**SC12 Work Programme and Budget**

**Table 1:** List of SC work programme titles and budget for 2017, and indicative budget for 2018–2019, which require funding from the Commission’s core budget. **Budgets for boldface projects** were approved by the Commission**.**

(Budget in USD; Es.=Essential, Pr.=Priority; priority 1 = low, 3 = high).

| **Project title** | **Terms of references /**  **Scope of work** | **Essential** | **Prriority** | **2017** | **2018** | **2019** |
| --- | --- | --- | --- | --- | --- | --- |
| SPC Oceanic Fisheries Programme Budget |  | x |  | 871,200 | 871,200 | 871,200 |
| Additional Resourcing SPC | Note: Additional resourcing for harvest strategy evaluation, including stock assessments. |  |  | 160,000 | 160,000 | 160,000 |
| Project 14. West Pacific East Asia (WPEA) Project | Note: Co-financed budget to get the GEF-Fund | x |  | 25,000 | 25,000 | 25,000 |
| Project 35b. Maintenance and enhancement of the WCPFC Tissue Bank | TORs annexed |  | 3 | 80,000 + 15,000 | 80,000 + 15,000 | 80,000 + 15,000 |
| Project 42 Pacific Tuna Tagging Programme (PTTP) | TORs annexed |  | 3 | 1,200,000 | 690,000 | 1,200,000 |
| Project 60: Further paired sampling and unloading data comparisons. | TORs annexed |  | 2 | 50,000 | 0 | 0 |
| Project 67: Review of impacts of recent high catches of skipjack on fisheries on the margins of the WCPFC Convention Area | TORs annexed |  | 2 | 40,000 | 40,000 | 30,000 |
| Project 68. Estimation of seabird mortality across the WCPO Convention area | TORs annexed |  | 2 | 70,000-75,000 | 20,000-25,000 | 15,000-20,000 |
| Project 78 (NEW). Review of shark data and modelling framework to support stock assessments | TORs annexed |  | 2 | 65,000 | 0 | 0 |
| Spatial longline analyses in support of bigeye tuna management in the WCPFC |  |  |  |  |  |  |
| Unobligated (Contingency) Budget | Note: Any science-related projects requested by the Commission with no budget allocation |  |  | 83,000 | 83,000 | 83,000 |
| **SC12 TOTAL BUDGET** |  |  |  | **2,661,700** | **1,986,700** | **2,481,700** |
| SC11 TOTAL BUDGET |  |  |  | 1,592,200 | 1,229,200 |  |

**TERMS OF REFERENCE / SCOPE OF WORK**

# project 35b

# Collection and evaluation of purse-seine species composition data

The scope of work will include, but not limited to, the following:

* Maintain and develop:
  + the public SPC webpage informing interested parties of the tissue bank, including the rules of procedure to access samples from the tissue bank.
  + a web-accessed database holding non-public data
  + a relational database that catalogues the samples to include fishery/sampling metadata
* Tissue sample utilisation and a record of outcomes/outputs will also be detailed in the relational database.
* Subject to approval by the WCPFC Executive Director:
  + metadata will be made available to institutions or organizations responsible for providing scientific advice in fisheries through the web-accessible component of the database, and subsequently,
  + SPC-OFP will facilitate the transmission of requested samples to specified researchers/organisations, and the return of unused and/or processed samples to the relevant storage facility.

Additional $15,000 to Project 35B

Australia has provided access to their quarantine and sample storage infrastructure through CSIRO. To date this has been an in-kind contribution to the operation of the tuna tissue bank. The challenge is that although the samples are stored, they are not curated which makes access when needed very difficult and time consuming. It is also creating problems with quarantine data. This work would see the samples curated at the Brisbane site on an ongoing basis and eliminate the quarantine issues. CSIRO can commit to the in-kind contribution of maintaining space and transfer of specimens on an ongoing basis with this funding for sorting and curation.)

This proposal is to extend aspects of the existing WCPFC tissue bank. The funding is additional to the existing ongoing budget for Project 35b. The scope of this extension work is to curate and store specimens at an additional site.

