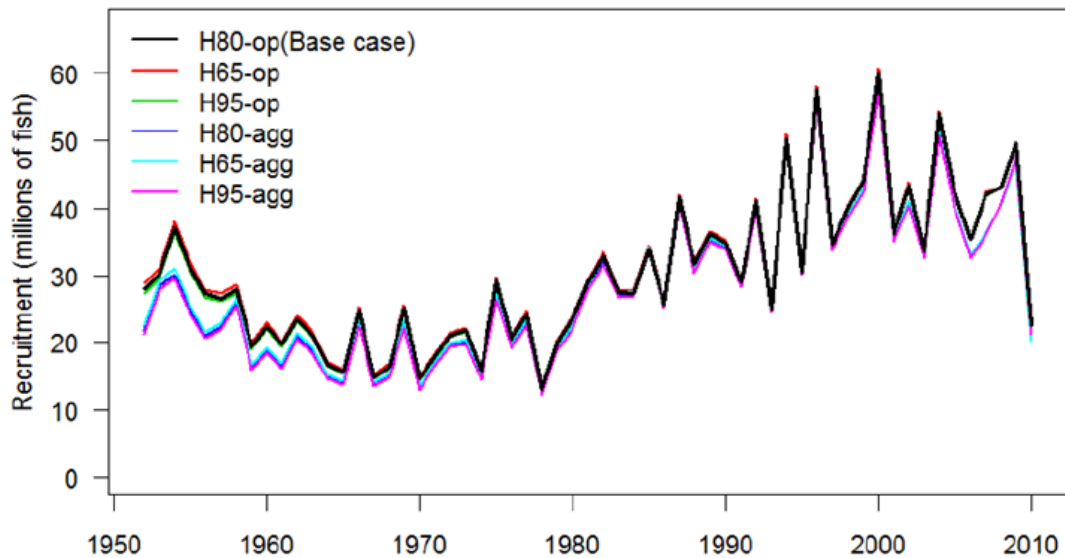


Figure 14- Estimated annual recruitment (millions of fish) for Bigeye from the Assessment Base Case model (H80-OPP)(black line) and five combinations of steepness and longline CPUE series. (Source; Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

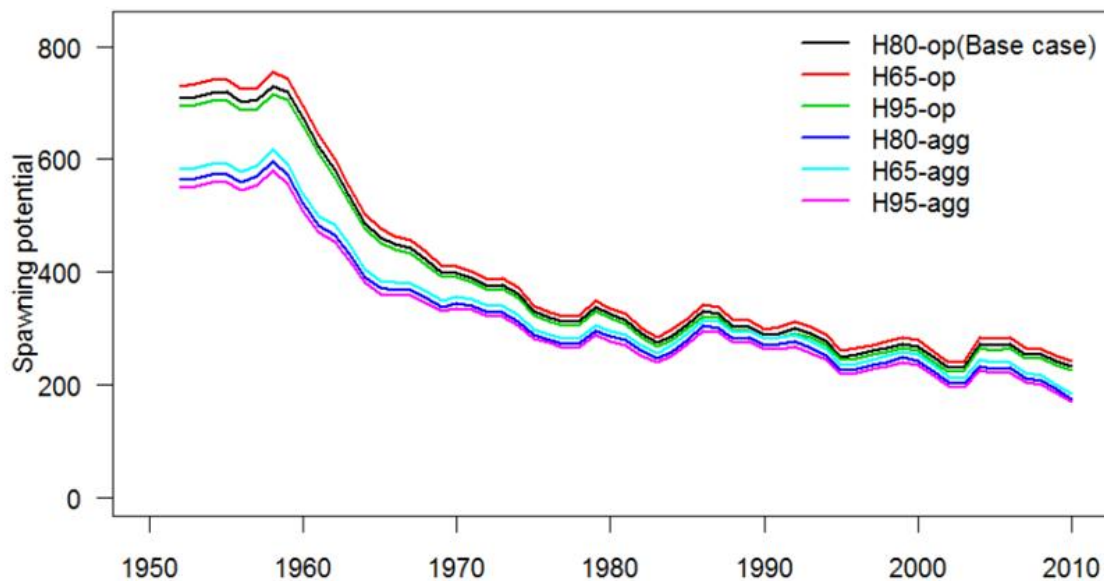


Figure 15- Estimated annual average spawning potential for Bigeye from the Assessment Base Case model (H80-OPP) and five combinations of steepness and longline CPUE series. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

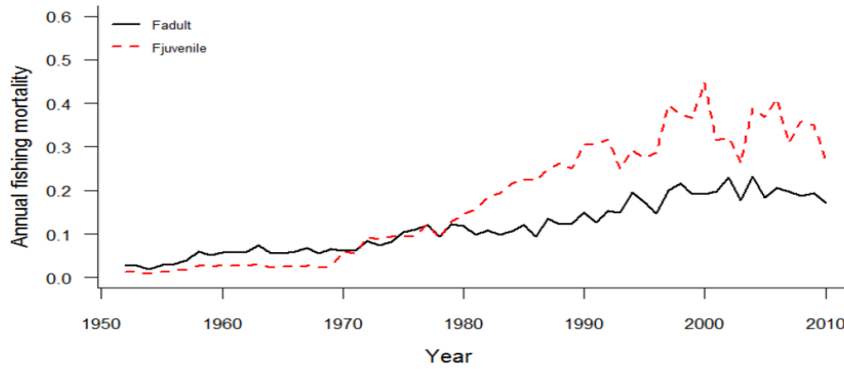


Figure 16- Estimated average Bigeye juvenile and adult fishing mortality from the Assessment Base Case model (H80-OPP) (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

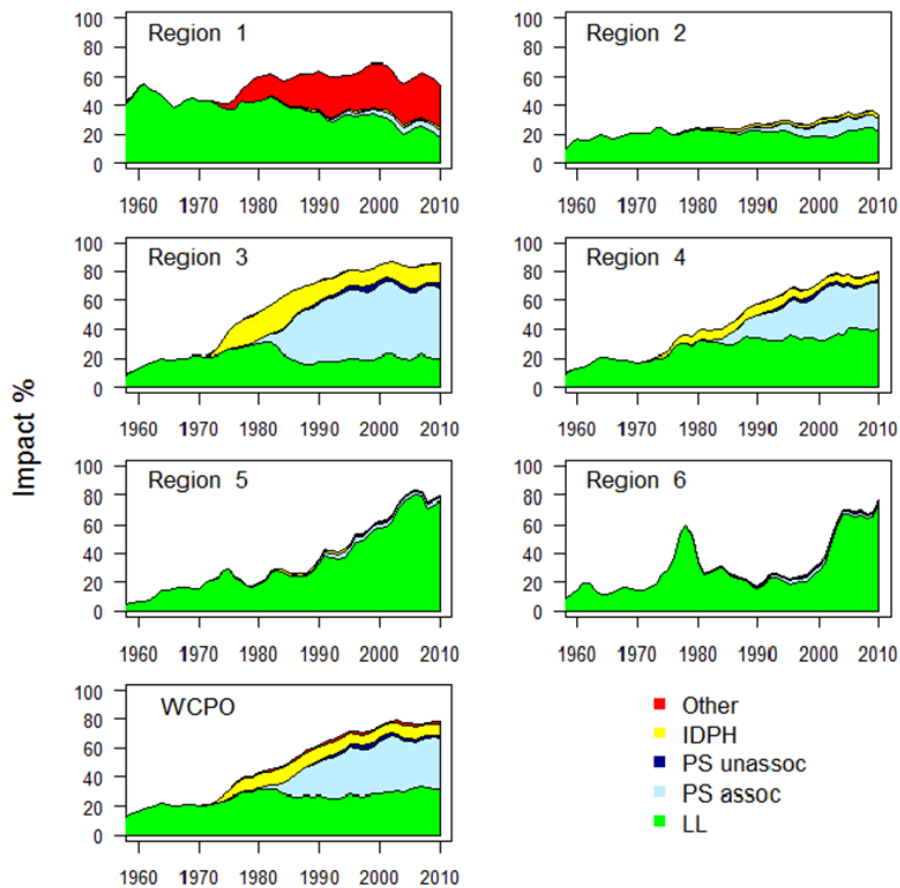


Figure 17- Estimates of reduction in Bigeye spawning potential attributable to fishing (Fishery Impact = $1 - SB_t/SB_{tF=0}$ by region) and various fishing groups (Base Case model). ‘LL’ = All Longline Fisheries; ‘IDPH’ – Philippine and Indonesian domestic fisheries, ‘PS assoc’ = Purse-Seine Log and FAD; ‘PS unassoc’ Purse-Seine school sets; ‘Other’ = Pole-and-Line Fisheries and coastal Japan Purse-Seine). (Source: Summary Report for the Seventh Regular Session of the Scientific Committee - At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

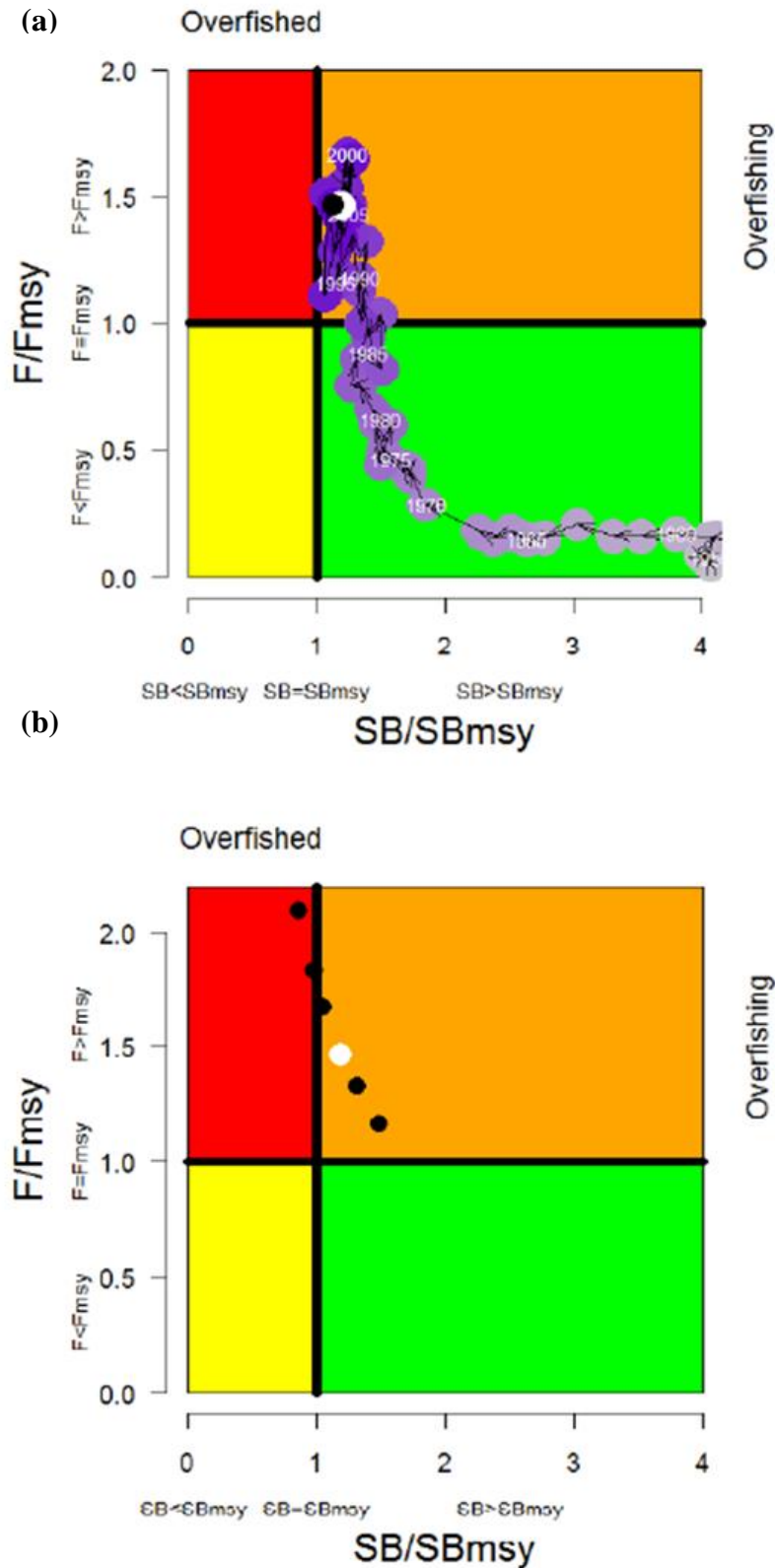


Figure 18- Temporal trend in bigeye annual stock status, relative to SB_{MSY} (x-axis) and F_{MSY} (y-axis) for the (a) Base Case, and (b) $F_{Current}/F_{MSY}$ and $SB_{Current}/SB_{MSY}$ for the Base Case (White Circle) and five combinations of steepness and longline CPUE series. [See Table 8 to identify individual model runs]. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

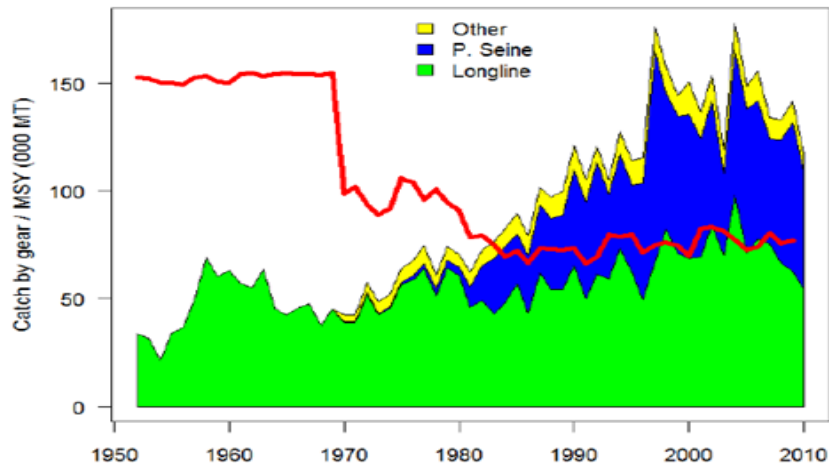


Figure 19- History of annual bigeye MSY estimates compared with catches from there major fisheries sectors. Declining MSY has resulted in fishing gear selectivity changes and increased catches of small bigeye (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Together, these results have led the SC to recommend a minimum 32% reduction in bigeye fishing mortality from the average 2006 to 2009 levels. This aims to return fishing mortality rate to F_{MSY} . The recommended reduction is equivalent to a minimum 39% reduction in the 2004 fishing mortality level, and a 28% reduction in the 2001 to 2004 average levels.

It is probably premature to unequivocally conclude that CMM 2008-01 has reduced bigeye fishing mortality to the levels specified by it. Data from 2009 and 2010 remain incomplete and have not been incorporated into the stock assessments. Estimates of fishing mortality in the final year addressed by the model (2010), therefore, are particularly uncertain.

The FAD closure introduced in 2009 contributed to a reduction of bigeye catches in 2009; a situation which appears to be reflected in preliminary information from 2010.

Total bigeye Purse Seine Effort between 20°N and 20°S, however, was 14% and 21% greater than the 2004 level in 2009 and 2010, respectively. It was 27% and 35% higher than the 2001 to 2004 (see Attachment B to CMMM 2008-01) average in 2009 and 2010, respectively.

Total Effort also increased by 6% from 2008 to 2010, corresponding with implementation of CMM 2008-01. A near-record high for associated school-effort occurred in 2009, despite a two-month FAD closure. This has been attributed to an increase in the number of days fished, as well as provisions and exemptions granted in accordance with CMM 2008-01. Other reasons have also been implicated.

The 2010 bigeye Longline catch seems to have been reduced by 34% from the 2001 to 2004 level, and by 48% compared to 2004 (see Attachment F of CMM 2008-01). However, incomplete data from 2009 and 2010 may have resulted in an overestimate of this reduction.

Reported bigeye catches declined by 33% in 2009 for the mix of Indonesian and Philippine surface fisheries. This remains to be confirmed when more detailed data for 2010 are provided. These will include Purse Seine Effort data.

Overfishing and an increase in juvenile bigeye catches have led to a considerable reduction in the stock's potential yield. The WCPFC SC has concluded that MSY levels would benefit (i.e. increase) if juvenile bigeye fishing mortality was reduced.

The WCPFC SC has noted that bigeye fishing mortality levels, exploitation rates and depletion differ between regions. For example, exploitation and depletion rates have been highest in equatorial regions, where 88% of the total 2001 to 2010 bigeye catch has been taken. The spawning biomass in these regions is estimated to have declined to about 17% of that estimated to occur in the absence of fishing ($SB_{2010}, F=0$).

The SC has also indicated that the submission of bigeye data continues to be incomplete. This highlights the importance of improving the timely provision of all essential data required for stock assessment purposes.

The SC has recommended the adoption of additional measures to reduce bigeye fishing mortality further, and beyond the levels identified in CMM 2008-01. Such levels should ensure that mortality is at least commensurate with F_{MSY} to avoid the risk of overfishing. Measures that reduce fishing mortality across a range of fish sizes (e.g. through the use of different fishing gear(s)) are likely to be the most effective.

Panel Assessment and Recommendations for bigeye

- **The WCPFC is to be commended for the several improvements forthcoming from the 2011 bigeye assessments compared to previous years;**
- **Such improvements would benefit further through the tabulation of annual bigeye Purse Seine catch estimates, along with the estimation methods used;**
- **Continued research on tuna, particularly bigeye, life history characteristics should be encouraged. The importance of including scientists from the WCPFC region is recognised and should also be encouraged;**
- **The Commission should encourage the SC to continue its research-focused work on bigeye as outlined in paragraph 133 of the *Summary Report for the Seventh Regular Session of the Scientific Committee*;**
- **The SC and Commission should be encouraged to actively address concerns attached to the possibility that the Bigeye is approaching, or is already in, an overfished state;**

- **Bigeye MSY levels could rise if the fishing mortality of small fish is reduced. An added concern in this regard is that the harvesting of juvenile fish has led to a greater than 50% reduction in MSY from pre-1970 levels. While a reduction in the catch of small bigeye will allow more sustainable overall yields, recent overfishing will lead to further potential yield losses in the future. The priority attention of both the SC and Commission should be focused on this situation;**
- **There is some indication that 100% observer coverage of the bigeye Purse Seine fleet will allow for fishery discards to be better assessed in the future. The SC and Commission are encouraged to give this notion serious operational consideration;**
- **Recently-developed, operational Longline indices for bigeye have provided more optimistic perceptions of stock status than using aggregated Longline data. A formal analysis of this observation should be encouraged to ensure that it is in fact appropriate and that it does not further stress a bigeye stock close to being overfished;**
- **Indonesia and the Philippines are encouraged to submit complete 2010 data for their bigeye surface fisheries. These should include Purse-Seine effort data;**
- **The Commission is encouraged to consider using a spatial management approach for measures aimed at ensuring sustainable bigeye fishing mortality levels, exploitation rates and depletion from various regions within the WCPFC Regulatory Area;**
- **The Commission should consider adopting additional measures above those expected from the current CMM so as to secure further reductions in bigeye fishing mortality, to ensure the return of the mortality rate to F_{MSY} .**
- **All Members, Cooperating Non-Members and Participating Territories (CCMs) are encouraged to provide data in strict accordance with the WCPFC data rules for scientific data.**

References

Harley, S.J. and Davies N. (2011) Evaluation of stock status of bigeye, skipjack and yellowfin Tunas against potential limit reference points. WCPFC-SC7-2011/MI-WP-04.

Harley, S.J., Hoyle, S., Williams, P., Hampton, J. and Kleiber, P. (2010). Stock assessment of bigeye tuna in the Western and Central Pacific Ocean. WCPFC-SC6-2010/SA-WP-04.

Skipjack

Skipjack are surface-schooling tuna (Figure 20). They are easily distinguished from other tuna species by their small size, small dark pectoral fins and three to six distinct dark longitudinal stripes in the belly. Skipjack are found year-round and tend to concentrate in warmer WCPO tropical waters. Their geographic distribution expands seasonally north and south into subtropical waters. Skipjack are mainly caught on the surface by Purse Seine and Pole-and-Line gear. They are primarily used in the canning industry.



Figure 20- Skipjack tuna (Source: <http://www.spc.int/oceanfish/en/tuna-fisheries/tuna-species>).

Skipjack are typically between 40 and 70 cm in length, corresponding to an age of between one and three years. Few harvested skipjack exceed 80cm. However, there are rare historical records of animals exceeding 100cm and weighing more than 30 kg.

Skipjack is a fast growing (reaching 42 to 45cm within the first year), relatively short-lived (few live longer than 3 to 4 years) species. Both sexes mature early (~ 1 year of age), and these life-history characteristics promote rapid population turnover.

Assessments have suggested that there is a very low probability that skipjack will fall below 20% SB_0 , based on historical trends and future predictions.

The 2011 assessment of WCPO skipjack (Hoyle *et al.* 2011) included a number of changes from the 2010 assessment. These comprised:

- Updated catch, effort, and size data;
- A revised standardized effort series for each region;
- Size frequency data adjustments from observer sampling of bigeye, skipjack and yellowfin size and species compositions⁵²;
- Modeling changes for the Philippine and Indonesian Purse-Seine fisheries, based on fishery locations;
- Inclusion of tag release and recovery data from the recent SPC-PTTP Program⁵³;
- Steepness was adjusted from 0.75 to 0.8 in the ‘Reference Case’, with alternative values of 0.65 and 0.95 being included in sensitivity analyses; and
- Growth parameters were fixed at their 2010 estimated values.

In addition to these changes, additional models were run to facilitate development of the final Reference Case model. This model served as an example for presenting model diagnostics; the choice of model outputs to be used for the formal skipjack assessment rested with the WCFC SC. Key assessment results and conclusions showed that:

- Skipjack natural mortality rates are age-specific, with younger animals exhibiting higher rates;

⁵² Adjusted for grab-sampling bias

⁵³ This increased the tagging data used in the assessment by 50%

- The model shows significant seasonal movements of the fishery between the western and eastern equatorial regions. The performance of the fishery in the eastern region has been shown to be strongly influenced by the prevailing environmental conditions with higher stock abundance and/or availability associated with El Niño conditions;
- Skipjack recruitment showed an upward shift in the mid-1980s and is estimated to have remained at the subsequent higher level since that time. Recent recruitment is estimated to be at a high level, but is poorly determined due to limited observations from the fishery;
- Biomass trends are driven largely by recruitment and fishing mortality. The highest biomass estimates from the model occurred between 1998 and 2001, and in 2005 to 2007. These immediately followed periods of sustained high recruitment in the eastern equatorial region;
- The biomass trajectory is influenced by underlying assumptions concerning treatment of various fishery-specific catch and effort data sets by the model;
- The model takes into account a considerable amount of tagging data to provide information on absolute stock size during the main tag recovery periods. Including PTTP tagging data in the model results in higher estimates of recent skipjack biomass and MSY;
- The impact of fishing is predicted to have reduced recent skipjack biomass by about 47% in the western equatorial region and 21% in the eastern region. Depletion of the entire stock is estimated to be approximately 35%.
- The principal conclusions are that skipjack is currently moderately exploited relative to its biological potential. Overfishing of skipjack is not apparent in the WCPO, nor is the stock in an overfished state. These conclusions seem relatively robust, at least within the statistical uncertainty of the current assessments;
- Fishing pressure and recruitment variability, combined with environmental conditions, will continue to be the primary influences on skipjack stock size and fishery performance; and
- For the model assumptions investigated, only moderate variation is apparent for the stock status estimates. However, further studies are required to refine estimates of skipjack growth and reproductive potential, including spatial-temporal variability.

Figures 21 to 24 illustrate the temporal trends in estimated skipjack recruitment, biomass, fishing mortality and depletion. $F_{\text{Current}}/F_{\text{MSY}}$ is estimated to be 0.37 for the assessment Reference Case (Table 9). Figure 21 clearly indicates the upshift in skipjack recruitment since the 1980s, while Figure 22 suggests that the stock spawning potential has remained relatively stable between about 4 and 6 million t. Juvenile and adult fishing mortality have gradually increased with time, while adults are markedly more affected by fishing (Figure 23). Figure 24 shows the relatively ‘healthy’ nature of skipjack, and Figure 25 illustrates the MSY trends with time for the three major fisheries sectors. The estimated management quantities from the selected skipjack assessment models used in 2011 are provide in Table 7. Despite changes to the model structure and underlying assumptions, the 2011 skipjack assessment conclusions are close to those of previous years (Table 10).

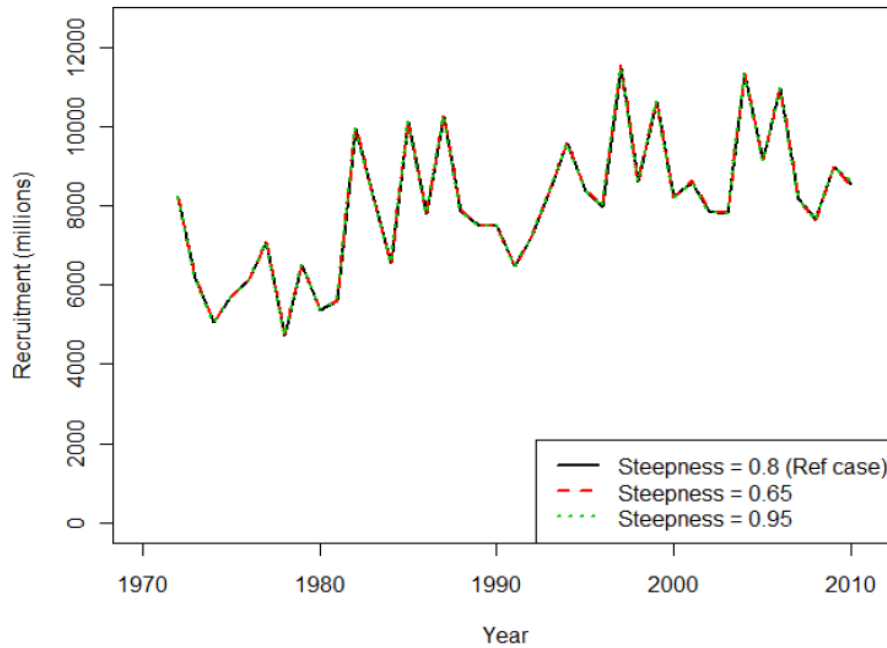


Figure 21- Annual recruitment (millions of fish) estimates for skipjack from the Reference Case model (Steepness = 0.8)(lack line) and two alternative steepness values. (Source; Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

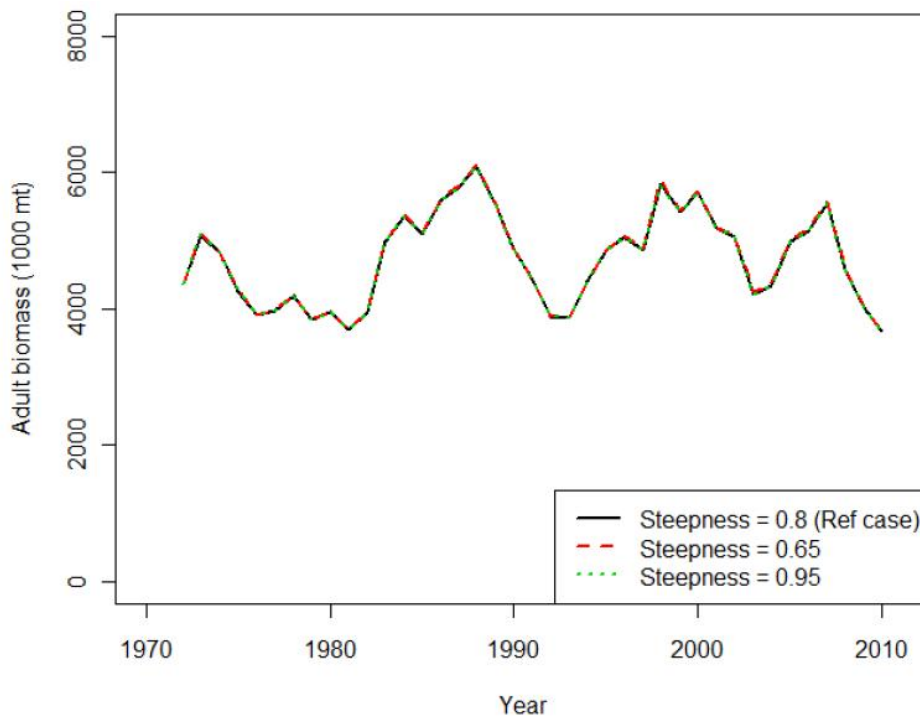


Figure 22- Annual average spawning potential estimates for skipjack from the Reference Case model and two alternative steepness values. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

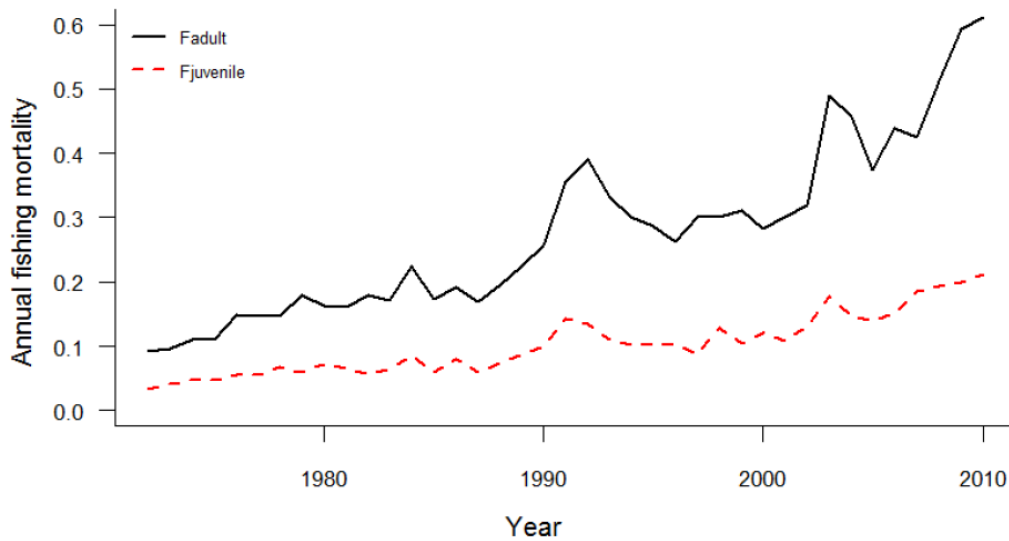


Figure 23- Annual average juvenile and adult fishing mortality estimates for skipjack from the Reference Case model (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

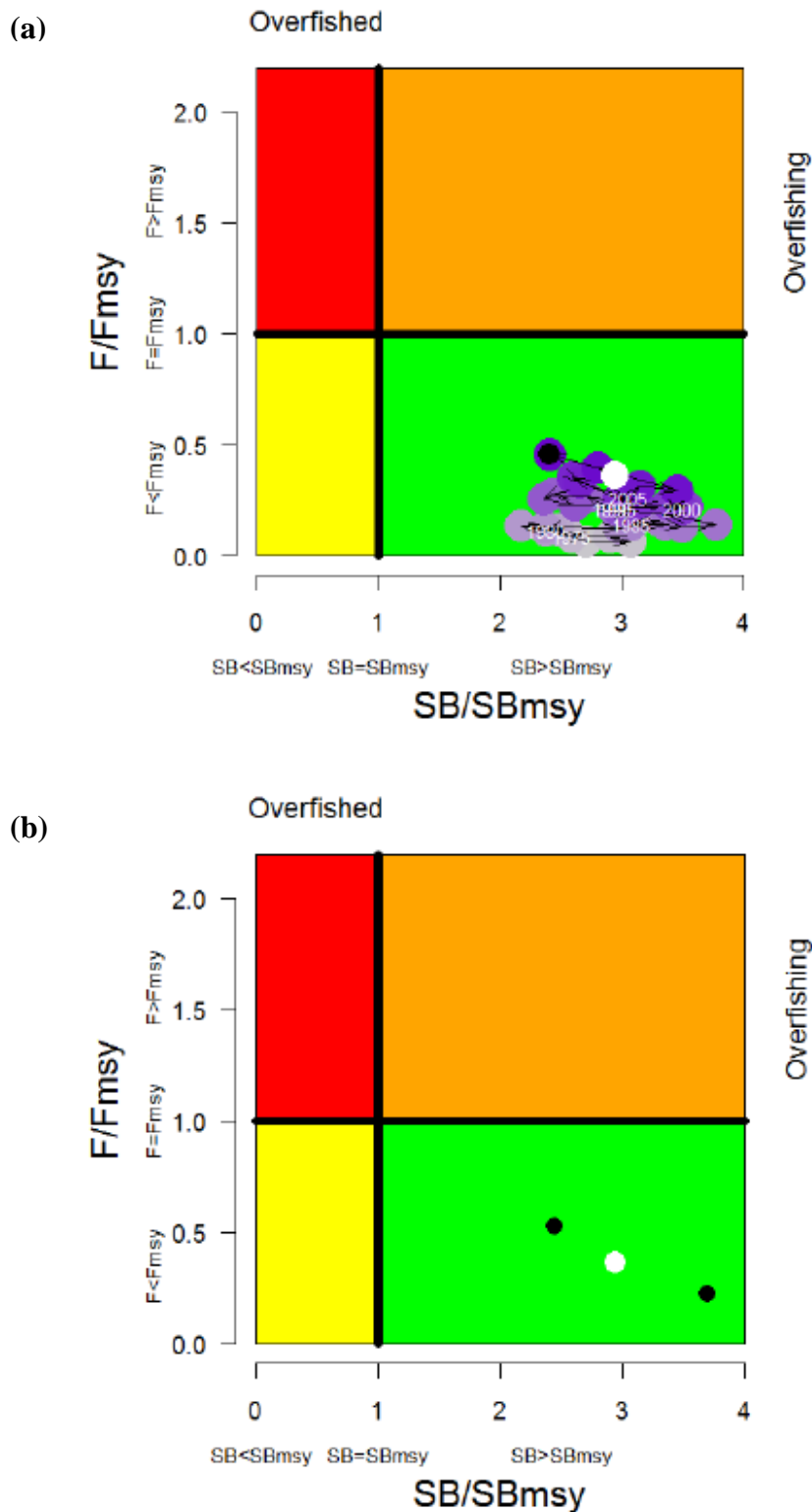


Figure 24- Temporal trend in skipjack annual stock status relative to SB_{MSY} (x-axis) and F_{MSY} (y-axis) for the (a) Reference Case model, and (b) $SB_{Current}/SB_{MSY}$ for the Reference Case (White Circle) and two alternative steepness values. [See Table 4.24 to identify individual model runs]. (Source; Summary Report for the Seventh Regular Session of the Scientific Committee - At:<http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

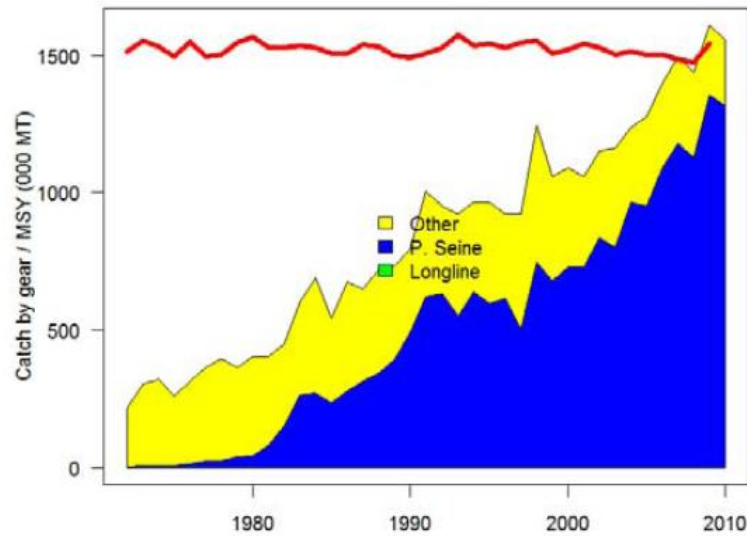


Figure 25- History of annual skipjack MSY estimates (red line) compared to catches from three major fisheries sectors. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Table 9- Skipjack management quantity estimates from the selected 2011 Reference Case model and two alternative steepness values. ‘Current’ is taken to be the average between 2006 and 2009 while the ‘Latest’ is for 2010. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

	H80 (Base case)	H65	H95
$C_{current}$	1,484,702	1,484,729	1,484,894
C_{latest}	1,556,643	1,556,596	1,556,924
MSY	1,503,600	1,274,000	1,818,000
$C_{current}/MSY$	0.99	1.17	0.82
C_{latest}/MSY	1.04	1.22	0.86
F_{mult}	2.71	1.9	4.46
$F_{current}/F_{MSY}$	0.37	0.53	0.22
SB_0	5,787,000	5,940,000	5,888,000
SB_{MSY}/SB_0	0.27	0.32	0.22
$SB_{current}/SB_0$	0.79	0.77	0.82
SB_{latest}/SB_0	0.60	0.58	0.62
$SB_{current}/SB_{MSY}$	2.94	2.45	3.69
SB_{latest}/SB_{MSY}	2.21	1.84	2.80
$SB_{curr}/SB_{curr_{F=0}}$	0.63	0.63	0.65
$SB_{latest}/SB_{latest_{F=0}}$	0.54	0.54	0.56
Steepness (h)	0.80	0.65	0.95

Table 10- Skipjack 2011 reference point estimates (with uncertainty based on the model ranges in Table 9) compared to those from 2010 and 2008. The 2008 spatial domain was limited to the WCPO equatorial region. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Management quantity	2011 Assessment (uncertainty)	2010 Assessment	2008 Assessment
Most recent catch	1,556,643	1,575,287 mt (catch based on spill sampling) ^a	1,546,436 mt (2007 ^b) 1,726,702 mt (2007 ^c) 1,410,389 (WCPO catch based on spill sampling)
<i>MSY</i>	1,503,600 (1274000 – 1818000)	1,375,600 mt	1,280,000 mt
$Y_{Current}/MSY$	0.76 (0.65-0.86)	0.80	0.70
$B_{current}/B_{current, F=0}$	0.65 (0.65-0.67)	0.63	0.66
$F_{current}/F_{MSY}$	0.37 (0.22-0.53)	0.34	0.26
$B_{current}/B_{MSY}$	2.68 (2.32-3.17)	2.24	2.99
$SB_{current}/SB_{MSY}$	2.94 (2.45-3.69)	2.67	3.82

The current skipjack stock is moderately exploited and neither subject to overfishing or overfished, as biomass is above the B_{MSY} ($B_{Current}/B_{MSY}= 2.68$). This assessment is relatively robust within the confines of the assessment models being used.

Skipjack catches in 2010 were the second highest recorded at roughly 1.6 million t; a level just below the 1.61 million t record of 2009. Equilibrium yield at current fishing mortality is about 1.14 million t. This is some 76% of the MSY level.

It has been recognized that fishing pressure and recruitment variability, influenced by environmental conditions, will continue to influence skipjack stock size and fishery performance. The WCPFC SC has expressed a desire to improve the skipjack model and to continue associated work along these lines as a priority to enable CCMs to clearly understand changes in stock status.

As noted, assessments continue to show that the skipjack stock is currently only moderately exploited ($F_{Current}/F_{MSY}= 0.37$) and fishing mortality levels are sustainable. However, there is concern that high catches in the equatorial region could result in reduction of the stock's distributional range, thereby reducing skipjack availability in higher latitude (e.g. Japan, Australia, New Zealand, and Hawaii) fisheries.

If recent fishing patterns continue, skipjack catches are likely to decline as stock levels are fished down to MSY. Due to rapid changes in recent years of fishing mortality and biomass indicators relative to MSY, any future increases in fishing effort should be closely monitored.

The Commission should consider developing limits on fishing for skipjack to confine any declines in catch rates associated with further biomass declines.

Fishing is having a significant impact on stock size, especially in the western equatorial region, and catch rates can be expected to be affected there. The skipjack stock distribution is also influenced by changes in oceanographic conditions associated with El Nino and La Nina events. These conditions impact both catch rates and stock size.

Additional Purse-Seine effort will yield only modest skipjack catch gains in the long-term. This may result in a corresponding increase in fishing mortality for bigeye and yellowfin tunas. The management of total fishing effort in the WCPO should therefore recognize this possibility.

Noting current uncertainty in the species composition of Purse-Seine skipjack catches, the WPFSC has urged the Commission to continue improving estimates of Purse-Seine catch species composition data. As such, the SC has requested CCMs, port States, flag States and vessel operators to support paired spill and grab sampling efforts, along with the collection of landings and cannery data.

Panel Assessment and Recommendations for skipjack

- **The WCPFC is to be commended for the several improvements forthcoming from the 2011 skipjack assessments compared to previous years;**
- **The Commission is encouraged to again address concerns raised by the 2010 and 2011 SC statements⁵⁴ on reduction of skipjack availability at high latitudes as a result of high catches in the equatorial region;**
- **The Panel notes the relatively healthy nature of the skipjack stock;**
- **The SC's ongoing efforts to improve the skipjack assessment model, aimed at enhancing understanding of stock status changes, are much appreciated;**
- **The Commission is encouraged to closely monitor future increases of WCPO fishing effort on skipjack to mitigate catch rate declines associated with further biomass declines;**
- **The Commission is also encouraged to manage total Purse-Seine fishing effort in the WCPO as a matter of priority to limit increased fishing mortality of bigeye and yellowfin. Improving estimates of Purse-Seine catch species composition is very much supported, as are other associated sampling and data collection efforts.**

References

Hoyle, S., Kleiber, P., Davies, N., Langley, A. and Hampton, J. (2011). Stock assessment of skipjack tuna in the western and central Pacific Ocean. WCPFC-SA-2011/SA-WP-04.

⁵⁴ These statements read: "There is concern, yet to be substantiated, that high catches in the equatorial regions could result in range contraction of the stock, thus reducing skipjack availability to higher latitude (e.g. Japan, Australia and New Zealand) fisheries"

Yellowfin

Yellowfin are relatively large tuna (Figure 26). They are easily distinguished as adults by large second dorsal and anal fins, typically bright yellow, along with prominent finlets. Juvenile yellowfin (< 70cm) are more difficult to distinguish from other tuna (e.g. bigeye).



Figure 26- Yellowfin tuna (Source: <http://www.spc.int/oceanfish/en/tuna-fisheries/tuna-species>).

Yellowfin are distributed throughout the WCPO tropical and sub-equatorial waters. They typically occupy warmer mixed-surface waters (above the thermocline). Small yellowfin are caught on the surface by a range of gear- including Handlines, Ringnets, Purse Seines and Pole-and-Line. Yellowfin are mainly processed for canning. The majority of larger and older fish are taken by both Purse-Seine and Longline, with the latter's catch often being shipped fresh to overseas markets.

The 2011 assessment of yellowfin used a stock assessment model and computer software known as MULTIFAN- CL (Langley et al., 2011). The model is age (28 age-classes) and spatially-structured (6 regions), and uses catch, effort, size composition and tagging data. These data are grouped in 24 fisheries and quarterly time periods from 1952 to 2010. The assessment comprises a range of model options and sensitivities to investigate the model's key structural assumptions, as well as sources of assessment uncertainty.

While the 2011 yellowfin assessment model's structure was similar to the previous (2009) assessment, a number of key data sets were substantially revised. These revisions specifically included Longline CPUE indices, catch and size data, Purse-Seine catch and size data, and the configuration of the Indonesian and Philippines domestic fisheries. Cumulatively,

changes resulted in substantial differences from the 2009 assessment⁵⁵. Overall, the current models considerably improve the fit to key data set compared with 2009. This indicates an improvement in main data source consistency, principally for longline CPUE indices and associated length and weight frequency data.

Despite updated data and a range of model structural assumption changes⁵⁶, the 2011 Yellowfin assessment is directly comparable with recent assessments (Table 11). The 2011 assessment was also the first attempt to integrate tagging data from the recent PTTP. The model diagnostics indicate a relatively poor fit to these data compared with the data from earlier tagging programs, particularly for older fish and/or for those with longer periods at liberty post-tagging. A positive bias was associated with all the 2011 assessment model options predicting the number of tags recovered from older fish. This would tend to indicate that yellowfin estimated exploitation rates for recent years were higher than observed directly from tag recoveries. Tagging data are therefore likely to conflict with other key data sources- most notably longline CPUE indices and, to a lesser extent, longline size data. Consequently, the inclusion of PTTP data in the 2011 yellowfin assessment model yielded a rather more optimistic assessment (compared to models where these data are excluded). Trends in estimated yellowfin recruitment, biomass, fishing mortality and depletion are shown in Figures 27 to 29.

For the Base Case, $F_{\text{Current}}/F_{\text{MSY}}$ was estimated at 0.77, indicating that yellowfin overfishing is probably not occurring (Figure 30). However, one of the alternate models suggests that $F_{\text{Current}}/F_{\text{MSY}} > 1.0$, with the range across the six assessment models used being between 0.54 to 1.15. Therefore, there is a possibility that yellowfin overfishing may in fact be occurring.

The 2011 assessment Base Case indicates that the current total and spawning biomass are higher than the associated MSY levels ($B_{\text{Current}}/B_{\text{MSY}} = 1.33$, range= 1.12 to 1.54; and $SB_{\text{Current}}/SB_{\text{MSY}} = 1.47$, range= 1.14 to 1.92). None of the alternate models found that $B_{\text{Current}}/B_{\text{MSY}}$ or $SB_{\text{Current}}/SB_{\text{MSY}}$ were lower than 1, therefore, indicating that yellowfin is not considered to be overfished.

