



CCSBT-CC/2410/15

Secretariat's analyses for Japan's Market Proposal related items
日本市場提案関連事項にかかる事務局による解析
(CC 議題項目 8.2.1)

1. Background
背景

At the 6th meeting of the Strategy and Fisheries Management Working Group (SFMWG 6) held in Tokyo, Japan, in July 2023, Japan submitted its new Market Proposal (CCSBT-SFM/2307/06), which proposed the Secretariat conduct the following analyses:

2023年7月に東京（日本）で開催された第6回戦略・漁業管理作業部会会合（SFMWG 6）において、日本は新たな市場提案（CCSBT-SFM/2306/06）を提出し、事務局が以下の解析を行うことを提案した。

- A) Catches of each Member and its exports to Japan by fishing seasons, using CDS, national reports of catch, and trade statistics.
CDS、漁獲量の国別報告及び貿易統計を用いた、漁期ごとの各メンバーの漁獲量と日本への輸出量
- B) Proportion of imports in the Japanese market (Correspondence Approach #1) by product types (Fresh Wild, Fresh Farmed, Frozen Wild and Frozen Farmed), using CDS, management tag survey and questionnaire to trade companies.
CDS、管理標識調査及び貿易業者への質問票を用いた、製品タイプ別（生鮮天然、生鮮蓄養、冷凍天然及び冷凍蓄養）の日本市場での輸入量の割合（対応関係アプローチ#1）
- C) Imports (Fresh and Frozen) by each Member (Correspondence Approach #2), using CDS and trade statistics.
CDS及び貿易統計を用いた、各メンバー別輸入量（生鮮及び冷凍）（対応関係アプローチ#2）
- D) Proportion of SBT (Frozen Wild, Frozen Farmed and Fresh) sold in major markets (Toyosu and Yaizu) in SBT landed and imported into Japan (Correspondence Approach #3), using CDS, management tag survey and questionnaire to trade companies.
CDS、管理標識調査及び貿易業者への質問票を用いた、日本に水揚げ及び輸入された SBTのうち主要市場（豊洲及び焼津）で販売された SBT（冷凍天然、冷凍蓄養及び生鮮）の割合
- E) Import of farmed SBT from Australia into Japan (Correspondence Approach #4), using CDS and FRDC Seafood Production and Trade Databases.
CDS及びFRDC Seafood Production and Trade Databasesを用いた、オーストラリアから日本への蓄養 SBTの輸入量（対応関係アプローチ#4）

F) Comparison between weight data of individual SBTs, using CDS and management tag survey.

CDS 及び管理標識調査を用いた、個別 SBT の重量データ間の比較

Japan further submitted its proposal on Market Analysis (CCSBT-CC/2310/19) to the 18th Meeting of the Compliance Committee (CC 18), which proposed the format for Items A), B), D) and E).

さらに日本は、第 18 回遵守委員会会合 (CD 18) に対し、上記事項のうち A), B), D) 及び E) のフォーマットを提案した市場解析提案 (CCSBT-CC/2310/19) を提出した。

CC 18 welcomed Japan's proposal and agreed to include the following activities in the CC 18 Work Plan:

CC 18 は日本による提案を歓迎し、以下の事項を CC 18 作業計画に含めることに合意した。

	Approximate Period	Resource
Conduct analysis of item 1.1-A), B), D) and E) of Japan's Market Proposal in accordance with the format specified in CCSBT-CC/2310/19 文書 CCSBT-CC/2310/19 に規定されたフォーマットに従い、日本市場提案のうち事項 1.1-A)、B)、D) 及び E) の解析を実施する	Before CC 19 CC 19 より前	Secretariat 事務局
Publish the outcome of Secretariat's market analysis following the annex of CCSBT-CC/2310/19 文書 CCSBT-CC/2310/19 の別添に従い、事務局による市場解析の結果を公表する	After EC 31 EC 31 後	Secretariat 事務局
Continue the analysis of Item 1.1-F) of Japan's Market Proposal in 2024, and Item 1.1-C) and Item 4 in 2025 2024 年においては日本市場提案のうち事項 1.1-F) の解析を引き続き実施し、事項 1.1-C) 及び 4 については 2025 年に解析を実施する	Before CC 19 (for Item 1.1-F)) (事項 1.1-F)に 関しては) CC 19 より前	Secretariat 事務局

Following the CC 18 Workplan, the Secretariat conducted the specified analyses, and the outcomes are summarised below.

CC 18 作業計画に従い、事務局は特定された解析を実施し、その結果の概要を以下に示した。

2. Analyses results of Japan's Market Proposal related items

日本市場提案関連事項の解析結果

(i) Item A), B), D) and E)

事項 A), B), D) 及び E)

Following the format provided by Japan in 2023, the Secretariat conducted those analyses as shown in **Appendix 1**.

2023 年に日本が提示したフォーマットに従って事務局が実施した解析結果を別添 1 に示した。

When necessary, the Secretariat made several adjustments to the original format and data set specified to be used depending on data availability and possible confidentiality issues.
データの利用可能性及び潜在的な機密保持上の問題を踏まえ、事務局は必要に応じて当初のフォーマット及び使用するよう指定されたデータセットにいくつかの調整を加えた。

(ii) Item C)
事項C)

As specified in the CC 18 Workplan, this item will be analysed in 2025.
CC 18 作業計画で規定されたとおり、本解析は 2025 年に実施予定である。

(iii) Item F): Comparison between weight data of individual SBTs, using CDS and CDS Tag Survey

事項F) : CDS 及びCDS 標識調査による個別の SBT の重量データの比較

The Secretariat repeated this analysis following the CC 18 Workplan. Details of this analysis is shown at **Appendix 2**.

事務局は CC 18 作業計画にしたがって本解析を再度実施した。本解析の詳細は別添 2 のとおりである。

In summary, based on the verification of reported catch by Members with CDS data and CDS Tag Survey data obtained from Japanese market, it could be qualitatively stated that the catches reported by Members through the CTF are reasonably accurate.

