SCIENTIFIC COMMITTEE
EIGHTH REGULAR SESSION

Busan, Republic of Korea
7-15 August 2012

LIST OF WORK PROGRAMME OF THE SCIENTIFIC COMMITTEE

WCPFC-SC8-2012/GN-WP-05 Rev2

An Informal Small Group (ISG) will meet to update the List of SC Work Programme. The purpose of this List is to allocate a unique number to individual SC projects for future reference, to describe explicit terms of reference for any project contract, and compile historical project activities. This will be a standing document for an annual update if needed. The ISG will meet in the margin of SC8 to review the priority, TOR and any further background descriptions, and consider the budget implications for review and recommendation to the Commission for high priority projects.

DRAFT WORK PROGRAMME OF THE SCIENTIFIC COMMITTEE FOR 2008-2010

(Indicative budget in USD)

Project items (Priority)	Description	Status
Project 28. (Priority = Medium)	**Development of procedures and decision rules (harvest control rules) to assist the interpretation of stock assessment results and the formulation of management recommendations.** Tasks/TOR History • SA-SWG priority. • 2012: SPC conducted a project "development of a simple harvest control rules for the WCPO fisheries"	**Active** (Due for completion 2012)
Project 38. (Priority = Low)	**Feasibility study to determine the effectiveness of otolith microchemistry to estimate stock mixing and large-scale tuna movement.** Tasks/TOR • Recent advances in extraction of microchemistry samples from fish otoliths provide the potential for observing regional water chemistry differentiation in the otoliths of pelagic species – hence a natural tag for estimating stock mixing and large-scale tuna movement. History • Budget level**:** 60K over 1 year (SPC and University of Hawaii proposal). – is this valid?	**Active** (Due for **c**ompletion 2012)

	Comments: 1. Not sure about this one. Independent of WCPFC funding I (Itano) have been involved in an otolith microchemistry project for stock discrimination of yellowfin and bigeye tuna in the central Pacific. That project is complete and a publication is in press. 2. This may refer to ongoing work between SPC and CSIRO Hobart. 3. Recommend: consult with SPC for their opinion. SPC Comment (Nicol) We do have some ongoing otolith microchemistry with CSIRO for albacore. I always assumed that this project though was the Itano YFT but we could capture our work under this project if that is desired. Maybe this could be determined after consideration of the SP Alb assessment report.	
Project 55. (Priority = Medium)	**Undertake studies on the behaviour and distribution of target and non-target species around FADs, and on the various specifications and use of FADs and fishing gears in influencing purse seine catches taken in association with FADs, with a view to identifying their impact in relation to mitigation measures to reduce catches of juvenile tuna and non-target species by purse seine gear.** Tasks/TOR History • FT-SWG Priority • Includes seeking collaboration with industry to Design of industry - associated studies related to selectivity and avoidance of small tunas and bycatch on floating objects. Assistance of the commission in promoting industry cooperation with in kind contribution of vessel time is requested. • PNG supported $25K for FAD Bycatch Mitigation Research and David Itano working with ISSF conducted this research (contracted in January	**Active** (Due for completion 2012)

	2011). Comments: 1. Funds have been used as per the project proposal to support established FAD bycatch mitigation programs as the funds were insufficient to mount a stand-alone project of effective scope. Funds to date have been used to support bycatch mitigation research sponsored by the ISSF. This project will be fully reported to SC8 as Funds will be fully expended to close the project in 2012.	
Project 57. (Priority = High)	**Identifying Provisional Limit Reference Points for the key target species in the WCPFC** Tasks/TOR • Identify candidate indicators (e.g. $B_{current}/B_o$, SB/SB_{MSY}) and related limit reference points (e.g. $B_{current}/B_o$,=X, SB/SB_{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 within a management framework. • Using past assessments, evaluate the probabilities that related performance indictors exceed the values associated with candidate reference points. • Evaluate the consequences of adopting particular limit reference points based on stochastic projections using the stock assessment models. • Undertake a literature review / meta-analyses to provide insights into levels of depletion that may serve as appropriate limit reference points and other uncertain assessment parameters (e.g. steepness). • Include the consideration of multispecitc effects on harvest control rules History • Several researches on reference points have been conducted by SC.	**Active** (Due for completion 2012)

