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Pilot Study of the Potential for using Non-ISSF Associated Cannery Receipt Data for the work of the WCPFC

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Pilot Study of the Potential for using Non-ISSF Associated Cannery Receipt Data for the work of the WCPFC

Antony Lewis

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EXECUTIVE SUMMARY

The pilot study, carried out during the first half of 2016, involved visits to 19 non-ISSF processors in 5 countries (Vietnam, Thailand, PNG, Indonesia and China) to profile production details, evaluate the quality of available cannery receipts data and encourage the voluntary provision of these data to WCPFC/SPC. These represented more than half of the main non-ISSF processors handling WCPO fish and has contributed significantly to understanding the supply chain in the sector.

Good cooperation was forthcoming from all processors and agreement in principle given to supply these data on a voluntary basis as quarterly reports, under agreed MoUs in some cases. Despite this, and in the absence of any formal requirement to do so, few data have been submitted and it has thus not been possible to fully evaluate the usefulness of these data to WCPFC scientific work.

The following recommendations were made, based on the conclusions of the pilot study, and are presented for consideration:

1) Subject to the availability of funding and resources, a second limited phase of the pilot study could be undertaken to extend the coverage of the pilot study to other key processors, and to follow-up, with the support of WCPFC, the provision of data as agreed in principle by most non-ISSF processors. Utilizing the services of industry associations as contact and facilitators would be recommended in appropriate situations.

2) To inform the progress of bringing non-ISSF processors into the arrangement, the 2016 ISSF/SPC analysis would usefully be repeated with all data available as at the end of 2016, to gauge the impact of improved data quality of submissions, and the incremental impact of acquisition of cannery receipts data from new ISSF members

3) Some technical issues such as bigeye data provision and corroboration of data from some domestic fisheries may require further investigation in a second phase study.

4) Only if submission of cannery receipts data from non-ISSF processors does not improve dramatically should development of a CMM to require the submission of cannery receipts data in an agreed format by all processors be considered, and only if suitable justification is tendered.

Photos (cover page)
Top: Unsorted purse seine tuna being unloaded by cargo net in one of several freighter/reefer holds, Songkhla port, Thailand
Centre: Unloading multiple holds from freighter/reefer by fork lift and 12 tonne trucks, Songkhla port wharf.
Bottom: Bigeye in cold storage set aside during visual species sorting of catch in cold storage

1. Background

The information collected from the landings of purse-seine caught tuna to processing plants (also referred to as "Cannery receipts") has been identified as potentially providing an important independent estimate of the purse seine fishery catch collected on logbooks, both in terms of volume and the breakdown of catch by species. In particular, these data have been suggested as a useful means of verifying the catch of bigeye tuna. Such data have been difficult to obtain in the past, but a recent initiative by the International Seafood Sustainability Foundation (ISSF), beginning in 2012, has resulted in the provision of detailed cannery receipt data to the SPC/OFP from various affiliated processing companies throughout the WCPO region and beyond. A recently completed study for ISSF by SPC[1] compiled a list of processors receiving WCPFC purse seine tuna catch, described the product flow of these catches, established relevant guidelines for a comprehensive review of the data supplied by ISSF participating companies, reviewed the available information through visits to over 60% of these companies' plants, and assessed the potential value of the data for the work of the WCPFC. The study, presented to SC 12 In August 2016, concluded that the data, supplied as confidential quarterly reports, are of qualified value to the work of WCPFC, but which could be considerably improved with some additional efforts to standardize data formats and improve species and size separation procedures. The study concluded however that its value would be much enhanced if similar data could be provided by non-ISSF companies to achieve more complete coverage of unloadings of WCPFC purse seine tuna to processors.

Around 50% of the WCPO tuna catch is landed at non-ISSF associated canneries, and those unloadings data are not currently readily available to the WCPFC; it is not fully understood to what detail landing data are collected and recorded, nor is it known how useful that data could be in support of the scientific work of the Commission. it is also recognized that there will be less leverage over these non-ISSF processors to supply data, and voluntary cooperation, with associated data confidentiality, will need to be built up under the auspices of WCPFC.

2. The study - objectives, scope and strategy

Noting the potential value of the cannery receipts data, EU funding was secured by WCPFC in 2016 for a pilot study to potentially extend the previous ISSF cannery data evaluation by investigating the willingness of non-ISSF canneries to share/release tuna fishery cannery receipts data for the work of the WCFPC, and evaluate the quality and usefulness of that data in the work of the Commission.

The *objectives* of the study were thus defined by WCPFC as:

1. Identify a sub-set of non-ISSF canneries that might be prepared to make tuna fishery cannery receipts data available to this pilot study and ultimately the Commission.
2. Depending upon the outcome of objective 1, develop an appropriate sample of canneries to visit to determine the potential of cannery data for the work of the WCPFC; and describe, the product flow of WCPFC purse seine tuna catch into non-ISSF processing plants.

[1] Potential use of cannery receipt data for the scientific work of the WCPFC (15 July 2016)
Lewis, A and P. Williams. WCPFC-SC12-2016/ST WP-03

3. Produce a report outlining the study, the findings and recommendations to achieve more comprehensive coverage if applicable and feasible.

Scope

This pilot study would focus on fish unloaded by the larger industrial purse seine fleets active in the WCPFC area, and excluding for the most part landings by artisanal/small scale commercial vessels for which associated logsheet data are rarely available for corroboration purposes. It would focus primarily on the species and size composition of purse seine target tuna species only (skipjack tuna, yellowfin tuna and bigeye tuna) from these cannery data, with an emphasis on the reliability and coverage of bigeye and yellowfin tuna species composition data. This pilot study would not consider the extent of discards and bycatch from the purse seine fishery.

Strategy

It was intended that the pilot study should initially focus on 2-3 processing plants in selected WCPFC countries, both CCMs and CNMs, with support for the work established by a formal approach to the countries concerned, from the WCPFC Executive beforehand.
It was suggested, in discussion with SPC and industry associates, that the following countries with significant processing capacity be considered initially, with the possibility of adding others for which limited initial understanding was available, as the study proceeded eg China.

