



**SCIENTIFIC COMMITTEE
SECOND REGULAR SESSION**

7-18 August 2006
Manila, Philippines

CONSOLIDATED TERMS OF REFERENCE OF THE SPECIALIST WORKING GROUPS

WCPFC-SC2-2006/GN IP-1

Paper prepared by the Secretariat

1. The Interim Chairman of the Scientific Committee, Dr Shelton Harley (New Zealand), has proposed that the conveners of Specialist Working Groups review the Terms of Reference for their respective Working Group as part of their schedule of work at the second regular session at Manila. This review will be considered under the Provisional Agenda 3.3. This information paper is to meet the purpose of possible TOR update.
2. To assist in this endeavor a comparison matrix relating to the terms of reference for the six SWGs, as reported in the Summary Record of the first regular session of the Scientific Committee, has been prepared for information (Appendix A). One exception is that a new draft TOR for 2006 EB-SWG meeting proposed by the convener was incorporated in this matrix.

Comparison Matrix of SWG TORs

Category	FT	BI	EB	ST	SA	ME
General mission/purpose	To assess the impacts of fishing (through the collection of operational level data and other means); promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques; and promote measures to prevent or eliminate over-fishing and excess fishing capacity (Convention, Part II, Article 5, sections d, e, g).	To improve our understanding of the biology of target and non-target species, in particular to provide quantitative estimates of key life history parameters and migration patterns for stock assessment purposes.	To review the impact on 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.	To coordinate the collection, compilation and dissemination of tuna fisheries and related data. To advise the Scientific Committee in regard to issues concerning data that can be used for both scientific and compliance purposes, and that require liaison with the TCC.	To evaluate the status of stocks of interest to the WCPFC and the impact of fishing.	To coordinate research and make recommendations to the WCPFC Scientific Committee on technical questions related to analytical methods used for fishery management.
1. Data collection	<ul style="list-style-type: none"> Promote, assist and review the identification, collection and verification of operational level data from all fleets in collaboration with the ST-SWG. 		<p><u>Sea turtle</u></p> <ul style="list-style-type: none"> Promotion and strengthening of data collection programs to obtain standardized information to develop reliable estimates of the bycatch of seas turtles. <p><u>Seabirds</u></p> <ul style="list-style-type: none"> Assess information provided by CCMs relating to interactions with seabirds, including incidental catches and details of species, to enable the Scientific Committee to estimate seabird 	<p>The coordination of the collection of data shall include periodic reviews of the Commission's standards for data collection, such as:</p> <ul style="list-style-type: none"> Minimum standards for data collection forms; Sampling protocols for data collection programs; Target coverage rates for data collection programs; Sampling designs for data collection programs; and Procedures for the verification of data. 		

			<p>mortality in all fisheries to which the WCPF Convention applies.</p> <p><u>NTAD species</u></p> <ul style="list-style-type: none"> • Estimated total catches of non-target, associated and dependent species (if available) - previous calendar year; other years if available. 			
2. Data compilation				<p>The coordination of the compilation of tuna fisheries and related data shall include:</p> <ul style="list-style-type: none"> • Periodic reviews of the Commission's policies in regard to the provision of data; • The coverage of data compiled by the Commission; and • The quality of data compiled by the Commission. 		
3. Data dissemination				<p>The coordination of the dissemination of data shall include periodic reviews of:</p> <ul style="list-style-type: none"> • The Commission's policies in regard to the dissemination of data; and • Instances of the dissemination of data by the Commission. 		
4. Review of stock assessment			<ul style="list-style-type: none"> • Undertake an ecological risk 		<ul style="list-style-type: none"> • Critically review assessments for 	

			analysis in order to prioritise species of seabirds, sea turtles, sharks and non-target fish species for future research.		<p>target and non-target stocks.</p> <ul style="list-style-type: none"> • Provide statements of stock status, and the impact of fishing, based on assessments, and other pertinent information. • Make recommendations regarding research and data required to support stock assessments. 	
5. Evaluation of management options					<ul style="list-style-type: none"> • Evaluate current and proposed future harvest practices in light of the Commission's objectives (Article 2) and requests • Make recommendations regarding the content of future assessments and any supporting analysis 	<ul style="list-style-type: none"> • Coordinate research to determine appropriate biological reference points for target and non-target species and make recommendations on the basis of this research. • Advise the Scientific Committee on appropriate methods of formulating scientific advice for management • Advise the Scientific Committee on analytical research and data needed to support management of fisheries.
6. Review of analytical methods						<ul style="list-style-type: none"> • Support the work of other SWGs by reviewing and evaluating analytical methods used to assess stocks, investigate