要すれば、CDS データ及び日本市場から得られた CDS 標識調査データを用いてメンバーの報告漁獲量を検証した結果によれば、CTF を通じてメンバーから報告された漁獲量は合理的に正確であると定量的に述べることができる。

3. Publication of the results of the analyses

解析結果の公表

Following the CC 18 Workplan, the Secretariat summarised the outcome of the market analyses using the format specified in the Annex of CCSBT-CC/2310/19, which is shown in **Appendix 3**.
CC 18 作業計画に従い、事務局は CCSBT-CC/2310/19 の別添に示されたフォーマットを用いて、市場解析の結果を別添 3 のとおり総括した。

When the contents of the format initially proposed by Japan do not appear in the actual analyses A), B), D), E), and F), or if data referred to in the original format are not publicly available, the contents are not shown.

日本が当初提案したフォーマットの内容の中で、実際の解析事項 A), B), D), E) 及び F) では網羅されていないもの、又は当初のフォーマットの中で言及されているデータが利用可能でない場合、これらの内容は省略した。

4. Action Required

要請されている行動

CC19 is invited to:

CC 19 は以下を招請されている。

- Note the information presented **Appendix 1 and 2** of this paper; and
本文書別添 1 及び 2 に提示された情報に留意すること。
- Taking into account that the Secretariat's resources are limited:
事務局のリソースは有限であることを踏まえ、
 - Recommend whether the analyses presented in this paper should be repeated again and included in CC's 2025 Workplan; and
本文書に提示された解析を再度実施すべきかどうか、及びこれを 2025 年の CC 作業計画に含めるかどうかについて勧告すること。
 - When necessary, make specific advice for the Secretariat to improve the analyses; and
必要に応じて、事務局に対して本解析を改善するための具体的な助言を行うこと。
 - Make a recommendation to the EC to publish **Appendix 3** of this paper, which summarises the outcome of the market analyses this year.
本年のし上解析の結果を総括した本文書別添 3 を公開することについて、EC に対する勧告を行うこと。

Prepared by the Secretariat
事務局作成文書

Analyses for Japan’s Market Proposal Item 1.1-A), B), D) and E)

The CC 18 agreed that the Secretariat conduct the following analyses using the specific format proposed in paper CCSBT-CC/2310/19:

- A) Catches of each Member and its exports to Japan by fishing seasons, using CDS, national reports of catch, and trade statistics.
- B) Proportion of imports in the Japanese market (Correspondence Approach #1) by product types (Fresh Wild, Fresh Farmed, Frozen Wild and Frozen Farmed), using CDS, management tag survey and questionnaire to trade companies.
- C) Proportion of SBT (Frozen Wild, Frozen Farmed and Fresh) sold in major markets (Toyosu and Yaizu) in SBT landed and imported into Japan (Correspondence Approach #3), using CDS, management tag survey and questionnaire to trade companies.
- D) Import of farmed SBT from Australia into Japan (Correspondence Approach #4), using CDS and FRDC Seafood Production and Trade Databases.

Result tables of the above analyses with the agreed format are shown below. When necessary, the Secretariat made several adjustments to the original format and data set specified to be used depending on data availability and possible confidentiality issues.

**Table 1.1- Item A): Catches of each Member landed at/imported into Japan by fishing seasons
Calendar Year: 2023**

Member	Import to/landed in Japan which occurred in Calendar year 2023 ^{*1}	Export to/Landed in Japan which occurred in Calendar year 2023 ^{*2}	Catch in Fishing year ^{*3}
Japan	-	6,334.86	6,335.00
Australia	7,949.49	8,078.30	6,035.00
Indonesia	34.46	36.90	1,031.55
Korea	1,081.29	1,010.20	1,305.00
New Zealand	687.76	690.30	1,102.80
South Africa	9.82	10.10	146.50
Taiwan	518.90	584.10	1,135.00

^{*1} Japan's Trade Statistics except for the column for Japan.

^{*2} CDS data. Total amounts of exports to/landed in Japan which occurred in a calendar year.

^{*3} Annual National report to ESC. Note: the original format specified “CC” here, but Members’ national reports to CC are not available at the time of drafting this paper.

Table 1.2 - Item B): Proportion of imports in the Japanese market (Correspondence Approach #1) by product types

Table 1.2-1: Proportion of Imports by Product Type

Calendar year: 2023

	Proportion of Imports (%)		
	CDS ^{*1}	CDS Tag Survey ^{*2}	Questionnaire to trade companies ^{*3}
Fresh Wild	11.66%	55.02%	8.70%
Fresh Farmed	58.10%	0.00%	0.04%
Frozen Wild	15.32%	44.98%	23.73%
Frozen Farmed	14.93%	0.00%	67.53%

^{*1} Data source: CDS. Proportion of imports in total amount ((re)exports to JPN + JPN's domestic landings)

^{*2} Data source: Toyosu/Yaizu CDS tag survey data (Proportion of imports in total amount). Original format specified “Auction sampling” here, but those data are not available to the Secretariat, and CDS tag survey data are used as proxy.

^{*3} Data source: Questionnaire to trade companies. Imports into JPN/the total. Note: Data used here are 2022 data (these are the latest available data due to the timing of CCSBT-funded Toyosu Market Survey).

Table 1.2-2: Proportion of Imports against all SBT entered Japan

	Proportion of Imports (%)		
	CDS ^{*1}	CDS Tag Survey ^{*2}	Questionnaire to trade companies ^{*3}
2023	64.61%	34.14%	Not Available
2022	66.90%	22.53%	46.52%
2021	64.93%	25.39%	39.73%
2020	67.80%	16.73%	42.05%
2019	67.51%	20.74%	44.50%

^{*1} Data source: CDS. Proportion of imports in total amount ((re)exports to JPN + JPN's domestic landings)

^{*2} Data source: Toyosu/Yaizu CDS tag survey data (Proportion of imports in total amount). Original format specified “Auction sampling” here, but those data are not available to the Secretariat, and CDS tag survey data are used as proxy.