⁵⁵ Cumulatively, the overall biomass level and MSY estimates ($B_{\text{Current}}/B_{\text{MSY}}$ and $SB_{\text{Current}}/SB_{\text{MSY}}$) were reduced, while $F_{\text{Current}}/F_{\text{MSY}}$ estimate was increased

⁵⁶ The primary differences include revised structuring of the Indonesian and Philippine-based fisheries, the incorporation of recent PTTP tagging data, the use of standardized longline CPUE derived from operational-level data, and Purse-Seine size frequency data corrected for grab sample selectivity bias using experimental spill sample data

Table 11- Yellowfin tuna reference points from the 2011 Reference Case model compared to the 2009 and 2007 assessments across a range of models. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Management quantity	2011 assessment	2009 Assessment	2007 Assessment
Most recent catch	507,100	539,481 mt (2008)	426,726 mt (2006)
MSY	538,800 (432,000-644,800)	Range: 493,600 ~ 767,200 mt	Base case: 400,000 mt Range: 344,520 ~ 549,200 mt
$F_{current}/F_{MSY}$	0.77 (0.54-1.15)	Range: 0.41 ~ 0.85	Base case: 0.95 Range: 0.56 ~ 1.0
$B_{current}/B_{MSY}$	1.33 (1.12-1.54)	Range: 1.38 ~ 1.88	Base case: 1.17 Range: 1.13 ~ 1.42
$SB_{current}/SB_{MSY}$	1.47 (1.14-1.92)	Range: 1.44 ~ 2.43	Base case: 1.25 Range: 1.12 ~ 1.74
$Y_{Fcurrent}/MSY$	0.97 (0.88-0.99)	Range: 0.76 ~ 0.98	Base case: 1.0 Range: 0.88 ~ 1.0
$B_{current}/B_{current, F=0}$	0.53 (0.48-0.55)	Range: 0.53 ~ 0.63	Base case: 0.51 Range: 0.51 ~ 0.58
$SB_{current}/SB_{current, F=0}$	0.44 (0.40-0.47)		

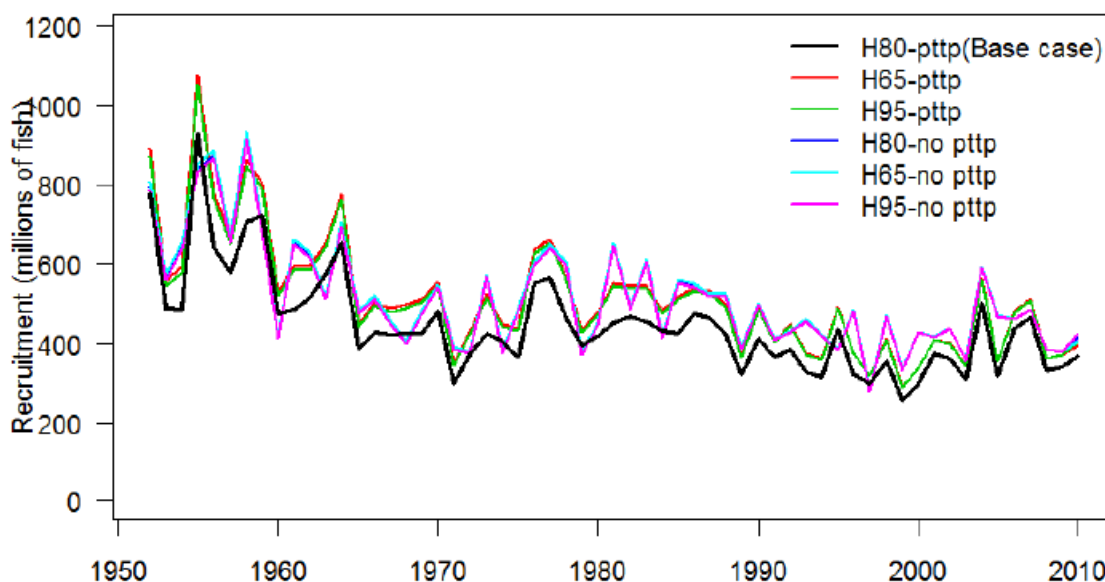


Figure 27- Estimated yellowfin annual recruitment for the assessment model Base Case (LL_{CPUE}OP_TW_{CPUE}R6_PTTP-H80) with five combinations of steepness and tagging data included. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

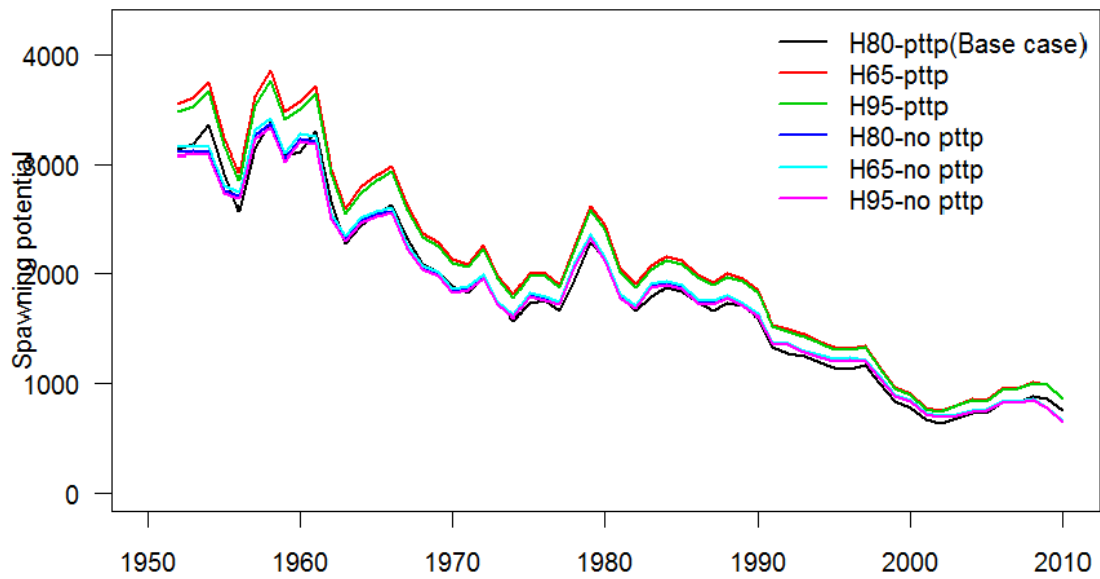


Figure 28- Estimated yellowfin average annual spawning potential from the assessment model Base Case (LL_{CPUE}OP_TW_{CPUE}R6_PTTP-H80) with five combinations of steepness and tagging data included. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee - At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

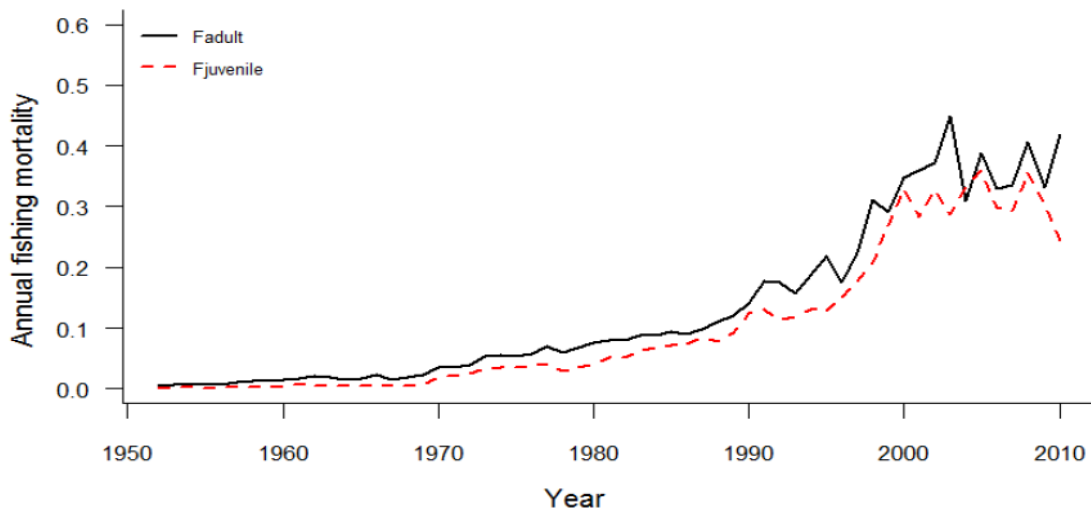


Figure 29- Estimated yellowfin average juvenile and adult fishing mortality from the assessment model Base Case (LL_{CPUE}OP_TW_{CPUE}R6_PTTP-H80). (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

An analysis of historical fishing gear attributable patterns indicates a yellowfin MSY reduction to approximately 60% of pre-1970 levels. This is attributed to increased harvesting of juvenile yellowfin (Figure 31).

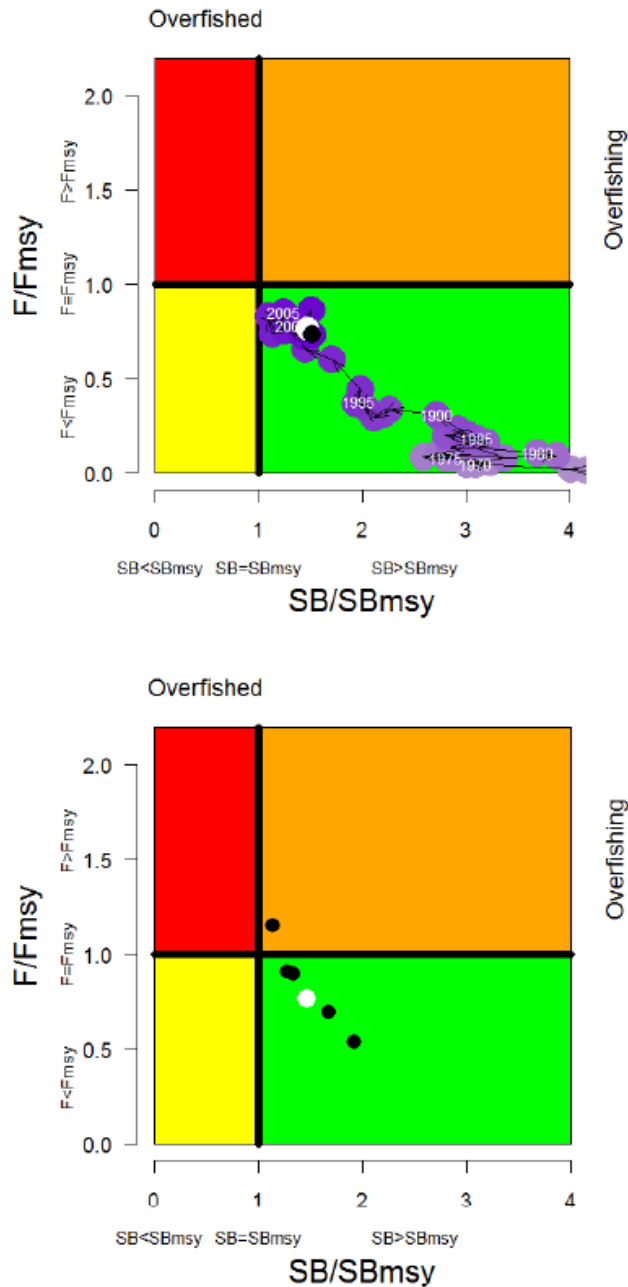


Figure 30- Trend in annual yellowfin stock status relative to SBMSY (x-axis) and FMSY (y-axis) reference points for the 2011 assessment Base Case model (LL_{CPUE}OP_TW_{CPUE}R6_PTTP-H80) and $F_{Current}/F_{MSY}$ and $SB_{Current}/SB_{MSY}$ for the Base Case (White Circle) and five combinations of steepness with tagging data sets included. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

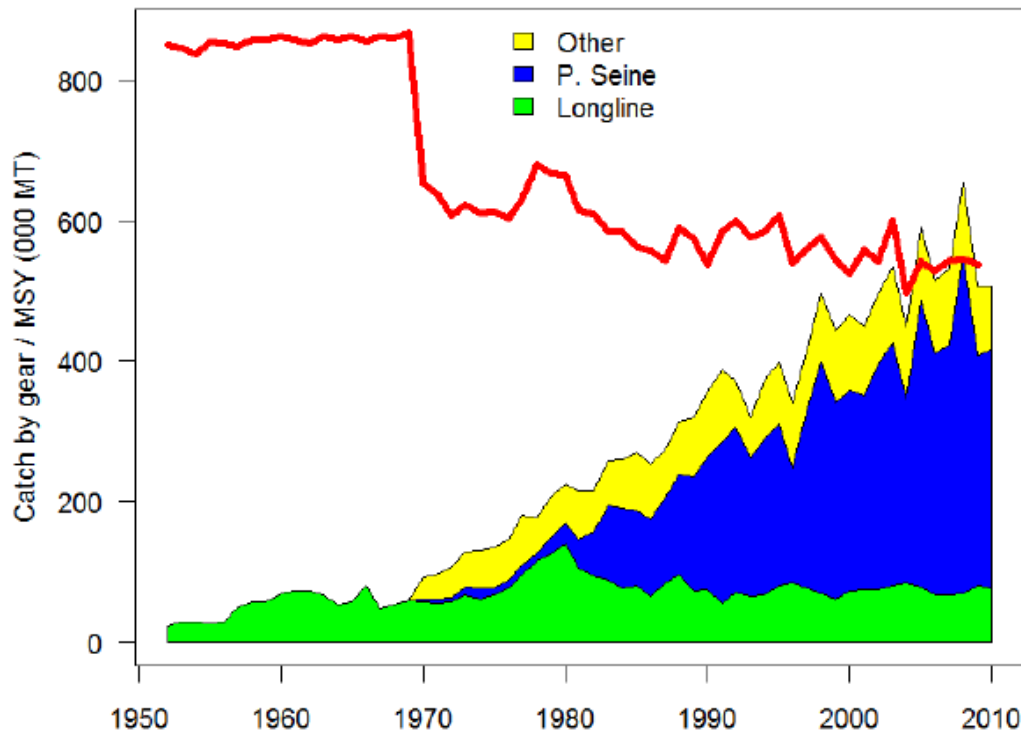


Figure 31- History of yellowfin annual MSY estimates compared with catches by the three major fisheries (Purse-Seine, Longline and Other) sectors. Declining MSY is linked to changes in fishing gear selectivity and increased catches of small yellowfin. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Yellowfin appears able to sustain MSY, with the stock not being subject to overfishing or being in an overfished state. Projections to 2021 indicate that fishing mortality should remain below F_{MSY} and spawning biomass should remain above SB_{MSY} .

However, yellowfin fishing mortality, exploitation rates and depletion show regional differences. Exploitation rates are highest in the western equatorial region (region 3 in the stock assessment model), where ~81% of the total yellowfin catch is taken. The spawning biomass in this region is estimated to have declined to about 31% of the unexploited level ($SSB_{2010,F=0}$).

An increase in the catch of yellowfin juveniles has resulted in a moderate (~40%) reduction in the stock's potential yield. This suggests that MSY levels would increase if the juvenile fishing mortality is reduced.

Panel Assessment and Recommendations for yellowfin

- **The WCPFC is to be commended for the several improvements forthcoming from the 2011 yellowfin assessments compared to previous years;**
- **The Commission is encouraged to give serious consideration to the WCPFC SC's advice that yellowfin fishing mortality in the western equatorial region should not increase;**
- **The Commission is encouraged to consider ways to reduce yellowfin juvenile fishing mortality;**
- **Projections for the yellowfin stock are essentially 'optimistic' and that fishing mortality should remain below F_{MSY} until 2021 and spawning biomass should remain above SB_{MSY} . The Commission is encouraged to give this situation serious attention; and**
- **Noting the highly positive results of the external review of the yellowfin tuna assessment by the Center for Independent Experts, the Panel is very much in sympathy with the view that such external reviews should be undertaken subject to terms of reference agreed by the Scientific Committee. In that respect, any independent review that does not access all available and relevant information, and/or operates under its own terms of reference, could seriously undermine the WCPF SC's provenance. The Commission is therefore encouraged to reinforce the standing of the SC as the source of the Commission's scientific advice and to ensure that this advice is not challenged by inappropriate, unclear or independently-driven terms of reference that have not been agreed by the SC itself (Further Panel comments on the issue of independent assessments of the SC's work is provided in Section 5.6).**

References

Langley, A., Hoyle, S. and Hampton, J. (2011). Stock assessment of yellowfin tuna in the western and central Pacific Ocean. WCPFC-SA-2011/SA-WP-03.

Bigeye and Yellowfin Fishing Effort

Paragraphs 39 of CMM 2008-01 requires that the total capacity of CCMs' other commercial bigeye and yellowfin tuna fisheries, including Purse-Seining north of 20°N or south of 20°S, but excluding artisanal fisheries and those fisheries taking less than 2,000 t of bigeye and yellowfin, shall not exceed the average level for the period 2001 to 2004, or the 2004 level. CCMs are required to provide the WCPFC SC with estimates of fishing effort for these other fisheries or proposals for the provision of effort data for these fisheries for 2009 and future years.

Paragraph 40 of CMM 2008-01 goes on to indicate that CCMs shall provide within the agreed timeframes each year, catch and effort data and size composition data for all fleets in the format required by the rules and requirements adopted by WCPFC as “Scientific Data to be Provided to the Commission”. As of August 2011, no new data had been provided.

Panel Assessment and Recommendations on bigeye and yellowfin fishing effort

- The WCPFC is encouraged to urge CCMs to provide annual bigeye and yellowfin catch and effort, and size composition, data for all fleets in the format required by the rules and requirements adopted by WCPFC as “*Scientific Data to be Provided to the Commission*”.
- To the extent possible, the Commission should also consider to request members to provide data by end of April after each fishing year so that the SPC can have sufficient time to redo its models if necessary.

South Pacific swordfish

Swordfish are large, highly migratory, predatory fish characterized by a long, flat bill (Figure 32). Swordfish are elongated, and round-bodied. They reach a maximum size of about 4.5 m in length. Females grow larger than the males, with males over 135 kg being rare. Females mature at 4 to 5 years of age in the North-West Pacific, while males mature at about 3 to 4 years. In the North Pacific, batch spawning occurs in water warmer than 24°C from March to July. In the equatorial Pacific, spawning happens year-round.

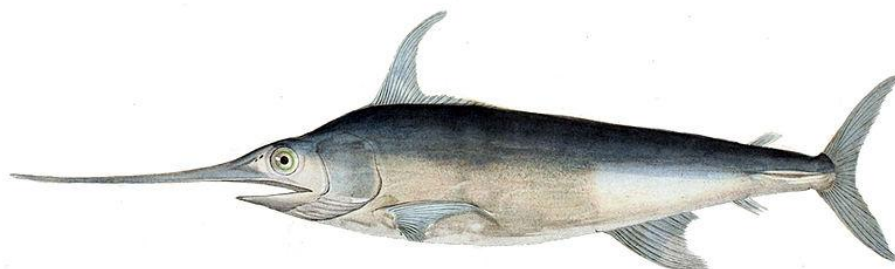


Figure 32- Swordfish.

The condition of Southwestern Pacific stock is a reason for a moderate concern due to model uncertainty, increasing catches, and declining CPUEs. The WCPO fishery is predominantly longline-based and its products are usually directed at the fresh, or frozen, food market. Catches of swordfish in the South Pacific have increased significantly along the past decade, particularly after 2004 (Figure 33).

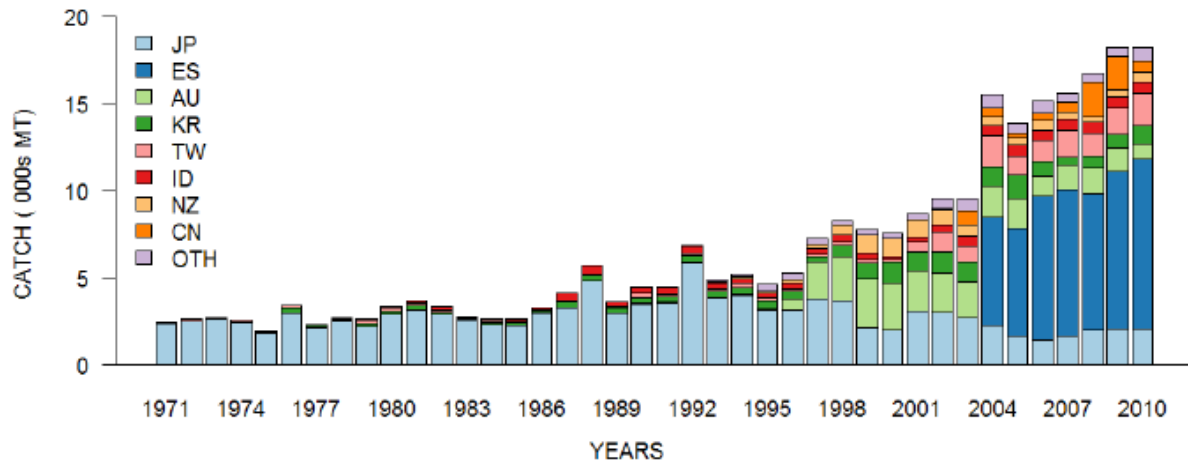


Figure 33- South Pacific swordfish catches (MT) by flag from 1970 to 2010 (from Williams *et al.* 2011).

No formal Swordfish assessment was undertaken in 2011, although valuable information for such an assessment of South Pacific (SPO) stocks is available (Williams *et al.* 2011). This means that the 2008 assessment of the stock's status, and the attached management recommendations, remain current⁵⁷.

In 2008, assessments of the southwest Pacific (140°E–175°W) and the south-central Pacific (175°W–130°W) swordfish stocks were attempted, both separately and combined. The assessment attempted for swordfish in the south-central Pacific was unable to determine the stock status. Nevertheless, despite the available data do not indicate evidence of significant fishery impacts, catches have increased in recent years to levels exceeding those in the southwest Pacific, which might be a reason for concern.

The 2008 assessment of the southwest Pacific stock appeared to be much more certain than the one run in 2006, although the overall results were close (Table 13). The assessment indicated that in the southwest Pacific, swordfish overfishing is not occurring ($F_{current}/F_{MSY}=0.44$; range= 0.18 to 0.67) and the stock is not in an overfished state ($B_{current}/B_{MSY}=1.57$; range= 1.22 to 2.06) (Fig. 34).

⁵⁷ Essentially, it was agreed that there are still SPO Swordfish data uncertainties to be resolved, but that results of the stock assessment are now accepted and finalized. The SC recommended to WCPFC-6 that the catch limits specified in CMM-2008-05 be carried forward to future years as a continuing measure. This advice was repeated in CMM-2009-03 with an attached data reporting requirement

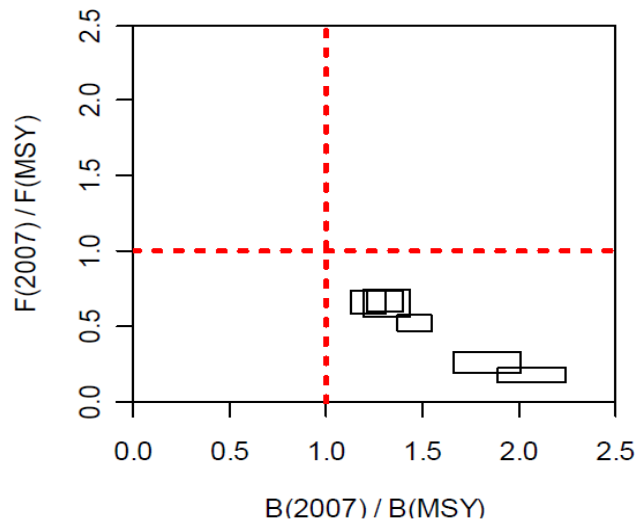


Figure 34- Summary plot comparing southwest Pacific fishing mortality, $F(2007)/F(MSY)$, and total stock biomass, $B(2007)/B(MSY)$, for southwest Pacific swordfish from a subset of plausible MULTIFAN-CL models. Boxes indicate the upper and lower 95% confidence limits (but not the covariance) for each individual model (<http://www.wcpfc.int/doc/summary-report-edited-version>).

Table 12. Estimates of reference points from the 2008 and 2006 southwest Pacific swordfish stock assessments. Values shown in the table correspond to the median of the maximum posterior density (MPD) estimates for the most plausible ensemble of models for each assessment (the minimum and maximum values are indicated below). Note that the swordfish assessment paper reported in trunked mass, although this table reports whole mass assuming that trunked mass = 0.723 (whole mass), and the average catch in mass is derived from numbers assuming 67.2 kg per fish in 2004 and 61.1 kg per fish in 2007 (which may differ from the model estimates).

Management Quantity	2008 Assessment	2006 Assessment
Most recent catch ¹ (mt)	2580 (final year = 2007 ²)	3760 (final year = 2004)
MSY (mt)	Median: 3310 Range: 2390–5720	not reported
C_{2007}/MSY	Median: 0.77 Range: 0.45–1.08	n/a
$B_{2007}/B_{2007, F=0}$ (B=total biomass)	Median: 0.58 Range: 0.45–0.79	n/a
$B_{2004}/B_{2004, F=0}$ (B=total biomass)	Median: 0.55 Range: 0.44–0.74	Median: 0.59 Range: 0.31–0.69
F_{2007}/F_{MSY}	Median: 0.44 Range: 0.18–0.67	n/a
F_{2004}/F_{MSY}	Median: 0.71 Range: 0.37–1.13	Median: 0.70 Range: 0.33–2.2
B_{2007}/B_{MSY} (B=total biomass)	Median: 1.57 Range: 1.22 – 2.06	n/a
B_{2004}/B_{MSY} (B=total biomass)	Median: 1.47 Range: 1.18–1.94	Median: 1.7 Range: 0.87–3.0

¹ Catch in mass for this table was not derived from the model results and may not be entirely compatible with other reference points.

² 2007 catches are provisional, with 2007 catches from some fleets assumed to be equal to 2006.

In its 2011 Meeting, the SC highlighted the need for a new South Pacific swordfish stock assessment, but recognized that the current WCPFC data holdings are insufficient to undertake an SPO swordfish assessment in 2012. In this respect, the European Union (EU) has advised that the provision of operational longline data (especially from the Spanish SPO longline fishery) will be provided to the WCPFC in the near future.

The Secretariat of the Pacific Community (SPC) has been tasked to work with the EU on the latter's swordfish data, specifically to assess whether the data will be useful in expanding the spatial scope of previous assessments to include the south-central Pacific, or if possible the entire SPO.

Panel Assessment and Recommendations for SPO swordfish

- **The on-going shortage of data on which to base a comprehensive assessment of SPO Swordfish is a matter of concern;**
- **WCPFC is encouraged to urge the EU and SPC to devote all efforts to improving the WCPFC SPO swordfish data holdings;**
- **The SC should be encouraged to undertake analysis of SPO swordfish fishery indicators for SC8; and**
- **Using information forthcoming from the above, and contained in Williams et al. (2011), the SC should formally assess SPO swordfish as soon as possible, taking into account TCC data and statistical advice.**

References

Williams, P., Harley, S. and Campbell, R. (2011). South Pacific swordfish data available for stock assessments. WCPFC-SA-2011/ST-IP-04.

Southwest Pacific striped marlin

Striped marlins (Figure 35) are a true oceanic species that prefers cooler water than either the blue or black marlin (*Makaira indica*). The striped marlin's body is more compressed compared to other marlin species. The high pointed dorsal fin equals or exceeds the depth of the body and the pectoral fin can be folded flush against the body.

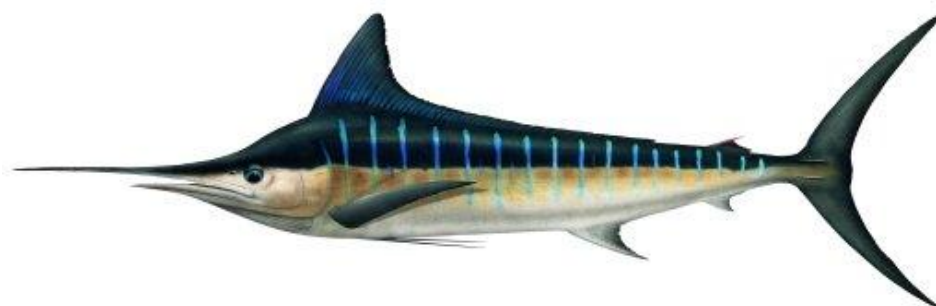


Figure 35- Striped marlin.

A clearly visible lateral line distinguishes striped marlin from blue marlin, where the lateral line is almost invisible. Striped marlin also have a longer lower jaw than either blue or black marlin. Striped marlin are found in tropical to temperate Indo-Pacific waters, not far from the surface. They are a game fish, which may attain a weight in excess of 150 kg and a length around 4 m.

No assessment of the Southwest Pacific striped marlin stock has been carried out since 2006 (WCPFC SC2), and the WCPFC SC has advised that an updated assessment is required. The SPC has been tasked with undertaking such an assessment for SC8 in 2012.

It has also been noted that compilation of striped marlin data by New Zealand and Australia, will be completed in March 2012. The results will be then presented to a pre-assessment workshop for incorporation into the 2012 stock assessment.

The fact that 6 years have already passed since the first attempt to assess the condition of the Southwest Pacific striped marlin stock is particularly worrying, in light of the significant uncertainties regarding the most important parameters used in the model and even more so considering its results, which indicated that the levels of fishing mortality might be approximating or have already exceeded F_{MSY} and current spawning and biomass levels were likely close or already below B_{MSY} . As a result of such outcome, the SC recommended as a precautionary measure that there should be no increase in fishing mortality (i.e. fishing effort) on striped marlin in the southwestern Pacific.

Panel Assessment and Recommendations for Southwest Pacific striped marlin

- **The only available assessment for Southwest Pacific Striped Marlin is now five years old. A new assessment, and utilization of any new information on the stock, are strongly encouraged and should be done as a matter of urgency.**

Northern Stocks

North Pacific striped marlin

No assessment of Northwest Pacific striped marlin was undertaken in 2011. Therefore, descriptions of stock assessment, and attached management recommendations, from SC6 (2010) remain current. Two assessment scenarios addressed different hypotheses concerning the steepness (0.7 and 1.0) of North Pacific Striped Marlin stock-recruitment dynamics. The probable status of North Pacific striped marlin indicated that F/F_{MSY} (2001 to 2003) was 3.67 under Scenario 1 (Steepness 0.7), and was 1.90 under scenario 2 (Steepness 1.0). Corresponding estimates of biomass were below SB_{MSY} , and ranged from 29% SB_{MSY} under Scenario 1, to 44%

of SB_{MSY} under Scenario 2. *MSY*-based reference points therefore indicate that Striped Marlin are experiencing overfishing and the stock is considered to be depleted under each steepness scenario. The International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC) indicated that a two-stock (WCPO and EPO) assessment for striped marlin will be completed in 2011.

Some CCMs have expressed concern about the Northwest Pacific striped marlin's stock status and that the planned International Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC) assessment was not forthcoming in 2011.

In the above terms, the SC has noted that North Pacific striped marlin is not a 'northern stock' according to the Convention and the WCPFC Rules of Procedure. Therefore the stock should be considered by the SC and not the ISC. The SC has therefore recommended that there be an immediate reduction in the fishing mortality for the North Pacific striped marlin stock. While the Commission has agreed that CMM 2010-01 will achieve this, the catch limits in the CMM need to be reviewed to ensure that they are sufficient.

SPC7 has recommended that the SPC should work with the ISC on data related issues required for the next assessment of North Pacific striped marlin. Failure by the ISC to provide an assessments by SC8 (2012) will lead to the science provider (SPC) carrying out the assessment as part of the SC program of work.

Panel Assessment and Recommendations for North Pacific striped marlin

- **Concerns expressed over the continued lack of an assessment for the North Pacific striped marlin stock appear justified;**
- **The Panel was concerned by the fact that information on the assessments undertaken by the ISC was not readily available or accessible, and, therefore, recommended that transparency in this regard be considerably improved. Most noticeably, and ideally, all assessments undertaken by the ISC should be peer reviewed and the results of these reviews made readily available for scrutiny by both the SPC and WCPFC SC;**
- **The ISC, SPC and SC should be strongly encouraged to ensure that such an assessment is collectively undertaken in 2012;**
- **This assessment should be undertaken in conjunction with that recommended for the Southwest Pacific striped marlin; and**
- **To achieve, and expedite, the above, the Commission's attention is drawn to a need to clarify the ISC's standing in respect of North Pacific striped marlin, as well as in relation to relevant provisions of the Convention and WCPFC Rules of Procedure.**

North Pacific albacore

Advice on the North Pacific albacore stock was provided to the SC by the ISC in 2011. Although there is uncertainty concerning estimates of the absolute North Pacific albacore biomass (Total and SSB) and fishing mortality, the ISC has advised that stock status and conservation advice based on the $F_{SSB-ATHL}$ ⁵⁸ reference point are relatively insensitive to such uncertainties. This insensitivity is attributable to the fact that trends in SSB and recruitment are robust to different plausible assumptions tested by the ISC. Estimates of $F_{2006-2008}$ (current fishing mortality) are less than 1.0 (Table 14) when expressed as a relative ratio to several potential F-based reference points (F_{MAX} , $F_{0.1}$, F_{MED} , $F_{20-50\%}$). SSB is currently around the long-term stock median and is expected to fluctuate around the historical median SSB in the future, assuming constant $F_{2006-2008}$ and average historical recruitment. The ratio $F_{2006-2008}/F_{SSB-ATHL}$ is 0.71, which means current F is well below the fishing mortality that would lead to SSB falling below the SSB_{ATHL} threshold.

Table 13- Potential North Pacific albacore reference points and estimated F-ratio using F Current ($F_{2006-2008}$), associated spawning biomass (SSB) and equilibrium yield. $F_{SSB-ATHL}$ ⁵⁹ is not an equilibrium concept so SSB, as well as yield, are given as median levels. (Source: Summary Report for the Seventh Regular Session of the Scientific Committee- At: <http://www.wcpfc.int/doc/summary-report-seventh-regular-session-scientific-committee-adopted-version-rev-1-24august2011>).

Reference Point	$F_{2006-2008}/F_{RP}$	SSB (t)	Equilibrium Yield (t)
$F_{SSB-ATHL}$	0.71	346,382	101,426
F_{MAX}	0.14	11,186	185,913
$F_{0.1}$	0.29	107,130	170,334
F_{MED}	0.99	452,897	94,080
$F_{20\%}$	0.38	171,427	156,922
$F_{30\%}$	0.52	257,140	138,248
$F_{40\%}$	0.68	342,854	119,094
$F_{50\%}$	0.91	428,567	99,643

CCMs and the SC have expressed a number of views on the above assessment. First, the ISC has North Pacific albacore catch data dating back to 1952, which can easily be incorporated into the assessment. Second, maintaining SSB as an average of 10 historically lowest estimated levels may be a suitable target reference point or management objective, and it could also be regarded as a limit reference point. Third, the current assessment may be inconsistent with previous advice, as it is much more optimistic than the past two assessments. Consequently, the current assessment's reliance on recruitment remaining at historical levels to maintain $F_{Current}$

⁵⁸ Fishing mortality that maintains spawning stock biomass (SSB) above the average level of its ten historically lowest points (ATHL)

⁵⁹ WCPFC SC considers that $F_{SSB-ATHL}$ is a limit reference point

is likely to be a more precautionary approach for present management measures. An independent review of the current ISC North Pacific albacore measure, to ensure that fishing mortality is restrained, has been welcomed by the WCPFC SC.

On balance, therefore, ISC has advised that North Pacific albacore overfishing is not occurring and the stock is not likely to be in an overfished condition (i.e. $F_{20-50\%} < 1.0$). However, biomass-based reference points have not been established for the stock. The stock is also considered to be 'healthy' on average and its sustainability is not threatened by overfishing at the $F_{2006-2008}$ (current) level. The stock is expected to fluctuate around the long-term median SSB (~400,000 t) in the short- and long-term. Future recruitment declines in the order of 25% below-average historical recruitment raise the risk of SSB falling below the SSB_{ATHL} threshold. The $F_{2006-2008}$ levels would increase to 54%, indicating that the stock impact is unlikely to be sustainable. Increasing fishing mortality beyond $F_{2006-2008}$ levels will not induce proportional yield increases due to the stock's underlying population dynamics. Finally, the current ISC assessment confirms that F has declined relative to the 2006 level, which is consistent with previous ISC advice in 2006.

Panel Assessment and Recommendations for North Pacific albacore

- **Note should be taken of the current situation regarding assessment of North Pacific albacore, particularly the independent review of the current North Pacific albacore measure by the ISC; and**
- **It may be worth considering that current North Pacific albacore measure be reviewed to ensure that it is able to actually restrain fishing mortality, particularly in light of past data shortcomings.**

Pacific bluefin tuna

Pacific bluefin tuna (Figure 36) possesses streamlined bodies. Retractable fins reduce water resistance and allow for more hydrodynamic water flow when swimming.

Pacific bluefin spawn in the Western Pacific between Okinawa and the Philippines. They also probably spawn in the Sea of Japan. They migrate 10,000 km to the Eastern Pacific, eventually returning to their birth waters to spawn. The Pacific bluefin matures slowly, reaching sexual maturity at about 5 years of age with a maximum life span of 25 years or so. They may reach more than 2.5 m in length and weigh over 500 kg.

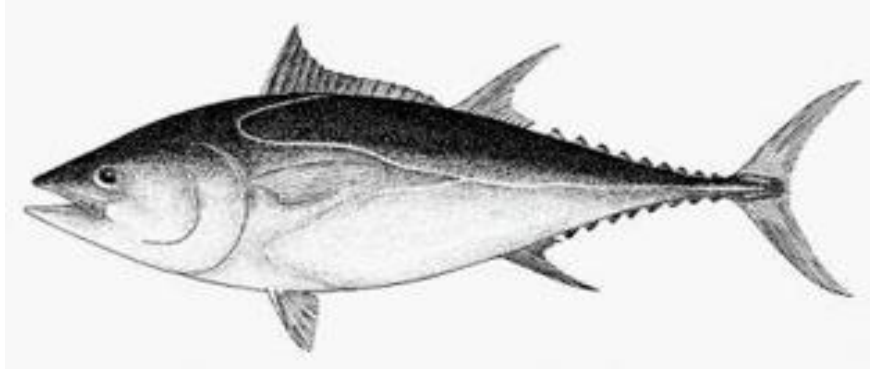


Figure 36- Pacific bluefin tuna.

Pacific bluefin are often considered to be overfished throughout their range. They are either caught with Longlines, or by illegal Drift Nets. Many young Pacific bluefin are captured before first reproduction. No Pacific bluefin stock assessment has been carried out in 2011. Therefore, the 2009 stock and status assessments remain current.

Pacific bluefin SSB in 2005 was 20,000 t, based on the SS2 model, and 23,000 t based on the SS3 model. The SSB values were estimated using natural mortality (M) from the 2008 assessment. Applying the revised estimate of M from the 2009 workshops and the SS3 model, SSB was estimated at 73,000t. The 2005 SSB estimates are above the median level for the assessment period (1952 to 2006). If fishing mortality (F) stays at the current F level, short-term projections (2009 to 2010) indicated that SSB will decline. In the longer term, SSB is expected to reach levels comparable with median SSB over the assessment period. Current F (2002–2004) was estimated to be larger than the commonly used Biomass Reference Points (BRPs) which may serve, in principle, as potential target reference points. This would include F_{MAX} - a BRP that is theoretically equivalent to F_{MSY} , given the underlying assessment structure and assumptions. However, the magnitude by which $F_{Current}$ exceeds the target BRPs varies. If $F_{Current}$ is reduced to F_{MAX} , the spawning potential (%SPR) is expected to increase in absolute terms by 10%. Yield-per-recruit is also expected to increase by 4% relative to current levels. Conversely, the $F_{Current}$ is less than that for commonly-used BRPs. It may therefore serve as potential recruitment overfishing threshold BRP (e.g. F_{MED}), at least in principle. In fact it would be an F above which the likelihood of recruitment failure is high. Fishing mortality for Pacific bluefin recruits (Age 0) and juveniles (Ages 1 to 3) have been generally increasing for more than a decade (1990 to 2005). Furthermore, the catch (in weight) is dominated by recruits and juveniles (Ages 0 to 3). The total Pacific bluefin catch has fluctuated widely between 9,000 and 40,000 t for the assessment period (1952 to 2006). Recent catches are near the assessment-period average (~22,000 t).

The WCPF SC has repeatedly advised a reduction of Pacific bluefin fishing mortality to 2002/ 2004 levels or below. In particular, the reduction of fishing mortality of juveniles in the 0 to 3 year age-classes has been advised, and the Northern Committee has been requested to monitor fishing mortality on age 0 to 3 fish.

Panel Assessment and Recommendations for Pacific Bluefin Tuna

- **Note should be taken of the current situation regarding assessment of Pacific bluefin tuna; and**
- **The WCPFC is encouraged to update its Pacific bluefin assessments, reduce Pacific bluefin fishing mortality to 2002/2004 levels and provide for monitoring of fishing mortality for age 0 to 3 fish.**

North Pacific swordfish

No assessment of North Pacific swordfish has been conducted in 2011, meaning that the 2009 stock and status assessments remain current. The ISC's 2009 North Pacific swordfish stock assessment was based on two different stock structure hypotheses: a single homogeneous stock in the North Pacific Ocean and two stocks (one in the WCPO and another in the EPO) in the North Pacific, with little, or no, mixing between them. The latter hypothesis is preferred, since it is supported by the bulk of most of the available stock structure evidences. Results from the single stock hypothesis indicate that MSY is about 19,000 t, and the exploitable biomass has been well above MSY. The estimated harvest rate has been well below the harvest rate of 34% at MSY. The harvest rate for 2006 was 13%. For the two-stock hypothesis, WCPO stock assessment results indicate that MSY is 14,400 t, and the exploitable biomass has largely been above the MSY level for the entire time-series. The estimated harvest rate at MSY is 26%, with actual harvest rates being largely below this level for the entire period. In 2006, the harvest rate was 14%. The 2010 projections based on this harvest rate results in the exploitable biomass continuing to remain above B_{MSY} .

The last ISC assessment of the North Pacific swordfish stock, therefore, indicates that it is not overfished and that overfishing is not occurring. Consequently, current catch levels are sustainable. Continued monitoring of exploitation rates in the area north of 20°N is required to ensure that the stock remains above B_{MSY} . The Northern Committee has scheduled a 2013 assessment of the North Pacific swordfish stock.

The ISC has concluded that both swordfish stocks in the North Pacific are healthy and above the level required to sustain recent catches. It provided no additional management advice in 2011. Therefore, the SC's 2010 management advice for North Pacific swordfish stands, pending a new assessment or other new information. The Commission has been requested to task the Northern Committee with providing an updated assessment in 2013 for review by SC9.

Panel Assessment and Recommendations for North Pacific swordfish

- **Note should be taken of the current situation regarding assessment of North Pacific swordfish; and**
- **The WCPFC is encouraged to update its North Pacific swordfish assessments in 2013 at the latest.**

The status of WCPFC stocks is summarized in Table 15, below:

Table 14- Summary of WCPFC stock assessments and status.

Stock	Assessment	Stock Status	Data	Comments¹
WCPO albacore	2011	No Overfishing Not Overfished	Lack essential Information	Assessment > Pessimistic Than Past Increased Catch/Effort Likely to Result in Declining Catch Rates
Bigeye	2011	Overfishing Close to overfished MSY >50% Pre-1970	2010 Surface Fisheries Data Not Complete All CCMs To Supply Data Per WCPFC Rules	32% F (From 2006/09 Levels) Reduction to Reach MSY > Juvenile Harvesting
skipjack	2011	No Overfishing Not Overfished Relatively 'Healthy' 'Moderately Exploited' Stock Depletion 35%	Collect Landings & Cannery Data	47% B Reduction West Equatorial Region 21% B Reduction West Equatorial Region Catch Decline As Stock Approaches MSY Management Total Effort For bigeye & yellowfin Required Improve Purse-Seine Catch Species Composition Estimates

1- For further details on the comments, refer to the text.

Table 14 (Cont).

Stock	Assessment	Stock Status	Data	Comments ¹
yellowfin	2011	No Overfishing Not Overfished	-	Comparable Recent Assessments B & SB > MSY MSY Reduction To 60% Pre-1970 > Exploitation West Equatorial Region Due To >Juvenile Harvesting F Below F _{MSY} & SB Above SB _{MSY} To 2021 MSY Up If <Less Juvenile F
bigeye/ yellowfin Fishing Effort	-	-	CCMs To Provide bigeye/ yellowfin Catch Effort & Size Data For All Fleets Per WCPFC Requirements	-
SPO Swordfish	2009	Unknown	Insufficient	Urgent Need to Assess SPO Swordfish
SWP Striped Marlin	2006	Uncertain (Probably overfishing And overfished)	Australian & New Zealand Data For March 2012	New Assessment & New Information Use Required
NP Striped Marlin	2010	Overfishing Stock Depleted	ISC Data Issues To Be Resolved	Needs Assessment ISC, SPC & SC To Ensure Assessment For 2012 Clarify ISC Standing On Stock?
NP albacore	2011	No Overfishing Not Overfished Stock 'Healthy'	-	F Decline From 2006 Levels
Pacific Bluefin	2009	Overfished?	-	Update Assessment Reduce F to 2002/04 Levels Monitor F For 0-3 Age Fish
NP Swordfish	2009	No Overfishing Not Overfished Stock 'Healthy'	-	Updated Assessment Required
Billfish General	-	-	-	Catch Decline 2003-2010

1- For further details on the comments, refer to the text.

5.3. Management Issues: the Precautionary Approach and Limit Reference Points

5.3.1. General background

A WCPFC SC discussion forum for management issues was only put into place in 2009, but without any specific Terms of Reference (TORs). At its 2011 meeting, the SC agreed the necessary TORs (Appendix V), and this section will highlight some of the key issues that the Review Panel sees as important for the SC's ongoing work, as well as the Panel's views on improving stock assessments and description of any attached trends.

5.3.2. The Precautionary Approach

5.3.2.1. Introduction

Articles 5 and 6 of the Convention (see also Section 3.4.3) provide for the application of the precautionary approach to the management of the highly migratory stocks covered by the Convention. Similar provisions are set out in UNFSA Article 6 and Annex II. Together these identify a need to determine⁶⁰ stock-specific reference points, as well as action to be taken if such points are exceeded. This requirement is seen as a key component in the implementation of a precautionary management approach (Davies and Polacheck, 2007).

Prior to 2007, the WCPFC had not agreed any specific management objectives. Therefore, it largely relied on current stock estimates as a function of MSY-based biological Reference Points (RPs) (see Section 5.3.3 below). The RPs are being used to interpret current stock status in the context of assessing future implications of a constant catch strategy. SC2⁶¹ adopted a work plan for 2007 to address alternative reference points, including identifying appropriate target or limit reference points. A consultancy was then commissioned in April 2007 to provide a discussion paper at SC3 later that year

Against the above background, it should be noted that NAFO had followed a similar approach in the late 1990's. This culminated in formal development of a Precautionary Approach Framework (PAF) for managing NAFO fisheries as well as a marriage of reference point assessments with management action⁶².

⁶⁰ Taking into account the best scientific information available

⁶¹ At: <http://www.wcpfc.int/meetings/2006/2nd-regular-session>

⁶² At: www.nafo.int/science/research/docs/fcdoc04-18.pdf

5.3.2.2. WCPFC PAF

Currently the more ‘formal development’ of a WCPFC PAF should be seen as “work in progress”. In these terms, it is notable that (after Davies and Polacheck, 2007⁶³):

- The Convention and prevailing international law mandate the application of a precautionary approach, including the use of target and limit reference points as well as pre-agreed management measures, or ‘decision rules’;
- RPs may be used as: (a) benchmarks for interpreting stock assessment results and for developing advice on short-term management actions; and (b) informing development of operational objectives, and performance measures, for management strategies as part of a Management Strategy Evaluation (MSE) process;
- The MSE approach provides for formal evaluation of whether a management strategy’s performance is likely to be consistent with the precautionary approach. It also provides a basis for comparing relative performance among alternative management strategies;
- Current application of the precautionary approach in tuna RFMOS should be reviewed. This would include the use of target and limit reference points (e.g. Kobe Plots), as well as MSE processes. Currently, it appears that no tuna RFMO is applying the precautionary approach in practice along the lines embraced by the WCPFC, UNFSA, FAO Code of Conduct, etc.;
- The Convention provides specific guidance for the development of formal management plans that meet precautionary approach requirements; and
- Operationalizing Commission management objectives, as well as defining appropriate performance measures and reference points, are key to implementing the precautionary approach. Such implementation should be based on a realistic expectation of what is possible, as well as recognition of the realistic potential management measures that the Commission may use.

