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Accord relatif aux Pêches dans le Sud de l'Océan Indien

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SC-10-07

Annual National Report of Korea (2025)

Delegation of Korea

Document type	Administrative paper ☐ Working paper ✔ Information paper ☐
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Abstract

There were no Korean flagged vessels fishing in the Convention Area from 2014 to 2024. No updates to the national report submitted in 2021, which includes the Korean history of fisheries in the Convention Area, catch and effort data and others, were made except some minor typos.

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[2] Documents available only to members invited to closed sessions.

Recommendations
• It is recommended that the SC note the national report provided by Korea and no fishing had been conducted by Korean flagged vessels in 2024.

Annual National Report of Korea (2025)

There were no Korean flagged vessels fishing in the SIOFA Convention Area from 2014 to 2024. Bottom longline fishing vessels had targeted Patagonian toothfish (*Dissostichus eleginoides*) and hapuka (*Polyprion* spp, Family *Polyprionidae*) and a trawl vessel targeting splendid alfonsino (*Beryx splendens*) and pelagic armorhead (*Pseudopentaceros richardsoni*) operated in the SIOFA Area until 2013. Catch and effort data, including fleet composition, CPUE summaries, biological data, and other data of interest, for those seasons fished were previously submitted to the SIOFA Secretariat in SC-06-19

Reference 1 – National report of Korea to SC06 of SIOFA

SC-05-[XX] / [secretariat to complete]

6th Meeting of the SIOFA Scientific Committee (SC6)
22-25 March 2021
(online)

National report of Korea to 6th Scientific Committee of SIOFA

Relates to agenda item: 3 Working paper ☒ Info paper ☐

Delegation of Republic of Korea

Abstract

Korean longline fishery in the high seas of the Indian Ocean started in 1999, and Korean trawl fishery initiated operating in the SIOFA area since 2000. The number of trawlers and longliners operated in the SIOFA Convention Area between 2011 and 2013 were one and one-to-three vessels respectively; however, none of the fishing vessels have been operating in the SIOFA Area since 2014. Major target species for Korean trawler in the area have been pelagic armorhead and splendid alfonsino, while Korean longliners had targeted for Patagonian toothfish and hapuka. Korean fishing vessels have caught less than 400 tons yearly in 2009-2011. The catch increased up to about 1,000 tons in 2012 and 2013, due to the increased catch by the trawl fishery. The annual observer coverage has been more than 50% for bottom impacted gear fishery since 2009. Korea established a procedure to protect Vulnerable Marine Ecosystems from bottom fishing in the high seas in 2009. It consists of threshold of VME organisms, move on rule etc. In terms of the verification of catch data and landing and transshipment information, measures to cross-check information collected by different authorities (e.g. NIFS, NFQS, FMC) are specified.

1. Description of fisheries

Korean trawl fishery in the Indian Ocean commenced in 1968, and it had focused in a 12 nautical miles area within the African EEZ. The bottom longline fishery in the high seas of the Indian Ocean started in 1999. Its target species were Patagonian toothfish (*Dissostichus eleginoides)* and hapuka (*polyprion spp*, Family Polyprionidae). And in 2000, Korean trawl fishery initiated operating in SIOFA area, targeting splendid alfonsino (*Beryx splendens*) and pelagic armourhead (*Pseudopentaceros richardsoni)*. Figure 1 shows fishing grounds of Korean trawl and bottom longline fisheries in Convention Area.

