STATUS OF FISHERIES OF YELLOWFIN AND SKIPJACK TUNAS IN PAKISTAN

Muhammad Moazzam

WWF-Pakistan, 46-K, PECHS Block 6, Karachi-75400, Pakistan
(mmoazzamkhan@gmail.com)

ABSTRACT

Tropical tuna is represented by two species in Pakistan; of these yellowfin tuna (*Thunnus abacares*) contributes 25,471 m. tons during 2017. Annual landings of skipjack tuna (*Katsuwonus pelamis*) during 2017 were recorded to be 3,178 m. tons. During 2017, a major part of the fleet mainly operated in the offshore deeper waters; therefore, landings of both yellowfin and skipjack tunas were comparatively much higher than previous years.

INTRODUCTION

Gillnetting for tropical tuna is an important fisheries of Pakistan as a major part of the fleet is engaged in this fishing. Gillnets consisting of multifilament are used for catching tropical tunas including yellowfin tuna (*Thunnus abacares*) and skipjack tuna (*Katsuwonus pelamis*). Bigeye tuna (*Thunnus obesus*) is rarely caught by the gillnet fishing vessels in coastal and offshore waters, therefore, it does not contribute to the tuna landings of Pakistan.

Information about tropical tuna fisheries of Pakistan is known through the work of Khan (2016), Moazzam (2011, 2012a-b, 2014), Moazzam *et al.*, (2017) and Nawaz and Moazzam (2014). These studies were based mainly on the fisheries statistical data that was published by Marine Fisheries Department, Government of Pakistan. Some information collected through the Crew-based Observer Programme initiated by WWF-Pakistan since 2012 is also incorporated in this study.

Based on the information generated through this WWF-Pakistan's Crew-based Observer Programme, data of tuna and tuna like species was reconciled with the landings data available with Marine Fisheries Department, Government of Pakistan. An exercise for reconstruction of landing data for IOTC species since 1987 to 2017 was also carried out. These data sets were provided to IOTC by by Marine Fisheries Department, Government of Pakistan whereas a part of it was presented in WPNT07 (Moazzam and Ayub, 2017).

TROPICAL TUNA LANDINGS

Tropical tuna landings during 2017 was observed to be comparatively higher than previous years (Table-I). An overall decrease of 16.89 % in the landings tropical tuna was observed during 2017 as compared to 2016. Major increase was noticed in case of skipjack tuna where an increase of 184.25 % was noticed during the same period. In case of yellowfin tuna this increase was observed to be only 8.89 %.

Table-I: Landings of Tropical Tuna Landings during 2016 and 2017

Species	Scientific Names	2016	2017	% Increase/Decrease
Yellowfin tuna	*Thunnus albacares*	23,392	25,471	8.89
Skipjack Tuna	*Katsuwonus pelamis*	1,118	3,178	184.25
Bigeye tuna	*Thunnus obesus*	0	0	-
TOTAL		24,510	28,649	16.89

Source: Marine Fisheries Department, Government of Pakistan

The increase in the landings of tropical tuna during 2017 may be attributed mainly to the operation of large tuna gillnetters in comparatively offshore waters as compared to previous years. Unprecedented increase of the prices of yellowfin and skipjack in the tuna market of Pakistan during 2017 was noticed. The average prices of these two species were about US$ 1.95-1.85/kg during 2017 as compared to 2016 when prices were US$ 1.25-1.35/kg. It is worth mentioning that longtail, yellowfin and skipjack tunas are traded with neighbouring country whereas kawakawa and frigate tuna are mainly exported to Sri Lanka in salted-dried form whereas small quantities of these species are locally consumed.

TREND OF TROPICAL TUNA LANDINGS

Tropical tuna has always been very important component of large pelagic fisheries in Pakistan. Landings data reconstructed by Marine Fisheries Department, Government of Pakistan and WWF-Pakistan (Moazzam *et al.*, 2017) indicates that annual landings of tropical tuna ranged between 6,000 m. tons during 1987 and about 29,000 in 2017 (Fig.1). Unprecedented increase in the annual landings of tropical tuna was noticed in 2017.

Analysis of the reconstructed landing data also indicates that yellowfin tuna (*Thunnus albacares*) is the most dominating species among all neritic and tropical tunas species. An increasing trend in the annual landings is noticeable since 2000 when landings of yellowfin tuna were 8,000 m. tons which steady increasing since then except a minor decrease in 2009 and 2013. Since 2014, the annual landings of yellowfin tuna exponentially increased from 14,000 m. tons in 2014 to 25,000 m. tons in 2017 (Fig. 2).