Project 58. (Priority = Medium)	**Evaluation of reference points and decision rules (harvest control rules).** Tasks/TOR • Undertake a formal evaluation (e.g. Management Strategy Evaluation and robustness of stock assessments) of reference points and decision rules to guide the long term management of the key target species in the WCPFC. History • The work program recommended in the second consultancy report and at SC4 would provide some guidance on progressing this task. • As of SC8, WCPFC-SC considered LRPs, TRPs, and Harvest Control Rules.	**Active** (Due for completion 2012)
Project 60. (Priority = High)	**Collection and evaluation of purse-seine species composition data** Tasks/TOR • Collection of fish weight data onboard longliners and purse seiners using "at sea" scales • Continued study into sampling regimes for size and species composition of purse-seine catches • Port sampling programmes to determine the accuracy of cannery receipts in Noro, SI and possibly other ports • Collaboration with other tuna RFMOs to examine factors affecting the sampling of purse-seine species composition Tasks/TOR for 2013 • Collect paired grab and spill samples from the WCPO purse-seine fishery and quantify the bias in species and size compositions determined from	**Active** (Due for completion 2013)

	grab samples • Compare species compositions determined from (i) logsheets, (ii) grab samples, (iii) spill samples, (iv) cannery receipts and (v) port sampling of landing categories of catches delivered to the cannery at Noro, Solomon Islands and possibly other ports • Document the spill sampling protocol • Develop procedures to correct historical catch and size data covering the WCPO purse-seine fishery for biases <u>History</u> • In April 2009 (to be presented at SC5 in 2009), $54,500 was contracted to fund the "Collection and Evaluation of Purse-Seine Species Composition Data". In December 2009, $54.5K was budgeted and in 2010, $90K was endorsed to support this project. • In December 2011, no further budget was allocated to this project but requested to submit a *Plan for Improvement of the Availability and Use of Purse Seine Catch Composition Data* (WCPFC8-2011-IP/06). SC8 will consider budgetary implications of this Plan. • 2013 = $75,000	
Project 37. **(Priority = High)**	**Analysis of FAD impacts on trophic dynamics.** <u>Tasks/TOR</u> • This work is required for a better understanding of the biological impacts of FADs. <u>History</u> • Budget level: 70K over 2 years (SPC and University of Hawaii proposal). – is this valid? SPC Comment (Nicol) –the only progress on this is the collection of samples	**Active** (Due for completion 2014)

	for isotope analyses and fatmeter for condition. Lab analyses have not been undertaken. SPC will host a PhD student from University of South Hampton in 2013 who will address hypotheses on this topic but we will not have results from this work until the 2014 SC. We might want to grant an extension to this project.	
Project 42. (Priority = High)	**Pacific-wide tagging project.** Tasks/TOR • The main objectives are to obtain information on movement, stock structure, growth, mortality, behaviour, habitat utilization, and vulnerability for use in stock assessments for yellowfin, bigeye and skipjack tuna. • Undertake a preliminary analysis of the vertical distribution of skipjack, yellowfin and bigeye tuna associated with fish aggregation devices, as indicated by acoustic tagging data. This item is related to the analysis of data from the PNG Tagging Project and scientists from other CCMs will participate in this project. Future work will be in the context of Phase 2 tagging. • Ongoing and newly funded research with sonic and archival tags in Hawaii, PNG and other areas. On-going. **(**Currently funded SPC-OFP and Univ. of Hawaii projects). History • Refer to GN WP-10 for the Phase 2 proposal of Regional tuna tagging • Funding is a limiting factor for Pacific Ocean tuna tagging experiments and should be sought from a broad range of sources, including member and non-member countries with substantial financial interests in these fisheries, GEF, and non-governmental organizations, particularly foundations	**Active** (Due for completion 2015)

	interested in supporting scientifically based tuna conservation efforts. • The budget required for a 2 year pan-Pacific tagging project would need at least USD 9 million to do a wide coverage project in the WCPFC-CA alone. Approximately USD 2.4 million has been identified through SPC projects. To provide some additional perspective, the IOTC tagging project over 3 years in a much smaller area than the Pacific (or even the WCPFC-CA) cost USD 19 million.	
Project 67. (Priority = High)	**Range contraction of tropical tunas, sharks, and billfish** Tasks/TOR • Recognizing that biomass for most WCPO stocks is estimated to be at historical lows and concerns have been raised by non-tropical coastal states about declines in the abundance of tropical tuna species, this project seeks to: a) Examine existing data to examine the spatial distribution of tropical tunas and related species is changing through time and with change is abundance; b) Develop models that allow the simulation testing of alternative hypotheses about spatial distribution patterns including range contraction; and c) Provide advice on the how the preservation of the spatial distribution of tropical species may impact on target and limit reference points. History • This is a newly proposed project in 2012 and no funding is sought from WCPFC at this time.	Active (Due for Completion 2015)

<table>
<tr>
<td>Project 35. (Priority = High)</td>
<td>
Refinement of bigeye parameters Pacific-wide: A comprehensive review and study of bigeye tuna reproductive biology.