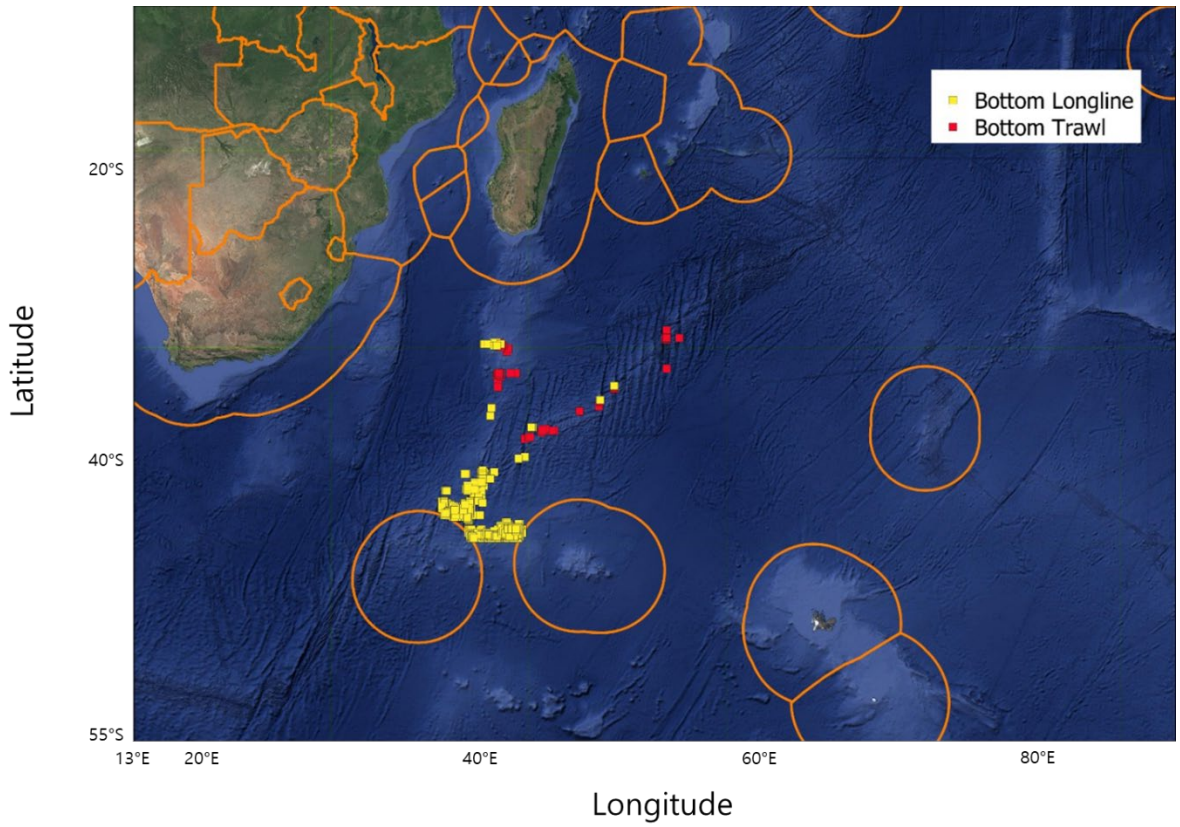


Figure 1. Fishing footprints of Korean bottom longline and trawl fisheries in SIOFA Convention Area from 2009 to 2013**.**

1.1. Fleet composition

In the SIOFA area, one bottom longline vessels operated from 2009 to in 2012, except for 2011 and three vessels operated in 2013. Main fishing ground of them was the Southern SW Indian Ridge, adjacent to the northern part of the CCAMLR area (Figure 1). The size classes of bottom longline fishing vessels ranged from 400 to 600 gross tonnages. There has been no fishing operation of Korean bottom trawl and longline vessels since 2014. One Korean trawl fishing vessel operated in SIOFA convention area from 2011 to 2013. Main fishing ground of Korean trawl was Madagascar Ridge and Northern SW Indian Ridge. There has also been no fishing operation since 2014 (Table 1).

Table 1. Number of Korean fishing vessels by fishery operating in the SIOFA area in 2009-2013

Fishery	GT	Year					
		2009	2010	2011	2012	2013	2014 -2020
Longline	400-600	1	1	2	1	3	-
Trawl	1,537	-	-	1	1	1	-

2. Catch, effort and CPUE summaries

2.1. Catch and effort

In terms of annual catches of target and bycatch species, the bottom longline and trawl fisheries in the SIOFA area had started to catch the target species from 1999 to 2013. Their catch records did not apply an accurate identification by species level during the period of 1999-2003. From 2009 to 2011, Korean fishing vessels have caught less than 400 tons each year, and their main species was Patagonian toothfish in SIOFA area. The catch was increased up to about 1,000 tons in 2012 and 2013, respectively, due to the increased catch of splendid alfonsino by the trawl fishery (Table 2, Figure 2).

