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An assessment of available information to address the WCPFC17 recommendation on the Tropical Tuna CMM para 51 (other commercial fisheries)

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ABSTRACT

This paper provides an assessment of available information to facilitate SC17 discussions and formulation of advice to address the WCPFC17 recommendation (paragraphs 198–200 below) on paragraph 51 of the tropical tuna conservation and management measure (CMM 2018-01 and CMM 2020-01):

> *51. CCMs shall take necessary measures to ensure that the total catch of their respective other commercial tuna fisheries for bigeye, yellowfin or skipjack tuna, but excluding those fisheries taking less than 2,000 tonnes of bigeye, yellowfin and skipjack, shall not exceed either the average level for the period 2001-2004 or the level of 2004.*

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198. CMM 2018-01, TCC16 had recognized the difficulty of the application of this paragraph in terms of the scope of "other commercial fisheries" in Indonesia and the Philippines.

199. The Commission noted that Indonesia and the Philippines had submitted delegation papers to SC16, TCC16 and WCPFC17 (**WCPFC17-2020-DP04** and **WCPFC17-2020-DP05**) in response to the request from TCC15 to inform a Commission discussion on the application of paragraph 51 of CMM 2018-01. However, the virtual format of these meetings made it difficult to consider these papers at SC16 and TCC16.

200. The Commission agreed to task SC17 and TCC17 to review these papers and provide advice to the Commission to facilitate a decision by WCPFC18 on the application of paragraph 51 of CMM 2018-01.

The most relevant information related to this discussion is available in the following SC17 Statistic Theme Information papers. Most key sections/text are referenced only from the following documents, rather than duplicating them in this paper.

- MOMAF & SPC (2021) for the Indonesia domestic fisheries (SC17 ST-IP-09)
- BFAR & SPC (2021) for the Philippines domestic fisheries (SC17 ST-IP-08)

In addition to these papers, both Indonesia and the Philippines regularly submit detailed annual landings and port sampling data to the WCPFC Scientific Services Provider (SSP) for small-scale, artisanal gears. These data do not cover the entire fishery but do provide some indications which are relevant to this topic:

- Philippines National Stock Assessment Project (NSAP)[1] landings and port sampling data.
- Indonesia tuna landings and port sampling fishery data.

This information has been considered in formulating this assessment, provided as recommendations, for SC17's consideration.

This paper also reiterates the importance of the ongoing (and enhanced) data collection in the comprehensive and complex small-scale, artisanal fisheries of Indonesia and the Philippines for the scientific work of the Commission.

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[1] See http://www.nfrdi.da.gov.ph/tpjf/etc/NSAP%20Capture%20Fisheries%20Atlas%20NOV%2028%202017.pdf

RECOMMENDATIONS

The areas of application of the WCPFC tropical tuna measures (CMM 2018-01 and CMM 2020-01, hereafter "TTMs") exclude the archipelagic waters (AWs) and territorial seas (TS) of Indonesia and the Philippines. However, the scientific work for the WCPFC requires data (catch estimates, catch/effort and size data) for the extent of the tropical tuna stocks in the WCPFC Convention Area, which includes ALL areas – high seas, exclusive economic zones (EEZs), AWs and TS.

Therefore, from a WCPFC scientific perspective, in particular for WCPFC stock assessments,

- – Indonesia and the Philippines are encouraged to continue to compile and submit scientific data covering **all areas** of their small-scale, artisanal tuna fisheries in the WCPFC Area, with assistance from the Commission where required.
- – The importance of distinguishing between large-fish and small-fish target handline fisheries is outlined in ANNEX 1, and therefore requires the continuation and enhancement of data collection and estimation processes to ensure the data and estimates for large-fish handline and small-fish hook-and-line fisheries are distinguished.

Regarding the response to the WCPFC17 recommendation on **Other Commercial Fisheries**, SC17 is invited to consider the following **recommendations** from the SSP:

1. Based on the information presented in MOMAF & SPC (2021) and BFAR & SPC (2021), the following small-scale, artisanal fisheries in Indonesia and the Philippines are acknowledged to be important for food security and livelihoods and, for the reasons stated in these reports (including national regulations and safety), they are restricted to the AWs and TS of their respective EEZs, and are therefore considered not to be applicable under paragraph 51 of the TTMs:

   - – small-scale hook-and-line fisheries;
   - – small-scale troll fisheries;
   - – small-scale gillnet fisheries;
   - – small-scale pole and line (*funai* – Indonesia);
   - – pajeko (Indonesia mini-purse seine);
   - – bagnet, beach seine, artisanal longline and other artisanal gears with very minor tuna catch.

