

Albacore tuna (*Thunnus alalunga*) landing at fishing ports in Thailand between 2016 and 2018

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Abstract

Thailand is one of world's largest exporters of tuna products. However, the required raw materials for tuna processing in the country were imported. Albacore tuna is important species in the tuna supply chain in Thailand for white meat tuna products. This paper presents the updated information on albacore tuna caught from the Indian Ocean unloaded by foreign vessels at fishing ports in Thailand between 2016 and 2018. There was a total of 371 trips from 94 foreign vessels that carried tunas caught from the Indian Ocean and unloaded at 11 ports in four provinces of Thailand. Most of the trips was from fishing vessels (*i.e.*, longliners and purse seiners). Among the fishing vessels, the flag countries of longliners were Indonesia, Malaysia and Taiwan Province of China, whereas the flag country of purse seiners was only Japan. The quantity of total landings and albacore tuna landed in the four port provinces was 87,401.68 t and 44.98 t, respectively. The large quantity of total landings was 72,150.19 t from carrier vessels; however, albacore tuna landed by carrier vessels was only 0.78 t. For fishing vessels, the total landings of longliners and purse seiners were 8,984.71 t and 6,266.78, respectively. The albacore tuna landed by longliners was 44.20 t, while there was none from purse seiners. The trends of number of trips made by fishing vessels as well as total landing and albacore tuna decreased from 2016 to 2018. The decreasing trends could have been affected by strict enforcement of the port state measures of Thailand as the country's policy on combating illegal, unreported and unregulated fishing.

Keywords: albacore tuna, landing, fishing port, foreign vessel, Indian Ocean

Introduction

Thailand is one of the world's largest exporters of tuna products; however, the required raw materials for tuna processing in the country are imported, particularly the albacore tuna (*Thunnus alalunga*). This tuna species is an important raw material for white meat tuna products in the tuna supply chain in Thailand. From 2000 to 2015, the albacore tuna was caught by Thai tuna longliners from the Indian Ocean (IOTC, 2019), but the catch could not fully support the demand of processing plants in Thailand. After that period, the Thai tuna longline fleet totally stopped all the fishing operations in the Indian Ocean. Consequently, the raw materials for albacore tuna processing were sourced from foreign fishing vessels and transshipment (carrier) vessels.

In 2018, there were 25 designated fishing ports in 10 provinces of Thailand along the Gulf of Thailand and the Andaman Sea for non-Thai vessels which brought aquatic animals and/or aquatic animal products to the country (MOAC, 2018), particularly raw materials for tuna processing. The Department of Fisheries (DOF), Thailand assigned port inspectors for foreign vessels at the designated ports. All foreign vessels landing at the ports are inspected using the "Standard Operating Procedure Foreign Flags Vessel Control and Inspection under Port State Measures (PSM)" of Thailand abiding by the "Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing" of the FAO (DOF, 2018).

The purpose of this paper is to present the updated information on tuna, highlighting the albacore tuna, caught from the Indian Ocean that was unloaded by foreign vessels at fishing ports in Thailand between 2016 and 2018.

Materials and methods

The data on tuna landing from foreign vessels between 2016 and 2018 were derived from the information compiled by the port inspectors designated by the DOF at the 25 fishing ports in 10 provinces of Thailand, namely: Bangkok, Samut Prakarn, Samut Sakhon, Trat, Songkhla, Pattani, Narathiwat, Ranong, Phuket and Satun (Figure 1). Each datum or record was considered as a trip of a vessel carrying tuna caught from the Indian Ocean, including landing port, vessel name, flag country, arrival date, fish species and landing quantity.

The foreign vessels from all flag countries were categorized into two main types: carrier vessel and fishing vessel. For the fishing vessel, the sub-types were identified according to its fishing gear (*i.e.* purse seiner and longliner).

The number of trips for each type or sub-type of vessel was calculated for each port province and flag country. The quantities of total landing and albacore tuna unloaded by each type or sub-type of vessel were computed for each port province. Furthermore, the trends of number of trips made by fishing vessels as well as total landing and albacore tuna during 2016-2018 were analyzed.