5.3.3. Limit Reference Points

Papers by Preece *et al.* (2011) and by Harley and Davies (2011) have contributed significantly to the intersessional work on Limit Reference Points being undertaken as part of Scientific Research Plan Project 57. The Project is aimed at:

- Identifying candidate indicators (e.g. B_{Current}/B_o , $SB_{\text{Current}}/SB_{\text{MSY}}$) and related Limit Reference Points⁶⁴ (LRPs) (e.g. $B_{\text{Current}}/B_o = X$, $SB_{\text{Current}}/SB_{\text{MSY}} = Y$), the specific information needs they meet, the data and information required to estimate them, the associated uncertainty of these estimates, and the relative strengths and weaknesses of using each type of LRP within a management framework;

⁶³ Davies, C.C. and Polacheck, T. 2007. A brief review of the use of the precautionary approach and the role of target and limit reference points and Management Strategy Evaluation in the management of highly migratory fish stocks. WCPFC-SC3-ME SWG/WP-3. <http://www.wcpfc.int/doc/me-wp-3/a-brief-review-use-precautionary-approach-and-role-target-and-limit-reference-points-and>

⁶⁴ As cited by Preece *et al.* (2011), a 'Limit Reference Point' "...indicates a state of a fishery and/or resource which is considered to be undesirable and which management action should avoid"

- Using past assessments to evaluate the probabilities that related performance indicators exceed the values associated with candidate Reference Points (RPs);
- Evaluating the consequences of adopting particular LRPs based on stochastic projections using the attached stock assessment models; and
- Undertaking a literature review, or meta-analyses, to provide insights into levels of depletion that may serve as appropriate limit reference points, and of other uncertain assessment parameters (e.g. steepness).

As already noted (Section 5.2), WCPFC SC typically summarizes stock status against three interim reference points:

- Level of fishing mortality likely to result in the *Maximum Sustainable Yield* (F_{MSY});
- Biomass capable of supporting the *Maximum Sustainable Yield* (B_{MSY}); and
- Predicted biomass in the absence of fishing ($B_{CURR(F=0)}$).

Therefore, the outputs from the interim reference point steps outlined above are anticipated to provide alternative, additional and more refined limit reference points for WCPFC and SC use.

The first paper above (Preece *et al.*, 2011) provides an overview of candidate limit reference points for key WCPFC target species. It also reviews steepness and depletion levels used across the various Tuna RFMOs. The second paper (Harley and Davies, 2011) addresses the historical, and projected, future, status of bigeye, skipjack and yellowfin stocks against the reference points proposed in the first paper, particularly:

- bigeye and yellowfin: $F_{SPR40\%}$ and $20\%SB_0$, and
- skipjack: $20\%SB_0$ ⁶⁵.

SPC7 provided the following key recommendations, with regard to Limit Reference Points:

- The Commission should adopt a working LRP definition based on the following principles:
 - (i) the state of the fishery which is considered undesirable is defined in terms of what management action should avoid;
 - (ii) the probability of breaching a LRP should be very low, and
 - (iii) management actions should be taken before a fishery falls, or is at risk of falling, below a LRP.
- The Commission should adopt the hierarchical approach (as outlined in MI-WP-03) to identify key limit reference points for key WCPFC target species as follows:

⁶⁵ Although results using the $F_{SPR40\%}$ limit reference point were also presented

Level	Condition	LRPs
Level 1	A reliable estimate of steepness is available	F_{MSY} and B_{MSY}
Level 2	Steepness is not known well, if at all, but the key biological (natural mortality, maturity) and fishery (selectivity) variables are reasonably well estimated.	$F_{X\%SPR_0}$ and either $20\%SB_0$ or $20\%SB_{current,F=0}$
Level 3	The key biological and fishery variables are not well estimated or understood.	$20\%SB_0$ or $20\%SB_{current,F=0}$

- Due to a high degree of uncertainty in the steepness parameter for yellowfin and bigeye the Commission should adopt a fishing mortality LRP based on a spawner-per-recruit level of $F_{X\%SPR_0}$ and a biomass based LRP based on a depletion level of either $x\%SB_0$ or $x\%SB_{Current,F=0}$ for these species in the WCPFC;
- Due to a high degree of uncertainty attached to the steepness parameter, and uncertainties in certain life-history and fishery parameters, for the other key WCPFC target species, the Commission should adopt either a $x\%SB_0$ or a $x\%SB_{Current,F=0}$ reference level as a biomass-based LRP for these species;
- The SPC-OFP (Oceanic Fisheries Programme of the Secretariat of the Pacific Community) should, using the most recent South Pacific albacore, bigeye, skipjack and yellowfin stock assessment models, undertake further analyses to evaluate the consequences of:
 - (i) different levels of spawning-potential-per-recruit, $x\%SPR_0$ (where x is in the range 20-50% in 10% increments) to be associated with the adopted fishing mortality-based LRP;
 - (ii) using either a $x\%SB_0$ or a $x\%SB_{Current,F=0}$ biomass-based LRP (range of x from 10 to 40%);
 - (iii) also adopting a spawning-potential-per-recruit-based LRP for the key target species other than bigeye and yellowfin.
- Noting the ISC's progress in developing reference points, the Northern Committee should consider similar analyses for the three stocks that they assess, including North Pacific albacore, and compare these in terms of the $F_{SSB-ATHL}$ reference point identified by the Northern Committee;
- The results of these further analyses be presented to, and reviewed by, the Management Objectives Workshop to be held in early 2012. The workshop conclusions be reported to SC8 for comment, before consideration by the Commission;
- Once adopted, the reference points developed will need to be implemented along with harvest control rules. The development of these harvest control rules should be included in the SC work plan and budget. Such harvest control rules must adequately recognize the fact that the fisheries have a multi-species nature, with the Convention's provision also being adequately recognized;
- The Commission should hold open consideration of other reference points (both target and limit) to reflect management objectives as they are identified and defined. These include objectives for other management-related issues, such as the impact of fishing on by-catch species and the ecosystem, as well as economic and social objectives. Empirical, as well as model-based reference points, could be included; and

- The SPC-OFP should prepare a paper for the Management Objectives Workshop to identify and evaluate candidate skipjack target reference points, including empirical reference points⁶⁶.

Panel Assessment and Recommendations on the Precautionary Approach and Limit Reference Points

- Compared to other tuna RFMOs, the WCPFC is among the leaders in advancing development of a formalized PAF;
- WCPFC should continue to pursue its work program aimed at: (a) a consultative process to develop formal management strategies for a small number of representative case studies for the entire range of WCPFC fisheries, and (b) a technical process to evaluate the robustness of current and alternative assessment, and/or reference, points so as to determine specific technical requirements and costs associated with undertaking a MSE process for specific fisheries;
- Other key issues to be addressed in moving towards more formal implementation of the precautionary approach should include development of a reliable fishery data collection program⁶⁷ and a research program to address priority information gaps;
- The development, and implementation, of future work on stock reference points and MSE processes should be undertaken with due recognition of the priorities attached to, and the resources available for, other precautionary approach elements, essential for the approach's practical implementation in a management context;
- In the above terms, the Panel notes that application of a WCPFC PAF has not yet appeared to take into account formal consideration of potential ecosystem effect in the taking of management decisions – for example in the application of bycatch trigger levels to limit fishing when bycatch thresholds are exceeded;
- Another key aspect currently being overlooked in the WCPFC's development of precautionary and reference point based management approaches is the need for rules to be in place for developing new and exploratory fisheries, as well as for re-opening previously closed fisheries;
- The Commission and SC are to be commended on progress made in developing limit reference points, particularly for bigeye, skipjack and yellowfin;
- The holding of a Management Objectives Workshop in early 2012 will undoubtedly assist the process of developing limit reference points;
- The Commission should review the current situation regarding ISC's development of reference points, including for North Pacific albacore; and
- The WCPFC is encouraged to adopt a working definition for LRPs based on the principles outlined by SC7, including clear Harvest Control Rules.

⁶⁶ Such as those based on CPUE as well as possible target reference points derived from stock assessment models

⁶⁷ This must include appropriate levels of independent verification

References

- Davies, C. and Polacheck, T. (2007) A brief review of the use of the precautionary approach and the role of target and limit reference points and Management Strategy Evaluation in the management of highly migratory fish stocks. WCPFC-SC3-ME SWG/WP-3.
- Harley, S.J. and Davies, N. (2011) Evaluation of stock status of bigeye, skipjack and yellowfin Tunas against potential limit reference points. WCPFC-SC7-2011/MI-WP- 04.
- Preece, A., Hillary, R. and Davies, C. (2011) Identification of limit reference points for the key target species in the WCPFC. WCPFC-SC7-2011/MI-WP-03.

5.3.4. The Management Objectives Workshop

As already noted a Management Objectives Workshop is scheduled for early 2012. TORs cleared by the WCPFC SC will be taken into account in setting up the Workshop's actual TORs and agenda.

Panel Assessment and Recommendations on the 2012 Management Objectives Workshop

- **The Commission and SC are to be commended for sanctioning the Management Objectives Workshop. It is noted that the attendance of (an) independent international expert(s) will serve to provide guidance on the use of reference points and other relevant issues important to identifying management objectives.**

5.4. The Ecosystem Approach

5.4.1. Background

The Preamble and various Convention Articles⁶⁸ (see item 3.2.1.8) highlight the need for the WCPFC “..to avoid adverse impacts on the marine environment, preserve biodiversity, maintain integrity of marine ecosystems and **minimize the risk** of long-term or irreversible effects of fishing operations”. This is linked to another preambular clause which recognizes that “...effective conservation and management measures require the application of the **precautionary approach** and the **best scientific information available**”.

It has generally been recognized, by the Pacific Islands Forum Fishing Agency (FFA) amongst others, that “the ecosystem approach to fisheries management (EAFM) is one management tool that resources managers and scientists believe may work to address indiscriminate exploitation of resources and other influences on non-target species and the environment” (Sauni, 2009).

⁶⁸ Most noticeably Articles 5 and 10

The notion alluded to in the previous paragraph suggests that ecosystem management concept puts into perspective potential issues and inter-relationships between a given fishery and its wider ecosystem 'associations'. In this context, an entire mosaic of fishery and ecosystem attributes may come to be affected by any imbalances that are attributable to excessive impacts such as overfishing, or the direct environmental impacts of fishing activities.

Many Pacific island FFA members have been involved in a process to implement an EAFM. As an essentially qualitative framework to identify fisheries management priorities, risk scores are assigned against the 'likelihood', and 'consequence', of failing to meet defined EAFM objectives. Where such objectives relate largely to target species sustainability, the SPC-OFP has been providing scientific advice on stock (notably tuna) status, as well as implications for particular countries of regional assessments.

On the other hand, the WCPFC has adopted a pragmatic approach, with the SC's first regular session in 2005 endorsing a recommendation that Ecological Risk Assessment (ERA) should be carried out as a means to evaluate and prioritize bycatch issues in particular in the WCPFC Area.

A variety of activities were then directed at pursuing the ERA approach, without losing sight of what the FFA was doing, or needed to do. A 2008 to 2011 ERA Research Plan was subsequently adopted by the WCPFC in 2007 with the following key objective: "identification of highly migratory species and associated/dependent species that are at relatively high risk of adverse effects during fishing, for consideration by the SC in terms of further research or management purposes". Various desired research outputs were also approved:

- Enhanced Productivity-Susceptibility Analyses (PSAs) that are comparable, transferable and for which uncertainty has been quantified;
- Identification of highly migratory species, or associated/dependent species at high apparent risk that can be assessed using existing data and models;
- Identification of data requirements, through fisheries monitoring or biological/ecological research, in order for other high-risk species to be assessed, and
- Scientific support for Small Island Developing States (SIDS) in implementing ERA/EAFM at the national level, as requested by the countries/territories and in collaboration with FFA.

Implicit in the above is that WCPO Fisheries are required to 'minimize waste and discards' and to 'minimize the risk of adverse effects' on bycatch populations.

Achievements of these outputs are linked to various regional-scale activities. These comprise: (a) ERA Training, (b) Study of Seabird-Fishery Spatial Overlaps⁶⁹, and (c)

⁶⁹ This study originally included identification of spatial and temporal overlap areas in terms of Seabird and Turtle, and later Shark, interactions with Tuna fisheries

Consideration of Other By-Catch Issues. The WCPFC Ecosystem and Bycatch Specialist Working Group (EBSWG) was set up in 2004/05 to consider such matters and to advise the SC and Commission accordingly.

5.4.2. Key Developments

Work undertaken by the EBSWG and SC⁷⁰ since 2005 has resulted in a number of far-reaching Commission decisions aimed at meeting the ERA/EAFM objectives outlined above⁷¹. These decisions have been incorporated into a variety of Resolutions, CMMs and Other Decisions adopted by the Commission. Their subsequent implementation has been used to populate the WCPFC Bycatch Mitigation Information System (BMIS)⁷². (At: <http://www.wcpfc.int/bycatch-mitigation-information-system-bmis>). A summary of relevant Resolutions and CMMs is provided in Table 16.

As an early measure, paragraph 1(d) of Resolution 2005-04 calls for advice to be given to the Commission at its second annual meeting on estimates of non-target species with an initial focus on seabirds, turtles and sharks.

Resolution 2005-03 encourages CMMs to avoid the capture of all non-target fish species not retained and to ensure their quick release.

CMM 2010-07, CMM 2008-03 and CMM 2007-04⁷³ outline specific requirements to conserve and manage sharks, turtles and seabirds. CMM 2008-04 expressly prohibits the damaging practice of driftnet fishing in the WCPFC Area.

CMM 2010-07 has attached requirements to report (paragraph 4) and fully utilize any shark catches (paragraph 6), along with other measures to reduce shark bycatch and promptly release non-retained sharks. Links are also specifically made to the FAO International Plan of Action for the Conservation and Management of Sharks as well as to the requirements of the CITES Appendix II listing of pelagic sharks.

⁷⁰ Including associated workshops and other sponsored activities

⁷¹ For information on perceived WCPFC data gaps associated with EAFM, please refer to Section 4 of Appendix VII

⁷² The BMIS has been developed to manage and facilitate access to information on WCPO bycatch and bycatch mitigation. 'Bycatch' is taken to refer to those species, such as sharks, seabirds and turtles, which are incidentally caught during fisheries activities targeting other species (i.e. tuna or swordfish). The online system provides a resource for fisheries managers, scientists, fishers and the general public. It is the central repository of information on the mitigation and management of bycatch in the WCPO. One of BMIS' major purposes is that its content may be easily shared among CCMs, other stakeholders and other interested parties. The database contains information on species encountered by WCPFC fisheries, as well as how they are linked to WCPFC Decisions (and Decisions of other RFMOs). It also provides information, where relevant, on mitigation measures or methods relevant to the WCPFC fisheries and the species they relate to, as well as those of other RFMOs

⁷³ CMM 2010-07 and CMM 2007-04 have been revised over the years in their various forms

CMM 2008-04 outlines reporting requirements (paragraph 5(b)) and various methods (e.g. use of large circle hooks in swordfish fisheries) to monitor/mitigate turtle bycatch. Again an express link is made to the 2005 FAO Guidelines to Reduce Turtle Mortality in Fishing Operations.

CMM 2007-04 outlines various mitigation measures to reduce seabird⁷⁴ bycatch during longline fishing (Table 1 and Annex 1, of the CMM). These measures draw on the experiences of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the guidance provided by the FAO International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries (IPOA-Seabirds). Specific measures include deployment of tori lines, side setting with bird curtain and weighted branch lines, night setting, weighted branch lines, dyed bait, and management of offal discharge.

Table 15- WCPFC CMMs aimed at mitigating the potential effects of fishing operations on the WCPO marine ecosystem.

Measure	Date	Title	Comment
CMM 2004-04	8/12/04	Resolution on Conservation and Management Measures	
CMM 2006-02	15/12/06	Conservation and Management Measure to Mitigate the Impact of Fishing For Highly Migratory Fish Stocks on Seabirds	Revised & Replaced by CMM 2007-04
CMM 2006-05	15/12/06	Conservation and Management Measure for Sharks in the Western and Central Pacific Ocean	Replaced by CMM 2008-06
CMM 2007-04	7/12/07	Conservation and Management Measure to Mitigate the Impact of Fishing For Highly Migratory Fish Stocks on Seabirds	
CMM 2008-03	12/12/08	Conservation and Management of Sea Turtles	
CMM 2008-04	12/12/08	Conservation and Management Measure to Prohibit Use of Large-Scale Drift Nets on the High Seas in the Convention Area	Subject to UNGA Resolution 46/215
CMM 2008-06	12/12/08	Conservation and Management for Sharks	Replaced by 2009-04
CMM 2009-04	11/12/09	Conservation and Management for Sharks	Replaced by 2010-07
CMM 2010-07	10/12/10	Conservation and Management for Sharks	
Resolution 2005-01	16/12/05	Resolution on Incidental Catch of Seabirds	
Resolution 2005-03	16/12/05	Resolution on Target Fish Species	
Resolution 2005-04	16/12/05	Resolution to Mitigate the Mitigate the Impact of Fishing For Highly Migratory Fish Stocks on Sea Turtles	Replaced by CMM 2008-03

⁷⁴ Particularly mortality of albatrosses and petrels

In 2011, a project⁷⁵ being sponsored by the EBSWG has indicated some potential for the project to provide applications that may be used to better understand oceanographic effects on fishing. This also supports a need for collaboration to pursue such research in terms of Productivity Susceptibility Analyses (PSAs) and ERAs.

For Sharks, the SC is concerned about steeply declining standardized catch rates, and size trends, for WCPO oceanic whitetip shark catches by Longline and Purse Seine. Whitetip is thus seen as a priority for further investigation during the second year of the Commission's Shark Research Plan. Such investigation is aimed at improving understanding of potential fishery impacts on the species.

On the basis of existing information presented to it, and available from other sources, the SC has recommended that the Commission consider mitigation measures for oceanic whitetip sharks in the Convention Area and blue sharks in the North Pacific.

The current WCPFC Shark Research Plan is scheduled to undertake an assessment of the oceanic whitetip and silky shark stocks in 2012 and of blue shark in 2013.

Having recognized the considerable body of work on shark catch mitigation (including non-retention and live-release, deeper hook deployment on longlines for epipelagic species, use of circle hooks, and prohibition of targeting, finning and wire leaders), the SC has further recommended investigations into the effectiveness of shark mitigation measures.

Finally, the SC has indicated the importance of WCPFC adopting a process aimed at designating key WCPFC shark species for data provision and assessment.

In spite of the several measures adopted in regard of bycatch species, data on the species and amount caught by WCPFC managed fisheries are very sketchy and largely unavailable. In regard of sharks, for example, despite some data do exist on blue shark, mako sharks, silky sharks, oceanic white-tip shark, thresher shark, porbeagle shark, and hammerhead sharks, except for the blue shark, they are too fragmentary to allow the monitoring of their stocks. In such case, an ERA should also be done for the shark species caught in conjunction with WCPFC managed fisheries so that species that are at relatively higher risk could be identified and prioritized for the adoption of conservation and management measures, including by prohibiting their taking or at least conditioning it to an adequate data provision on the catches.

⁷⁵ Spatial Ecosystem and Population Dynamics Model (SEAPODYM)

Panel Assessment and Recommendations on WCPFC's Ecosystem Approach

- WCPFC is to be commended for pursuing a pragmatically-focused ecosystem approach built on the ERA of direct linkages between fishing and the WCPO ecosystem(s);
- The Commission and SC are also to be commended for developing various mitigating measures to address fishery-species interactions for seabird, turtles and sharks in particular;
- WCPFC is encouraged to expand data collection for potential fisheries and ecosystem interactions to provide priority information on such interactions to monitor interaction extent, mitigation effects and interaction effects;
- WCPFC is encouraged to further consider other effects likely to arise from fishing operations on the WCPO ecosystem. Such effects include lost, or abandoned, fishing gear and potential marine ecosystems⁷⁶ risks. At-sea monitoring may be necessary before such risks are identified;
- The question of general biodiversity protection does not appear to have been addressed as yet and the WCPF is encouraged to consider ways (e.g. using spatial protection) how this might be achieved;
- A number of RFMOs have instituted Scientific Observer Programs to monitor, and gather information on, fisheries-ecosystem interactions/effects. Within the bounds of what may be practicable, the WCPFC is encouraged to consider how such programs⁷⁷ may assist its ecosystem work in terms of promoting an EAFM, and the ERA, approach regionally;
- Some other RFMOs (e.g. the North Atlantic Fisheries Organization- NAFO) put policy guidelines in place for their EAFM approaches. These are sufficiently flexible to include recent 'best practice' developments such as those initiated under UNGA Resolution 61/105. The Commission is encouraged to give the development of such tools serious consideration in the interests of strategically 'mapping out' where it is going with its ERA activities. In these terms a designated area of the WCPFC Website for consolidating discussion on ecosystem issues might also be worth considering; and
- Following the previous comment, the SC is encouraged to develop 'plausible models' of WCPFC ecosystem to guide strategic development of its EAFM and to focus on key ecosystem components, including by means of a more structured regional plan of action on sharks and seabirds.

References

Sauni, S. (2009). Ecosystem Approach to Fisheries Management: Implementation Issues and Challenges for the Pacific Island States. In: *Navigating Pacific Fisheries*. Haninch, Q. and Tsamenyi, M. (Eds). Ocean Publications, ANCORS, University of Wollongong. p. 302-318.

⁷⁶ For example, such risks include transference of alien and potential damaging species in bilge water. They also include considerations such as light pollution, net entanglements, etc.

⁷⁷ For example, a concern has been raised that the recent observer coverage of 3.6% in Australia's Eastern Tuna and Billfish Fishery (ETBF) makes estimation of Turtle-Fisheries interactions highly uncertain. The deployment of onboard mounted cameras as a means to collect much of the same data currently collected by observers has been identified as a potential solution

5.5. Data collection and sharing

5.5.1. Background

Since 2005, the WCPFC has been refining its data collection and submission provisions in the form of “*Scientific Data to be Provided to the Commission*” and “*Standards for the Provision of Operational Catch and Effort Data to the Commission*”. The latter has been attached as an Annex to the former. Together, the 2007⁷⁸ and 2009 versions of these documents constitute the WCPFC’s annual data requirements, accessible on the WCPFC Website⁷⁹. In general context, these and other information requirements flow from the CCMs obligations outlined in Article 23(2) of the Convention, in particular.

Under Article 13 of the Convention, and as specified in the above recommendations for data provision, SPC-OFP compiles annual catch estimates, operational (logsheet or logbook) and aggregated catch and effort data, and size composition data on the Commission's behalf. In conducting scientific research and analyses supporting the Commission’s work, the OFP also compiles other data (e.g. unloading reports, observer data, port sampling data, tagging data, oceanographic data and various types of biological data).

A system has been in place to review scientific data provision to the WCPFC as well as to highlight data gaps on the Commission’s Web Site (At: <http://www.wcpfc.int/statprov>). The system (Williams, 2011) is aimed at:

- Providing the WCPFC Secretariat, the SC and data managers with a broad indication of the status of data collected and provided to the WCPFC (i.e. identify data gaps);
- Providing CCMs with a concise summary of data provided/not provided to the WCPFC, highlighting any deficiencies with provided data;
- Serving as a reference for the WCPFC Secretariat and data managers when following up outstanding issues with CCMs on the collection/provision of data to the WCPFC (identify data gaps which may prompt 'data rescues', for example); and
- Providing a concise summary of data available to data users (e.g. researchers), indicating any apparent problems in the data provided.

The system ensures data provisions are registered by the Commission, and it also facilitates review of outstanding data requirements.

A WCPFC Data Catalogue has recently been made available on the WCPFC Website (<http://www.wcpfc.int/wcpfc-data-catalogue>) to describe WCPFC data holdings by gear, species and data type (annual catch estimates, aggregated and operational catch/effort data and

⁷⁸ At: <http://www.wcpfc.int/doc/data-01/scientific-data-be-provided-commission-revised-wcpfc4-wcpfc6>

⁷⁹ At: http://www.wcpfc.int/search/apachesolr_search/standards%20for%20provision%20of%20operational%20catch%20and%20effort%20data%20to%20the%20commission

aggregated size data). Aggregate catch and effort data coverage, operational logsheet (catch and effort) data, unloading data, port sampling data and observer data are held by the OFP. These data are viewable at: <http://www.spc.int/oceanfish/html/Statistics/Coverage/index.asp>.

5.5.2. Data submission requirements

The data requirements outlined in the various documents alluded to in Section 5.5.1 outline the WCPFC's data management system. Furthermore, and recognizing CCMs' duty to cooperate in the conservation and management of the resources for which they are responsible under 1982 UN Convention, Article 5(i)⁸⁰ of the Convention creates the legal obligation for CCMs to:

“...collect and share, in a timely manner, complete and accurate data concerning fishing activities on, *inter alia*, vessel position, catch of target and non-target species and fishing effort, as well as information from national and international research programmes.”

To give effect to these obligations, the Secretariat annually circulates an advisory list of CCM reporting, including requirements (e.g. as shown for 2011 in Appendix VI). This outlines the linkages with the relevant CMMs in force as per the particular data requirements necessary. Other data are submitted on an *ad hoc* basis, as required/requested by the Commission, SC, or specific Committee(s)/Working Group(s). Subsequent access to, use of, or general standing of data and information held by the WCPFC will be considered in Section 5.5.5.

Panel Assessment and Recommendations on WCPFC Data Submission Requirements

- **To a large measure, information on data submission requirements appear adequate;**
- **However, some Longline catch data are only provided after a lag of several months⁸¹, some CMMs lack the necessary infrastructure to ensure accurate/timely data submissions and data are sparse for species other than billfish or tuna;**
- **The Commission is urged to encourage the Secretariat to make such information easily accessible, particularly with respect to ensuring that data deadlines are met, and especially for fisheries subject to CMMs in force, and/or requiring assessment;**
- **Serious consideration should be given to providing an enduring, and detailed 'Data Submission' item on the WCPFC Website as a 'one-stop shop' for all data submission information; and**
- **To improve transparency attached to the timely submission of data, submission dates should be monitored by the Secretariat with the attached information being made available on the password protected portion of the WCPFC Website;**

⁸⁰ As well as paragraph 2 of Article 23

⁸¹ In some cases in excess of 18 months after fishing has occurred

5.5.3. Data holdings

A summary of fisheries data compiled by the SPC-OFP and maintained by the WCPFC is provided in Table 17. As already noted, several types of scientific data are provided by CCMs in accordance with the requirements outlined in the “*Scientific Data to be Provided to the Commission*” (paragraph 4.5.1). Such data comprise:

- Annual catch estimates;
- Aggregated catch and effort data;
- Operational catch and effort data; and
- Aggregated size data.

The data in Table 17 are used by the Commission for its work. They are prepared and disseminated in accordance with the current “*Rules and Procedures for the Protection, Access to, and Dissemination of Data Compiled by the Commission*” (Section 5.5.5 below).

The WCPFC Data Catalogue (<http://www.wcpfc.int/wcpfc-data-catalogue>) consists of a set of tables summarizing the Organization’s scientific data holdings by gear, species and broad ocean area. The data are compiled in both a summary and detailed format. This serves to assist potential scientific data users in determining the extent of available data.

The annually-produced, WCPFC Tuna Fishery Yearbook also provides fishery data in PDF and Excel format (<http://www.wcpfc.int/statistical-bulletins>).

Summaries of data (from Williams, 2011) held by the SPC-OFP and provided to the WCPFC are given in Figures 37 to 41.

In managing the WCPFC’s scientific data, the SPC-OFP Data Management Section⁸²:

- Calls for the annual submission of scientific data;
- Receives and acknowledges submissions;
- Undertakes quality controls on, and checking of, the data provided;
- Imports data into the WCPFC Database; and
- Transmits the WCPFC Database to the WCPFC Secretariat on a quarterly basis.

As already noted (Section 5.5.1), the SPC-OFP is also responsible for specific types of data⁸³ in effecting its WCPFC management responsibilities.

⁸² See: <http://www.spc.int/oceanfish/en/ofpsection/data-management/wcpfc>

⁸³ These data comprise annual catch estimates, aggregated catch and effort data, operational (logsheet) data, aggregate size composition data and Regional Observer Programme data

Table 16- Data held in the WCPFC Database (‘SPO’: South Pacific Ocean; ‘WCPFC’: WCPFC Area).

Gear	Species	Code	Area
Longline	<u>Tuna</u>		
	Albacore	ALB	SPO
	Bigeye	BET	WCPFC
	Yellowfin	YFT	WCPFC
	Skipjack	SKJ	WCPFC
	Pacific Bluefin	PBF	WCPFC
	<u>Marlin</u>		
	Striped	MLS	SPO
	Black	BLM	WCPFC
	Blue	BUM	WCPFC
	Swordfish	SWO	SPO
	<u>Shark(s)</u>		
	Blue	BSH	WCPFC
	Mako	MAK	WCPFC
	Silky	FAL	WCPFC
Oceanic Whitetip	OCS	WCPFC	
Thresher	THR	WCPFC	
Porbeagle	POR	WCPFC	
Hammerhead	HAM	WCPFC	
Purse-Seine	<u>Tuna</u>		
	Bigeye	BET	WCPFC
	Yellowfin	YFT	WCPFC
	Skipjack	SKJ	WCPFC
Pole-and-Line	Bigeye	BET	WCPFC
	Yellowfin	YFT	WCPC
	Skipjack	SKJ	WCPFC

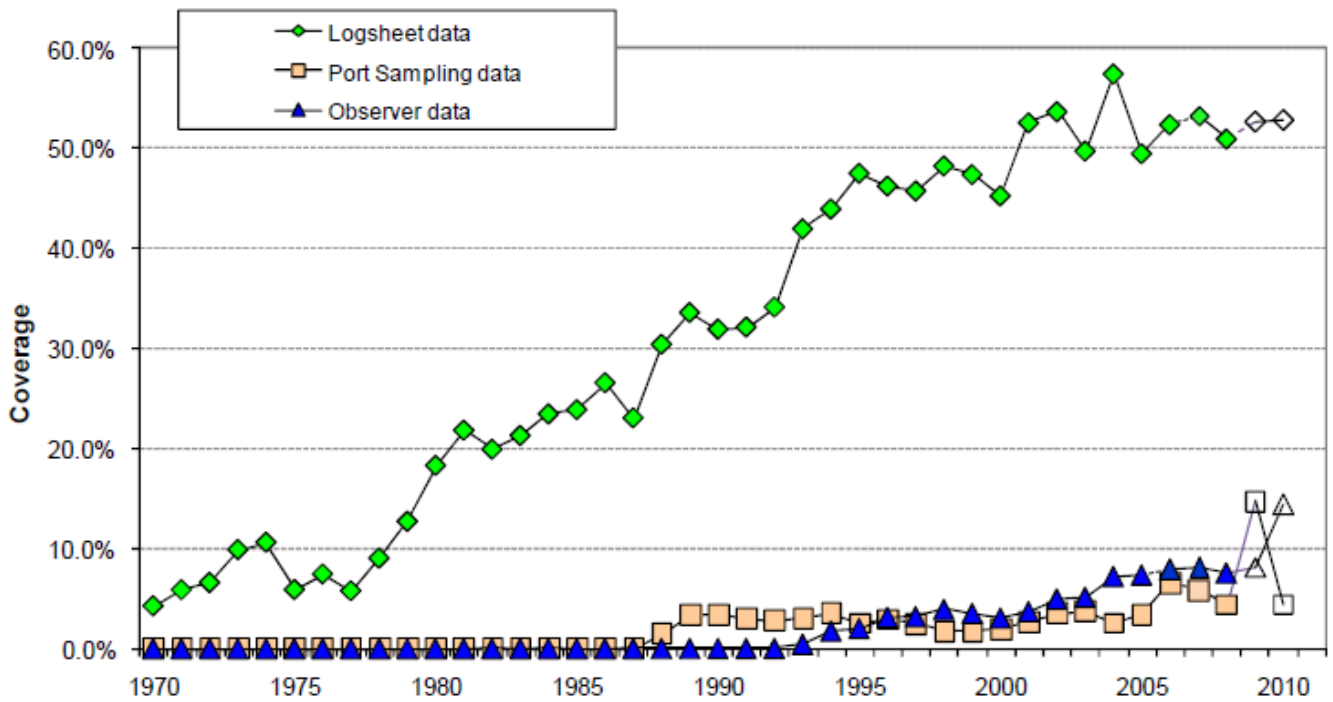


Figure 37- Operational (logsheet), port sampling and observer data compiled by the OFP. Data are held by SPC-OFP and provided to the WCPFC. The 2009 and 2010 data are provisional (Source: Williams, 2011).

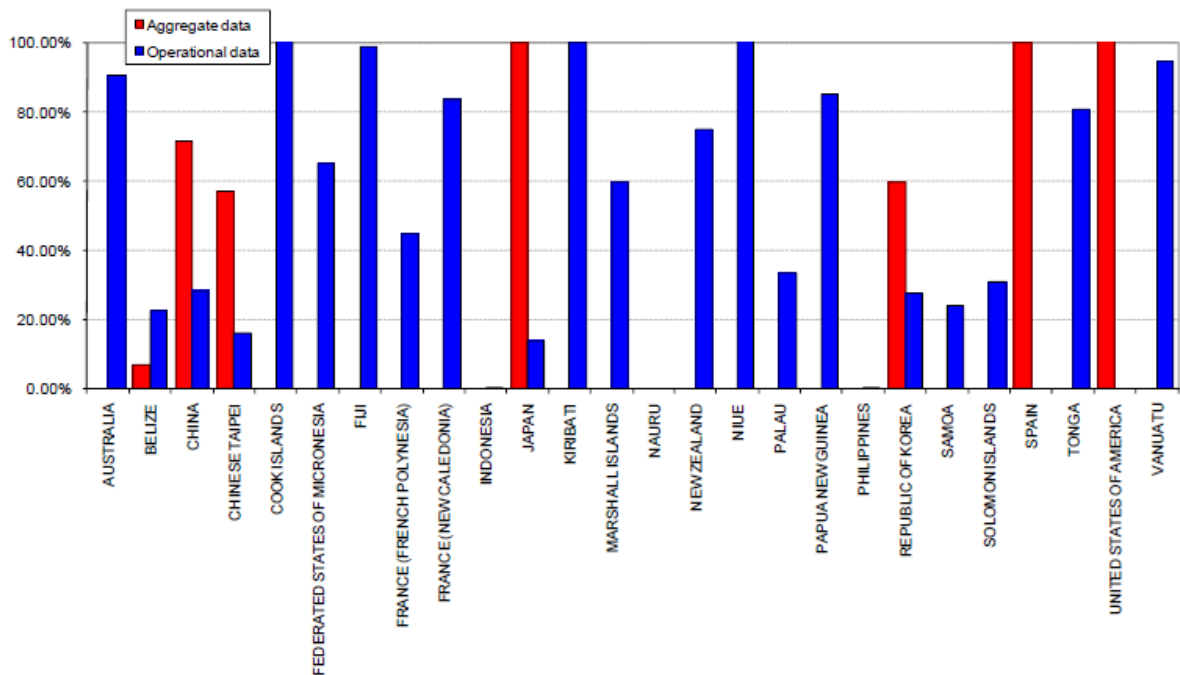


Figure 38- Coverage of 2000 to 2010 aggregate and operational (catch/effort) data from the Longline fishery. Aggregate data are provided to the WCPFC and operational data are held by SPC-OFP, although some of the latter are provided to WCPFC (Source: Williams, 2011).

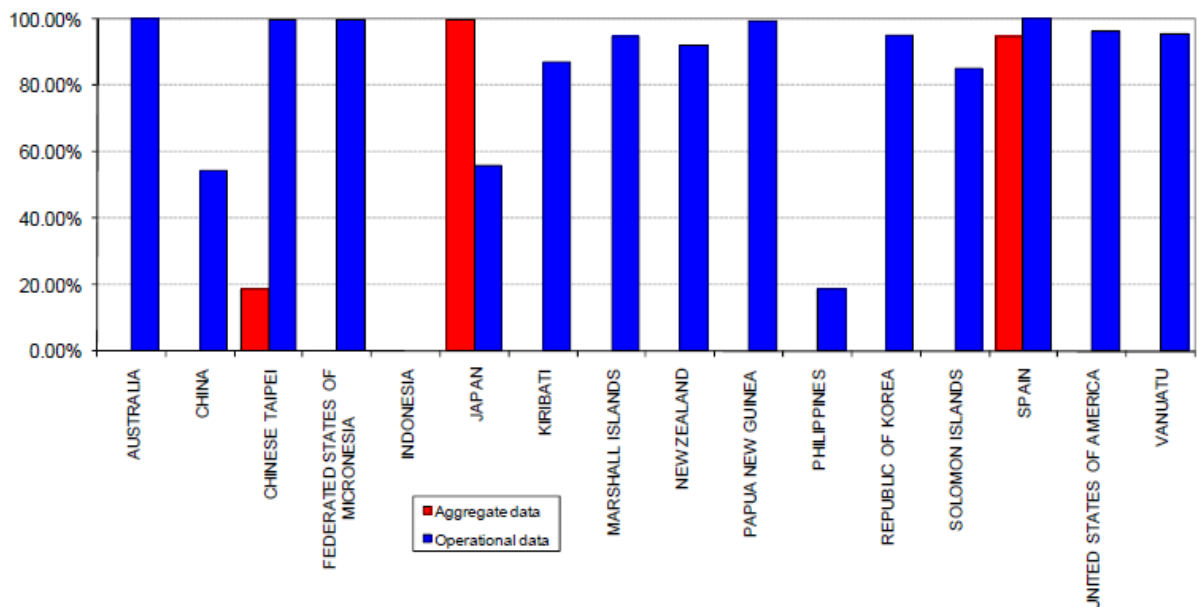


Figure 39- Coverage of 2000 to 2010 aggregate and operational (catch/effort) data from the Purse-Seine fishery. Aggregate data are provided to the WCPFC and operational data are held by SPC-OFP, although some of the latter are provided to WCPFC (Source: Williams, 2011).

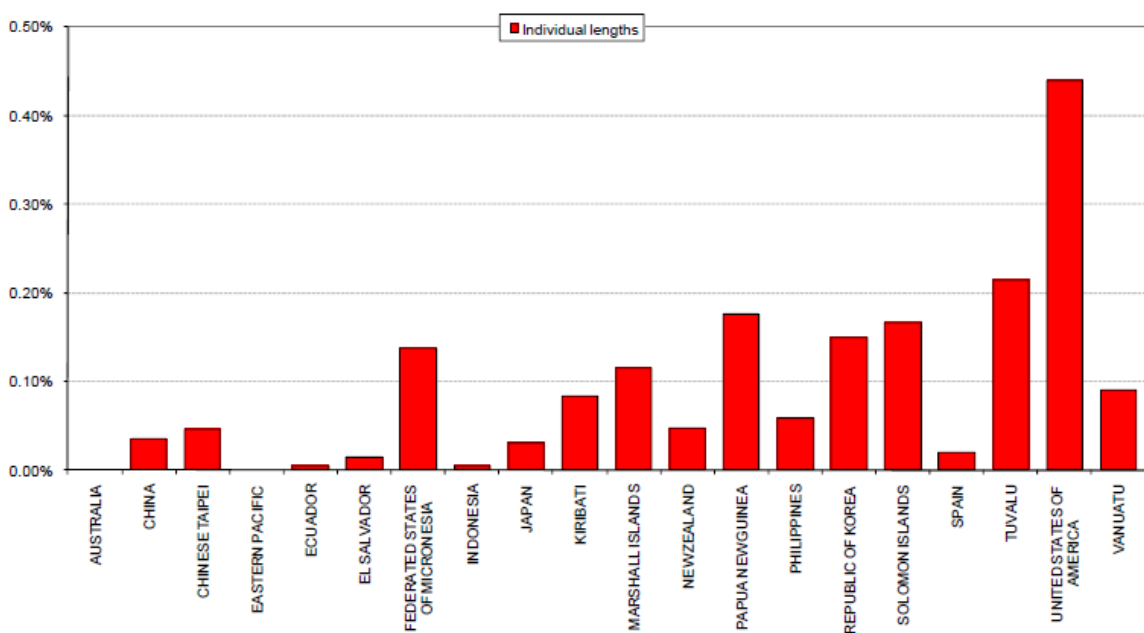


Figure 40- Coverage of 2000 to 2010 size composition data by fleet for the Longline fishery. Data are provided to the WCPFC (Source: Williams, 2011).

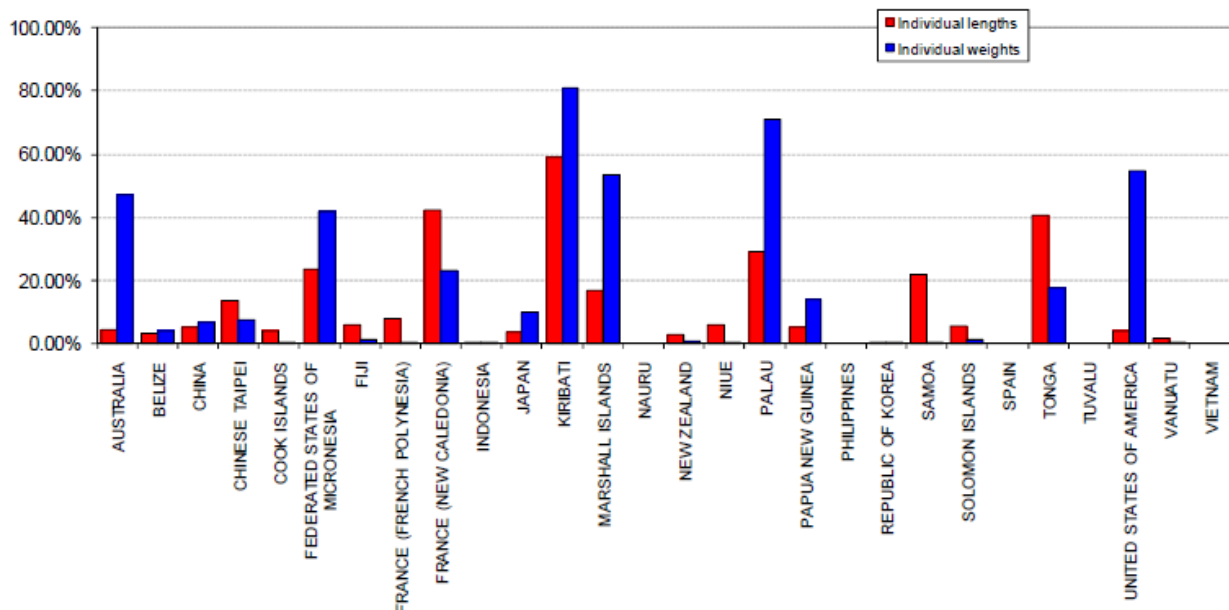


Figure 41- Coverage of 2000 to 2010 size composition data by fleet for the Purse-Seine fishery. Data are provided to the WCPFC (Source: Williams, 2011).

Panel Assessment and Recommendations on WCPFC Data Holdings

- The WCPFC, SPC-OFP and CCMs are to be congratulated on the comprehensive data holdings now available for WCPFC stocks;
- Consideration should however be given to ensure that the provenance of the WCPFC data holdings and the data held by the OFP are complementary and compatible; and
- On-going and timely publication of the WCPFC Tuna Fishery Yearbook is to be commended.

References

Williams, P. (2011). Scientific data available to the Western Central Pacific Fisheries Commission. WCPFC-SC7-2011/ST-WP-1.

5.5.4. Data gaps

A contemporary overview of important gaps in the WCPFC data holdings is provided in Appendix VII. A particularly persistent concern highlighted in this review is the need to resolve catch attribution uncertainties (Appendix VII, Section 2); a situation which prompted a commissioned consultancy on the matter (Gillett 2011). Other key data gaps identified include:

- Incomplete spatial coverage for Chinese Longline aggregate data;
- Missing shark species data from most CCMs;
- Missing aggregate catch/effort data from the Philippines, Indonesia and Vietnam;
- Lack of tuna catch for the Spanish Longline aggregate data; and

- Late submission of some Japanese Longline data

Key developments in the submission of Regional Observer Programme (ROP) data include:

- Authorization for the SPC to release ROP data to the WCPFC has now been granted by all Pacific Island CCMs ;
- Authorization has been granted for ROP data from two sub-regional observer programmes (US Multilateral Treaty and FSM Arrangement) to be provided to the WCPFC;
- The WCPFC and SPC-OFP have received the following observer data in recent months:
 - ROP trip data for a Chinese Taipei Longline vessel fishing in 2009/2010;
 - ROP trip data for US Longline vessel fishing in 2010;
 - Observer data (to the SPC-OFP) for 30+ fishing voyages by Philippine Purse-Seine vessels operating in Philippine waters (non-ROP trips) in 2010; and
 - Observer data (to the SPC-OFP) for 6 fishing voyages by Vietnamese Longline vessels operating in Vietnam waters (non-ROP trips).

However, there is still a significant backlog in ROP data provision and processing. This is mainly due to an overwhelming demand for observer services attributable to the current requirements for 100% coverage in the Purse-Seine fishery. Improving the provision of scanned data from national programs to the SPC/OFP also remains a significant challenge.

Developments associated with the Western Pacific East Asia Oceanic Fisheries Management Project (WPEA OFM) ⁸⁴ over the past year include:

- More comprehensive port sampling, cannery and logsheet data from Philippines;
- First-time, logsheet, port sampling and observer data provisions from Vietnam; and
- For the first time in more than a decade, Indonesian logsheet and port sampling data.

Recommendations forthcoming from SC7 (paragraphs 493 to 500 of the SC's report - At: <http://www.wcpfc.int/meetings/2011/7th-regular-session-scientific-committee>) indicate that:

- CCMs should consider the implications of adding text to Section 5⁸⁵ of the *Guidelines on Scientific Data to be Provided to the Commission* to make data requirements consistent with the requirement to provide information on statistical methods used to produce other types of fishery data;
- CCMs should also consider the implications of adding text to the Guidelines to ensure that scientists are provided with information on any changes in the way fishing takes place, when such information is not captured in the data being submitted;
- Delays have been noted in the provision of complete data sets by the April 30th deadline each year. Accordingly, CCMs are encouraged to develop better data provision processes to provide data to the WCPFC earlier than the April 30th deadline. This will allow for earlier

⁸⁴ The Project provides support to the Philippines, Indonesia and Vietnam in establishing tuna fishery data collection and management systems. It is now into the second of a three-year term

⁸⁵ Provision of aggregated size data

stock assessments, as well as sufficient time for CCMs to consider such assessments in advance of SC meetings;

- Recognition has been given to the importance of historical data to reduce uncertainties in WCPFC's scientific work. CCMs have been encouraged to consider ways to improve submission of historical data and its scientific use;
- The WCPFC Secretariat has been encouraged to cooperate with other tuna RFMOs to establish a common format for reporting data gaps⁸⁶;
- Note was taken of catch attribution issues associated with Chinese longline catches in Kiribati waters. There were also under-reported catches for 2009 and 2010 by these Chinese vessels licensed to fish in Kiribati. SC encouraged China to resubmit their data for 2009 and 2010. It also noted that Kiribati has not been provided complete records of these data. Noting the influence of the unclaimed bigeye catches (approximately 4,000 t in 2009) on the bigeye assessment and projection outcomes for WCPFC8, the SC forwarded the issue to the Technical and Compliance Committee (TCC) for consideration. Any projections subsequently produced will be more accurate with these data included;
- An increase of Chinese vessels into the WCPFC Area from waters beyond the WCPO has been noted. In this respect, Kobe II recommended that tuna fishing vessels should not move between different RFMO areas, unless in accordance with the rules of the RFMO in the target area;
- There are inconsistencies between fleets in the reporting of skipjack and yellowfin + bigeye on Purse-Seine logsheets. As accurate purse seine catch composition data are essential for scientific purposes, the matter has been referred to the TCC;
- Progress has been made in reconciling the ISC and WCPFC data holdings between ISC and WCPFC; and
- Providing data to the SPC, or WCPFC, after each observer trip has been recognized as being extremely important. Unfortunately, there have been some technical problems and the SPC and WCPFC ROP have been working hard to rectify these by providing equipment, personnel and other assistance for transferring data in a quick and timely manner.

