DRAFT REPORT ON THE REVIEW OF RE-ESTIMATION METHODOLOGY OF INDONESIA'S ANNUAL TUNA CATCH DATA IN IOTC FOR 2017-2019

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Contents

Tables

Figures

EXECUTIVE SUMMARY

There is a discrepancy of Indonesian catches data between those recorded in the Indonesian National Report and those presented in the IOTC datasets.

In the 25th Session of the Indian Ocean Tuna Commission and Associated Meetings, there were two proposals on the Interim Plan for Rebuilding Yellowfin Tuna in the IOTC Area of Competence submitted by the EU and Maldives, respectively. The Commission agreed that the Maldives proposal was used as a basis for discussion. The proposal used the IOTC dataset which is a catch re-estimation carried out by the IOTC Secretariat on behalf of the Scientific Committee.

In the case of YFT, the IOTC Secretariat's re-estimated data is some 40% less than Indonesia's reported 1RC data and is disputed by Indonesia. If this re-estimated data were to be used as the basis for catch reductions this would have a significant negative impact on livelihoods in Indonesia's small-scale and artisanal fisheries.

Indonesia requests the IOTC not to re-estimate the catches officially submitted to the IOTC for years prior 2017 and proposes to apply re-estimation methodology of Indonesia's annual tuna catch data for 2017-2019 as proposed here. In conclusion, the estimated catches which officially submitted to the IOTC for years prior 2017 as well as the new re-estimation of Indonesia's annual tuna catch data for 2017-2019 shall be used for any purposes of the commission.

1. Purpose of this paper

This paper is presented to support Indonesia's objection on the use of re-estimated data by the Secretariat for data catches officially submitted to the IOTC for years prior 2017 and proposes re-estimation methodology of Indonesia's annual tuna catch data for 2017-2019.

2. Background

Relevant information related to the background of the development of re-estimation methodology of Indonesia's annual tuna catch data for 2017-2019 quoted from the reports below:

The report of 20th working party on tropical tunas (WPTT20)

1. The WPTT NOTED the large increase in the Indonesian yellowfin tuna catch and queried whether this may be a result of error in data entry or reporting. Indonesia clarified that data verification was needed and an update on this would be included in their national report to SC21.
2. The WPTT NOTED that it may be beneficial to include a sensitivity run in the yellowfin tuna stock assessment that investigates the potential bias due to the uncertainties in the catch estimates, which would enable comparison of results with the standard approach that uses the reconstructed catch histories estimated by the IOTC Secretariat. The WPTT further NOTED that this approach was not undertaken during the 2018 yellowfin tuna assessment. The WPTT NOTED that such an approach may require additional calculations.

The report of 14th working party on data collection and statistics (WPDCS14)

1. The WPDCS NOTED the changes to the IOTC Secretariat's methodology in terms of revisions to the estimation of average catches and the species composition of Indonesia's fresh longline catches, and the range of data sources used to validate the new estimates, including:
   a. The 2013 Fishing Capacity report, published by the IOTC Secretariat;
   b. Comparisons with the species composition of catches from port sampling conducted by the Research Institute of Tuna Fisheries in Benoa, one of the main landing sites for Indonesia's fresh longline fleets.
   c. Validation of longline observer trips reports submitted by Indonesia.
   d. Comparisons of average catches of vessels unloading in Benoa.
2. The WPDCS ACKNOWLEDGED the work of the IOTC Secretariat to develop and improve current estimates of catches of Indonesia's fresh longline fleet. RECOGNIZING the need for the Secretariat to report a single nominal catch series for each CPC prior to the IOTC Working Parties, the WPDCS AGREED that the catch series provided by the Secretariat is likely the best available information on Indonesian fresh longline catches at present and REQUESTED that the possibility of revisions for years prior to 2014 be explored in order to ensure consistency in the catch trends over the longer time period.

3. The WPDCS ENDORSED the current methodology developed by the Secretariat to produce the new catch series for scientific use and REQUESTED that this methodology be subject to frequent review so as to provide the best available information, given the on-going uncertainties with the quality of Indonesia's official statistics.

The report of the 21st Session of the IOTC Scientific Committee (SC21)

1. The SC noted that a recent update to official figures for Indonesia nominal catches for 2017 has been received in November 2018 and is in the process of being assessed by the Secretariat. Also, the SC noted that time-area information are included by Indonesia in its national report, but that these same data is not yet submitted to the Secretariat in accordance with Resolution 15/02. Indonesia noted that it is making efforts to comply with Resolution 15/02 and that these data will be provided as soon as possible. The SC **NOTED** that the significant decline in catches reported at the Port of Benoa in 2017 could be explained by a reduction in effort due to an issue with allocating fishing permits to fishers. In response to a query around the large increase in swordfish catches since 2012, the SC noted that the Secretariat has revised its catch reconstruction for the Indonesian fresh longline fishery, and that the detected increase has been corrected resulting in higher confidence around the data in recent years (while ongoing uncertainties still remain with historical catches).
2. The SC noted that there are apparent discrepancies in the IOTC database (as this is disseminated through the IOTC website) and the catch levels in 2017 and previous years for tropical tuna species as reported during the WPTT20. The SC **ACKNOWLEDGED** that this difference was due to the need to provide two distinct nominal catch series to account for the ongoing re-estimation of Indonesian fresh-tuna longline catches, that the method to produce these revised best scientific estimates for the time series has been endorsed during the last WPDCS and that therefore these apparent discrepancies will soon disappear.
3. The SC noted the IOTC Secretariat has re-estimated the catches for Indonesia's fresh longline fleet and provided the WPB16 meeting with an alternative catch series (IOTC–2018–WPB16–DATA03b). The total catches mostly affect catches of swordfish, blue marlin, and striped marlin to a lesser extent, which have been revised downwards by as much as 30%. The SC further noted that these estimates have been reviewed by WPDCS14.

The 25th session of the Indian Ocean Tuna Commission

Indonesia'concerns in the 25th Session of the Indian Ocean Tuna Commission and Associated Meetings are as follow:

- There were two proposals on the Interim Plan for Rebuilding Yellowfin Tuna in the IOTC Area of Competence submitted by the EU and Maldives, respectively. The Commission agreed that the Maldives proposal was used as a basis for discussion.
- The proposal used the IOTC data set which is a catch re-estimation carried out by the IOTC Secretariat.
- Regardless of the data source, the proposal proposed reducing YFT catches for developing coastal states that catch YFT >5,000 tons (in 2014) including Indonesia by 12%.

- The data re-estimation process carried out by the IOTC Secretariat on YFT catch data reported by Indonesia reduced the catch in 2014 by 45,122 tons to 25,275 tons. So that the catch limit obtained by Indonesia when using the IOTC data set will decrease by 44% from 39,707 tons to 22,242 tons.
- Indonesia in principle supports the yellowfin tuna re-building measure, as stated at S25. However, the use of catch re-estimation caused Indonesia to raise an objection.

YFT objection letter from Indonesia described as follow:

- As shown during the 25th Session, Indonesia was abiding similar views as all other CPCs to support and agree on rebuilding Yellow Fish Tuna (YFT) stock through an interim plan, ensuring sustainability, and accelerating this high-value and economic resource recovery, particularly for developing coastal states, SIDS, and territory.
- Therefore, as a member of IOTC, Indonesia reiterates our commitment to fully comply with conservation and management measures, including catch data submission. Indonesia is open and welcome any inquiry for further consultations. In regard to this matter, we have been engaged in various intersessional discussions with CPCs and consulted with the IOTC Secretariat to explore a possible way forward on crucial matters, especially the data discrepancy issue.
- However, as a member of IOTC attending the 25th Session of IOTC, Indonesia has raised an objection to the reference used for the catch adjustment and how that proposal would negatively impact small-scale and artisanal fisheries. Indonesia consistently calls the full compliance of Agreement for the Establishment of the Indian Ocean Tuna Commission (the Agreement) and reiterate that using re-estimated data as the basis of adjustment of the catch is clearly lacks a legal basis and is tantamount to upset the agreement. By all means, the use of official reported catch is critical and uncompromisable.
- Based on Paragraph 1 Article XI, the Commission shall decide the scope and form of the statistics for the purposes of the Agreement. Therefore, the use of re-estimated data by the Secretariat without prior consultation with members of the commissions, including Indonesia is highly regrettable.
- Having said the above, the use of re-estimated data by the Secretariat will consequently reduce our catch limit significantly by more than 40% compared to Resolution 19/01. It will threaten the livelihood of our small-scale and artisanal fisheries. The decision on using the re-estimated data has strongly urged Indonesia to express our disappointment and compelled Indonesia to take the necessary action by declaring an objection to the adoption of the Interim Plan.
- The government of Indonesia sees the urgent need to exercise our right establishes under Article IX (5) to object to the adoption of the interim plan. Hence any implementation of the resolution on an Interim Plan for Rebuilding the Indian Ocean Yellowfin Tuna Stock in the IOTC Area of Competence adopted at the 25th Session of the IOTC shall not apply to Indonesia.

The report of 1st Indonesian tuna fisheries data workshop

1. An *ad-hoc* technical workshop on the status of Indonesian tuna fisheries data at IOTC was held online on the 25th, 27th and 28th May 2021, to to provide update and ongoing work

on data collection an d improvement and how they may use in revising the re-estimation of Indonesia's official catches (performed in agreement with the IOTC Scientific Committee) and the current rationale for continuing to estimate the species composition of Indonesia's total catches, in particular related to the use of re-estimated data by the IOTC will consequently reduce Indonesia's YFT catch limit significantly by more than 40% compared to Resolution 19/01. This workshop was attended by the IOTC Secretariat, the Ministry of Marine Affairs of Indonesia along with support of the International Pole and line Foundation (IPNLF)

2. Indonesia (IDN) **INDICATED** that they currently lack of understanding of the methodology used to re-estimate Indonesia's official catches by the IOTC Secretariat and that they would like to understand the current discrepancies observed between the reported information (through Forms 1-RC) and the published information (IOTC best scientific estimates) since this among other things may affect the catch limit of YFT for Indonesian fisheries (IOTC Res. 19/01), with potentially major negative consequences on Indonesian fishers and livelihoods.
3. IPNLF **STATED** that it is essential to understand the current methodology used for species and gear assignment to reconcile the catch data sources and address the gap between the position of IDN and the Secretariat with regards to catches of YFT, the extent to which the current estimation methodology was reviewed over time and when, and focus the discussions on the period 2018-2019.
4. The IOTC Secretariat **NOTED** that a key question of the workshop is in first place to understand *why* the IOTC Scientific Committee requested the Secretariat to re-estimate IDN catch data, **RECALLING** that the estimation procedure has been developed from the early 2000s and revised through time in collaboration with IDN, and that it also concerns fisheries from other CPCs.
5. The IOTC Secretariat **INDICATED** their interest in better understanding the data collection and validation systems in place for IDN tuna fisheries data, and provide IDN with more clarity on the origins and methods applied for the catch data re-estimation, with the objective of helping IDN clarify whether a revision of the estimation process should be discussed and presented at the next WPDCS and SC.
6. The IOTC Secretariat **RECALLED** that the methodology used for validating and re-estimating the IDN's official data has been periodically reviewed, and was last refined in 2018 (specifically, for the component relating to IDN fresh longline fisheries) as a consequence of the issues emerging from the re-estimated catch trends due to the uncertainty in the number of IDN's active fishing vessels, sampling coverage, and species composition in the catch.
7. FAO **INDICATED** that they also expected this meeting to clarify some of the inconsistencies and sharp fluctuations in IDN's official capture fisheries statistics submitted via FAO's NS-1 questionnaire, particularly since 2017 and the implementation of the One Data, and agree with IDN on the way forward to ensure transparency and a common understanding of the main data issues.

8. Conclusions and future activities

- The WS **NOTED** the recent progress accomplished by IDN through the One Data program, with accurate information now acquired through Electronic Reporting Systems (ERS) and fishing positions validated with VMS, **ACKNOWLEDGING** that delays in data submission for the reference year 2020 are expected to occur due to the COVID-19 pandemic.
- The WS **AGREED** on the need for the IOTC Secretariat to improve information and feedback provided to the CPCs, especially when some re-estimation of the data are performed.
- The WS **AGREED** that new technical workshops specifically dealing with IDN tuna fisheries catch data should be conveyed to review and assess the available information and update the methodology used for generating the best scientific estimates to be used for stock assessment and management purposes.