^{*3} Data source: Questionnaire to trade companies. Imports into JPN/the total. Note: Data used here are 2022 data (these are the latest available data due to the timing of the CCSBT-funded Toyosu Market Survey).

Table 1.3 - D): Proportion of SBT sold in major markets (Toyosu and Yaizu) in SBT landed and imported into Japan (Correspondence Approach #3)

Frozen and Fresh Combined

	(1) SBT entered Japan ^{*1}	(2) SBT sold in Toyosu and Yaizu Market ^{*2}	Proportion of SBT sold in two major markets ((1)/(2)) (%) ^{*3}	Proportion of SBT sold in Japanese markets (%) ^{*4}
2023	16,153.09	6,386.42	39.54%	87.22%
2022	14,821.65	6,123.86	41.32%	87.47%
2021	15,987.24	6,519.79	40.78%	88.91%
2020	15,998.06	5,712.33	35.71%	89.57%

*1 Data source: CDS. Exports of SBT to JPN + SBTs caught by JPN and landed in Japan.

*2 Data source: Statistics of Toyosu and Yaizu Markets. Yearly Total amount of Frozen and Fresh SBT sold in the markets.

*3 SBT sold in 2 markets as a percentage of the total amount of SBT entered into Japan

*4 Proportion of (1) against Members' CDS Catch/Harvest. Note: This figure shows what percentage of SBT are sold in Japan. The original format specified "Data source: Questionnaire to trade companies. Proportion of amounts of SBT sold in Japanese markets", but those data are not usable for this purpose due to representativeness issues and consequently, the sum of those data are not comparable with (1) of this table.

Toyosu Statistics: <https://www.shijou-tokei.metro.tokyo.lg.jp/asp/smenu2.aspx?gyoshuud=2&smode=10>

Yaizu Statistics: <https://www.yaizu-gyokyo.or.jp/catch-year/>

Table 1.4 - Item E) Import of farmed SBT from Australia into Japan (Correspondence Approach #4)

	Export of Farmed SBT from AU ^{*1}	Export of Farmed SBT from South Australia ^{*2}
2023	7,601.86	7,704.93
2022	6,994.00	7,441.79
2021	7,259.86	7,158.94
2020	7,722.55	8,484.41
2019	8,443.72	8,366.77

*1 Data source: CDS. Amounts of exports of SBT from Australia into Japan.

*2 Data source: FRDC Seafood Production and Trade Database. Amounts of exports of SBT from South Australia into Japan - <https://www.frdc.com.au/seafood-import-and-export-volume-species>

**Updated analysis for verification of reported catch by Members with CDS data and CDS Tag Survey data obtained from Japanese market
(Japan’s Market Proposal item 1.1-F))**

1. Background

In 2023, the EC 31 approved the CC 18 Workplan and it specified for the Secretariat to “Continue the analysis of Item 1.1-F of Japan’s Market Proposal in 2024” ([CCSBT-SFM/2307/06](#)).

In this **Appendix 2**, the Secretariat repeated the analysis conducted in 2022 and 2023, utilising the latest Market Survey Data (including data up to mid-2024) provided by Japan and CTF data held by the Secretariat.

The Secretariat expresses its appreciation to Japan, particularly Dr. Tomoyuki Itoh, for initial processing the Market Survey data from the Toyosu and Yaizu markets for this analysis.

2. Data used for this trial analysis

The Secretariat used the following datasets to conduct this trial analysis.

1) *Individual SBT data from CCSBT CDS Catch Tagging Forms (2010-2024¹)*

These data are collected from Members and maintained by the Secretariat through the Catch Documentation Scheme (CDS) from 2010 to date.

This dataset includes CDS tag number, product type, product weight and fork length of each fish, fishing information, origin of fish (Member, wild/farming) etc².

The numbers of CDS tags recorded on CTFs by Members are shown in Table 2-1 below.

Table 2-1. Number of CDS tags (= number of SBT) recorded on CTFs by Member and year (2010 – mid 2024).

	AU	ID	JP	KR	NZ	TW	ZA	Total
2010	185,538	4,990	38,558	14,898	8,473	33,028	557	287,138
2011	213,830	11,936	63,282	13,291	8,811	15,156	687	328,047
2012	288,855	9,165	51,205	15,743	13,537	17,451	972	397,998
2013	278,440	18,187	49,459	19,540	11,922	33,553	478	412,827
2014	266,731	11,573	58,814	15,835	13,800	26,659	461	395,088
2015	301,638	5,944	85,182	22,000	14,973	33,004	645	463,386
2016	324,200	6,362	80,348	19,112	19,763	30,392	620	480,797
2017	275,531	9,617	85,019	18,352	19,255	32,845	1,210	441,829
2018	341,346	10,946	106,627	20,310	19,919	35,495	2,294	536,937
2019	360,174	12,834	112,021	21,116	16,548	34,615	2,539	559,847
2020	344,072	13,578	91,667	17,931	15,517	29,512	1,311	513,588
2021	342,756	12,463	112,343	20,456	14,070	37,783	1,268	541,139
2022	412,505	11,207	101,001	19,255	18,221	36,183	1,748	600,120
2023	463,180	11,085	109,110	22,393	20,514	27,996	1,395	655,673
2024	226	7,304	-	-	2,921	2,793	54	13,298
Total	4,399,022	157,191	1,144,636	260,232	218,244	426,465	16,239	6,627,712

¹ Due to the different timing for reporting/data submission between CDS and the Tag Survey, the 2024 data currently shown in this paper should be considered preliminary and indicative.

² Details are available in Appendix 1 of the [Resolution on the Implementation of a CCSBT Catch Documentation Scheme](#).

2) Japan’s market CDS Tag Survey data (2010 – mid 2024)

Tag Survey data are obtained through Japan’s market CDS Tag Survey in the major Japanese wholesale markets and through the CCSBT-funded Toyosu Market Survey (hereinafter “Market Survey”)³.

This dataset includes the date of survey, CDS tag number, marketplace, fishing vessel ID (call sign), product weight of fish, name of the wholesaler, and origin of fish (Member, wild or farming), etc. As Japan has ceased its market survey in Yaizu market, new data for this year’s analysis are only from the CCSBT Market Survey.