Table 2. List of target species by Korean fishing vessels

	Scientific name	Common name	FAO 3-alpha code
Main target	*Beryx splendens*	Splendid alfonsino	BYS
Main target	*Dissostichus eleginoides*	Patagonian toothfish	TOP
Main target	*Pseudopentaceros richardsoni*	Pelagic armourhead	EDR
Target	Polyprion spp	Hapuka	HAU

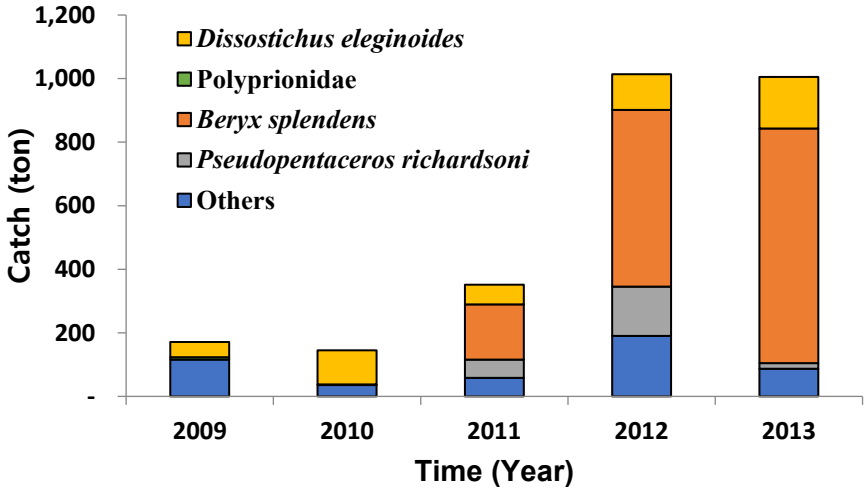


Figure 2. Time series of catch with target species by Korean fishing vessels in the SIOFA area from 2009 to 2013.

2.3. CPUE by fishery for the target species

The CPUE variation of Patagonian toothfish caught by bottom longline fishery had interannual fluctuations with the range of 5-14 kg/100hooks (Table 3). Catch of polyprionidae was low (Figure 2), while their CPUE was high in 2010 (Figure 3). CPUE of splendid alfonsino by trawl fishery have largely changed from below 1 ton/hr in 2011-2012 to 2.6 ton/hr in 2013. CPUE of pelagic armourhead maintained relatively lower than alfonsino during 2011-2013.

Table 3. CPUE of target species by fishery in the SIOFA area from 2009 to 2013

(a) Longline

Species		2009	2010	2011	2012	2013
Dissostichus eleginoides	Catch(kg)	47,991	107,416	62,334	112,159	162,048
	No. of hook	622,250	1,278,760	504,392	2,005,132	1,189,420
	CPUE (kg/100hooks)	7.7	9.4	12.4	5.7	13.5
Polyprionidae	Catch(kg)	7,665	1,640	-	-	-
	No. of hook	551,250	16,200	-	-	-
	CPUE (kg/100hooks)	1.4	10.1	-	-	-

(b) Trawl

Species		2009	2010	2011	2012	2013
Beryx splendens	Catch(kg)	-	-	143,772	556,165	738,325
	Operation hours(hr)	-	-	246	723	288
	CPUE (ton/hr)	-	-	0.6	0.8	2.6
Pseudopentaceros richardsoni	Catch(kg)	-	-	57,439	155,185	17,900
	Operation hours(hr)	-	-	246	723	288
	CPUE (ton/hr)	-	-	0.2	0.2	0.1