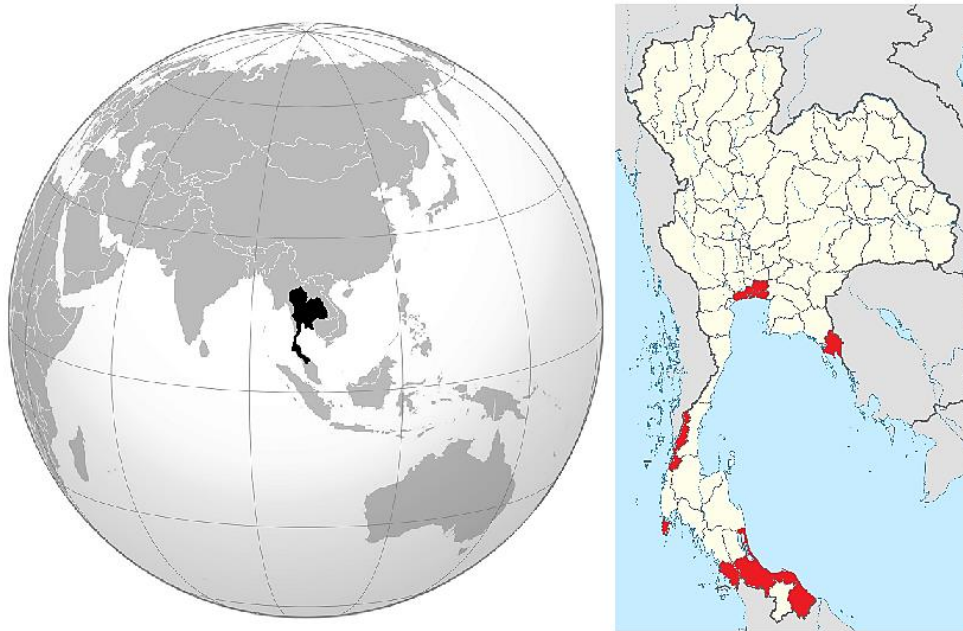


Figure 1 Location of 10 port provinces (red color) of Thailand for unloading aquatic animals and/or aquatic animal products from non-Thai vessels during 2016-2018 (maps modified from www.mapsland.com and www.wikimedia.org)

Results and Discussion

A total of 371 trips of foreign vessels arrived in fishing ports in Thailand between 2016 and 2018. All trips were made by 94 foreign vessels, including 15 carrier vessels and 79 fishing vessels. The fishing vessels consisted of 76 longliners and three purse seiners (Figure 2).

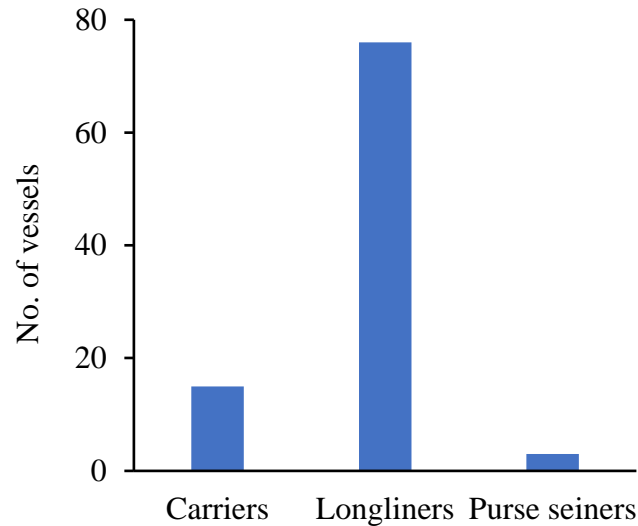


Figure 2 Total number of foreign vessels (carriers, longliners and purse seiners) carrying tuna caught from the Indian Ocean that landed in Thailand between 2016 and 2018

Number of trips by port province

Among the 25 fishing ports, the foreign vessels unloaded tuna caught from the Indian Ocean at 11 ports in four provinces (Bangkok, Samut Prakarn, Samut Sakhon and Phuket). Table 1 shows the number of trips for carrier and fishing vessels for each port province. Carrier vessels made a total of 21 trips in Bangkok, Samut Prakarn and Samut Sakhon. The carrier vessels unloaded tuna in these three port provinces because of the short distance between the ports and processing plants, thus, large quantities of fish could be easily transported from the ports to the processing plants.

For the fishing vessels, there was a total of 350 trips in Phuket only. It indicated that the ports in Phuket were preferred by the foreign fishing vessels in landing tuna. This might be due to the proximity of the ports in Phuket from the fishing ground and the efficiency of re-exporting fresh tuna by airplane using the international airport in Phuket. Moreover, Phuket had 116.7 trips per year, which was the highest among the four port provinces.