The report of 2nd Indonesian tuna fisheries data workshop

1. The 2nd Indonesian tuna fisheries data workshop was held online on the 20th and 21st September 2021 as a follow up one of the recommendations of the 1st workshop. The workshop was to discuss the re-estimation methodology of Indonesia's annual tuna catch for 2017-2019 proposed by Indonesia.
2. The IOTC Secretariat INDICATED their acknowledgement on the proposed re-estimation methodology of Indonesia's annual tuna catch for 2017-2019 with some corrections and SUGGESTED Indonesia to present the paper of re-estimation methodology in the 17th working party on data collection and statistics (WPDCS).
3. The chair of Scientific Committee SUGGESTED to Indonesia to add some additional information regarding the data sources that is used in the proposed re-estimation methodology, such as coverage level of logbook.

3. The impact of data discrepancies on catch limit of YFT for Indonesia

The data re-estimation process carried out by the IOTC Secretariat on YFT catch data reported by Indonesia reduced the catch in 2014 by 45,122 tons to 25,275 tons. So that the catch limit obtained by Indonesia when using the IOTC data set will decrease by 44% from 39,707 tons to 22,242 tons, described as in the table below :

Data Source	Catch of 2014	YFT Rebuilding-Catch limit (12% Reduction)
Form 1 RC (Tonnes)	45.122	39.707
IOTC Data Set (Tonnes)	25.275	22.242
Gap (Tonnes)	19.847	17.465
Gap percentage (%)	**43,99**	**43,99**

Note:

- Form 1RC = Estimated catch data officially reported to IOTC
- IOTC Data Set = Catch data (Form 1 RC) re-estimated by the IOTC Secretariat

As stated above, the use of re-estimated data by the Secretariat will consequently reduce our catch limit significantly by more than 40% compared to Resolution 19/01. It will threaten the livelihood of our small-scale and artisanal fisheries. The number of fisherman for each fleet category as in the table below:

FLEET	NUMBER OF FISHERMAN	
	2019	2020*
TOTAL	**672350**	**680174**
ARTISANAL (< 30 GT)	**643642**	**655451**
Small Longline/LLCO	8718	7374
Tuna Handline/HL	82062	101360
Troll Line/TL	17648	15421
Gillnet/GI	121520	155358
Small Purse Seines/PSSS	37385	39180
Pole and Line/PL	7202	2091
Others	369107	334667
INDUSTRIAL (> 30 GT)	**28708**	**24723**
Tuna Longline/LLTU	366	972
Handline/HL	27	133
Troll Line/TL	1	5
Gillnet/GI	75	1188
Tuna Purse Seine/PS	26361	17496
Pole and Line/PL	0	210
Others	1878	4719

Note: *) Provisional numbers

3.1. Indonesia's annual tuna catch estimates prior 2017

Since 2010, Indonesia has been submitting the official annual tuna catch to the IOTC Secretariat through form 1RC. The 2010-2016 data was accepted as official data, the same as published by FAO, as shown in the table below:

NS1-Form for reporting statistics on capture production of fish, crustaceans, molluscs, etc., by species items and major fishing areas

COUNTRY NAME	INDONESIAN NAME	FAO ENGLISH NAME	FISHING AREA CODE	UNIT	2010	2011	2012	2013	2014	2015	2016
Indonesia	Tenggiri	Narrow-barred Spanish mackerel	57	t	22577	25936	30553	34061	32016	30297	25355
Indonesia	Tenggiri Papan	Indo-Pacific king mackerel	57	t	11632	8853	7389	6004	8205	7833	9208
Indonesia	Tongkol Krai	Frigate tuna	57	t	51889	64066	71118	73044	46690	70705	77206
Indonesia	Lisong	Bullet tuna	57	t	3505	6203	12131	23386	27934	13429	6724
Indonesia	Tongkol Komo	Kawakawa	57	t	60385	50791	50510	38747	43511	40547	34511
Indonesia	Cakalang	Skipjack tuna	57	t	68466	84601	87333	94437	72088	80938	72206
Indonesia	Tongkol Abu-abu	Longtail tuna	57	t	24088	38585	26658	23645	20901	25757	21451
Indonesia	Albakora	Albacore	57	t	12504	11483	11028	6095	6973	7301	7177
Indonesia	Madidihang	Yellowfin tuna	57	t	47926	38511	38533	61380	45122	40571	36799
Indonesia	Tuna Mata Besar	Bigeye tuna	57	t	25296	26859	32540	35505	32412	18665	22135
Indonesia	Setuhuk Biru	Blue marlin	57	t	320	127	489	653	765	1032	1440
Indonesia	Setuhuk Hitam	Black marlin	57	t	9747	6363	4317	5197	4839	3466	3123
Indonesia	Setuhuk Loreng	Striped marlin	57	t	393	423	580	745	1190	983	657

Source: questionnaire submitted to the FAO in 2016

the official Indonesian annual tuna catch of 2010-2016 as published by FAO has been used for various purposes by public as well as other institutions.

Based on the IOTC Secretariat's presentation in the 1st Indonesian Tuna Fisheries Data Workshop, there were some collaborating activities between the IOTC Secretariat, relevant institutions and Indonesia Government on the review of Indonesia data collection and reporting procedures have been conducted, as the following:

i. 2011: (1) review of fisheries data collection systems for BOBLME countries, (2) CSIRO-led project on "*Capacity development to monitor, analyse and report on Indonesian tuna fisheries*" (ACIAR).

ii. 2012: pilot project to improve data collection from IO artisanal fisheries (IOTC).
Materials & Methods :
- Several data sources (1950-1991): IPTP, IOTC, etc.
- Catch data reports and sheets from ports and provinces (2003-2011): DGCF, DINAS
- Exclusion of unlikely gear-species combinations

Results:
Time series of artisanal catches by gear and species 1950-2011, using fixed gear / species ratios for ART fisheries

iii. 2013: workshop to evaluate the procedure developed by the IOTC secretariat to estimate IDN albacore catches for 2002-2012 (methodology potentially applicable to other species).
Materials & Methods :
- Different data sources: WCPFC, DGCF, ISSF, IOTC
- Time series of artisanal catches derived from Revision II
- Fishing craft data on the number of deep-freezing longliners (LL)
- TWN LL fishery: proxy for the annual catch rate and composition of IDN LL

Results:
- Time series of IDN deep-freezing longliners, 2002-2011
- Time series of catches of LL fisheries by species/gear, 2002-2011
- Time series of catches of FLL fisheries by species/gear, 2002-2011

Based on the paper prepared by IOTC Secretariat in the WPDCS10, there were some capacity building activities implemented by the IOTC and its partners during 2014 in Indonesia, as the following:

i. Review of data collection and management systems artisanal fisheries of West Sumatra, Indonesia

ii. Data collection Workshop West Sumatra Indonesia
iii. Review of data collection and management systems artisanal fisheries of Bali and East Java, Indonesia
iv. Pilot sampling activities North and West Sumatra, Indonesia

Based on the paper prepared by IOTC Secretariat in the WPDCS11, there were some capacity building activities implemented by the IOTC and its partners during 2015 in Indonesia, as the following:

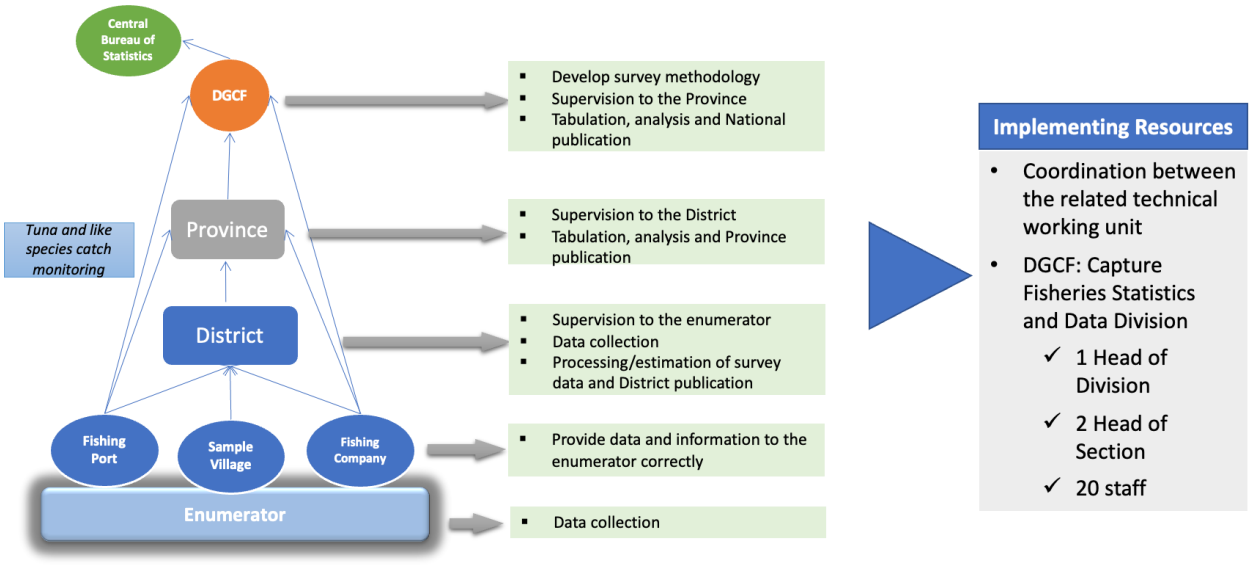
i. Indonesia pilot sampling monitoring activities (North and West Sumatra)
ii. Technical assistance mission: reporting of catch- and-effort, size data and Regional Observer data (Jakarta)
iii. Indonesia pilot sampling: project evaluation and catch estimation workshop (Jakarta)

Based on the paper prepared by IOTC Secretariat in the WPDCS12, there were some capacity building activities implemented by the IOTC and its partners during 2016 in Indonesia, as the following:

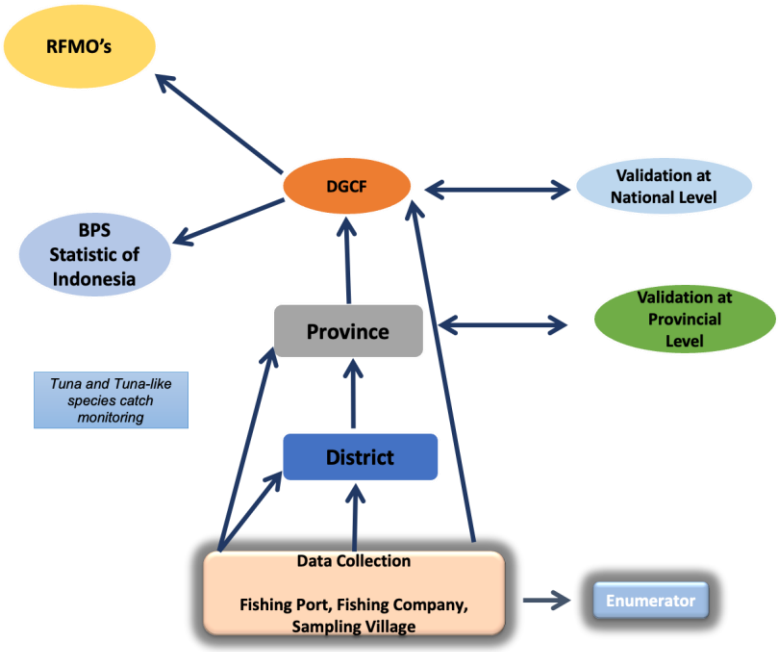
i. Continuation of support for the IOTC/OFCF/BOBLME pilot sampling of artisanal fisheries.
ii. Data compliance mission to facilitate the reporting of catch-and-effort and size data from industrial longline fleet.

As the follow up of the coordination activities above, Indonesia has submitted revised annual catch data for the concern years to the IOTC Secretariat and been acknowledged receipt as a final of Indonesia official catch data.

The data collection of 2010-2016 was conducted through the methodology below:



Before submitting the official catch data of 2010-2016, it has been verified and validated through validation scheme as described below:



4. Proposed Re-estimation Methodology

4.1. Indonesia's re-estimation basis

I. The catch re-estimation based on the result of the re-investigation of all data sources (one data, port sampling, logbook and e-logbook, port landing, observer data, official arrival inspection data) for each gear during the period 2017-2019.

II. Estimation of the total catch by fishing gear using One Data as an official national annual catches.

III. The re-estimation only applied for the catch composition by fishing gear of 2017-2019 of 16 IOTC main mandatory species.

