| **Project title** | **TORs** | **Essential** | **Priority / Rank** | **2019** | **2020** | **2021** |
| --- | --- | --- | --- | --- | --- | --- |
| **Project 60: Improving purse seine species composition** | Annexed |  | Medium / 1 | *\** | 40,000 | 40,000 |

\*\* SPC will utilise funding from other sources in 2019.

|  |
| --- |
| Project 60Improving purse seine species composition |

This work continues to build upon work to date under Project 60 and reported in SC14-ST-WP-02. SC14 recommended that the:

* Future work proposed by the Scientific Service Provider under Project 60 (Improving purse seine species composition) continue over the coming two years.

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.

2018 Tasks

This work should be progressed by the following activities:

* Where possible and logistically feasible, observer programmes should continue to undertake paired sampling trials on a limited basis (up to 6 trips per year[[1]](#footnote-1)) to continue to refine estimates of selectivity bias and to support additional simulation modelling (see also Table 1 below).
* Where possible, paired sampling trials should be undertaken on trips for which high quality unloadings and port-sampling data are likely to be available, to allow additional observer sampling / unloading comparisons.
* Undertake additional simulation modelling to estimate precision and bias of using corrected grab sampling data as the basis for estimating purse seine species composition at various levels of resolution, including consideration of within-brail variability in size compositions.
* Revise the models of species compositions that are used to estimate species-specific catches.
* Review, and if necessary revise the approach used to estimate catch compositions directly from observer samples.
* Report alternative species composition estimates to SC15 with stepwise changes from the existing approach, including: correction of bias using multinomial-model based correction factors; revised models of species compositions; and if necessary, stratification by flag when obtaining catch compositions directly from observer samples.
* 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.

**Table 1: Paired spill/grab sampling trips completed to date, and future sampling targets for Project 60.**

|  |  |  |
| --- | --- | --- |
| **Flag** | **Paired trips completed** | **Target fleets** |
| FM | 3 |   |
| JP | 6 | \* |
| KR | 7 |   |
| PG | 14 |   |
| PH | 10 |   |
| SB | 12 | \* |
| TW | 4 |   |
| US | 7 | \* |
| **Total** | **63#** | **4-6 per year** |

\* These fleets are targeted due to the access to high quality in-port catch sampling and/or unloadings data.

# Target is now at least 75 trips, with an additional 4-6 trips per year over the next three years to achieve that target.

1. Note that it is intended that paired spill/grab sampling trips will only continue for the next 2-3 years at a rate of 4-6 trips per year. The additional data would give a much better understanding of between-brail variability in size, and whether it does vary between different set types - the smaller bin size and more frequent sampling adopoted at SC14 should give a much more informative dataset. Further, if there are differences in between-brail variability between free schools and associated sets, the additional data are needed to get more robust estimates of association-specific grab sample bias. [↑](#footnote-ref-1)