Panel Assessment and Recommendations on Data Gaps

- **WCPFC is encouraged to give serious consideration to SC7 concerns for data identified in Section 5.5.1, as well other data interests highlighted below;**
- **All CCMs are encouraged to provide data in a timely manner, and in strict accordance, with WCPFC *Scientific Data to be Provided to the Commission*;**
- **Indonesia and the Philippines are encouraged to submit complete 2010 data for their bigeye surface fisheries, including Purse-Seine effort data;**
- **Continuing difficulties attached to submission of ROP data should be noted, and submission of such data is to be encouraged;**
- **Improving estimates of Purse-Seine catch species composition is very much supported, as are associated sampling and data collection efforts (Section 5.2);**

⁸⁶ As recommended at the Kobe III meeting in July 2011

- WCPFC is encouraged to urge CCMs to provide annual bigeye and yellowfin catch and effort data, as well as size composition, for all fleets in the format required by WCPFC as “*Scientific Data to be Provided to the Commission*”;
- The on-going shortage of data on which to base a comprehensive assessment of SPO swordfish is a matter of concern;
- WCPFC is encouraged to urge the EU and SPC to devote all efforts to improving the WCPFC SPO swordfish data holdings;
- WCPFC is encouraged to expand data collection for potential fisheries and ecosystem interactions to provide priority information on such interactions, to monitor its extent and effects, as well as the mitigation measures adopted and their results;
- Indonesian archipelagic waters catches should be included in the annual catch estimates between 2000 and 2010;
- Data inputs into pre-2000 Indonesian tuna fisheries annual catch estimates should be reviewed;
- Historical annual catch estimates using data from each of the domestic Vietnamese fisheries should be reconstructed;
- Logbook and port sampling data collection for Vietnamese Purse-Seine and Gillnet fisheries should be established;
- Vietnamese observer data should be reviewed to ensure their collection is in line with observer data collected elsewhere;
- Coastal States, fishing States, Chinese Taipei and Korea should be encouraged to specifically indicate whether double-counting of reported catch is occurring or not;
- The four CCMs concerned (Japan, Korea, China, and Chinese Taipei) should be encouraged to notify their intent to provide operational catch/effort data on longline fishing targeting bigeye and yellowfin to the WCPFC;
- Submission of aggregated Chinese catch and effort data in the Pacific Ocean for 2003 to 2007 should be encouraged; and
- Capacity building should continue in Philippines, Vietnam and Indonesia, through the WPEA program.

References

Gillett, R. (2011). Catch attribution in the Western and Central Pacific Fisheries Commission. Consultancy Report Submitted to WCPFC Secretariat.

5.5.5. Data access and sharing

The WCPFC has agreed, or is in the process of agreeing, various guidelines, rules and/or associated processes to direct the accessing/sharing of the different kinds of data held by the organization (Table 18). A key aspect of such considerations, currently under development,

includes the ongoing development of additional rules and procedures for access to, and dissemination of, data not in the public domain for compliance and enforcement purposes.

Table 17- Summary table of various WCPFC data access and information security arrangements (Source: <http://www.wcpfc.int/guidelines-procedures-and-regulations>)

Title	Date Introduced	Purpose	URL Link
Rules and Procedures for the Protection, Access to, and Dissemination of Data Compiled by the Commission ('RAP')	2007	WCPFC Commission & Secretariat-Held Data & Information Only To Be Released In Accordance With The Rules & Procedures To Reflect Commission's Desired Level of Confidentiality & Security	http://www.wcpfc.int/doc/data-02/rules-and-procedures-protection-access-and-dissemination-data-compiled-commission-revise
Rules and Procedures for the Protection, Access to, and Dissemination of High Seas Non-Public Domain Data and Information Compiled by the Commission for the Purpose of Monitoring, Control and Surveillance (MCS) Activities and the Access to and Dissemination of High Seas VMS Data for Scientific Purpose	2009	Allow Non-Public Domain Data To Be Made Available (Principally By Electronic Means) For MCS Activities On The High Seas, For Conduct Of MCS Activities In Areas Under National Jurisdiction & Supporting Of Investigations, Judicial & Administrative Procedures In Conformity With 2007 Rules Notwithstanding Paragraph 1 Of These Rules, Paragraphs 17 To 19, 22 & 29 to 32 Of The 2007 Rules Apply To Protection Dissemination, And access To, Non-Public Domain Data Covered By the 2009 Rules	http://www.wcpfc.int/doc/commission-09/rules-and-procedures-protection-access-and-dissemination-high-seas-non-public-doma
Information Security Policy	2007	Establishes Management Framework To Initiate & Control Implementation Of Information Security Within WCPFC	http://www.wcpfc.int/doc/data-03/information-security-policy
Media Access Policy	2011	Provides Guidelines For Media Access To, & Participation In, Annual Commission and Subsidiary Meetings. Access Encouraged In Accordance With Rule 36 of WCPFC Rules of Procedure So That Similar Access, & Transparency, Is Provided (As Far As Possible) For Accredited Media	http://www.wcpfc.int/doc/commission-11/media-access-policy

Scientific information and data in the public domain⁸⁷ are available on the WPCFC Website (<http://www.wcpfc.int/science-and-scientific-data-functions>).

Availability of operation level data is governed by confidentiality rules⁸⁸ so that information of individual vessel activity is not accessible. Therefore, catch and effort data in the public domain are aggregated to the level of three vessels, or more, since aggregated data provided by CCMs rarely details the number of vessels from which the data come from.

Collaborative data and information exchanges are sanctioned, and take place, between WCPFC and the SPC-OFP, IOTC and IATTC, in particular⁸⁹. Various memoranda of understanding (MOUs) between WCPFC and other international organizations (FFA, ISC, SPREP, IOTC, CCAMLR, CCSBT, ACAP and NPAFC) recognize the merits of exchanging relevant data/information on matters of mutual interests⁹⁰.

Panel Assessment and Recommendations on Data Access and Sharing

- **The WCPFC is to be commended on the way in which it compiles and manages its data and information holdings, particularly in respect to the levels of access it provides, whilst also providing for data confidentiality when necessary; and**
- **The Commission and SC may wish to give thought to protecting the intellectual property contained in various assessment reports in the event of publication of such reports outside the organization (e.g. in scientific journals).**

5.6. Quality and provision of scientific advice

The 2008 *Independent Review of the Commission's Transitional Science Structure and Functions*' (WPCFC, 2008) noted that the quality of scientific advice from both the SPC-OFP and the SC is high by international standards⁹¹.

The Review emphasized the unique relationships involved in the analyses and provision of WCPFC data. These relationships have their origin in Articles 10 to 15 of the Convention which provide a basis for the effective discharge of obligations set out in other parts of the Convention text. These obligations include those outlined in Article 5, which sets out principles

⁸⁷ These include results of research and stock assessments that involve target stock, or species taken incidentally by WCPFC-sanctioned Tuna fishery operations

⁸⁸ Details at: <http://www.wcpfc.int/doc/data-02/rules-and-procedures-protection-access-and-dissemination-data-compiled-commission-revise>

⁸⁹ Such exchanges take place under specific data exchange arrangements (<http://www.wcpfc.int/reasons-with-other-organisations>)

⁹⁰ At: <http://www.wcpfc.int/reasons-with-other-organisations>

⁹¹ This judgement was made notwithstanding uncertainties attributable to possible conflicts of interest and limited peer review

and potential measures for conservation and management. Such measures include the need to adopt measures "based on the best scientific evidence available", collection and sharing of data and protection of biodiversity. Article 6 is also relevant and addresses, *inter alia*, application of the precautionary approach, as well as assessment of non-target impacts on associated and/or dependent species. The need to take uncertainties into account is also one of its key elements.

Figure 42 illustrates the current relationships involved in the provision and analysis of data, and the resultant delivery of scientific and management advice to the Commission. The links⁹² between the ISC and the SC, and between the SC and the NC, show the relatively limited nature of the scientific input and advice passing between these institutions. The link between the SPC-OFP is also shown, subject to the provisions outlined in Article 13 of the Convention.

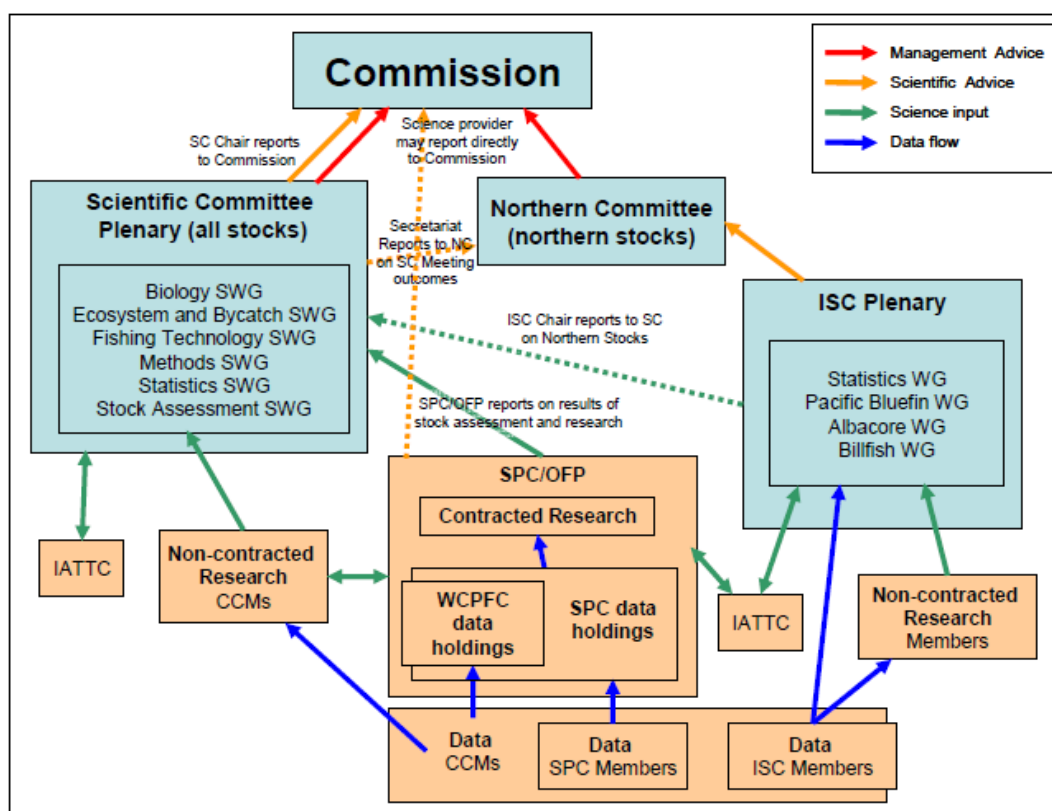


Figure 42- Current relationships between various institutions involved in the provision and analysis of data use by the WCPFC, including the resultant delivery of scientific and management advice to the Commission. (Source: <http://www.wcpfc.int/doc/wcpfc5-2008-11/independent-review-scientific-structure-and-function>)

⁹² Illustrated in Figure 42 by dotted lines. The links between the ISC and the NC, the SC and the Commission are governed by a MoU (Appendix VIII)

The MOU between WCPFC and ISC clearly states that it is up to the NC to request ISC scientific information and advice regarding northern fish stocks⁹³. The ISC then is required to provide the requested scientific information and advice back to the NC one month before its annual meeting. According to the MOU, however, the ISC shall also provide the requested information and advice to the Commission and to the Scientific Committee. The Panel understands the present WCPFC structure was a compromise from the negotiations that created the Commission, particularly with respect to its subsidiary bodies. This compromise is reflected in the MOU (Appendix VIII). Nonetheless, the Panel is concerned that the present communication flow established by the MOU prevents a more fluent dialogue between the Commission and the Scientific Committee with the ISC. This does not help transparency, especially in the way information is being conveyed by the ISC to the SC. In some instances, this has resulted in particular concerns with the assessments being undertaken by the ISC and their associated data inputs. Members of the Scientific Committee have also expressed the concern that there is a need to ensure that the same rigor is being applied to all the scientific advice provided to the WCPFC. As far as possible, such advice should be standardized with respect to assessments of stocks concerned and the input data used in such assessments.

Figure 42 also shows that non-contracted research CCMs and the IATTC may be involved in collaborative research. At a minimum, such collaborations involve sharing of views on, as well discussions of, assessments.

A summary of issues forthcoming from the Review was prepared by the Secretariat for the Northern Committee (WCPFC 2010) and is provided in Appendix IX. This summary includes outcomes agreed by SC5 and SC6. A similar summary was provided in 2009 to the WCPFC SC (WCPFC, 2009)⁹⁴.

Both the above summaries indicate that the SC's provenance as the statutory WCPFC scientific-advice-provision authority should be endorsed. This means that the SC "takes the lead in endorsing the work done by the Commission's science providers and SWGs". Therefore, the SC is the designated avenue for providing scientific advice to the Commission and NC, even if such advice is "a simple endorsement of the advice provided by bodies, such as the ISC, SPC-OFP, SC itself and the NC".

In specifically addressing the quality of scientific advice provided to the Commission, the Review highlighted five key issues:

⁹³ Annex 1: North Pacific albacore; Pacific Bluefin tuna; swordfish and other billfishes; By-catch (fish and non-fish) species. Other species may be added to the list with the mutual written concurrence of the Participants to this MoU.

⁹⁴ At: [WCPFC-SC5-2009-GN-WP-08 \[Summary Issues arising from Indep Review Report\].pdf](#)

- The need to implement periodic peer review⁹⁵ of all WPCPF contracted assessments, including reciprocal reviews in association with other Tuna RFMOs (e.g. IATTC, and ISC);
- Develop procedures to allow CCMs to undertake reciprocal assessments;
- Promote transparency by posting research results and inputs on the WCPFC Website;
- Develop strategies to maximize use of the SPC-OFP's, and other relevant, scientific expertise and knowledge to facilitate identification of, and decisions on, WCPFC scientific needs/priorities, and
- The need for continued SPC scientific training of talented individuals from developing CCMs to enhance such CCMs participation in the WCPFC's scientific activities.

Other important areas identified by the Review included the need to consider issues associated with: (a) data custodianship, (b) the ISC, (c) restructuring WCPFC SC processes, and (d) developing a workplan for implementing the Review's recommendations. Key highlights include:

- The need to strengthen confidence in data custodianship service so as to improve data submission shortfalls;
- Update guidelines⁹⁶ for processing the WCPFC SC work programme;
- Amend the MOU with the ISC to allow the WCPFC SC and NC to request work directly from the ISC;
- Clarify the respective roles of the WCPFC SC and ISC in providing advice to the NC and SC. As the statutory WCPFC scientific advisory body, the SC should lead endorsement of work done by the Commission's scientific advisors (see paragraph 4.6.8 above); and
- Establish an *Ad Hoc* Group on Socio-Economic Issues.

Many of the Review's suggestions in the previous two paragraphs remain unfilled, or are still under consideration by the Commission and SC. However, and most noticeably, the role of the ISC and its associations with the SC essentially remains unclear (see above), particularly in terms of a transparent flow of scientific information and advice between the two bodies.

Conversely, data custodianship and confidentiality arrangement concerns have been significantly reduced and the production of a *Draft Strategic Research Plan* (WCPFC, 2011)⁹⁷ should do much to provide a longer-term, priority framework for guiding the SC's activities. This Plan would also complement development of the annual SC Work Programme; an activity which has been in place for the past few years⁹⁸.

⁹⁵ Including allowing sufficient time for the WCPFC-SC to review any results forthcoming

⁹⁶ Appendix M of the SC4 Report. (At: <http://www.wcpfc.int/meetings/2008/4th-regular-session-scientific-committee>)

⁹⁷ At: <http://www.wcpfc.int/doc/gn-wp-05/draft-strategic-research-plan-2011%E2%80%932016>

⁹⁸ For example as posted at: <http://www.wcpfc.int/doc/gn-wp-06/work-programme-scientific-committee>

In terms of maximizing available scientific expertise and building scientific capacity in the WCPFC region, SC7 has noted the contribution of three Pacific Island scientists⁹⁹ in the research project on the life history characteristics of tuna, in particular bigeye. The SC has considered that the effective inclusion of scientists from within the region in such projects should be encouraged in the development of future tuna research.

References

- WCPFC (2009). Summary of Issues Arising From Independent Review. WCPFC-SC5/GN-WP-08. (At:http://www.wcpfc.int/search/apachesolr_search/WCPFC-SC5-2009/GN-WP-08).
- WCPFC (2010). Summary of Issues Arising From The Independent Review of the Commission's Transitional Science Structure and Functions. WCPFC-NC6/WP-05. (At: http://www.wcpfc.int/search/apachesolr_search/WCPFC-NC6/WP-05)
- WCPFC (2011). [Draft] Strategic Research Plan 2012-2016. WCPFC-SC7/GN-WP-05. (At: <http://www.wcpfc.int/doc/gn-wp-05/draft-strategic-research-plan-2012%E2%80%932016>)

Panel Assessment and Recommendations on Quality and Provision of Scientific Advice

- **Due recognition should be given to the vibrancy and high quality of scientific advice being provided to WCPFC by the SC and SPC-OFP;**
- **The Commission is also encouraged to formally define the SC's provenance as the key supplier of scientific advice to the Commission;**
- **The Commission is encouraged to resolve the remaining issues still outstanding from the 2008 'Independent Review of the Commission's Transitional Science Structure and Functions';**
- **Notable issues to be assessed include those highlighted above, namely:**
 - **The need to strengthen confidence in data custodianship service so as to improve data submission shortfalls;**
 - **Update guidelines¹⁰⁰ for processing the WCPFC SC work program;**
 - **Provide a mechanism to allow the SC to request scientific information directly to the ISC;**
 - **Clarify the respective roles of the WCPFC SC and ISC in providing advice to the NC and SC. As the statutory WCPFC scientific advisory body, the SC should lead endorsement of work done by the Commission's scientific advisors (see above); and**
 - **Establish an *Ad Hoc* Group on Socio-Economic Issues;**

⁹⁹ Along with contributions by a wide range of organizations, including industry

¹⁰⁰ Appendix M of the SC4 Report. (At: <http://www.wcpfc.int/meetings/2008/4th-regular-session-scientific-committee>)

- **Subject to the above, the Commission is encouraged to clarify the role of the ISC, and its associations with the Commission and the SC, particularly in respect to direct exchanges of scientific information and advice;**
- **To encourage scientific transparency with respect to assessments being undertaken the same rigor should be applied to all the scientific advice provided to the Commission, to extent possible, in a standardized manner;**
- **The SC is encouraged to continue developing a WCPFC Strategic Research Plan;**
- **The SC is also encouraged to develop a summary document (i.e. 'Blind Freddy's Guide') which provides information on the assessment it undertakes, as well as on the underlying science being pursued. This document should be produced in lay and easy-to-follow language aimed at enhancing understanding across all WCPFC participants (not just scientists); and**
- **The question of broadening scientific capacity available within CCMs should be considered further, possibly with a view to developing a WCPFC institutional policy on the matter, which would identify ways how such capacity could be grown within the region. It is noted that a number of RFMOs (e.g. CCAMLR, ICCAT) have such policies in place to augment scientific capacity and build scientific expertise available to members from developing countries (as per the 1995 United Nations Fish Stocks Agreement¹⁰¹ Articles 25.1(c) and 25.2).**

5.7. Adoption of conservation and management measures

Within the WCPFC convention area there are only 10 target species which fall under the classification of straddling and highly migratory fish. Six of these are tuna species: South Pacific albacore, North Pacific albacore, bigeye, skipjack, yellowfin, and bluefin. The other four are billfish species: southern Pacific swordfish, northern Pacific swordfish, southwestern Pacific striped marlin, and northern Pacific striped marlin. The status of these species has been examined under 4.2 Status of Living Marine Resources. A brief description including where the species occurs is also provided for within that section.

This section examines the current CMMs (conservation and management measures) as adopted by the WCPFC and assesses effectiveness of these CMMs in achieving the objectives of the WCPFC as laid out in the WCPFC Convention, including its effectiveness in implementing rebuilding plans for recovering depleted or overfished stocks where and if applicable. It also looks at effectiveness of the WCPFC in applying the precautionary approach in accordance with WCPFC Convention Articles 5(c) and 6 and as set forth in UNFSA Article 6 and the Code of Conduct for Responsible Fisheries Article 7.5, including the application of precautionary

¹⁰¹ At: http://www.un.org/depts/los/convention_agreements/convention_overview_fish_stocks.htm

reference points. The stock status as already examined in 4.2 will be revisited in so far as necessary to discuss the effectiveness of CMMs.

Since its inception WCPFC has adopted a total of 48 CMMs of which 27 are currently in force. Those no longer in force have been replaced by later CMMs. Nine of the CMMs currently in force are specific to target species, 3 are specific to non-target species, 4 are broad measures and impacts management of both target and non-target species, 7 are specific to MCS or targeted at combating IUU fishing and affect all major target stocks, and 4 are administrative in nature and are either adopted at, or replacing CMMs adopted at, the inaugural meeting of the commission. There is no program or protocol in place for periodical assessment of compliance with the measures adopted.

5.7.1. Conservation and management measures for target species

South Pacific albacore

The most recent assessment of this stock in 2011 found no overfishing of the stock and that it is not overfished. The WCPFC first adopted a CMM for South Pacific albacore in 2005 (CMM 2005-02), which was rescinded and replaced in 2010 by CMM 2010-05. The 2010 Measure provides that CCMs shall not increase the number of fishing vessels actively fishing for South Pacific albacore in the Convention Area south of 20°S above 2005 levels. The Measure also makes fairly vague provision for cooperation between CCMs that actively fish for this species south of the equator, including cooperation and collaboration on research to reduce uncertainty with regard to the status of this stock. CCMs are required to report annually to WCPFC on the catch levels of South Pacific albacore in the Convention area south of 20°S, including the catch levels of their fishing vessels that have taken South Pacific albacore as a bycatch. The measure is to be reviewed annually on the basis of advice from the Scientific Committee.

Panel Assessment and Recommendations

- **Considering that the stock of the South Pacific albacore has been assessed and is presently not overfished nor suffering overfishing (see Section 5.2), the present measure (2010-05), limiting the level of fishing capacity, in terms of the number of vessels allowed to actively fish for the species, seems adequate and commensurate with the status of the stock, provided that fishing effort is indeed managed in strict conformity with this measure.**

Bigeye

The most recent assessment of this stock in 2011 found overfishing of the stock and that although the stock is not yet overfished, it is at threat of becoming overfished. The WCPFC adopted CMMs for bigeye and yellowfin tuna in 2005 and 2006, which have since been superseded by the adoption of CMM 2008-01. The 2008 measure is to be implemented over a three-year period (2009-2011). One of the key objectives of the measure is to reduce bigeye tuna fishing mortality by at least 30% from the annual average during 2001-2004. In order to achieve this, the CMM provides different measures for purse seine fisheries and for longline fisheries.

For purse seine fisheries in the area bounded by 20°N and 20°S, in 2009 there was a 2-month closure of fishing on FADs in the EEZs of PNA members and on the high seas, and in 2010-2011 there was a 3-month FAD closure in those waters. These measures within CMM 2008-01 closely resemble the provisions of the Third Arrangement Implementing the Nauru Agreement ('3IA'), which PNA members adopted in May 2008. The CMM notes that PNA members will implement the measure through domestic processes and legislation, including the VDS (Vessel Day Scheme) which limits fishing effort in PNA waters, and the 3-month FAD closure provided for in the 3IA. CMM 2008-01 provides an alternative to high seas FAD closure: members who can demonstrate a 'functioning capacity to implement [alternative] measures in an effective and transparent manner' may adopt a member-specific catch limit to reduce their catch by weight of bigeye tuna in the purse seine fishery by at least 10%. CMM 2008-01 also requires non-PNA CCMs to 'implement compatible measures to reduce purse seine fishing mortality on bigeye tuna in their EEZs'.

Other measures for purse seine fisheries include a requirement for all CCMs fishing on the high seas to submit FAD management plans to WCPFC by July 2009, 100% observer coverage from 1 January 2010, catch retention rules to create a disincentive to capture small bigeye and yellowfin, and undertakings for the WCPFC and CCMs to explore methods to reduce juvenile catches.

The measures directed at longline fisheries do not address vessels but rather member states and participating territories that have longline fleets. With some exceptions, members and cooperating non-members must reduce their catch of bigeye by 10% in 2009, 20% in 2010 and 30% in 2011, relative to average 2001-2004 levels.

CCMs are required under CMM 2008-01 to provide to WCPFC catch and effort data and size composition data for all fleets in relation to bigeye and yellowfin, and are also required to report to each regular session of the TCC on the implementation of CMM 2008-01. The

measures in CMM 2008-01 are reviewed annually, and the 2011 review of CMM 2008-01 is discussed below.

CMM 2008-01 was supplemented in 2009 with CMM 2009-02 and 2009-05. The objectives of CMM 2009-02 are ‘to ensure consistent and robust application of FAD closures and catch retention in the high seas between 20°S and 20°N through the specification of minimum standards’, and ‘to apply high standards to the application of the FAD closure and catch retention in order to remove any possibility for the targeting of aggregated fish, or the discard of small fish’. The CMM reminds flag states of their responsibility to ensure that purse seine vessels flying their flag comply with the rules relating to FAD closure and catch retention. The measure seeks to close a number of perceived ‘loopholes’ and to expressly prohibit certain tricks that were apparently being used by some vessels to get around the FAD closures, by, for example, providing that during a FAD closure period ‘no purse seine vessel shall conduct any part of a set within one nautical mile of a FAD’, the operator of a vessel must not allow the vessel to be used to aggregate fish or to move aggregated fish, and vessels must not be used to operate in cooperation with each other in order to catch aggregated fish. CMM 2009-02 also prescribes in detail the limited circumstances in which it is permissible to discard fish and the manner in which they must be discarded so as to maximize the chance of discarded fish remaining alive.

CMM 2009-05 prohibits fishing on data buoys (such as those used to gather and transmit meteorological and oceanographic data), which were reportedly being used by some vessels as FADs. The measure requires CCMs to prohibit their fishing vessels from fishing within one nautical mile of or interacting with a data buoy in the high seas of the Convention Area (para 1), and further provides that fishing activities inconsistent with paragraph 1 ‘shall be deemed fishing activities that undermine the WCPF Convention and WCPFC conservation and management measures and shall constitute a serious violation in accordance with Article 25 of the Convention’.

Panel Assessment and Recommendations

- **Since the bigeye tuna is addressed in conjunction with yellowfin tuna, in CMM 2008-01, Panel assessment and recommendations with regard to this measure are included after yellowfin tuna below.**

Yellowfin

Yellowfin was last assessed in 2011 and assessment found no overfishing of the stock and that it is not overfished. CMM 2008-01, as supplemented by CMM 2009-02, relates to both bigeye and yellowfin tuna. As discussed above, the objective of CMM 2008-01 in relation to

bigeye is to reduce purse seine fishing mortality by 30% over a 3 year period, whilst the objective in relation to yellowfin is more modest: a reduction in the risk of overfishing of yellowfin, which means that the catch of yellowfin should not be increased beyond average 2001-2004 levels.

The provisions in CMM 2008-01 relating to juvenile tuna catch mitigation research, 100% observer coverage, data provision and reporting apply broadly to CCMs or to CCMs fishing in certain waters, and serve to conserve and manage both yellowfin and bigeye stocks. However, some of the measures within CMM 2008-01 discussed above are directed solely at bigeye, being the stock that is subject to overfishing, and do not apply directly to yellowfin – see for example paragraph 18, which requires non-PNA CCMs to implement measures compatible with PNA and high seas FAD closure and catch retention measures, ‘to reduce purse seine fishing mortality on *bigeye tuna* in their EEZs’ (emphasis added).

CMMs 2009-02 and 2009-05 are also relevant to yellowfin, and have been outlined above under bigeye.

Panel Assessment and Recommendations

- **The yellowfin tuna is addressed in conjunction with the bigeye tuna, in Panel assessment and recommendations related to CMM 2008-01, below.**

Review of CMM-2008-01

CMM-2008-01 is a comprehensive measure addressing the conservation of bigeye and yellowfin stocks in the WCPFC Area, requiring the compatibility between high seas and EEZ. It also strives to:

- Maintain stocks at MSY levels, as qualified by relevant environmental and economic factors including the special requirements of developing States in the WCPFC Area under Convention Article 5;
- Achieve¹⁰² a minimum 30% reduction in bigeye fishing mortality from the annual average during the period 2001 to 2004, or in 2004;
- Ensure that there is no increase in yellowfin fishing mortality beyond the annual average during the period 2001 to 2004, or in 2004; and
- Adopt a package of measures (including high seas area closures) to be reviewed annually, and adjusted as necessary by the Commission¹⁰³.

¹⁰² Through implementing a package of measures over a three-year period commencing in 2009

¹⁰³ The review is required to take account of scientific advice available at the time, as well as implementation of CMM 2008-01 provisions. Furthermore, the review is to include any adjustments required by Commission decisions concerning management objectives and reference points

In 2011, WCPFC SC considered three submissions (Hampton and Williams, 2011; SPC-OFP 2011; Sibert *et al.* 2001) relevant to the review of CMM 2008-01.

In general, the utility of these submissions to the CMM 2008-01 review process have been welcomed by the SC. Most notably, the Commission's attention has been drawn to the following in considering the implementation of CMM 2008-01:

- Trends in FAD usage and associated catch information indicate that the FAD closure has been effective in reducing the use of such devices in the Purse-Seine fishery;
- Limits placed on Purse-Seine operation have not adequately constrained that fishery's effort;
- Purse-Seine bigeye catches (in the area 20°N to 20°S) declined by 21% in 2010 compared to 2009, and by 7.3% from the 2001-2004 average;
- Closing areas to Purse-Seine fishing will not be effective for bigeye conservation, without due consideration of displaced fishing effort; and
- Provisional longline catches in 2010 are 30% lower than the 2001 to 2004 level. However, this estimate is based on incomplete data and is despite an increase in fleet size. In addition, the reductions in catch may not necessarily correspond to reductions in fishing mortality.

The SC has identified certain updates to the projected results from the review, along with specific outputs. Stochastic projections are also needed to calculate the probabilities of exceeding various reference points the SC has noted.

Panel Assessment and Recommendations on Review of CMM-2008-01

- **The Commission and SC are to be commended for the review process attached to implementation of CMM 2008-01 and encourages further reviews of this kind;**
- **In the process of reviewing 2008-01, serious consideration should be given to the multispecies nature of the purseseine fishery, so that an eventual displacement of fishing effort from one area or for one species, will not result in undesirable impacts on another area and/ or species.;**
- **Noting that CMM 2008-01 will be reviewed, every effort should be made to clarify and simplify its various requirements, in order to ensure compatibility of measures for the EEZs and the High Seas, particularly in respect to bigeye tuna fishing mortality.**
- **Commission is encouraged to consider additional provisions above thos in the current CMM 2008-01 to secure further reductions in bigeye tuna fishing mortality;**
- **The Commission is encouraged to seriously consider limiting yellowfin fishing mortality in the western equatorial region to current levels;**
- **The Commission is also encouraged to consider provisions aimed at reducing yellowfin juvenile fishing mortality.**

References

Hampton, J. and Williams, P. (2011). Analysis of purse seine set type behavior in 2009 and 2010. WCPFC-SC7-2011/MI-WP-01.

SPC-OFP (2011). Projections based on 2011 assessments. WCPFC-SC7-2011/MI-WP-02.

Sibert, J., Senina, I. and Lehodey, P. (2011). Prospects for effective conservation of bigeye tuna stocks in the Western Central Pacific Ocean. WCPFC-SC7-2011/MI-WP-01.

Skipjack

Skipjack was last assessed in 2011 and assessment found no overfishing of the stock and that it is not overfished. There has never been any CMM adopted by the WCPFC for skipjack. However, CMM 2008-01, 2009-02, and 2009-05, although not targeted at skipjack, affect purse-seine fishing in the area where skipjack occurs and constraints fishing effort on the stock. Such matters were scheduled to be considered in 2011 but further postponed to 2012.

Panel Assessment and Recommendations

- **The Panel notes that the skipjack stock is healthy, but that concerns have been expressed about high catches in the equatorial region, which could lead to a reduction in the availability of the species in the high latitudes.**
- **It should also be noted that CMM 2008-01, although directed to bigeye tuna and yellowfin tuna, as above discussed, since it imposes limits on total purse seine fishing effort, also indirectly positively affects the skipjack stock.**
- **Considering the multispecies nature of the purseine fishery, the Panel welcomes the revision of 2008-1 currently scheduled for WCPFC 8, with the expectation that skipjack stock will be addressed by it in a more direct way. .**

South Pacific swordfish

This stock was last assessed in 2009 and its status was unclear. WCPFC first adopted a CMM in relation to South Pacific swordfish in 2008 (CMM 2008-05) which was superseded in 2009 by CMM 2009-03. The objective of CMM 2009-03 is to provide for the sustainable management of swordfish in the South Pacific by not increasing catch or effort beyond 2000-2005/6 levels. The 2009 Measure requires CCMs to limit the number of their fishing vessels for swordfish in the Convention Area south of 20°S, to the number in any one year between the period 2000- 2005. CCMs must also limit the amount of swordfish caught by fishing vessels flagged to them in the Convention Area south of 20°S to the amount caught in any one year during the period 2000- 2006. CCMs are prohibited from shifting their fishing effort for

swordfish to the area north of 20°S, as a result of this measure. CCMs are also required to submit to WCPFC comprehensive reports in relation to specified vessels, detailing the number of vessels that fished for swordfish and their total swordfish catch. CMM 2009-03 further requires CCMs to cooperate to protect the long-term sustainability and economic viability of the fisheries for swordfish in the Southwest Pacific, and in particular to cooperate on research to reduce uncertainty with regard to the status of swordfish stocks (the ‘standard CCM cooperation provision’). If a CCM exceeds the total catch of swordfish specified for it under CCM 2009-03, that CCM will in the following year be subject to a reduction in their catch limit equal to the exceeded amount.

Panel Assessment and Recommendations

- **Although the south Pacific swordfish stock was assessed not to be overfished or suffering from overfishing, in the last assessment, done in 2008, the condition of the south-central Pacific stock could not be evaluated. As the last assessment was done 4 years ago, it should be urgently updated. To this aim it is crucial that CCMs do provide the data necessary for such assessment.**
- **The Panel notes with concern that CMM 2009-03 does not impose an actual limit on the number of vessels actively fishing for swordfish to the south of 20°S, it just requires CCMs to exercise restraint through limiting the number of their vessels fishing for the species and the amount of swordfish caught by them.**
- **With a continuing lack of an updated assessment, in accordance with paragraph 9 of CMM 2009-03, the interim measure shall continue to be applied in a manner that does not allow any increase in the fishing mortality of the species.**

Southwestern Pacific striped marlin

This stock was last assessed in 2006 and its status is unknown with high probability that overfishing is occurring and that the stock is already overfished. The objective of CMM 2006-04 for striped marlin in the southwest Pacific is to protect the long-term sustainability and economic viability of the fisheries for the species in the Southwest Pacific by avoiding any increase in fishing mortality of this stock. The measure requires CCMs (with some exceptions) to limit the number of their fishing vessels fishing for striped marlin in the Convention Area south of 15°S, to the number in any one year in the period 2000– 2004. It includes the standard CCM cooperation provision, and the standard SIDS and coastal state provision. CCMs were required under CMM 2006-04 to provide information to WCPFC by 1 July 2007 on the number of their vessels that had fished for striped marlin in the Convention area south of 15°S between 2000 and 2004, and to nominate the maximum number of vessels that would continue to be permitted to fish for striped marlin in the area south of 15°S. CCMs are also required to report

annually to WCPFC on catch levels for striped marlin of vessels that have taken striped marlin as a bycatch, and the number and catch levels of vessels fishing for striped marlin in the Convention Area south of 15°S. The Measure requires the Executive Director to compile and disseminate the information provided by CCMs in accordance with this CMM, and provides that the TCC must monitor and review compliance with this measure as necessary.

Panel Assessment and Recommendations

- **Considering that: a) 6 years have already passed since the first attempt to assess the condition of the Southwest Pacific striped marlin stock, b) the significant uncertainties regarding the parameters used in the model; and, even more so, c) its results, indicating that the levels of fishing mortality might be approximating or have already exceeded F_{MSY} and that current spawning and biomass levels were likely close or already below B_{MSY} , the Panel strongly urges that a new assessment of this stock be undertaken as a matter of priority. To this aim, any new information available should be taken into account.**
- **Considering the species is taken almost exclusively as a bycatch, the measure in place for this stock (2006-04), limiting the number of fishing vessels fishing for striped marlin in the Convention Area south of 15°S, is ineffective, because it does not address the actual catch taken. The Panel, therefore, urges the Commission, on the basis of the new stock assessment to be done as matter of priority, to adopt and implement clear measures to limit fishing mortality.**

North Pacific striped marlin

This stock was last assessed in 2010. Assessment found that the stock is depleted and overfishing is occurring. The objective of CMM 2010-01 is, over a three-year period, to reduce fishing mortality of North Pacific striped marlin stock to 80% of 2003 levels. The Measure applies in the high seas and EEZs in the Convention Area north of the equator. Each flag/chartering CCM with vessels fishing in the relevant area is subject to catch limits for North Pacific striped marlin from 2011 onwards (the figure against which reductions must be made is the highest catch between 2000 and 2003): in 2011 there must be a 10% reduction; in 2012, 15%; and in 2013 and beyond, a reduction of 20%. The Measure provides that ‘each flag/chartering CCM shall decide on the management measures required to ensure that its flagged/chartered vessels operate under the [specified] catch limits... noting that previous examples of such measures have included effort reductions, gear modification and spatial management.’ Each flag/chartering CCM was required to report to WCPFC by 30 April 2011 ‘verifiable information regarding its catch of North Pacific striped marlin by its flagged/ chartered vessels north of the equator’. CCMs must also report each year in their part 2 annual report on their

implementation of CMM 2010-01, including the total catch taken of North Pacific striped marlin. The Measure is to be amended in 2011 based on the revised stock assessment.

Panel Assessment and Recommendations

- **The Panel urges that a new assessment of the stock be done as a matter of priority;**
- **Despite the measure 2010-01 is a positive step to reduce fishing mortality for the species, the panel noted that the stipulation of a proportionate reduction in paragraphs 4 and 5 of the measure makes it difficult to figure out what is the actual catch limit for the species. This measure, including eventual catch limits, shall be revised upon the results of the new assessment to ensure that fishing mortality for the species is compatible with Convention objectives.**

North Pacific albacore

North Pacific albacore was last assessed in 2011. No overfishing was found and the stock was deemed healthy and not overfished. The objective of CMM 2005-03 is to constrain the total level of fishing effort for North Pacific albacore in the Convention Area north of the equator at the levels that were current in 2005.

CMM 2005-03 provides that CCMs must ‘take necessary measures to ensure that the level of fishing effort by their vessels fishing for North Pacific albacore in the [Convention Area] is not increased beyond current levels.’¹⁰⁴. CCMs are required under this Measure to report to the WCPFC:

- every six months (annually for small coastal fisheries) on all catches of North Pacific albacore, no later than one year after the end of the period covered; and
- annually on all catches of albacore north of the equator and all fishing effort north of the equator in fisheries directed at albacore, including details of gear type and number of vessel-days fished.

The Measure further requires the Executive Director of WCPFC to communicate the resolution adopting the measure to the IATTC and request that the two Commissions seek to achieve a consistent set of CMMs for North Pacific albacore. The Measure includes a provision that takes into account the special requirements of Small Island Developing State members that is somewhat narrower than the standard SIDS provision, as it refers to not prejudicing the rights of SIDS members ‘whose current fishing activity for North Pacific albacore is limited, but that

¹⁰⁴ ‘Current’ should arguably be taken to refer to 2003 levels, which was the most recent data on catch levels for North Pacific albacore at the time this CMM was adopted

have a real interest in, and *history of*, fishing for the species' (emphasis added). The NC is required under CMM 2005-03, in coordination with the SC and other bodies, to monitor the status of North Pacific albacore and to report on the status at each annual meeting of the WCPFC including making recommendations as necessary.

Panel Assessment and Recommendations

- **Considering that the stock of the North Pacific albacore has been assessed and is presently not overfished nor suffering overfishing (see Section 5.2), the present measure (2005-03), limiting the level of fishing effort to the one in 2005, despite old, seems to be adequate and commensurate with the status of the stock.**
- **The Panel welcomes the independent review of the current ISC North Pacific albacore CMM, to ensure that fishing mortality is restrained in any future formulation of the measure.**

Pacific bluefin tuna

Pacific bluefin tuna was last assessed in 2009. The principal objective of CMM 2010-04 is to ensure, through control of fishing effort, that the level of fishing mortality for Pacific bluefin tuna in the Convention Area is not increased above the current level. The Measure provides that CCMs must 'take measures necessary to ensure that total fishing effort by their vessels fishing for Pacific bluefin tuna in the area north of the 20° north shall stay below the 2002-2004 levels for 2011 and 2012, except for artisanal fisheries.' The measure also requires CCMS (except Korea) to adopt measures to reduce the catch of juvenile bluefin. This exception for Korea was revised at NC 7, and will be presented to WCPFC 8, for discussion and approval.

The Measure makes provision for improved data collection for Pacific bluefin tuna fisheries, and requires CCMs to report to the Executive Director of WCPFC at the end of 2011 and the end of 2012 on measures used to implement specified provisions of the CMM – which reports are to be reviewed annually by the NC.

The Measure also requires the Executive Director to communicate the CMM to the IATTC Secretariat and its relevant contracting parties to request them to take equivalent measures for the management and conservation of Pacific bluefin tuna. The Measure also includes a narrow SIDS provision. CMM 2010-04 as revised will be reviewed by the NC in 2012 on the basis of the new ISC stock assessment for Pacific bluefin.

Panel Assessment and Recommendations

- The present status of the Pacific Bluefin tuna stock is not clear from available documents, particularly with respect to specific biological Reference Points, including present fishing mortality in relation to F_{MSY} or $F_{0.1}$, for instance. This limitation makes it very difficult for the Panel to assess the status of the stock and the adequacy of current CMM;
- It is noted that CMM 2010-04 will be reviewed by the NC on 2012 based on new ISC stock assessment for the Pacific Bluefin tuna;
- In respect of the above, the Panel notes that the SC has repeatedly advised a reduction of Pacific Bluefin Tuna fishing mortality to 2002/2004 levels or below. In particular, the reduction of juvenile (0-3 year) fishing mortality has also been advised, and the NC has been requested to monitor it;
- The Panel urges the Commission to take account of the results of the new stock assessment and to develop biological reference points and clear harvest rules for this species as a matter of priority;

North Pacific swordfish

The most recent assessment of this stock in 2009 found the stock healthy with no overfishing occurring and the stock not overfished. . The Commission has been requested to task the NC with providing an updated assessment of the stock in 2013 for SC 9 review. There is no specific CMM in place for this stock, although paragraph 3, of CMM 2009-03, establishes that CCMs shall not shift fishing effort for swordfish to the area north of 20°S as a result of that measure.

Panel Assessment and Recommendations

- Although the North Pacific swordfish stock was assessed not to be overfished or suffering from overfishing, in 2009, the Panel encourages the Commission to consider advice offered by SC 9 on the scheduled NC assessment of North Pacific Swordfish in 2013.

5.7.2. Conservation and management measures supporting protection of non-target species and the marine environment

Three of the WCPFC CMMs currently in force are specific to non-target species. CMM 2010-07 is specific to sharks; CMM 2008-03 is specific to sea turtles; and CMM 2007-04 is specific to seabirds (Table 16). CMM 2008-04, which prohibits the use of driftnets on the high seas in the convention area, is beneficial to the protection of the marine environment. CMM

2008-01 three- month FAD closure also has notable beneficial effect on bycatch. For further discussion on this issue refer to Section 5.4., on Ecosystem Approach.

Panel Assessment and Recommendations

- **The Panel Assessment and Recommendations relevant to Section 5.4.2 apply here as well.**

5.8. Capacity management

The following FAO adopted definition of fishing capacity is the definition that will be used for the purpose of discussion in this section on capacity limit:

The amount of fish (or fishing effort) that can be produced of a period of time (e.g. a year or a fishing season) by a vessel of a fleet if fully utilized and for a given resource condition.
<http://www.fao.org/fishery/topic/1485/en>

The WCPFC has not adopted any measure specifically dealing with capacity, although several CMM do establish effort limits, including limits on the number of vessels targeting certain species. At the 2010 Commission meeting, Japan tabled an overall capacity restriction proposal which was not supported by small island coastal states who had concerns that it was setting limits on the number of vessels and that such would effectively block entry of new vessels, including those of coastal states, into the convention area. Coastal states further argued that effort limits would be more effective as a management tool within the capacity constraints of the coastal states in whose jurisdiction much of the fishing effort is occurring and on whom, therefore, much of the regulatory and policing functions for the CMMs are borne. Consistent to this position PNA members have commenced implementation of the VDS (Vessel Day Scheme) within their members' jurisdictions which applies restrictions to effort days. It is noteworthy that CMM 2008-01 (paragraphs 11-12 and 17-18) obligates non-PNA WCPFC members to implement compatible measures, along with a range of other restrictions, on purse-seiners fishing in their own zones. WCPFC members have had numerous workshops to examine and discuss capacity limits options.