The number of fish observed/recorded by the Market Survey by Member is shown in Table 2-2 below.

Table 2-2. Number of SBT observed/recorded by the Market Survey by Member, and increased number/percentage of observed SBT since the previous study in 2023.

	AU	ID	JP	KR	NZ	TW	ZA	Total
Number of observed SBT in Market Survey (2010-mid 2024)	2,593 (2173)	893 (893)	86,807 (81850)	16,801 (15706)	3,417 (2716)	16,513 (15839)	135 (135)	127,726 (119879)
Increased No. of observed SBT since 2023	420	-	4,957	1,095	701	674	-	7,847
increased %	19.3%	0.0%	6.1%	7.0%	25.8%	4.3%	0.0%	6.5%

Note: Within the table above, brackets show figures for 2010 – mid 2023 (i.e. figures indicated in [CCSBT-CC/2310/13](#)).

It should be noted that the data recorded in the Market Survey described above contained many missing or incomplete data. The main reason was that there were unreadable CDS tags for some reason, such as the tag being embedded in frozen SBT meat, partially damaged, detached, or a recording error by the surveyor.

3. Updated Analysis

The Secretariat conducted analyses using the datasets described in Section 2 above.

1) Data preparation for trial analysis

To integrate the two datasets described in Section 2, the Secretariat imported the Market Survey data provided by Japan into the CDS database and matched the data by CDS tag numbers common to both the Market Survey dataset and the CTF dataset.

The number of SBT individuals with matching CDS tag numbers between the Market Survey data and the CTF data is shown in Table 2-3 below.

³ Japan has voluntarily conducted SBT CDS Tag Survey twice a month at Toyosu market (as well as at Tsukiji and Yaizu market since 2007). Japan’s Toyosu market Tag Survey has been replaced by the CCSBT-funded survey since April 2023. Japan has ceased its Tag Survey in Yaizu market.

Table 2-3. Number of matches of CDS tag numbers between the Market Survey data and CTF data.

Member/ CNM	Number of observed SBT in Market Survey (2010-mid 2024) (A)	Number of observed tags		Rate		
		"Readable" tag numbers (B)	Number of "matched" tag numbers (C)	"Readable" rate against all records (B/A)	CTF - Matching rate against all records (C/A)	CTF - Matching rate against "readable" tag (C/B)
AU	2,593	2,079	1,996	80.18%	76.98%	96.01%
ID	893	729	642	81.63%	71.89%	88.07%
JP	86,807	75,717	74,908	87.22%	86.29%	98.93%
KR	16,801	11,533	11,336	68.64%	67.47%	98.29%
NZ	3,539	3,362	3,089	95.00%	87.28%	91.88%
PH	567	376	367	66.31%	64.73%	97.61%
TW	16,513	12,428	11,201	75.26%	67.83%	90.13%
ZA	135	98	81	72.59%	60.00%	82.65%
Total/ Average	127,848	106,322	103,620	83.16%	81.05%	97.46%

CDS tag numbers were readable in 83.16% (or 106,322 individuals) of SBT observed through the Market Survey (a total of 127,848 individuals). The percentage of readable tag numbers ranged between Members from 68.64% to 95.00%.

The proportion of readable tag numbers showed a high rate in general (83.16% throughout the survey). However, Korea, Taiwan and South Africa have a relatively low rate amongst Members, at around 70 % of the total. As indicated in Appendix C of [CCSBT-CC/2310/13](#), the readability of the tag number has been largely improved in recent years.

The matching rate between readable tag numbers from the Market Survey and CTF data was very high in general, overall at 97.46% and ranging from 82.65% to 98.93% by Member. Indonesia (88.07%) and South Africa (82.65%) showed a relatively low matching rate among Members. If the data record/entry error rate that occurred in the Market Survey was the same, this percentage may reflect Members' error rate for CTF.

The Secretariat created a new data set by extracting data for this analysis from the data set integrated by matching CDS tag numbers as described above. The extracted data for this trial analysis are as follows:

- CDS tag numbers of matched SBT individuals
- Survey year in which SBT individuals were observed in Japanese market
- Product weights of SBT individuals observed/recorded in Japanese market
- Product type of individuals as recorded in the CDS
- Product weights of individuals as recorded in the CDS
- CCSBT Statistical Area in which SBT individuals were caught as recorded in the CDS

The Secretariat calculated the difference between the product weights obtained from the two sources and then calculated the mean and standard deviation of the proportion of the difference between them for each stratum (Member, year, product type and CCSBT Statistical Area).

2) *Coverage and representativeness of Japan's Market Survey data against all SBT individuals*

The Number of SBT individuals matched between Market Survey data and CTF data by Member and year is shown in Table 2-4.

Table 2-4: Number of individuals matched between Market Survey data and CTF data by Member and year. Figures in the cells indicate the number of individuals.

	AU	ID	JP	KR	NZ	TW	ZA	Total
2010*	-	10	967	164	-	591	-	1,748
2011*	-	90	2,386	631	89	904	-	4,157
2012*	-	211	3,064	688	40	311	9	4,462
2013*	5	147	2,443	1,210	19	401	3	4,297
2014*	8	150	3,874	1,163	54	1,292	-	6,627
2015*	89	34	5,228	924	141	1,253	-	7,669
2016*	-	-	6,473	1,237	27	1,092	-	8,829
2017*	-	-	6,834	1,231	5	768	-	8,838
2018*	-	-	7,634	1,159	-	1,195	-	9,988
2019*	227	-	8,175	372	361	1,159	20	10,314
2020*	282	-	7,129	275	317	518	40	8,561
2021*	728	-	7,559	428	564	853	-	10,132
2022*	244	-	7,049	605	646	546	9	9,099
2023*	-	-	2,803	683	58	227	-	3,771
2024*	-	-	182	112	-	-	-	294
Total	1,583	642	71,800	10,882	2,321	11,110	81	98,786

* Year code in Table 2-4 above is based on the date of Market Survey. Given the time lag between landing/importing and wholesale market auction, and also considering the fact that fishing season is varied between Members, the results of the calculations above should be recognised as indicative, as some matching counts may be inherently more correct to be categorised in different years. The same caution should be applied to all tables and figures below in this document.