The specific work is to:

* Sort specimens on arrival and reconcile with quarantine data
* Enter data describing specimens received into BioDaSys
* Store specimens systematically so that they can be retrieved when requested

Laboratory and storage materials to complete curation

**Project 42 (REVISED PROPOSAL)**

**Pacific Tuna Tagging Programme (PTTP)**

It has been highlighted in SC12-SA-WP-04, SC12-MI-WP-05 and SC12-RP-PTTP-01 that regular tagging is required to support stock assessment and harvest strategy implementation for tropical tuna. SC12-RP-PTTP-01 proposed that skipjack and yellowfin focused tagging using pole-and-line fishing and bigeye tagging using handline fishing be conducted in alternate years.

The following funding support would be required to implement this work, which would target the release of 20,000 SKJ and 5,000 YFT in each pole-and-line cruise and 2,000 BET in each handline fishing cruise. The two budget columns below refer to the alternating years targeting SKJ/YFT and BET:

|  |  |  |
| --- | --- | --- |
| **Budget item** | **SKJ+YFT (PL)** | **BET (HL)** |
| Vessel charter | 600,000 | 300,000 |
| Tags/equipment | 150,000 | 100,000 |
| Personnel | 150,000 | 100,000 |
| Tag recovery | 300,000 | 100,000 |
| Admin/reporting | 180,000 | 90,000 |
| **TOTAL** | **1,380,000** | **690,000** |

# Project 60

# Collection and Evaluation of Purse-Seine Species Composition Data

The scope of work will include, but not limited to, the following items below:

1. Continue to identify key sources of sampling bias in the manner in which species composition data are currently collected from WCPO purse seine fisheries and investigate how such biases can be reduced
2. Review a broad range of sampling schemes at sea as well as onshore; develop appropriate sampling designs to obtain unbiased species composition data by evaluating the selected sampling procedures; extend sampling to include fleets, areas and set types where no representative sampling has taken place; verify, where possible, the results of the paired sampling against cannery, unloading and port sampling data
3. Review current stock assessment input data in relation to purse-seine species composition and investigate any other areas to be improved in species composition data, including the improvements of the accuracy of collected data,
4. Update standard spill sampling methodology if required.
5. Analyse additional data collected to evaluate the benefits of spill sampling compared to corrected grab-sampling.

2016-18 Tasks

This work should be progressed by the following activities:

* Subject to the availability of data, analyse the spill and grab sampling data for the trips conducted on PNG purse seiners in 2014, and compare those results to the estimates of species composition obtained from intensive port sampling.
* Undertake additional observer sampling / unloading comparisons where it is possible to conduct paired sampling trials and obtain accurate estimates of catch by species for the same trips from unloadings.
* Extend the comparisons of grab- and spill-sampling-based species composition with accurate unloadings data to include the comparison of grab samples corrected for selectivity bias with the unloadings data.
* Where possible and logistically feasible, observer programmes should continue to undertake paired sampling trials on a limited basis (say 10 trips per year) to continue to refine estimates of selectivity bias and to support additional simulation modelling.
* Undertake additional simulation modelling to estimate precision and bias of using corrected spill sampling data as the basis for estimating purse seine species composition at various levels of resolution.
* Consider other work in progress to assess the accuracy of cannery records with respect to estimates of species composition at the trip level. If accurate data could be obtained from canneries, it would be an invaluable additional source of information for the estimation of species composition of the purse seine catch.

**Project 67**

**Review of impacts of recent high catches of skipjack on fisheries on the margins of the WCPFC Convention Area**

**(For 2016)**

Data update until 2015 and down scale the new optimization at coarse resolution to the corrected GLORYS + Mercator operational model and conduct fishing impact and connectivity analysis. The progress will be presented at the SC13 as well as preliminary results of otolith data analysis.

**(For 2017-2019)**

SEAPODYM work, Tagging activities, including in sub-tropical and temperate regions, genetic analysis and otolith analysis focusing on early growth rate to provide better information on stock connectivity and movement.

1. SEAPODYM works to investigate spatial fishing impact in the WCPO (continue)
2. Collection and analysis of genetic samples from skipjack around Japan and in various areas of the equatorial fishery, to potentially determine the likely spawning ground origin of skipjack around Japan.
3. Otolith data analysis to identify spawning or hatching area using different growth pattern in different areas (2 years : preliminary analysis using Japanese data and tissue bank data)
4. tagging activities in sub-tropical and template regions to provide better information on stock connectivity and movement (this is in relation to SC11 recommendation)