Table 1 Number of trips of foreign vessels (carrier and fishing vessels) that carried tuna caught from the Indian Ocean and landed at fishing ports in port provinces of Thailand during 2016-2018

Port province	Carrier vessels	Fishing vessels		All vessel types	Trips per year for all vessel types
		Longliners	Purse seiners		
Bangkok	9	0	0	9	3.0
Phuket	0	330	20	350	116.7
Samut Prakarn	10	0	0	10	3.3
Samut Sakhon	2	0	0	2	0.7
Total	21	330	20	371	123.7

Number of trips by flag country

The foreign vessels that carried tuna caught from the Indian Ocean and landed in Thailand during 2016-2018 were from nine flag countries, namely: Bahamas, Curacao, Indonesia, Japan, Korea (Republic of), Malaysia, Maldives, Panama and Taiwan Province of China (Table 2). Most of the trips was from Taiwan Province of China, followed by Japan. The number of trips for carrier vessels were mostly from Panama and Bahamas. Among the fishing vessels, the most number of trips for longliners was made by Taiwan Province of China, whereas all trips for purse seiners was made by Japan only.

Table 2 Number of trips of foreign vessels (carrier and fishing vessels) by flag country that carried tuna caught from the Indian Ocean and landed at fishing ports in Thailand during 2016-2018

Flag country	Carrier vessels	Fishing vessels		All vessel types	Trips per year for all vessel types
		Longliners	Purse seiners		
Bahamas	6	0	0	6	2.0
Curacao	2	0	0	2	0.7
Indonesia	0	7	0	7	2.3
Japan	0	0	20	20	6.7
Korea (Republic of)	2	0	0	2	0.7
Malaysia	0	4	0	4	1.3
Maldives	3	0	0	3	1.0
Panama	8	0	0	8	2.7
Taiwan Province of China	0	319	0	319	106.3
Total	21	330	20	371	123.7

Quantities of total landing and albacore tuna

The quantities of total landing and albacore tuna unloaded by carrier and fishing vessels at the four port provinces in Thailand between 2016 and 2018 are shown in Table 3. The total landing and albacore tuna landed in Thailand during the period were 87,401.68 t and 44.98 t, respectively. The carrier vessels landed the largest quantity of the total landing (72,150.19 t); however, albacore tuna was only 0.78 t (0.001% of the total landing), while the 99.9% of the total landing was a combination of tropical tunas (skipjack, yellowfin and bigeye tunas).

For fishing vessels, the total landing of longliners and purse seiners were 8,984.71 t and 6,266.78 t, respectively. The quantity of albacore tuna unloaded by longliners was 44.2 t (0.5% of the total landing of longliners), while there was none from purse seiners. About 70% of catch from longliners was composed of yellowfin and bigeye tunas, and 27.4% was billfishes. For purse seiners, the catch was composed of skipjack, yellowfin and bigeye tunas (73.9%, 15.8% and 10.3%, respectively).

Based on the catch composition data in this paper, the main fishing ground for longliners and purse seiners could be located in the equatorial or tropical waters. Panjarat *et al.* (2016) reported that the fishing ground of foreign longliners (most of the catch composed of yellowfin and bigeye tunas) landed in Phuket in 2011 was in the Eastern Indian Ocean between latitude 2°S and 12°N.

Table 3 Quantities (t) of total landing (Total) and albacore tuna (ALB) caught from the Indian Ocean unloaded by foreign vessels (carrier vessels and fishing vessels) at port provinces of Thailand during 2016-2018

Port province	Carrier vessels		Fishing vessels				All vessel types	
			Longliners		Purse seiners			
	Total	ALB	Total	ALB	Total	ALB	Total	ALB
Bangkok	26,733.74	0.69	0.00	0.00	0.00	0.00	26,733.74	0.69
Phuket	0.00	0.00	8,984.71	44.20	6,266.78	0.00	15,251.49	44.20
Samut Prakarn	42,011.12	0.09	0.00	0.00	0.00	0.00	42,011.12	0.09
Samut Sakhon	3,405.33	0.00	0.00	0.00	0.00	0.00	3,405.33	0.00
Total	72,150.19	0.78	8,984.71	44.20	6,266.78	0.00	87,401.68	44.98

Trends of number of trips, total landing and albacore tuna

Figure 3 shows the trend of number of trips made by the fishing vessels at the fishing ports in Thailand that unloaded tuna caught from the Indian Ocean between 2016 and 2018. The number of trips decreased continuously from 203 trips in 2016 to 44 trips in 2018. The total landing also decreased from 7,846.74 t in 2016 to 2,931.46 t in 2018 (Figure 4). For albacore tuna, it slightly increased from 21.15 t in 2016 to 21.80 t in 2017; however, it decreased abruptly to 1.24 t in 2018.

The strict enforcement of PSM of Thailand since 2016 could have influenced the decreasing number of trips of foreign fishing vessels and resulted in the decreasing trend of total landing and albacore tuna. Moreover, the decreasing trends of total landing and albacore tuna between 2016 and 2018 were a continuation of the historical record of landings of foreign fishing vessels in Thailand between 1994 and 2015 (Panjarat *et al.*, 2016).