Table 2-4 shows a very large variation in the number of matches between Members each year.

The number of matched SBT individuals (Table 2-4 above) was compared to the total number of CDS tags registered in the CTF by Member and year (Table 2-1 above) to check the representativeness of Market Survey data. The calculated coverage of the Market Survey data against all CTF data is shown in Table 2-5 below.

Table 2-5. Coverage (percentage) of Number of matches to Market Survey data against the total number of CDS tag numbers registered with the CTF, by Member and year

	AU	ID	JP	KR	NZ	TW	ZA	Total
2010	0.00%	0.20%	2.51%	1.10%	0.00%	1.79%	0.00%	0.61%
2011	0.00%	0.75%	3.77%	4.75%	1.01%	5.96%	0.00%	1.27%
2012	0.00%	2.30%	5.98%	4.37%	0.30%	1.78%	0.93%	1.12%
2013	0.00%	0.81%	4.94%	6.19%	0.16%	1.20%	0.63%	1.04%
2014	0.00%	1.30%	6.59%	7.34%	0.39%	4.85%	0.00%	1.68%
2015	0.03%	0.57%	6.14%	4.20%	0.94%	3.80%	0.00%	1.65%
2016	0.00%	0.00%	8.06%	6.47%	0.14%	3.59%	0.00%	1.84%
2017	0.00%	0.00%	8.04%	6.71%	0.03%	2.34%	0.00%	2.00%
2018	0.00%	0.00%	7.16%	5.71%	0.00%	3.37%	0.00%	1.86%
2019	0.06%	0.00%	7.30%	1.76%	2.18%	3.35%	0.79%	1.84%
2020	0.08%	0.00%	7.78%	1.53%	2.04%	1.76%	3.05%	1.67%
2021	0.21%	0.00%	6.73%	2.09%	4.01%	2.26%	0.00%	1.87%
2022	0.06%	0.00%	6.98%	3.14%	3.55%	1.51%	0.51%	1.52%
2023	0.00%	0.00%	2.57%	3.05%	0.28%	0.81%	0.00%	0.58%
2024	0.00%	0.00%	-	-	0.00%	0.00%	0.00%	2.21%
Total	0.04%	0.41%	6.27%	4.18%	1.06%	2.61%	0.50%	1.49%

Based on Table 2-5 above, the overall coverage from 2010 to date is 1.49 %. On a Member-by-Member basis, there has been a wide variation between Members in recent years, ranging from 0% to around 7%. For Japan, Korea and Taiwan (far-sea longline Members), the coverage since 2010 to date is relatively high (6.27%, 4.18% and 2.61%, respectively).

For Japan's SBT, the coverage for 2023 (the most recent year the fishing season ended) was largely decreased (from 6.98% in 2022 to 2.57% in 2023). New Zealand's Coverage for 2023 also decreased from 3.55% in 2022 to 0.28%. These may indicate an increase in bilateral direct trading rather than auctioning.

While Korea showed similar coverage as of 2022 (3.05%), Taiwan and South Africa's coverages are also decreased.

Given the coverage indicated above, it may require careful consideration whether the data obtained from the Market Survey is representative enough to be used in assessing the accuracy and identifying compliance trends in the CDS of all Members' stakeholders (mainly fishers and farming operators).

3) *Verification of reported catch by Members with CDS data and CDS Tag Survey data obtained from Japanese market*

The weight of SBT recorded in the Market Survey and the CTF are both net weights, and these weight data are directly comparable as there are unlikely to be any changes in product type between landing or export/import and auction.

As described in Section 4-1) above, the difference between the product weights of each individual SBT between the two data sets (Market Survey product weight minus CTF product weight) was calculated for each SBT individual, and then the mean and standard deviation of the proportion of difference were calculated by Member. If this proportion is "zero", it means the weight from the Market Survey and the weight from CTF are the same, and consequently, the Member's reported weights were accurate. If this proportion is a negative figure, it indicates that the weight of the fish measured on the vessel or at the farm was higher than the weight measured in the market during the auction. For some Members, this may suggest that fishers on board may have weighed SBT "conservatively", potentially to ensure that they do not exceed their quotas (e.g. if the measurement is 49.5kg, record as 50kg to CTF considering unstable weighing on board).

However, in the datasets used, very large discrepancies between the two weights data were observed for a considerable number of individuals.

A bubble plot showing the relationship between Market Survey weight and CTF weight by Member is provided in **Attachment A** to provide a visual representation of the variation in the data. For all plots in **Attachment A**, the vertical axis is the CTF weight of each SBT individual, and the horizontal axis is the Market Survey weight. Each bubble represents the count of records within a 5kg bin (i.e. the higher the count, the larger the bubble). In general, the Market Survey weight data and CTF weight data matched well (most bubbles are on/close to a 1:1 line) for all Members; however, Members with larger sample sizes tend to have more outliers.

In addition, to indicate the scale of extreme records, the maximum weight discrepancies (in both positive and negative directions) between the two data sets by Member are shown in Table 2-6 below.

Table 2-6. Maximum discrepancy between Market Survey weight data and CTF weight data (positive and negative directions) by Member.