CCMs – Papua New Guinea, Philippines, Korea, Indonesia
(all four countries have numerous canneries but with limited ISSF membership and coverage; Indonesian cannery receipts may include some artisanal/small scale catch not linked to logsheets)

CNMs – Thailand, Vietnam
(Thailand is the world's largest processor, but with just 50% coverage achieved during the ISSF study; Vietnam is the fastest growing entity in WCPFC tuna processing, with several recent lSSF members but these were not covered in the earlier ISSF study)

It was not intended to include during the pilot study canneries in Pacific Latin America, mostly Ecuador, which process significant quantities of WCPO fish, as established by the ISSF/SPC study[2].

The final report would include recommendations on how to progress the outputs of this study both in terms of the immediate objectives i.e. improvements to cannery data entry and to potentially facilitate loading into SPC databases used for verifying other types of catch data. The recommendations should also consider practicalities and benefits for the cannery/processing company.

The report should provide recommendations to guide any subsequent work to achieve additional coverage of non-ISSF companies processing WCPFC fish not covered by the pilot study, and to outline how this should proceed if judged desirable.

[2] over 200,00t of WCPO fish processed in some years

It was intended that the work should be carried out during the first two quarters of 2016, subject to receiving necessary support from identified CMMs and CNMs to proceed with cannery visits. The level and quality of reporting would then be assessed druing the remainder of the year and into 2017.
The continuing support of the SPC/OFP as data provider and repository of the existing cannery receipts, transshipment, observer and other databases would obviously be essential to the success of the study

3. Visits to processors

3.1 Guidelines for the visits

The ToR prepared by WCPFC prescribed that the pilot study should attempt to answer, *inter alia*, the following questions for each cannery/processing plant:

a. How does the cannery conduct data species/size composition separation and is the resulting information useful for validating species and size composition at the vessel trip level?
b. Can the total trip catch of the purse seine catcher vessels be reconciled with the cannery receipts data? What are the issues?
c. Why might the cannery not be able to produce species/size composition breakdowns that are useful for WCPFC (one of the questions during visit) ?
d. What would be entailed for the cannery to produce species/size composition breakdowns that are useful for WCPFC science (question during the visit) ?
e. How might canneries change/enhance their current data collection to achieve the requirements of 'useful' WCPFC data? ... The canneries may also suggest a method which is appropriate and which needs to be considered, in addition to the protocols developed under objective 4. Would having a standardised and user-friendly software data processing tool assist?
f. Are the recommended changes to ensure 'useful' cannery data are available feasible or not? if not feasible, what are the impediments? (e.g. costs, inefficient, no direct benefit to cannery, etc.) ?
g. What is the reaction by canneries if they were obliged to enhance their data collection system to produce 'useful' data, through market (or other) pressure ?
h. Would subsidies or incentives for producing useful species/size composition data be feasible/practical ?
i. What are the differences between canneries that are now producing adequate species/size composition data to those that are not? (for example, a premium paid for bigeye tuna over other species?)
j. What do canneries want out of this – what benefits do they envisage ? e.g. recognition for cooperating with work to ultimately conserve stocks, etc. ?

This provided a useful guide for the conduct of the visit to processors. It was also attempted to obtain details of the utilization of the various tuna species (skipjack, yellowfin, bigeye), as well as markets for the products and their requirements, as these factors impact the data collected at various points along the supply chain. Processors handling primarily albacore tuna eg PAFCO Fiji, Everwin Vietnam were not included in the pilot study schedule of visits, nor were those processors handling primarily neritic tunas such as longtail tuna, bullet, frigate

and mackerel tunas eg some Vietnam canners, China (Zhousan) canners producing mostly chunk light tunas (*Auxis* spp.).

A preliminary list of non-ISSF processors handling fish of WCPO origin was compiled during the ISSF study, and is attached as **Annex 1.** Several of the processors became ISSF participating companies during the study and were either not visited, or the provision of cannery receipts data was assumed. These are identified in the study.
A total of 19 canneries was visited during the study, following official requests by WCPFC to facilitate the visit.
Detailed summary notes of each cannery visit, grouped by countries, are attached as **Annex 2.** These form the main source of information for the conclusions drawn by the pilot study, and to frame recommendations for future work

3.2 Summary of visits to processors

Coverage
A total of 19 canneries was visited in 5 countries as follows: Vietnam (2), Thailand (5), PNG (3), Philippines (4) and China (5). An additional number were not visited as cooperation was declined, either by the processor itself (one - Vietnam) or at the direction of the national authority (one- PNG). Several other visits could not be made because of logistical difficulties or the absence of key personnel during the limited time available for the visit (3 processors). No Korean canneries were visited as it was not possible to receive a positive response to the WCPFC Executive approach from either Government or the peak industry association. This was unfortunate, with the Korean purse seine fleet supplying the Korean processors now the leading purse seine fleet in the WCPO fishery and the largest processor a former ISSF participating company.
Nonetheless, overall coverage achieved was high, and was extended from the initial list of CMMs and CNMs to include China, with strong support from the official China Overseas Fisheries Association.
The coverage represented close to 2,000t/day in terms of potential processing capacity, or close to 60% of the WCPO total excluding PLACs. Much of the capacity not covered included smaller canneries not processing tuna full time and hence with much latent capacity. Coverage of actual production was probably closer to 70%,
Cooperation was uniformly excellent in the processors visited, with managerial and technical staff readily sharing production details, supply chain information and details of the cannery receipts data collected routinely.