Tasks/TOR
a) Objectives
To obtain accurate scientific information on maturity, spawning locations, sex ratios, and fecundity for inclusion in stock assessments of bigeye tuna in the Pacific Ocean.

b) Items to be considered as a joint research between IATTC and WCPFC
Based on tagging studies to date, the movements of bigeye are geographically restricted. The limited amount of mixing across the Pacific Ocean can create differences in life history characteristics as a function of differences in oceanography and genetic structure. Therefore, obtaining size and age based estimates of bigeye reproductive characteristics from spatial strata across the Pacific Ocean would be useful for inclusion in bigeye stock assessments, since current estimates are based on inadequate spatial strata and limited sample sizes to have much confidence for inclusion in Pacific-wide assessments.

History
• Original proposal
<table>
<tr><td colspan="2">Pilot study</td><td colspan="4">Pacific-wide study</td></tr>
<tr><td>2009</td><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td></tr>
<tr><td>30K</td><td>29K</td><td>62K</td><td>236K</td><td>350K</td><td>129K</td></tr>
</table>
• Adjusted proposal, as of July 2012
<table>
<tr><td>Planning stage</td><td>Pilot study?</td><td>Pacific-wide study?</td></tr>
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<td>Active (Due for Completion 2016)</td>
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<tr><td></td><td>
<table>
<tr><td>2008</td><td>2009</td><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td><td>2016</td></tr>
<tr><td>15K</td><td>30K</td><td>30K</td><td>31K</td><td>55K</td><td></td><td></td><td></td><td></td></tr>
</table>
It is important to address some of the outstanding issues related to the biological parameters for BET, but we also need to ensure work is done on other species for which much less data are available. Hopefully, the priority species will identify themselves through the Ecological Risk Assessment process. In the WCPO, we have a range of similar or even more critical issues related to YFT and ALB.
</td><td></td></tr>
<tr><td>Project 36.
(Priority = High)</td><td>Age and growth of the target tuna species.
<u>Tasks/TOR</u>
An initial project within this category is regional differences in growth from length-frequency data for YFT and BET.
<u>History</u></td><td>Active (Part of project 35)</td></tr>
<tr><td>Project 65.
(Priority = High)</td><td>Peer review of stock assessment

<u>Tasks/TOR</u>

<u>History</u>
In 2012, a peer review was conducted on 2011 bigeye stock assessment.
Include any others e.g. Yellowfin CIE review.</td><td>Active on-going</td></tr>
<tr><td>Project 1.
(Priority = High)
SPC-OFP</td><td>Incorporate data provided by Members, Cooperating Non-Members and Participating Territories (CCMs) under the Commission’s data provision policy into existing databases and facilitate access of Commission secretariat staff to those data as appropriate.</td><td>Active on-going</td></tr>
</table>

Services	Tasks/TOR History	
Project 11. **(Priority = High)** **SPC-OFP Services**	**Identify known data / information gaps in the current stock assessment, particularly in relation to operational level CPUE data** Tasks/TOR History • A number of potential explanations for different data gaps were identified, including the time and resources required to access and collate historical records, the long voyage times for some distant-water longline fleets and the large and dispersed nature of small boat fleets in Indonesia and the Philippines. • A number of members cited specific issues with the summary of data gaps presented in the paper and SPC-OFP undertook to revise the information accordingly in consultation with the relevant members	**Active on-going**
Project 14. **(Priority = High)** **Consolidate with project 8**	**Indonesia and Philippines Data Collection Project (IPDCP)** **West Pacific East Asia Oceanic Fisheries Management Project** Tasks/TOR • IPDCP: data collection from port sampling in Indonesia and Philippines • WPEA OFM: i) Monitoring, data enhancement and fishery assessment; and ii) Policy, institutional strengthening and fishery management	**Active on-going**