	AU		ID		JP		KR		NZ		TW		ZA		All	
	Plus	Minus	Plus	Minus	Plus	Minus	Plus	Minus	Plus	Minus	Plus	Minus	Plus	Minus	Plus	Minus
2010	-	-	4.00%	-63.19%	86.40%	-334.78%	55.79%	-175.00%	-	-	68.18%	-163.16%	-	-	86.40%	-334.78%
2011	-	-	71.88%	-93.99%	77.96%	-298.34%	-	-	74.14%	-160.87%	70.49%	-148.12%	-	-	77.96%	-298.34%
2012	-	-	81.09%	-76.10%	78.21%	-614.29%	81.65%	-180.30%	29.69%	-93.01%	74.81%	-172.73%	4.37%	-0.88%	81.65%	-614.29%
2013	-	-1.38%	62.72%	-1189.47%	72.55%	-900.00%	84.00%	-1229.41%	4.41%	-0.72%	69.51%	-128.57%	2.52%	1.35%	84.00%	-1229.41%
2014	-	-6.44%	69.61%	-46.55%	-	-	71.43%	-900.00%	68.86%	-164.57%	76.50%	-148.68%	-	-	76.50%	-900.00%
2015	58.51%	-181.69%	5.11%	-8.59%	67.14%	-207.45%	58.50%	-891.60%	65.78%	-120.59%	-	-	-	-	76.74%	-891.60%
2016	-	-	-	-	-	-	63.16%	-117.39%	53.24%	-22.45%	85.04%	-537.50%	-	-	85.04%	-537.50%
2017	-	-	-	-	-	-	65.65%	-220.69%	5.03%	-3.86%	75.66%	-169.46%	-	-	80.85%	-900.00%
2018	-	-	-	-	-	-	-	-	-	-	72.22%	-116.31%	-	-	73.68%	-909.71%
2019	48.81%	-115.28%	-	-	78.93%	-762.07%	66.41%	-754.37%	74.95%	-56.25%	72.48%	-174.51%	32.69%	-23.46%	78.93%	-762.07%
2020	60.21%	-116.05%	-	-	-	-	61.18%	-95.18%	-	-	53.72%	-46.63%	25.45%	-28.81%	81.41%	-380.39%
2021	56.52%	-25.55%	-	-	83.31%	-288.24%	75.29%	-310.57%	55.78%	-77.30%	68.52%	-594.44%	-	-	83.31%	-594.44%
2022	68.54%	-132.24%	-	-	70.04%	-281.88%	80.20%	-216.92%	73.79%	-122.50%	77.27%	-348.28%	16.88%	-12.11%	80.20%	-348.28%
2023	-	-	-	-	62.11%	-146.58%	76.48%	-170.49%	32.93%	-3.88%	69.63%	-316.67%	-	-	76.48%	-316.67%
2024	-	-	-	-	14.19%	-34.39%	74.85%	-59.53%	-	-	-	-	-	-	74.85%	-59.53%
All	68.54%	-181.69%	81.09%	-1189.47%	86.40%	-900.00%	84.00%	-1229.41%	74.95%	-164.57%	85.04%	-594.44%	32.69%	-28.81%	86.40%	-1229.41%

As shown in Table 2-6 above, with positive deviations of up to 86.4% and negative deviations of up to minus 1,229.41%, it is clear that this data set contains extreme outliers.

Besides, in order to indicate the distribution of the proportion of differences between the two weights data across all Members and years, a histogram is provided in Figure 2-1 below. In this histogram, the horizontal axis shows the proportion of the difference between the weight data (interval 0.025 (2.5%)), and the vertical axis shows the number of SBT individuals.

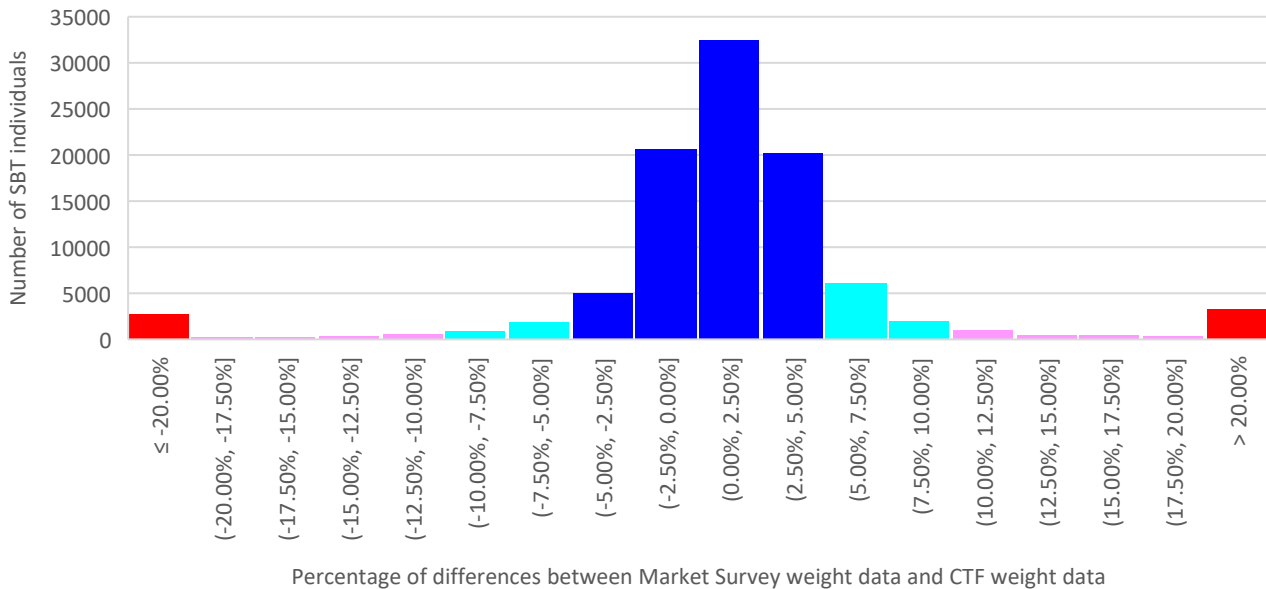


Figure 2-1: Histogram of the percentage of difference between the Market Survey weight data and CTF weight data. The horizontal axis shows the difference between the weight data (2.5% of interval) and the vertical axis shows the number of SBT individuals. The proportion of differences between the two weights data within ±5% are shown in blue, between ±5-10% in light blue, between ±10-20% in pink and above ±20% in red.

With regard to the difference between the weight weighed on board and the weight at landing in the CDS, taking into account the fact that Japan, Korea and Taiwan allow a range of $\pm 5\%$ between the weight weighed on board (the weight recorded in the CTF data) and landing weight as “error due to weighing on board”, the SBT individuals with $\pm 5\%$ shown in blue in Figure 2-1 above can be considered as both the Market Survey data and the CTF data are properly recorded (within acceptable level under current CDS operation), and many of individuals (79.60%) are included in this category.