Data collection
Most processors collect increasingly detailed cannery receipts, in response to the EU catch certificate system and IUU requirements, to pending catch documentation schemes, to chain of custody requirements associated with sustainability certification, and to other data collection such as HACCP requirements.
The actual cannery receipts data generally fall into two categories, as previously described for the ISSF participating companies (Lewis & Williams, 2016)

- *Outturn receipts/bill of lading (BoL)/cannery import data*

“These data are usually supplied for both fish transhipped via carrier and fish unloaded directly from fishing vessels, and contain details on all aspects of the primary unloading process:

- *carrier vessel* (name, flag state, IMO, registration and call number, start and end of unloading, transhipment port, lot number)
- *catcher vessel* (name, flag state, IMO, fishing date start end, fishing area (coordinated and FAO area), gear type, GRT)

There may also be additional information on catch certificates, PVR status, etc. and estimates of the catch by species and sometimes by size category where prices paid to the trader vary by size category.
Weights by category quoted in this report are often based on a sub-sample of the catch at landing, typically 20-30 %, often called "1 in 5", but it may be 10% for some companies especially in tropical ports where deterioration in the heat may be a risk. Transporting the frozen fish from carrier vessel or fishing vessel alongside the wharf typically occurs via open trucks, 10-20t capacity, to transport fish, usually to intermediate cold storage or direct to processing plants in some cases.
This initial unloading report triggers payment to usually ~ 90% of the value of the fish unloaded; payment of the balance will be subject to reconciliation, based on additional size/species information, amount of damaged and reject fish, and bycatch if present.

- *Actual quantity by species and size/ Quantity and Quality (Q & Q)* reconciliation

The Q and Q reconciliation report details the actual quantity to be processed, with a breakdown by species and size class, the amount of rejects, damaged fish and bycatch. The Q and Q data usually sit on the right hand side of the quarterly report. The quarterly report may take some time to compile, if final sorting (and final species separation) is done just prior to processing, after an indeterminate time in cold storage."

Virtually all the companies visited collect BoL/outturn receipts data as they are the basis of initial payments to the supplier or trader. They are not complete receipts data as they often do not contain accurate species breakdown by size, typically with fish < 7.5 lbs (3.4 kgs) not separated by species in the BoL as they have the same value. In case of fresh local fish, procedures may be slightly different where fish are sized and separated by species on receipt, and may be further graded on the basis of histamine testing.

The Q &Q reconciliation provides all the necessary detail in most cases, although depending on market requirements and availability of staff, thorough species separation of the smallest categories may not occur, as it is time consuming and often difficult in practical terms. Separate arrangements such as sub-sampling may be necessary if these data are considered sufficiently important to obtain and if the quantity of fish involved is significant
Q & Q reconciliation may also take time for all fish to be finally processed and recorded - months in some cases - and compliance is generally easier for larger companies, because of manpower requirements.

These Q & Q data, in the form of quarterly reports as developed under the ISSF approach, are the required information and were what was raised with the processors in terms of an

example of data submission requirements. The form of report required was provided as a template example. ..\Quarterly reports coys\Qtrly report example rev. 1.xls
The Q and Q report should be prepared by the processing plant or cold storage plant, rather than at the unloading point.

Size separation/categories
The **size categories** recognized generally follow international norms in either lbs or kgs as below, and are also important to inform the thawing and cooking times in the cannery production regime. They may vary to some extent by cannery, especially with respect to the smallest size classes eg 2-3 lbs, 1-2 lbs, < 1 lb, and minimum sizes may be applied, with undersized fish processed as fish meal or discarded.

< 3lbs	(< 1.4 kgs)
3.0 - 4.0 lbs	(1.4- 1.8 kgs)
4.0 -7.5 lbs	(1.8 – 3.4 kgs)
7.5 - 20 lbs	(3.4 – 9.1 kgs)
20 lbs up	(9 or 10 kgs up)

The size separation data also inform the differential prices often paid by size category - lower prices as a disincentive for smaller fish with their lower recovery rate, along with more frequent damage and quality issues.

Species separation
The majority of processors showed a strong commitment to accurate species separation for all size categories, although some plants do not find it economical or feasible to separate bigeye and yellowfin less than 3 lbs /1.4 kgs (see later) which may be an issue for the ultimate application of the data to overall species composition determination.

All separation was on the basis of visual inspection, with experienced sorters often having their own idiosyncratic and usually reliable criteria for separating frozen bigeye and yellowfin in particular. With increasingly stringent requirements in some markets for clear species separation and product labelling (eg the EU FIC Regulation 1169/2011[3] became applicable in December 2014, requiring species to be named on the label, with the option of DNA testing of product) , this is reflected in more careful species separation procedures.

No processor seemed to be using other than visual inspection for species separation, and several used double visual inspection at two points along the supply chain eg pre-cold storage and again, pre-cook/receival area.

Bigeye which escape detection during visual sorting may be detected on the processing line, as result of the blood spotting often seen in cooked highly vascularized bigeye meat. This is usually a negative for visual quality/appearance in the can and may be masked by species mixing.

The following section briefly discusses the changing markets demands for, and utilization of bigeye, and implications for the cannery receipts data.

[3] Food Information for Consumers (FIC) Regulation 1169/2011

Bigeye utilization

The pattern of bigeye utilization by processors is changing in response to market forces driven in some cases by management restrictions and eNGO perceptions related to its overfished status in some ocean area eg WCPO. Some of the realities and implications of this fluctuating situation for the cannery receipts data are briefly discussed below.

- bigeye separated onboard prior to landing and not offered for sale to processor
  [only with fresh local fish and where alternative markets are readily available; often no logsheet data, and catch not recorded anyway; not covered by port sampling of landings]
- supply contracts which exclude (frozen) bigeye from the purchase schedule, as no demand for bigeye
  [bigeye may be sorted and removed during transhipment and possibly discarded; bigeye may be separated by the buyer and returned to the trader, or the quantity deducted from the sale in the Q & Q report; data capture implications unclear in some cases eg discards during/after transhipment]
- bigeye separated during sorting on landing/cold storage and directed to alternative use [Sorted fish may be directed to local sales, chunk light sales (US), red meat sales, fishmeal, petfood etc; should be reflected in Q & Q report, as whole or part]
- bigeye discovered during processing (blood spots) and removed from packing
  [may be directed to other usage eg fishmeal, flake or VA packs; unclear if recorded but should be in processing tally sheets; may not make the Q & Q report]
- market discourages use of bigeye (processing and sale) eg EU via eNGO advocacy
  [bigeye separated rigorously and utilized for alternative markets, or discarded; companies may export skipjack only to some markets; in other markets eg Middle East, where blending of bigeye with other species, typically skipjack, is allowable, especially in flake packs. Data implications depend on situation]
- specific bigeye packs prepared and sold
  [not common as low demand, but does occur in some specialist domestic markets eg China, Latin America; the darker colour and blood spotting usually throws up quality issues for "bigeye-only", hence widespread blending previously; no data issues]

With bigeye/yellowfin proportional data a key objective of the cannery receipts data collection, it is important that these potential sources of data loss or incomplete recording of bigeye in the catch are covered or quantified.

