EXAMINATION OF THE EFFECTS OF PIRACY ON FLEET OPERATIONS AND SUBSEQUENT CATCH AND EFFORT TRENDS

PREPARED BY: IOTC SECRETARIAT, 12 NOVEMBER 2013

PURPOSE

To inform the Scientific Committee (SC) of the known impacts of piracy activities in the Indian Ocean on IOTC fleet operation and subsequent catch and effort, as identified by the various working parties in 2013.

BACKGROUND

At the 15th Session of the Commission, it was '*recognized that piracy activities in the western Indian Ocean, have had substantial negative consequences on the activities of some fleets, as well as the level of observer coverage in these areas. The Commission requests that the Scientific Committee assess the effect of piracy on fleet operations and subsequent catch and effort trends*' (para. 40 of the S15 report).

At the 16th Session of the Commission, Members further '*recognised the severe impact of piracy acts on humanitarian, commercial and fishing vessels off the coast of Somalia and noted that the range of the attacks extended towards almost all of the western Indian Ocean, notably toward Kenya and Seychelles, with attacks being reported in their respective EEZ.*'

DISCUSSION

Throughout 2013, the various IOTC species working parties carried out further examinations of the impacts of piracy activities on IOTC fleets, and came to a range of conclusions which could be summarised as follows:

Effect of piracy on catches of IOTC species

Although no specific analysis of the impacts of piracy on fisheries in the Indian Ocean were presented at IOTC working party meetings in 2013, many papers demonstrated some level of impact on fishing operations in the western Indian Ocean (Somali Basin) and other areas as a result of relocated fishing effort. Specifically, that there has been a substantial displacement of longline catch and effort (Fig. 1) into traditional albacore fishing areas, thereby increasing fishing pressure on this species. Since 2004, annual catches have declined steadily, largely due to the continued decline in the number of active Taiwan,China longliners in the Indian Ocean (Fig. 2a). In recent years, the proportion of fishing effort of the Japanese longline fleet sharply decreased in the north-western Indian Ocean (off the Somalia coastline), while fishing effort increased in the area south of 25°S, especially off western Australia where catch rates of albacore are higher (Fig. 1). Similarly, as a direct result of piracy activities in the western Indian Ocean, many of the gillnet vessels from the I.R. Iran targeting tropical tuna species on the high seas have moved back to the EEZ of I.R. Iran and are now targeting yellowfin tuna and longtail tuna in the Arabian Sea or neritic tuna and tuna-like species in the coastal waters of the I.R. Iran. This has resulted in substantial increases in the total catch and effort of neritic tuna and tuna-like species under the IOTC mandate.