	History • Refer to SC3-GN-WP-07 Report of the Steering Committee on IPDCP • 2004-2009: IPDCP activities in Indonesia and Philippines • 2010-2012: WPEA OFM Project activities • WCPFC Secretariat and UNDP is working on the 2nd Phase of WPEA OFM	
Project 15. (Priority = High)	**Rescue of historical commercial catch data from countries in the western Pacific Ocean, including Vietnam.** Tasks/TOR History • Highest priority to minimize data gaps in stock assessments and has been implemented as part of WPEA OFM Project	**Active on-going** (Refer to Project 14)
Project 2. (Priority = High) SPC-OFP Services	**Compile estimates of annual catches by species, gear type and flag, as specified in the procedures for Scientific Data to be Provided to the Commission** Tasks/TOR History	**Active on-going**
Project 22. (Priority = High) SPC-OFP Services	**Undertake stock assessment for target and non-target species as requested by the Commission.** Tasks/TOR • Refinement of data and data structure used for stock assessment	**Active on-going**

	• Quantification of changes in fishing efficiency due to changes in fishing gears and fish finding technologies – Medium Priority. (Used to model changes in selectivity over time required in MFCL assessment models - Cross-reference with Project 27 for non-OFP project work) • Quantification of changes in longline selectivity due to changes in gears and patterns of deployment – Medium Priority. (Used to model changes in selectivity over time required in MFCL assessment models. SPC-OFP services as time allows.) <u>History</u> • Annual commitment	
Project 23. **(Priority = High)** **SPC-OFP Services**	**Undertake standardisation of longline catch and effort data, including where appropriate operational-level data, and the construction of indices of stock abundance for species of interest to the Commission.** <u>Tasks/TOR</u> • There are many issues to explore relating to CPUE standardization. Need to develop a specific work programme on this with funding support. <u>History</u> •	**Active on-going**
Project 24. **(Priority = Medium)** **SPC-OFP Services**	**Development and reporting of stock indicators for those key species not formally assessed.** <u>Tasks/TOR</u> • Formulate most-up-to-date management advice to Commission if full assessment not undertaken. <u>History</u> • SA-SWG priority	**Active on-going**

Project 25. (Priority = High) SPC-OFP Services	**Continued exploration of sensitivity of stock assessment outcomes to structural assumptions in models and data issues, including the comparison of various stock assessment models.** Tasks/TOR • This work also includes the development of better diagnostics to more objectively determine plausible model structure. • Work program for 2008 includes a comparison of MFCL, SS-2 and other stock assessment models for yellowfin or bigeye tuna. • This will be more routinely incorporated into the assessments if it is felt to be informative. History • ME-SWG Priority.	**Active on-going**
Project 26. (Priority = High)	**Stock assessment on southern swordfish** Tasks/TOR History • SA-SWG priority. • 2006: Full stock assessment of swordfish in the southwest Pacific • 2008: full stock assessment • 2011: data collection and CPUE analysis • In March 2012, WCPFC8 agreed to conduct swordfish stock assessment as requested by the EU. SPC-OFP is undertaking this work.	**Active on-going (Periodic)**

Project 29. (Priority = High) SPC-OFP Services	**Further refinement of the stock assessment model, MULTIFAN-CL, including simulation testing of new developments as appropriate and refinement of models for CPUE standardization.** Tasks/TOR • Work program for 2008 included designing a more efficient recruitment parameterization (High priority) and incorporation of length-based selectivity (Medium priority). • There are a number of other matters that need to be addressed, including a long-term project to re-write the software to make it more transparent, better documented, and include new features (multi-sex, species, and stock options). History • ME-SWG and SA-SWG Priority. •	**Active on-going**
Project 3. (Priority = High) SPC-OFP Services	**For catches for which estimates are not otherwise available, conduct statistical analyses to estimate catches, particularly in regard to (a) purse-seine catches of bigeye tuna and yellowfin tuna, (b) discards of target tuna species, and (c) catches of non-target species.** Tasks/TOR History • Related with (c) above, refer to WCPFC-SC8-2012/EB-WP-18	**Active on-going**
Project 32. (Priority =	**Further consideration of how to reflect uncertainty in projections.**	**Active on-going** (now project 28)

Medium)	Tasks/TOR History • ME-SWG Priority.	
Project 41. (Priority = Medium)	**Development of a biological database for inclusion on the WCPFC website.** Tasks/TOR History • BI-SWG Priority. • The Commission contracted with SPC for the development of *Bycatch Mitigation Information System*, which is annually updated with the budget of TCC.	**Active on-going - now as BMIS?**
Project 5. (Priority = Medium) SPC-OFP Services	**Produce and publish on the Commission's website the Tuna Fishery Yearbook, containing annual catch estimates by gear type, flag and species.** Tasks/TOR History	**Active on-going**
Project 50. (Priority = Low)	**Offal discards and haul-back mitigation studies.** Tasks/TOR	**Active on-going** (TCC funded BMIS; Remainder