**PROJECT 68**

**Estimation of seabird mortality across the WCPO Convention area**

* Fulfil the requirement under the WCPFC seabird CMMs to estimate the total number of seabirds being killed per year in WCPFC fisheries.
* Assess mortality per year over the ten years since the first WCPFC seabird CMM, as requested under CMM2006-02, CMM 2007-04 and CMM 2012-07, and assess whether there is any detectable trend.
* Describe the methods used to estimate total mortality, including treatment of data gaps, and
* Identify the limitations in the data available, allowing the SC to generate advice to the Commission on what improvements are needed to enable better analyses to be made.
* Generate advice on what further level of seabird assessment at species or species-group level can be conducted, given the amount and quality of data currently available

**Project 78 (NEW)**

**Review of shark data and modelling framework to support stock assessments**

|  |  |
| --- | --- |
| **Objectives** | Implement a review of the data availability, data quality and data gaps for undertaking shark assessments, and the associated need to identify appropriate data assumptions for re-constructing data time-series and appropriate modelling techniques |
| **Rationale** | * Implements recommendations from the South Pacific blue shark, the 2016 SPC data gaps paper and the BDEP paper regarding the need to inspect and clean existing shark data holdings * Assessments usually do not have time for this type of work, and general data management budgets do not provide for this depth of focus * While providing an improved understanding of existing data holdings and their utility for assessments, the project would also improve the modelling framework to be used in shark assessments. |
| **Assumptions** | * Would require either SPC, or a consultant working with SPC, so that all data holdings that are usually accessed for stock assessments can be included. |
| **Scope** | This study should be conducted by a scientist familiar with shark biology and assessment methods (not by a data management generalist). The review should cover all WCPFC key species and include:   * Assess the quality of the data currently held including the spatial and temporal coverage of logbook and observer data, * Identify significant data gaps and the uncertainties which these gaps imply, * Comparing observer and logsheet data with a view to identifying and adjusting for under-reporting, discarding, non-species specific recording and other missing data, * Assess impact of specific shark related CMMs on data quality, * Investigate data reporting patterns by fleet including whether i) annual catches and discards are reported for all key species; ii) whether operational or aggregated logsheet data are provided for all key species; and iii) the extent to which the provided data are estimated and how that might affect their precision, * Identify mechanisms to addressing the current data gaps including identifying potential sources of new historical data, * Identify appropriate data assumptions for re-constructing data time-series and propose methods (e.g. weighting, extrapolation, etc) to adjust for identified biases, * Provide advice on what types of analyses the data can support including advice on appropriate modelling approaches (e.g. CPUE standardisation) where the data is considered sufficient, * Produce a paper containing recommendations, and revised datasets as appropriate, for SC13. |
| **Budget** | $65,000 |

**PROJECT 79 (NEW)**

**Spatial longline analyses in support of bigeye tuna management in the WCPFC**

|  |  |
| --- | --- |
| **Objective** | Conduct Multifan-CL projections to provide managers information on spatial aspects of regional longline depletion |
| **Rationale** | Regarding fishing mortality, the WCPFC SC has previously commented on spatial considerations given high fishing exploitation rates and fishery depletion in some regions of the MFCL assessment. The SC has expressed concern with regard to depletion in some regions for both yellowfin and bigeye tuna. |
| **Assumptions** | 1. Structure of analyses which would use the 2014 bigeye tuna reference case assessment in the western and central Pacific Ocean with deterministic projections; 2. Using recent average recruitment (2002 - 2011); 3. Using 2015 purse seine choices for future effort levels; and 4. Using 2012 catch in the Philippines and Indonesia. |
| **Scope** | Identify alternative levels of regional longline bigeye catch (relative to those in 2012) that achieve fishing mortality at the Maximum Sustainable Yield (Fmsy) level within a certain time frame, such as initially 10 years or additionally in 20 years if computationally feasible. Identified runs could include:   1. Scenario 1 - The analysis would identify combinations of longline effort that represent similar regional exploitation rates and estimate a time-series of regional catches that achieved Fmsy in the time frame. Outputs would be a time-series of regional catch and effort and depletion. 2. Scenario 2 – The analysis would identify combinations of longline effort that represent similar regional depletion estimates and achieve Fmsy in the time frame. Outputs would be a time-series of regional catch and effort and depletion. |
| **Expected outcomes** | Regional understanding of longline effort and bigeye catch resulting from differing assumptions on using similar exploitation rates or obtaining similar depletion among regions |
| **Budget** | The U.S. is willing to make a voluntary contribution to WCPFC in support of these analyses. |