2. Based on the information presented in MOMAF & SPC (2021) and BFAR & SPC (2021), the only fisheries considered to be relevant to paragraph 51 of the TTMs, are
   - – the **Indonesia pole-and-line fishery** fishing outside AWs and TS for vessels > 30 GT, and
   - – the **"large-fish" handline fisheries in Indonesia and the Philippines** fishing outside AWs and TS, which are also be restricted by vessel size.

3. There are sufficient data available for the **Indonesia pole-and-line fishery** and the **Philippines large-fish handline fishery** to determine (i) the baseline levels of catch, and (ii) the annual catches which are required to evaluate compliance related to para 51 of the TTMs and develop Table 8 of WCPFC Secretariat and SPC (2021) which provides the assessment for the most current calendar year.

4. Based on the information presented in MOMAF & SPC (2021), there are insufficient data available for the **Indonesia large-fish handline fishery** to determine (i) the baseline levels of catch, and (ii) the annual catches which are required to evaluate compliance related to para 51 of the TTMs. The following suggestions are proposed to attempt to resolve these issues:

   a) The relevant WCPFC processes will need to consider what is an appropriate baseline catch in the absence of estimates in the TTM's baseline years. For example, the average for years

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when there were annual catch estimates generated (2013–2016) or 2015 could be used as the basis for setting a baseline catch for this fishery.

b) Indonesia intends to proceed with dedicated workshops to enhance data collection and estimation processes for this fishery, which will at least ensure reliability of catch estimates in the future.

c) In the interim, the SSP continues to present the best available catch estimates and other related information on this fishery in the WCPFC forums.

5. The WCFPC Secretariat, with assistance from the SSP, will continue to evaluate compliance for the **Indonesia pole-and-line fishery** and the **Philippines large-fish handline fishery** under the Other Commercial Fisheries (para 51) requirements of the TTMs based on these recommendations; Table 8 of WCPFC Secretariat and SPC (2021) provides the assessment for the most current calendar year. To ensure there is summary information available on other fisheries deemed exempt from the TTM, the WCPFC Secretariat and the SSP will continue to produce Table 9 of WCPFC Secretariat and SPC (2021).

6. The WCFPC Secretariat, with assistance from the SSP, will continue to work with Indonesia through the West Pacific East Asia (WPEA) Project to enhance their data collection and estimation processes to ensure there is distinction of catches between their large-fish handline fishery and their small-fish hook-and-line fishery.

REFERENCES

Ministry of Marine Affairs and Fisheries, Indonesia (MOMAF) and SPC-OFP. 2021. Availability of catch estimates from the other commercial fisheries in Indonesia. Statistics and Data Theme Information Paper ST–IP–09. Seventeenth Regular Session of the Scientific Committee of the WCPFC (SC17). Online Meeting. 11–19 August 2021.

Bureau of Fisheries and Aquatic Resources, Philippines (BFAR) and SPC-OFP. 2021. Availability of catch estimates from the other commercial fisheries in the Philippines. Statistics and Data Theme Information Paper ST–IP–08. Seventeenth Regular Session of the Scientific Committee of the WCPFC (SC17). Online Meeting. 11–19 August 2021.

WCPFC Secretariat and SPC. 2021. Catch and effort data summaries to support discussions on the TROPICAL TUNA CMMs. Management Issues Information Paper MI–IP–11. Seventeenth Regular Session of the Scientific Committee of the WCPFC (SC17). Online Meeting. 11–19 August 2021.

ANNEX 1 – Distinguishing "large-fish" and "small-fish" target handline catch for scientific work

An estimated 35–40% of the total WCPFC yellowfin catch comes from the domestic fisheries[2] of Indonesia and the Philippines. Distinction in the catch levels of juvenile and adult yellowfin tuna from these fisheries is critical for the WCPFC stock assessments, and uncertainty in catch estimates and data will impact the outcomes of these assessments.