	History • Development of bycatch and bycatch mitigation database (currently BMIS is developed and managed by SPC, funded by TCC budget). • If any use is to be made of this database, there would be considerable ongoing work required to populate the various database tables. Some of this, but not all, could be done under other OFP service items (bycatch estimation). • There is also a concern that the additional components added on (e.g. ERA attributes, non-target catch estimates and species utilisation) probably weren't envisaged at the start and the work involved will go beyond the time/funds originally envisaged in the contract. • Some funding would need to be allocated in future budgets if this work is to be ongoing.	Inactive)
Project 52. (Priority = High) SPC-OFP Services	**Shark Research Program.** Tasks/TOR • Refer to Shark Research Plan History • EB-SWG Priority. • Shark Research Plan was proposed at SC6 and adopted at WCPFC7. • CMM 2006-05 (replaced by 2010-07) requested that shark stock assessments be undertaken for key shark species. • Shark research plan was approved by WCPFC7.	**Active on-going**
Project 6. (Priority = High)	**Compile estimates of catch and effort in support of the functions of the Commission and its subsidiary bodies, such as (a) estimates of annual catches by vessel flag, EEZ, and archipelagic waters, for use in determining the catch component of the Commission's assessed**	**Active on-going**

SPC-OFP Services	**contributions, and (b) estimates of catch and effort in support of Conservation and Management Measures.** Tasks/TOR History	
Project 7. **(Priority = High)** **SPC-OFP Services**	**Disseminate public domain catch, effort and size data on the Commission's website at agreed level of resolution.** Tasks/TOR History	**Active on-going**
Project 8. **(Priority = High)** **SPC-OFP Services**	**Participate in data collection project in the West Pacific East Asian waters** Tasks/TOR • Participate in the Indonesia and Philippines Data Collection Project (Projects 15 and 16) and the compilation of information on the tuna fisheries of Vietnam. • Participate in the WPEA OFM Project History •	**Active on-going** (The 1st phase of WPEA OFM finishes 2012)
Project 46. **(Priority =**	**Development / review of models, such as full development of an ECOSIM model, for evaluation of fishery and environmental impacts on ecosystem,**	**Active on-going** (SEAPODYM –

Medium)	**including development of reference points.** Tasks/TOR History • Required modeling and assessing fishery impacts on the ecosystems. • This is separate from the ERA work. SPC-OFP will be undertaking work under SCIFISH project on continued development of SEAPODYM model and application to WCPO pelagic ecosystems.	long term)
Project 62. (Priority = Medium)	**SEAPODYM simulation modelling** Tasks/TOR • Collaboration between CLS, Space Oceanography Division and SPC-OFP • Development of a Pacific swordfish application • Simulation experiments to improve the model calibration for tuna species, using higher resolutions of fishing data and oceanic environmental data • Model calibration for albacore with a basin-scale application including both north and south populations. • Incorporation of conventional and archival tagging data in the model calibration. • Projection of impact of global climate change on distribution and abundance of tuna stocks History •	**Active on-going see project 46**
Project 16. (Priority =	**Publication and distribution of Commission's training and educational materials.**	**Completed**

Medium)	Tasks/TOR • Development of training materials and the production of material to facilitate the identification of target and non-target species by fishermen, observers, and port samplers with the objective of improving data quality. History • During 2007, additional guides were developed by the FT-SWG on longline and purse seine bycatch species. **Comments:** 1. Work included the production of three identification guides for distinguishing yellowfin from bigeye tuna in three condition states (fresh, brine frozen, damaged) useful for the training of observers and port samplers. The guides were produced in English and have since been translated into 7 languages for use by all tRFMOs. Additional photographic guides were produced to assist the identification of longline and purse seine non-target species. Expenditures under this Project were mainly used to fund the reproduction and distribution of these guides to various agencies and organizations for training purposes. 2. These guides are still available on the Commission website at no cost but funds for their printing and distribution in hard copy may be desirable in the future. 3. Recommend that this Project be moved to a list of inactive but potentially useful projects.	