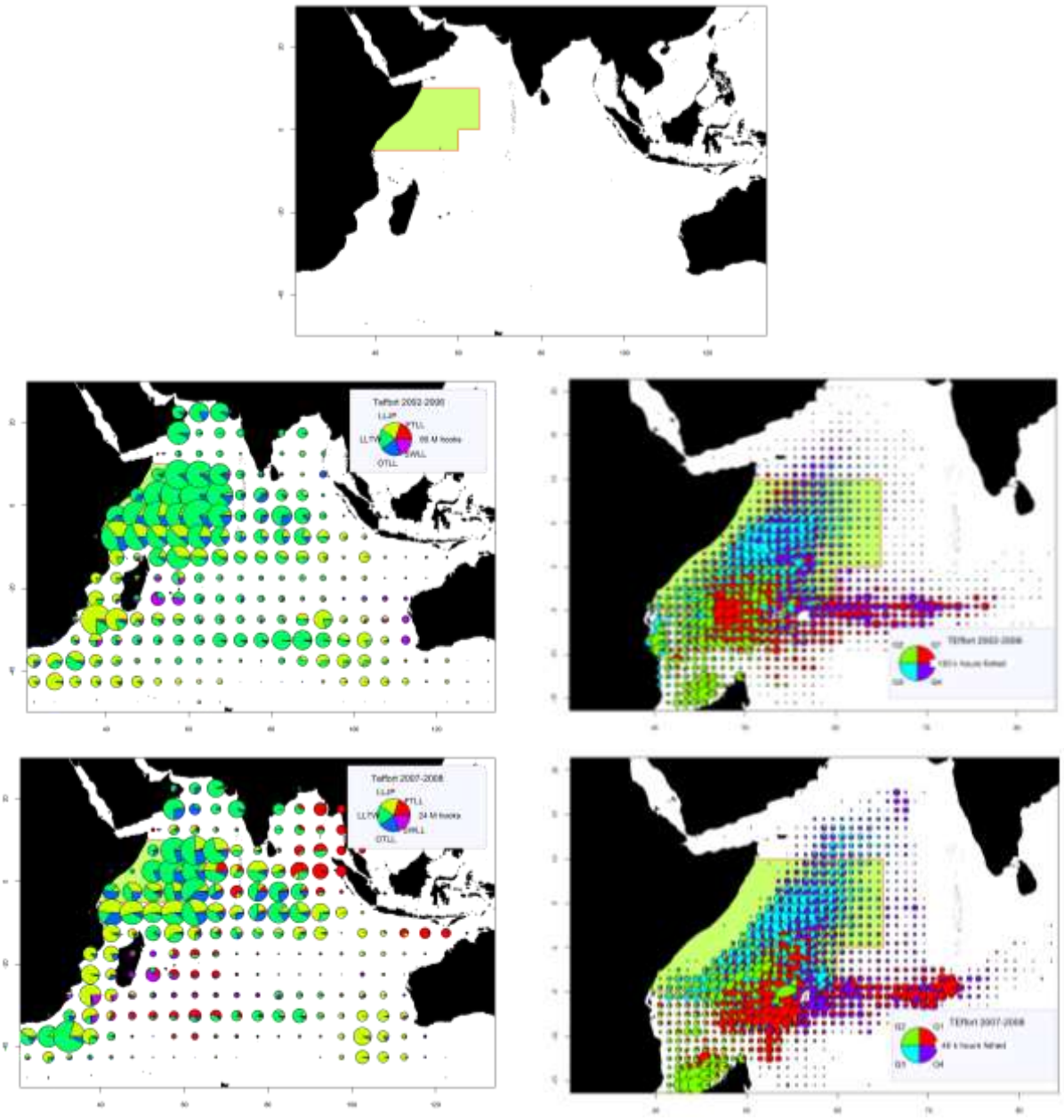
Fishing effort by the purse seine fleets shifted east by at least 100 miles during 2008–11 compared to the historic distribution of effort (Fig. 1) although vessels remained in the area impacted by piracy due to the presence of onboard military personnel. Piracy was also likely to influence the behaviour of small-scale fishing vessels which have declined in number and effort within the region.

The relative number of active longline vessels in the IOTC area of competence declined substantially from 2008 until 2011 (Fig. 2a, b), as did the purse seine fleets (Fig. 2c).The decline was likely due to the impact of piracy activities in the western Indian Ocean. Japan reported a reduction of 120 longline vessels between 2006 and 2011, with 68 remaining in 2011,which corresponds to a decrease of total catch of about 80% (for bigeye tuna and yellowfin tuna combined). In recent years, the proportion of fishing effort of the Japanese longline fleet sharply decreased in the north-western Indian Ocean (off the Somalia coastline), while fishing effort increased in the area south of 25°S, especially off western Australia. The Rep. of Korea reported that one longline vessel was hijacked in 2006 and this had resulted in a large reduction (50%) of the number of Rep. of Korean active vessels, from 26 in 2006 to 7 in 2011 (7 in 2012); while the remaining longline vessels moved to the Southern Indian Ocean. The number of EU and associated purse seiners has also decreased from 51 in 2006 to 34 in 2011 (a 33% of reduction) (Fig. 2c).

However, since 2011, there has been an increase in the number of active longline vessels in the Indian Ocean for Japan (68 in 2011 to 98 in 2012), China (10 in 2011 to 32 in 2012), Taiwan,China (132 in 2011 to 138 in 2012) and the Philippines (2 in 2011 to 14 in 2012) (Fig. 2a). Similarly, there has been an overall increase in the number of active purse seine vessels in the Indian Ocean for the European Union and assimilated fleets (34 in 2011 to 36 in 2012) and other for all other purse seine fleets combined (23 in 2011 to 35 in 2012) (Fig. 2c).

In the first half of 2011, 11 longline vessels from Taiwan,China, moved to the Atlantic Ocean and 2 to the Pacific Ocean. However, in the second half of 2011, 5 longline vessels returned from the Atlantic Ocean, and 1 longline vessel returned from the Pacific Ocean. The departure of the vessels from the Indian Ocean is reflected in the total effort deployed throughout not only the western Indian Ocean impacted by piracy, but also the entire Indian Ocean (Fig. 3a for longline and Fig. 3b for purse seine). In 2012, the trend was reversed, with a total of 15 longline vessels being transferred from the Atlantic Ocean back to the Indian Ocean, resulting in an overall increase in longline effort, particularly in the western Indian Ocean (Fig. 3a). Similarly, 6 longline vessels from Taiwan,China have been transferred from the Pacific Ocean back to the Indian Ocean in 2012. Although total levels of effort for the Taiwan,China longline fleet in the Indian Ocean remained low in 2012, effort levels in waters off Somalia increased markedly (Figs. 1 and 3a).