On the other hand, the number of SBTs with a difference of more than “ $\pm 20\%$ ” between the two weights data is about 2,700 in the negative direction and about 3,300 in the positive direction, and such SBT individuals showed extreme figures, as shown in Table 2-6.

Such “extreme” records appear in both positive direction and negative directions (i.e. both “under-reported” and “over-reported” by fishers and/or farm operators). If fishers and/or farm operators were deliberately under-reporting to CTF not to exceed quotas, these extreme records should be unevenly distributed in the positive direction. Considering the relatively “even” distribution of records to both positive and negative directions, it would be appropriate to consider that a large part of such extreme records was un-intentional errors due to administrative problems (e.g. data entry errors by surveyors in Japan’s Market Survey, or data error in CTF database etc.) and may be appropriate to deem these extreme records as “outliers”.

In this regard, CC 16 commented that “Outliers above and below 20% could be removed, but there should also be a discussion around improving the data collection mechanisms”. Based on this recommendation, the Secretariat created a new dataset by excluding outliers above $\pm 20\%$ (red area in the Figure 2-1 histogram). The number of matches between the Market Survey data and the CTF data by member, excluding outliers, is shown in Table 2-7 below. Improving the data collection mechanisms need to be considered separately.

Table 2-7. Number of matchings between Market Survey data and CTF data – all matchings and matchings after excluding outliers by Member.

Member/ CNM	Number of observed tags		Rate
	Number of "matched" tag numbers (A)	Number of matchings after excluding "outliers" (B)	Number of matching within 20% weight difference (B/A)
AU	1,996	1,955	97.95%
ID	642	581	90.50%
JP	74,908	71,626	95.62%
KR	11,336	9,855	86.94%
NZ	3,089	2,983	96.57%
PH	367	363	98.91%
TW	11,201	10,176	90.85%
ZA	81	75	92.59%
total	103,620	97,614	94.20%

As indicated in Table 2-7 above, approximately 94% of matched SBTs fall within the $\pm 20\%$ weight difference range when outliers exceeding $\pm 20\%$ are excluded. Of these, approximately 84% of matched SBTs fall within the $\pm 5\%$ weight difference range (Figure 2-1). Based on these figures, it can be qualitatively stated that the catches reported by Members are reasonably accurate (i.e. within the margin of error allowed by the current CDS operation).

4. Additional Analysis using the same dataset (excluded outliers)

Some data elements available from the Market Survey and CTF data may serve as indicators for the Commission and/or Members to target monitoring and guidance in terms of compliance with CDS requirements (i.e. which Members, which product types, and which Statistical Areas fishers and/or farm operators tend to over-report or under-report the weight of fish).

The Secretariat conducted the following analyses as the same as the 2022 and 2023 study with the latest dataset:

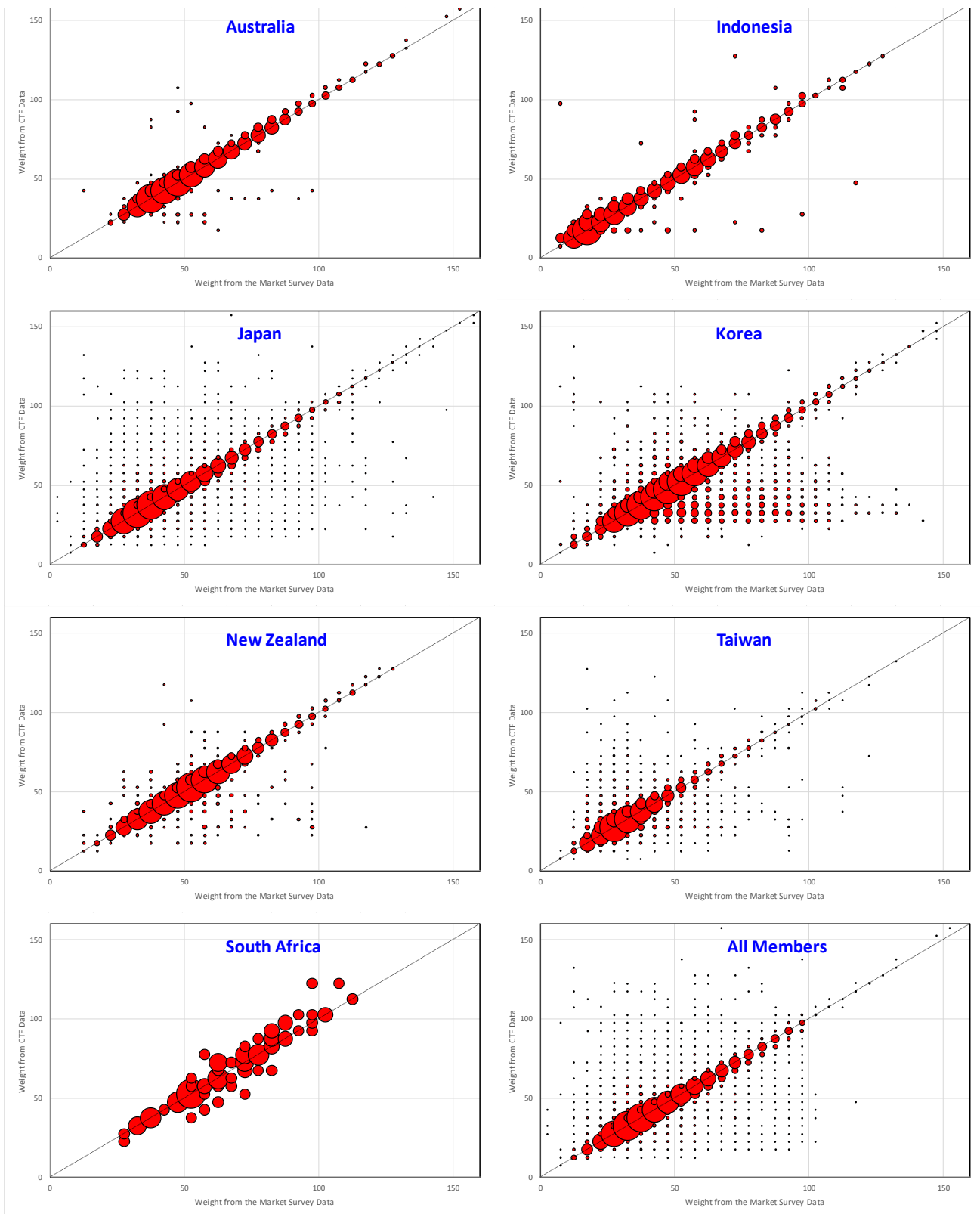
- 1) Comparison of product weights between Japan's Market Survey data and CTF data – by Member
- 2) Comparison of product weights between Japan's Market Survey data and CTF data – by Product type
- 3) Comparison of product weights between Japan's Market Survey data and CTF data – by CCSBT Statistical Area