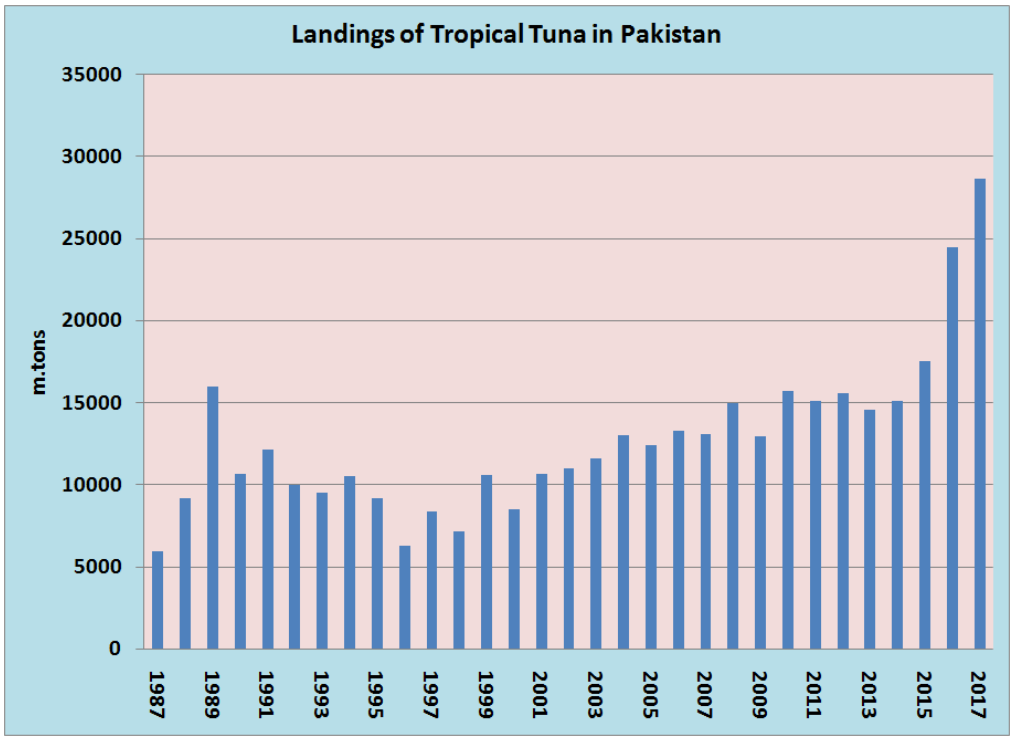


Fig. 1: Trend of landings of tropical tuna in Pakistan.