IV. Select the best figure of catch composition from the data sources. The best figure means the catch composition which most represent the actual catch composition for the concern fishing gears, as described for some fishing gears in the tables below:

PS/Tuna Purse Seine/Industrial

SPECIES	LOGBOOK				ONE DATA				NATIONAL OBSERVER				PORT LANDING			
	Catches (%)				Catches (%)				Catches (%)				Catches (%)			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
ALB	0	0,17	0,24	0,05	0,03	0,02	0,00	0,00		20,9	0,0	0,0		0,01	0,07	0,20
YFT	16,95	17,23	9,06	7,99	9,68	8,31	17,45	16,01		0,0	2,8	0,0		7,27	13,38	13,56
BET	9,98	7,10	4,23	4,01	7,89	7,83	0,92	2,78		0,0	10,0	0,0		0,38	1,57	3,78
SKJ	68,72	70,20	76,50	74,34	36,42	21,73	59,83	55,87		34,4	87,3	0,0		31,26	61,73	58,75
SBF	0	0,00	0,00	0,06	0,00	0,00	0,03	0,03		0,0	0,0	0,0		0,00	0,04	0,00
BLT	0,18	0,33	5,59	10,00	12,72	25,08	5,95	6,13		0,0	0,0	0,0		47,32	6,68	9,21
KAW	0,49	1,53	0,56	0,45	9,43	25,93	4,45	4,07		44,7	0,0	0,0		3,39	6,89	3,08
LOT	0,07	0,34	2,25	1,00	4,52	7,19	3,06	8,78		0,0	0,0	0,0		2,73	3,13	3,82
FRI	3,47	2,97	1,25	1,78	17,41	2,42	6,28	4,38		0,0	0,0	100,0		7,37	6,34	7,41
BLM	0	0,05	0,00	0,00	0,42	0,09	0,14	0,10		0,0	0,0	0,0		0,03	0,01	0,01
BUM	0	0,00	0,01	0,01	0,00	0,00	0,00	0,00		0,0	0,0	0,0		0,00	0,00	0,00
SFA	0,01	0,01	0,31	0,17	0,03	0,03	0,05	0,07		0,0	0,0	0,0		0,02	0,01	0,01
MLS	0	0,00	0,00	0,00	0,00	0,00	0,00	0,00		0,0	0,0	0,0		0,00	0,01	0,00
SWO	0,03	0,02	0,00	0,00	0,04	0,25	0,00	0,01		0,0	0,0	0,0		0,01	0,01	0,00
COM	0,07	0,05	0,00	0,12	1,21	0,33	1,26	1,11		0,0	0,0	0,0		0,14	0,10	0,16
GUT	0	0,00	0,00	0,00	0,21	0,80	0,57	0,67		0,0	0,0	0,0		0,07	0,02	0,01

PSSS/Small Purse Seines/Semi-industrial

SPECIES	LOGBOOK				ONE DATA				NATIONAL OBSERVER				PORT LANDING			
	Catches (%)				Catches (%)				Catches (%)				Catches (%)			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
ALB	0	0,02	2,81	0,23		0,03	0,00	0,00		3,4	0,0	0,0		0,00	0,05	0,08
YFT	12,66	0,18	1,04	6,49		14,47	4,48	4,62		0,0	0,0	0,0		3,15	3,92	5,11
BET	0	0,00	0,79	0,52		1,68	2,31	0,67		0,0	0,0	0,0		0,18	0,33	0,58
SKJ	74,13	1,04	20,21	15,11		45,38	18,42	11,73		95,9	86,0	0,0		10,72	20,34	22,32
SBF	0	0,00	0,01	0,02		0,00	0,00	0,22		0,0	0,0	0,0		0,01	0,02	0,00
BLT	5,62	14,61	45,77	46,81		13,00	22,26	30,21		0,0	0,0	0,0		72,10	47,03	49,33
KAW	0	0,14	3,79	1,66		15,18	9,02	8,09		0,7	0,0	83,3		2,34	6,56	6,02
LOT	0,88	0,06	7,82	2,18		3,17	17,45	9,19		0,0	0,0	0,0		3,08	11,17	8,33
FRI	5,65	83,94	13,04	25,96		5,63	18,74	29,45		0,0	14,0	0,0		8,17	10,17	7,90
BLM	0	0,00	0,00	0,00		0,01	0,07	0,09		0,0	0,0	0,0		0,04	0,01	0,01
BUM	0	0,00	0,00	0,00		0,03	0,00	0,00		0,0	0,0	0,0		0,00	0,02	0,00
SFA	0	0,00	4,66	0,58		0,15	0,27	0,14		0,0	0,0	0,0		0,00	0,03	0,00
MLS	0	0,00	0,00	0,00		0,00	0,00	0,00		0,0	0,0	0,0		0,00	0,00	0,00
SWO	0	0,00	0,03	0,04		0,15	0,06	0,00		0,1	0,0	0,0		0,00	0,04	0,00
COM	0	0,00	0,00	0,22		0,14	5,08	4,54		0,0	0,0	16,7		0,09	0,24	0,23
GUT	0	0,00	0,01	0,19		1,00	1,83	1,04		0,0	0,0	0,0		0,11	0,06	0,08

LLTU/Tuna Longline/Industrial

SPESIES	LOGBOOK				PORT SAMPLING				ONE DATA				NATIONAL OBSERVER				PORT LANDING				SCIENTIFIC OBSERVER			
	Catches (%)				Catches (%)				Catches (%)				Catches (%)				Catches (%)				Catches (%)			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
ALB		22,74	29,45	23,33		7,25	12,79	13,05	10,03	7,42	15,40	18,67		0,0		19,7		15,78	17,00	21,65		60,52	48,65	33,03
YFT		31,23	24,55	27,11		16,27	22,79	8,13	33,60	24,14	28,19	29,09		23,4		49,9		29,07	25,50	28,80		5,97	2,71	6,68
BET		20,64	15,22	14,13		17,00	24,50	21,80	43,40	33,21	13,11	14,37		75,4		22,1		23,06	22,96	21,79		9,98	21,98	36,10
SKJ		3,48	6,19	5,00		0,01	0,01	0,07	7,08	21,15	11,77	15,04		0,0		1,1		19,43	17,37	23,06		3,47	2,60	11,55
SBF		2,58	10,96	10,53		57,50	37,30	47,85	5,89	10,22	9,90	7,67		0,0		0,6		3,40	7,82	0,00		10,30	16,35	1,44
BLT		0,00	0,06	0,01		0,00	0,00	0,00	0,00	0,00	0,01	0,01		0,0		0,0		0,00	0,01	0,02		0,00	0,00	0,00
KAW		0,00	0,12	0,01		0,00	0,00	0,00	0,00	0,00	0,28	0,00		0,0		0,0		0,00	0,00	0,00		0,00	0,00	0,00
LOT		0,04	0,34	0,14		0,00	0,00	0,00	0,00	0,00	0,02	0,05		0,0		0,0		0,14	0,05	0,01		0,00	0,00	0,00
FRI		0,05	0,01	0,00		0,00	0,00	0,00	0,00	0,00	0,71	0,00		0,0		0,0		0,07	0,04	0,06		0,00	0,00	0,00
BLM		5,19	2,26	1,00		0,03	0,06	0,35	0,00	0,78	3,46	1,21		0,0		2,9		4,78	2,53	0,80		0,98	1,15	3,43
BUM		0,07	3,15	4,06		0,15	0,08	0,50	0,00	0,12	2,65	2,98		0,0		0,8		0,17	1,96	0,00		2,17	1,56	1,08
SFA		0,82	2,61	1,76		0,19	0,11	0,19	0,00	0,15	2,58	1,39		1,0		0,2		1,39	2,22	1,59		0,54	0,42	0,18
MLS		0,27	0,93	0,49		0,05	0,14	0,40	0,00	0,93	1,68	0,50		0,0		0,5		0,57	1,32	0,00		1,19	0,21	1,44
SWO		11,35	3,62	10,17		1,55	2,22	7,67	0,00	1,65	8,29	6,90		0,2		2,2		2,03	0,78	0,00		4,88	4,38	5,05
COM		1,52	0,00	1,66		0,00	0,00	0,00	0,00	0,19	1,73	2,12		0,0		0,0		0,05	0,27	2,18		0,00	0,00	0,00
GUT		0,03	0,53	0,59		0,00	0,00	0,00	0,00	0,04	0,22	0,00		0,0		0,0		0,05	0,16	0,04		0,00	0,00	0,00

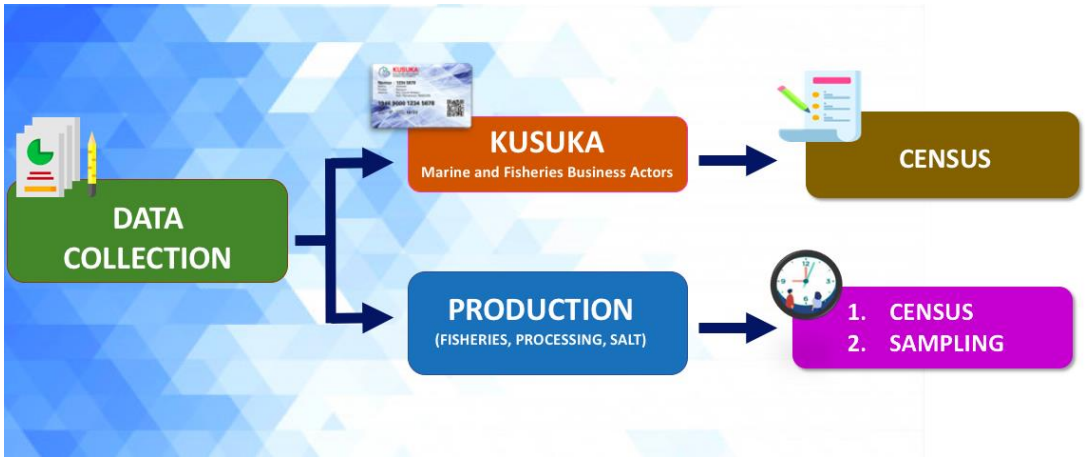
LLCO/Small Longline/Artisanal

SPESIES	LOGBOOK				PORT SAMPLING				ONE DATA				NATIONAL OBSERVER				PORT LANDING				SCIENTIFIC OBSERVER			
	Catches (%)				Catches (%)				Catches (%)				Catches (%)				Catches (%)				Catches (%)			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
ALB		13,89	5,43	7,84		0,00	0,00	0,31	22,32	16,85	9,52	3,87		36,7	0,0			5,77	4,90	6,86		45,33	32,65	
YFT		15,25	21,69	25,26		55,92	29,96	32,32	25,86	30,42	24,25	14,21		44,8	0,0			30,31	18,70	12,31		9,93	34,50	
BET		16,97	15,29	10,49		31,86	43,79	44,51	9,66	8,39	23,67	31,51		13,9	100,0			29,17	39,37	33,09		28,59	6,67	
SKJ		40,30	53,16	51,98		0,00	0,00	0,00	24,90	10,02	7,01	44,37		2,0	0,0			26,78	29,56	46,01		6,96	3,29	
SBF		0,38	0,22	0,28		10,33	22,78	15,65	0,00	0,00	1,21	0,85		0,0	0,0			0,63	2,18	0,00		0,00	0,92	
BLT		0,31	0,40	0,00		0,00	0,00	0,00	0,00	0,02	1,11	0,01		0,0	0,0			0,00	0,02	0,00		0,00	0,00	
KAW		0,21	0,02	0,00		0,00	0,00	0,00	2,53	0,23	7,72	0,03		0,0	0,0			0,00	0,00	0,00		0,00	0,00	
LOT		4,03	1,24	0,07		0,00	0,00	0,00	1,50	2,42	9,75	0,32		0,0	0,0			0,15	0,04	0,02		0,00	0,00	
FRI		0,00	0,06	0,00		0,00	0,00	0,00	0,00	0,03	3,36	1,15		0,0	0,0			0,00	0,00	0,00		0,00	0,00	
BLM		0,09	0,52	0,52		0,10	0,02	0,05	0,01	7,72	2,06	0,38		0,0	0,0			3,14	3,97	0,87		0,44	2,36	
BUM		0,00	0,08	0,10		0,40	0,51	0,55	0,00	0,95	1,81	0,81		0,0	0,0			0,09	0,14	0,00		1,19	1,03	
SFA		0,25	0,53	0,57		0,00	0,00	0,01	0,54	0,74	1,96	0,09		0,7	0,0			0,33	0,27	0,43		0,30	6,16	
MLS		0,20	0,30	0,01		0,00	0,01	0,00	5,14	1,82	1,54	0,02		0,0	0,0			0,22	0,14	0,00		0,15	0,21	
SWO		8,11	1,06	2,51		1,39	2,94	6,60	3,01	15,35	2,36	1,91		1,8	0,0			3,21	0,62	0,00		7,11	12,22	
COM		0,00	0,00	0,24		0,00	0,00	0,00	4,28	5,00	2,62	0,47		0,0	0,0			0,08	0,08	0,43		0,00	0,00	
GUT		0,00	0,00	0,14		0,00	0,00	0,00	0,25	0,05	0,05	0,00		0,0	0,0			0,11	0,01	0,00		0,00	0,00	