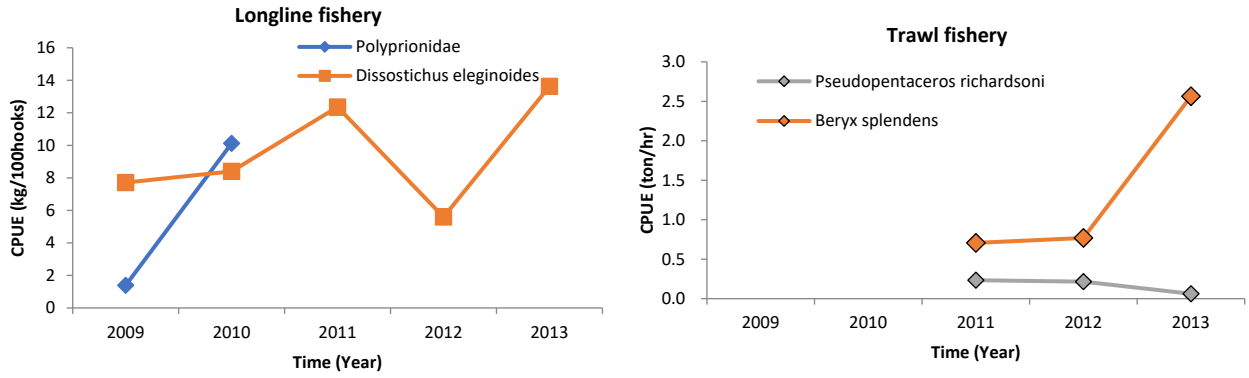


Figure 3. Time series of CPUE with target species of bottom longline and trawl fisheries in the SIOFA area from 2009 to 2013.

3. Fisheries data collection and research activities

3.1. Fisheries data collection

National Institute of Fisheries Science (NIFS) has been collecting the data sets of Korean fishing vessels. The available log-sheet data in the SIOFA area are those from 2009 up to present. In 2012, Korean domestic law (i.e. *Distant Water Fisheries Development Act*) was revised, and the frequency of data submission was changed from within 30 days (home-based) or 60 days (foreign-based) after completion of their operations to a monthly-based report to improve and satisfy a timely submission of data and to ensure quality and quantity of the data. After September 2014, the Act obliged fishers to report the catch statistics to NIFS every week, and it has been changed to a daily basis since September 2015.

3.2. Observer data collected

The observers collected the biological data as requested by the Korean scientific observer program standards (e.g. length, weight, sex). The biological measurements were conducted on all species to the extent possible. In 2013, Korea deployed five scientific observers on three bottom longline vessels and one trawler operating in the SIOFA CA (Table 1). They collected biological data and observed operations during all fishing season on board; therefore, the observer coverage was estimated to be 100% (Table 4).

Korea have been the otoliths of Patagonian toothfish(300), Splendid alfonsino(658), pelagic armourhead(215), and others(a little). All otoliths of splendid alfonsino were provided to Dr. Kyne Krusic-Golub in Fish Ageing Services (FAS) in order to aging study. The age determination of pelagic armourhead has been published (Coulson et al., 2020).

Table 4. Annual observer coverage (%) by Korean bottom longline and trawl fisheries in 2009 to 2013

Fishery	2009	2010	2011	2012	2013	2014 - 2020
Longline	100 (Aug.~Oct.)	100 (Jul.~Dec.)	100 (Jan.~Aug.)	100 (May~Dec.)	100 (Jan.~Apr.)	-
Trawl			100 (Nov.~Dec.)	100 (Jan.~Dec.)	100 (Jan.~Nov.)	-

3.3. Research activities

Korean research trawler, *Tamgu No.1* conducted research trawl fishing in the Southern Indian Ocean in 2001 and 2002.

4. VME Thresholds

4.1. Protocol on VME encounter of distant-water fishery

Korea established a procedure to protect Vulnerable Marine Ecosystems from bottom fishing in the high seas, in accordance with UNGA Resolution 61/105, adopted in 2006, and 64/72, adopted in 2009. Korean domestic laws request all Korean bottom fishing vessels clearly mark the start and end of each haul on each fishery, and monitor all hauls to record the quantity of VME indicator organisms recovered during that haul.