These analyses showed similar results as the previous studies and, in conclusion, it seemed difficult to explore compliance trends from comparisons by Member, Product type or CCSBT Statistical Area perspective due to variation in the amount of available data and representativeness issues.

Detailed results can be provided if requested.

5. Conclusion

- (1) The results of the updated analyses carried out in this document and additional comments are summarised below.
 - The Market Survey data and the CTF data held by the Secretariat (2010 – mid-2024) were cross-verified. Overall, there was a high (97.46%) matching of readable tag numbers in the market data against the CTF tag data. This suggests that the large weight discrepancies observed were not a result of incorrectly matched fish.
 - The coverage of the Japanese Market Survey data relative to the total CTF data in 2023 (the most recent year in which the fishing season ended) was relatively high for Korea at 3.05%, but other Members showed a large coverage decrease or zero observation.
 - It may require careful consideration whether the data obtained from the Market Survey is representative enough to be used in assessing the accuracy and identifying compliance trends in the CDS of all Members' stakeholders.
 - Verification of reported catch by Members with CDS data and CDS Tag Survey data obtained from the Japanese market was conducted. Following the recommendation by CC16, outliers (over $\pm 20\%$ weight difference) are excluded from the dataset for analysis. As a large part of matched records (approximately 84%) fall within the $\pm 5\%$ Weight Difference range, it could be qualitatively stated that the catches reported by Members through the CTF are reasonably accurate.



Comparison between weight data from the Market Survey (kg, horizontal axis) and from CTF data (kg, vertical axis). Each bubble in the bubble plot represents the number of records within 5kg bin (i.e. the higher the count, the larger the bubble). Black dotted line indicates 1:1. Note: the scale of bubble size is not the same between graphs as it is relative to total sample size for each Member.

Distribution of Southern Bluefin Tuna in Japanese and Global markets

The Extended Commission (EC) of CCSBT held in October 2023 analysed the overall situation of Southern Bluefin Tuna (SBT) market as follows.

1. Global Distribution of SBT

<General situation>

According to the information obtained from the Catch Document scheme (CDS), the total amount of SBT that entered Japan's market in 2023 was 16,153 tons. This accounts for 87.22 % of all SBT caught or harvested by all CCSBT Members (18,519 tons) in 2023. The proportion of SBT entering Japan decreased by 0.25 % from the previous calendar year.

	SBT entered into Japan (t)	Proportion of SBT sold in Japanese markets (%) against all SBT caught/harvested by all CCSBT Members
2023	16,153.09	87.22%
2022	14,821.65	87.47%
2021	15,987.24	88.91%
2020	15,998.06	89.57%

*Data source: CDS

2. Distribution of SBT in Japanese Market

<General situation>

All the SBTs caught by Japanese vessels were landed in Japan in 2023. The SBTs were all frozen, and the amount was 6,335 tons according to the information obtained from CDS. The amount increased by 7.6 % from the previous year. The amount of SBT imported into the Japanese market in the year 2023 is shown below by product type and by exporting Member. In addition, the amount of import of farmed SBT, and the proportion of SBT traded in major markets (Toyosu and Yaizu) are also shown below.

a) Proportion of SBT imported into Japan by product type (2023)

Product Type	Proportions (%)
Fresh Wild	11.66%
Fresh Farmed	58.10%
Frozen Wild	15.32%
Frozen Farmed	14.93%
Total	100.00%

*Data source: CDS

b) SBTs imported into Japan by exporting Member (2023)

Exporting Member	The amount of imported SBTs (t)
Australia	7,949.49
Indonesia	34.46
Korea	1,081.29
New Zealand	687.76
South Africa	9.82
Taiwan	518.90

*Data source: CDS

c) Imported SBTs farmed in Australia

<General Situation>

In 2023, based on CDS, the total amount of SBT farmed in Australia and exported to Japan was 7,602 tons, and increased by 8.7 % from the previous year.

d) Proportion of SBTs traded in major markets in Japan (2023)

<General Situation>

In 2023, the proportion of SBTs traded in two major markets in Japan, Toyosu (Tokyo) and Yaizu (Shizuoka), among the total amount of SBTs entered Japan was 39.54 % and decreased by 1.78 % from the previous year. Please note that the transaction of a SBT that entered Japan in a particular year does not always occur in the same year.

*Data source: CDS data, Statistics of Tokyo Central wholesale market, and Yaizu Fisheries Cooperative Association.

3. Conclusion from comparison and verification between TAC, catch and distribution

- a) Analyses of the available information on the catch by all Members, including CDS data, have detected no over-catch from allocation or TAC in the 2023 fishing season. (From existing analysis; Attachment B of CCSBT-CC/2410/04).
- b) Verification of CDS data, trade statistics, surveys regarding the Japanese market and other data sets indicates no remarkable discrepancy between such data in relation to the distribution of SBT in the Japanese market in 2023, taking into account elements such as the time lag between catch and import/landing.

4. Future actions

EC recommends that the analyses of the distribution of Southern Bluefin Tuna in Japanese and Global markets be continued next year.