4.2. Data sources which used in the verification process of national annual catch data

4.2.1. One Data Program

One Data is a National Program, aimed to provide an integrated data for a more cohesive national planning process. In the beginning of 2017, the MMAF implemented One Data of Marine and Fisheries for the very first time. By late of 2019, the Presidential Decree No. 39 about the National One Data was finally signed, and One Data became a nation-wide Program. Type and method of data collection under the one data program is described in the figure below:

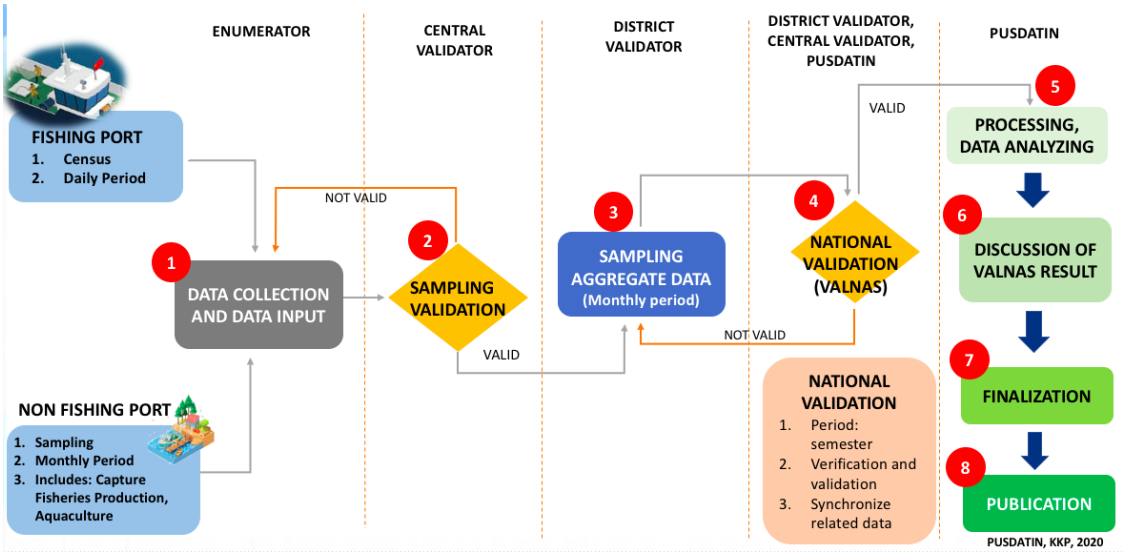


The objective of KUSUKA data collection is Collecting / updating data on marine and fishery business actors (fishermen, fish farmers, fish traders / marketers and fish processors and salt farmers), including data on Fisheries households, facilities and types of activities of all marine and fisheries business actors according to their domicile by census.

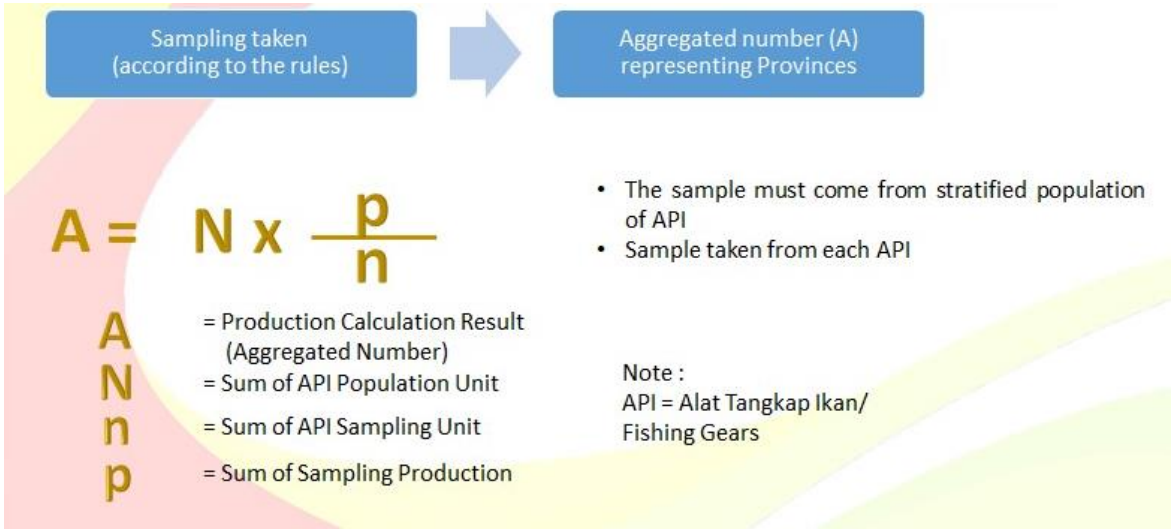
Meanwhile, the objectives of production data collection are 1) Collecting production data at the fishing port; 2) Collecting sampling data on marine and inland capture fisheries production, aquaculture production, fish processing production and salt production; 3) As a basis for estimating district / city level to aggregate production figures.

The methodology of production data collection are described below:

1. Census for fishing port (daily)
2. Sampling, randomly selected from each population stratification in each district / city (monthly)
3. Recall where the respondent was interviewed regarding fishing activities carried out in the last month



Fisheries Production Data Collection



Aggregated Number Population

Gear Type	Species	Species Code	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gillnet (GI)	Albacore	ALB	95	-	-	965	20	-	97	80	0
	Bigeye tuna	BET	2.493	430	341	938	729	0	1.139	1.340	1.498
	Skipjack tuna	SKJ	10.183	4.394	3.434	7.652	12.892	2.783	6.738	10.079	6.954
	Yellowfin tuna	YFT	1.353	617	445	1.241	2.912	1.161	1.603	3.726	3.248
	Total		**14.124**	**5.441**	**4.220**	**10.796**	**16.553**	**3.943**	**9.577**	**15.225**	**11.700**
Line	Albacore	ALB	2.975	3	9	1.179	860	566	697	1.011	1.085
	Bigeye tuna	BET	6.609	6.533	5.175	1.908	2.872	4.058	4.464	5.730	6.426
	Skipjack tuna	SKJ	22.928	32.161	25.131	19.474	16.964	31.834	25.304	38.432	38.156
	Yellowfin tuna	YFT	11.179	18.681	13.465	9.645	9.276	9.034	8.928	11.294	14.818
	Total		**43.691**	**57.378**	**43.780**	**32.206**	**29.972**	**45.492**	**39.393**	**56.467**	**60.484**
Longline (LL)	Albacore	ALB	7.631	6.021	8.539	4.488	6.278	6.399	4.689	1.754	4.005
	Bigeye tuna	BET	11.150	15.037	16.197	7.919	7.642	8.302	5.474	4.634	5.390
	Skipjack tuna	SKJ	8.943	9.517	5.729	4.763	2.281	6.555	4.568	2.102	6.092
	Yellowfin tuna	YFT	11.222	16.325	12.645	10.549	10.404	10.527	9.610	4.261	5.656
	Total		**38.946**	**46.900**	**43.110**	**27.719**	**26.605**	**31.785**	**24.340**	**12.751**	**21.143**
Others (OTH)	Albacore	ALB	229	1	3	662	3	-	96	81	9
	Bigeye tuna	BET	2.751	1.493	1.183	2.121	1.692	140	3.408	872	3.688
	Skipjack tuna	SKJ	14.090	14.494	11.326	30.452	11.394	86	12.782	14.464	17.466
	Yellowfin tuna	YFT	3.003	5.528	3.985	10.773	3.107	7.593	7.824	5.814	4.883
	Total		**20.073**	**21.516**	**16.497**	**44.008**	**16.196**	**7.819**	**24.111**	**21.231**	**26.047**
Purse Seine (PS)	Albacore	ALB	98	70	199	7	18	29	25	0	0
	Bigeye tuna	BET	9.537	12.012	9.516	5.779	9.199	9.445	5.919	1.404	4.554
	Skipjack tuna	SKJ	31.190	33.871	26.468	18.597	28.828	55.614	35.885	63.034	65.787
	Yellowfin tuna	YFT	11.776	20.229	14.582	8.363	10.786	11.598	12.342	16.388	15.866
	Total		**52.601**	**66.182**	**50.765**	**32.746**	**48.831**	**76.686**	**54.170**	**80.826**	**86.207**
All Gear	Albacore	ALB	11.028	6.095	8.750	7.301	7.179	6.994	5.604	2.926	5.099
	Bigeye tuna	BET	32.540	35.505	32.412	18.665	22.134	21.945	20.404	13.981	21.556
	Skipjack tuna	SKJ	87.334	94.437	72.088	80.938	72.359	96.872	85.277	128.110	134.455
	Yellowfin tuna	YFT	38.533	61.380	45.122	40.571	36.485	39.913	40.306	41.483	44.471
Grand Total			**169435**	**197.417**	**158.372**	**147.475**	**138.157**	**165.725**	**151.592**	**186.500**	**205.582**

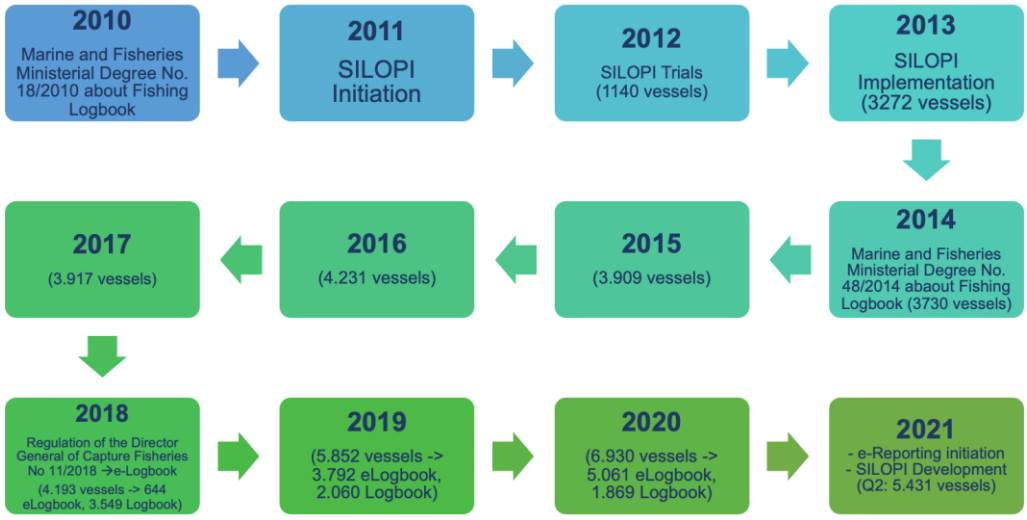
Series of Annual Nominal Catch

4.2.2 Fishing Logbook

Fishing Logbook Regulations

- Law No. 11/2020 on Job Creation and Law No. 45/2009 on Fisheries;
- Marine and Fisheries Ministerial Decree No. 33/2021 about Fishing Logbook, Onboard Observer, Vessel Inspection, Testing, and Marking, and Fishing Vessel Crew Management. Fishing vessels above 5 (five) GT must be equipped with a fishing logbook (using eLogbook);
  i. Fishing vessels up to 5 (five) GT must be equipped with a simplified fishing logbook;
  ii. The simplified logbook filling process can be carried out on a fishing vessel or on land after landing the fish, then submitted to the harbormaster at the fishing port, the fishing logbook officer, the fishing port authority, or the fishermen center authority;
  iii. Simplified Filling of Fishing Logbook data includes basic Gear information, Number and Type of Catch Fish, and Fishing Location (Grid Area); and
  iv. Explain the data flow starting from device preparation for the eLogbook application to the analysis and reporting process to MKP once a year.
- Marine and Fisheries Ministerial Decree No. 10/2021 about Standards for Business Activities and Products in the Implementation of Risk-Based Business Licensing for the Marine and Fisheries Sector;
- CMM RFMO IOTC, Resolution IOTC 15/01, 15/02, 15/08 and Ecological Related Species (ERS).