The fishing vessel, during its operation, shall submit the information with regard to its operation (e.g. position, date) to NIFS if it was confirmed that the vessel encountered VMEs. The threshold of the encounter of VMEs is over 60kg of coral per set or over 800kg of sponges per set. If the amount of VME that exceeds the weight specified in the criteria, the vessel shall apply a 2 nautical miles move-on rule to resume its fishing operation. Furthermore, the vessel shall relocate its fishing position until it reaches a point where no VMEs are confirmed. In accordance with Article 15 of *Distant Water Fisheries Development Act*, an automatic location communicator shall be installed on all vessels conducting bottom fishing activities, and an observer shall be on board each vessel for over 50% of the total number of days fished during the trip.

4.2. VME Measurement

Before 2013, observation, collection, and measurement of the VMEs in the SIOFA area were mainly implemented by observers on board the vessels. Benthic organisms were the dominant VME indicators observed in the SIOFA area, and the criteria used for their classification and recording are referred in *The CCAMLR VME Taxa Classification Guide*, developed by CCAMLR. For bottom longline fishery, the frequency of data collected was mainly by each set, without considering line segments (however it did differ by observers).

Information collected and recorded by observers for each VME were taxa, number of individuals, weight (kg) and location (latitude, longitude). The position of VME encounters were recorded based on

the midpoint of each set or the midpoint of the measured set. In case of trawl fishery, the trawling route was not considered, and the last position of the applicable haul was referred to as the position of the VME encounter.

5. Biological sampling and length/age composition of catches

5.1. Length frequency of target species

Target species of SIOFA area were Patagonian toothfish and Polyprionidae by bottom longline fishery and Splendid alfonsino and Pelagic armourhead by trawl fishery. No catch record of Polyprionidae was present since 2010. Patagonian toothfish was measured a total of 9,292 individuals in 2011-2013. The range of total length was 43-198 cm, and mean length was 94.5 cm. The annual mean length had a decreasing trend. In 2011, two modes were present in the length frequency. After 2012, there was only one group with one mode at 80 cm (Figure 4).

Splendid alfonsino and pelagic armourhead were measured a total of 12,561 and 2,518, respectively in 2011-2013. The fork length of splendid alfonsino ranged between 15 and 56 cm, and mean length was 23.9 cm. The annual mean length of splendid alfonsino was approximately 25 cm during 2011-2012, but sharply decreased in 2013. There was a dominant length class at 20 cm in 2013. The total length of pelagic armourhead ranged between 13 and 66 cm, and mean length was 51.7 cm. The trend of the annual mean length had no change. There was only one group with one mode at 52 cm (Figure 5).

6. Description of data verification mechanisms

6.1. Catch data verification

The revision of *the Act on Fisheries Information and Data Reporting* was put into effect in December 2012. Such revision includes requirements for data collection and reporting which was recently adopted by the RFMOs regarding especially ecologically important species, discards/release and bycatch mitigation, etc. Since September 2014, *the Act on Fisheries Information and Data Reporting* has obliged fishers to report the catch statistics to NIFS every week, and again revised on 1st September 2015, that fishers make a daily reporting through an electronic reporting system (ERS) in order to manage and/or cross-check the data in real time.

Catch statistics of Korean fishing vessels are obtained from two sources of data reporting. Korea Overseas Fisheries Association (KOFA) collects monthly catch by species and vessels from fishery industries, and NIFS collects haul by haul data from vessels which are filled out by the captain onboard. Korea also established Fisheries Monitoring Center (FMC) in March 2014 to monitor and/or manage the Vessel Monitoring System (VMS) data so that the data are cross-checked with fishing position from the logbook. Catch data are cross-checked between those of NIFS (which originate from the logbook) and those of National Fishery Products Quality Management Service (NFQS), prior to issuing Catch Documentation Scheme (CDS) as well.