						<p>ecosystem variability, and evaluate management options.</p> <ul style="list-style-type: none">• Investigate the statistical properties and performance of selected stock assessment methods using simulation analysis and other appropriate methods, make recommendations regarding the most appropriate methods to be used for the assessment of target and non-target species.• Provide ongoing review of the structure of stock assessment and projection models as applied to various species of interest and, where necessary, make recommendations regarding enhancements to the models to improve their performance or to address deficiencies with respect to specific applications.• Advise the Scientific Committee on methods that might be used to support the ecosystem approach to fisheries in the Western and Central Pacific Ocean.
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<p>7. Biological parameters</p>		<ul style="list-style-type: none"> • Provide a means for evaluating the suite of biological parameters for both target and non-target species. • Coordinate the basic research work critical to deal with both target and non-target species biology. • Identify key research priorities for future research and make recommendations regarding research and biological parameters to support stock assessment. 				
<p>8. Effective fishing effort</p>	<ul style="list-style-type: none"> • Promote, assist and review analyses of technical data relevant to changes in effective fishing effort in concert with the work of the SA-SWG and ME-SWG • Promote, assist and review research and reporting on the current status and recent developments in regional fisheries and related shore side developments. • Examine and review the technical aspects of capacity measurement and monitoring of fisheries within the WCP-CA. 					

<p>9. Mitigation of bycatch</p>	<ul style="list-style-type: none"> • Promote, assist and review research, analyses and the generation of materials on innovative fishing methods and technology to minimise bycatch levels and increase effective targeting in collaboration with the EB-SWG and BI-SWGs. 		<p><u>Sea turtle</u></p> <ul style="list-style-type: none"> • Research and development of gear and bait alternatives. • Promotion of the use of available bycatch mitigation technology. • Biological research on sea turtles, including the identification of migration routes or other areas of spatial or temporal importance. <p><u>Seabirds</u></p> <ul style="list-style-type: none"> • Investigate seabird mitigation measures applied and being tested by other RFMOs, particularly those of the CCAMLR. • Investigate the utility of implementing compatible measures for sea bird mitigation. • Make recommendations on specific seabird mitigation measures 			
<p>10. Socio-economic factors</p>	<ul style="list-style-type: none"> • Promote, assist and review studies on socio-economic and other factors that may influence fishing strategies, effective fishing effort and fishing capacity. 					
<p>11. Education</p>	<ul style="list-style-type: none"> • Promote, assist and 		<p><u>Sea turtle</u></p>			

	review the development and provision of resources (e.g. field manual) to assist fishers, port samplers and observers toward providing and collecting high quality data.		<ul style="list-style-type: none">• Industry education,• Development and promotion of safe handling techniques and other techniques to improve sea turtle conservation.			
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Terms of Reference of the SWGs for SC2 in 2006

(All TORs here were carried over from those in the SC1 Report except EB-SWG.)

Fishing Technology Specialist Working Group

Technology is the practical application of science, tools, techniques or other organised knowledge to conduct tasks efficiently. 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 Central Pacific Ocean (Convention, Article 2);

The FT-SWG will address directives to assess the impacts of fishing (through the collection of operational level data and other means); promote the development and use of selective, environmentally safe and cost-effective fishing gear and techniques; and promote measures to prevent or eliminate over-fishing and excess fishing capacity (Convention, Part II, Article 5, sections d, e, g);

The Fishing Technology SWG will work in close collaboration with the other SWGs of the Scientific Committee, the TCC, other regional fishery management organisations and the private sector. Specific duties of the FT-SWG shall include, but not be limited to the following:

- a) Promote, assist and review analyses of technical data relevant to changes in effective fishing effort in concert with the work of the SA-SWG and ME-SWG;
- b) Promote, assist and review the identification, collection and verification of operational level data from all fleets in collaboration with the ST-SWG;
- c) Promote, assist and review research, analyses and the generation of materials on innovative fishing methods and technology to minimise bycatch levels and increase effective targeting in collaboration with the EB-SWG and BI-SWGs;
- d) Promote, assist and review the development and provision of resources to assist fishers, port samplers and observers toward providing and collecting high quality data;
- e) Promote, assist and review research and reporting on the current status and recent developments in regional fisheries and related shore side developments;
- f) Examine and review the technical aspects of capacity measurement and monitoring of fisheries within the WCP-CA; and
- g) Promote, assist and review studies on socio-economic and other factors that may influence fishing strategies, effective fishing effort and fishing capacity.