The WCPFC yellowfin tuna stock assessments require data (catch estimates, catch and effort and size data) for the extent of the yellowfin tuna stock in the WCPFC area. Therefore, catch estimates from the domestic Indonesia and Philippines fisheries which distinguish between large-fish and small-fish targeting and cover EEZs, AWs and TS (the extent of the stock), are fundamental to the scientific work of the WCPFC.

The Philippines, through their data collection system (Philippines National Stock Assessment project-NSAP[3]) and annual catch estimates workshops, have successfully made the distinction between these two fisheries in their data and catch estimates over the past two decades, but there remain some challenges in producing catch estimates for these two distinct fisheries in Indonesia.

MOMAF & SPC (2021) for the Indonesia domestic fisheries and BFAR & SPC (2021) for the Philippines domestic tuna fisheries provide a breakdown of the characteristics for (i) large-fish HANDLINE and (ii) small-fish HOOK-and-LINE targeting (refer to Tables A1 and A2 in the ANNEX 2), which provide some guidance on how data collection systems and estimation processes can distinguish between these two fisheries.

The issue with having a combined estimate of yellowfin tuna catch for 'handline' (without distinguishing or indicating the target fishery) is not knowing the size structure of the combined handline catch, unless the sampling protocol correctly represents the level of catch between these two fisheries (which is not the case in Indonesia and Philippines, since the current sampling does not cover the extent of landing sites for the small-fish artisanal hook-and-line vessels, for example).

Figures 1 and 2 provide an example to demonstrate the implications of not distinguishing between catches of large-fish handline and small-fish hook-and-line fisheries. The NSAP data collection program, through the Philippines Bureau of Fisheries and Aquatic Resources (BFAR) regional offices, covers the primary landing site for large-fish handline fleet (General Santos City in Region 12 province) and many landing sites for the artisanal small-fish hook-and-line fishery in the other regions of the Philippines. However, due to the logistical challenges in covering what are hundreds of landing sites for the artisanal small-fish hook-and-line fishery, only representative landing sites can be covered. While the number of size samples collected is sufficient for scientific use, there is clear bias in the number of yellowfin tuna samples collected for the respective large-fish handline fishery and the artisanal small-fish hook-and-line fishery (that is, the number of fish sampled by fishery is not representative of the catch from each fishery). To ensure the catch estimates by fishery/species/size is representative, BFAR (with key government and industry stakeholders in the Philippines domestic fisheries) convene an annual workshop to determine, *inter alia*, tuna species catch estimates for the large-fish handline fishery and small-fish hook-and-line fishery, which are then used to ensure the size data are correctly weighted for WCPFC stock assessments.

In summary, we reiterate the fundamental scientific requirement for
  i.   the continuation and enhancement of data collection and estimation processes to enable catch by species to distinguish between large-fish handline and small-fish hook-and-line fisheries in the Philippines, and
  ii.   more resources to be dedicated to improving the data collection and estimation processes in Indonesia to enable catch estimates to be determined for their large-fish handline fishery and their small-fish hook-and-line fishery.