Data corroboration / data utility

The ISSF study compared various data sources - cannery data, logsheet data and observer data - within a relational database developed by SPC, to explore the utility of the cannery receipts data and corroborate them with other datasets. This will not be possible with much of the cannery receipts data from some countries eg Indonesia, Vietnam and Philippines where much raw material is sourced locally from small scale commercial or even artisanal vessels, where logsheet coverage is low, and there is very little observer coverage for domestic vessels. Other means of corroboration/verification will eventually need to be sought for these situations, if the cannery receipts data are to be useful

Data submission

Every processor visited recognized the need for complete cannery receipts data for the work of the WCPFC, agreed that it was feasible to collect and provide in the form of a quarterly report as per the template provided (even though this might be an additional collation and compilation step and could be onerous for small processors in particular, because of limited manpower), and were satisfied that commercial-in-confidence concerns could be met by SPC/OFP as long-standing and well respected repository of the data.

It was also made clear at every step of the process that provision of the data was entirely voluntary and recognized that there was currently no mechanism to authorize WCPFC to require provision of such data.

The Thailand processors noted that much of the required information was already provided to the Dept of Fisheries (DoF) and the Thai Tuna Industry Association (TTIA), but they would be happy to sign an MoU to cover the regular data provision (see **Annex 3** for example draft MoU). The four Philippines tuna processors signed an MoU (see **Annex 4**) in May 2016,with the data to be submitted through the BFAR Director of Region XII, to provide official status to the data submission process.

Despite these verbal agreements in principle and via MoUs, **data have since been submitted by only one processor** either to the study or the SPC/OFP database, as far as can be ascertained, and apart from several processors who became ISSF members during the period of the study eg Celebes Canning , Aneka Tuna.

Evaluation of the usefulness of cannery receipts data

No analyses to evaluate the adequacy of the data, as per the previous ISSF study and the ToR of this study, have thus been undertaken and it may require an additional phase of the work to develop an appropriate mechanism to effectively encourage provision of such information, short of requiring compulsory data provision under the terms of a Conservation and Management Measure (CMM) which would need to be developed and approved by the Commission members. This not felt to be a desirable option at the time the ISSF/SPC study was tabled in August 2016 (SC 12), but this may be subject to change as the situation evolves, and as the utility of the data become clearer.

New ISSF members

During the course of the study, five WCPO tuna processors joined the ISSF as participating companies or associates, as below. These companies are now providing cannery receipts data on a regular basis to SPC/OFP, thus significantly improving the extent of coverage

Vietnam:

Food Tech (associate)

Everwin (associate) – mostly albacore, as noted

Philippines:

Celebes Canning (associate)

Indonesia:

Aneka Tuna Indonesia

Avila Prima (associate)

Bali Maya – mostly albacore, as noted

4. Conclusions

Although the pilot study was able to scope production details of 19 significant processors in 5 countries, and to obtain support in principle for the voluntary provision of cannery receipts data to the level of detail required by the WCPFC, no data were actually supplied by any of the processors, with one exception. This may not be surprising, given the lack of any leverage on the non-ISSF processors, unlike the ISSF companies who are required to supply such information as a condition of participation. It is perhaps also not surprising in an industry/management environment that has become more combative as resource management issues arise and the significant additional work commitment to regularly collate and compile the required data, some of which would have a degree of commercial sensitivity.

No follow-up to verbal agreements and MoUs to supply data was undertaken, in fairness, with the study having no mandate to do so and the data submission understood as being totally voluntary. The WCPFC itself could however undertake this work itself or support a second phase of the study to do so, as well as extending the current coverage to other processors not covered in the pilot eg Korean and Latin American processors, and some Thai and Chinese processors.

There are also some emerging technical issues to be resolved, such as the changing patterns of utilization of bigeye which may not be fully reflected in current data collection arrangements, and gaps in data available to corroborate the cannery receipts data in some situations eg incomplete logsheet and observer coverage for some domestic fisheries.

The expansion of the ISSF coverage to more processors is to be positively acknowledged, and it would be useful to revisit the ISSF/SPC analysis both with data quality improvements as identified in the 2016 analysis, and the incremental impact of the addition of new data sources/ participating companies.

In following up on commitments in principle by the non-ISSF processors to provide data, it might be useful to engage existing industry associations such as the TTIA as primary contact and facilitation points. If that still does not work, then there may be little option but to develop and seek approval of an appropriate CMM to require provision of the cannery receipts data in an agreed format, if the data are seen as sufficiently important to the work of the WCPFC to require this. This may need to be accompanied by annual audits and other compliance checks as required, as well as detailed justification for CMMS and CNMs.

It noted that other schemes to require increased provision of catch and post-harvest data are gaining momentum eg catch documentation schemes (CDS), product traceability requirements, and these initiatives may eventually converge in any case. Avoiding duplication and conflicting requirements would be desirable as this proceeds and would argue for implementing the cannery receipts data arrangement for non-ISSF companies as soon as possible.

5. Recommendations

1) Subject to the availability of funding and resources, a second limited phase of the pilot study should be undertaken to extend the coverage of the pilot study to other key processors, and to follow-up, with the support of WCPFC, the provision of data as agreed in principle by most non-ISSF processors. Utilizing the services of industry associations as primary contact and facillitators, backed up by Govt agencies, would be recommended.