Project 17. **(Priority = High)**	**Draft list of minimum data fields for the regional observer program be annotated with explanations of what each field is and why it is needed and detail describing the format (units of measure, codes etc) to be used when collecting each field.** Tasks/TOR • As shown in the title above. History • ST-SWG priority • Undertaken by WCPFC Secretariat during 2008	**Completed**
Project 34. **(Priority = High)** **SPC-OFP Services**	**Further review of spatio-temporal aspects of catches of juvenile bigeye and yellowfin tuna caught in association with fish aggregating devices (FADs) by updating the analysis presented in WCPFC 3-2006-16. Refine the assessment of management options presented in the paper on the basis of the latest available fishery information.** Tasks/TOR • Research items to be considered over the 3 year planning horizon: a) With new SKJ and BET assessments and YFT 2007 assessment, conduct multi-species management options analyses, including economic outcomes of options on each sector. b) PS fishery characterisation – as a first step in developing an operational model of the fishery and more formal management strategy evaluation (MSE) work. c) More spatial analysis – perhaps adopting the statistical approach of estimating lat/long/season effects on associated set (small juvenile) YFT and BET catches.	**Completed**

	History	
Project 39. (Priority = High)	**Regional study of the stock structure and life-history characteristics of South Pacific albacore.** Tasks/TOR History • BI-SWG Priority. • A proposal to undertake this work is being developed by Australia and conjunction with New Zealand, SPC-OFP and other CCMs (e.g. New Caledonia, French Polynesia, FFA countries). • Total Budget: AUD820K over 3 years, and the Commission supported $25K for 2008, 2009, and 2010 to CSIRO (Jessica Farley). • This project was successfully finished and final report was submitted to the Secretariat in July 2012, which was posted on SC8 website.	**Completed**
Project 43. (Priority = High)	**Ecological Risk Analysis, including PSA.** Tasks/TOR History • On-going ERA Work Program submitted to SC-3 and endorsed (cf. EB-WP-3). • Includes $30,000 for identifying areas of spatial and temporal overlap of seabird and sea turtle interactions with tuna fisheries in the WCPO (ACAP). • ERA budget of $130K was included in SPC-OFP science services budget	**Completed** (ERA complete in 2009 Shark Research Plan Ongoing)

	in 2009 (SC5). • WCPFC7 switched ERA to shark research: *WCPFC7* 144. WCPFC7 approved the shark research plan and the reallocation of existing funds within the Scientific Services budget ($792K in 2012) to support shark assessments during 2011 and 2012. WCPFC7 agreed to add porbeagle and four species of hammerhead sharks to the Commission's key shark species in CMM 2009-04 (Attachment DD). This amendment raises the number of key shark species to be reported to the Commission to 13 but maintains the original 8 key species as the focus of the Shark Research Plan until further funding is made available.	
Project 56. (Priority = Medium)	**Utilize underwater videos and other tools to characterize species, size composition and spatial distribution of tunas aggregating around floating objects.** Tasks/TOR History • FT-SWG Priority • The unit used in the EPO by IATTC cost approximately $3000. On advice from IATTC, it will likely be necessary that gear be suitable to depths of at least 100 m due to deeper thermocline and mixed layer depth in the WCPO. This will require greater pressure ratings and length of cables. • This project was conducted by David Itano for two years and project outputs were presented at SC meetings.	**Completed**
Project 9. (Priority = Medium) **SPC-OFP**	**Develop data standards for port sampling and observer programmes in association with WCPFC Secretariat**	**Completed**

Services	Tasks/TOR History	
Project 10. (Priority = High) SPC-OFP Services	**Advise the Executive Director regarding the development of (a) Rules and Procedures for the Access to and Dissemination of Data and (b) the Information Security Policy** Tasks/TOR • Will require on-going periodic monitoring as the information and data management policies and procedures of the Commission evolve. • This has been in each annual work plan for many years. There has not been much year-to-year progress. It would be better to engage in this process only periodically (e.g. once every 3 years). Also need legal advice beyond the expertise of SPC. History •	**Completed** (retain as required for periodic inputs)
Project 12. (Priority = High) SPC-OFP Services	**Within the next 12 months deploy on the WCPFC website a prototype computer programme that would allow gaps in data to be easily identified.** Tasks/TOR History • ST-SWG priority	**Completed 2008**