6.2. Verification of landing and transshipment information

Process of verifying landing and transshipment information is also similar to catch statistics in Korea. NIFS collects total catch of each vessel by ERS. Vessels report the amount of landing and transshipment information to FMC, and they apply for the CDS issued by NFQS. The data set are verified and confirmed through cross-checking among total catch of NIFS, CDS information of NFQS and landing and transshipment report of FMC.

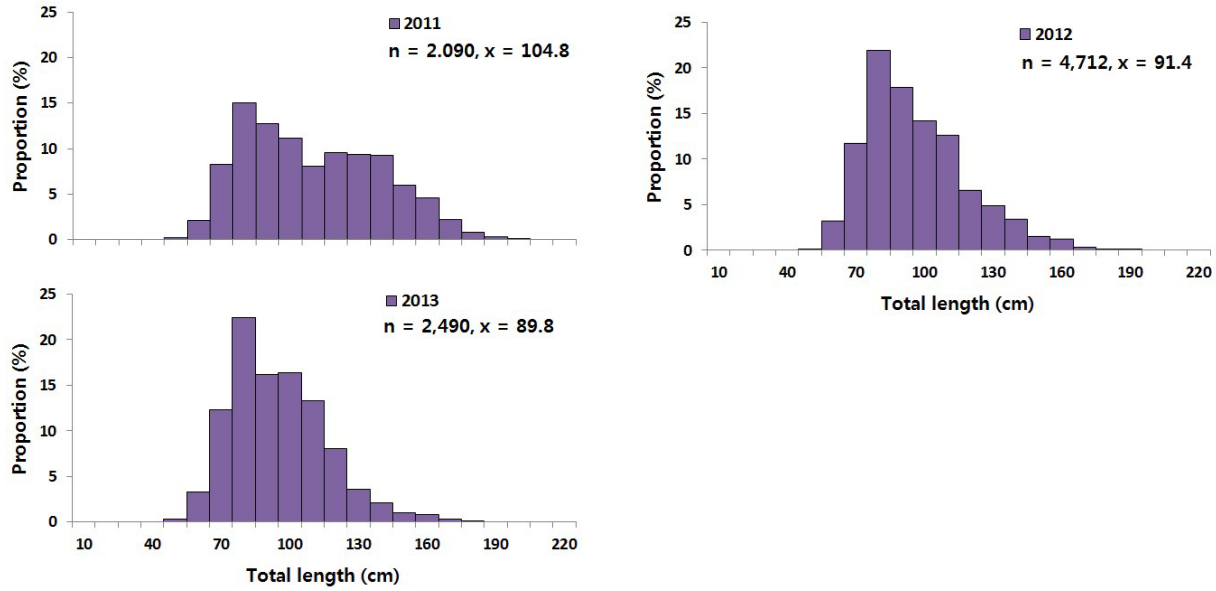
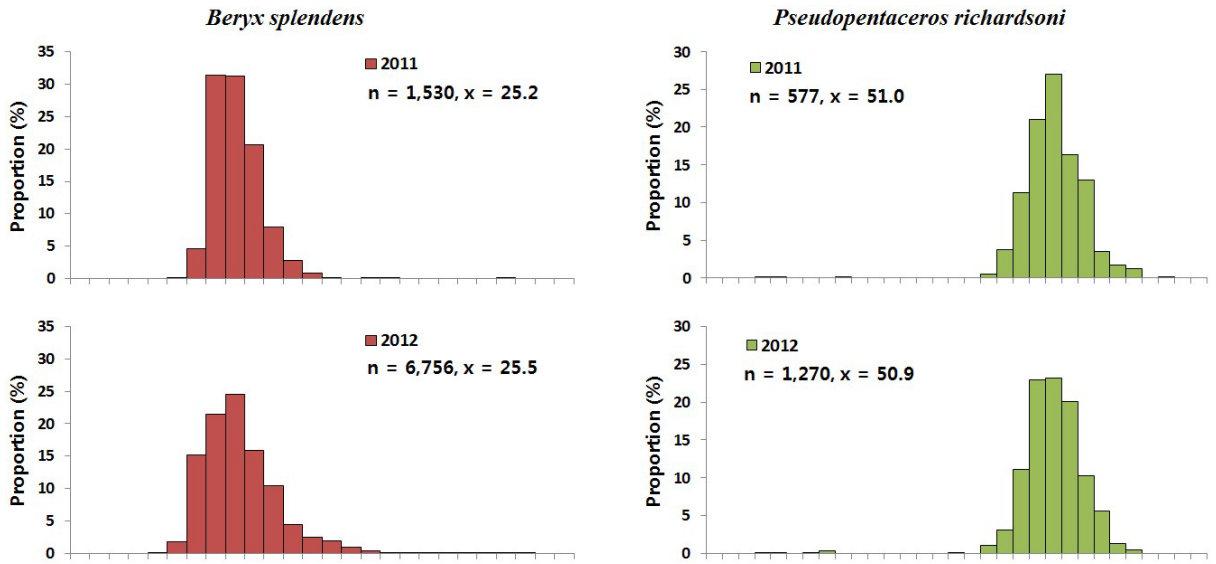