Reports that both longline and purse seine vessels from some fleets appear to be moving back towards the western Indian Ocean in 2012, should be closely monitored and reported at the SC and the working party meetings in 2014.



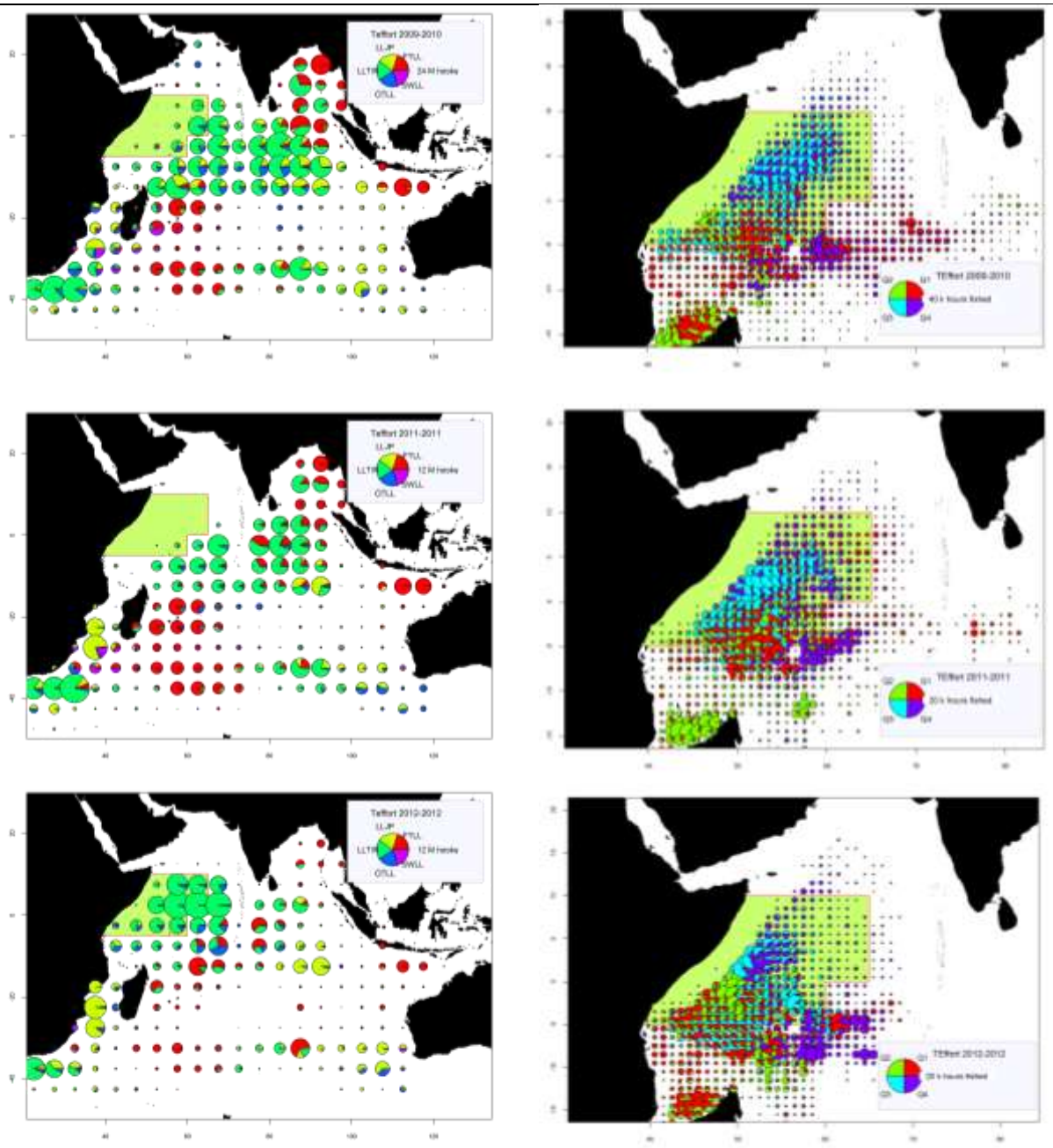


Fig. 1. The geographical distribution of fishing effort for longline (5 x 5 degrees; millions of hooks – left column) as reported for the longline fleets of Japan (LLJP), Taiwan,China (LLTW), fresh-tuna longline (FTLL), other longline (OTLL), and longline directed at swordfish (SWLL), and for purse seine (1 x 1 degrees; hours fished – right column) in the IOTC area of competence (Data as of September 2013), for 2002–06, 2007–08, 2009–10, 2011 and 2012. The area shaded in green is where piracy activities are considered highest. Longline effort: LLJP (light green): deep-freezing longliners from Japan; LLTW (dark green): deep-freezing longliners from Taiwan,China; SWLL (turquoise): swordfish longliners (Australia, EU, Mauritius, Seychelles and other fleets); FTLL (red): fresh-tuna longliners (China, Taiwan,China and other fleets; OTLL (blue): Longliners from other fleets (includes Belize, China, Philippines, Seychelles, South Africa, South Korea and various other fleets).