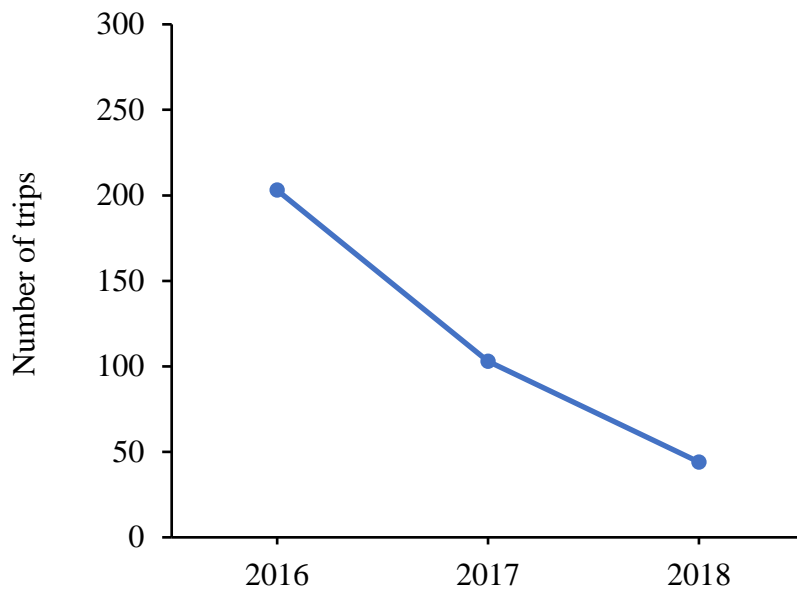


Figure 3 Trends of number of trips made by foreign fishing vessels at fishing ports in Thailand that unloaded tuna caught from the Indian Ocean during 2016-2018

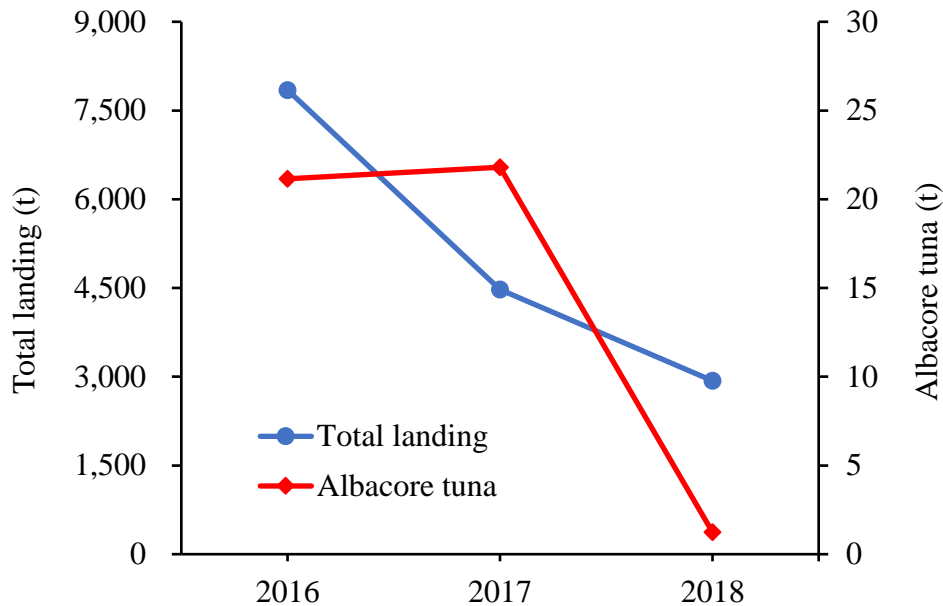


Figure 4 Trends of total landing and albacore tuna (t) caught from the Indian Ocean unloaded by foreign fishing vessels at fishing ports in Thailand during 2016-2018

Conclusion

Thailand imported tuna caught from the Indian Ocean between 2016 and 2018, which were carried by 371 trips of foreign vessels and unloaded at fishing ports in Bangkok, Phuket Samut Prakarn and Samut Sakhon. For albacore tuna, most of its landing in Thailand (44.2 t) was made by longliners at fishing ports in Phuket, however, it accounted only about 0.5% of total landing of longliners. There was a decreasing trend of albacore tuna unloaded by foreign fishing vessels in Thailand between 2016 and 2018. The decreasing trend could have been affected by the strict enforcement of PSM as a policy of Thailand on combating IUU fishing. Therefore, it can be ensured that the tuna products from Thailand are not involved with IUU fishing.

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