Methods Specialist Working Group

The ME-SWG will coordinate research and make recommendations to the WCPFC Scientific Committee on technical questions related to analytical methods used for fishery management. The TOR for the ME-SWG include the following:

- a. Support the work of other WCPFC Specialist Working Groups by reviewing and evaluating analytical methods used to assess stocks, investigate ecosystem variability, and evaluate management options;
- b. Investigate the statistical properties and performance of selected stock assessment methods using simulation analysis and other appropriate methods and, on the basis of studies undertaken, make recommendations regarding the most appropriate methods to be

- used for the assessment of target and non-target species of the Western and Central Pacific Ocean tuna fishery;
- c. Provide ongoing review of the structure of stock assessment and projection models as applied to various species of interest and, where necessary, make recommendations regarding enhancements to the models to improve their performance or to address deficiencies with respect to specific applications;
 - d. Coordinate research to determine appropriate biological reference points for target and non-target species of the Western and Central Pacific Ocean tuna fishery and make recommendations on the basis of this research;
 - e. Advise the Scientific Committee on appropriate methods of formulating scientific advice for management;
 - f. Advise the Scientific Committee on methods that might be used to support the ecosystem approach to fisheries in the Western and Central Pacific Ocean; and
 - g. Advise the Scientific Committee on analytical research and data needed to support management of fisheries for highly migratory fish stocks in the Western and Central Pacific Ocean.

Statistics Specialist Working Group

The TOR of the Statistics SWG is to coordinate the collection, compilation and dissemination of tuna fisheries and related data. The 'collection of data' refers to the use of forms by national agencies or the Commission to record various types of data (e.g., logsheets or logbooks to record operational catch and effort data, observer data collection forms, port sampling forms, records of unloadings, etc.). The 'compilation of data' refers to the provision of data by national agencies to the Commission in accordance with policies and procedures that have been established by the Commission in this regard. The 'dissemination of data' refers to the release of data by the Commission to the users of the data.

The coordination of the collection of data shall include periodic reviews of the Commission's standards for data collection, such as:

- a. Minimum standards for data collection forms;
- b. Sampling protocols for data collection programs;
- c. Target coverage rates for data collection programs;
- d. Sampling designs for data collection programs; and
- e. Procedures for the verification of data.

The coordination of the compilation of tuna fisheries and related data shall include:

- a. Periodic reviews of the Commission's policies in regard to the provision of data;
- b. The coverage of data compiled by the Commission; and
- c. The quality of data compiled by the Commission.

The coordination of the dissemination of data shall include periodic reviews of:

- a. The Commission's policies in regard to the dissemination of data; and
- b. The instances of the dissemination of data by the Commission.

The coordination of the collection, compilation and dissemination of data shall also include any other activities that the Scientific Committee considers to be appropriate.

The Statistics SWG shall advise the Scientific Committee in regard to issues concerning data that can be used for both scientific and compliance purposes, and that require liaison with the TCC.

Biology Specialist Working Group

The general objective of the Biology Specialist Working Group is to improve our understanding of the biology of target and non-target species, in particular to provide quantitative estimates of key life history parameters and migration patterns for stock assessment purposes to the WCPFC Scientific Committee.

The functions of the Biology Specialist Working Group are to:

- a. Provide a means for evaluating the suite of biological parameters for both target and non-target species;
- b. Coordinate the basic research work critical to deal with both target and non-target species biology;
- c. Identify key research priorities for future research; and
- d. Make recommendations regarding research and biological parameters to support stock assessment.

Stock Assessment Specialist Working Group

The overall purpose of the Stock Assessment Specialist Working Group is to evaluate the status of stocks of interest to the WCPFC and the impact of fishing. The assessments underpin the scientific advice for management that is provided by the WCPFC Scientific Committee to the Commission.

The functions of the Stock Assessment Specialist Working Group shall be, in consultation with other Specialist Working Groups, to:

- a. Critically review assessments for target and non-target stocks;
- b. Provide statements of stock status, and the impact of fishing, based on assessments, and other pertinent information;
- c. Evaluate current and proposed future harvest practices in light of the Commission's objectives (Article 2) and requests;
- d. Make recommendations regarding the content of future assessments and any supporting analysis; and
- e. Make recommendations regarding research and data required to support stock assessments.