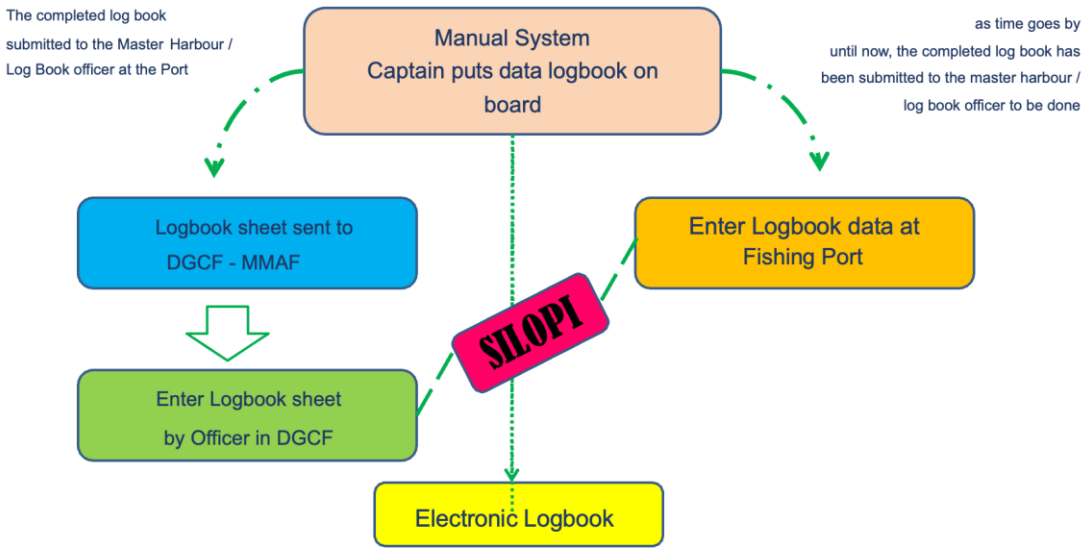
Fishing Logbook Implementation



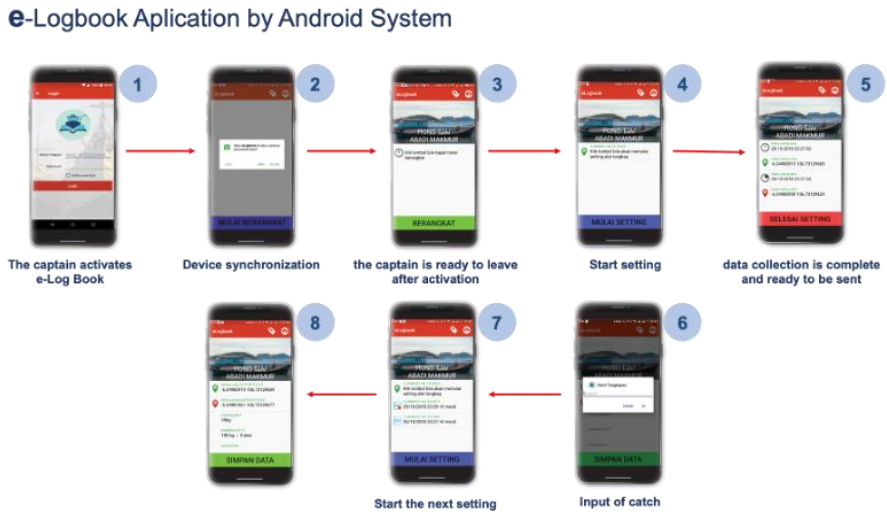
SILOPI: Fishing Logbook Information System (App)

Fishing log book is an obligation for fishing vessel with size of 5 GT or more. While, Fishing boats with size less than 5 GT use simplified fishing log book. It is designed for the small-scale fishers in remote areas.

Fishing Logbook Mechanism



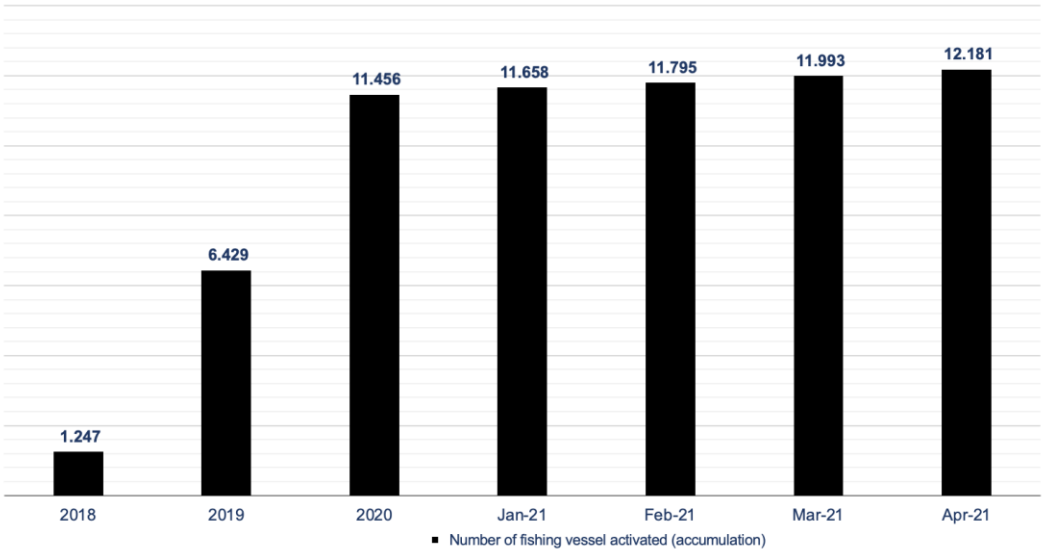
Electronic Fishing Logbook



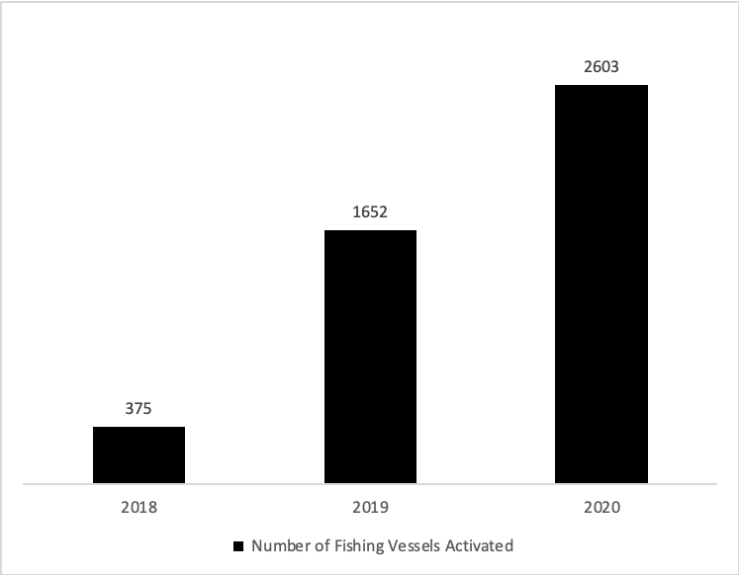
The advantages of electronic fishing logbook described as follow:

a. Much simpler than paper since the fishers just need to click the button and the app will automatically records the time and location of departure, setting, hauling, and landing site;
b. Improves the accuracy the information of fishing ground because the app uses GPS embedded in the smartphone; and
c. Improves the quality of data on catch per setting due to the simple way of reporting

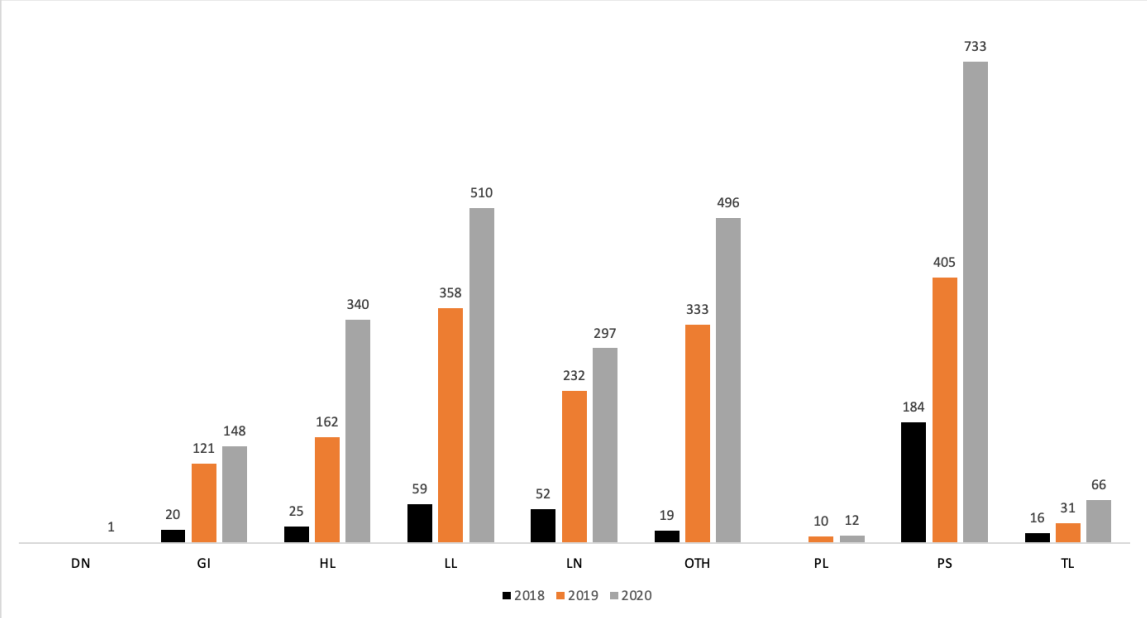
Number of Active Fishing Vessels registered in ELogbook



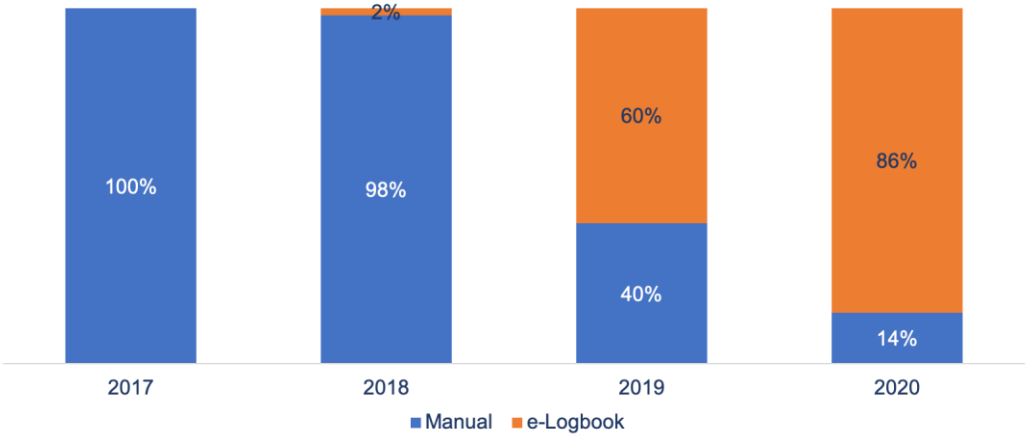
Number of Active Fishing Vessels registered in e-Logbook in IOTC area



Number of Active Fishing Vessels registered in e-Logbook for each Fishery in IOTC area



Reporting Method Composition



Note: Change in reporting rate from Manual and E-Logbooks

4.2.3. Port Landing (PIPP/Fishing Port Information Center)

In the ease and completeness of presenting data in a certain format and easily accessible to the public as well as the need for policy analysis, it is necessary to digitize the data. For this reason, the Ministry of Marine Affairs and Fisheries encouraged digital-based data collection, one of which is the Fishing Port Information Center (PIPP).

The fishing port information center is an information system that includes the collection, management, analysis, storage, presentation, and dissemination of fishing port data and information. It was built in 2019. Data and information on fishing ports are used to support the operations of fishing ports, improve information services to the public, and support the formulation of policies in the fishing port sector.

PIPP covers data and information of fishing port facilities, daily, monthly, and annual operational data of fishing ports, which contain the frequency of vessel's arrival, fish production and prices, fishing gear, logistics, marketing, and labor in the form of daily data that can be accumulated in the form of monthly, quarterly and even yearly.

Based on the Decree of the Minister of Marine Affairs and Fisheries Number 6 of 2018 concerning the National Fishing Port Master Plan, there are 538 fishing ports in Indonesia whose operational data and facilities are expected to be entered in the Fishing Port Information Center (PIPP) digitally that can be easily accessed and processed into the update and valid information for the development of capture fisheries, especially in fishing ports. There are 205 fishing ports which joined in the PIPP. The PIPP website can be accessed on the www.pipp.djpt.kkp.go.id page.
In 2019, the number of fishing ports which applied PIPP was 149 fishing ports, while in 2020 was 192 fishing ports and it continues increasing in 2021 as many as 205 fishing ports. The number of fishing vessels recorded in 2019 was 13,698 with size less than 30 GT and 2,944 with size above 30 GT. In 2020 , there were 14,679 vessels with size less than 30 GT and 3,218 vessels with size above 30 GT, while in 2021 (January-August) there were 14,571 vessels with size less than 30 GT and 3,016 vessels with size above 30 GT.