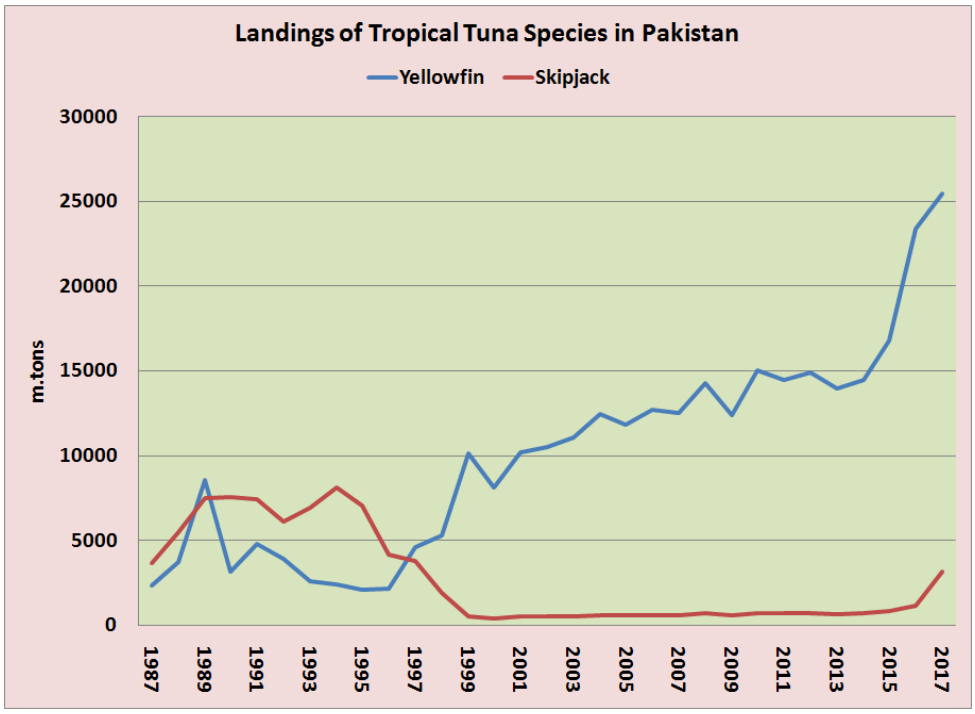
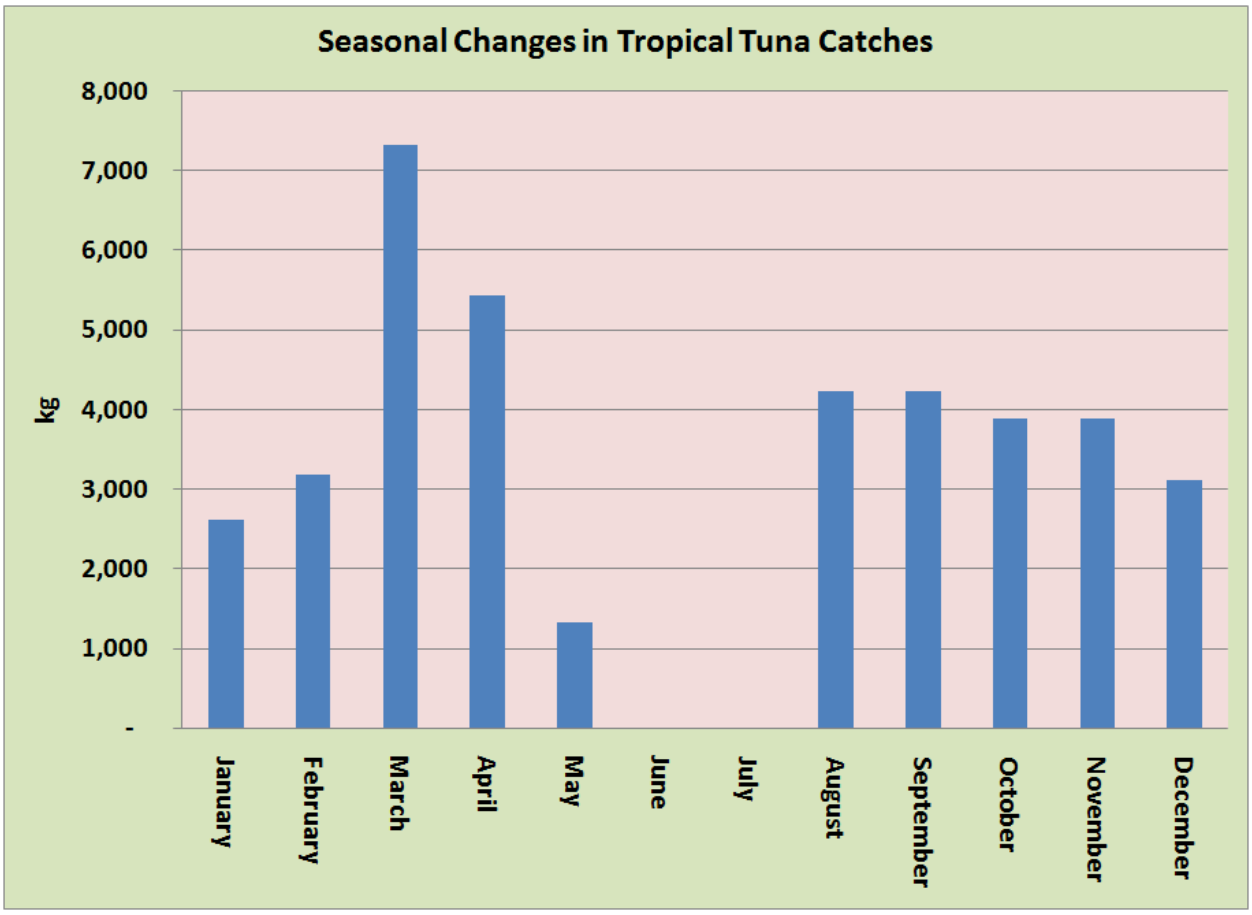


Fig.2: Trend of landings of tropical tuna species in Pakistan

An opposite trend was observed in case of skipjack tuna (*Katsuwonus pelamis*). Its annual landings were observed to have maxima in 1994 when it reached to a level of

8,000 m. tons. Since then its annual landings decreased to 485 m. tons in 1999. This decrease can be attributed to impact of Somali piracy (Moazzam 2012). Annual landings of skipjack tuna remained low (between 485 m. tons and 1,118 m. tons) during 1994 and 2016. An unprecedented increase in annual landings of skipjack tuna was noticed in 2017 when it reached a level of 3,000 m. tons.