	• Undertaken in 2008 jointly with WCPFC Secretariat	
Project 13. (Priority = High) SPC-OFP Services	**Review current unloadings data forms used in the region, and the proposed WCPFC transhipment reporting form, to determine their adequacy for scientific purposes.** Tasks/TOR History • ST-SWG priority	**Completed 2008**
Project 40. (Priority = Medium)	**Life-history characteristics of non-target species identified by the ERA as high risk.** Tasks/TOR History • BI-SWG Priority.	**Completed** 2009
Project 51. (Priority = High)	**Extension services to member countries for within EEZ ERA.** Tasks/TOR History • ERA methods can value add to EAFM approaches being adopted by WCPFC member countries for fisheries planning and management at the EEZ scale. • The extension services will be capacity building of ERA skills within these	**Completed 2009**

	countries.	
Project 61. (Priority = High)	**N. Pacific striped marlin mitigation methods** Tasks/TOR • Analyze catch rates with regard to gear and operational modifications, spatio-temporal and oceanographic considerations. • Modelling to incorporate gear and spatio-temporal effects to identify potential factors contributing to striped marlin catch reductions in N. Pacific longline fisheries. History •	**Completed 2010**
Project 44. (Priority = High)	**Seabird and turtle education and extension of fishers (Promotion of mitigation methods to fishers)** Tasks/TOR History	**Completed 2012**
Project 45. (Priority = High)	**Education and dissemination of information relating to Turtle de-hooking devices.** Tasks/TOR History	**Completed 2012**

Project 64. (Priority = High)	**Revised stock assessment of SW Pacific Striped Marlin** Tasks/TOR • A project to undertake this work is being developed by Australia in conjunction with New Zealand, SPC-OFP and other CCMs. • This species is not one of the principal target species assessed by the SPC-OFP but is an important target species for a number of CCMs. Australian and New Zealand scientists are proposing to undertake this work and are seeking the endorsement of the Commission as the research will have broader regional benefits. Support from the Commission would help secure funds from funding sources from Australia and New Zealand. History • 2011: Collation of SP striped marlin data for a planned stock assessment in 2012 (USD 30,000), which is coordinated by Stephen Brower (NZ) – SC6 Report, Para 514 • 2012: SPC-OFP will conduct stock assessment	**Completed 2012**
Project 66. (Priority = High)	**Identification and evaluation of target reference points** Tasks/TOR History • SPC-OFP conducted the Commission's consultancy in 2012 to identify and evaluate candidate target reference points for skipjack, including empirical reference points such as those based on CPUE as well possible target reference points derived from stock assessment models	**Completed 2012**
Project 63. (Priority = High)	**Identifying Provisional Decision Rules**	**Completed 2012 possible**

	Tasks/TOR • For the key target species in the WCPFC, develop candidate harvest strategies (decision rules) based on present stock status. • Define and/or quantify assessment uncertainty and articulate how this is to be incorporated within decision rules. History • SC8 will review the concept of **harvest control rules** and the Commission will have a workshop on management objective WS, 28-29 December 2012.	**extension**
Project 30. **(Priority = Medium)** **SPC-OFP Services**	**Development of recruitment indices independent of the MFCL model, including the investigation of recruitment and oceanographic trends.** Tasks/TOR • Required to index recruitment in stock assessment models. Major advances made in 2007 need to be followed up and formally incorporated into assessments. History • SA-SWG and ME-SWG Priority. •	**Deleted as requested by the SC4**
Project 4. **(Priority = Medium)** **SPC-OFP Services**	**Produce and publish on the Commission's website two issues of the Regional Tuna Bulletin, containing estimates of monthly catch rates for WCPO fleets, based on the most recent data available.** Tasks/TOR History	**Dis-continue**

Project 18. (Priority = High)	**Determine appropriate sample sizes for length frequency sampling strategies.** Tasks/TOR • Relates to all target species but yellowfin was identified as priority species. History • SA-SWG priority Comments: 1. Incorporated into Project 60 2. Recommend deleting this item	**Inactive** **Delete**
Project 19. (Priority = High)	**Identification and description of operational characteristics of the major WCPO fleets and identification of important technical parameters for data collection.** Tasks/TOR • Includes characterization of operational features at both vessel and set/operational levels useful for effort standardization and the evaluation of fishing efficiency, targeting and bycatch mitigation. • Includes use of simple proxies and other means as tangible indicators of increasing fishing power, i.e. individual or fleet landings per annum, and/or estimates of the number of FADs deployed each year.	**Inactive**