4.3. The re-estimations of Indonesia's annual tuna catch data in IOTC for 2017-2020

Having had re-investigation of all data sources (one data, port sampling, logbook and e-logbook, port landing, observer data, official arrival inspection data) for each gear during the period 2017-2019, there was some update information regarding catch composition for 2017-2019 data. Therefore we would like to re-estimate the Indonesia annual tuna catch composition for 2017-2019. We select the best figure of catch composition from the data sources. The re-estimation only applied for the catch composition by fishing gear of 2017-2019 of 16 IOTC main mandatory species. Meanwhile, the estimation of the total catch by fishing gear using One Data as an official national annual catches.

4.3.1. PS/Tuna Purse Seine/Industrial

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010										
2011										
2012										
2013										
2014										
2015										
2016										
2017	101	0,1	12071	10,1	9959	8,3	91085	76,1	0	0,0
2018	111	0,2	11264	17,2	4642	7,1	45877	70,2	0	0,0
2019	211	0,2	8078	9,1	3780	4,2	68245	76,5	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010								
2011								
2012								
2013								
2014								
2015								
2016								
2017	1214	1,0	597	0,5	190	0,2	4161	3,5
2018	218	0,3	998	1,5	219	0,3	1941	3,0
2019	4986	5,6	496	0,6	2009	2,3	1112	1,2

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010										
2011										
2012										
2013										
2014										
2015										
2016										
2017	30	0,0	0	0,0	216	0,2	0	0,0	35	0,0
2018	32	0,0	0	0,0	9	0,0	0	0,0	11	0,0
2019	4	0,0	7	0,0	274	0,3	0	0,0	3	0,0

Year	Sheerfish			
	COM	%	GUT	%
2010				
2011				
2012				
2013				
2014				
2015				
2016				
2017	79	0,1	0	0,0
2018	34	0,1	0	0,0
2019	0	0,0	4	0,0

Note:

1. In the period of 2010-2016, there was no separation yet between the PS and PSSS. All the purse seines operated during the years been recorded as small purse seines/PSSS.
2. Since 2018, separation of the purse seines based on the size vessel, which was PS categorized as purse seine (industrial) vessel with size above 30 GT.
3. Estimation of the total catch by fishing gear using One Data

4. The catch composition for 2017-2019 using logbook data as the best figure for catch composition of tuna purse seine. The number of PS vessels covered by logbook was 826 units of 1,159 units (71,3%) in 2017, 610 units of 948 units (64,3%) in 2018 and 887 units of 976 units (90,9%) in 2019.

4.3.2. PSSS/Small Purse Seines/Semi-industrial

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	341	0,4	4334	4,9	8226	9,4	22652	25,8	0	0,0
2011	1027	0,9	8737	7,7	7309	6,4	34838	30,7	0	0,0
2012	98	0,1	11776	13,1	9537	10,6	31190	34,8	0	0,0
2013	70	0,1	20229	16,3	12012	9,7	33871	27,2	0	0,0
2014	199	0,2	14582	13,4	9516	8,7	26468	24,3	0	0,0
2015	7	0,0	8363	10,8	5779	7,5	18597	24,1	0	0,0
2016	18	0,0	10786	12,9	9199	11,0	28828	34,5	0	0,0
2017										
2018	9	0,0	87	0,2	0	0,0	12804	26,8	0	0,0
2019	1651	2,8	613	1,0	476	0,8	11879	20,2	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	13040	14,9	24664	28,1	9429	10,8		0,0
2011	21710	19,1	18947	16,7	12669	11,2		0,0
2012	4617	5,1	7553	8,4	3492	3,9	13998	15,6
2013	20369	16,4	12740	10,2	4964	4,0	14050	11,3
2014	24329	22,3	14306	13,1	4388	4,0	8981	8,2
2015	11560	15,0	16449	21,3	3694	4,8	7075	9,2
2016	2550	3,1	12411	14,9	5365	6,4	8879	10,6
2017								
2018	21976	46,0	1433	3,0	2389	5,0	9077	19,0
2019	26897	45,8	2227	3,8	4597	7,8	7663	13,0

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	718	0,8	29	0,0	707	0,8	70	0,1	399	0,5
2011	649	0,6	0	0,0	7	0,0	0	0,0	78	0,1
2012	76	0,1	12	0,0	315	0,4	7	0,0	79	0,1
2013	208	0,2		0,0	84	0,1		0,0	150	0,1
2014	266	0,2		0,0	119	0,1		0,0	134	0,1
2015	83	0,1		0,0	9	0,0		0,0	525	0,7
2016	24	0,0		0,0	62	0,1		0,0	190	0,2
2017										
2018	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2019	0	0,0	0	0,0	2738	4,7	0	0,0	20	0,0

Year	Sheerfish			
	COM	%	GUT	%
2010	2156	2,5	938	1,1
2011	5737	5,1	1697	1,5
2012	5299	5,9	1613	1,8
2013	4856	3,9	701	0,6
2014	4631	4,3	948	0,9
2015	4410	5,7	766	1,0
2016	3278	3,9	1908	2,3
2017				
2018	0	0,0	0	0,0
2019	0	0,0	8	0,0

Note:

1. In 2017, in the transformation process of data collection system into the one data has impacted to the lack of support data in order to separate the purse seines, so that during the year, all purse seines been recorded in one category which was PS
2. Since 2018, separation of the purse seines based on the size vessel, which was PSSS categorized as purse seine vessel with size 30 GT below.
3. Estimation of the total catch by fishing gear using One Data
4. The catch composition for 2017-2019 using logbook data as the best figure for catch composition of small purse seines. The number of PSSS vessels covered by logbook was 106 units of 366 units (28,9%) in 2017, 49 units of 226 units (21,7%) in 2018 and 500 units of 7,749 units (6,5%) in 2019.

4.3.3. LLTU/Tuna Longline/Industrial

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	2549	12,3	7780	37,5	6621	31,9	414	2,0	408	2,0
2011	1910	16,7	2767	24,2	4321	37,8	652	5,7	700	6,1
2012	3710	14,2	6191	23,6	9109	34,8	4088	15,6	910	3,5
2013	4615	12,7	11019	30,4	12542	34,6	2448	6,7	1382	3,8
2014	4550	14,1	8820	27,3	14221	44,1	205	0,6	1063	3,3
2015	3688	18,2	5211	25,8	6484	32,0	385	1,9	593	2,9
2016	1794	11,5	5218	33,4	6095	39,0	551	3,5	601	3,8
2017	3188	22,5	4287	30,3	3674	25,9	212	1,5	770	5,4
2018	2419	22,7	3322	31,2	2195	20,6	370	3,5	1050	9,9
2019	3265	29,5	2722	24,6	1688	15,2	686	6,2	1084	9,8

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	6	0,0	9	0,0	7	0,0	0	0,0
2011	0	0,0	0	0,0	3	0,0	0	0,0
2012	4	0,0	4	0,0	0	0,0	0	0,0
2013	0	0,0	0	0,0	0	0,0	0	0,0
2014	0	0,0	0	0,0	0	0,0	0	0,0
2015	0	0,0	0	0,0	0	0,0	0	0,0
2016	7	0,0	2	0,0	0	0,0	0	0,0
2017	0	0,0	8	0,1	27	0,2	3	0,0
2018	0	0,0	0	0,0	4	0,0	5	0,0
2019	6	0,1	13	0,1	37	0,3	1	0,0

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	266	1,3	34	0,2	850	4,1	246	1,2	1575	7,6
2011	35	0,3	39	0,3	136	1,2	138	1,2	718	6,3
2012	97	0,4	126	0,5	280	1,1	161	0,6	1508	5,8
2013	107	0,3	201	0,6	426	1,2	321	0,9	3214	8,9
2014	241	0,7	315	1,0	226	0,7	370	1,1	2186	6,8
2015	149	0,7	270	1,3	146	0,7	412	2,0	2719	13,4
2016	293	1,9	49	0,3	97	0,6	127	0,8	592	3,8
2017	15	0,1	5	0,0	133	0,9	90	0,6	1584	11,2
2018	164	1,5	7	0,1	87	0,8	28	0,3	820	7,7
2019	251	2,3	350	3,2	289	2,6	103	0,9	401	3,6

Year	Sheerfish			
	COM	%	GUT	%
2010	0	0,0	0	0,0
2011	0	0,0	0	0,0
2012	0	0,0	0	0,0
2013	0	0,0	0	0,0
2014	0	0,0	82	0,3
2015	179	0,9	0	0,0
2016	188	1,2	22	0,1
2017	156	1,1	13	0,1
2018	161	1,5	3	0,0
2019	130	1,2	59	0,5

Note:

1. Since 2017, separation of the tuna longlines based on the size vessel, which was LLTU categorized as tuna longline vessel with size above 30 GT.
2. Estimation of the total catch by fishing gear using One Data
3. The catch composition for 2017-2019 using logbook data as the best figure for catch composition of tuna longline. The number of LLTU vessels covered by logbook was 362 units of 545 units (66,4%) in 2017, 257 units of 257 units (100%) in 2018 and 245 units of 364 units (67,3%) in 2019.

4.3.4. LLCO/Small Longline/Artisanal

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	2956	10,8	6791	24,9	7581	27,8	1049	3,9	66	0,2
2011	6865	22,6	6548	21,5	3885	12,8	3515	11,6	0	0,0
2012	3922	12,7	5032	16,3	2041	6,6	4855	15,7	0	0,0
2013	1406	5,6	5306	21,2	2495	10,0	7069	28,3	0	0,0
2014	3989	16,3	3825	15,7	1976	8,1	5524	22,6	0	0,0
2015	800	5,0	5338	33,6	1435	9,0	4378	27,6	0	0,0
2016	4484	22,6	5186	26,1	1547	7,8	1730	8,7	0	0,0
2017	4056	18,2	3144	14,1	5970	26,8	7001	31,4	65	0,3
2018	1337	5,8	7016	30,3	6752	29,2	6199	26,8	37	0,2
2019	443	4,9	1691	18,7	3559	39,4	2673	29,6	122	1,3

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	1618	5,9	638	2,3	337	1,2	0	0,0
2011	44	0,1	941	3,1	903	3,0	0	0,0
2012	108	0,3	1104	3,6	2562	8,3	1004	3,2
2013	0	0,0	210	0,8	1167	4,7	7	0,0
2014	0	0,0	236	1,0	1032	4,2	4	0,0
2015	1	0,0	88	0,6	1558	9,8	11	0,1
2016	0	0,0	184	0,9	664	3,3	168	0,8
2017	0	0,0	239	1,1	537	2,4	0	0,0
2018	0	0,0	0	0,0	34	0,1	0	0,0
2019	2	0,0	0	0,0	3	0,0	0	0,0

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	2887	10,6	0	0,0	0	0,0	0	0,0	3005	11,0
2011	2615	8,6	1	0,0	195	0,6	51	0,2	3128	10,3
2012	2374	7,7	61	0,2	776	2,5	55	0,2	3189	10,3
2013	2079	8,3	110	0,4	299	1,2	111	0,4	3577	14,3
2014	2659	10,9	196	0,8	423	1,7	215	0,9	3190	13,1
2015	768	4,8	238	1,5	185	1,2	0	0,0	615	3,9
2016	1575	7,9	129	0,7	136	0,7	165	0,8	3572	18,0
2017	2	0,0	4	0,0	71	0,3	147	0,7	1051	4,7
2018	728	3,1	20	0,1	187	0,8	51	0,2	744	3,2
2019	359	4,0	13	0,1	24	0,3	12	0,1	132	1,5

Year	Sheerfish			
	COM	%	GUT	%
2010	314	1,2	2	0,0
2011	1289	4,2	430	1,4
2012	2969	9,6	881	2,8
2013	1135	4,5	50	0,2
2014	1082	4,4	68	0,3
2015	185	1,2	266	1,7
2016	224	1,1	67	0,3
2017	15	0,1	0	0,0
2018	18	0,1	25	0,1
2019	7	0,1	1	0,0

Note:

1. Since 2017, separation of the tuna longlines based on the size vessel, which was LLCO categorized as tuna longline vessel with size 30 GT below.
2. Estimation of the total catch by fishing gear using One Data
3. The catch composition for 2017-2019 using logbook data as the best figure for catch composition of small longline. The number of LLCO vessels covered by logbook was 197 units of 197 units (100%) in 2017, 89 units of 131 units (67,9%) in 2018 and 185 units of 4,566 units (4,1%) in 2019.
4. Since 2019, the trip landing in benoa has been decreasing, meanwhile the number of longline vessels with size 30 GT below was also decreasing
5. Based on the assessment paper on the SWO provided by Indonesia, Indonesia is not SWO national fishing nation, which the SWO catch composition in the range of 0-5%
6. There was changes on fishing strategy, where the surface longline before 2017 targeting SWO