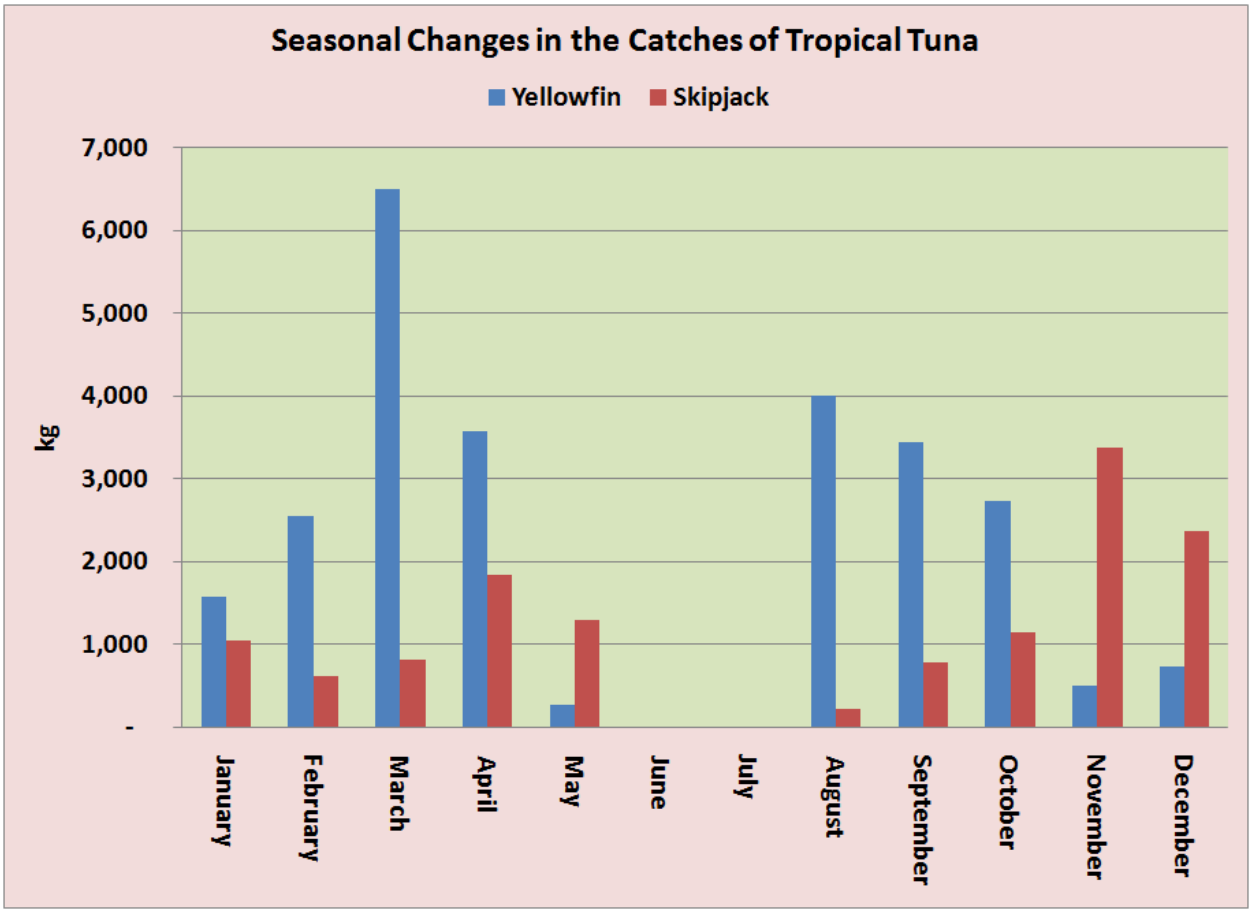
.

Fig. 3: Seasonal changes in catches of tropical tuna in Pakistan (averaged for 2013-2017).

SEASONAL CATCHES OF TROPICAL TUNA

Data collected through WWF-Pakistan's Crew-based Observer Programme revealed a marked seasonality in the catches of tropical tuna. Peak catches of tropical tuna were observed in March and April (Fig. 3). The data presented in Fig. 3 is an average of five year data (2013-2017) which shows minimum catches during May which is mainly because the tuna gillnet vessels start closing down their operations by mid of May in anticipation for voluntary close season during June and July.