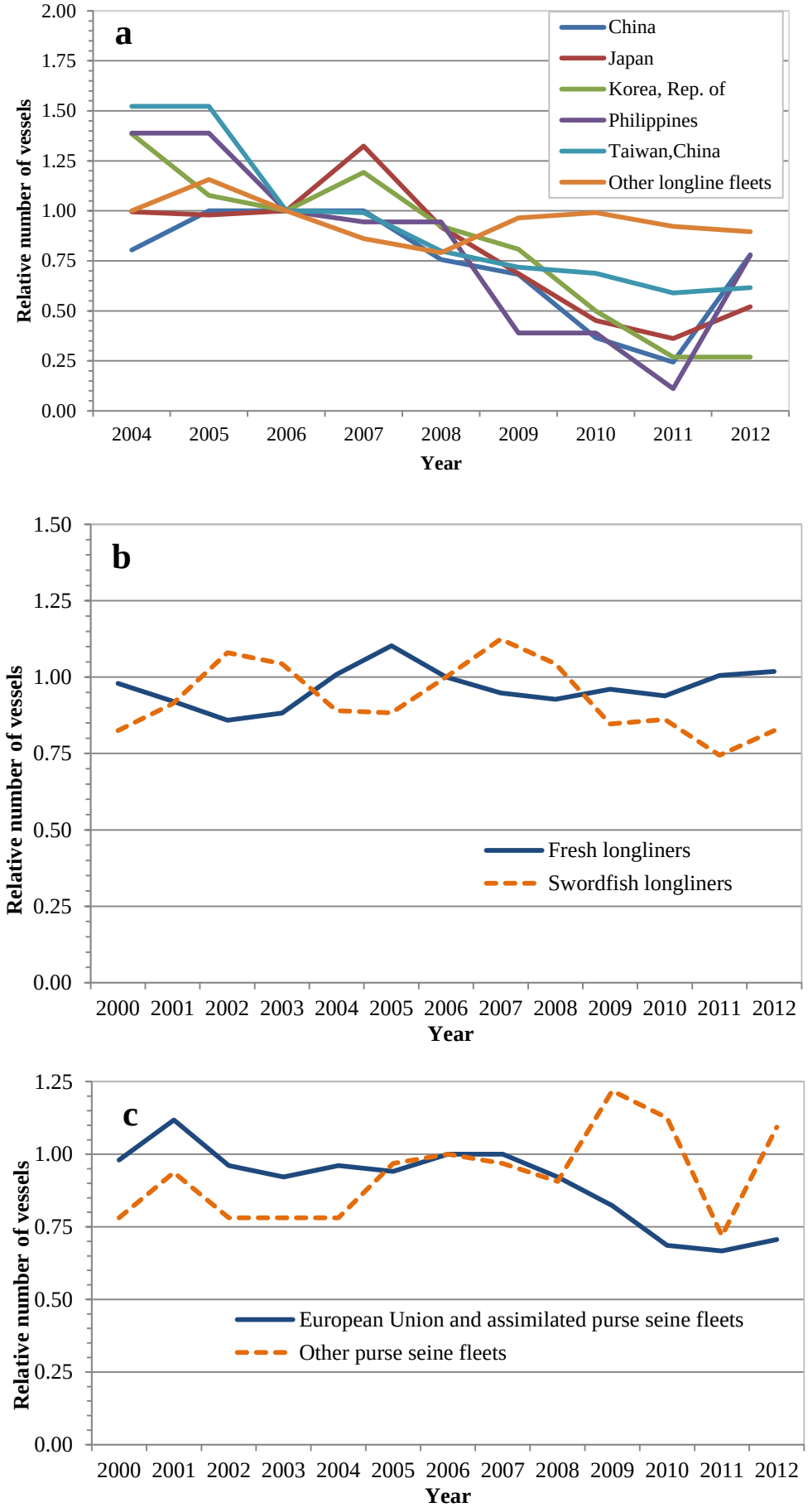


Fig. 2. The change in the relative number of some active a) deep freezing longline (numbers have been scaled to the number of active vessels in 2006), b) other longline and c) purse seine fleets since 2000 in the Indian Ocean.