Panel Assessment and Recommendations

- **The Panel encourages the Commission to continue its work and dialogue concerning capacity management, including strategies to reduce overcapacity;**

General Panel Assessment and Recommendations on Conservation Measures (Section 5)

- **The Panel was unable to determine exactly to what extent the WCPFC receives and uses social, economic, or other data in the formulation of scientific advice and the Commission's execution of its management responsibilities/policies;**
- **The Commission is encouraged to continue promoting the timely submission of relevant data, the submission of outstanding data and the resolution of all data gaps, as highlighted, to ensure up-to-date and timely assessments essential for good management of the stocks it is responsible for;**
- **In assessing the effectiveness of Conservation and management measures, the Panel notes that there are two considerations to be pursued. The first relates to compliance with such measures. In this regard, the Panel commends the Commission for the Compliance monitoring scheme outlined in CMM 2010-03. The second consideration requires assessing the effectiveness of a specific CMM. This necessitates some agreed standards against which 'effectiveness' can be assessed. The Panel suggests that the Commission and the SC may wish to develop standards for assessing the effectiveness of CMM along lines similar to those addressed with respect to monitoring compliance, in CMM 2010-03.**
- **WCPFC's conservation and management practices appear to be largely in keeping with 'international best practice'.**

6. Compliance and Enforcement

Despite some shortcomings (see later discussion) the WCPFC's general approach to compliance and enforcement is comparable to that of other tuna RFMOs. Nonetheless, and in specific instances, actual compliance with conservation and management measures remains problematic for the WCPFC. A key area of concern is the meeting of data submission requirements.

Institutionally, the WCPFC is the only tuna RFMO in which a permanent compliance body (Technical and Compliance Committee- TCC) has been formally established¹⁰⁵ in the text of the Convention. The TCC meets annually in late September to early October for more than a week. This provides the TCC with some prominence and largely reflects the priority afforded to compliance and enforcement issues by the Members.

In the Secretariat, compliance and enforcement support is provided by the Compliance Manager, assisted by three Vessel Monitoring System (VMS) officers, two Regional Observer Programme (ROP) officers, one Compliance officer and one Record of Fishing Vessel (RFV) officer. All these staff are engaged full time.

While the WCPFC has not yet established its own Port State measures and market-related measures, it has set in place: (i) an institutional High Seas Boarding and Inspection regime consistent with UNFSA requirements; (ii) a Vessel Monitoring System (VMS); (iii) a Regional Observer Programme; (iv) a record of fishing vessels and authorization to fish; and (v)

¹⁰⁵ Under Article 11 of the Convention

a list of vessels presumed to have carried out IUU fishing activities. In the following sections, more detailed analyses are presented concerning: (i) flag State duties; (ii) Port State measures; (iii) Monitoring, Control and Surveillance (MCS); (iv) other enforcement-related issues, including follow up on infringements; (v) cooperation mechanisms to detect and deter non-compliance; and (vi) market-related measures.

6.1. Flag State duties

Article 94 of 1982 UN Convention lays down the key duties of the flag State as being “to effectively exercise [its] jurisdiction and control in administrative, technical and social matters” over ships flying its flag.

The FAO Compliance Agreement in Article III sets out the duty of the flag State, as related to fishing operations on the high seas, in more concrete and specific manner, including the need to maintain a record of fishing vessels and ensure that its vessels do not undermine agreed conservation and management measures.

UNFSA Article 18 and other parts of the Agreement have elaborated flag State duties more extensively. For example, detailed MSC provisions are provided and these include observer programs, VMS and regulation of transshipment(s). As discussed in Section 3, the WCPFC adheres closely to the UNFSA’s flag State duties requirements. In this section, attention will be given to: (i) control of fishing vessels/cargo vessels/suppliers; (ii) provision of scientific/fishery operational data and Annual Report submissions¹⁰⁶; (iii) maintenance and provision of fishing vessel records; (iv) fishing vessel marking and identification; and (v) control of flag State nationals.

6.1.1. Control of fishing vessels, cargo vessels and fish suppliers by Flag States

This is the most fundamental requirement for flag State duties as related to fisheries. Members should always remain mindful of their flag State duties and should faithfully authorize their vessels to fish appropriately. Although particular or serious problems in Members’ performing their duties are not evident as far as the reports and observation of the TCC and the Commission meetings are concerned, the Panel has a grave concern about failures by many CCMs to report fishery data as required.

¹⁰⁶ Including information on CMM implementation

6.1.2. Marking and identification of fishing vessels

The WCPFC adopted CMM-2004-03 (Specification for the Marking and Identification of Fishing Vessels) in 2004. This measure aimed to implement the FAO Standard Specification for Marking and Identification of Fishing Vessels requirements, adopted by the FAO Committee on Fisheries (COFI), in 1989.

The Panel does not see that any substantive discussion was conducted at either TCC or Commission meetings on this subject after CMM-2004-03 was adopted. WCPFC should assess the degree of implementation of this CMM. The Panel was informed that FFA and WCPFC have different registers. It would be, therefore, very important to merge them or, at least, to harmonize them.

6.1.3. Provision of scientific and fishery operational data¹⁰⁷

There is a general lack of satisfaction with the timeliness and extent of Annual Report reporting. Five days prior to the 2010 WCPFC-7 (1 December 2010), the Secretariat had received only 30 of the 35 expected Part 1 Annual Reports (on fisheries research and statistics for the previous year), and 26 Part 2 Reports (management and compliance information). Part 1 should have been submitted one month prior to the SC meeting and Part 2 one month prior to the TCC meeting. It is to be noted that in 2010 only 5 CCMs submitted Part 1 Report before the deadline, 16 CCMs before the SC 6 and 9 CCMs during the SC meeting. As for the Part 2 Report, as of the 31 August 2010 deadline, the Secretariat had received only 14 Reports, and as of 1 December 2010, 26 Reports. For 2011 as of this writing, 21 Part 2 Reports were received by 8 September. For example, one CCM always submitted Annual Report during TCC and some CCMs have not submitted their Annual Reports for 3 years in a row. Table 19, below, is illustrative in indicating the yearly timeliness of reports, while Figure 43 shows the cumulative percentage of reports required from CCMs and received by WCPFC relative to the deadline dates and increments of two weeks thereafter, averaged for the period 2006-2011. On average, 14% of the reports were received by the deadline, while 14% were received more than eight weeks after the deadline or were not received at all.

While the burden to island Members of submitting Annual Reports, particularly Part 2 Report which is becoming onerous due to increased numbers of CMMs, needs to be addressed appropriately, there should be no excuse for any Member to fail to submit, subject to confidentiality requirements of their domestic regulations, Part 1 Report before the deadline

¹⁰⁷ Includes submission of Annual Report, as well as of information on CMM implementation

which is a fundamental prerequisite for effective SC's functions or Part 2 Report which is essential for monitoring compliance.

Of particular concern is no, or late, submission of catch and effort data for bigeye and yellowfin tuna as well as vessel-day and catch data for albacore in the North Pacific and the South Pacific and striped marlin in the South Pacific. It has caused serious problems not only for SC to conduct robust stock assessment but also for the Secretariat and TCC to assess compliance (see Paragraphs 483 and 491 of pre-edited version of the SC7 Summary Report). Also, at the recent meetings of the NC, a continued lack of data from one Member actively fishing in the Convention area under the NC remit was noted with concern, for several species, in particular, bigeye tuna and the North Pacific albacore (see Paragraph 95 of the pre-edited version of the NC7 Summary Report).

Table 18- Part I Reports Submission status of WCPFC Annual Reports Part 1 (US report includes statistics of their territories).

	2006	2007	2008	2009	2010	2011
Australia	1	1	1	1	1	1
Canada	1	1	1	1	1	1
China	1	1	1	1	1	1
Cook Islands	1	1	1	1	1	1
European Union	1	1	1	1	1	1
Federated States of Micronesia	1	1	1	1	1	1
Fiji	1	1	1	1	1	1
France						
French Polynesia	1	1	1	1	1	1
Japan	1	1	1	1	1	1
Kiribati	1		1	1	1	1
Korea	1	1	1	1	1	1
Marshall Islands	1	1	1	1	1	1
Nauru	1	1	1	1	1	1
New Caledonia	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1
Niue	1	1		1	1	
Palau	1	1	1	1	1	
Papua New Guinea	1	1	1	1	1	1
Philippines	1	1	1	1	1	1
Samoa	1	1	1	1	1	1
Solomon Islands	1		1	1	1	1
Chinese Taipei	1	1	1	1	1	1
Tokelau		1		1	1	
Tonga	1	1	1	1	1	1
Tuvalu	1		1	1	1	1
United States of America	1	1	1	1	1	1
Vanuatu	1	1	1	1	1	1
Wallis and Futuna		1		1		
<i>American Samoa</i>						
<i>Guam</i>						

<i>Northern Mariana Islands</i>						
Belize			1	1	1	1
Ecuador						
El Salvador				1	1	1
Indonesia	1	1	1	1	1	1
Mexico						
Panama						
Senegal				1		
Thailand						
Vietnam					1	1
Submitted	27	26	26	32	31	28
Outstanding	2	3	3	2	4	9
Total CCMs	29	29	29	34	35	37

** France does not submit Part 1.

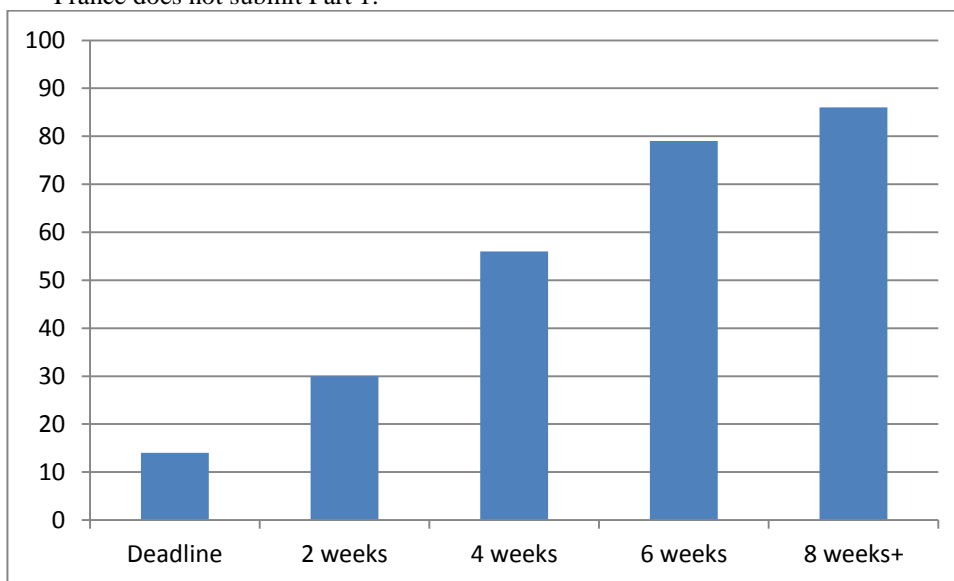


Figure 43- Cumulative percentage of reports required from CCMs and received by WCPFC relative to the deadline dates and increments of two weeks thereafter, averaged for the period 2006-2011.

In order to rectify untimely submission of Part 2 Report while lessening the burden of reporting, the 2010 WCPFC 7 approved the template for Part 2 Reporting, noting that work will be progressed during 2011 on streamlining Part 2 Reporting to facilitate the CCMs' ability to complete the reports in a timely manner. Such reporting will also be linked to the Information Management System (IMS) being implemented by the Secretariat to assist in tracking of all correspondences on CMMs received and sent out from the Secretariat. In other words, the IMS is expected to lessen the CCMs' reporting burdens.

These undertakings supported advancement of the current deadline for the Part 2 Report submission in order to give more time for the Secretariat to prepare the draft Compliance Monitoring Report in a more integrated manner. TCC 7 agreed to recommend the advancement

of the Part 2 Report deadline from the current 31 August to 1 July. The Secretariat is moving to automate where possible its Part 1 and Part 2 reporting procedures.

It is widely felt among Members that CCMs who are not providing operational-level catch and effort data in accordance with WCPFC data requirements rule for scientific purposes should provide essential information in Annual Report Part 2 outlining reasons why such data have not been submitted, as well as on steps taken to correct such shortcomings. Notwithstanding, it should be reminded that what is really needed are the data, not excuses for not providing them.

Other CCMs, who are also SPC members, have not authorized SPC-OFP to release operational-level catch and effort data to WCPFC on their behalf. To ensure completeness of essential data available for assessments, such authorization(s) should be mandated, while reasons should be given if authorization cannot be given and/or corrective actions being taken if such an authorization has not been provided.

Although the Panel sees the steps being put in place as a movement towards the right direction, the Commission should continue to encourage timely submission of necessary data.

6.1.4. Maintenance and provision of Fishing Vessels Records (RFV)

As far back as the Preparatory Conference in 2004, the necessity for a conservation and management measure on the maintenance and provision of fishing vessel records was recognized. At its Inaugural Session, WCPFC adopted CMM 2004-1 (Record of Fishing Vessels and Authorization to Fish). The CMM included most of the operational elements outlined in paragraphs 4-7 of Convention Article 24.

In 2009, WCPFC-6, replaced CMM 2004-01 with CMM 2009-01. The latter included two additional elements to those already present in the earlier CMM. The first was to provide for a WCPFC Interim Register of Non-Member Carrier and Bunker Vessels, along with requirement for payment of a nominal registration fee for such vessels. The second was to clarify that the flag State is responsible for ensuring that their vessels are on the Record of Fishing Vessels prior to commencing operations in the Convention Area.

A Register of Fishing Vessels (RFV) is basic for any effective fisheries operation and compliance scheme since it helps to identify legitimate vessels and other properties such as fishing gears. However, the challenge is to get CCMs to provide all the data required by Annex IV of the Convention (see Table 20, below).

As most of CCMs do not fully comply with the data requirements, the basis for the effective management of WCPFC fisheries is weakened. In this respect, it is notable that Paragraph 7 of CMM 2009-01 requires all necessary data to be provided prior to the commencement of fishing.

There also appears to be a need for common, minimum regional data requirement standard in terms of identifying legitimate vessels. Such standards should be closely aligned to the Global Record being developed by FAO, including, as appropriate, the Lloyd’s Fairplay Unique Vessel Identifier (UVI/IMO) for fishing vessel of 24 meters or more in length.

Table 19- Information requirements from vessels in WCPFC Register of Fishing Vessels (RFV) (Annex IV of the Convention).

1	Name of fishing vessel, registration number, previous names (if known), and port of Registry
2	Name and address of owner or owners
3	Name and nationality of master
4	Previous flag (if any)
5	International Radio Call Sign
6	Vessel communication types and numbers (INMARSAT A, B and C numbers and Satellite telephone number)
7	Color photograph of vessel
8	Where and when built
9	Type of vessel
10	Normal crew complement
11	Type of fishing method or methods
12	Length
13	Molded depth
14	Beam;
15	Gross register tonnage
16	Power of main engine or engines
17	The nature of the authorization to fish granted by the flag State
18	Carrying capacity, including freeze type, capacity and number and fish hold capacity

6.1.5. Control of Flag State nationals

The WCPFC largely tackles the issue of who controls fishing vessels in the Convention Area through its fishing vessel record requirements in combination with the setting up of the

IUU Vessel List, as discussed in 5.5.2. However, these measures seem to be insufficient to identify who is who in the play and to prevent those conducting IUU fishing from reaping unjust benefits.

The Panel considers that those measures along with a smooth and effective implementation of the Compliance Monitoring Scheme as referred to in 5.5.6 as well as a Catch Documentation Scheme should become a practical tool box to facilitate control of Flag State nationals.

Panel Assessment and Recommendations on Flag State duties

- **The Panel does not see evidences of particular serious problems in Members' implementation of their flag State duties in the area of (i) control of fishing vessels/cargo vessels/suppliers flying their flag and (ii) marking and identification of their fishing vessels. With regard to the latter, however, WCPFC should assess whether the relevant CMM has been effectively implemented and whether and how the FFA's register and the WCPFC's register become consistent with each other.**
- **Members are encouraged to submit all necessary vessel marking and identification data to the WCPFC before their vessels commence fishing;**
- **Panel recommends that the maintenance and provision of RFV be improved, including, as appropriate, the introduction of a Lloyd's Fairplay Unique Vessel Identifier (UVI/IMO) for large vessels of 24 meters or more in length.**
- **The Panel considers that the lack and/or lateness of providing, on the part of many Members, scientific/fishery operational data and of submitting their Part 2 Annual Reports on compliance, before the required deadlines and in a manner and format as required by the Convention and CMMs concerned, was and remains a serious problem which should be corrected as a matter of urgency.**

6.2. Port State Measures

Article 8.3.1 of the Code of Conduct outlines the general duties of port States. Largely, it mandates port States to introduce “such measures as are necessary to achieve and to assist other States in achieving the objectives of the Code”. The details of the regulations and measures a port State has established must be made known to other States. Paragraph 2 of the same Code Article addresses assistance to be given by a port State to a flag State. However such assistance is confined to “prevention of pollution and for safety, health and conditions of work on board fishing vessels”. It is not directly applicable to fishing. The likely reason for that is because at the time of the Code negotiations, around mid-90's, the concept of port State measures for

international fisheries was not widely accepted. Consequently, there was some reluctance to consider the scope, or actual content, of a port State regime focused on fisheries regulatory needs.

UNFSA Article 23 expanded the concept of port State fishery measures to some extent. It stipulates in general terms that a port State has a right and duty “to promote the effectiveness of subregional, regional and global conservation and management measures”. It also permits port States to adopt regulations to prohibit landing and transshipment of fish “where it has been established that the catch has been taken in a manner which undermines the effectiveness of subregional, regional or global conservation and management measures on the high seas”. WCPFC Convention Article 27 is identical to UNFSA Article 23 in its substance.

It was only from about 2001 onwards that the application of port State measures for the purpose of regulating international fisheries became more widely accepted. This culminated in COFI's adoption of the 2005 FAO Model Scheme on Port State Measures to be followed in 2009 by adoption of the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing by the FAO Conference.

By then, Port State measures had increasingly become the focus of attention in international and regional fora as a cost effective and efficient way to tackle IUU fishing since COFI endorsed the 2005 FAO Model Scheme.

Accordingly, WCPFC strived to align itself with the subsequent FAO negotiation process. After the 2009 FAO Agreement on Port State Measures was adopted, WCPFC-6¹⁰⁸ noted that implementing the FAO PSMA provisions was a priority for the Commission. It decided that the matter should be progressed further intersessionally for discussion at TCC 6. Subsequently, the June 2010 KOBE II MCS Workshop (Barcelona, Spain) made the following recommendations:

- (i) Encourage RFMO Members to consider signing and ratifying the FAO Port State Measures Agreement at their earliest opportunity; and
- (ii) Where they do not already exist, and where appropriate, encourage RFMO Members to adopt port State control measures that are consistent with the FAO Port State Measures Agreement, and that take into account the specific characteristics and circumstances of each RFMO.

At the WCPFC 7 in 2010, a revised CMM on port State measures was proposed and deferred to TCC 7 for consideration. TCC7 noted the revised proposal but did not take further action.

¹⁰⁸ While receiving a proposal from the EU on implementing the minimum technical standards of the FAO Port State Measures Agreement within WCPFC

The draft Work Programme for 2012-2014 presented to TCC 7 includes, for 2012, the task to develop a CMM on port State measures and to consider mechanisms for the implementation of port State measures in a harmonized manner.¹⁰⁹

Port State measures will be discussed again in the WCPFC Meeting scheduled to March 2012 and FFA has in place port State control and regulations on transshipment and inspection. Therefore it is not as if nothing is done in port in the region. However, it is understood that some Pacific island coastal States may be reluctant to subject foreign fishing vessels to port State measures for a range of reasons, including perceived complexity, capacity needs, reporting requirements, level of inspections, costs, possible effects on fisheries access agreements and the need for assistance mechanisms.

However, the benefits of port State measures have been universally acknowledged in many fora and through the development and acceptance of the Port State Measures Agreement. Such measures are of high value for catch documentation schemes and are generally the most cost-effective way to combat IUU fishing. If such reluctance continues, it could be useful to undertake a cost-benefit analysis in terms of the effectiveness of port State measures in combating IUU fishing, the benefits of global international minimum standards (not unlike, and in fact weaker than, port control measures for merchant vessels, *inter alia* under the 1982 Paris Memorandum of Understanding on Port Controls), the costs of alternative controls, such as use of patrol vessels, and the linkages with other compliance tools such as observer programmes and VMS. Assistance mechanisms could then be developed as appropriate.

The FAO Agreement on Port State Measures provides for a special fund to be established to support assistance to developing States parties to it (Article 21). An ad hoc working group is to be established to make recommendations on funding mechanisms including a scheme for contributions, identification and mobilization of funds, development of criteria and procedures to guide implementation and progress of the funding mechanisms. FAO has begun the process to establish terms of reference for the working group and when the Agreement enters into force developing States parties will be able to access the funds. FFA members were instrumental in developing Article 21 during negotiations of the Agreement.

Panel Assessment and Recommendations on Port State Measures

- **At this time the WCPFC is lagging behind other RFMOs in developing port State measures;**
- **Given that globally-shared view that port State measures are a useful tool to combat IUU fishing, the Panel is encouraged that the WCPFC has afforded the issue a priority;**

¹⁰⁹ <http://www.wcpfc.int/node/3824>

- **It is recommended that a new CMM on port State measures be adopted and implemented within the Convention Area at the earliest opportunity;**
- **Furthermore, it is recommended that the training and technical assistance for island CCMs should be provided where needed to facilitate implementation of WCPFC-wide port State measure scheme;**
- **To address concerns that may arise in adopting, and/or implementing, a CMM on port State measures, a cost-benefit analysis of such measures should be undertaken. This analysis should take into account the effectiveness of port State measures in combating IUU fishing, the benefits of global international minimum standards (taking into account the terms and effectiveness of related instruments such as the 1982 Paris Memorandum of Understanding on Port Controls, as well as port State measures schemes in other RFMOs), the costs of alternative controls (such as use of patrol vessels) and the legal basis for linkages with other compliance tools (such as observer programs and VMS); and**
- **As appropriate, regional special assistance mechanisms could be developed to support the implementation by developing States parties of the Port State Measures Agreement. As such, access to Article 21 funds should be facilitated once these funds are made available.**

6.3. Monitoring, Control and Surveillance (MCS)

Various Articles of the Convention outline WCPFC MCS regime. These comprise: a vessel monitoring system (Article 24.8), a High Seas Boarding and Inspection Scheme (Article 26), a Regional Observer Programme (Article 28), and a Transshipment Verification and Regulation (Article 29). Other applicable standards for the verification of fisheries data are addressed in Article 10.1(d). This section as a whole will consider the extent to which the CCMs effectively implement the WCPFC MCS regime.

6.3.1. Vessel Monitoring System (VMS)

VMS is a system in which the location of fishing vessels can be automatically transmitted, using near real-time satellite position-fixing transmitters. It is intended to function as a tool to effectively support the monitoring of compliance with CMMs.

A functional VMS and operational observer programme have been considered as two key MCS components required to support CMM implementation by the Commission. Practical issues to be addressed initially to set up a functional VMS to monitor the location of vessels authorized to fish in the Convention area, included:

- the actual location of the VMS reporting centre(s) where signals from ship-borne units are to be received; and

- operational procedures, which take into account the differences between fishing operations in the SPO and in NPO, particularly in respect to the latter where fishing takes place in areas under dispute by Japan, Korea and China.

In 2006, WCPFC3 adopted CMM 2006-06 (Commission Vessel Monitoring System), with the following features:

- (i) The system was activated on 1 January 2008 for vessels in excess of 24 meters in length, and on 1 January 2009 for all other vessels in the area south of 20°N, and in the area east of 175°E in the Convention Area north of 20°N;
- (ii) The system is to be activated on a date to be determined by the Commission in the area north of 20°N and west of 175°E;
- (iii) A stand-alone VMS able to accept VMS data forwarded from the FFA VMS system has been put into place. Vessels operating on the high seas are able to report VMS data directly to the WCPFC or via the FFA VMS; and
- (iv) Various standards were adopted for a draft minimum Automatic Location Communicator and Mobile Transmitting Units (ALC/MTU).

In 2007, CMM 2006-06 was replaced by CMM 2007-02. The new measure required, amongst other things, vessels in the Convention Area to maintain VMS transmission when they move into the area bounded by 20°N and 175°E (the area for which a VMS implementation date has yet to be established - see point (ii) above) from elsewhere in the Convention Area.

In 2008 WCPFC-5 adopted various VMS standards, specifications and procedures (VMS SSP) for inclusion in the Rules of Procedures for Protection, Access to and Dissemination of Data. In 2009, WCPFC-6 revised the VMS Standard and Operational Procedures (VMS SOP).

The WCPFC has operated a VMS in conjunction with FFA since 2009. In 2010 the WCPFC and the FFA agreed to the need to analyze the cost and structure of the current VMS services to ensure that the current arrangements were the best possible vehicle to provide VMS services to the members of both organizations. Its report was presented to TCC 7 as Joint FFA & WCPFC Vessel Monitoring System Review (WCPFC-TCC7-2011/10). The most important findings of the review were:

- i. There are no clear objectives for the existing VMS;
- ii. The flow of necessary information to the Secretariat is overly constrained and impacts the WCPFC VMS Manager's ability to do his job and CCMs' ability to conduct MCS activities;
- iii. There are a number of areas in which costs could be reduced almost immediately.

The main recommendations of the review were:

- i. FFA and WCPFC should continue to work cooperatively;
- ii. WCPFC and FFA should identify the CMMs which should, as a priority, be supported by the VMS;

- iii. The VMS should be expanded to a fishery information management system like that of the PNA for the VDS;
- iv. A clear statement of work should be developed for the implementation and maintenance of a centralized database;
- v. FFA and WCPFC should develop one central database or cloud computing system to store all original VMS data;
- vi. The central database should receive the data directly, i.e. with no human intervention;
- vii. If the central database is implemented, the current Service Level Agreement (SLA) should be replaced by a joint legal agreement (contract);
- viii. In the long term, WCPFC and FFA may want to consider shifting responsibilities from a commercially-contracted Service Provider to in-house staff;
- ix. The data sharing rules should be amended so that the WCPFC, FFA and CCMs with EEZs in the Convention Area have full access, and other CCMs and owners have limited access, to the data;
- x. WCPFC should adopt the FFA ALC/MTU approval process and FFA list of approved ALCs/MTUs, and non-polling ALCs/MTUs should be phased out;
- xi. The amount of information transmitted should be reduced to one packet size and the polling rate when vessels are less than 200 nm outside the Convention Area should be reduced with redundant data transmissions eliminated;
- xii. The SLA should be amended to permit WCPFC to liaise directly with the FFA's contracted service provider.

Panel Assessment and Recommendations on VMS

- **The Panel commends the WCPFC for setting up an electronically-based VMS to monitor the location of authorized vessels fishing in the Convention Area, although there appears to be some implementation problems;**
- **The Panel recommends that WCPFC follow up the recommendations of the FFA & WCPFC VMS Review as prioritized by TCC 7 (Attachment F, WCPFC TCC7/2011/33) for the purpose of establishing more efficient and cost effective VMS system. In this regard, the Panel welcomes the information received from the Secretariat that VMS costs have already been substantially reduced;**
- **It is recommended that ways should be explored and established for VMS information within EEZs to be shared by the WCPFC Secretariat with appropriate confidentiality requirements;**
- **It is recommended that the Northern Committee (NC) resolves a VMS implementation date for the Convention Area north of 20°N and west of 175°E. Not only should a fixed date be proposed for consideration by the TCC and the Commission, but any phased approach or any suggested exemptions should only be considered if strong justification for such deviations is provided; and**
- **It is also recommended that any other outstanding policy and technical issues relating to the VMS regime should be expeditiously resolved.**

6.3.2. High Seas Boarding and Inspection

High Seas Boarding and Inspection is, among others, a salient tool for the purpose of monitoring and ensuring compliance with conservation and management measures on the high seas adopted by the Commission (CMMs), as required by UNFSA. Fishing vessels flying a flag of Members must accept boarding and inspection by a duly authorized inspector in accordance with agreed procedures.

According to Article 26 of the Convention and the subsequent CMM, WCPFC has established a High Seas Boarding Inspection Scheme in a manner fully faithful to the requirements of the relevant UNFSA Articles, i.e., Articles 21 and 22.

Although significant progresses were made in PrepCon Working Group III in developing procedures for high seas boarding and inspection, there was not sufficient time to reach agreement.

The 2005 WCPFC 2 decided that the boarding and inspection procedures in UNFSA Articles 21 and 22 should not be utilized until pending matters had been resolved. Such matters included the development of domestic legislation, the form of identification issued to authorized inspectors, designation and publicity of the appropriate domestic authority to issue various notifications, etc.

Furthermore, some CCMs raised concerns about the “use of force” and the definition of “serious violations”. Subsequently, WCPFC 3 (2006) adopted CMM-2006-08 (Western and Central Pacific Fisheries Commission Boarding and Inspection Procedures). The WCPFC Inspection Flag (paragraph 18), the approved identity card of authorized inspectors (paragraph 19) and the multi-language questionnaire (paragraph 21) were developed to address CCM concerns.

At WCPFC 3, a multi-language questionnaire was developed to facilitate smooth communication between the inspector and the captain/crew of the vessel inspected. This was updated at the 2010 WCPFC 7 to reflect new CMMs.

As of this writing, for 2011, 62 high seas boarding and inspections had taken place under CMM 2006-08. The frequency of boarding and inspection seems to be increasing as years progress, since it grew from 12 in 2010 to 50 in 2011 (Table 21). Some CCMs, including France, US New Zealand conducted boarding and inspection onboard the vessels other than their own. Chinese-Taipei conducted boarding and inspection mostly for the vessels of its flag.

Table 20- Number of high seas boarding and inspections done at WCPFC, in 2010 and 2011.

Year	Number of Boardings	Number of Violations
2010	12	2
2011	50	5
Total	62	7

Although 7 violations were detected by high seas boarding and inspections, none of them were considered to be serious. However, it is not clear whether the establishment and implementation of High Seas Boarding and Inspection Scheme has been a main driver for this.

Panel Assessment and Recommendations on High Seas Boarding and Inspection

- **Although serious problems on this subject are not evident from the reports available to the Panel, the Panel does not have sufficient information and data to judge that the WCPFC High Seas Boarding and Inspection Scheme is being effectively implemented. The assessment should be done at a later stage when more information becomes available as a result of more extensive implementation of the Scheme.**

6.3.3. Regional Observer Programme (ROP)

Article 28.1 of the Convention requires that the Commission develop a regional observer programme to collect verified catch data, other scientific data and additional information related to the fishery from the Convention Area and to monitor the implementation of the conservation and management measures adopted by the Commission.

Substantive discussion on a WCPFC regional observer programme commenced in 2005, both in the SC and in the TCC. In 2006, WCPFC 3 adopted CMM 2006-07 (Conservation and Management Measures for the Regional Observer Programme), whereby the Commission established procedures¹¹⁰ to develop a WCPFC ROP at WCPFC 4, in the following year.

At WCPFC 4, the WCPFC Regional Observer Programme was put into place under CMM 2007-01, except for particular fisheries as prescribed in paragraph paragraphs 9 and 10 of Annex C of the CMM. A key outcome of the measure was the requirement to CCMs to achieve 5% coverage of the fishing effort in each fishery under the jurisdiction of the Convention by no later than 30 June 2012. Vessels fishing exclusively for the fresh fish market in the area north of 20°N would be required to be subject to observer coverage no later than 31 December 2014.

¹¹⁰ This included the establishment of an intersessional working group to address the matter

Under CMM 2008-01 (Conservation and Management Measure for bigeye and yellowfin tuna in the Western and Central Pacific Ocean) all Purse Seine vessels fishing within the area bounded by 20°N and 20°S were required to carry an ROP observer from 1 January 2010.

Subsequent to 2008, and following much work by the intersessional WG on ROP, the Commission put in place a variety of observer standards. These included: data field descriptions; an observer guide and manual; details of observer training; observer code of conduct; observer safety requirements; ROP national coordinator; briefing and debriefing requirements; equipment and material requirements; communication provisions; and measuring observer performance standards.

Despite the above, the security and timely flow of data to both the Secretariat and SPC, access by the flag State to ROP data and the provision of draft observer reports to the master of the vessel, as well as the flag State, remain under discussion. Similarly, the question remains moot as to how effectively the requirement that an opportunity should be provided for the master to comment on the draft observer report, should be implemented under paragraph 1 c) of Annex B of CMM. The qualification and quality of observers, as well as apprehension concerning observer availability, have also been noted by some CCMs.

The Secretariat has audited national observer programmes for compliance with Commission standards and suggested remedial action. The results of this audit will be discussed at WCPFC8 (WCPFC 2011/24 attachment 1). The audit applied standards to national observer programmes that are attached to minimum data fields, observer training, observer trainers, code of conduct, sea safety, placement/deployment, debriefing and briefing, debriefing training, equipment and materials, communications, observer performance, dispute mechanisms, authorization processes, observer coverage, vessel safety certification, insurance, and adherence to CMMs. At the time of writing, 23 observer programmes were designated to be audited¹¹¹. Nineteen audits have been completed and the remaining four audits will be completed in the first quarter of 2012.

With regard to the derogation that has been given to vessels used exclusively to fish for fresh fish in the area north of 20°N, WCPFC 7 did not approve the proposal from the NC, largely due to proposed observer requirements that differed from conditions imposed on other longline vessels. The Commission therefore directed the NC to submit a revised recommendation. The 2011 NC 7 agreed on a new proposal which was submitted to TCC 7 and will be submitted to WCPFC 8 for consideration. At TCC 7, the pending issues below, amongst others, were identified for consideration by the ROP Technical Advisory Group:

¹¹¹ These programmes included those of the FFA, US Treaty, and FSM arrangement

- (i) The source of observers for carriers transshipping at sea, from a WCPFC CCM other than the flag State of the carrier;
- (ii) Processes for purse seine vessels requiring exemption to transit the Convention Area without an observer aboard; and
- (iii) Data to be collected by observers cross-endorsed between the WCPFC and IATTC.

Panel Assessment and Recommendations on Regional Observer Programme

- **Panel recommends that all outstanding issues related to the effective implementation of the ROP (i.e. data flow, access to observer data, draft observer report submission and reduction in cost) should be expeditiously resolved; and**
- **It also recommends that a ROP should be agreed at WCPFC 8 as a matter of priority for vessels fishing exclusively for fresh fish in the area north of 20°N.**
- **The Panel commends the audit of national observer programmes as a significant development.**

6.3.4. Transshipment verification and regulation

Elaboration of a WCPFC transshipment verification and regulation regime commenced around 2007. The aim was to develop transshipment procedures so that verifiable data could be accrued on the quantity and species transshipped in ports and at sea. Verification of transshipment completion was also an aim. Under Article 29.5 of the Convention, transshipment at sea by Purse-Seine vessels is prohibited unless specifically exempted by the Commission. Within the Commission therefore, views ranged from allowing transshipment activities compatible with the practices of other RFMOs to prohibiting high seas transshipment.

After extensive negotiations over several years, WCPFC 6 (2009) adopted CMM 2009-06 (Conservation and Management Measure on the Regulation of Transshipment). Amongst other things, this CMM elaborated a general prohibition of transshipment from Purse Seine vessels on the high seas, whilst allowing limited exceptions at sea within national EEZs. Full, 100% observer coverage was stipulated for at-sea transshipment in all cases. There is, however, no regulation of transshipment in Port as yet.

To the best knowledge of the Panel, TCC 7 did not discuss in a substantive manner the issue of transshipment verification and regulation, nor did it make any recommendation on CMM 2009-06. The Panel is not aware whether or not the absence of discussion reflected that there was no substantial problem with regard to the subject.

Panel Assessment and Recommendations on Transshipment Verification and Regulation

- **The Panel commends the WCPFC for developing a transshipment regime;**
- **Every encouragement is given to both the WCPFC and Members to ensure that the transshipment regime is consistently and universally applied within the Convention area, and to all WCPFC-regulated fish stocks;**
- **The WCPFC and Members are encouraged to review whether or not the current scheme on transshipment verification and regulation is adequate or needs improvements, including reporting and monitoring of transshipment. The Panel noted that the Commission may wish to consider the issue of in port transshipment.**

6.3.5. Other standards for verification of fisheries data

This issue has been discussed in Sections 5.5 (Data Collection and Sharing), 5.6 (Quality and Provision of Scientific Data), 6.1 (Flag State Duties) and 6.5 (Cooperative Mechanisms to Detect and Deter Non-Compliance).

Panel Assessment and Recommendations on other standards for verification of fisheries data

- **The Panel notes, with concern, that several requirements with regard to data provision established in various CMM, including timeliness, are not being adequately observed by CCM;**
- **It is unclear to the Panel to what extent the Secretariat validates the fisheries data submitted to it and the steps adopted to rectify obviously incorrect data (e.g. fishing taking place on land, due to misreporting of geographic position);**

6.4. Other enforcement-related issues (including infringement follow-up)

Article 25.7 of the Convention stipulates:

All investigations and judicial proceedings shall be carried out expeditiously. Sanctions applicable in respect of violations shall be adequate in severity to be effective in securing compliance and to discourage violations wherever they occur and shall deprive offenders of the benefits accruing from their illegal activities. Measures applicable in respect of masters and other officers of fishing vessels shall include provisions which may permit, inter alia, refusal, withdrawal, or suspension of authorizations to serve as masters or officers on such vessels.

Article 25.8 requires that each member shall transmit to the Commission an annual statement of compliance measures, including imposition of sanctions for any violations, it has taken in accordance with this article.

Like many other RFMOs, WCPFC has not adequately addressed the issue of flag State investigation of, and follow up on, infringements, including review of the adequacy of penalties imposed by flag State depending on the seriousness of violation. Nor does any comparative study on penalties which are imposed by different flag States seem to have been conducted. This is probably attributable to two factors. First, and as a matter of principle, many CCMs consider that the imposition of penalties is an internal matter in regard to which a sovereign State exercises its own authority as it sees fit¹¹². Secondly, and as a matter of practice, the Annual Report Part 2, the only source from which compliance information can be obtained on a regular basis (apart from the poor state of reporting, as illustrated in 5.1.2 above), provides only for yes or no information in respect to CMMs compliance-related information. The Reports therefore do not usually indicate any concrete actions a reporting State may have taken to address potential compliance infringements.

¹¹² Such consideration would take into account all matters a flag State, *a priori*, may consider appropriate or in conformity with its own laws (particularly with respect to penalties imposed). The extent to which obligations to the Convention are addressed by the flag State in its national laws is another matter and here the Commission should be encouraging all its Members to work towards a common standard commensurate with the international law requirements they themselves have agreed to be bound by. In other words, no action is not a tenable option in terms of meeting the Convention's objectives and national sovereignty/jurisdiction issues do not constitute a just reason for not enforcing CMM requirements

Accordingly, there does not seem to be any strong incentives for CCMs to address infringement follow-ups in depth as long as the issue of domestic jurisprudence remains in the forefront. Nonetheless, when Commission considers whether it should delist a particular vessel from the IUU Vessel List as stipulated in CMM-2010-06, it has to take into account the adequacy of any actions taken or sanctions imposed by the flag State on the vessel. Accordingly, WCPFC-5 (2008) agreed that further development of guidelines on how the Commission may consider and assess the adequacy of any actions taken, or sanctions imposed, in respect to CMM- 2010-06 (IUU Vessel List) should remain a priority work item.

Panel Assessment and Recommendations on Other Enforcement Related Issues

- **The Panel recommends that clearer mechanisms be established to ensure that CCMs follow-up on CMM infringements, and that CCMs regularly submit information on actions taken; and**
- **It also recommends that the Commission establish guidelines for a range of penalties to be applied to various infringements, for example, consideration of a need for equity in the value of fines being applied.**

6.5. Cooperative mechanisms for detecting and deterring non-compliance

6.5.1. The Technical and Compliance Committee (TCC)

As indicated before, the WCPFC has established the Technical and Compliance Committee (TCC) under Article 11.1 of the Convention, with the Committee's functions being stipulated in Article 14. The TCC meets annually and well in advance of the Commission meeting to provide ample time for CCMs to review TCC's results and recommendations before taking any final decisions at the Commission meeting. The TCC has a unique mandate and the Commission generally respects TCC's conclusions which are reached through dedicated and extensive discussion among compliance and MCS experts. Within the Secretariat, as already noted, the Compliance Manager is devoted to supporting the TCC and its attached compliance functions. This officer's functions are thus highly specialized (e.g. see Appendix X) requiring dedication on a full time basis.

Certain CCMs outline a need to set priorities for the TCC's work. A major problem is that the TCC's agenda is very extensive. This has meant that the TCC's effort's to focus on compliance and enforcement issues have been limited by extensive discussions on new CMMs, or amendments thereof.

Panel Assessment and Recommendations on Compliance Committee

- **The Panel commends the TCC for the work it does and encourages it to continue striving to fulfill its mandate; and**
- **The Panel recommends that a common understanding be sought among CCMs on the TCC's priorities. The Committee's agenda should then be adjusted accordingly and its working schedule carefully tailored to ensure that it provides all its required outputs.**

6.5.2. The IUU Vessel List

For more than a decade, Illegal, Unreported and Unregulated (IUU) Fishing has been recognized as one of the most serious problems facing world fisheries. They have been rampant globally and without regard to whether within areas of national jurisdiction or on the high seas. After all this is not only a global problem, but it may threaten the very sustainability of the worlds' most valuable fishery. Under these backgrounds, the FAO Council in 2001 adopted the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU). Many RFMOs since then have established regulations to combat IUU fishing in accordance with IPOA-IUU.

IPOA-IUU stipulates that the identification of vessels carrying out IUU fishing activities should follow agreed procedures and be applied in an equitable, transparent and non-discriminatory way.

WCPFC 3 (2006) adopted CMM 2006-09 (Conservation and Management Measure to Establish a List of Vessels Presumed to Have Carried out Illegal, Unreported and Unregulated Fishing in the Western and Central Pacific Ocean). This CMM established a process ranging from initial proposals to list vessels in a Draft IUU Vessel List through a Provisional IUU Vessel List established by TCC and ultimately to an IUU Vessel List agreed by the Commission (Table 22). CMM 2006-09 was revised as CMM 2007-03, which clarified some of the original language but did not make any substantive changes. Since 2007 and each year thereafter, the TCC has established a Provisional IUU Vessel List and the Commission has agreed the status of each vessel listed on the Provisional List and established the IUU Vessel List. Proposals for delisting vessels from the IUU Vessel List follow similar procedures.

An important issue that remains concerns paragraph 3(j) of the CMM. This provision allows the IUU list to be extended to include other vessels owned by the operator of a vessel that appears on the IUU Vessel List. Finally, WCPFC 7 (2010) agreed on a clearer procedure relating to paragraph 3(j) and adopted CMM 2010-06 (Conservation and Management Measure to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the WCPO). It also incorporated a later deadline for proposing

a vessel to be listed in the Draft IUU Vessel List (i.e. 70 days prior to the TCC meeting as compared to 120 days in the original). In 2009, WCPFC-6 also adopted CMM 2009-09 (Conservation and Management Measures for Vessels without Nationality), which encourages CCMs to take all necessary measures against stateless vessels.

Table 21- Number of vessels in the provisional and final IUU Vessel Lists.

	2007	2008	2009	2010	2011
TCC (Provisional)	4	13	15	4	5
Commission (Final)	3	3	5	5	(to be determined at WCPFC8)

Panel Assessment and Recommendations on IUU Vessel List

- **Panel recommends that IUU Vessel List continue to be compiled, and utilized as part of the WCPFC’s efforts to combat and eliminate IUU fishing; and**
- **The IUU Vessel List should be shared and, to the extent possible, harmonized with other RFMO list as recommended by KOBE III.**

6.5.3. Catch documentation

The role of catch documentation in combating IUU fishing has been under discussion by the WCPFC since 2005. In 2006, WCPFC 3 received a number of proposals addressing the issue. Discussions focused on a Catch Documentation Scheme (CDS) to deal with fish caught and traded and on a Statistical Document Programme (SDP) to deal with fish traded. Table 23 illustrates practices of various tuna RFMOs with regard to CDS and SDP:

Table 22- Catch Documentation Schemes (CDS) and Statistical Document Programme, conducted by various tuna Regional Fisheries Management Organizations.

	ICCAT	IATTC	WCPFC	IOTC	CCSBT
SDP	YES (swordfish and frozen bigeye tuna)	YES (bigeye tuna)	NO	YES (frozen bigeye tuna)	YES
CDS	YES (bluefin tuna)	NO	NO	NO	YES

While WCPFC 6 (2009) agreed on the need to establish CDS, no CMM has yet been adopted to this effect. Some pending concerns, among others, include: (i) who will validate the CDS, the flag State or the coastal State for fish caught within EEZs; and (ii) which species of fish should be covered (i.e. all or only some tuna species). Progresses in filling gaps for these differing views are slow. An intersessional Working Group has been tasked to develop terms of reference for a WCPFC CDS. But TCC 7 could not agree on its terms of reference due mainly to the issue of who, the flag States or the chartering States, should validate the catch caught by the chartered vessels.

Panel Assessment and Recommendations on Catch Documentation

- **The intersessional Working Group is encouraged to complete the TOR for a WCPFC CDS as soon as possible;**
- **It is recommended that a WCPFC CDS be established as soon as possible. This establishment should unroll in phases which would commence with a limited number of species in terms of concerns attached to their impending sustainability, e.g. bigeye tuna.**

6.5.4. Port monitoring of purse seine vessel landings

At WCPFC 6 (2009), a proposal was presented relating to port sampling and monitoring of purse seine catches to determine the species composition of such catches. The proposal was based on CCMs' efforts to monitor canneries in Bangkok where most of the Purse Seine catches are landed/processed.

CMM 2009-10 (Conservation and Management Measure to Monitor Landing of Purse Seine Vessels at Ports so as to Ensure Reliable Catch Data by Species) was adopted by WCPFC-6 to enable collection of species and size composition data from canneries in the non-CCMs regarding purse seine catch in the Convention area.

Panel Assessment and Recommendations on Port Monitoring of Purse Seine Vessel Landings

- **Panel recognizes the importance of port sampling for proper identification of species composition and recommends that a cannery sampling programme be initiated based on the CMM 2009-10.**

6.5.5. Chartered vessels

With SIDS aspiring to develop their own domestic tuna fisheries capabilities¹¹³, WCPFC 6 adopted CMM 2009-08 (Charter Notification Scheme). This CMM was aimed at addressing possible shortcomings attached to flag State responsibilities with respect to chartered vessels. The CMM expires at the end of 2011 unless renewed by the Commission.

However, the existing provisions constitute a notification scheme; they do not address the rights and the obligations of a chartering Member and those of the chartered vessels' flag State. Concern has also been expressed that the current charter arrangement is weak and unless otherwise restricted, it will continue to provide a gap in currently applicable conservation and

¹¹³ including through vessel charter arrangements

management measures, in particular for bigeye and yellowfin tuna under CMM 2008-01. It is noted that paragraph 2 of CMM 2008-01 stipulates that the Commission shall consider the implementation of a Charter Arrangement Scheme in 2009, which has not yet been adopted.

The issue of attribution of the catch caught by chartered vessels as well as data access rights of chartering State still remains to be clearly defined.¹¹⁴

At TCC 7 a paper by a consultant “Catch Attribution in the Western and Central Pacific Fisheries Commission” (WCPFC-TCC7-2011/23) was presented. While there have been inconsistencies across countries in several attribution practices, the paper developed options for some salient areas, including (i) attribution of catches by chartered vessels on the high seas; (ii) attribution of catches by chartered vessels in a non-host zone; (iii) concurrent charters, etc., and suggested that the WCPFC establish positions on these issues. Notwithstanding, no concrete agreement was reached at TCC 7.