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[2] fisheries that are based in their country, land their catch in ports of their country (domestic landings) and covers fishing in all areas: EEZ, AWs and TS. In the case of the Philippines, also includes those vessels based in the Philippines that are permitted to fish in the high seas pocket #1.
[3] See http://www.nfrdi.da.gov.ph/tpjf/etc/NSAP%20Capture%20Fisheries%20Atlas%20NOV%2028%202017.pdf
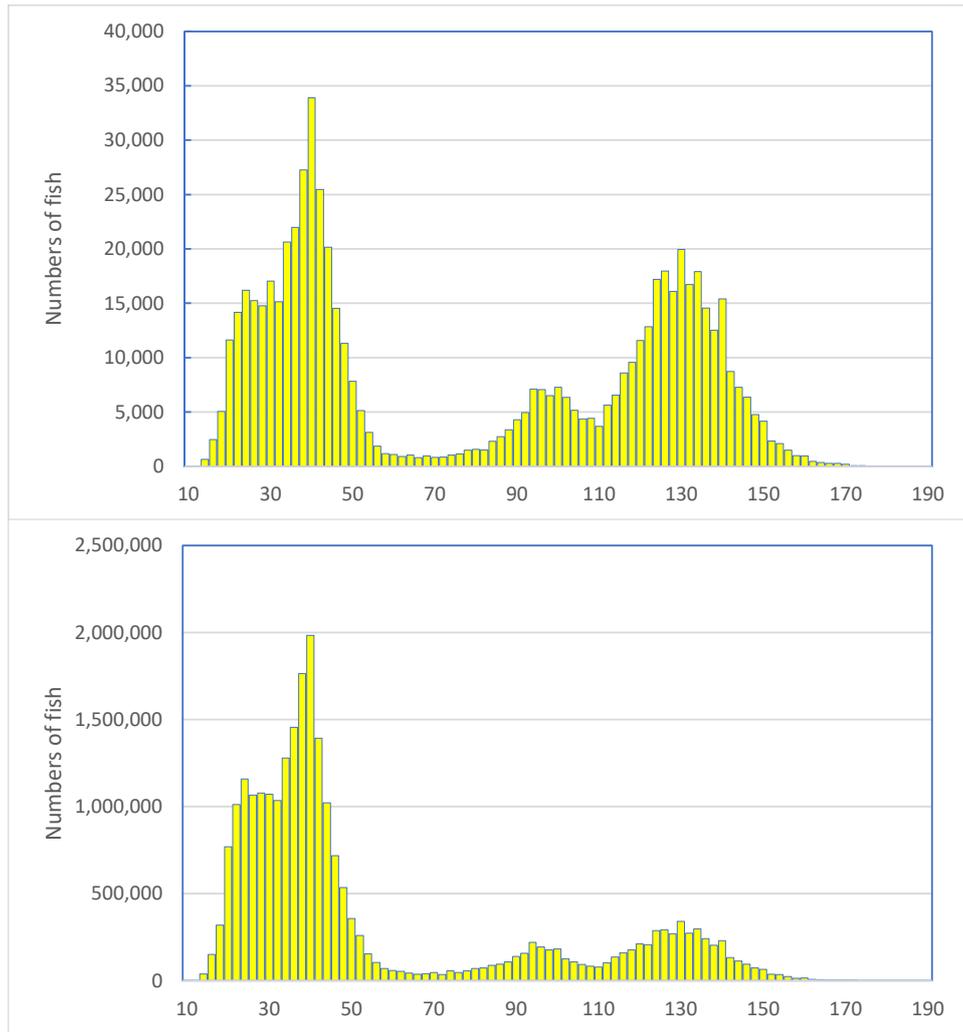
Figure 1. Length frequency distributions of Philippines domestic handline and hook-and-line yellowfin tuna catch, 2015–2020.

TOP – raw size samples, unadjusted for the large-fish Handline and small-fish hook-and-line yellowfin catch estimates
BOTTOM – length frequency data adjusted/weighted by the large-fish handline and small-fish hook-and-line yellowfin catch estimates
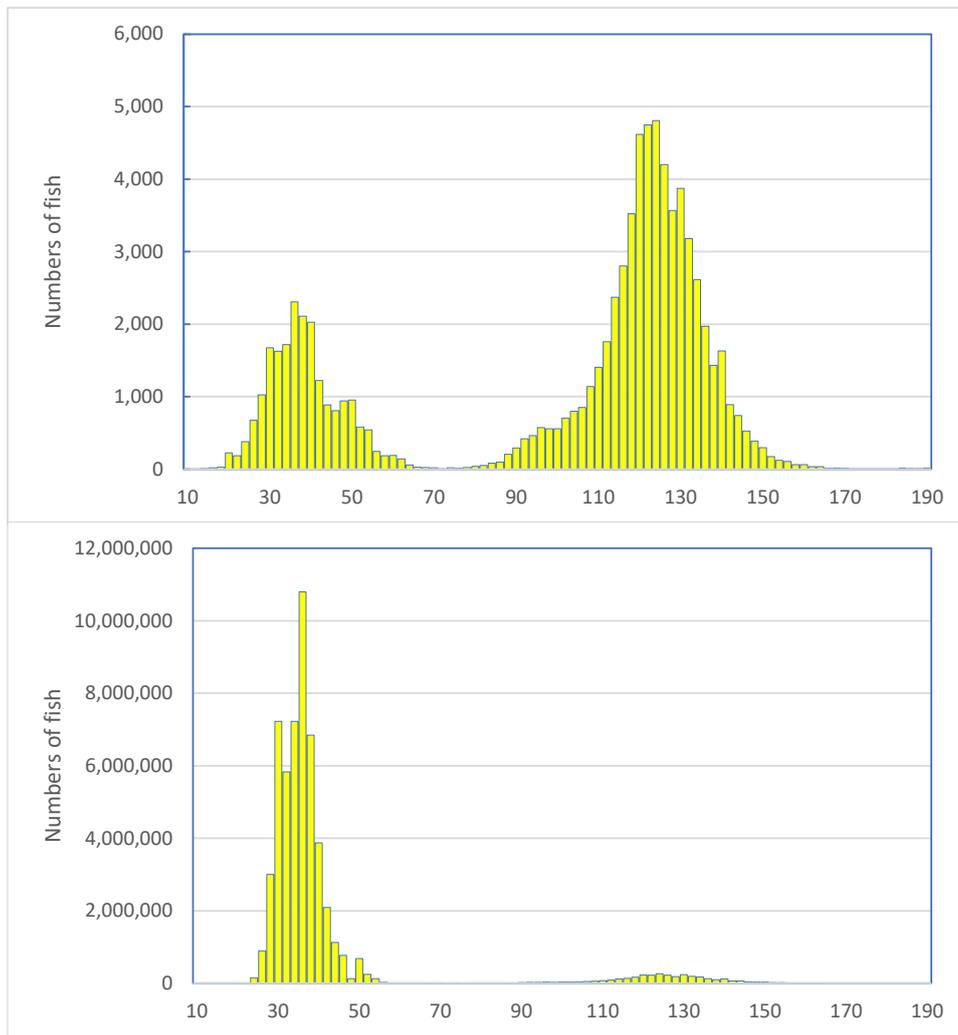
Figure 2. Length frequency distributions of Indonesia domestic handline and hook-and-line yellowfin tuna catch, 2015–2020.