4.3.5. GL/Gillnet/Semi-industrial

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	252	0,4	919	1,5	554	0,9	7704	13,0	0	0,0
2011	152	0,2	3718	4,9	1411	1,9	12755	16,8	0	0,0
2012	95	0,2	1353	2,2	2493	4,1	10183	16,9	0	0,0
2013	0	0,0	617	1,5	430	1,0	4394	10,6	0	0,0
2014	0	0,0	445	1,2	341	0,9	3434	9,5	0	0,0
2015	965	1,6	1241	2,0	938	1,5	7652	12,5	0	0,0
2016	20	0,0	2912	3,8	729	1,0	12892	17,0	0	0,0
2017	0	0,0	1160	2,2	1119	2,1	6023	11,3	0	0,0
2018	97	0,2	1603	3,2	1139	2,2	6738	13,3	0	0,0
2019	80	0,1	3726	5,3	1340	1,9	10079	14,3	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	18048	30,4	15835	26,6	4839	8,1	0	0,0
2011	23066	30,3	10899	14,3	10154	13,4	0	0,0
2012	1881	3,1	15981	26,6	9086	15,1	12522	20,8
2013	863	2,1	6234	15,1	3255	7,9	15176	36,7
2014	1031	2,9	7000	19,5	2877	8,0	9701	27,0
2015	444	0,7	5691	9,3	11774	19,3	13930	22,8
2016	366	0,5	6784	8,9	6546	8,6	29632	39,1
2017	2387	4,5	14431	27,2	5071	9,5	4387	8,3
2018	2680	5,3	10279	20,3	9436	18,6	5008	9,9
2019	1880	2,7	7618	10,8	12330	17,5	17026	24,1

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	1677	2,8	45	0,1	631	1,1	40	0,1	546	0,9
2011	1039	1,4	31	0,0	228	0,3	89	0,1	538	0,7
2012	488	0,8	41	0,1	430	0,7	54	0,1	250	0,4
2013	374	0,9	37	0,1	662	1,6	25	0,1	756	1,8
2014	479	1,3	66	0,2	936	2,6	48	0,1	674	1,9
2015	962	1,6	307	0,5	1011	1,7	213	0,3	653	1,1
2016	670	0,9	476	0,6	301	0,4	128	0,2	1046	1,4
2017	139	0,3	248	0,5	666	1,3	0	0,0	4017	7,6
2018	3272	6,5	8	0,0	730	1,4	1522	3,0	132	0,3
2019	1061	1,5	161	0,2	1146	1,6	378	0,5	111	0,2

Year	Sheerfish			
	COM	%	GUT	%
2010	6144	10,3	2193	3,7
2011	7063	9,3	4871	6,4
2012	3648	6,1	1607	2,7
2013	6436	15,6	2083	5,0
2014	6137	17,1	2818	7,8
2015	12721	20,8	2526	4,1
2016	9072	12,0	4261	5,6
2017	10538	19,8	2949	5,6
2018	4124	8,1	3864	7,6
2019	9405	13,3	4265	6,0

Note:

1. Estimation of the total catch by fishing gear and the catch composition using One Data

4.3.6. HL/Tuna Handline/Artisanal

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	39	0,3	3117	23,3	200	1,5	3373	25,2	0	0,0
2011	39	0,5	1997	24,3	237	2,9	2653	32,2	0	0,0
2012	423	1,9	3634	16,5	218	1,0	5002	22,7	0	0,0
2013	3	0,0	9524	26,7	745	2,1	8167	22,9	0	0,0
2014	9	0,0	6865	22,3	590	1,9	6382	20,7	0	0,0
2015	755	2,6	5145	17,7	1064	3,7	5087	17,5	0	0,0
2016	602	1,4	5655	13,1	1440	3,3	10577	24,5	0	0,0
2017	488	1,0	7663	15,5	2934	5,9	10168	20,6	0	0,0
2018	578	1,5	5254	13,9	1778	4,7	12589	33,3	0	0,0
2019	915	1,5	6756	11,2	1747	2,9	26210	43,4	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	270	2,0	4712	35,2	413	3,1	0	0,0
2011	441	5,4	295	3,6	1337	16,2	0	0,0
2012	502	2,3	2651	12,0	1509	6,8	6316	28,6
2013	34	0,1	5849	16,4	2998	8,4	2722	7,6
2014	41	0,1	6568	21,3	2650	8,6	1740	5,6
2015	146	0,5	4089	14,0	3271	11,2	4303	14,8
2016	3031	7,0	4727	10,9	3921	9,1	4187	9,7
2017	18	0,0	4105	8,3	4277	8,7	5080	10,3
2018	917	2,4	6594	17,4	6495	17,2	760	2,0
2019	2386	3,9	3220	5,3	2897	4,8	5778	9,6

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	3	0,0	0	0,0	67	0,5	14	0,1	105	0,8
2011	0	0,0	0	0,0	678	8,2	23	0,3	28	0,3
2012	15	0,1	0	0,0	0	0,0	7	0,0	56	0,3
2013	131	0,4	5	0,0	212	0,6	203	0,6	26	0,1
2014	168	0,5	9	0,0	301	1,0	392	1,3	23	0,1
2015	1097	3,8	190	0,7	762	2,6	229	0,8	242	0,8
2016	290	0,7	659	1,5	693	1,6	192	0,4	125	0,3
2017	1084	2,2	234	0,5	859	1,7		0,0	971	2,0
2018	627	1,7	245	0,6	145	0,4	159	0,4	4	0,0
2019	2779	4,6	681	1,1	657	1,1	16	0,0	66	0,1

Year	Sheerfish			
	COM	%	GUT	%
2010	834	6,2	254	1,9
2011	506	6,1	2	0,0
2012	1727	7,8	0	0,0
2013	4426	12,4	639	1,8
2014	4220	13,7	864	2,8
2015	2429	8,3	327	1,1
2016	5856	13,5	1277	3,0
2017	5630	11,4	5839	11,8
2018	743	2,0	930	2,5
2019	3805	6,3	2545	4,2

Note:

1. Estimation of the total catch by fishing gear and the catch composition using One Data

4.3.7. PL/Pole and Line/Artisanal

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	0	0,0	457	8,2	0	0,0	2255	40,4	0	0,0
2011	0	0,0	1535	37,6	0	0,0	2545	62,4	0	0,0
2012	0	0,0	394	2,8	0	0,0	8328	59,1	0	0,0
2013	0	0,0	3860	18,0	0	0,0	12256	57,1	0	0,0
2014	0	0,0	2782	17,3	0	0,0	9577	59,7	0	0,0
2015	0	0,0	1288	13,8	0	0,0	7364	78,8	0	0,0
2016	0	0,0	600	32,9	0	0,0	1044	57,3	0	0,0
2017	0	0,0	4529	20,7	1	0,0	17348	79,3	0	0,0
2018	0	0,0	1061	27,9	40	1,1	2695	71,0	0	0,0
2019	0	0,0	388	15,8	12	0,5	2050	83,6	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	2218	39,7	136	2,4	0	0,0	0	0,0
2011	0	0,0	0	0,0	0	0,0	0	0,0
2012	0	0,0	276	2,0	0	0,0	5089	36,1
2013	0	0,0	583	2,7	0	0,0	4748	22,1
2014	0	0,0	655	4,1	0	0,0	3035	18,9
2015	0	0,0	0	0,0	0	0,0	0	0,0
2016	0	0,0	1	0,0	1	0,1	40	2,2
2017	0	0,0	0	0,0	0	0,0	0	0,0
2018	0	0,0	0	0,0	0	0,0	0	0,0
2019	0	0,0	0	0,0	0	0,0	0	0,0

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2011	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2012	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2013	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2014	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2015	0	0,0	5	0,1	0	0,0	0	0,0	0	0,0
2016	0	0,0	6	0,3	0	0,0	0	0,0	0	0,0
2017	2	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2018	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2019	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0

Year	Sheerfish			
	COM	%	GUT	%
2010	522	9,3	0	0,0
2011	0	0,0	0	0,0
2012	0	0,0	0	0,0
2013	0	0,0	0	0,0
2014	0	0,0	0	0,0
2015	0	0,0	688	7,4
2016	130	7,1	0	0,0
2017	0	0,0	0	0,0
2018	0	0,0	0	0,0
2019	0	0,0	0	0,0

Note:

1. Estimation of the total catch by fishing gear using One Data
2. The catch composition using port landing data for 2017-2019 (cilacap, labuhan lombok, sape (NTB), tenau kupang). The number of PL vessels covered by PIPP was 22 units of 22 units (100%) in 2017, 14 units of 14 units (100%) in 2018 and 22 units of 22 units (100%) in 2019.
3. Pole and line mostly operated in FMA 573 (NTB dan NTT)

4.3.8. TL/Troll line/Artisanal

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	4443	12,2	5291	14,5	774	2,1	11238	30,9	0	0,0
2011	1128	1,9	8562	14,4	8229	13,8	15360	25,8	0	0,0
2012	2552	6,0	7150	16,7	6392	14,9	9597	22,4	0	0,0
2013	0	0,0	5297	11,2	5788	12,3	11738	24,9	0	0,0
2014	0	0,0	3818	10,0	4585	12,1	9172	24,1	0	0,0
2015	424	1,5	3212	11,4	844	3,0	7023	25,0	0	0,0
2016	258	1,0	3021	11,6	1432	5,5	5343	20,6	0	0,0
2017	78	0,7	0	0,0	0	0,0	1741	15,6	0	0,0
2018	85	0,3	2975	11,6	1342	5,2	11138	43,4	0	0,0
2019	95	0,3	4397	14,0	3983	12,7	10090	32,1	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	5730	15,7	1159	3,2	2237	6,1	0	0,0
2011	15983	26,9	3423	5,8	3178	5,3	0	0,0
2012	498	1,2	3063	7,2	3138	7,3	4975	11,6
2013	206	0,4	1539	3,3	3486	7,4	11561	24,5
2014	246	0,6	1728	4,5	3081	8,1	7390	19,4
2015	69	0,2	3657	13,0	1482	5,3	7484	26,6
2016	254	1,0	3375	13,0	1009	3,9	8513	32,8
2017	15	0,1	4964	44,5	0	0,0	2607	23,4
2018	253	1,0	3954	15,4	1439	5,6	2920	11,4
2019	911	2,9	1991	6,3	1305	4,2	6166	19,6

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	1675	4,6	1	0,0	402	1,1	23	0,1	5	0,0
2011	107	0,2	0	0,0	262	0,4	42	0,1	8	0,0
2012	365	0,9	0	0,0	677	1,6	46	0,1	0	0,0
2013	276	0,6	0	0,0	823	1,7	75	0,2	0	0,0
2014	353	0,9	0	0,0	1164	3,1	146	0,4	0	0,0
2015	369	1,3	0	0,0	634	2,3	125	0,4	5	0,0
2016	218	0,8	2	0,0	395	1,5	40	0,2	7	0,0
2017	1311	11,7	72	0,6	17	0,2	0	0,0	5	0,0
2018	211	0,8	66	0,3	575	2,2	66	0,3	3	0,0
2019	424	1,3	9	0,0	222	0,7	43	0,1	4	0,0

Year	Sheerfish			
	COM	%	GUT	%
2010	3086	8,5	328	0,9
2011	2958	5,0	260	0,4
2012	2720	6,4	1602	3,7
2013	5732	12,2	655	1,4
2014	5466	14,4	886	2,3
2015	2221	7,9	585	2,1
2016	1563	6,0	510	2,0
2017	337	3,0	10	0,1
2018	287	1,1	359	1,4
2019	1374	4,4	383	1,2

Note:

1. Estimation of the total catch by fishing gear using One Data
2. The catch composition using One Data (bungus, pengambengan, pelabuhan ratu, prigi)
3. Catch mostly from vessels with size 30 GT below