Panel Assessment and Recommendations on Chartered Vessels

- **The Panel recommends that CCMs review if the current CMM is adequate to address the issue of charter vessel arrangements and, if they conclude it is not, establish additional measures, including a new CMM, e.g. Charter Arrangement Scheme, to address pending issues.**
- **It is recommended that WCPFC should solve the issue of attribution of catch caught by chartered vessels as soon as possible.**

6.5.6. Compliance Monitoring Scheme

The WCPFC has been developing mechanisms to assess and report on CCM compliance by the CMMs since 2006. At this stage, this comprises annual reporting by the Secretariat on compliance issues. This process has evolved and by 2011 a mechanism (CMM 2010-03) was put in place to assess compliance by each CCM with the CMMs. This process is being extended to a collective assessment of compliance that can then be used for developing mitigation measures to improve compliance for consideration by the Commission. The continuation of the individual CCM’s compliance will assist the Commission to adopt measures to assist CCMs in their compliance challenges.

CMM 2010-03 (Conservation and Management Measure for Compliance Monitoring Scheme) mentioned in Part 3.4.4.3 constitutes the first step towards a phased mechanism to respond to non-compliance, but is only valid for 2011. Its purpose is to ensure implementation of and compliance with the Convention and CMMs and it is designed to:

¹¹⁴ In ICCAT the issue of catch attribution has been settled by Recommendation 02-21, on vessel chartering, Paragraph 5: Catches taken pursuant to the chartering arrangement of vessels that operate under these provisions shall be counted against the quota or fishing possibilities of the chartering Contracting Party

- (i) assess members and cooperating non-members compliance with their obligations;
- (ii) identify areas in which technical assistance or capacity building may be needed to assist CCMs to attain compliance;
- (iii) identify aspects of conservation and management measures which may require refinement or amendment for effective implementation;
- (iv) respond to non-compliance through remedial options that include a range of possible responses that take account of the reason for and the degree of non-compliance, cooperative capacity-building initiatives and, in case of serious non-compliance, such penalties and other actions as may be necessary and appropriate to promote compliance with CMMs; and
- (v) monitor and resolve outstanding instances of non-compliance.

Panel Assessment and Recommendations on Compliance Monitoring Scheme

- **The Panel recommends that CMM 2010-03 be faithfully implemented as a top priority and that a process that will identify a range of possible responses to non-compliance be added, as appropriate, to a revised CMM;**
- **The Panel also recommends that CCMs and the Secretariat review if there is room for improvement in the Compliance Report prepared by the Secretariat, which may contribute more effectively to compliance issues without giving excessive burden on CCMs reporting.**

6.6. Market-related measures

The WCPFC has not established any market-related measure, i.e., trade restriction measures to enforce compliance, for species under its remit, nor has it substantially discussed the matter¹¹⁵. Consequently, WCPFC is far behind other tuna RFMOs such as ICCAT, IOTC and CCSBT in utilizing a tool which was identified in the FAO's International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) as potentially effective for combating IUU fishing.

Instead, CCMs seem to have so far tackled IUU fishing and other compliance issues in a more direct way by adopting a number of CMMs on: (i) record of fishing/cargo/supplier vessels and authorization to fish; (ii) IUU vessel list; (iii) VMS; (iv) Regional Observer Programme; (v) High Sea Boarding and Inspection Scheme; (vi) regulation of transshipment; (vii) monitoring of landing of purse seine vessels at ports; (viii) Charter Notification Scheme; and (ix) Compliance Monitoring Scheme. The effectiveness of such measures is likely to be augmented by a Catch Documentation Scheme, as discussed in 5.5.3.

¹¹⁵ IATTC has not established market related measures either.

Panel Assessment and Recommendations on Market-Related Measures

- **The Panel is unable to make a concrete recommendation on the potential efficacy of WCPFC market-related measures at this time. However, the Commission is encouraged to continue considering the role that such measures may play in addressing IUU and unsustainable fishing.**

7. International cooperation

7.1. Transparency

7.1.1. Transparency of WCPFC decisions and work

Article 21 of the Convention mandates the Commission to promote transparency in its decision-making processes and other activities. Key requirements include the affording of opportunities to participate in WCPFC meetings as observers, or otherwise, as appropriate. They also direct that rules of procedure providing for such participation should not be unduly restrictive and that IGOs and NGOs should be given timely access to pertinent information, subject to the WCPFC's rules of procedure (Rule 36).

Article 7.1.9 of the FAO Code of Conduct indicates that 'States and RFMOs should ensure transparency in fisheries management and decision-making', while UNFSA Article 12 expresses the same sentiments. The latter also emphasises the non-restrictive nature of participation and timely access to pertinent information. As noted in Table 4, the Convention's transparency provisions are consistent with those of UNFSA.

The Panel notes that a number of observers (including Acceding States, NCPs, IGOs and NGOs) are routinely invited to WCPFC meetings. The number of invitees has grown considerably in recent years and continues to grow (Table 24). Given the increasing workload of such meetings, the Panel anticipates that there will be a growing challenge to provide opportunities for observers to participate in a meaningful manner. This was considered to be particularly significant in terms of providing adequate time for the presentation and discussion of observer reports, as well as for the participation of observers more actively in the meeting overall.

Table 23- Number of observers in WCPFC annual meetings, from 2004 to 2011.

Year	Number of Observers to Annual Meetings
2004	12
2005	6
2006	15
2007	13
2008	21
2009	19
2010	25

The Panel was unable to reliably assess observer views on how they saw their engagement(s) with the Commission, or their participation in WCPFC meetings generally. However, it noted that many documents and much information are publicly available on the WCPFC Website. Furthermore, the SPC and NC frequently provide documents to be considered.

Panel Assessments and Recommendations on Transparency

- **The Commission is to be commended on its efforts to engage with a wide range of Observers and the general public. It is encouraged to continue its efforts to promote transparency and to solicit broad input in the interests of improving the representativeness, and ownership, of decisions. Wide spread availability of contextual information on inputs used for decisions is also advocated; and**
- **The Commission is therefore encouraged to continue promoting transparency in its work and to explore suitable mechanisms/processes to achieve maximal access to important information used for the decision making.**

7.1.2. Public availability of relevant information

The Panel considers that the public availability of relevant WCPFC documents is, in general, adequate. Nonetheless, the Panel is concerned that some background documents may not be widely available or difficult to track down. This makes it hard to appreciate both the information input and the context of certain outcomes reported in the public domain.

The speed and efficiency with which WCPFC material is made publicly available is also seen as adequate. However, the scope of work being undertaken by the Commission has clearly expanded in terms of both quantity and complexity. This has broadened and complicated the need for Secretariat support. The current trend is likely to continue into the future thereby implying that continued attention will need to be applied to ensure that meeting reports are delivered in a synthesised fashion and with as much brevity as possible.

As a vehicle for disseminating information among Members, the WCPFC Website appears adequate. However, for those with a limited knowledge of the WCPFC's purpose, structure and activities, particularly the general public, the Website is less than 'user friendly'. This often makes it hard to access information as the Website structure is not particularly 'intuitive'. Given the Website's increasing importance as a communication tool and its role as a major portal to support the WCPFC's internal workings, the Website should be kept under constant review. Equally, every effort should be made to optimise the Website's potential as an important educational and outreach tool by making it more user friendly and interactive through the use of simple directive navigational pathways. A flow-based, pictorial map of the Website's available subject matter may be a useful consideration in this regard.

Panel Assessment and Recommendations on Public Availability of Relevant Information

- **The Panel commends the WCPFC, especially the Secretariat, on its efforts to make information available to Members, Observers and the public in a timely manner;**
- **The Panel, however, encourages, wherever possible, that all input information and the context of some outcomes be made publicly available; and**
- **The WCPFC's Website content, structure and accessibility should be kept under constant review to ensure that the Commission's work is supported and that the Website continues to serve as a useful tool for educational and broader outreach purposes.**

7.2. Relationships with Cooperating Non-Members (CNMs)

The responsibilities of the Commission and its Members in relation to CNMs are outlined in Article 32. These have been comprehensively discussed in Section 3.3.2. Particular issues noted include implications associated with the allocation of catch to new CNMs, developing rules to address the status of CNMs under the Convention (particularly concerning the role of Members under Article 32(2)) and potential gaps in the Convention related to Article 32(4). Finally, there is no established process for Contracting Parties to invite non-parties to accede to the Convention, in accordance to Article 32(5) and Article 35 (see also section 3.3.2).

Panel Assessment and Recommendations on Relationship with Cooperating Non-Members

- **The Commission is encouraged to maintain a proactive approach in engaging with CNMs, particularly in relation to ensuring the effectiveness of CMMs and the meeting of the Convention's objectives, including by establishing a clear process to invite non-Parties to accede to the Convention.**

7.3. Relationship with Non-Cooperating Non-Contracting Parties

Article 32(3) provides for the Commission to draw to the attention of any State which is not party to the Convention to any activity undertaken by its nationals or vessels which, in the Commission's opinion, affects implementation of the Convention's objective.

Article 32(4) requires Member, either collectively or individually, to request non-parties to the Convention to cooperate fully in the implementation of WCPFC CMMs to ensure that such measures are applied to all fishing activities in the Convention Area. Under the same Article, non-parties that cooperate benefit from participation in the fishery commensurate with their commitment to comply with, and their record of compliance with, CMMs for relevant stocks.

The Panel noted that the above provisions are essentially salutatory and their effectiveness is highly contingent on the Commission as a whole adopting a consistent policy¹¹⁶ aimed at actively promoting cooperation with non-parties and encouraging them to accede to the Convention.

Panel Assessment and Recommendations on Non-Contracting Non-Cooperating Parties

- **The Commission may wish to ensure that details of engagements with third-party States under Article 32 of the Convention are formally brought to the attention of FAO and any other relevant international organisation or State, on a regular basis;**
- **The Panel notes that direct approaches, such as diplomatic demarches, to NCP Flag States whose vessels are involved in IUU fishing have been successful in other RFMOs to combat this kind of practice. WCPFC is, therefore, encouraged to adopt such approaches wherever necessary in the Convention Area; and**
- **The Commission is encouraged to develop strategies and policy outlining a common approach to be followed in promoting the cooperation with Convention non-parties.**

7.4. Cooperation with other international organizations

Under Articles 22(1) and 22(2) of the Convention, the Commission is required to consult, cooperate and collaborate with other inter-governmental organizations that have related objectives and which can contribute to attaining the Convention's objective. These organizations include, inter alia, the FAO, CCAMLR, CCSBT, IATTC, IOTC, SPC, FFA, PNA and Ta Vaka Moana. The Commission is also bound to cooperate with an RFMO where the Convention Area overlaps with the RFMO's area of application (Article 22(3)). This aims to avoid duplication of measures for species that are regulated by the WCPFC and another RFMO(s) in an overlapping area.

A summary of the relations between the WCPFC and other organizations is presented to each meeting of the Commission and its subsidiary bodies. These reports include an overview of relations between the WCPFC and the SPC, CCSBT, ISC, IATTC, FFA, FAO, CCAMLR, IOTC, SPREP, ICCAT, ACAP and NPAFC.

Cooperation, coordination and consultation agreements have been formalized with SPC, FFA, CCSBT, IATTC, IOTC, ISC, SPREP, ACAP, and NPAFC (<http://wcpfc.int/rerelations-with-other-organisations>). The details of these agreements can be found in WCPFC-TCC7-2011/27 and are summarised in Appendix XI.

¹¹⁶ For example, see *Policy to Enhance Cooperation Between CCAMLR and Non-Contracting Parties* (http://www.ccamlr.org/pu/e/e_pubs/cm/11-12/coop.pdf).

The FFA predates WCPFC, with the latter being first mooted by Forum leaders in the FFA due to their concern that efforts to manage Pacific tuna stocks in their waters were being undermined by unregulated fishing on the adjacent high seas. The Panel noted that the FFA and the Forum leaders have retained a long-term interest in the WCPFC's performance.

The Panel also noted that a major objective of the MOU between the WCPFC and FFA (Appendix XI) is to ensure that cooperation between the two organizations remains strong, as well as functional. The WCPFC and FFA chief executive officers play an important role in maintaining the vitality of this cooperation at a functional level; a fact underscored by an agreement on joint VMS and vessel registries.

It is appreciated that consistency of scientific advice and a reduction of costs is largely attributable to the SPC-OFI being responsible for the science underpinning the stock management strategies of both WCPFC and FFA. The WCPFC also has a strong working relationship with the SPC itself, which is regularly contracted to provide scientific services to the WCPFC.

The WCPFC has strong ties with the PNA. Currently, there is no formal agreement between these two organizations, but they remain in regular contact to share information and sustain a constructive working relationship. Areas of common interest include the observer program, observer data, fisheries log book information, fisheries data entry, and the Vessel Day Scheme.

WCPFC cooperates with Ta Vaka Moana, a new arrangement which does not possess treaty status. It comprises the southern Pacific countries involved in longlining for albacore tuna. The organisation is largely funded by New Zealand and was established with an Executive officer in 2010. Although no formal arrangement presently exists between WCPFC and Ta Vaka Moana, regular contact has been established with the parties sharing several common interests (e.g. the southern albacore stocks) in the region.

With regard to IATTC, the Panel notes that two important, and outstanding, issues remain unresolved with respect to cooperation between WCPFC and IATTC. These include implementation of an MOU on the Cross Endorsement of IATTC and WCPFC Observers, and the development of a joint management agreement for the overlapping area shared by the WCPFC and IATTC. This was discussed at TCC7 in September 2011 (CPFC-TCC7-2011/27), but the outcome remains to be endorsed at WCPFC8 in March 2012.

Panel Assessment and Recommendations on Cooperation With Other International Organizations

- **The WCPFC should consider critically re-examining its relationship with a range of organizations providing meeting observers to ensure that the exchange of information with such organizations is maximised and the working relationships with the bodies represented are transparent, effective and dynamic;**
- **WCPFC should continue to examine the need for concluding agreements with other organisations to enhance its own effectiveness and the pursuance of Convention objectives. Possible candidates could include environmental organisations such as CITES;**
- **The Commission is encouraged to urgently resolve the outstanding issues relating to cooperation with the IATTC as these issues are extremely important for ensuring harmonious management of an area shared by the two organizations and the cost-effective deployment of observers; and**
- **The Panel suggests that the WCPFC should continue to examine its own regulatory provisions and measures against contemporary developments in other RFMOs. Wherever relevant (e.g. UNGA Resolution 61/015), it should also examine other instruments, or agreements, applicable to fisheries, the environment and broader governance to ensure that the WCPFC continues to pursue international best practice.**

7.5. Special requirements of developing States

Discussions on the special requirements of developing States under Article 30 of the Convention can be found in Section 3.4.6. The Panel noted that Commission Resolution 2008-01 addresses the interest and aspirations of SIDS and Territories in developing and advancing their participation in fisheries targeting highly migratory fish stocks in the Convention area. It also emphasizes the CCMs commitment to support and not hinder or constrain pursuit of such interest and aspirations. Furthermore, it demonstrates CCMs commitment to ensure that CMMs will not disproportionately burden SIDS and Territories nor undermine their legitimate aspirations to develop their fisheries (Art. 30(2)(c)).

The Resolution reiterates existing CCM obligations under Article 10(3) of the Convention. This provision details the considerations which the Commission should take into account, when developing criteria for allocating total allowable catch or fishing effort. Article 10(3)(J) takes particular account of *“the fishing interests and aspirations of coastal States, particularly Small Island Developing States, and territories and possessions, in whose areas of national jurisdiction the stocks also occur.”*

Panel Assessment and Recommendations

- **The Commission is encouraged to continue consideration of the special requirements of developing States and territories with a view to meeting their fishing interests and aspirations.**

8. Financial and administrative issues

8.1. Availability of financial resources

8.1.1. Background

The budget, securing of funds and other WCPFC financial matters fall under Article 18 of the Convention. Based on contributions by Members, funds are to be used in furthering the Commission's work and to meet its day-to-day administrative needs.

Article 30¹¹⁷ specifically recognizes that funds should also to be available to facilitate the effective participation of developing States, especially Small Island developing States, in the Commission's work.

To ensure financial propriety, Article 19 of the Convention mandates an annual audit of the Commission's records, books and accounts by an independent auditor appointed by the Commission.

The WCPFC Secretariat Executive Director is designated as the Commission's chief administrative officer under Article 15(3). He/she is required to perform the administrative functions assigned to him/her by the Commission.

In performing its functions (Article 15(4)), the Secretariat is required to be cost-effective, so as to minimize Members' financial burden (Article 15(5)). In this respect, the Secretariat is bound to take due account of available capacity in existing regional organizations able to perform certain secretariat functions.

Under Article 17(2), the WCPFC's budget is adopted and amended by consensus, as are the *Financial Regulations* for the Commission's administration and for the exercising of its functions. The *Financial Regulations*¹¹⁸ set the WCPC financial year from 1 January to 31 December (Regulation 2). They also provide details, *inter alia*, for the:

- Budget Process (Regulation 3);
- Appropriation procedures to be followed by the Executive Director¹¹⁹ to meet obligations incurred, as well as to make payments for the purpose(s) that appropriations have been adopted at the levels agreed (Regulation 4);
- Provision of funds- where the identification of the type of Commission funds, the contribution formula, and various attached procedures relating to the making of contributions are outlined in Regulation 5. Regulation 5.6 specifically indicates that all annual contributions are to be assessed and paid in United States (US) dollars;

¹¹⁷ Particularly paragraphs 3 and 4 of the Article.

¹¹⁸ The *Regulations* were set up at WCPFC 6 (2009). They recognise the nature of the Commissions' funds outlined in Article 17.(1), and are accessible at: <http://www.wcpfc.int/doc/commission-02/financial-regulations>.

¹¹⁹ As the Commission's designated chief administrative officer under Article 15.(3) of the Convention.

- Modalities associated with the General Account (Regulation 6.1(a) to 6.1(d)) and Trust Funds (Regulation 6.2 to 6.3);
- Establishment and Use of Special Requirement Funds (Regulation 7), subject to Article 30 of the Convention, in assisting developing States Parties and small island developing States;
- Other Income so that such income is set apart from the regular provision of funds addressed in Regulation 5;
- Mechanisms to secure custody and investment of funds (Regulation 9), ensure internal controls (Regulation 10), govern the keeping of accounts (Regulation 11) and arranging external audits of accounts (Regulation 12); and
- Processes governing the acceptance of annual financial statements (Regulation 13).

Under Regulation 5.5, annual contributions are considered due, and payable in full, within 60 days of the receipt of the communication by the Executive Director referred to in Regulation 5.4, or as of the first day of the calendar year to which they relate, whichever is the later. As of 1 January of the following calendar year, the outstanding (i.e. unpaid) balance of any contributions, and advances, are considered to be one year in arrears. Although interest is payable on unpaid contributions at such rate as may be determined by the Commission, it has never applied this provision to a member yet.

The audit process under Regulation 12 mandates that the Commission appoints an external Auditor¹²⁰. The Auditor's appointment is for a period of two years and reappointment is possible. The Commission ensures that the Auditor is independent of the Commission. The Auditor has to be also independent of any of the Commission's subsidiary bodies established under the Convention, and the Commission's staff. While the Auditor is completely independent and solely responsible for the conduct of the audit, he/she is paid by the Commission.

Adopted in 2004, the Commission's Rules of Procedure (ROPs)¹²¹ set out various processes and procedures for the conduct of the Commission's business. Some notable items addressed include: (a) designation of Commission sessions; (b) formulation of, and dealing with the Commission's agenda; (c) representation; (d) office bearers; and (e) the Secretariat. They also include plenary meeting conduct, decision-making, voting arrangements, the rules of procedure for subsidiary bodies, suspension of rights, etc. Further discussion of the ROPs can be found in Section 4.

¹²⁰ Under the Regulation, the Auditor is deemed to be the Auditor-General or equivalent statutory authority from a member of the Commission, or an internationally recognized independent auditor with experience in the auditing of international organizations.

¹²¹ At: <http://www.wcpfc.int/doc/commission-01/rules-procedure>.

Section V (Rules to 11 to 13) of the ROPs outlines the Executive Director's (Rule 11), and the Secretariat's duties (Rule 12). Most notably, Rules 11 and 12 reflect the Executive Director's and Secretariat's functions, as initially set out in Articles 15.3 and 15.4 of the Convention.

In executing its functions, the Secretariat is seen to receive, reproduce and distribute Commission documents, reports and decisions, as well as those of its subsidiary bodies. It also prepares and circulates meeting summary reports as per ROP Rule 33, while retaining responsibility for the custody, and proper preservation, of documents¹²² held in the Commission's archives.

Under ROP Rule 13, the Executive Director is required to report annually to the Commission, including such supplementary reports as are necessary. These reports provide a mechanism for monitoring both the Executive Director's performance, as well as that of the Secretariat. In respect to the former, the Executive Secretary issued an Administrative Guidelines and Procedures Manual in 2009 (<http://wcpfc.int/doc/commission-01/rules-procedure>). This conforms to the Executive Secretary's authority outlined in Staff Regulation 1 and supplements both the Financial and Staff Regulations.

Agreed in 2005, the Staff Regulations¹²³ outline Secretariat staff obligations and conditions of employment. The various sections deal with duties and obligations (Part III– Regulations 3 to 10), appointment and promotion (Part IV– Regulations 11 to 15), entitlements on appointment and termination (Part V– Regulations 16), hours of work (Part VI– Regulations 17), remuneration (Part VII– Regulations 19 to 20), allowances and related benefits (Part VIII– Regulations 21 to 24), leave (Part IX – Regulations 25 to 27), housing (Part X– Regulations 28), expenses (Part XI– Regulations 29), discipline (Part XII– Regulations 30), staff committee (Part XIII– Regulations 32) and general staff-related matters (Part XIV– Regulations 32).

In particular, Staff Regulations 31 and 35 are aimed at ensuring the general well-being of Secretariat staff. The former provides for the annual election of a Staff Committee by Secretariat staff to represent their views. This Committee may also be consulted by the Executive Director from time-to-time on questions relating to staff issues and welfare. The latter gives the Executive Director authority to arrange for the training of staff members in areas directly related to their duties and advancement.

¹²² Such documents are taken to include essential data as identified in Article 15.4.(b) of the Convention.

¹²³ At: <http://www.wcpfc.int/doc/commission-03/staff-regulations>.

Other key arrangements of an administrative or financial nature include: a) reporting templates¹²⁴; b) principles, guidelines and operational procedures for the Commission's Special Requirement Fund¹²⁵; c) the Headquarters and Grant Agreement¹²⁶; d) media access policy¹²⁷; e) Rules and Procedures for the Protection, Access to, and Dissemination of, Data Compiled by the Commission (as revised by WCPFC4, in 2007)¹²⁸; and f) the WCPFC Information Security Policy¹²⁹. Additional schedules to the Staff Regulations deal with Secretariat staff salaries¹³⁰ and the Executive Director's appointment process.¹³¹

Panel Assessment and Recommendations on General Financial and Administration Arrangements

- **The various statutory requirements for effective management of the WCPFC's financial and administrative arrangements have been adequately addressed in the documents and procedures outlined above; and**
- **In the interest of financial transparency, the Commission may wish to establish a limit on the number of times the auditors may be reappointed.**

8.1.2. Financial management

The Commission has established a Standing Finance and Administration Committee¹³² (FAC) to provide advice and recommendations on budgetary, financial and administrative matters. The FAC meets during the Commission's annual session.

The proposed budget for the General Account¹³³ is posted on the WCPFC Website under the Annual Session space, 60 days prior to the Session¹³⁴. The posting also includes the indicative budget amounts for the next two years as well.

¹²⁴ At: <http://www.wcpfc.int/doc/commission-08/revise-template-annual-report-part-2>

¹²⁵ This Fund addresses the principles, guidelines and operational procedures to support the capacity-building work of the Commission and the selection of activities to be supported under the Fund as outlined in Article 30 of the Convention. At: <http://www.wcpfc.int/doc/commission-05/principles-guidelines-and-operational-procedures-commissions-special-requirements->

¹²⁶ At: <http://www.wcpfc.int/doc/commission-06/headquarters-agreement-and-grant-agreement>.

¹²⁷ At: <http://www.wcpfc.int/doc/commission-11/media-access-policy>

¹²⁸ At: <http://www.wcpfc.int/doc/data-02/rules-and-procedures-protection-access-and-dissemination-data-compiled-commission-revise>.

¹²⁹ At: <http://www.wcpfc.int/doc/data-03/information-security-policy>.

¹³⁰ At: <http://www.wcpfc.int/doc/commission-04a/staff-regulations-schedules-1-2a-and-2b>.

¹³¹ At: <http://www.wcpfc.int/doc/commission-04b/staff-regulations-schedule-3>.

¹³² The Committee was established at WCPFC3 in 2006, assuming the tasks of the previous *Ad Hoc* Committee (See paragraph 181 at: <http://www.wcpfc.int/doc/final-summary-record-consolidated-with-all-attachments>). Its terms of reference can be found in the WCPFC4 Report at Annex II of Attachment P to that report. (At: <http://www.wcpfc.int/doc/summary-report-and-attachments>).

¹³³ Established under Financial Regulation 6.1.

¹³⁴ The Annual Session usually takes place in early December.

The timing of the Technical and Compliance Committee¹³⁵ (TCC) Meetings (usually October) poses a procedural obstacle to the above process, since the Committee's budget development process is complex and substantial. Consequently, there are often small delays in disseminating the budget information.

As implied above, the General Account draws on Members' Contributions as its source of funds. Three major components are funded by this Account, along with an Information Communications and Technology (ICT) Programme. In addition to the General Account, the Commission maintains the:

- Western Pacific East Asia Ocean Fisheries Management Project Fund¹³⁶;
- Working Capital Fund;
- Japan Trust Fund;
- Special Requirements Fund;
- Voluntary Contributions Fund, and
- Regional Observer Programme Support Fund.

The Commission applies accrual-based accounting¹³⁷ principles to all its accounts in accordance with International Accounting Standards. *QuickBooks Pro* is used to track all finances and assets, including Secretariat staff leave.

Panel Review and Recommendations on Financial Management

- **The WCPFC's financial arrangements appear adequate and in keeping with international best practice.**

¹³⁵ The TCC was established under Article 11 of the Convention with the primary function of providing the Commission with information, technical advice and recommendations on the implementation of, and compliance with, conservation and management measures.

¹³⁶ This Fund absorbed the former Indonesia- Philippines Data Collection Project.

¹³⁷ Accrual based accounting is a method that measures financial performance and position of an institution by recognizing economic events regardless of when cash transactions occur. The general principle is that economic events are recognized by matching revenues to expenses (the matching principle) at the time in which the transaction occurs rather than when payment is made (or received). This method allows the current cash inflows/outflows to be combined with future expected cash inflows/outflows to give a more accurate picture of an institution's current financial position.

8.1.3. Budget

The Commission's total annual budget since 2005 has grown from around US\$ 1 million to more than US\$ 6 million (Figure 44). The WCPFC's budget has shown a steady increase to the extent it is now six times that when the Organization came into being. This growth has averaged about 23%¹³⁸ per year, well in excess of any anticipated inflationary, or CPI, increases (see also discussion below).

The above budget growth has been determined by the WCPFC Members, despite the 2008 GFC (Global Financial Crisis). The 2008 budget¹³⁹ increase was less than the prevailing trend, while the 2009 budget increase was proportionately greater than for any other year.

To place the Commission's budget growth into perspective, it is emphasized that this growth has been more than twice that anticipated in 2008. Therefore, the 2011 budget was some 56% greater than that in 2009, and 31% greater than that estimated in 2008.

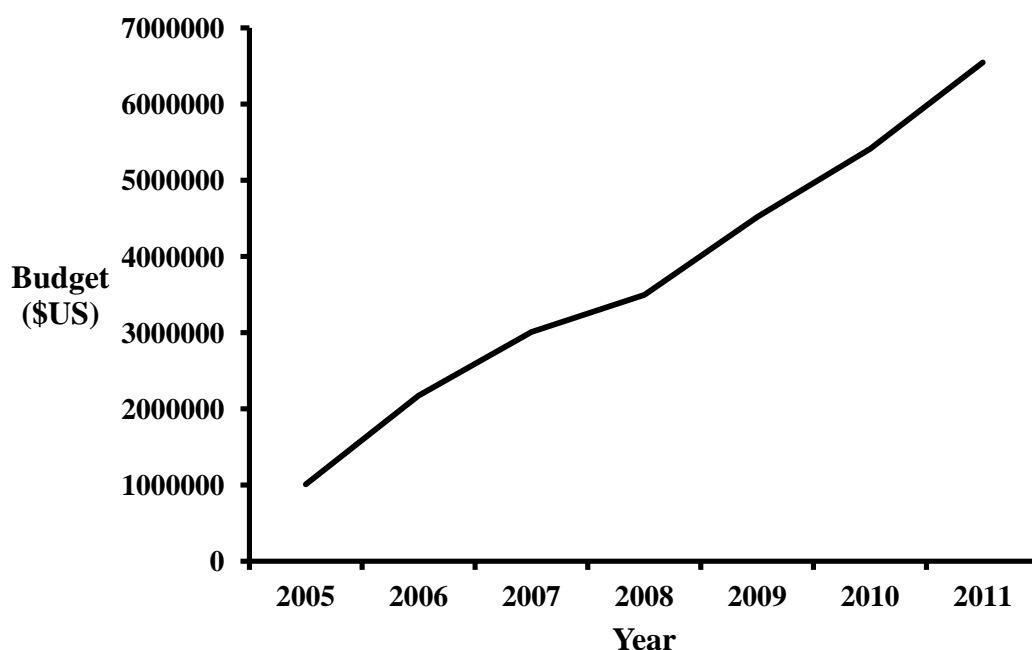


Figure 44- WCPFC approved annual budget since 2005.

Such trends suggest that Members have recognized that the budget should grow as a function of Commission's work needs, even during financially hard times.

¹³⁸ Range from 15 to 38%.

¹³⁹ The percentage increase in the 2008 budget was the second lowest in the overall series after that in 2006.

8.1.3.1. Budget contributions

It is not possible to track the budget contribution trend relative to the due date for contribution payments prior to 2009¹⁴⁰. However, in 2010, the FAC noted¹⁴¹ that eight Members' contributions were outstanding as follows: 2007)

- US\$ 52,246 remained outstanding for 2009 from two Members¹⁴², and
- US\$ 106,677 remained outstanding for 2010 from six Members¹⁴³.

The trend in contribution payments for 2010 (Figure 45) shows that more than 60% of the total 2010 budget contributions were still outstanding in April. By July, more than six months after the due date, 20% of the total contributions had still not been made.

The 2010 contribution situation moved FAC to note a deteriorating pattern of contribution payments and the negative impact that late payment has on the Commission's operations and financial position. The Committee therefore recommended that all Members be encouraged to pay their contributions on time and by the due date. Nonetheless, a similar pattern appears to have prevailed in 2011 with only 35% of the annual contributions having been received by the due date.

The situation described above means that, if necessary, the Working Capital Fund can be used to ensure that the Commission's cash flow requirements are met. The Fund currently has a positive balance of just under US\$ 600,000, although its level usually stands at about US\$ 500,000.

The administration and use of the Working Capital Fund is governed by Financial Regulations 4.4 and 4.5. Clear recognition is given to the expectation that there is a need to accommodate normal operating expenditure prior to the receipt of contributions ('assessments') from WCPFC Members, and to accommodate extenuating circumstances. The Executive Secretary is thus able to incur obligations against the Fund, when such obligations are necessary for the Commission's effective, and continued, functioning. Such obligations are restricted to administrative requirements of a continuing nature. They are also limited to the scale of requirements authorized in the budget for the current financial year, and until the assessed contributions are received from Commission Members. Financial Regulation 5.2 clearly states that: "*pending the receipt of such contributions, the appropriations may be financed from the Working Capital Fund*".

¹⁴⁰ The financial management system prior to 2008/09 was not able to capture the contribution trend.

¹⁴¹ In WPFC7-2010-FAC/4/05 at: <http://www.wcpfc.int/doc/wcpfc7-2010-fac405/report-general-account-fund-contributions-and-other-income-2010>.

¹⁴² By 30/12/10, this fell to US\$ 27,552 from one Member.

¹⁴³ By 30/12/10, this fell to US\$ 70,248 from three Members.

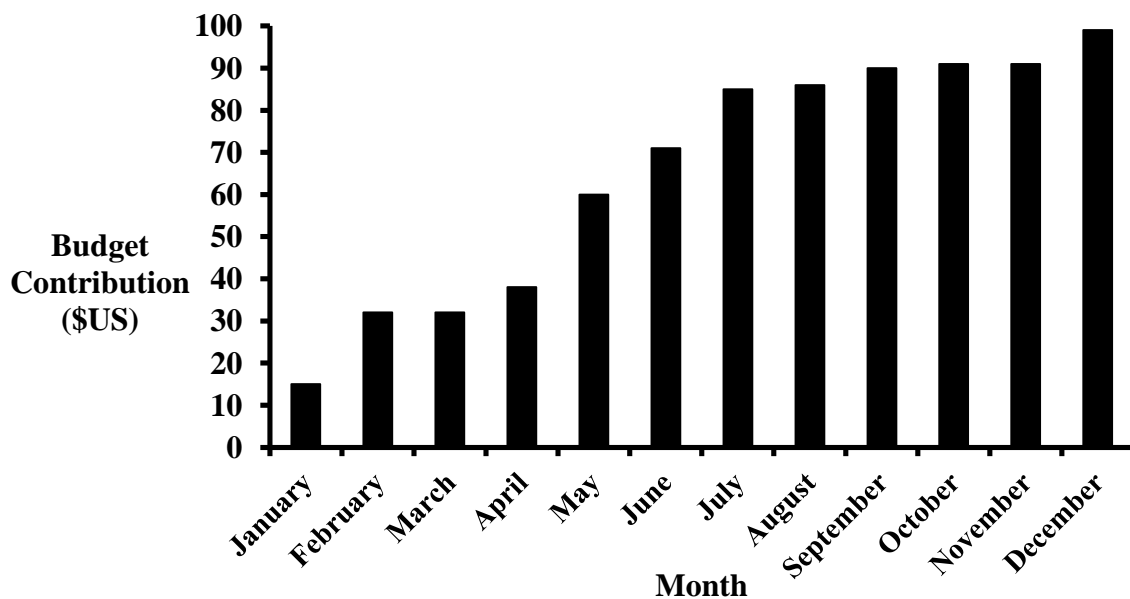


Figure 45- Timing of WCPFC budget contributions in 2010.

Under Financial Regulation 5.2, individual budget contributions are determined in accordance with the formula outlined in Article 18(2) of the Convention. This is specifically applied as follows:

- (a) "A 10 per cent base fee divided in equal shares between all members of the Commission;
- (b) A 20 per cent national wealth component based upon an equal weighting of proportional gross national income (calculated on a three-year average) per capita and proportional gross national income (calculated on a three-year average); and
- (c) A 70 per cent fish production component based upon a three-year average of the total catches taken within exclusive economic zones and in areas beyond national jurisdiction in the Convention Area of all the stocks covered by the Convention for which data are available (including the main target tuna species, as well as the four main billfish species, i.e. black marlin, blue marlin, striped marlin and swordfish), subject to a discount factor of 0.4 being applied to the catches taken within the EEZ of a member of the Commission which is a developing State or territory by vessels flying the flag of that member. In the case of a member that has part of its EEZ inside the overlapping area, and is a member of the Inter-American Tropical Tuna Commission and contributes to the budgets of both IATTC and WCPFC, only 50% of catches made by its flag vessels in the overlap area between the two Commissions shall be included in the calculation of a member's contribution based on catch".

The indicative schedule of contributions from various Members in 2011 is shown in Table 25, apportioned according to the fee categories derived from the formula outlined in the previous paragraph. The total 2011 contribution for each Member is illustrated graphically in Figure 46. From this information, and that in Table 25, it can be seen that the top five contributors¹⁴⁴ account for some 65% of the total budget. This would imply that any systemic failure by one of these Members to pay its contribution by the due date would probably impact significantly on the overall's budget's status as well as the Organization's ability to meet its cash flow needs.

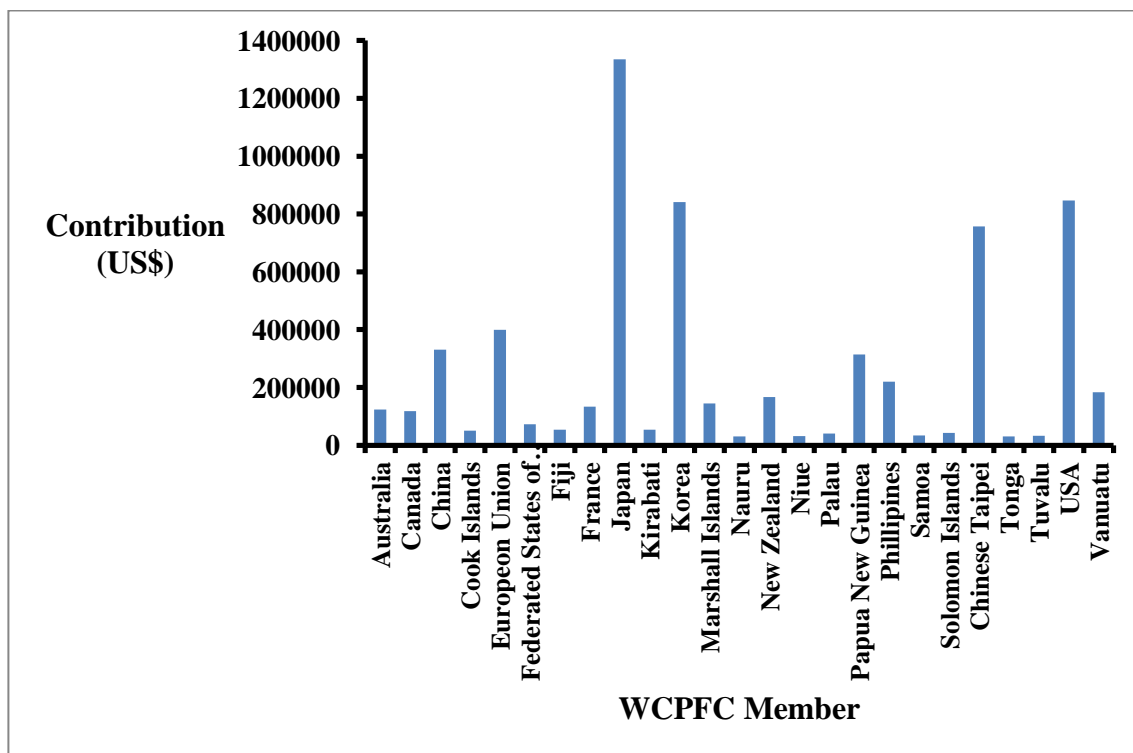


Figure 46- The 2011 budget contributions of WCPFC Members in \$US (vertical axis) as assessed on 31/12/2010.

¹⁴⁴ In order of contribution value - Japan, Korea, Chinese Taipei, United States and European Union

Table 24- Schedule of Member's contributions to the WCPFC 2011 budget.
Apportionments are based on the formula set out in Financial Regulation 5.2. All budget amounts are in \$US as assessed in August 2010.

Member	Base Fee Component (10% Budget)	Wealth Component (20% Budget)	Catch Component (70% Budget)	Total Contribution	%Budget by Member
Australia	25 552	83 387	17 346	126 286	1.98
Canada	25 552	92 534	150	118 236	1.85
China	25 552	59 575	221 362	306 489	4.80
Cook Islands	25 552	21 745	3 808	51 105	0.80
European Union	25 552	291 513	72 773	389 839	6.10
Fed. States of Micronesia	25 552	4 177	35 312	65 042	1.02
Fiji	25 552	6 980	22 507	55 039	0.86
France	25 552	97 481	10 403	133 438	2.09
Japan	25 552	135 764	1 254 672	1 415 987	22.17
Kiribati	25 552	3 006	13 927	42 486	0.67
Korea	25 552	50 191	775 556	851 299	13.33
Marshall Islands	25 552	5 583	120 214	151 349	2.37
Nauru	25 552	4 495	0	30 048	0.47
New Zealand	25 552	51 269	92 689	169 510	2.65
Niue	25 552	6 411	215	31 179	0.50
Palau	25 552	16 319	0	40 871	0.64
Papua New Guinea	25 552	1 898	322 040	349 490	5.47
Philippines	25 552	5 390	187 718	218 660	3.42
Samoa	25 552	4 786	3 739	34 077	0.53
Solomon Islands	25 552	1 681	16 091	43 325	0.68
Chinese Taipei	25 552	36 790	752 957	815 299	12.76
Tonga	25 552	4 836	928	31 316	0.49
Tuvalu	25 552	3 789	0	29 341	0.46
USA	25 552	284 979	362 004	672 535	10.53
Vanuatu	25 552	4 038	185 247	214 837	3.36
Totals	638 808	1 277 617	4 471 658	6 388 083	100.00

8.1.3.2. Cost recovery

Three key Secretariat services aim to implement the CMMs and support the:

- Regional Observer Program (CMM 2007-01).
- Record of Fishing Vessels (CMM 2009-01), and
- Vessel Monitoring System (VMS) (CMM 2007-02).

To meet these service needs, the introduction of the VMS alone was predicted¹⁴⁵ to impose approximately \$US 320,000 on the budget in 2009, reaching about \$US 575,000, in 2011. The indicative costs for the VMS in 2012 was \$US 853,000. This single activity was thus responsible for an almost 10% annual budget increase in 2009 and thereafter.

¹⁴⁵ At: <http://www.wcpfc.int/doc/wcpfc5-2008-ip-12/commission-vms-costing-scenarios>.

The above situation induced the Commission to consider ways in which greater efficiencies could be achieved in its operations, particularly in terms of providing for budget reductions without compromising essential activities.

In 2010¹⁴⁶, the Commission thus agreed on terms of reference for a consultancy study on cost recovery and the optimization of service costs. The key principles underlying this study were endorsed as being fairness, equity and cost-effectiveness. The consultancy's scope was set up to target the VMS, Regional Observer Program, WCPFC Record of Fishing Vessels, fees for carrier and bunker vessels, and registration fees for observer delegations at Commission meetings. A consultancy report has been prepared and will be considered at WCPFC8. One of the results of this report is a projected saving of more than 50% of the indicative costs from 2012 onwards.

Panel Assessment and Recommendations on the Budget

- **The WCPFC's budget has grown substantially since the Commission assumed its responsibilities. This is largely attributable to the many significant activities that the Organization has initiated since its inception (see Section 8.2 below);**
- **Members appear to be currently providing the necessary financial resources required to achieve the Convention's aims, as well as to implement Commission decisions and to source contemporary scientific advice;**
- **However, potential budgetary instability arising from late contributions is a cause for concern. Therefore timely payment of annual contributions should remain a high priority to ensure that the WCPFC remains cash-stable and that financial support for the Organization's functions are equitably shared as envisaged in the contribution formula (Article 18(2) of the Convention and Financial Regulation 5.2);**
- **The reimbursement of any surplus funds from one year to the next should be discouraged if it rewards those in contribution arrears equally to Members who have paid their contributions on time; *Note: Financial Regulation 4.2 "appropriations shall be available for obligation during the financial year to which they relate. Available funds remaining at the end of the financial year will be applied to the working capital fund."***
- **The potential, and proportionately significant, impact of new activities on the WCPFC budget is noted;**
- **The WCPFC is commended for considering ways to address budget savings, including cost-recovery, without compromising service delivery. The WCPFC should review the outcomes of the consultancy mentioned above for its decision on how such saving might be achieved without compromising its works; and**
- **The Panel was encouraged by the anticipated savings of more than 50% for the VMS from 2012 onwards.**

¹⁴⁶ At: http://www.wcpfc.int/system/files/documents/meetings/regular-sessions-commission/seventh-regular-session/delegation-proposals-and-pape/WCPFC7-2010-DP21%20Rev%203%20Draft_Cost_Recovery_TOR.pdf.

8.2. Availability of other resources

8.2.1. Structure and related administrative matters

Three major programs and six sub-programs are supported by General Account funds (Table 26).

Table 25- WCPFC Programs and Sub-Programs

Program	Sub-Programs	Manager
Science Programme	Scientific Services Scientific Research	Science Manager
Technical & Compliance Programme	Vessel Monitoring System Regional Observer Programme Other Compliance Measures	Compliance Manager Observer Programme Coordinator
Administrative Support Programme	Administrative Support Programme ICT Programme	Finance & Administration Officer ICT Manager

The relationship between these three programs, the Secretariat's mandate and Commission's objectives are set out in the Secretariat's Business Plan¹⁴⁷. This Plan also includes program objectives and performance indicators, being guided by the Commission Strategic Plan¹⁴⁸ and Scientific Committee's Strategic Research Plan¹⁴⁹ as reviewed from time-to-time. The Secretariat is responsible for providing the necessary support to ensure that such objectives are met.

Under Article 15 of the Convention, the Secretariat is one of the WCPFC's four key structures along with the Commission (Articles 9 and 10), Scientific Committee (Article 12), and Technical and Compliance Committee (Article 14).

The Secretariat Staff Structure is shown in Figure 47 and can be seen to be well aligned with the programs and sub-programs illustrated in Table 26. The posts attached to this structure are summarized in Table 27¹⁵⁰.

¹⁴⁷ The Plan expired at the end of 2010 and an updated draft will be considered at WCPFC8 in December 2011 - At: <http://www.wcpfc.int/doc/wcpfc4-2007-fac1-08/draft-business-plan-secretariat>.

¹⁴⁸ For example, see the Commission Strategic Plan for 2011 to 2013 in Attachment II of WCPFC7-2010-32-Rev.1-FAC4-Summary Report- At: <http://www.wcpfc.int/doc/wcpfc7-2010-32/finance-and-administration-committee-summary-report>.

¹⁴⁹ This Plan will expire at the end of 2011 - At: http://www.wcpfc.int/system/files/documents/meetings/scientific-committee/6th-regular-session/general-papers/information-papers/WCPFC-SC6-2010-GN-IP-09_Strategic_research_plan_2007-2011_SC2-Attachment.pdf.

¹⁵⁰ The structure was initially confined to 13 staff identified at the 2002 Second Session of the WCPFC Preparatory Conference (At: http://www.wcpfc.int/system/files/documents/preparatory-conference/conference-documents/working-papers/WCPFC_PrepCon_WP3%28Structure_and_needs%29.pdf)

Table 26- Current WCPFC secretariat staff posts.