	• Includes monitoring of operational features related to depths fished by longline hooks and depths of purse-seine nets. • Includes monitoring and reporting on new developments in fishing gear and practices, fishing modes and related shore side developments as they relate to changes in fishing power. • Supply TDRs and hook timers to regional observer programs undertaken by SPC-OFP. <u>History</u> • FT-SWG priority. Comments: 1. FT-SWG no longer exists so no progress. ~~2. Recommend that this Project be moved to a list of inactive but potentially useful projects.~~	
Project 20. (Priority = Low)	**Examine and review the technical aspects of capacity measurement and monitoring of fisheries within the WCPFC-CA.** <u>Tasks/TOR</u> • This project may be undertaken by the TCC, but the FT-SWG terms of reference were modified in 2006 to accommodate capacity work. <u>History</u> • FT-SWG priority Comments: 1. FT-SWG no longer exists so no progress. ~~2. Recommend that this Project be moved to a list of inactive but potentially useful projects.~~	**Inactive**
Project 21.	**Investigate and promote studies on socio-economic influences on fishing**	**Inactive**

(Priority = Low)	**strategies, spatio-temporal fishing patterns and influences on effective fishing effort.** Tasks/TOR History • FT-SWG priority Comments: 1. FT-SWG no longer exists so no progress. ~~2. Recommend that this Project be moved to a list of inactive but potentially useful projects.~~	
Project 27. (Priority = Medium)	**Investigation and quantification of changes in catchability of target and non-target species, including bycatch and incidental species, over time not included in the CPUE standardization.** Tasks/TOR • Many factors, not reported on logbooks, influence catchability. The comparison of catch rates obtained by individual research projects where details of gear and fishing practices have been extensively documented may allow changes in catchability to be investigated and possibly quantified. History • SA-SWG priority (cross-reference Project 23/22).	**Inactive** (links with other projects)
Project 31. (Priority =	**Improve existing, and explore alternative, models for standardization of effort and the construction of indices of stock abundance.**	**Inactive**

High)	Tasks/TOR • Includes tasks identified by the ME-SWG at SC3 – the continued identification of factors which influence CPUE, understanding and quantification of the changes in catchability over time not included in the CPUE standardisation models, and identification of alternative catchability trends for inclusion in stock assessment models, and the calculation of regional weighting factors. History • SA-SWG and ME-SWG Priority.	
Project 33. **(Priority = ~~Medium~~)** **Low**	**Development of new stock assessment models and associated software.** Tasks/TOR History • ME-SWG Priority.	**Inactive** (links to project 60)
Project 47. **(Priority = Medium)** **Low until enough observer coverage**	**Turtle population assessments.** Tasks/TOR • Three year project to continue into 2009, involving collation of data eventually leading to quantitative assessments. History •	**Inactive**
Project 48. **(Priority =**	**Survival of hooked and released seabirds.**	**Inactive**

Medium)	Tasks/TOR • History • Will require sourcing external funding for satellite/archival tags.	
Project 49. (Priority = Medium)	**Turtle tagging and associated materials.** Tasks/TOR • History • Will require sourcing external funding for satellite/archival tags. Conventional tags can probably be obtained at little or no cost from SPREP	**Inactive**
Project 53. (Priority = Medium)	**Investigation into the fishing activities and catch composition of small vessels (e.g. longliners<24m)** Tasks/TOR • To create a better understanding of the catch and effort and operational activities of small high seas vessels so that appropriate management measures (e.g. sharks and seabirds) can be considered for these vessels. History • EB-SWG Priority. •	**Inactive**
Project 54. (Priority = Medium)	**Review scientific data to assess the inter-relationship between ~~in a holistic manner~~ the effects of bycatch management measures using the different longline gears and mitigation measures on the catch of turtle, shark and other target and non-target longline species.** Tasks/TOR	**Inactive**

	• Assess the impact of circle hooks, line weighting and other mitigation methods impact the capture of target species, sea turtles, seabirds and sharks. <u>History</u> • EB-SWG Priority. • Some work has been done in the Atlantic and we could assess that.	
Project 59. (Priority = Medium)	**Management Strategy Evaluation for non-target and protected species using semi-quantitative models.** <u>Tasks/TOR</u> • ERA will identify species at risk from to the effects of fishing. For some of these species the information available will be insufficient for a robust statistical stock assessment approach. However a need to evaluate management options for these species will remain. <u>History</u> •	**Inactive**
Project 68. (Priority = High - once there is sufficient observer coverage)	**Estimation of seabird interaction, bycatch and mortality** <u>Tasks/TOR</u> • EB-SWG Priority? • Subject to the requests by CMM 2007-04 <u>History</u>	Inactive