Ecosystems and Bycatch Specialist Working Group

Turtles

With respect to turtles, the tasks allotted to the Science Committee from the second meeting of the WCPFC were as follows:

From WCPFC-2 (para 37)

“In relation to the Resolution relating to sea turtles, it was agreed that the Commission, through the Scientific Committee and Technical and Compliance Committee, should develop a program that includes:

research and development of gear and bait alternatives, promotion of the use of available bycatch mitigation technology, promotion and strengthening of data collection programs to obtain standardized information to develop reliable estimates of the bycatch of seas turtles, biological research on sea turtles, including the identification of migration routes or other areas of spatial or temporal importance, industry education, development and promotion of safe handling techniques and other techniques to improve sea turtle conservation.

This program will take into account the sea turtle conservation efforts undertaken in other international organizations, in particular the Inter-American Tropical Tuna Commission (IATTC)”

See above and WCPFC-2 (Att. H – para 5)

“Urges CCMs to:

- i. Undertake research trials of appropriate-size circle hooks in commercial pelagic longline fisheries.
- ii. Undertake research and trials on the use of circle hooks in recreational and artisanal fisheries;
- iii. Require longline vessels flying their flags to carry on board and, when sea turtle interactions occur, employ the necessary equipment (e.g. de-hookers, line cutters, and scoop nets) for the prompt release of incidentally caught sea turtles.”

Seabirds

From WCPFC-2 (para 36)

“The Commission agreed that the Scientific Committee, in consultation with the Technical and Compliance Committee, should:

investigate seabird mitigation measures applied and being tested by other RFMOs, particularly those of the Commission for Conservation of Antarctic Marine Living Resources; investigate the utility of implementing compatible measures;

and recommend specific seabird mitigation measures for consideration at the Third Regular Session of the Commission.”

From WCPFC-2 (Att. E – para 5)

“CCMs shall provide the Commission with all available information on interactions with seabirds, including incidental catches and details of species, to enable the Scientific Committee to estimate seabird mortality in all fisheries to which the WCPF Convention applies.”

All species

SC-1 report (para 7.46(a))

“Undertake an ecological risk analysis in order to prioritise species of seabirds, sea turtles, sharks and non-target fish species for future research

The suggested template for the annual report to the commission includes in the essential fisheries information “Estimated total catches of non-target, associated and dependent species (if available) Previous calendar year; other years if available”

FYI, 2005 EB-SWG TOR:

The overarching purpose of the Ecosystem and Bycatch Specialist Working Group (EB-SWG) is to provide information to the WCPFC to fulfil Articles 5 (d & e) of the Commission's *Principles and measures for conservation and management*. To achieve this, the EB-SWG will review:

- the impact on 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.

The functions of the Ecosystem and Bycatch Specialist Working Group shall be to:

Bycatch

- Review catch estimates for non-target species;
- Assess the impacts of fishing, other human activities and environmental factors on the ecosystem and biodiversity, including non-target, associated and dependent species, and habitats of special concern;
- Evaluate measures to minimise impacts of fishing on non-target, associated and dependent species and habitats of special concern;

Ecosystem analysis and modelling

- Review the results of research projects to support ecosystem analysis and modelling such as trophic studies and species interactions;
- Review impacts of pelagic fisheries on the pelagic ecosystem through ecosystem analysis and modelling;
- Review impacts of the environment on pelagic fisheries and stocks e.g., large scale work on pelagic ecosystem modelling, and more local scale ecosystem modelling at national level, including impacts on seamounts;
- Promote the development of new analysis and modelling approaches to investigate ecosystem impacts from fishing and environmentally driven processes, and ultimately to provide reliable prediction of changes in the spatio-temporal dynamics of the stocks and main components of the pelagic ecosystem;

Links with other SWGs and other organizations

- Note the linkages between the EBSWG and the other SWGs as follows;
- Bycatch mitigation methods, which minimise the selectivity of non target and protected species will also of interest to FT-SWG;
- The fundamental biological properties of incidentally caught species such as sharks and billfish relate to interactions structuring ecosystems and will be of interest to the BI-SWG;
- Technical aspects of ecological models should also be scrutinised by the ME-SWG (as occurs for stock assessment models);

- Environmental variability discussed in EBSWG will also be of interest to the SA-SWG and may need to be explicitly accounted for in the assessments themselves; and
- Other organizations will carry out research on ecosystems and bycatch that will be of interest to this group.