4.3.9. LN/Liftnet/Artisanal

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	0	0,0	311	6,0	167	3,2	456	8,8	0	0,0
2011	0	0,0	642	7,4	0	0,0	1514	17,5	0	0,0
2012	24	0,2	221	1,8	29	0,2	6	0,0	0	0,0
2013	0	0,0	105	1,0	26	0,2	1380	12,8	0	0,0
2014	0	0,0	76	0,8	21	0,2	1078	10,9	0	0,0
2015	95	0,6	2508	15,3	49	0,3	5780	35,2	0	0,0
2016	0	0,0	647	3,9	119	0,7	4702	28,6	0	0,0
2017	0	0,0	2372	7,9	3	0,0	46	0,2	0	0,0
2018	0	0,0	5056	16,5	2125	6,9	6301	20,6	0	0,0
2019	0	0,0	2459	10,5	156	0,7	6258	26,7	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	1326	25,6	689	13,3	703	13,6	0	0,0
2011	783	9,1	489	5,7	340	3,9	0	0,0
2012	1898	15,3	1299	10,4	1013	8,1	4144	33,3
2013	1314	12,2	1826	16,9	683	6,3	2436	22,6
2014	1570	15,9	2051	20,8	604	6,1	1557	15,8
2015	276	1,7	3616	22,0	578	3,5	2907	17,7
2016	355	2,2	3537	21,5	1061	6,5	5544	33,7
2017	783	2,6	2210	7,3	2866	9,5	21174	70,4
2018	3162	10,3	3165	10,4	7376	24,1	1412	4,6
2019	2344	10,0	1675	7,1	2670	11,4	4265	18,2

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	0	0,0	1	0,0	21	0,4	0	0,0	0	0,0
2011	927	10,7	0	0,0	1	0,0	0	0,0	0	0,0
2012	1	0,0	0	0,0	7	0,1	0	0,0	57	0,5
2013	117	1,1	0	0,0	5	0,0	0	0,0	1114	10,3
2014	150	1,5	0	0,0	7	0,1	0	0,0	994	10,1
2015	0	0,0	0	0,0	11	0,1	0	0,0	4	0,0
2016	4	0,0	39	0,2	0	0,0	0	0,0	4	0,0
2017	0	0,0	0	0,0	91	0,3	0	0,0	0	0,0
2018	10	0,0	0	0,0	11	0,0	10	0,0	0	0,0
2019	321	1,4	0	0,0	473	2,0	285	1,2	0	0,0

Year	Sheerfish			
	COM	%	GUT	%
2010	1225	23,6	284	5,5
2011	3363	39,0	569	6,6
2012	3633	29,2	104	0,8
2013	1691	15,7	93	0,9
2014	1612	16,4	126	1,3
2015	445	2,7	170	1,0
2016	308	1,9	118	0,7
2017	538	1,8	0	0,0
2018	1415	4,6	532	1,7
2019	1687	7,2	875	3,7

Note:

1. Estimation of the total catch by fishing gear and the catch composition using One Data

4.3.10. DS/Danish seine/Artisanal

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	625	2,3	276	1,0	0	0,0	5767	21,0	0	0,0
2011	0	0,0	9	0,1	0	0,0	1093	8,2	0	0,0
2012	193	0,4	1225	2,4	180	0,4	8091	16,1	0	0,0
2013	0	0,0	632	1,6	213	0,5	6605	16,8	0	0,0
2014	0	0,0	456	1,5	169	0,5	5161	16,5	0	0,0
2015	341	0,8	2706	6,0	77	0,2	15384	34,0	0	0,0
2016	3	0,0	828	10,4	285	3,6	855	10,8	0	0,0
2017	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2018	0	0,0	888	6,4	176	1,3	3786	27,5	0	0,0
2019	2	0,0	1288	6,5	258	1,3	3820	19,4	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	6608	24,1	5007	18,2	4353	15,8	0	0,0
2011	3010	22,5	4943	37,0	3413	25,5	0	0,0
2012	1483	2,9	6437	12,8	3949	7,8	19896	39,5
2013	185	0,5	5777	14,7	2985	7,6	18244	46,3
2014	221	0,7	6487	20,7	2639	8,4	11662	37,2
2015	310	0,7	20	0,0	723	1,6	22779	50,4
2016	161	2,0	1740	21,9	768	9,7	1965	24,7
2017	9851	34,5	8436	29,5	892	3,1	4255	14,9
2018	1069	7,8	2893	21,0	2576	18,7	1826	13,2
2019	2615	13,3	981	5,0	2061	10,5	6827	34,7

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	166	0,6	0	0,0	63	0,2	0	0,0	0	0,0
2011	0	0,0	0	0,0	341	2,6	0	0,0	99	0,7
2012	119	0,2	0	0,0	122	0,2	0	0,0	0	0,0
2013	103	0,3	0	0,0	57	0,1	10	0,0	616	1,6
2014	131	0,4	0	0,0	81	0,3	19	0,1	549	1,8
2015	0	0,0	0	0,0	0	0,0	0	0,0	9	0,0
2016	1	0,0	0	0,0	13	0,2	0	0,0	7	0,1
2017	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
2018	61	0,4	0	0,0	6	0,0	0	0,0	0	0,0
2019	141	0,7	0	0,0	196	1,0	0	0,0	0	0,0

Year	Sheerfish			
	COM	%	GUT	%
2010	1123	4,1	3481	12,7
2011	240	1,8	216	1,6
2012	7135	14,2	1582	3,1
2013	3958	10,0	0	0,0
2014	3774	12,0	0	0,0
2015	2070	4,6	785	1,7
2016	1289	16,2	32	0,4
2017	5142	18,0	0	0,0
2018	197	1,4	312	2,3
2019	933	4,7	580	2,9

Note:

1. Estimation of the total catch by fishing gear and the catch composition using One Data

4.3.11. OTH/Others

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	1825	2,7	18649	27,6	647	1,0	13558	20,0	0	0,0
2011	362	0,8	3155	7,1	627	1,4	9677	21,8	0	0,0
2012	12	0,0	1557	4,7	2542	7,6	5993	18,0	0	0,0
2013	1	0,0	4791	14,1	1254	3,7	6509	19,2	0	0,0
2014	3	0,0	3453	11,4	993	3,3	5087	16,8	0	0,0
2015	226	0,5	5559	11,5	1995	4,1	9288	19,2	0	0,0
2016	0	0,0	1632	4,6	1288	3,6	5837	16,3	0	0,0
2017	0	0,0	5222	7,3	137	0,2	16039	22,5	0	0,0
2018	96	0,7	1879	14,2	1107	8,4	2695	20,4	0	0,0
2019	79	0,3	2067	9,2	459	2,0	4385	19,4	0	0,0

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	6530	9,7	7536	11,1	1770	2,6	0	0,0
2011	5231	11,8	10854	24,5	6590	14,9	0	0,0
2012	1140	3,4	12143	36,5	1907	5,7	3175	9,6
2013	415	1,2	3989	11,8	4107	12,1	4100	12,1
2014	496	1,6	4480	14,8	3630	12,0	2620	8,7
2015	623	1,3	6937	14,3	2677	5,5	12216	25,3
2016	0	0,0	1751	4,9	2116	5,9	18277	51,1
2017	6789	9,5	5851	8,2	5393	7,6	19553	27,5
2018	121	0,9	2402	18,2	1865	14,1	341	2,6
2019	532	2,4	1552	6,9	2711	12,0	5447	24,1

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	2356	3,5	210	0,3	198	0,3	0	0,0	3077	4,5
2011	991	2,2	56	0,1	1162	2,6	81	0,2	120	0,3
2012	532	1,6	0	0,0	551	1,7	0	0,0	691	2,1
2013	306	0,9	100	0,3	671	2,0	0	0,0	493	1,5
2014	392	1,3	179	0,6	949	3,1	0	0,0	440	1,5
2015	38	0,1	22	0,0	523	1,1	4	0,0	903	1,9
2016	48	0,1	66	0,2	251	0,7	4	0,0	523	1,5
2017	432	0,6	250	0,4	601	0,8	495	0,7	1281	1,8
2018	943	7,1	425	3,2	99	0,8	164	1,2	9	0,1
2019	426	1,9	90	0,4	322	1,4	9	0,0	551	2,4

Year	Sheerfish			
	COM	%	GUT	%
2010	7131	10,5	4152	6,1
2011	4653	10,5	809	1,8
2012	2988	9,0	0	0,0
2013	5341	15,8	1783	5,3
2014	5094	16,9	2413	8,0
2015	5637	11,7	1720	3,6
2016	2992	8,4	1012	2,8
2017	7856	11,0	1280	1,8
2018	724	5,5	354	2,7
2019	1948	8,6	1988	8,8

Note:

1. Estimation of the total catch by fishing gear and the catch composition using One Data

4.3.12. All Fishing Gears

Year	Main Tunas									
	ALB	%	YFT	%	BET	%	SKJ	%	SBF	%
2010	13030	3,7	47925	13,7	24770	7,1	68466	19,5	474	0,1
2011	11483	3,1	37672	10,2	26019	7,0	84601	22,9	700	0,2
2012	11028	2,9	38533	10,1	32540	8,5	87333	22,9	910	0,2
2013	6095	1,5	61380	14,8	35505	8,5	94437	22,7	1382	0,3
2014	8750	2,4	45122	12,6	32412	9,1	72088	20,1	1063	0,3
2015	7301	2,1	40571	11,6	18665	5,3	80938	23,1	593	0,2
2016	7179	2,2	36485	11,2	22135	6,8	72359	22,2	601	0,2
2017	7911	1,9	40449	9,6	23798	5,6	149662	35,5	835	0,2
2018	4731	1,5	40406	12,5	21296	6,6	111190	34,5	1087	0,3
2019	6742	1,7	34185	8,6	17457	4,4	146376	36,7	1206	0,3

Year	Neritic Tunas							
	BLT	%	KAW	%	LOT	%	FRI	%
2010	55394	15,8	60385	17,2	24088	6,9	0	0,0
2011	70269	19,0	50791	13,7	38585	10,4	0	0,0
2012	12131	3,2	50510	13,2	26658	7,0	71118	18,6
2013	23386	5,6	38747	9,3	23645	5,7	73044	17,6
2014	27934	7,8	43511	12,2	20901	5,8	46690	13,0
2015	13429	3,8	40547	11,5	25757	7,3	70705	20,1
2016	6723	2,1	34512	10,6	21450	6,6	77205	23,7
2017	21057	5,0	40840	9,7	19252	4,6	61220	14,5
2018	30397	9,4	31719	9,8	31833	9,9	23291	7,2
2019	42559	10,7	19773	5,0	30622	7,7	54285	13,6

Year	Billfish									
	BLM	%	BUM	%	SFA	%	MLS	%	SWO	%
2010	9747	2,8	320	0,1	2939	0,8	393	0,1	8711	2,5
2011	6363	1,7	127	0,0	3009	0,8	423	0,1	4717	1,3
2012	4068	1,1	240	0,1	3157	0,8	331	0,1	5831	1,5
2013	3701	0,9	453	0,1	3239	0,8	745	0,2	9946	2,4
2014	4839	1,4	765	0,2	4206	1,2	1190	0,3	8190	2,3
2015	3466	1,0	1032	0,3	3281	0,9	983	0,3	5675	1,6
2016	3123	1,0	1426	0,4	1948	0,6	656	0,2	6066	1,9
2017	3014	0,7	813	0,2	2653	0,6	731	0,2	8945	2,1
2018	6047	1,9	771	0,2	1848	0,6	2000	0,6	1721	0,5
2019	5766	1,4	1311	0,3	6341	1,6	846	0,2	1289	0,3

Year	Sheerfish			
	COM	%	GUT	%
2010	22535	6,4	11632	3,3
2011	25809	7,0	8853	2,4
2012	30119	7,9	7389	1,9
2013	33575	8,1	6004	1,4
2014	32016	8,9	8205	2,3
2015	30297	8,6	7833	2,2
2016	24900	7,6	9207	2,8
2017	30291	7,2	10091	2,4
2018	7704	2,4	6378	2,0
2019	19290	4,8	10707	2,7

There are several activities needed to take forward if this approach been approved and agreed by the SC24 as described below:

i. Indonesia will revise the Form 1RC for 2017-2019 and submit the revised Form 1RC to the IOTC Secretariat.
ii. Indonesia will submit the update version of the annual tuna catches data for 2017-2019 to the FAO.

5. Conclusion

i. Since 2010, Indonesia has been submitted the official annual tuna catch to the IOTC Secretariat through form 1RC. The 2010-2016 data was accepted as official data similar to as published by FAO. Therefore, Indonesia **REQUESTS** IOTC not to re-estimate the estimated catches which officially submitted to the IOTC for years before 2017.
ii. If the re-estimation methodology of Indonesia's annual tuna catch data for 2017-2019 been approved and agreed by the SC24, Indonesia will revise the Form 1RC for 2017-2019 and submit the revised Form 1RC to the IOTC Secretariat.
iii. Referring to the point i and ii above, Indonesia **REQUESTS** IOTC to use the Indonesia's

annual catch data of 2010-2016 which officially submitted to the IOTC and the revised Form 1RC for 2017-2019 for any purposes of the commission.