<p style="text-align: center;">Executive Director</p>
<p style="text-align: center;"><u>Professional (Expatriate) Staff</u></p> <p style="text-align: center;">Compliance Manager Science Manager Finance and Administration Officer Observer Program Coordinator VMS Manager ICT Manager Assistant Manager (Science Program) Systems Development Officer Japan Trust Coordinator</p>
<p style="text-align: center;"><u>Support (Local) Staff</u></p> <p style="text-align: center;">Data Quality Officer Data Entry Assistant (Vessel Registry) VMS Operator (x2) Office Manager Executive Assistant Treasury Assistant Secretary Receptionist</p>

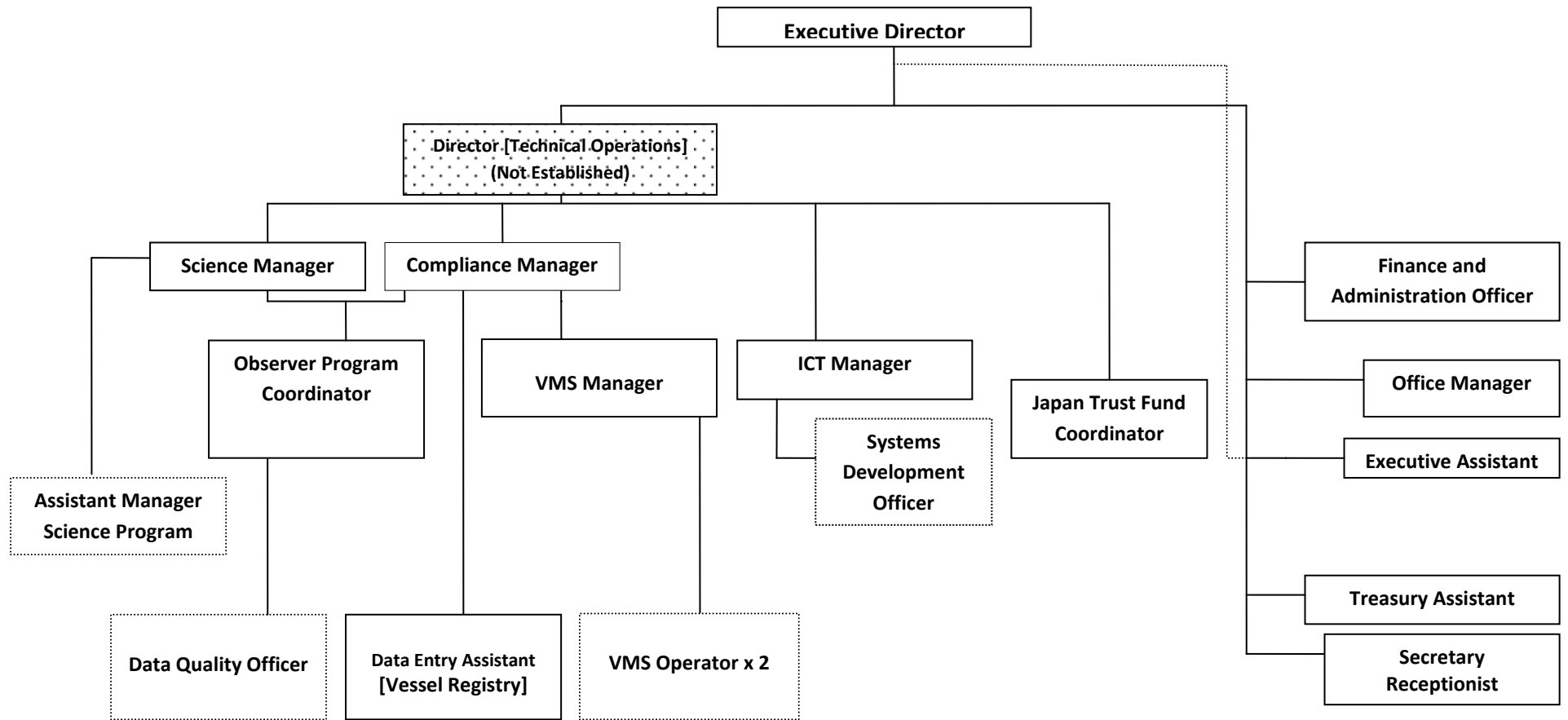


Figure 47- WCPFC Secretariat staff structure.

8.2.2. Human resources

As indicated in Section 8.1.1 above, the 2005 Staff Regulations outline Secretariat staff obligations and conditions of employment. They also detail service conditions, employment principles, duties, rights and responsibilities (Staff Regulations 3 to 10 in particular).

The Executive Director and all WCPFC staff members are international civil servants (Staff Regulation 3). Their responsibilities are exclusively international and by accepting appointment, Staff pledge themselves to discharge their functions, and to regulate their conduct, with only the interests of the WCPFC in mind.

Under Articles 7, 8 and 11 of the Headquarters Agreement between the Federated States of Micronesia and WCPFC on Diplomatic Privileges, the Executive Director has all privileges and immunities accorded to a diplomatic agent under the Agreement and in conformity with international law¹⁵¹ as does his/ her family. Likewise, all WCPFC staff and their families enjoy the privileges and immunities accorded to members of the administrative and technical staff of a diplomatic mission.

The three categories of WCPFC Secretariat staff (**‘professional staff’**, **‘support staff’** and **‘local staff’**¹⁵²) are remunerated in accordance with *Council of Regional Organizations in the Pacific* (CROP) salary structures (Staff Regulation 2). These structures have been revised in recent years and are now extremely complicated. The Secretariat are therefore, and currently, remunerated, following the old CROP salary arrangements.

WCPFC staff are required to exercise utmost discretion in all their official business and duties (Staff Regulation 6). They are also bound by confidentiality requirements and the release of any information relating to WCPFC needs to be authorized by the Executive Director if it is outside their normal duties for the Commission (Staff Regulation 6). All rights in, and title to, results of work performed by staff in the course of their duties remain the Commission’s property.

The Staff Regulations are administered by the Executive Director (Staff Regulation 1). The Executive Director may supplement the Staff Regulations with Staff Instructions not inconsistent with the Regulations, or with any decisions made by the Annual Session. Furthermore, the Executive Director may issue such Staff Instructions as necessary to ensure that the Staff Regulations remain effective. The 2009 Administrative Guidelines and Procedures Manual constitutes such instructions. All staff are also employed under stipulated Staff Contract provisions

¹⁵¹ Notably in conformity with the 1961 Vienna Convention on Diplomatic Relations

¹⁵² **‘Professional staff’** include the Executive Director and other staff engaged under a fixed term contract whose salary levels fall within the CROP Grades H to M; **‘support staff’** are staff engaged under a fixed term contract whose salary levels fall within the CROP Grades A to F, and **‘local staff’** are salaried staff who are not expatriates (Staff Regulation 2)

that outline the incumbent post requirements in terms of stipulated Terms of Reference and a Duty Statement (e.g. as shown for the Compliance Manager in Appendix X).

As noted, the Executive Director's annual report to the Commission (<http://wcpfc.int/doc/commission-01/rules-procedure>) provides a mechanism for monitoring the Director's and Secretariat's performance. This performance is reviewed by the Commission Chair.

The performance of each Secretariat staff member is assessed annually by their supervisor, as per Figure 47. The assessment is based on the staff member's Terms of Reference and Duty Statement. It assesses performance against the Terms of Reference for the Staff position concerned. The assessment is rated as 'below average', 'above average', or 'excellent'. However, the Panel was unable to assess the consequences of a 'below average' rating, particularly as this may be attached to identifying remedial action (e.g. training), to address shortfalls in performance.

8.2.3. Communications

There appears to be no institutional policy for communicating veritable information to advance the Commission's external relations and/or publicize its achievements. While it could be anticipated that the Executive Director may play an important role in this regard, no clear guidance appears to have been given to the Executive Director in respect to his/her accessibility to the media and his/her representation of the Commission.

Secretariat staff, and the Executive Director in particular, frequently participate in international meetings (e.g. COFI). Such activities are endorsed by the Commission and Scientific Committee as necessary while reports of staff participation are submitted to the relevant WCPFC bodies.

The Panel noted with appreciation the various outreach initiatives being instituted to highlight the Secretariat's contribution to Pohnpei community relations as well as to its regional standing.

The Panel suggests that it would be beneficial to the Commission's image if a formal Communication Policy could be developed to promote the Commission's profile and standing. It is suggested that the Executive Secretary be tasked with developing such a policy, for the Commission's consideration in developing an overall communication strategy for the organization.

8.2.4. Other resources

Panel comments attached to Section 5.6 have highlighted a need to broaden scientific capacity within the CCMs as well as a need to develop an associated institutional policy to address how scientific capacity may be strengthened in the WCPFC region. This explicitly recognises that scientific load-sharing by Commission Members is not even. There are likely to be attached administrative and financial considerations in addressing this particular issue. Furthermore, these considerations are likely to be additional to any Special Requirement Funds established under Article 30 of the Convention and Financial Regulation 7¹⁵³.

Panel Assessment and Recommendation on Availability of Resources

- **The various administrative arrangements and structures attached to the Secretariat's responsibilities and functioning are good. The Secretariat appears to function well and the organization/support of meetings, the production of essential documentation and attached communication are satisfactory;**
- **The increasing Secretariat task list appears to have been well and efficiently handled up to this point. However, it is essential that a 'critical mass' of Secretariat skills be sustained, particularly when senior professional staff leave. The career development of staff is therefore encouraged, as is the sharing of, and cross training in, essential task execution;**
- **Any future reorganization or expansion of the WCPFC's work is likely to affect how the Secretariat organizes its work so that it continues to sustain a high service-delivery standard. Under such circumstances, clear direction needs to be given so that the Secretariat's work priorities are clearly identified and that any need for additional resources (human or fiscal) is adequately addressed sooner rather than later;**
- **The Executive Director's role in disseminating high-quality information about the WCPFC, and its work, should be recognized, along with that of other senior staff. Consideration of an Organizational communications strategy and media policy may also be of merit. In this context, it may be worth clarifying the Executive Director's responsibilities, along with those of other office bearers, for the communication of such information; and**
- **To better determine how well Secretariat staff deliver their required services, metrics should be developed for assessing their various duties/ tasks. These could be based on a schedule of tasks/ activities to be undertaken, the completion of tasks against identified guidelines/ deadlines, and the final service outputs delivered in terms of delivery efficiency/ standards. Such metrics would also serve to identify 'exceptional performance' as well as performance requiring remediation. The former would serve to retain and reward high performing, good and efficient staff.**
- **The Panel suggests that the Commission may wish to task the Executive Secretary with developing a procedure to target training needs to improve staff performance.**
- **The Panel commends the Secretariat outreach initiatives with regard to the local community and the region.**
- **The Panel urges the Commission to develop a formal Communication Policy.**

¹⁵³ See also paragraph 8.1.7.

8.3. Cost-efficiency and effectiveness

As noted, the Secretariat's various functions are outlined in Article 15 of the Convention and Rule 33 of the Commission's Rules of Procedure. In executing its duties, and to minimize costs for Commission Members, the Secretariat is required to be cost effective.

Like other RFMOs, WCPFC is characterized by notable scientific activities. Most of these activities require appropriate support from the Secretariat. With time, the Secretariat has increased and improved the services it provides to the Scientific Committee, notably including those listed in Table 28, below.

In recent years, greater emphasis has come to be placed in the need for international fisheries arrangements to address their broader needs in a more proactive way. This not only impacts on how RFMOs go about their business, but it has also brought focus to their performance. A notable development in this regard, has been the recent demands attached to the need for RFMOs to deal with IUU fishing.

As part of the growing need to address and monitor compliance, the WCPFC has a suite of measures, and associated organizational structures, in place to detect IUU fishing and to counter its effects¹⁵⁴. These include the marking of licensed vessels, the compilation/ dissemination of vessel lists and the production of a widely-disseminated IUU Vessel List (CMM 2006-09). The measures are consistently under review and have played a significant role in strengthening the Secretariat's technical capacity.

These and associated compliance-related activities (Table 29, below) have necessitated the appointment of additional staff in recent years. A most notable development in this regard, has been the recent creation of the VMS Manager post (with two VMS Operator posts) to improve monitoring of licensed vessels fishing in the WCPFC Area (CMM 2007-02). This has facilitated a very cost-effective focus on four areas: (a) maintenance of a 6000 vessel Record of Authorized Fishing Vessels; (b) monitoring of the 3000 active fishing vessels through the VMS; (c) coordination of 750 national observers in the Regional Observer Programme, and (d) improved coordination with sub-regional organizations, namely FFA, PNA, SPC and the new Te Vaka Moana. Routine monitoring of compliance by fishing fleets with the 29 current Conservation and Management Measures is also undertaken.

Taking the above considerations into account, it is the Panel's view that the current Secretariat structure is compatible with the functions with which it is tasked. In these terms, the cost-efficiency of the WCPFC as a whole is not only aligned with the organisation's diverse functions, it is also adequately realized.

¹⁵⁴ At: <http://www.wcpfc.int/vessels>.

Table 27- List of WCPFC meetings supported by the Secretariat.

Date	Meeting	Location	Output
4-8 April	Preparatory Stock Assessment Workshop	Noumea	<ul style="list-style-type: none"> Participated Members addressed questions and provided guidelines to Science Service Provider for the conduct of 2011 stock assessment
12-15 April	GEF Project meeting (Sulu-Celebes Sea Sustainable Fisheries Management Project Technical WS and WPEA Project consultation with Philippines)	Manila	<ul style="list-style-type: none"> Planning and convening a GEF meeting trained WPEA project activities in Philippines reviewed and future activities planned
11-14 July	WPEA WS on Development of National Tuna Management Plan (NTMP), Tuna Fishery Profile, and Review of WPEA project activities.	Hanoi	<ul style="list-style-type: none"> Template of NTMP, Tuna Fishery profile produced WPEA Project activities reviewed
14 to 25 July 2011	International Science Committee <ul style="list-style-type: none"> ALB WG 14-15 July PBF WG 16 July BILL WG 16 July STAT WG 17-19 July ISC11 Plenary Meeting 20-25 July 	San Francisco	<ul style="list-style-type: none"> Update ISC on the work of the Commission since the last regular Session. Scientific and administrative input Meeting Summary Report
9-17 August	SC7	Pohnpei	<ul style="list-style-type: none"> Scientific advice and recommendations produced for WCPFC8
13 August	The WPEA Project Steering Committee Meeting	Pohnpei	<ul style="list-style-type: none"> WPEA project activities reviewed
6-9 September	NC7	Sapporo	<ul style="list-style-type: none"> NC recommendation produced for WCPFC8
15-20 October	GEF Project Manager's Training WS and the 6 th International Waters Conference	Dubrovnik	<ul style="list-style-type: none"> Development of Strategic Action Programme, Transboundary Diagnostic Analysis trained experience of project management shared.
14-25 November	Workshop on policy, legal and institutional arrangements, consultation meeting for the development of 2012 WPEA annual work plan in Indonesia and Vietnam	Hanoi and Jakarta	<ul style="list-style-type: none"> Consultancy reports on NTMP, Tuna fishery profile and Functions of National Tuna Association reviewed 2012 WPEA annual work plan drafted Indonesia's accession to WCPFC discussed
12-16 December (plan)	Indonesian Policy, legal and institutional WS and Planning of 2012 WPEA Philippine annual work plan	Jakarta, Manila	<ul style="list-style-type: none"> Indonesia's tuna fishery profile, logbook system, Indonesian NTMP, and National Tuna Association reviewed Philippine 2012 WPEA annual work plan drafted

Table 28- Compliance-related activities under the responsibility of WCPFC Secretariat.

<p>General</p>	<ul style="list-style-type: none"> • Close liaison with sub-regional organizations including FFA, SPC, PNA Te Vaka Moana and all CCMs to monitor compliance with the CMMs in accordance with the new Compliance Monitoring Scheme (CMM 2010-03) and coordinating MCS activities and procedures within the Convention Area, e.g., annual MCS working Groups, ROP and VMS meetings; • Liaising with CCMs to address special requests for information on operationalizing CCMs; • Receiving and logging all processes involved in the high seas boarding and inspection activities (CMM 2006-08) and monitoring and advising on appropriate procedures; • Responding to queries from CCMs, Non-Members and the industry on compliance matters; • Liaising with CCMs and regional organizations to harmonise RFV and VMS systems, IUU lists and using new technology to assist CCMs in reporting requirements through electronic means in a move to an Integrated Fisheries Information Management System;
<p>Record of Fishing Vessels</p>	<ul style="list-style-type: none"> • Maintain and daily update the record of 6000 fishing vessels that are authorised to fish in the Convention area; • Liaise with the four other tuna RFMOs to maintain and update the Consolidated List of Authorized Fishing Vessels (CLAV) of all tuna RFMOs on a monthly basis;
<p>Vessel Monitoring System</p>	<ul style="list-style-type: none"> • Close liaison and participation in 3 major regional monitoring, control and surveillance operations per year with the provision of staff and VMS data for the high seas patrol assets; • Maintain and update the 3000 VMS Registry of vessels active in the Convention Area; • Monitoring of the two western high seas pocket closures to purse seine fishing on a daily basis; • Monitoring of the FADs closures on the high seas; • Set up and VMS monitoring of the Special Management Area in the high seas pocket surrounded by the tripartite management flag States; Kiribati, Cook Islands, French Polynesia; • Provision of special monitoring and VMS information requests for MCS patrols and the 100 nm extended buffer zones beyond national EEZs according to security procedures; • Provision of Commission VMS data for those CCMs that have requested access under Article 24(8) of the Convention for VMS data inside their EEZs.
<p>Regional Observer Programme</p>	<ul style="list-style-type: none"> • Close liaison with all the national observer programme providers who now provide approximately 750 observers to ensure 100% observer coverage on all purse seiners active in the high seas of the Convention Area and planning for the 5% coverage for longliners in June 2012, thus necessitating training of some 400 new observers for 2012; • Liaison with SPC for the compilation, quality verification and analyses of the science and compliance data from approximately 3000 observer trips per year; • Assisting CCMs in national training programmes, briefer and de-briefer training to provide higher quality observer data and reports; • Conducting Regional Observer Programme Audits to maintain the high quality performance of the observer programme to set regional standards; • Investigating new technology for the entry of core observer data direct from sea to the SPC to reduce costs and enhance timing of receipt of observer data for stock assessment, safety and compliance activities.

Panel Assessment and Recommendations on Cost-Efficiency and Effectiveness

- **Despite an increasing workload, and the increased complexity of WCPFC's scientific advice and fisheries management activities, the Secretariat continues to support the Organization's work in a highly professional and effective manner.**
- **The WCPFC Secretariat is commended for its work in support of the WCPFC.**

8.4. Secretariat and other resources required to continue support of the WCPFC's work

The WCPFC Secretariat's work concentrates on finance and administration, organization and support of meetings, circulation of communications, production and distribution of reports and publications, and compilation of statistics.

As outlined in the 2009 Administrative Guidelines and Procedures Manual, the current WCPFC human resources strategy entails providing as much internal Secretariat specialization as practicable within the Organization's structural arrangements while allowing for the sharing of generalized tasks among individual staff. These requirements have been largely addressed by:

- Raising individual competency through training and hiring to enhance efficiency and the Secretariat skills base; and
- Implementing a team approach to augment the Secretariat's flexibility, as well as its ability to respond to the Organization's future requirements.

Coupled with the Secretariat Business and Commission Strategic Plans, this has meant that Secretariat resourcing has largely remained in keeping with strategic needs. Notably:

- The incumbent Executive Director does not sign off on any staff assessment, unless a development plan is in place for the professional or local staff member being assessed, and
- Assessment of Secretariat staff performance could be better focused generically, if various metrics (e.g. ingenuity, flexibility, skills-matching, etc.) could be graded against a stipulated, common-format task list. This would not only facilitate priority setting for individual staff, but would also improve monitoring of staff outputs across the Secretariat.

The Panel noted that a number of RFMOs have developed Professional Development Internship (PDI) programs to provide Secretariat staff with meaningful international training opportunities. These programs also facilitate cooperation and the exchange of ideas/practices with other fisheries organizations.

In terms of infrastructure, the current Secretariat headquarters appear adequate for current needs as well as future growth.

Housing for expatriate staff appears problematic, although the Commission is considering providing housing for the Executive Director. The question of whether a lack of suitable housing may be deterring recruitment of skilled staff could not be determined.

It is noticeable that the hosting of regular meetings at the WCPFC Headquarters in Pohnpei may be encountering problems. This is largely attributable to a general lack of hotel space and the scheduling of flights.

Panel Review and Recommendations on Secretariat and Other Resources

- **The Executive Director should be commended for facilitating the professional development of Secretariat staff and linking this to assessment of staff performance. It may be worthwhile also encouraging the Executive Director to develop a Professional Internship Program along the lines identified above;**
- **The Commission's attention is drawn to the fact that future expansion of WCPFC activities, particularly data collection/sharing and MCS activities, may require the expansion of Secretariat staff capabilities. It may also necessitate the acquisition/deployment of new communication and information technologies. It is therefore recommended that staff capabilities should be continually monitored and wherever necessary rigorous professional/skills training programs, and/or opportunities for Secretariat staff, should be identified and addressed;**
- **The Panel also draws the Commission's attention to the fact that any future expansion of the Secretariat's work will entail timely consideration of attendant staff needs or skills. This implies that adequate planning and priority setting is essential to provide the Secretariat with the necessary human, financial and other resources it may need for its future work;**
- **Following the above, the Panel notes that the matrix currently being developed by the Secretariat for FAC's consideration is likely to provide a cost-effective approach to planning the WCPFC's future activities in terms of financial commitments, skills availability and infrastructure implications;**
- **The Executive Director should be tasked with developing a generically-based and standardized cross-Secretariat staff performance appraisal system. This would aim to provide stipulated, common-format task lists to facilitate priority setting for individual staff and across the Secretariat. It will also improve monitoring of staff skills and outputs;**
- **Secretariat office space, and the attached infrastructure, appears adequate for current and future needs; and**
- **Consideration needs to be given to producing a meeting schedule, and associated meeting sites, that are convenient for all Members in terms of both available accommodation and convenient accessibility. The Panel understands that a list of requirements for hosting meetings has been compiled. This should form the basis for drawing up the meeting site and schedule referred to immediately above.**

9. Appendices

Appendix I- Terms of Reference for the Performance Review of the Western and Central Pacific Fisheries Commission

Background

At WCPFC7 the Commission took the following decision to review the performance of the Commission.

436. WCPFC7 agreed that a performance review of the Commission would be undertaken in 2011, and tasked the Executive Director with (i) developing criteria for the review based on input received from members, and reflective of characteristics of the WCPFC; and (ii) proposing a review panel to members for their approval that reflects the input received.

The discussion prior to the decision and reflected in the Commission record (para 435) noted that the review team should include independent experts and Commission members including SIDS representation. The criteria for the review have been developed as determined by the decision of the Commission, are based on the established Kobe principles, and amended to reflect the WCPFC's mandate and membership.

The review will take place in 2011 and focus on the effectiveness of the Commission to fulfil its mandate under the Convention and in line with the review criteria. The review will consider the Convention texts and supporting structure developed and adopted by the Commission and will include the science processes and status of the stocks, and the Conservation and Management Measures adopted by the Commission and the role of the Committees. The review is to be transparent and objective and provide advice to members on areas where and how improvement could be made to the Commissions operations. It is suggested that the structure and reports from the other Tuna RFMOs be used to guide the final report structure of the review panel.

Objective

The objective of the work to be carried out by the review team shall be to submit a report presenting:

1. A review of the WCPFC Convention Basic Texts in terms of the framework they provide to meet the objective of the Convention and the work of the Commission.
2. An assessment of the achievement of WCPFC's objectives against the attached criteria (i.e. are there measures, processes or procedures in place to achieve WCPFC's objectives?)
3. Recommendations on how to improve WCPFC performance.

Methodology

In consultation with the Executive Director, the review team shall determine the review process and methodology using as a basis the criteria contained in Annex 1. The timing of the review has been structured to allow the Consultants to meet with members of the Commission during the Kobe 3 meeting in July 2011 in California.

Criteria

The criteria attached were developed through the Kobe process and have been modified to reflect the WCPFC Convention as determined by the decision of the Commission. The review team is invited to consider the criteria as a basis for their evaluation.

Work Schedule

The work estimate is based on 30 working days for the completion of the review. Depending on the availability of the review team it is proposed to commence this process so that the report can be available for consideration by the Annual meeting of the WCPFC in December 2011.

1 Consultation

Consultation with members can occur by way of a questionnaire, email or during the Kobe 3 meeting in July 2011 in California. The review team may also take an opportunity to meet with members at other regional meetings as appropriate.

2 Provisional Report

The provisional report will contain the evaluation and the assessment. This report will be sent to the WCPFC Secretariat before 30 September 2011.

3 Revision of the Provisional report

The Chair and Vice Chair along with the Executive Director will review the report and provide any comments to the review team in order for them to finalize their report to the WCPFC.

4 Final Report

The final report will contain the evaluation, the assessment and the recommendations. This final report will be:

- Sent to the WCPFC Secretariat before 21st October 2011.
- Immediately distributed to WCPFC CCMs so that it can be considered at the 8th Annual meeting of WCPFC in Palau 2011.
- Discussed at the annual meeting and the Commission will decide on those recommendations it wishes to progress and the process for doing this.

The Panel Review Coordinator will attend the 8th Annual Meeting of WCPFC.

Criteria for Reviewing the Performance of Regional Fisheries Management Organizations (RFMOs)

	<i>Area</i>	<i>General criteria and convention consistency</i>	<i>Detailed criteria</i>
1	<i>Conservation and management</i>	Status of living marine resources	<ul style="list-style-type: none"> • Status of major fish stocks under the purview of the RFMO in relation to maximum sustainable yield or other relevant biological standards. • Trends in the status of those stocks. • Status of species that belong to the same ecosystems as, or are associated with or dependent upon, the major target stocks (hereinafter “non-target species”). • Trends in the status of those species.
		Data collection and sharing WCPFC Article 10 (1(d)), 5 (i), 10(1(e), 5 (j).apply	<ul style="list-style-type: none"> • Extent to which the RFMO has adopted standards for collection, verification and reporting of data on fisheries for highly migratory fish stocks in the Convention Area in accordance with the UN Fish Stocks Agreement, including, agreed formats, specifications and timeframes for data submission, taking into account UNFSA Annex I. • Extent to which RFMO members and cooperating non-members, individually or through the RFMO, collect and share complete and accurate data concerning vessel position, fishing activities (and catches of) target stocks and non-target species and fishing effort, as well as other relevant data in a timely manner. • Extent to which the RFMO has access to accurate and complete statistical data to ensure that the best scientific information is available, while maintaining confidentiality, where appropriate • Extent to which the RFMO has adopted standards for exchange of data concerning fishing activities and fishing vessel data among members and with other RFMOs. • Extent to which the RFMO is addressing any gaps in the collection and sharing of data as required. • Extent to which the RFMO obtains and evaluates economic and other fisheries –related data and information relevant to the work of the Commission.
		Quality and provision of scientific advice WCPFC Articles 5(e) , 10(1(f))	<ul style="list-style-type: none"> • Extent to which the RFMO receives and/or produces the best scientific advice relevant to the highly migratory fish stocks and other living marine resources under its purview, as well as to the impacts of fishing on the marine environment. • Extent to which the RFMO obtains and evaluates scientific advice, reviews the status of the stocks, promotes the conduct of relevant scientific research and disseminates the results thereof.

	<p>Adoption of conservation and management measures</p> <p>WCPFC Articles 5(f), 5(e) 10(1(h)) 5(b) and 30 (2)</p>	<ul style="list-style-type: none"> • Extent to which the RFMO has adopted conservation and management measures for both target stocks and non-target species that ensures the long-term sustainability of such stocks and species and are based on the best scientific evidence available. • Extent to which the RFMO has implemented the precautionary approach in accordance with WCPF Convention Articles 5(c) and 6 and as set forth in UNFSA Article 6 and the Code of Conduct for Responsible Fisheries Article 7.5, including the application of precautionary reference points. • Extent to which the RFMO has adopted and is implementing effective rebuilding plans for depleted or overfished stocks. • Extent to which the RFMO has moved toward the adoption of conservation and management measures for previously unregulated fisheries, including new and exploratory fisheries. • Extent to which the RFMO has taken due account of the need to conserve and protect marine biological diversity and the marine environment and minimize harmful impacts of fisheries on living marine resources and marine ecosystems. • Extent to which the RFMO has adopted measures to minimize pollution originating from fishing vessels, waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species, in particular endangered species, through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques. • Extent to which the RFMO has adopted generally recommended international minimum standards for the responsible conduct of fishing operations. • Extent to which the RFMO has taken into account the special requirements of developing States, and territories in the establishment of conservation and management measures (CMM's)
	<p>Capacity management</p> <p>WCPFC Articles 5(g), and Article 2.</p>	<ul style="list-style-type: none"> • Extent to which the RFMO has identified fishing capacity levels commensurate with long-term conservation and sustainable use to support the optimum utilization of the fisheries resource. (<i>note Kobe 2 workshops agreed to adopt the FAO definition of capacity in the medium term... "The amount of fish (or fishing effort) that can be produced over a period of time (e.g. year or a fishing season) by a vessel or a fleet if fully utilized and for a given resource condition"</i>). These were adopted by the WCPFC. • Extent to which the RFMO has taken actions to prevent or eliminate overfishing and excess fishing capacity and effort, and to ensure that levels of fishing effort do not exceed those commensurate with the sustainable use of the resources.
	<p>Compatibility of Conservation and Management Measures</p> <p>WCPFC Article 10(1(b))</p>	<ul style="list-style-type: none"> • Extent to which compatible measures have been: <ul style="list-style-type: none"> ✓ adopted as reflected in UNFSA Article 7 and, ✓ established in accordance with WCPF Convention Article 8.

		Fishing allocations and opportunities WCPFC Articles 10(1(a)), 10(1(g)); 32(4), 30 and 30(2),	<ul style="list-style-type: none"> • Extent to which the RFMO agrees on the allocation of allowable catch or levels of fishing effort, including taking into account requests for participation from new members or participants as reflected in UNFSA Article 11. • Extent to which the RFMO has developed, where determined necessary, criteria for the allocation for the TAC or the total level of fishing effort for highly migratory fish stocks in the convention area. • Extent to which the RFMO has a process for taking into account requests for participation from non parties as reflected in Article 32 of the WCPF Convention. • Extent to which the RFMO takes into account the special requirements of developing States, in particular small island developing States and Territories, in the establishment of conservation and management measures.
2	<i>Compliance and enforcement</i>	Flag State duties	<ul style="list-style-type: none"> • Extent to which RFMO members are fulfilling their duties as flag States under the treaty establishing the RFMO, pursuant to measures adopted by the RFMO, and under other international instruments, including, inter alia, the 1982 Law of the Sea Convention, the UNFSA and the 1993 FAO Compliance Agreement, as applicable.
		Port State Measures	<ul style="list-style-type: none"> • Extent to which the RFMO has adopted and implemented measures relating to the exercise of the rights and duties of its members as port States, as reflected in UNFSA article 23, and the Code of Conduct for Responsible fisheries Article 8.3 and in WCPF Convention Article 27.
		Monitoring, control and surveillance (MCS) WCPFC Articles 10(1(i)); 5(j).	<ul style="list-style-type: none"> • Extent to which the RFMO has adopted integrated MCS measures including conservation and management measures, for effective monitoring, control, surveillance and enforcement, a vessel monitoring system (Article 24(8)), High Seas Boarding and Inspection Scheme (Article 26), Regional Observer Programme (Article 28), and Transshipment Verification and Regulation (Article 29)), and other standards for verification of fisheries data (Article 10(1(d))). • Extent to which RFMO members implement such measures effectively.
		Other enforcement-related issues, including follow up on infringements	<ul style="list-style-type: none"> • Extent to which the RFMO, its Members and Cooperating Non-Members follow up on infringements to conservation and management measures, and other decisions of the Commission.
		Cooperative mechanisms to detect and deter non-compliance	<ul style="list-style-type: none"> • Extent to which the RFMO has established adequate cooperative mechanisms to both monitor compliance and detect and deter non-compliance (e.g., compliance committees, vessel lists, sharing of information about non-compliance, market-related measures). • Extent to which these mechanisms are being effectively utilized.
		Market-related measures	<ul style="list-style-type: none"> • Extent to which the RFMO has adopted measures relating to the exercise of the rights and duties of its members as market States. • Extent to which these market-related measures are effectively implemented.
3	<i>Decision-making and dispute settlement</i>	Decision-making	<ul style="list-style-type: none"> • Extent to which the RFMO has transparent and consistent decision-making procedures that facilitate the adoption of conservation and management measures in a timely and effective manner.

		Dispute settlement	<ul style="list-style-type: none"> • Extent to which the RFMO has established adequate mechanisms for resolving disputes.
	<i>The role and performance of Subsidiary bodies</i>	Enhancing the work performance of the Commission	<ul style="list-style-type: none"> • .Extent to which the subsidiary bodies contribute to the performance of the Commission • Is the structure of the subsidiary bodies of the Commission correct, or are there other bodies that should be considered. • Could they have an improved or enhanced role in decision making
4	<i>International cooperation</i>	Transparency	<ul style="list-style-type: none"> • Extent to which the RFMO is operating in accordance with the transparency provisions of Article 21 of the WCPF Convention, Article 12 of the UNFSA, and the Code of Conduct for Responsible Fisheries Article 7.1.9. • Extent to which RFMO decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials are made publicly available in a timely fashion.
		Relationship to cooperating non members WCPFC Article 32	<ul style="list-style-type: none"> • Extent to which the RFMO facilitates cooperation between members and non members, including through the adoption and implementation of procedures for granting cooperating status.
		Relationship to non-cooperating non-members WCPFC Article 32	<ul style="list-style-type: none"> • Extent of fishing activity by vessels of non-members that are not cooperating with the RFMO, as well as measures to deter such activities.
		Cooperation with other RFMOs WCPFC Article 22(2); 22(3); and 22 (3 and 4).	<ul style="list-style-type: none"> • Extent to which the RFMO cooperates with other RFMOs, particularly those which have related objectives and which can contribute to the attainment of the objective of the Convention, including through the network of Regional Fishery Body Secretariats. • Extent to which the RFMO cooperates with the IATTC to ensure that the objective of the Convention (Article 2) is reached. In particular the extent to which the RFMO has consulted with the IATTC with a view to reaching agreement on a consistent set of conservation and management measures, including MCS, for fish stocks that occur in the Convention Areas of both organizations, and to avoid duplication of measures in respect of species in the area which are regulated by both organizations.

		<p>Special requirements of developing States</p> <p>WCPFC Article 30(1); 30(2), 30(3) and 30(4)</p>	<ul style="list-style-type: none"> • Extent to which the RFMO gives full recognition to the special requirements of developing States which are Parties to the Convention, in particular small island developing States and Territories, in relation to conservation and management of highly migratory fish stocks in the Convention Area and development of fisheries for such stocks including with respect to fishing allocations or opportunities, taking into account UNFSA Articles 24 and 25, and the Code of Conduct of Responsible Fisheries Article 5. • Extent to which the Conservation and Management Measures adopted by the RFMO take into account the special requirements of developing States in particular small island developing States and Territories. • Extent to which the RFMO has funds to facilitate the effective participation of developing States, particularly small island developing States and Territories in the work of the Commission, including its meetings and those of subsidiary bodies. • Extent to which RFMO members, individually or through the RFMO, establish mechanisms for cooperation with developing States and Territories, which may include provision of financial assistance, assistance relating to human resources development, technical assistance, transfer of technology including through joint venture arrangements, and advisory and consultative services. These may be delivered on a bilateral basis with developing States and Territories, or through WCPFC Special Requirements or other funds established for this purpose.
		<p>Participation</p> <p>WCPFC Article 35</p>	<ul style="list-style-type: none"> • Number of member coastal States/number of cooperating non-member coastal States/total number of coastal States. • Number of member countries/number of cooperating non-member countries/total number of countries.
5	<i>Financial and Administrative Issues</i>	<p>Availability of resources for RFMO activities</p>	<ul style="list-style-type: none"> • Extent to which financial and other resources are made available to achieve the aims of the RFMO and to implement the RFMO's decisions.
		<p>Efficiency and cost-effectiveness</p> <p>WCPFC Article 15(5).</p>	<ul style="list-style-type: none"> • Extent to which the RFMO is efficiently and effectively managing its human and financial resources, including those of the Secretariat. • Extent to which, and as appropriate, the Secretariat is utilizing the capacity of existing regional institutions to perform certain technical secretariat functions.

Appendix II- Short curriculum vitae of external and internal expert

Denzil Miller

Denzil Miller has a PhD in marine biology from the University of Cape Town. He has headed a number of international fisheries negotiations, was Chair of the CCAMLR Scientific Committee (1996-2000) and CCAMLR Executive Secretary (2002-2010). Denzil also headed the FAO Regional Fisheries Secretariat's Network and was a member of the NAFO performance review panel. He has published more than 70 peer-reviewed papers and books on marine science, policy and governance. He was an Erskine Visiting Fellow at the University of Canterbury (New Zealand) in 2010, is a Professorial Fellow at the Australian National Centre for Ocean Strategy and Resources at the University of Wollongong and Honorary Research Professor at the Institute for Marine and Antarctic Studies at the University of Tasmania. Denzil was the recipient of the South African BP Antarctic Award in 1995, the South African Antarctic Medal in 1995 and the Duke of Edinburgh Conservation Medal in 1997 for his services to ocean and Antarctic fisheries management. He was made an Honorary Member in the Order of Australia (AM) in December 2011 for his contribution to Antarctic marine conservation.

Professor Fabio Hazin

Prof. Fabio Hazin was born in Recife, Brazil, in June 04, 1964. He graduated as a fisheries engineer, from Universidade Federal Rural de Pernambuco, in 1987, and got his Master and D.Sc. Degree in Fisheries Oceanography, from the Tokyo University of Marine Science and Technology, in Japan, in 1991 and 1994, respectively. He also did a course on the Law of the Sea, in the Rhodes Academy. He has an academic background on fisheries biology of highly migratory fish species and fisheries management. He Chaired the FAO Technical Consultation to draft a legally binding instrument on Port State Measures, in 2008-2009. He also served as the Chair of the International Commission for the Conservation of Atlantic Tunas- ICCAT, from 2007 to 2011, and has been the Brazilian Chief Scientist in that Commission, since 1999. In 2011, he chaired the Performance Review Processes of NAFO, CECAF and SWIOFC. Presently he is the head of the Fisheries and Aquaculture Department of Universidade Federal Rural de Pernambuco, Brazil; the Scientific Coordinator of the Saint Peter and Saint Paul Archipelago Research Station; President of the Scientific Committee of the Standing Committee for the Management of Tuna Fisheries, of the Brazilian Ministry of Fisheries and Aquaculture; and President of the State Committee for the prevention of Shark Attacks. He has participated in more than 150 international Meetings, in the past 15 years, including the past 7 FAO/ COFI Meetings, FAO Conferences, several FAO Expert and Technical Consultations, the past 16 ICCAT SCRS Meetings and Commission Meetings, Meetings of the UNICPOLOS, of the UN Sustainable Development Commission, UNFSA Review Conference, etc. He has over 100 scientific papers published in several International Journals, 22 book chapters and has edited 5 books. His main field of activities includes fisheries policy and management, fisheries science, and fisheries oceanography.

Ichiro Nomura

Mr Ichiro Nomura held, from April 2000 to August 2010, the position of Assistant Director-General and head of the Fisheries and Aquaculture Department of FAO in Rome, where he was responsible for all programmes and activities relating to the development of policies, strategies and guidelines as well as the provision of technical services to FAO members concerning management, economics and policy, information and statistics, products and industry, conservation, emergency and rehabilitation activities in the field of fisheries and aquaculture, through an FAO statutory body - the Committee on Fisheries - and also for promoting and supporting the implementation of the Code of Conduct for Responsible Fisheries and its related instruments. Before coming to FAO, he had held various responsible positions in the Fisheries Agency of the Japanese Government for more than 25 years and is well known in various international fisheries fora, including the FAO Compliance Agreement negotiation, the UN Fish Stocks Agreement negotiation, etc. He also served as Chairman of the OECD Committee for Fisheries and Chairman of the International Commission for the Conservation of Atlantic Tuna. Mr. Nomura holds a Master of Law and Diplomacy from the Fletcher School of Law and Diplomacy, Tufts University, USA, and a Master of Public Administration from the John. F. Kennedy School of Government, Harvard University, USA.

Judith Swan

Judith Swan is an expert in fisheries law, policy and institutions with experience in a range of interconnected disciplines. She has worked in over sixty countries and at all levels-local, national, regional and international.

She has served as a law professor at seven universities in Australia and Canada, an international fisheries relations officer in the government of Canada, legal counsel and chief of fisheries management for the Pacific Islands Forum Fisheries Agency, Executive Director of the Oceans Institute of Canada, CEO of a consulting firm and Senior fisheries policy and programme officer at the Food and Agriculture organization of the United Nations. She is the author of several publications, and was instrumental as founder of World Oceans Day.

She has published widely on governance in regional fisheries bodies and has chaired or participated in performance reviews of four regional fishery bodies.

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Appendix IV- General Report Structure of the Performance Review other RFMOs GFCM, CCSBT, CCMLR, ICCAT, NEAFC, SEAFO).

RFMO Performance Review Model

Executive Summary

1. Introduction

- 1.1. Background of the Performance Review
- 1.2. Terms of Reference and Criteria of the Performance Review
- 1.3. The Performance Review Panel
- 1.4. Methodology of the Performance Review Panel
- 1.5. The structure of the report

2- Background and brief history of the RFMO

- 2.1- The foundation
- 2.2- Objective and mandate
 - 2.2.1- Area of competence
 - 2.2.2- Species and fisheries covered
- 2.3- Membership
- 2.4- Institutional structure

3- The Convention and its consistency with other International fisheries instruments and initiatives

4- Conservation and Management

- 4.1- Status of living marine resources
- 4.2- Ecosystem approach
- 4.3- Data collection and sharing
- 4.4- Quality and provision of scientific advice
- 4.5- Adoption of conservation and management measures
- 4.6- Capacity management
- 4.7- Compatibility of management measures
- 4.8- Fishing Allocations and opportunities

5- Compliance and Enforcement

- 5.1- Flag State duties
- 5.2- Port State Measures
- 5.3- Monitoring, Control and Surveillance
- 5.4- Follow-up on infringements
- 5.5- Cooperative mechanisms to detect and deter non-compliance
- 5.6- Market related measures

6- Decision making and dispute settlement

- 6.1- Decision making
- 6.2- Dispute settlement

7- International Cooperation

- 7.1- Transparency
- 7.2- Relationship to non-Contracting Parties cooperating with the assessed RFMO
- 7.3- Cooperation with other RFMOs
- 7.4- Special requirements of Developing States

8- Financial and administrative issues

- 8.1- Availability of resources
- 8.2- Efficiency and cost-effectiveness

9- Conclusions and recommendations

Appendix V

The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

Scientific Committee
Seventh Regular Session

Pohnpei, Federated States of Micronesia
9–17 August 2011

TERMS OF REFERENCE FOR THE PEER REVIEW OF THE 2011 BIGEYE TUNA STOCK ASSESSMENT

Terms of Reference

The Panel would prioritise the tasks listed below. The review panel may comment and make recommendations upon issues additional to those listed below.

1. Evaluate and determine what stock structure is most appropriate for the bigeye tuna stock assessment with consideration of a Pacific wide assessment.
2. Comment on the adequacy and appropriateness of data sources for stock assessment. Evaluate the use (robustness) of modified data from sampling bias studies. Identify data uncertainties and its effects on assessments results. Recommend methods to resolve data uncertainties.
3. Review the assessment methods: determine if they are reliable, properly applied, and adequate and appropriate for the species, fisheries, and available data.
4. Evaluate the assessment model configuration, assumptions, input data and configuration, and primary sources of uncertainty, parameters (fishery, life history, and spawner recruit relationships), determine if data is used appropriately, input parameters seem reasonable and primary sources of uncertainty are accounted for.
5. Particular attention is to be paid to the following:
 - A) Length of older individuals and the impact it has on the stock assessment results.
 - B) Potential for regime shift in recruitment. Consider whether shifts in recruitment are real or are caused by model artefacts.
 - C) Appropriateness of the stock recruitment relationship.
 - D) Availability of bigeye to purse seine and not being available to longline.
 - E) Investigate the cause of residual patterns in the length composition data and determine how it can be resolved.
 - F) The use of CPUE indices in the assessment (purse seine, pole-and-line and/or longline) and consider the regional weighting of these standardized indices.
 - G) Determine if the manner in which the movement and tagging data are modeled is appropriate.
 - H) Determine if the spatial structure of the model is appropriate.
6. Evaluate the adequacy of the sensitivity analyses in regard to completeness and incorporation of results.

Appendix VI
REPORTING AND DATA REQUIREMENTS FOR 2011
(Information Supplied by WCPFC Secretariat)

1. Data notes (<http://www.wcpfc.int/doc/notes-relating-data-provision>) are provided on the WCPFC Website. These are presented in Table 1.
2. The various 2011 data requirements, and attached submission details/deadlines, are provided in Table 2.

Table 1: WCPFC Data notes as posted on the Website.: 21 July, 2008.

ANNEX to the Provision of Scientific data to the WCPFC

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Last updated : 21 July 2008

Table A1. Description of the Data Status field

NOT COLLECTED	Data were not collected
COLLECTED - not yet available	Data were collected, but not yet made available to the WCPFC
PROVIDED and OK	Data were collected and provided according to the criteria established for data provision
PROVIDED but check NOTES	Data were collected and provided, but not according to the criteria established for data provision and/or there are NOTES regarding the data provided
COLLECTION status unknown	Data were not provided – collection status unknown
Fleet INACTIVE	Fleet was not active

Table A2. Notes on ANNUAL CATCH ESTIMATES

1	Estimates not provided by CCM, but catch was estimated by the OFP while assisting with the preparation of the national fisheries report.
2	Estimates not provided by CCM, but catch estimates were taken from the national fisheries report prepared for the meeting of the Scientific Committee
3	Total annual catches by species were provided but species catches were not broken down by gear type.
4	Estimates not provided, but total annual catches can be determined by aggregating operational data.
5	The number of active vessels not provided.
6	The number of active vessels was not broken down into size class categories.
7	Marlin catch estimates not provided to the species level.
8	Coverage of data used to determine estimates not provided.
9	Type(s) of data used to determine estimates not provided.
10	Methods used to determine estimates not provided.
11	Billfish species estimates not provided.
12	Estimates of yellowfin catch also include bigeye catch (bigeye catch not provided)
13	Significant catches have been reported for "unclassified" gear types
14	Broad estimates provided in the absence of any reliable information

Table 1: (Cont.)**Table A3. Notes on AGGREGATE CATCH/EFFORT DATA**

1	Data cover the WCPO only (the Pacific Ocean west of 150°W)
2	Data cover the WCPFC Convention Area, but not the Pacific Ocean (in cases where Pacific-wide stock assessment is required)
3	Data have not been "raised" to represent total catch and effort
4	Coverage of data provided is less than 50%
5	The catch data are in units of weight (kgs or metric tonnes) only, rather than both numbers of fish and weight.
6	The catch data are in units of numbers of fish only, rather than both numbers of fish and kilograms.
7	The catch data are for swordfish only.
8	The unit of effort is "days on which a set was made", rather than "days fished or searched".
9	The unit of effort is "sets" rather than "days fished or searched".
10	The purse-seine catch/effort data are not stratified by school association
11	The units of effort are unknown, or non-standard
12	No effort data provided
13	The data are aggregated by 5°x5° instead of 1°x1° ([PURSE SEINE])
14	Unraised LONGLINE data stratified by 1°x1°, month and hooks between floats were also provided.
15	National legislation requires that time/area strata comprising data from less than three vessels can not be included.
16	The 5°x5°/month Longline catch and effort data are not stratified by "Hooks between Floats"
17	Coverage of data provided is less than 50%
18	No breakdown of Bilfish species catch provided
19	The estimation of bigeye in the reported yellowfin-plus-bigeye catch has not been undertaken in these data
20	The spatial aggregation is non-standard (must be 5°x5° for Longline; 1°x1° for surface fisheries)
21	Aggregate data were not provided by the flag state, or the aggregate data provided by the flag state were not appropriate for use in stock assessments. However, aggregate data have been generated from annual catch estimates and operational data made available by Coastal States (Pacific-Island Countries/Territories) to the WCPFC
22	Species composition of main tuna species catch does correspond to annual catch estimates
23	Aggregate data were not provided by the flag state, or the aggregate data provided by the flag state were not appropriate for use in stock assessments. However, aggregate data have been generated from operational data made available to the SPC by Pacific-Island countries/territories members

Table 1: (Cont.)