<u>**TOP**</u> – raw size samples, unadjusted for the large-fish Handline and small-fish hook-and-line yellowfin catch estimates
<u>**BOTTOM**</u> – length frequency data adjusted/weighted by the large-fish handline and small-fish hook-and-line yellowfin catch estimates
[Large-fish Handline catch estimate for 2016 has been carried over for years 2017-2020]

ANNEX 2 – Tables of characteristics to distinguish large-fish handline and small-fish hook-and-line

Table A1. Characteristics of large-fish HANDLINE and small-fish HOOK-and-LINE targeting in the Indonesia domestic fisheries (from MOMAF & SPC (2021))

Table 1. Characteristics of large-fish HANDLINE and small-fish HOOK-and-LINE targetting in the Indonesia domestic fisheries.

Attribute	When to assign GEAR as either …		
	Deep Handline		**Surface Handline**
	large-fish HANDLINE (H) (using Larger Vessels)	**large-fish HANDLINE (H) (using Smaller Vessels)**	**small-fish HOOK-and-LINE (K)**
Size of YFT catch	Most of the catch are large YFT > 70 cms	Most of the catch are large YFT > 70 cms	Most of the catch are small TUNA (SKJ, YFT) < 70 cm
Hook size	LARGE hooks Usually single hook	LARGE hooks Usually ingle hook	SMALL hooks Number of hooks >=10
Species composition	Large YFT comprise most of the catch (generally > 80%)	Large YFT comprise most of the catch (generally > 80%)	Most of the catch is small tuna (SKJ, YFT). There may be some large YFT, but most of catch is small tuna.
Primary fishing period and depth	Fishing occurs mostly at day and night at a depth of more than 50 metres.	Fishing occurs mostly at day and night at a depth of more than 50 metres.	Fishing occurs mainly during the day, at the surface
Fishing operation	Drifting by a buoys or floating material, one hook large by natural bait. (DriftOneLargeNatural) / Floating line Drifting with buoy and ballast, big multi gears and artificial attractor (DriftMultipleLargeArtificial) Drop handline with ballast, one big hook and artificial attractor (DropOneLargeArtificial)/Deep Hand Line) Drop handline with ballast, One big hook and natural bait (DropOneLargeNatural)/Deep Hand Line) On the surface one big hook and live bait (SurfaceOneLargeLive)/Deep Hand Line)		Drop line with ballast, one small hook and artificial attractor (DropOneSmallArtificial)/Jigging Drop line with ballast, one small hook and natural bait (DropOneSmallNatural)/Deep Hand Line) Drop line with ballast, small multi gears and artificial attractor (DropMultipleSmallArtificial)/jigging Dropline with ballast, small multi gears and natural dead bait (DropMultipleSmallNatural)