2) To inform the progress and rationale of bringing non-ISSF processors into the arrangement, the 2016 ISSF/SPC analysis could usefully be repeated with all data available as at the end of 2016, to gauge the impact of improved data quality of submissions, and the incremental impact of acquisition of cannery receipts data from new ISSF members

3) Some technical issues such as bigeye data provision and corroboration of data from some domestic fisheries may require further investigation in a second phase study.

4) Only if submission of cannery receipts data from non-ISSF processors does not improve dramatically should development of a CMM to require the submission of cannery receipts data in an agreed format by all processors be considered, and only if suitable justification is tendered.

Annex 1 **Indicative list of non-ISSF processors handling WCPO tuna**

The daily volumes estimated are capacity rather than actuals in most cases, and also include smaller plants which may not process tuna full time, or process mostly neritic tunas.

WCPO	Number, capacity	Raw material sources
Thailand	16 canneries, 850t/day	Mostly smaller canneries
Philippines	4 canneries, ~ 300t/day	All in General Santos
Indonesia	13 canneries, 405t/day	Mostly small, local fish; not all full time tuna processing
Vietnam	8 canneries, 420t/day	Imports and local fish; not all full time tuna processing
Korea	4 canneries, 210t/day	All Korean p/s fish
China	7 canneries, 440t/day	Zhejiang (most) and GuangDong/Fujian; not all fulltime tuna processing
Japan	18 canneries, small;360t/day	Includes katsuobushi
PNG	4 canneries, 200t/day	Madang (1), Lae (3)
Other WCPO	2 canneries (RMI, Fiji)	[~ 3185t/day}
Outside WCPO		
Ecuador	6 canneries, 153,000t/year	Less 50,000t by ISSF
Mexico	several canneries, 28,200t/year	
El Salvador	1 cannery, 21,000t/year	
Guatemala	1 cannery, 2,000t/year	
Colombia	3 canneries, 11,700t/year	
Peru	3 canneries, minor (1,000t/yr)	{~ 670t/day
Non-ISSF processors total	~ 51%, 60-70 canneries, small	
ISSF processors (most large)	3,390t/day (49% of total WCPO)	

Annex 2 Visits to processors - summary notes

Cannery	Date of visit	Production details	Notes re cannery receipts
VIETNAM		(MARD notified, agreed to support with contacts and visits to companies as necessary)	
Yueh Chyang *[Long An]*	March 17th Samboon Chonpricha, Deputy GM)	Up to 80t/day, 20-24,0000t p.a.; 50% cooked loins to Thailand, 50% cans (US 30%, and other), plus petfood, fishmeal; Sources - local 30%, including SJ, LTT, iced; all p/seine fish, no gillnet; imports 70% nearly all SJ, frozen [*Thai Union major shareholder, with VN partner]*	Unloading at 3 main wharves - Quy Nhon, Vung Tau (local), Tien Giang , HCM (imports); fish sized - < 4 lbs, 4-7.5, 7.5-20, 20 + lbs; Species separation, but little rigor below 7.5 lbs. Local fresh fish checked for histamine levels; usually avoid yellowfin as price too high except small fish; bigeye separated. ISSF membership unclear as TU affiliate, but not official; supplied data until 2012; now too onerous for small staff but would do if required
Food Tech *[Long An]*	March 18th (Sitala Srisativitana MD; Wicanate Praputih Plant Mgr)	50t/day, up to 80t/day; nearly all cans, some pouch, some petfood; Sources- mostly local (Central Provinces) with some WCPO imports (FCF); small loining plant in Phu Yen; all p/seine fish, histamine checks; markets 60-70% EU but no YF so no BE issues; some LTT to US (chunk light)	Sorting by size pre-processing; no pole-and-line fish as too expensive; sizes 1-1.8kgs, 1.8-3.4; bonito separated , -> Hong Kong low end catering markets; happy to provide data, also suppliers have done skippers WS in Quy Nhon in 2016. [**ISSF associate member since early 2016, presumably now submitting ISSF data]**
Everwin *[Ho Chi Minh]*	Not visited as GM absent o/s on two visits	Details unclear but may be mostly cooked albacore loins using imported fish	[**ISSF associate member since early 2016, presumably now submitting ISSF data]**
Highland Dragon *[Binh Duong]*	Unwilling to cooperate; not visited	Up to 80t/day, mostly imports but some local fish; canned tuna and cooked loins, some contract packing; mostly for US market	No data available *[US company since 1999]*
Other canneries		Several other canneries processing tuna part time eg Halong Canfoco (Da Nang) or mostly neritic tunas eg KTC, Kifocan in Kien Giang	
THAILAND		No direct response from Govt/MoF but companies welcomed visits, and Govt officials very helpful	
Siam	13th May	150t/day capacity, two shifts, 6 day week; 45-48,000t pa; ~ 100% can,	Unload mostly Songkhla but some trucked from BKK; external cold storage; size, species separations seems rigorous; can supply