Figure 4. Length frequency of Patagonian toothfish by bottom longline fishery.



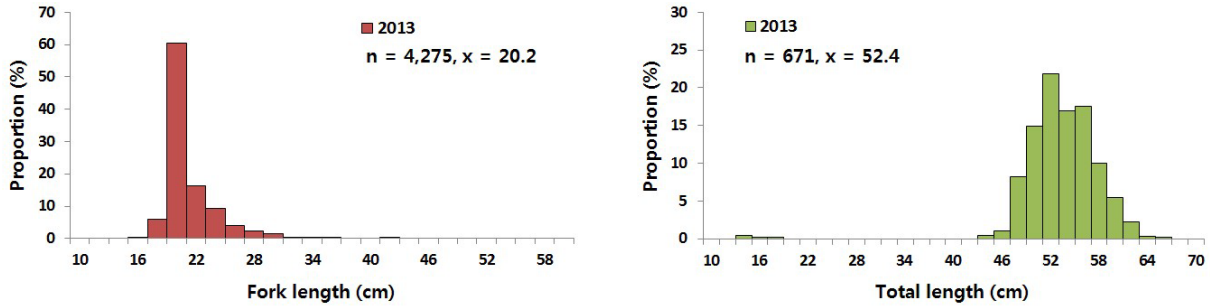


Figure 5. Length frequency of splendid alfonsino and pelagic armourhead by trawl fishery.

7. Summary of observer and sampling programs

7.1. Observer training

Korean scientific observer program for distant water fisheries started in 2002. National Institute of Fisheries Science (NIFS) is responsible for implementing and developing the observer program. The qualification for a person to be an observer is: a person who is a college graduate whose major field is nature science, or else, a fisheries high school graduate who accompanies at least 2-year experience on board having a certificate of qualification to deck officer. Candidates for observer who have passed the paper review (including medical check-up) and oral interview have to take training programs for 3 weeks. Observer training programs include basic safety training for seafaring, operations of navigation devices, biological information training for target and non-target species and data collection method for fishing activities. During the training program they have two types of test. One is the test on a technical term of fisheries and biology, and the other is the test on species identification. The person who scored above 70/100 in both tests and attended 100% of the course timetable can be qualified and deployed on board as a scientific observer. NIFS trains observers again before dispatching them to each RFMO convention area. The training includes the conservation and management measures of each RFMO, how to collect the data and sample, specific task that need to be done and more.

7.2. Port sampling program

Korea has not conducted any port sampling programs within the SIOFA area.

8. References

Coulson, P. G., R. Shotton, S. Robertson, and J. H. Lee. 2020. Thin-sectioned otoliths reveal extended longevity of southern boarfish (*Pentaceros richardsoni*) and are used to investigate inter-oceanic differences in length and age structure and growth. Fisheries Research 231: 105691. [doi: 10.1016/j.fishres.2020.105691].