The analysis further revealed that yellowfin tuna dominates the catches almost throughout the year except during May and November and December (Fig. 4). The catches of skipjack tuna were observed to be high during May and November and December. It is worth mentioning that during November and December, a major part of the fleet moves to offshore and deeper waters of EEZ of Pakistan and in the Area Beyond National Jurisdiction (ABNJ) where skipjack are more common as compared to yellowfin tuna. The high catches skipjack in May is attributed to migration of skipjack tuna to continental shelf area which according to fishermen starts in April and continues till May.



. Fig. 4: Seasonal changes in catches of Tropical tuna species in Pakistan (averaged for 2013-2017).

CONCLUSION

Tropical tuna species forms the important part of the tuna fisheries in Pakistan as these species contribute about 44 % of the total tuna landings. Yellowfin tuna is the most dominating tuna species observed since 1987 which is followed by longtail tuna (*Thunnus tonggol*). A marked seasonality in the tropical tuna landings was noticed with a peak in March and April. There is a voluntary two month close season observed during June and

July by the tuna gillnets fishermen mainly because of extremely rough weather and intensive wave action due to summer monsoon.

During 2017, tropical tuna landings was observed to be about 16.89 % higher than 2016 which is mainly due to operation of large gillnet vessels in comparatively offshore waters for targeting skipjack and yellowfin tuna. The demand and prices of these two species were much higher during 2017 as compare to 2016. Marketing forces, therefore, control area of operation of tuna vessels in Pakistan which is reflected in change in species composition.

Bigeye tuna (*Thunnus obesus*) is seldom caught by Pakistani gillnet vessels. This may be because of geographical distribution of bigeye tuna in Indian Ocean. According to Lee *et al*. (2005) bigeye tuna mainly distributed in tropical waters of Indian Ocean between 10°N and 15°S which is an area seldom fished by Pakistani gillnetters. Mohri *et al.*, (1991) observed that low catches in the north high latitude region of the Arabian Sea.

REFERENCES

Khan, M. F., 2016. Status of Tropical Tuna Gillnet fisheries in Pakistan. Working Party on Tropical Tuna (WPTT18) 05 November, 2016- 10 November, 2016. Mahé, Seychelles. IOTC-2016-WPTT18-INFO3.

Lee, P.-F., Chen, I.-C., and Tzeng, W.-N., 2005. Spatial and Temporal Distribution Patterns of Bigeye Tuna (*Thunnus obesus*) in the Indian Ocean. Zool. Stud. 44:260-270.

Moazzam, M., 2011. Tuna fishing of Pakistan: Impact of transboundary migration on exploitation levels. In: Proceedings of Seminar "Transboundary Coastal and Marine Protected Areas with Special Priorities for Spawning Grounds (27-28 May, 2009). (Eds. Wahab, A., Moazzam, M. and Hasan, A., (Editors) 2011. Zoological Survey of Pakistan, Islamabad. Pp. 49-60.

Moazzam, M., 2012a. Tuna Situation Analysis. WWF-Pakistan Report. Karachi 43p..

Moazzam, M., 2012. The impacts of piracy in the Pakistani fisheries sector: case study of Pakistan. In: Seminar on "The impacts of Piracy on Fisheries in the Indian Ocean" Mahé, Republic of Seychelles, 28 – 29 February 2012. European Bureau for Conservation and Development.

Moazzam, M. and Ayub, S., 2017. Catch reconstruction of neritic tuna landings of Pakistan based on data collected by WWF-Pakistan's Crew Based Observer Programme. Seventh Session of IOTC Working Party on Neritic Tuna (WPNT07) 10-13 July 2017. Male, Maldives. IOTC- 2017-WPNT07-11.

Moazzam, M., Khan, M. F. and Khan, M. W., 2017. Status of Gillnet fisheries and Data Reconstruction of Tropical Tuna in Pakistan. Working Party on Tropical Tuna (WPTT19) 17 October, 2017 - 22 October, 2017. Mahé, Seychelles. IOTC 2014 WPTT19 12_Rev1.

Mohri, M., Hanamoto, E., Takeuchi,S. 1991. Distribution of Bigeye Tuna in the Indian Ocean as Seen from Tuna Longline Catches. Nippon Suisan Gakkaishi 57: 1683-1687.

Nawaz, R., and Moazzam, M., 2014. An assessment of cetacean mortality in the tuna fisheries of Pakistan. Final Report Australian Marine Mammal Centre Grants Program. WWF-Pakistan 89p.