International Food (SIF) (*Songkhla]*	(Yuttajak Saeloo, Procurement)	some pouch, petfood; Sources: still have own vessels (LTT) but mostly rely on imports - WCPO p/s but some p/l Indonesia and Japan; 90% SJ, 5% YF BE <, LTT 1% (more on website), some AL	Q & Q data as per template; would sign MoU but not followed through; supply much data to Thai Tuna Industry Assoc and DoF - suggests exploring re MoU/access to data at Q & Q level [Interested in exploring ISSF membership]
SK Foods [Samut Sakorn]	16th May (Tim Real, Dep MD)	60t/day currently; can, pouch, frozen loins; Sources: imports, mostly FCF, ~ 100% p/s, some FAD-free	Species separated at all sizes (< 3lbs, 3-4,4-7.5 lbs etc); BE blended with SJ in flake packs where market allows but not EU any more; chunk light (LTT) to US and others
SPA [Nakhon Pathom]	16th May (Somchai Luangaramkul, MD)	Small efficient plant 20t/day; 100% can, red meat, petfood, fishmeal, all export; Sources: all WCPO p/seine (FCF), no p/l	90% SJ,10& YF/BE, some tonggol; would prefer no YF/BE if possible; some sorting of catch pre-unloading; some BE blended with SJ for Middle East (ME), and LTT as "white tuna" for ME
Kingfisher [Samut Sakorn]	17th May (Nat Onsri, GM; Adisak Phunthong, Procurement)	(also SeaPac) 60-80t/day at present-reduced from before; 70% petfood for Japan, US, EU, 30% human sources - WCPO p/s via traders (FCF), some p/l; some local LTT, some FAD free (TMI)	Sizing pre- cold storage; sorted by spp down to < 3 lbs; BE mostly to petfood, would prefer not to buy at all; Happy to sign MoU but not followed through
Premier [Samut Prakarn]	Not possible	Maybe 40t/day - no further details	Not possible to arrange visit/meeting in available time slots
Others		(Small canneries in Rayong, Phuket not visited. ISSF members already supplying data - Asian Alliance, Thai Union (3), Sea Value (3), Pataya, RS, CMC, Tropical, (MMP)	
PAPUA NEW GUINEA		(NFA declined to assist as it believed study was outside WCPFC mandate; only one coy did not cooperate)	
RD Tuna Canners [Madang]	April 27th (Atty Rene Barrion, VP Corp Affairs)	150t/day (200t capacity), 29,000t pa (2015); cans 80%, loins 20%; export/local 60/40; imported red meat, fishmeal. Sources: local, mostly own fleet, some TPJ, some imports	75% SJ, 20% YF, 5% BE but can be 50% YF in some months; Unloading mostly Vidar, but also Rabaul, Wewak, and others Sizing at Vidar wharf; no high grading onboard; size separation using international sizes (< 1.8 kgs, 1.8-3.5, 3.5-10 etc); also several grades < 1.8kgs (0.5-1.5, 1.5-1.8, 2nd sort pre-cook, so species separation by double visual inspection BE usage -all local, none to Europe; EU exports all SJ
Majestic {Lae]	April 29th	Now about 40t/day but supply limited; Potentially largest cannery in PNG with 250t/day possible; mostly can but	Sizes usual, sorted pre-cold store; mostly SJ (preferred) but YF can be 40-60% at times; general agreement to send data (Rose as contact), even if difficulties with charter vessels. BE - no info ...

	(Wayne Adams, GM - now moved to NZ)	loin/pouch increasing; spot buy and process on contract	[Potentially ISSF member as 2 out of partners are ie Thai Union and Century Canning/GenTuna]
IFC [Lae]	April 29th (Rosedean Dzulkfli, GM; Alex Bernadino)	20t tuna/day, mackerel is still core business; tuna supply difficult - AW limits, VDS days; competition from imports, both tuna and mackerel; most tuna exported, little local	Sizes usual <1, 1-1.8, 1.8-35; 1 as minimum size but pay much less, not much is handled; species 75/20/5, BE by visual separation, esp blood spots; accumulate then process for local market; plans to sell BE as fresh steaks in vacpac
Others		Frabelle declined visit; Nambawan not yet in operation. SSTC Wewak supplying data as ISSF member.	
PHILIPPINES		(Good cooperation from Govt (BFRA/NFRDI), companies and industry organizations)	
Alliance Select (General Santos]	April 14th (Josephine Ines, OIC Plant Mgr)	60t/day, up to 90t/day; 15-17,000t pa. 2015 was worst year ever. Production 100% can, for export; 40% catering szie, 60% commercial; Sources: local frozen 40%, imports 60%, much from PNG; markets mostly EU	Unloading mostly at GS Fish Port, some fresh but mostly frozen; Size categories - many small since small local fish; < 300gm, 0.3-0.5kg, 0.5-1.0, 1.0-1.4 , 1.4-1.8 etc; don't process 10kgs up, send back; species separation - all visual, 3 stages - onboard, in port (unload), plant (pre cold storage); BE - small %, all removed; don't process at all. **Supplying data voluntarily**
Ocean Canning [GenSan]	April 14th (Editha Espinosa)	40t/day but up to 80t; 10,000t pa, mostly SJ; mostly can (95%) with some pouch. Sources: local only 10-20%, largely imports, esp PNG (Frabelle, TPJ); markets mostly EU, some YF -> JP	Sort by species and size pre-cold storage; unloading mostly GS Fish Port but some Frabelle port; BE small % but sent back to supplier - not in supply contract GSP+ has been very positive for OC.
Celebes Can [GenSan]	15th April (Rogelia Espina GM, Mira del Rosarion QA)	40t/day, previously 100t/day; 100% can; Sources - 30% local ,all frozen; 70% imports (Frabelle, traders); all p/s; markets mostly EU	Sort initially at port (1 in 5), YF and SJ; szies as usual (some small with 0.5 kg minimum, price diffs); BE sort in c/s and later in plant; 5% tolerance when pay, not wanted from suppliers. GSP+ has been largely negative **[Now ISSF member since late 2015 - already supplying data]**
SeaTrade [GenSan]	15th April (Dennis Bretana, Plant Mgr)	50t/day, previously 100t/day; 10-12,000t pa; 100% can, mostly catering for EU; Sources- mostly local, fresh 70%, esp NH Agro; 30% frozen local; all p/s, originating fish so GSP+ very beneficial	Receivals mostly fresh, with sorting onboard ,then in 33 kg bins; various usual sizes, 1 kg upwards, min size 500 gms; BE - mostly return to supplier as not in contract. Happy to provide data