Table A2. Draft characteristics of large-fish HANDLINE and small-fish HOOK-and-LINE targeting in the Philippines domestic fisheries (from BFAR & SPC (2021))

Table 2. Draft characteristics of large-fish HANDLINE and small-fish HOOK-and-LINE targetting in the Philippines domestic fisheries

Attribute	When to assign GEAR as either …		
	large-fish HANDLINE (H) *(using Larger Vessels)*	large-fish HANDLINE (H) *(using Smaller Vessels)*	small-fish HOOK-and-LINE (K)
Size of YFT catch	Most of the catch are large YFT > 70 cms	Most of the catch are large YFT > 70 cms	Most of the catch are small TUNA (SKJ, YFT) < 70 cm
Hook size	LARGE hooks Usually ingle hook	LARGE hooks Usually ingle hook	SMALL hooks Number of hooks >=10
Species composition	Large YFT comprise most of the catch (generally > 90%)	Large YFT comprise most of the catch (generally > 90%)	Most of the catch is small tuna (SKJ, YFT). There may be some large YFT, but most of catch is small tuna.
Vessel Size	>24m or >20GT with *"pakura"*	<24m or <20GT without *"pakura"*	<24m or <20GT without *"pakura"*
Primary fishing period and depth	Mostly caught at dawn or early morning, or from late afternoon to early evening. Fishing occurs mostly a depth of more than 50 metres.	Mostly caught at dawn or early morning, or from late afternoon to early evening. Fishing occurs mostly a depth of more than 50 metres.	Fishers tend to catch small tunas only in the morning (or when not able to catch large tunas). Fishing occurs mainly at the surface.

ANNEX 3 – Distribution of large-fish handline catch in Indonesia and the Philippines in recent years
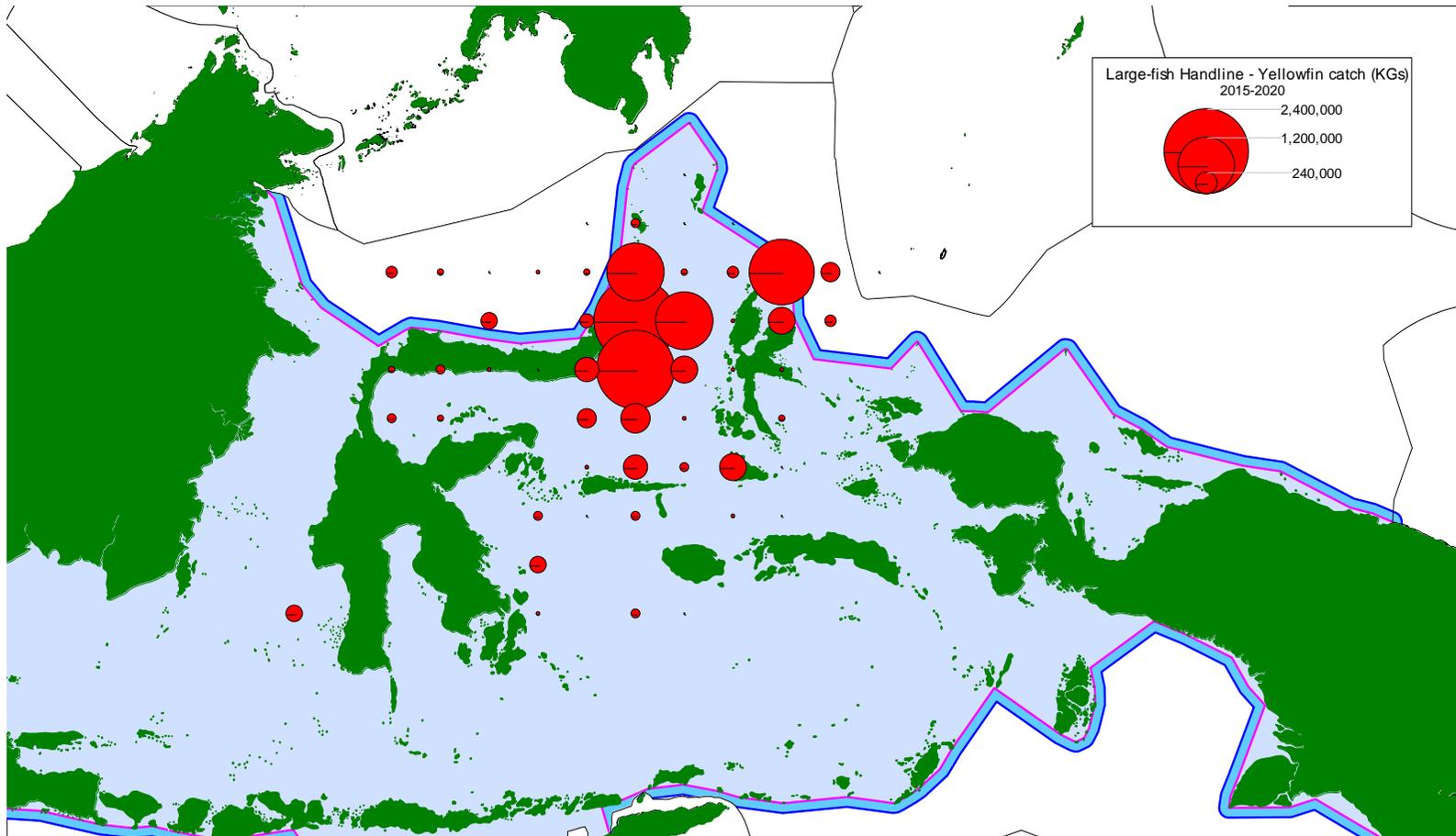

