SCIENTIFIC COMMITTEE
SPECIALIST WORKING GROUP

TERMS OF REFERENCE FOR THE SPECIALIST WORKING GROUPS

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BIOLOGY SWG

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.

ECOSYSTEM AND BYCATCH SWG

The overarching purpose of the Ecosystem and Bycatch Specialist Working Group (EBSWG) is to provide information to the WCPFC to fulfill Articles 5 (d & e) of the Commission's *Principles and measures for conservation and management*; namely that the Commission will:

"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".

"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",

"protect biodiversity in the marine environment"

To achieve this, the EBSWG will review the impact on fishing on components of the ecosystem not targeted by fisheries, especially sharks, seabirds and turtles; the interactions between climate and environmental factors and the target and bycatch species, and the development of ecosystem-based models to assist the Commission in decision making.

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

Bycatch

- Review annual estimates of catches and interactions with 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 minimize impacts of fishing on non target, associated and dependent species and habitats of special concern.

Ecosystem modeling

- Review the results of research projects to support ecosystem modeling such as trophic studies and species interactions.
- Review impacts of pelagic fisheries on the pelagic ecosystem through ecosystem models such as SEAPODYM and ECOSIM/ECOPATH.
- 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 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.

Reporting

- Prepare the reports of the EBSWG, including recommendations to the Scientific Committee and WCPFC on the research to support and develop ecosystem models, and on bycatch estimation and mitigation research.

Overlap with other SWG

- Note the overlap between the EBSWG and the other SWGs as follows:
    - bycatch mitigation methods, which minimize the selectivity of non target and protected species will also of interest to **FTWG**
    - 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 **BWG**
    - technical aspects of ecological models should also be scrutinised by the **MWG** (as occurs for stock assessment models)
    - environmental variability discussed in EBSWG will also be of interest to the **SAWG** and may need to be explicitly accounted for in the assessments themselves

FISHING TECHNOLOGY SWG

The Fishing Technology SWG will work in close collaboration with the other SWGs of the Scientific Committee, the Technical and Compliance Committee, other regional fishery management organisations and the fishing industry. 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 SWG

The Methods Specialist Working Group will coordinate research and make recommendations to the WCPFC Scientific Committee on technical questions related to analytical methods used for fishery management. The initial terms of reference for the Working Group include the following:

1. Develop criteria for evaluating the performance of models applicable to the tuna fisheries of the western and central Pacific Ocean tuna fishery.
2. 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 tuna stocks and important by-catch species of the western and central Pacific Ocean tuna fishery.
3. 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.
4. Coordinate research to determine appropriate biological reference points for target tuna stocks and important by-catch species of the western and central Pacific Ocean tuna fishery and make recommendations on the basis of this research.
5. Advise the Scientific Committee on appropriate methods of formulating scientific advice for management.
6. Advise Scientific Committee on methods that might be used to support the ecosystem approach to fisheries in the western and central Pacific Ocean.
7. Advise Scientific Committee on analytical research needs.

STATISTICS SWG

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.

STOCK ASSESSMENT SWG

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.