Philbest [GenSan]	April 14th (update)	Now 150t/day, with 44,000t processed in 2015; loins the majority (60%), cans 20% but recent shift to large pouch (US); Sources - 30% local, 70% imports, much from PNG:	Sorting in and/or before cold storage; 16 cages alongside conveyor belt, so all sizes, species in one sort. BE kept separate, price = SJ, can as chunk light for US, with AT, MT; blood spotting present but no big issue for chunk light. [have considered ISF membership but cost considered too high; very helpful in coordinating MoU for Phils processors data provision]
Others		[Data already being supplied by Gen Tuna (the largest Philippines tuna processor) as ISSF member]	
INDONESIA		(Direct engagement with companies, as Govt support not official)	
Aneka Tuna Indonesia [Pasuruan/ Surabaya]	1st August (S. Kobayashi, GM; Mulyardi, Marketing; Lie Wie Sian-Production; Bu Murni)	Production 250t/day with new plant, but recent supply problems; mostly can but also large pouches, also petfood (Japan) and fishmeal; Sources: previously 80% local but now lower; imports WCPO p/s but some albacore (JP); exports JP (35%) various others Import restriction, local << - desperate; much local from Pahala BN	Sizes as usual - < 1, 1-1.8, 1-8-3.4 but own categories to some extent; good traceability post-receival but questions before; sort in receival area; Be - ask local suppliers to separate (no demand); % has increased recently; imports - usually< 1%;mix with SJ if have to and market allows. **[ATI now ISSF member since early 2016 and supplying data]**
Avila Prima [Surabaya/Muncar]	Not visited		[**ISSF associate member since early 2016, presumably now submitting ISSF data]**
Pahala Bahari Nusantara [Jakarta/Cikarang]	Not visited (Yulius Lai, Marketing)	Approx. 30,0000t processed in 2014, reduced since moratorium; mostly loins and almost all local fish, p/s and p/l, until recently; much Indian Ocean	Key supplier to local processors eg ATI and major exporter
Bali Maya Permai {Negara, Bali]	Not visited (Yanti Tio, MD)	Much albacore - no details	**{Bali Maya now ISSF member and supplying]**
CHINA		(Excellent support from the China Overseas Fisheries Association who provided a guide for the visit)	
Zhejiang Fudan Tourism Food [Zhousan]	11th July (Dai Min Xia VP, Zhu Xian Ping Zimo QA)	50t/day, up to 60t; 12-15,000t pa; cooked loins, no canning; all SJ, YF; pack on contract. Source: nearly all WCPO p/s (TMI, SKai); varied markets	Unload in Zhousan port; sort pre cold storage; usual size categories; BE % small but separated; red meat export to PNG (RD); cooked loins in 6, 7 kg packs; some flake

Halisheng [Zhousan]	11th July (Man Zhen Lin, GM)	Tuna processing stopped in 2014 (high prices), after 20,000t processed in 2013 (80t/day); resumed recently but only chunk light (*Auxis*) from local mackerel fishery	Very low % BE ~ 1%) - strict separation; Happy to send data but not relevant now since no tuna Part of much larger group; potential PNG player (Lae);
Ningbo Today {Xikou, Ningbo]	12th July (Chen Yifang GM, Tommy Xia, Shirley Chen)	100t/day, capacity 150t/day; 50,000t tuna pa; 2 plants, one loin only, other can/loin/pouch; Source: 70% imports (WCPO p/s), 30% domestic (CN p/s)	Standard sizes; BE 1-2% but two specialty packs for local market (see website), some loins -> Taiwan; also chunk light; big push for local market, some inroads; Also mackerel, sardines, smoked oyster, squid
Tropical Food Mfg [Ningbo}	13th July (Thanate, Lilian Li)	Mostly sardines, mackerel (local fish) but some albacore from CN longliners; small amounts SJ/YF; canned ALB ->US	[Subsidiary of Tropical, Thailand; send albacore data to ISSF as assumed "member" but quantity small]
Ningbo Fengsheng [Beilun/Ningbo]	13th July (Han Yi Cheng, GM; Linda Zhou)	Cooked albacore and SJ loins, ULT tuna; SJ 40t/day loins, process total 50,000t pa; Source: p/s and longline; CN and FCF; 2 coy p/s vessels,18 ULT longliners; markets 100% export	No information on sizing and species separation
Others		Possible processors in southern China - Guang Dong, Fujian including Hai Ding (assoc with MMP Thailand) plus small plants in Zhousan area now mostly producing chunk light *(Auxis)*	
KOREA		Arrangements could be finalized with either Govt (KFA) or industry association; no visits made	
DongWon F & B	n/v	180t/day	Former ISSF member and data available for several years
Sansim	n/v	80t/day	
Sajo Co ltd	n/v	120t/day	
Ottigi (Geoje & Gosung)	n/v	100t/day	

Annex 3 Example of draft MoU for data provision, Thai processors

MEMORANDUM OF UNDERSTANDING
BETWEEN
KINGFISHER HOLDINGS,
AND
THE WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION (WCPFC)

Preamble

Recognizing that detailed cannery receipts data, provided in confidence by plants processing WCPO tuna, are useful for the scientific work of the WCPFC

Recognizing that the Dept of Fisheries, Thailand, on behalf of the Government of Thailand as WCPFC CNM, has communicated its strong support for the activity

Noting that companies already collect such information in the course of normal commercial operations and traceability

Recalling the ISSF participating companies have been providing such data in the form of quarterly reports to WCPFC for some years

Kingfisher Holdings Ltd agrees to the following arrangements for the regular provision of cannery data in an agreed format to WCPFC.