ANNEX to the Provision of Scientific data to the WCPFC

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Table A4. Notes on OPERATIONAL DATA

1	For LONGLINE : "Branchlines between floats not provided"
2	For LONGLINE : "Hooks per set not provided"
3	"Activity" not provided
4	"Time of set" not provided
5	For PURSE SEINE : categories of "School Association" were not provided
6	Coverage of data provided is less than 50%
7	No activity in the WCPFC Convention Area during this year
8	Discard information not included
9	Operational Logsheet data provided to SPC by their member countries on a regular basis

Table A5. Notes on SIZE DATA

1	Length intervals are 2 centimetres
2	Temporal stratification at the YEAR level has been provided only
3	Spatial stratification is larger than 10° latitude x 20° longitude rectangles
4	There is no breakdown by SCHOOL ASSOCIATION (PURSE SEINE)
5	Includes weight data in units of KILOGRAMS (gilled-and-gutted weight)
6	Includes weight data in units of KILOGRAMS (gilled-and-gutted-and-tailed weight)
7	Includes weight data in units of POUNDS (gilled-and-gutted weight)
8	The data were not stratified spatially (i.e. no latitude/longitude information provided)
9	The data were not stratified spatially, but broad areas which approximate 10° latitude x 20° longitude rectangles were provided
10	Length intervals are 5 centimetres
11	Includes collection of size data by Coastal States (Pacific-Island countries/territories) where this fleet operates and/or unloads catch
12	Albacore size data only available
13	Swordfish size data only available

Table 2: WCPDC CCM reporting and data requirements for 2011.

REPORTS DUE FROM CCMs RESPECTING CMMs		
Documents	Due date	Report / Data Required (refer to each paragraph for the precise description, reports refer to species of the CMM)
1. Annual Report (AR) Part 1: due 30 days prior to the Science Committee Meeting (9 July 2011); 2. AR Part 2: due 30 days prior to the Technical Compliance Committee Meeting (28 August 2011) 3. Scientific Data to be provided to the Commission: 30 April 2011		
CMM 2005-03: North Pacific Albacore	31 Oct 2010/30 April 2011 30 April 2011	Para 03: Six-Month (Semi-annual) catch report. Small coastal fisheries report annually Para 04: Catch (weight) and Effort (gear type and vessel days) north of equator for directed fisheries
CMM 2006-04: Striped Marlin in SW Pacific	30 April 2011	Para 4: Catch levels of F/V that have taken striped as a by-catch, and number and catch levels of F/V fishing south of 15°S.
CMM 2006-08: HS B&I	60 days prior to first B&I 28 Aug 2011 Refer to each para.	Para 13: notification of boarding and inspection vessel and crew [Ref. para 155 Summary Record of WCPFC3] Para 40: AR Part 2 Inspecting CCMs B&I and alleged violations Para 41: AR Part 2 Response to alleged violations Para 20, 26, 27, 29-36, 42, 44, 49, 50: various reports and notifications
CMM 2007-04: Seabirds	9 July 2011 (AR Part 1)	Para 2: Report on implementation of the IPOA –Seabirds and the NPOA Seabirds Para 9: Report on interactions with seabirds
CMM 2008-01: Bigeye & Yellowfin	Report to SC, TCC 30 April 2011 28 August 2011 (AR Part 2)	Para 26: Research and report results of mitigation of juveniles Para 39: Other Commercial Tuna Fishing Effort Restrictions - Provide SC with fishing effort for other fisheries Para 45: Reports to TCC on the implementation of this Measure.
CMM 2008-03: Sea Turtles	28 August 2011 (AR Part 2) 60 days in advance of	Para 2: Report on implementing FAO guidelines to Reduce Sea Turtle Mortality Para 5(c-d), Para 7 (d-e): sea turtle incidents Para 8(b): Report on trials of circle hooks and mitigation of sea turtle catches

Table 2: (Cont.)

	SC (9 June 2011) and TCC (28 July 2011)	
CMM 2008-04: Large Scale Drift Nets	28 August 2011 (AR Part 2)	Para 5: Report summary of MCS actions re-monitoring drift nets
CMM 2009-01: RFV	Before 1 July 2011 Refer to each para.	Para 9: List of vessels for preceding year that 'fished' or 'did not fish' beyond its EEZ Para 7, 8, 18, 23, 28-31, 33, 38: various reporting and notification
CMM 2009-02: HS FADS Closure and Catch Retention	Within 48 hours after any discard	Para 12: Discard reports from PS
CMM 2009-03: Swordfish	9 July 2011 (AR Part 1)	Para 8: Number of vessels and Total Catches of swordfish
CMM 2009-05: Data buoys		Para 5: Reports on entanglement with data buoys
CMM 2009-06: Transshipment	28 August 2011 (AR Part 2) 1 July 2011 Refer to each para.	Para 11: Report on all transshipment activities Para 26: Exemption requests for PS in zone Para 24, 30, 35: Transshipment Notices and Declarations
CMM 2009-08: Charter notification	15 days, 72 hours rule	Para 3: Notification re Chartered vessels and activities
CMM 2009-11: CNM	31 July 2011	Para 1: Applications 60 days in advance of TCC meeting
CMM 2010-01: NP Striped Marlin	30 April 2011 28 Aug 2011 (AR Part 2)	Para 7: Reports from flag/chartering CCM on catches north of the equator. Para 8: Measures to implement CMM 2010-01
CMM 2010-02: EHS SMA	6 hours prior to entry, 6 hours prior to exit Not later than 30 days after trip completion As per CMM 2009-06	Para 2: Flag State reports at least 6 hours prior to entry and no later than 6 hours prior to exiting the E-HSP plus catch (kilograms) on board. Para 3: Report of sightings of any fishing vessel Para 6: Reports on transshipment activities.
CMM 2010-03: Compliance Monitoring Scheme	16 September 2011	Assumes all AR and other reports received on time and ED report circulated by 25 Aug 2011 Para 11: report back to ED on Draft Report section

	AR Part 2, commencing 2012	Para 21: Actions taken to address its non-compliance in the previous year.
CMM 2010-04: Pacific Bluefin Tuna	By 31 July 2011	Para 4: Report on implementation of paras 2, 3, 6, 7
CMM 2010-05: South Pacific Albacore	30 April 2011	Para 4: Report catch levels of vessels that take SP Albacore as by-catch and number and catch levels of vessels actively fishing for SP Albacore south of 20°S
CMM 2010-06: IUU Listing	21 July 2011 18 Sept 2011 28 August 2011 40 days 70, 10 and 20 days respectively prior to TCC7	Para 4 and 5: IUU vessel notification and acknowledgement Para 9: CCMs and Non-CCMs with vessels listed - comments to ED Para 11: CCMs and Non-CCMs with vessels can submit additional data at any time Para 13: CCMs and Non-CCMs with vessels on the current WCPFC IUU Vessel List – information to ED Para 26: CCM's response to request for removal from IUU list Application of Para 3(j) Annex A Para 6, 10, 13: Time frames as above for General IUU listing; CMMs info on listed vessels to ED at least 20 days prior to TCC
CMM 2010-07: Sharks	28 August 2011 (AR Part 2)	Para 2 & 12: Implementation of the IPOA and NPOA and this CMM.

Appendix VII
STATUS OF WCPFC DATA GAPS
[Information Sourced from Williams (2011)¹⁵⁵]

1. Background

1. The most important gaps in the WCPFC scientific data holding are regularly reviewed at the annual SC meeting. Therefore, the information presented here constitutes the most recent (2011) analysis of such gaps. Bold, italic text reflects recent work, and/or developments to resolve gaps.
2. The data gaps considered have been grouped by fishery and/or particular area of WCPFC consideration.

2. Tuna Fisheries

Important Gaps from Key Fleets

Chinese Taipei Domestic (Chinese Taipei Based) Offshore (STLL) Longline Fleet

- No operational (logsheet), aggregated catch and effort and size data available pre-2004.

Chinese Distant-Water and Offshore Longline Fleet

- Several issues relating to provision of annual catch estimates and aggregate catch and effort data by China. Issues include:
 - ✓ bigeye catch of 4,133 t, taken by Chinese longline vessels in 2009 in Kirabati waters, does not appear accounted since: (i) China notified WCPFC Secretariat that catch was not included in Chinese annual catch estimates for 2009, and (ii) Kiribati (as coastal State for which China indicated that catch should be attributed to) has also not included this catch in its fleet estimates, and
 - ✓ Provision of annual catch estimates and aggregate data for 2004 to 2008, and 2010 cover WCPO area (i.e. Pacific Ocean west of 150°W) and not the WCPFC Statistical area, as per requirements for scientific data provision to the WCPFC.

¹⁵⁵ Williams, P. (2011). Scientific data available to the Western Central Pacific Fisheries Commission. WCPFC-SC7-2011/ST-WP-1.

Indonesian Tuna Fisheries

- Total catch estimates for period pre-1970 missing;
- Estimates of annual catches have not been stratified by gear type for the period 1991 to 1999;
- Estimates of annual ‘yellowfin’ catches covering the period from 1970 to 1999 also include bigeye;
- General lack of operational, aggregated catch and effort, and size composition data;
- Most recent catch estimates for 2000-2010 have been provided for Indonesian fisheries by gear and species, but exclude archipelagic waters catches. Requirements for submission of scientific data to the WCPFC stipulate that annual catch estimates should cover the WCPFC Convention Statistical Area, which includes Indonesian archipelagic waters north of 8°S;
- For period from 1970 to 1999, large annual catches reported for ‘unclassified’ gear types, and
- Information required on gear types categorized as ‘unclassified’, and the size composition of catches taken by such gear types.

Some of the Indonesian Tuna fisheries data gaps listed have been partially resolved over the past 2 to 3 years through the following initiatives:

- (i) *Annual Indonesian/WCPFC Tuna Data Collection Review Workshops between 2007 and 2010;*
- (ii) *Establishment of a national logbook data collection system;*
- (iii) *Establishment of port sampling in key ports;*
- (iv) *Initiation of the Indonesian Data Rescue Project (2009);*
- (v) *Indonesian/WCPFC Annual Catch Estimates Workshops conducted in 2010 and 2011.*

Important data gaps remaining are:

- (a) **Exclusion of archipelagic waters catches for annual catch estimates between 2000 and 2010, and**
- (b) **Adequate review of annual catch estimates prior to 2000.**

Japanese Coastal Fleets

- No operational, aggregated catch and effort data and size composition data, available.

Japanese Pole-and-Line Fleet

- No operational, aggregated catch and effort data, and size composition data available pre-1972.

Philippines Tuna Fisheries

- Total catch estimates pre-1970 are missing;
- General lack of operational and aggregated catch and effort data;
- Only limited size composition and species composition data available for the period prior to the National Stock Assessment Programme (NSAP), which commenced in 1997;
- From 1970 to 2007, significant annual catches reported for ‘unclassified’ gear types. Information is required on gear types categorized as ‘unclassified’, as well as on size composition of catches taken by ‘unclassified’ gear types. Catches of ‘unclassified’ gear types have been mostly allocated to municipal ‘hook-and-line’ fishery, but catches in some regions appear unrealistically high for yellowfin and bigeye.

Some Philippine data gaps listed have been resolved over the past 2 to 3 years through the following initiatives:

- (i) *Annual Catch Estimates Review Workshops, conducted in 2008, 2010 and 2011, have helped resolve the large “unclassified” gear catches issue, and led to more reliable bigeye catch estimates;*
- (ii) *Establishment of Purse-Seine logsheet data collection since 2008;*
- (iii) *Ongoing NSAP work providing important size and species composition data, and*
- (iv) *Establishment of data collection from other sources (e.g. cannery receipts, observers, VMS) has contributed to catch estimation process;*

The most important data gap remaining is understood to be:

- **Reliability of catch estimates for the complex small-scale Hook-and-Line fishery in the Philippines, which is currently estimated to take about 70 000 t of juvenile skipjack, yellowfin and bigeye.**

Vietnamese Tuna Fisheries

- No annual catch estimates, operational or aggregated catch and effort data, nor size composition data currently available, other than anecdotal information on catches.

Some data gaps have been resolved in past year with an expectation of further improvements in coming years under the WPEA OFM project. Significant milestones in the past year include:

- (i) **First provision of official estimate for the 2010 longline fishery for 2010;**
- (ii) **Establishment of national logbook data collection system for Longline fishery, and**
- (iii) **Establishment of port sampling for the Longline fishery.**

The most important remaining data gaps are:

- **Reconstruction of historical annual catch estimates for each of the domestic Vietnamese fisheries;**
- **Establishment of logbook and port sampling data collection for Purse-Seine and Gillnet fisheries, and**
- **Review of observer data to ensure their collection is in line with observer data collected elsewhere.**

Historical Coverage Rates

- For several fleets, particularly small Pacific island countries, better estimates are required of the logsheet and unloadings data historical coverage to improve annual catch estimates, and
- Aggregated catch and effort data. In this regard, the identification and rescue of historical data are required.

Catch Nationality

- There have been some difficulties in assigning catches to one national entity. While catches should normally be assigned to the fishing vessel flag State, there are sometimes circumstances where this may not be appropriate. The FAO Coordinating Working Party on Fishery Statistics (CWP) has listed some situations where difficulties in assigning catch nationality might exist. The CWP also provides guidelines for how catch nationality may be assigned in certain situations, where it might not be appropriate for catch nationality to be aligned with fishing vessel flag (<http://www.fao.org/fishery/cwp/handbook/C>). In the WCPFC fisheries, there are a number of instances where assignment of catch nationality is not straightforward. For example:

- ✓ Foreign-flagged vessels domestically-based in Pacific Island countries, including domestic charter arrangements, and
 - ✓ Vanuatu-flagged purse seine vessels fishing under the FSM Arrangement under the “home party” of Papua New Guinea.
- The consistent assignment of "fishing nation" in all types of scientific data has a number of important implications within the SC and other areas of the Commission’s work. With the 2011 establishment of a WCPFC Conservation Management Measure (CMM) on chartering, procedures for assignment of catch data to national entities are being developed. These procedures are required to ensure that “double-counting” of catch and effort data provided by flag and chartering entities does not occur.

In terms of double counting, a number of coastal States have provided notifications over the past three years that locally-based foreign fleets should be considered as charter vessels and therefore fisheries data should assigned to the coastal State. However, several issues remain to be resolved before data can be re-assigned from flag-State to coastal-State. In particular, there is a need for confirmation from “flag” States that they have removed charter vessel data from aggregate data to ensure “double-counting” does not occur.

- *Recent initiatives (e.g. WCPFC Circular 2010-20) to garnish information from coastal States and fishing States on potential catch double-counting have provided some information for Chinese Taipei and Korea. However, no confirmation on whether double counting is occurring, or not, is yet to be received from any of the CCMs. Since the catch by the 170 vessels of the two CCMs is substantial, double-counting would represent a significant difference to the actual reported catch levels.*

Operational Catch and Effort Data

- Coastal States (which are members of the SPC and FFA) collect operational catch and effort data through bilateral access agreements with foreign fleets fishing in their waters. These data are processed and held by the SPC on behalf of the coastal States. Operational catch and effort data are not available outside FFA member EEZs for Japanese fleets, the Korean distant-water longline fleet, and the Chinese and Chinese Taipei distant-water longline fleets targeting bigeye and yellowfin;

- Operational catch and effort data for Chinese and Chinese Taipei distant-water longliners targeting albacore are compiled by port samplers in Pago Pago, American Samoa and Levuka, Fiji, and
- Operational catch and effort data (together with fine-scale oceanographic data that may affect catch rates) are required for development of abundance indices. Operational catch and effort data are also required to determine catch spatial distribution in relation to EEZs, the high seas areas and other management-related areas.

Significant progress has been made:

- ***With the provision of historical operational data over the past two years. There are now only four CCMs with active fleets operating in the WCPFC Area which have yet to notify their intent to provide operational catch/effort data to the WCPFC.***

Aggregate Catch and Effort Data

- Certain stock assessments require aggregate catch and effort data for entire stocks. For example, bigeye stock assessments are for the Pacific Ocean¹⁵⁶. Therefore, aggregated longline data are required to cover the same area. In the case of SPO albacore and Swordfish, stock assessments are limited to the Pacific Ocean south of the equator.
- In some instances, aggregated catch and effort data provided to the WCPFC for the most recent year have not been raised and/or represent incomplete coverage of activities. For example, the 2010 aggregate Longline data provided for the Japanese, Korean and Chinese Taipei distant-water longline fleets do not include the latter months for 2010. This has ramifications for the stock assessment projections (see Harley *et al.* 2011);
- In some cases, it is not possible to reconcile aggregate longline catch data with annual catch estimates. For example, this is the case with the aggregated catch/effort data from the Japanese distant-water, Longline fleet. Here catch information is provided in the form of the numbers of fish only, with weight not being included. This often occurs when annual catch estimates are sourced from unloading data, which is different from the data source for aggregate catch data (logsheets), and

¹⁵⁶ The provision of distant-water longline data covering the whole Pacific was a change in the *Guidelines on the Provision on Scientific Data to the Commission* approved by WCPFC4 in December 2007.

- Again, and in some cases, the unit of catch provided in aggregate longline catch data is not suitable for stock assessments. For example, aggregated catch data from the distant-water Chinese longline fleet is provided in ‘kilogram’ units only, while stock assessments require catch in the ‘numbers of fish’ by species.

Positive developments include:

- ***Recognition that requirements for the provision of scientific data to the WCPFC cater for voluntary submission of data from the entire Pacific Ocean. In these terms:***

“Catch and effort data aggregated by periods of month and areas of 5° longitude and 5° latitude that have been raised to represent the total catch and effort, and unraised longline catch and effort data stratified by the number of hooks between floats and the finest possible resolution of time period and geographic area, covering distant-water longliners may also be provided for the Pacific Ocean east of the eastern boundary of the WCPFC Statistical Area”.

The WCPFC-SC sees this issue as being resolvable through the data exchange MOU with IATTC, whereby WCPFC should be able to obtain the balance of Pacific Ocean data (i.e. EPO data) from IATTC, and combine this with the WCPFC data to cover the entire Pacific. WCPFC6 (December 2009) approved a data exchange arrangement with IATTC. This was signed as a Memorandum of Understanding (MOU) at WCPFC7 (<http://www.wcpfc.int/node/2684>);

- ***The catch unit reporting problem has been rectified in data provided for recent years (2008 to 2010). However, it remains a problem for Chinese longline data provided for 2003 to 2007.***

Purse-Seine Species Composition Data

- Species composition data collected by observers and port samplers are needed to improve estimates of yellowfin and bigeye catches for Purse-Seine fleets, other than vessels fishing under the United States Treaty, the FSM Arrangement and the domestic PNG fleet.

This problem is being addressed through:

- (i) ***Establishment of 100% observer coverage since January 2010;***
- (ii) ***A WCPFC project on spill sampling, and***
- (iii) ***Initiatives relating to the collection of landings data and cannery receipts.***

Longliner Size Composition Data

- Size composition data are not available for the Vanuatu fleet targeting bigeye and yellowfin in the eastern tropical areas of the WCPFC Statistical Area;
- Swordfish weight frequency data for Australia longline fishery are apparently available and would be a useful addition to the WCPFC's size data holdings for the currently proposed Swordfish stock assessment;
- albacore size composition data provided for by the Chinese Taipei Longline fleets are stratified at 2 cm size intervals. However, the data are required at 1cm intervals to be consistent with data used in stock assessments for other fleets.

Progress has been made in that:

- *In 2011, and for the first time, China provided albacore, bigeye and yellowfin size data for its entire longline fleet fishing in the WCPFC Area. Size data were stratified by year, month, 5° x 5° cells and 2 cm size intervals. However, further clarification on data sources is required. For example, it is unclear whether length has been estimated from weight, and/or whether samples been taken from distant-water and offshore vessels. In that connection, size offshore vessel data are also collected by port sampling and observer programmes in various Pacific Island countries.*

3. Shark Fisheries

In 2009, SC5 requested:

“... SPC-OFP to commence work on preliminary stock assessments for key shark species, and to develop a research plan to support further assessment for consideration at SC6 ...”

Various data-gap issues associated with WCPFC Shark catches have been elaborated by Clarke and Harley, 2010 and Clarke *et al.* 2011. Noteworthy considerations to address such gaps include:

- *A number of CCMs have provided annual catch estimates and aggregated catch data by Shark species¹⁵⁷;*
- *Aggregated catches for Blue, Mako and Porbeagle Shark are available for the Japanese Longline fleet from 1994 to 2009;*
- *Operational logsheet catches of all key shark species taken by the, now cover the years from 1991 to 2010;*

¹⁵⁷ The data are summarized in Williams (2011)

- *Operational logsheet catches are available from the Australian Longline fleet (1991 to 2010) for all key shark species taken as well as for the New Zealand Longline fleet (1989 to 2010), and*
- *Aggregated catches for all key shark species taken by the Chinese Taipei Longline (2008 to 2010).*

Future work involves determining annual catch estimates and collaborating with CCMs to determine whether shark species catch estimates can be determined for the years and fleets not yet covered.

4. Ecosystem Approach to Fisheries

Gaps in data collection/provision, sampling design and research related to the implementation of an ecosystem approach to fisheries (EAFM) include the:

- Coverage of catch data collected by observers on non-target species (including species of special ecological interest - marine reptiles, marine mammals, sharks and sea birds) needs to be increased for most Longline and Purse-Seine fleets, particularly distant-water longline fleets, for which observer coverage has been negligible;
- Biological data for non-target species are lacking. These data include length and weight, length and age-at-maturity, longevity, growth rate, fecundity, habitat use (vertical and horizontal range), and trophic interactions, and
- Other gaps include quality-controlled ocean bathymetry data (especially on seamount definition and location), oceanographic data products resolving mesoscale, fisheries-relevant features, and acoustic data to validate models of oceanic ecosystem mid-trophic components.

A key development in addressing the above gaps has been:

- *Implementation of 100% Purse-Seine fishery, observer coverage under CMM 2008-01 has essentially resolved outstanding issues concerning the fishery's coverage. The requirement under CMM 2008-01 to implement 5% Longline fishery observer coverage in 2012 will significantly improve coverage of this fishery. Future work is also expected to focus on the quality of observer data in the context of an EAFM.*

3.5 Hidden Changes in Fisheries Operations and Data Collection

Sections 1 and 4 of the 'Scientific Data to be Provided to the Commission' require CCMs to provide information on the way aggregated fisheries data are produced. For example:

“The statistical methods used to estimate the annual and seasonal catches shall be reported to the Commission, with reference to the coverage rates for each type of data (e.g. operational catch and effort data, records of unloadings, species composition sampling data) that is used to estimate the catches and to the conversion factors that are used to convert the processed weight of longline-caught fish to whole weight”.

The above text covers estimation of annual catches, and similar text should address production of aggregate catch/effort data. However, mention also needs to be made of the requirement for an explanation of how size data are produced¹⁵⁸. For this reason, the addition of the following text under Section 5 of the *Scientific Data to be Provided to the Commission* has been recommended:

“The statistical and sampling methods that are used to derive the size composition data shall be reported to the Commission¹⁵⁹.”

However, two other considerations have potential ramifications for the submission of stock assessment data. These seem to fall in two broad categories:

- (i) **Hidden Changes in Fisheries Operations:** Such changes reflect the way fishing takes place, when these are not captured in the available data. An example is where there has been a gear-use change which may result in improved catches, or changes in the size of fish caught. Such information is duly compromised when gear attributes have not been recorded, documented or accounted for. Another example is when aggregate data may not be at sufficient resolution to indicate discrete differences in catch that operational-level data provide, and
- (ii) **Hidden Changes in Data Collection:** There may be subtle changes in the way data are collected which are not reflected in the metadata. For example, if a loining plant (where sampling is conducted) changes the minimum size of fish received and processed, this will have important ramifications for stock assessments if any changes are not documented or are unknown.

To avoid bias in data available for stock assessments, potential impacts likely to fall into these two categories should be investigated and then reported by CCMs, on submission of their annual data. The Commission may therefore need to further consider the addition of appropriate text to the *Scientific Data to be Provided to the Commission* to cover such eventualities.

References

- Clarke, S.C. and Harley, S. (2010). A Proposal for a Research Plan to Determine the Status of the Key Shark Species. WCPFC-SC6-2010/EB-WP-01.
- Clarke, S., Harley, S., Hoyle, S. and Rice, J. (2011). An indicator-based analysis of key shark species based on data held by SPC-OFP. WCPFC-SC7-2011/EB-WP-01.

¹⁵⁸ Currently not included in Section 5 of *Scientific Data to be Provided to the Commission*.

¹⁵⁹ Such an amendment would also need to state any details for the methods to be used.

Appendix VIII

Memorandum of Understanding between The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and The International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean

(Adopted December 2005)

Recognizing that, *inter alia*, the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (hereinafter referred to as “the WCPF Commission”):

- Adopts measures to ensure long-term sustainability of highly migratory fish stocks in the Convention Area and promote the objective of their optimum utilization;
- Ensures that such measures are based on the best scientific evidence available and are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States in the Convention Area, particularly small island developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional, or global;
- Assesses the impacts of fishing, other human activities and environmental factors on target stocks, non-target species, and species belonging to the same ecosystem or dependent upon or associated with the target stocks;
- Collects and shares, in a timely manner, complete and accurate data concerning fishing activities on, *inter alia*, vessel position, catch of target and non-target species and fishing effort, as well as information from national and international research programs;
- Establishes a committee, which shall be called the Northern Committee, to make recommendations on the implementation of such conservation and management measures as may be adopted by the Commission for the area north of the 20 parallel of north latitude and on the formulation of such measures in respect of stocks which occur mostly in this area;
- Enters into administrative and financial arrangements as required to utilize scientific services for the purpose of providing information and advice on the fishery resources covered by its Convention and related matters that may be relevant to the conservation and management of those resources and, in order to carry out its functions in a cost-effective manner, shall, to the greatest extent possible, utilize the services of existing regional organizations and shall consult, as appropriate, with any other fisheries management, technical or scientific organization with expertise in matters related to the work of the Commission; and
- Establishes a committee (the Scientific Committee) to ensure that the Commission obtains for its consideration the best scientific information available through review of research results, encouraging and promoting cooperation in scientific research and assessing status of target or non-target stocks of interest.

Recognizing that the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific (hereinafter referred to as “the ISC”):

- Enhances scientific research and cooperation for conservation and rational utilization of the species of tuna and tuna-like fishes which inhabit the North Pacific Ocean during a part or all of their life cycle;
- Creates the scientific groundwork, if at some point in the future, it is decided to create a multilateral regime for the conservation and rational utilization of these species in this region;
- Establishes a central database to support the scientific research of the ISC and continues to consider establishing a permanent Secretariat;
- Establishes subsidiary Working Groups to perform the significant scientific work of the ISC.

The Commission of the WCPFC and the ISC, the participants to this Memorandum of Understanding (“MOU”), have therefore reached the following understanding.

Part I: Provision of Scientific Advice

- The Northern Committee may request from the ISC scientific information and advice regarding fish stocks (generally those stocks occurring mostly north of the 20° parallel of north latitude; see Annex 1) for response prior to each meeting of the Northern Committee. This formal request will be transmitted expeditiously to the ISC. The Commission will, if requested, provide data necessary for the scientific analysis to be conducted by the ISC.
- The ISC will provide requested scientific information and advice in accordance with this MOU one (1) month before the annual meetings of the Northern Committee. ISC will also provide the requested scientific information and advice to the Commission and the Scientific Committee. This scientific information and advice will follow the standard presented in Annex 2 for standard (recurring) requests or as mutually agreed upon for special requests (see also Part III below).
- The ISC will provide its normal Committees and Working Group reports, prepared under the Rules and Procedures for the Conduct of the ISC Committee and Subsidiary Bodies, including relevant background reports, directly to the Northern Committee, the Commission, and the Scientific Committee.
- ISC scientific information and advice will be presented at the annual meeting of the Northern Committee and the Scientific Committee, and may be presented to the Commission by the Chair of the ISC, or a designate, and advisors from the ISC Working Groups, as appropriate. The participation costs of the ISC Chair, or designate, and advisers from the ISC Working Groups will be borne by the Member Governments of the ISC Chair and Working Group advisors.

Part II: Framework for Mutual Cooperation

Participants to this MOU will:

- Encourage reciprocal consultations and regular contacts on matters of common interest regarding scientific research on highly migratory tuna and tuna-like resources;
- Regularly exchange relevant meeting reports, information, project plans, documents, and publications regarding matters of mutual interest; and
- Routinely exchange fishery data, in accordance with the rules and procedures for data confidentiality adopted by each organization, to minimize duplicative data collection efforts and enhance fishery monitoring and stock assessment through the use of common data sources.

The Executive Director of the Commission, or designate, including the Chair of the Northern Committee and Chair of the Scientific Committee, will be invited to observe the plenary meetings of the ISC and its Working Groups. The Chair of the ISC, or designate, will be invited to observe the annual meetings of the Commission and meetings of the Northern Committee and Scientific Committee, as well as other subsidiary bodies, as appropriate. The costs of participation will be borne by each Organization respectively.

Part III: Finance

- ISC will provide its normal reports and the reports of its Working Groups, as well as standard (recurring) scientific information and advice, without cost to the Commission.
- The Commission will pay, as mutually decided, costs for special scientific advice requested by the Commission.

Part IV: General Administrative Arrangements

- This MOU becomes effective upon the date of signature of the responsible representatives in both the Commission and ISC.
- This MOU may be modified by written consent of both Commission and ISC and signed by the responsible representative in each organization. The modified MOU becomes effective upon the date of signature of both the responsible representatives of the Commission and ISC.
- If any dispute should arise between the Commission and ISC on the operation of this MOU, both will make every effort to resolve the dispute themselves, or if necessary, by utilizing a mutually decided arbiter.
- Either Commission or ISC may terminate this MOU by providing 30 days written notice to the other of its intention to withdraw from this MOU. Upon termination of the MOU, any funds provided for special, typically non-recurring, scientific advice shall be refunded to the Commission (see Part III above).
- A full review of the terms and operation of the MOU and its Annexes will be conducted as soon as practicable after the first full 12 months of operation following its signature by the Commission and the ISC and subsequently every three years.

Part V: Signature

Signed on behalf of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean:

Signed: original signed	Signed: _original signed_
Date: _____	Date: _____
Chair	Chair
Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific	International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean

Annex 1

Provisional list of species and/or stocks in the North Pacific for which the Northern Committee may request standard (recurring) advice from the ISC:

- North Pacific Albacore
- Pacific bluefin tuna
- Swordfish and other billfishes
- By-catch (fish and non-fish) species

Other species may be added to the list with the mutual written concurrence of the Participants to this MOU.

Annex 2

Standard (recurring) advice required from ISC by the Northern Committee:

For tuna and tuna-like species that occur primarily in the North Pacific, the ISC will report annually to the Northern Committee of the WCPFC on:

1. Performance of the monitored fisheries
2. Progress in stock assessment research and future needs
3. Status of stocks
4. Advice on conservation measures
 - a. Management measures needed
 - b. Evaluation of the effectiveness of exiting measures

Any additional ISC tasks needed to support WCPFC will be delineated in annual service agreements established at the outset of each year and in accordance with Part III

Appendix IX

SUMMARY OF ISSUES ARISING FROM THE INDEPENDENT REVIEW OF THE COMMISSION'S TRANSITIONAL SCIENCE STRUCTURE AND FUNCTIONS [Information Sourced from WCPFC (2010) and WCPFC (2009)¹⁶⁰]

SCIENTIFIC COMMITTEE'S RESPONSE ON THE RECOMMENDATIONS FROM THE INDEPENDENT REVIEW OF THE COMMISSION'S TRANSITIONAL SCIENCE STRUCTURE AND FUNCTIONS

Recommended Item	Response from SC5
I. DATA CUSTODIANSHIP	
1) Data gaps	1) SC5 supported.
2) Data management and confidentiality	2) SC5 supported.
3) Data custodianship service	3) SC5 supported.
3b) Three-year service agreement with SPC to secure resources	3b) SC5 supported.
3d) Incorporation of ISC data into the WCPFC holdings	3d) Addressed and reported in SC6 summary report agenda item 9.1.c
II. SCIENCE STRUCTURE AND FUNCTIONS	
4) Process of project contract a) Update guidelines for SC work programme b) Improve the level of advertising, funding and scope of candidate projects	4) Addressed and adopted.
5) Quality of scientific advice available to the Commission a) Implement periodic external peer review process b) Develop a standard procedure for CCMs to undertake duplicate assessments c) Maintain transparency by posting research inputs and outputs on website d) Develop a strategy to maximize the use of science knowledge of the SPC-OFP and other existing or potential contractors e) SPC to continue training of talented individuals from developing CCMs to enhance their full participation in the scientific activities of the Commission	5) a) Addressed and reported in SC6 summary report agenda item 13.2 b) Recommendation not accepted by SC. c) SC5 supported. d) By posting on the Commission's website. e) SC5 supported.
6) International Scientific Committee (ISC) a) Amend MOU to allow for ISC work to be requested by the SC b) To support robust science within the ISC i) Additional review by the SC and external peer review ii) For transparency, promote wider participation in ISC's assessment activities, and sufficient funding iii) SC and NC, with funding support, request ISC of validation work on key ISC assessments c) Improve support to ISC	6) a) While non-ISC Members support this amendment, most ISC Members wanted to discuss this at WCPFC6. b) MOU to be reviewed at WCPFC7 i) ii) iii) c)

¹⁶⁰ WCPFC (2010). Scientific data available to the Western Central Pacific Fisheries Commission. WCPFC-NC6/WP-05. (At: <http://www.wcpfc.int/doc/wcpfc-nc6-wp-05/summary-issues-arising-independent-review-commission%E2%80%99s-transitional-science-stru>). WCPFC (2009)

<p>i) Promote ISC officers' attendance at SA-SWG to present their assessments</p> <p>ii) On-time submission of ISC documents to SC</p> <p>iii) Allow sufficient time for SC to review ISC's assessments and advice</p> <p>d) To promote harmonization of the Commission's science functions, the SC's research plan should include the ISC's work plan</p>	<p>i) SC noted it's feasible but cost implications here.</p> <p>ii) Recommend to ISC to post ISC's working papers on the ISC website. SC noted that ISC working papers require authorization by authors.</p> <p>iii) SC thought it feasible but need to adjust meeting time table with a suitable time gap between meetings.</p> <p>d) SC recommends that the SC work plan and the ISC work plan reference each other.</p>
<p>7) Restructuring the SC process</p> <p>a) To clarify the role of SC and ISC in advising NC, the SC, as the statutory WCPFC body, should take the lead in endorsing the scientific work done by the Commission's Science Services Provider 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</p> <p>i) The SC Chair introduces the SC report to NC</p> <p>ii) The ISC Chair presents and provides technical explanation to NC in a non-confrontational way between SC and ISC</p> <p>b) Specialist Working Groups and related processes.</p> <p>i) Strengthening Stock Assessment Preparatory Workshop (SAPW) by the WCPFC taking ownership of that activity with appropriate funding support</p> <p>ii) Incorporate the BI-SWG and ME-SWG into SAPW</p> <p>iii) Revise the Terms of Reference of the SAPW to include provision for agreement on data inputs, model runs and the setting of an appropriate timetable</p> <p>iv) Identify risks and seek solutions to address such risks when SAPW is expanded</p> <p>v) Promote the participation of ISC and IATTC in the SWGs to promote coordination of ocean-wide assessments and include northern stocks in the agenda of the SAPW</p>	<p>7)</p> <p>a) The Commission to decide.</p> <p>i) SC supported. ii) SC supported.</p> <p>b)</p> <p>i) Generally support SAPW, strongly support to remain as an informal meeting, including relevant biological and methodological papers. SPC will facilitate the workshop</p> <p>ii) Incorporate relevant biology and methods papers into SAPW</p> <p>iii) Revised TOR as Attachment L of SC6 Summary Report.</p> <p>iv) Inclusion of presentations within the SC of significant issues as identified in the SAPW.</p> <p>v) Funding considerations.</p>

<p>c) Consider other workshops on species not included in the main SPC-OFP work programme</p> <p>d) Allocate significantly more time to SA-SWG to thoroughly review all assessment-related outputs from SPC-OFP, ISC and CCMs</p> <p>e) Restructuring of the SWGs</p> <ul style="list-style-type: none"> i) Have an annual meeting for EB-SWG and SA-SWG only ii) Have biennial or occasional meetings for the FT-SWG and ST-SWG iii) BI-SWG and ME-SWG to be absorbed into SAPW (or SA-SWG) or have occasional meetings iv) Less formal process of the SWG meetings, including no national representation and more intensive involvement of experts <p>f) Establish an Ad-hoc Group on Socio-economic Issues which identifies:</p> <ul style="list-style-type: none"> i) socio-economic issues and how they might be addressed ii) types of information and analyses required to generate appropriate management advice iii) availability of expertise within the CCMs and/or potential service providers to undertake the necessary work 	<p>c) Generally support, perhaps as a special session within SC or as standalone workshops. Other bycatch species could be included as a special session into SC.</p> <p>d) Considered adequate for present schedule, re-consider with regard to work schedule.</p> <p>e) Alternative idea not reflected in consultancy report was adopted. Have one continuous SC session structured thematically, chaired by individual conveners.</p> <p>Secretariat, Chair, Vice-Chair and Conveners to plan details of new thematic structure intersessionally and post agreed plan on Commission's website.</p> <p>Review of new SC structure reported under Agenda item 13.3 of SC6 Summary Report</p> <p>f) Consider items as special sessions of i)-iii) as interest arises.</p>
III. IMPLEMENTATION	
<p>8) Implementation of the recommendations a) Develop a work plan for the implementation of these recommendations.</p>	<p>8) a) No work plan required as all matters have been addressed.</p>

Appendix X

COMPLIANCE MANAGER TERMS OF REFERENCE AND DUTY STATEMENT

Professional Grade: Level L

Organizational relationships: The Compliance Manager reports to the Executive Director regarding fisheries compliance matters of the Commission. He/she is required to deal with senior members of government among members and others cooperating with the Commission, as well as perform a senior management role in the Secretariat.

Key responsibilities: The Compliance Manager serves as the Secretariat for the Technical Compliance Committee (TCC) and provides oversight and management of all fisheries management and conservation compliance matters for the Executive Director. He/she provides oversight of the process to obtain quality technical advice from contractors and Members, Cooperating Non-members and Participating territories (CCMs) compliance and fisheries management programs, and conveys that advice to the TCC and Commission. He/she will take all necessary action as agreed by the Commission to encourage compliance with conservation and management and other decisions of the Commission.

Duties will include:

- Overseeing the management and technical development of the Commission's monitoring, control and surveillance (MCS) activities including the efficient technical operation of the Commission's Vessel Monitoring System, Record of Fishing Vessels, Regional Observer Programme, IUU List, boarding and inspection arrangements; standards for national reporting for monitoring compliance, vessel and gear markings, authorizations to fish, Port State measures, and monitoring transshipment;
- Liaising, and facilitating coordination, with other regional and national agencies and organisations involved in fisheries MCS, including those that provide operational support to the western and central Pacific region;
- Liaising with cooperating non-Members of the Commission on MCS affairs;
- Providing technical assistance on MCS to CCMs, as requested;
- Serving as the Secretariat to the Technical and Compliance Committee and its Working Groups including providing support, as required, to inter-sessional work;
- Arranging approved MCS related training opportunities for fisheries MCS personnel from Commission CCMs;
- Collecting, analyzing and distributing MCS related information to Commission CCMs;
- Providing expert advice on MCS related issues to the Commission;
- Contributing to the overall management of the Commission's Secretariat;
- Researching new and emerging technologies and procedures that will enhance the Commission's MCS efforts; and
- Other duties as required by the Executive Director.

Qualifications and Experience

Essential:

- Tertiary qualification in fisheries management or related field;
- At least five years of experience in the planning, management and operational aspects of fisheries MCS;
- Extensive experience in project management and team leadership;
- Broad knowledge of marine science, fisheries biology, oceanography and socio-economics;
- Detailed knowledge of oceanic pelagic fisheries, with emphasis on tuna;
- Demonstrated active international involvement in fisheries management and fisheries compliance - preferably involving tuna; and
- Experience in the formulation of fisheries compliance advice for fisheries management purposes.

Desirable:

- At least 2 years working on fisheries MCS;
- Experience in regional (multinational) fisheries management;
- Communication skills in English of a high order, particularly in written and oral presentation of technical compliance advice to multicultural audiences including fishermen and policy makers;
- Interpersonal skills of a high order, including the ability to supervise technical and to manage relationships critical for effective compliance operations; and
- A willingness to undertake extensive travel in support of the Commission's work.

Appendix XI

Current and Potential Agreements Between the WCPFC and Other Organizations

1. Current Agreements

The Commission for the Conservation of Southern Bluefin Tuna (CCSBT)

The existing MOU between WCPFC and CCSBT was signed following the endorsement of the Second Regular Session of the Commission, 12-16 December 2005 in Pohnpei, Federated States of Micronesia.

International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC)

Based on recommendations from the *Independent Review of Interim Arrangements for Science Structure and Function* adopted at the Fifth Regular Session of the Scientific Committee, 6-10 December 2008, the Secretariat prepared a draft revised MOU with the ISC. However, this draft was not accepted by the NC and the current MOU has not yet been reviewed; although it may be presented to WCPFC8.

The Inter-American Tropical Tuna Commission (IATTC)

The current MOU was put in place by representatives of the IATTC and WCPFC following the Memorandum's endorsement by WCPFC3 at Apia, Samoa in December 2006. IATTC considered a draft data exchange agreement to data exchanges between the two Commissions. An initial draft prepared by the WCPFC Secretariat was based on Appendix 4 of the *Rules and Procedures for the Protection of, Access to, and Dissemination of Data Compiled by the Commission*. IATTC80 proposed some amendments to that. The modified draft was approved by WCPFC6 and signed by the two parties at the Commission meeting in Papeete, French Polynesia during December 2009. WCPFC7 directed the Executive Director to seek agreement on a Memorandum of Cooperation with IATTC aimed at establishing Cross Endorsement of Regional Observers between the two organizations. This was signed at the IATTC meeting in La Jolla, USA in July 2011.

The Pacific Islands Forum Fisheries Agency (FFA)

As directed by the Fourth Regular Session of the Commission a MOU between the organizations' two secretariats was finalized [2009]. Pursuant to Article 15(5) of the Convention, there is also a service level agreement (SLA) [2009] between the FFA and the Commission for VMS services. This Agreement has recently been the subject of discussions between the two organisations. As a result, a joint review of the FFA and WCPFC VMS was undertaken and the results were tabled at TCC7. They will be further discussed at WCPFC 8.

Secretariat of the Pacific Community (SPC)

The revised MOU between the WCPFC and SPC was adopted in Papeete, French Polynesia during December 2009. This was preceded by a Data Exchange Agreement in August of the same year. Both agreements can be found at: <http://www.wcpfc.int/doc/wcpfc-spc-ofp-revised-memorandum-understanding>. The scientific stock assessments for both the WCPFC and SPC are undertaken by

the SPC-OFP, which contributes to consistency in the scientific advice, through the SC, being provided to the Commission and a reduction of the overall costs for such assessments.

The Agreement for the Conservation of Albatross and Petrels (ACAP)

The Fourth Regular Session of the Commission [3-7 Dec 2007] adopted a MOU with ACAP.

The Secretariat of the Pacific Regional Environment Programme (SPREP)

The Fourth Regular Session of the Commission adopted a MOU [3-7 Dec 2007] with SPREP.

The Indian Ocean Tuna Commission (IOTC)

The Fourth Regular Session of the Commission [3-7 Dec 2007] adopted a MOU with IOTC.

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

WCPFC5 adopted an Arrangement with CCAMLR. The Arrangement was signed by the Chair of CCAMLR on 12th January 2009.

North Pacific Anadromous Fish Commission (NPAFC)

WCPFC5 recommended that the establishment of a formal relationship with the North Pacific Anadromous Fish Commission (NPAFC) should be pursued. A draft MOU was developed by the two Secretariats, approved by WCPFC 6 at Papeete, French Polynesia in December 2009. It was signed in December 2010.

General

All the above Memoranda or Arrangements will be posted on the WCPFC website so that they will no longer need to be reproduced for each session of the Commission and its subsidiary bodies.

2. Potential Future Agreements

The UN Food and Agriculture Organization (FAO)

The Fourth Regular Session of the Commission identified an urgent need to develop a formal MOU with FAO. This is still under consideration.

The International Convention for the Conservation of Atlantic Tunas (ICCAT)

There is regular dialogue with the ICCAT directly, as well as through the tuna-RFMO network. No further developments on formalizing an arrangement for consultation, cooperation and collaboration with ICCAT have been forthcoming in 2010 and 2011.

Tuna Regional Fisheries Management Organisations (t-RFMOs)

The Secretariat is actively engaged in an initiative to promote collaboration, information exchange and consultation between the Secretariats of RFMOs with a principle interest in tuna (t-RFMOs) (www.tuna-org.org). The WCPFC participated in KOBE III in La Jolla, USA during July 2011. Furthermore, the Secretariat participates in the regular postings of the Consolidated List of Authorized Fishing Vessels (CLAV) of all fishing vessels registered to fish by the t-RFMOs. This activity is being coordinated by IOTC and results can be found at www.tuna-org.org.

The North Pacific Marine Science Organization (PICES)

PICES is an intergovernmental scientific organization established in 1992 to promote and coordinate marine research in the northern North Pacific and adjacent seas. The present membership comprises Canada, Japan, People's Republic of China, Republic of Korea, the Russian Federation, and the United States of America. PICES continues to invite WCPFC to participate in its annual meetings. Secretariat funds are available, but staffing constraints have prevented participation. Nonetheless, close cooperation with PISCES is predicted in the future.