Figure 3. Distribution of Yellowfin tuna catch in Indonesia from large-fish handline catch, 2015–2020
(based on landings data collected under the WPEA project; each landing record indicates the 1°x1° grid where fishing occurred;
Area in light blue is archipelagic waters; Area in dark blue is territorial seas; black lines indicate EEZ boundary)
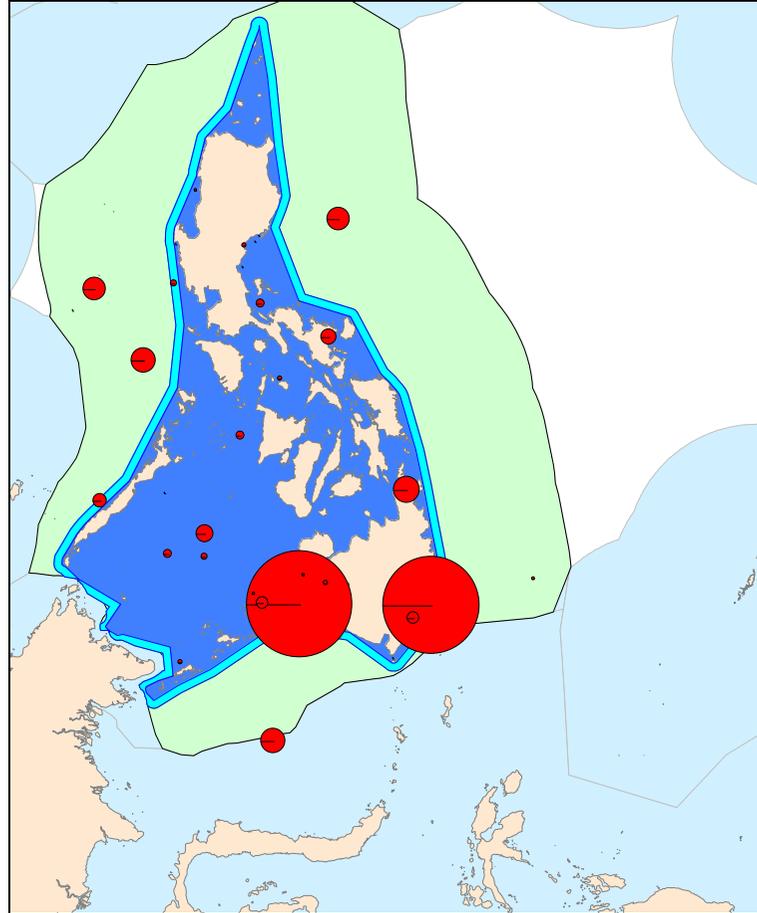
Figure 4. Distribution of tuna catch from the Philippines <u>large-fish handline</u> gear by fishing ground, 2015-2020
(Philippines National Stock Assessment Project (NSAP) database; landings data indicate the fishing ground;
Area in dark blue is archipelagic waters; Area in light blue is territorial seas; Area in green is EEZ outside AWs and TS)