Data to be submitted

1. Cannery receipts data, broken down by standard size categories[4] and species, specifically skipjack, yellowfin and bigeye, should be supplied along with total amounts of bycatch eg bonito, and rejects.
2. These data should be compiled by the processing plant, based on quantity and quality reconciliation (Q & Q) data rather than bill of lading
3. For both carrier and direct deliveries, details of capture vessels, transhipment, carrier vessels and unloading to be supplied for each unloading (complete or partial), as per Annex 1. An example of a proforma quarterly report spreadsheet is attached

Data submission and confidentiality

4. Data in the form of summary spreadsheets should be supplied quarterly, beginning if possible with the first quarter of 2016 (January 1st-March 31st), to the following address: ofpdatareception@spc.int (SPC OFP as WCPFC Data Manager);
5. Data as supplied will remain confidential to WCPFC for internal use and will not be made available in non-aggregated form
6. Data receipt will be acknowledged for each submission and an annual summary of data received will be provided to the company.
7. Any other requirements/reassurances/caveats

Agreed and signed this day, xxxxxxxx 2016, in Bangkok, Thailand

.....
Kingfisher Holdings Ltd (Thailand)

.....
Western and Central Pacific Commission

[4] as specified in Annex 1; as a minimum, < 1-8 kgs, 1.8-3.4 kgs, 3.4-10 kgs, 10 kgs +, but further break down of sizes smaller than 1.8kgs desirable, if possible

ANNEX 1 Instructions for the collection and compilation of data

Round fish (includes gilled and gutted**) unloading from Fishing Vessel (Direct unloading)**
i. Name of fishing vessel
ii. Unique Vessel Identification Number (for example, IMO number) of fishing vessel
iii. Gear type
iv. Flag State of fishing vessel
v. Start date for unloading to processor
vi. End date for unloading to processor
vii. RFMO area of subject catch
viii. Fishing trip dates
ix. Weight of catch (in metric tons) by commercial species/size categories compiled from immediate pre-processing data as specified below.
x. Unloading port

Round fish (includes gilled and gutted) **unloading from Carrier Vessel (Transshipments)**
i. Name of carrier vessel
ii. Unique Vessel Identification Number (for example, IMO number) of carrier vessel
iii. Flag State of carrier vessel
iv. Start date for unloading to processor
v. End date for unloading to processor
vi. Name(s) of catcher vessel(s)
vii. Unique Vessel Identification Number(s) (for example, IMO number) of catcher vessel(s)
viii. Flag state(s) of catcher vessel(s)
ix. Date(s) of transfer of fish from catcher vessel(s) by vessel, and/or transfer from processor(s) to carrier vessel
x. Locations of transfer(s) at sea [at sea coordinates/port name] by transfer
xi. Fishing trip dates
xii. Weight of catch (in metric tons) by commercial species/size categories by catcher vessel(s) compiled from immediate pre-processing data as specified below.
xiii. Unloading port

Weight of the catch (in metric tons) **by commercial species/size categories** should be compiled from immediate pre-processing data such as 'Q and Q report' (Quantity and Quality reconciliation). Until then, unloading data/outturn reports can be used.

The size classes should reflect commercial gradings used by the processor, with the following suggested minimum breakdowns:

Skipjack: <3 lb (1.4 Kg); 3-4 lb (1.4 -1.8 Kg); 4-7.5 lb; >7.5lb (3.4 Kg). The category 3-4 lb can could be combined with the <3 lb category if not generally required by the processor.
Yellowfin and bigeye: <4 lb (1.8 Kg); 4-7.5 lb (1.8-3.4 Kg); 7.5-20 lb (3.4-9 Kg; > 20 lb (9 Kg). If used by the processor, the additional category 3-4 lb (1.4-1.8 Kg) should be added.
Species separation for skipjack, yellowfin and bigeye should apply to all size breakdowns, unless practical considerations limit this separation in the smallest size classes (e.g. < 3lb or < 4 lb).

Annex 4 Philippines tuna processors MoU

MEMORANDUM OF UNDERSTANDING

AMONGST

SOKSARGEN TUNA PROCESSORS,

THE BUREAU OF FISHERIES AND AQUATIC RESOURCES (BFAR), AND

THE WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION (WCPFC)

Preamble

Recognizing that detailed cannery receipts data provided in confidence by plants processing Western and Central Pacific Ocean (WCPO) tuna are useful for the scientific work of the WCPFC

Recognizing that the Bureau of Fisheries and Aquatic Resources (BFAR), on behalf of the Philippines Government as a WCPFC Co-operating Commission Member (CCM), has communicated its strong support for this activity

Noting that companies already collect such information in the course of normal operations and traceability

Recalling the ISSF participating companies have been providing such data in the form of quarterly reports to WCPFC for some years,

the Soksargen Tuna Processors as named, agree to the following arrangements for the regular provision of cannery data in an agreed format to WCPFC.

Data to be submitted

1. Cannery receipts data, broken down by standard size categories[5] and species, specifically skipjack, yellowfin and bigeye, should be supplied along with total amounts of bycatch e.g. bonito, and rejects.
2. These data should be compiled by the processing plant, based on quantity and quality reconciliation (Q & Q) data rather than bill of lading.
3. For both carrier and direct deliveries, details of capture vessels, transhipment, carrier vessels and unloading to be supplied for each unloading (complete or partial), as per the attached example pro-forma spreadsheets.

Data submission and confidentiality

4. Data in the form of summary spreadsheets should be supplied quarterly, beginning if possible with the first quarter of 2016 (January 1st-March 31st), to the following addresses:
   ofpdatareception@spc.int (SPC OFP as WCPFC Data Manager); smalvas.bfar@gmail.com (BFAR Region 12 Director, for BFAR)
5. Data as supplied will remain confidential to WCPFC Secretariat and the WCPFC science and data service provider only for internal use and will not be made available to any other parties in raw data format without the consent of the Soksargen Tuna Processors. Summarised data may be included in WCPFC papers on the proviso that (i) summarised data does not identify any processor, (ii) the finest resolution of the summarised data is species/size categories aggregated by month, with all processor data combined.
6. Data receipt will be acknowledged for each submission and an annual summary of data received will be provided back to each company.
7. Any other requirements as mutually agreed …

[5] as a minimum, < 1-8 kgs, 1.8-3.4 kgs, 3.4-10 kgs, 10 kgs +, but further break down of sizes smaller than 1.8kgs

Agreed and signed this day, May 20th 2016, in General Santos, Philippines

.....
Philbest Canning Corporation

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Alliance Select

.....
Ocean Canning

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Seatrade Canning Corporation

.....
Western and Central Pacific Commission

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Oceanic Fisheries Programme, Secretariat of the Pacific Community

.....
Director, Region XII, BFAR