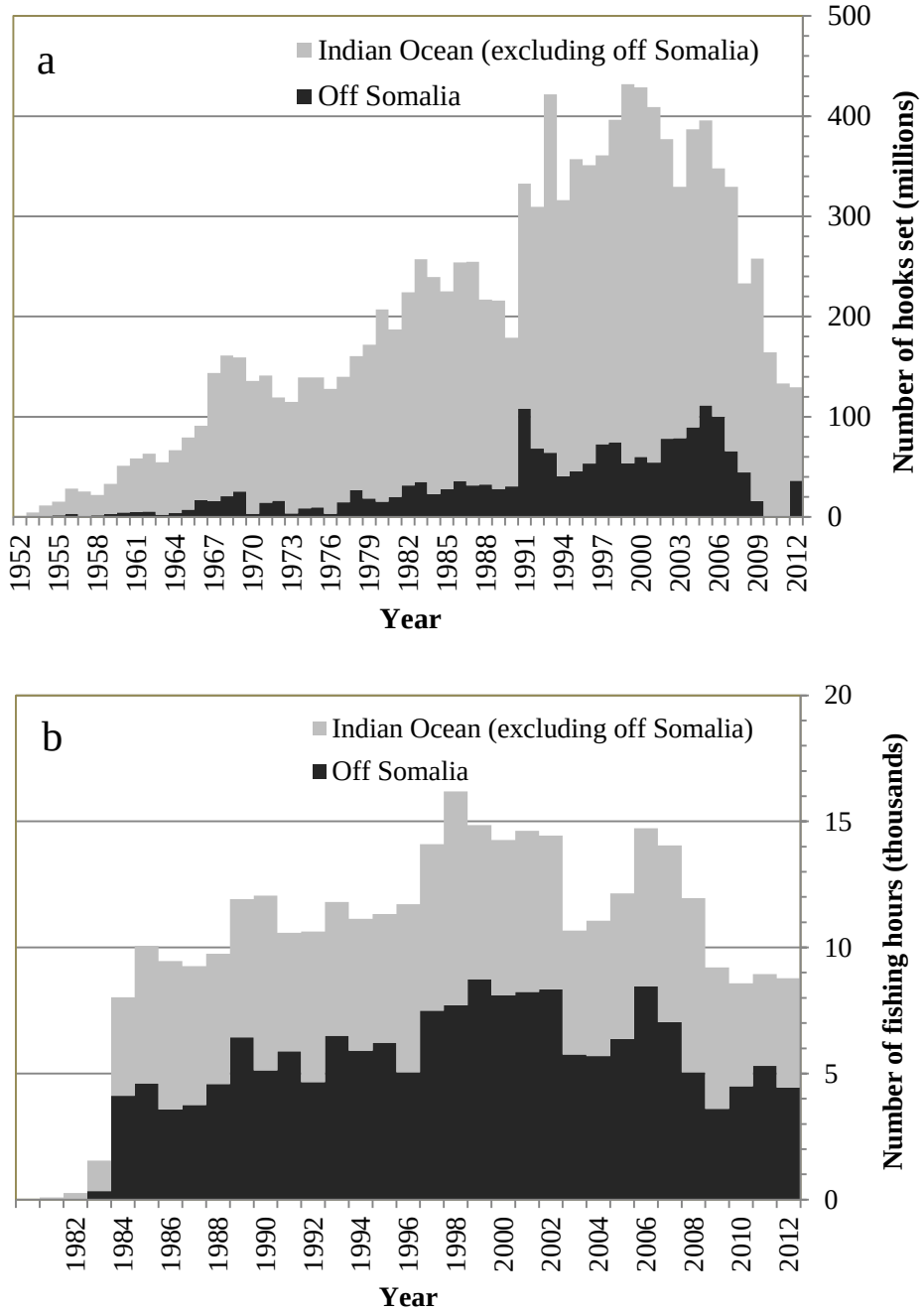


Fig. 3. Changes in total effort for a) longline (number of hooks set in millions), and b) purse seine (number of hours fished in thousands) vessels by year and geographical area: off the Somalia coastline (area shown in the insert of Fig. 1) and for the rest of the Indian Ocean.

Recommendation

That the SC **NOTE** the reported impacts of piracy on fishing operations in the western Indian Ocean (Somali Basin) and other areas as a result of relocated fishing effort, and **CONSIDER** how to convey these reported impacts to the Commission.