

Challenges to the pole-and-line tuna fishery in the Maldives

A Riyaz Jauharee

Marine Research Centre, Ministry of Fisheries and Agriculture, Republic of Maldives. 2013

Abstract

Maldivians have been catching tuna for nearly 1000 years from the coastal waters, free swimming schools and around drifting objects in the Indian Ocean. Tuna catches in the Maldives reached its peak in 2006 with a reported catch of 166,000t (138,000t of skipjack and 23,000t of yellowfin tuna). The pole-and-line fishery contributes 75-80% of all tuna landings in the country. The remaining is caught by handline, troll line and longline. In the past the tuna fishery had some difficulty in attracting young people to work on the vessels. But with the increasing price of tuna in the world markets the youth are keener to engage in the tuna fishery. Although there is no shortage of fishermen to work on the vessels the fishery is now facing a number of challenges. The increasing oil price and the declining catches have forced several fishers to abandon the tuna fishery. The boom in the tuna fishery in the middle of the last decade resulted in fishers building larger vessels and install bigger engines. The decline in fishery has made operation of these larger vessels uneconomical forcing the fishers to abandon these vessels. Another challenge is the lack of adequate livebait resources. Increasing size of the vessels has also put more pressure on the livebait resources. Local decline in livebait resources in some parts of the Maldives has forced the fishers to collect livebait from far away atolls resulting in an increase in the operation cost. Difficulty in obtaining ice and selling their catch was also highlighted by some fishers. In some seasons due to the increased amount of tuna landings in the country the price of tuna becomes very low making it uneconomical for the fishers to operate their vessels. It was suggested by some fishers that the handline tuna fishery targeting large yellowfin has also affected the pole-and-line tuna fishery but analysis of logbook data from the past two years has not shown a decline in catch landing in one fishery with an increase in landing in the other fishery.

Maldives tuna fishery

Maldives has a nearly 1000 year old pole and line tuna fishery. Pole and line fishery depends on livebait resources as the fishers use livebait to attract tuna and catch them. Tuna catches increased to an all time record of 167,000 t in 2006 but have been steadily declining since then. In 2010 the tuna catches dropped by about 60,000 t from the peaked catch in 2006. The pole and line fishers contribute 75-80% of all tuna landings across the Maldives. A handline fishery targeting large yellowfin near the surface started expanded in the 1990s. Tuna are also caught by trolling and longline vessels. Longline fishing vessels operate in outer EEZ beyond 100 miles. The longline vessels target bigeye and large yellowfin while trolling vessels target kawakawa and frigate tuna in the inshore and near shore waters around the atolls. Although Maldives used to have an important troll fishery in the past this fishery no longer exists. The sector has accounted for around 4-6 percent of GDP in recent years, and contributes to Maldives' earning of foreign exchange on account of the export of fresh, chilled, frozen, pouched and canned skipjack and yellowfin tuna. With a fishing fleet of approximately 1,200 pole-and-line vessels and approximately 350 hand line large yellowfin vessels, close to 15,000 fishermen and their families depend on fishing, according to records maintained by the Ministry of Fisheries and Agriculture (MOFA). This represents about 10-15 percent of the local workforce.

Maldives pole-and-line fishery

The livebait pole and line fishery consists of two separate activities; catching of livebait and catching of tuna using the livebait. Bait fishing is carried out in the lagoons and from the atolls basin using simple lift nets. Tuna fishing is carried out in the open ocean, outside the atolls, using pole and line. Traditionally, pole and line fishing starts with a livebait fishing operation carried out first thing in the morning. A simple cotton lift net was used, and deployed from a side of the *masdhoni* (Maldivian fishing boat) rigged on four long poles. Scraped fish paste was often used to lure the schools over the net. When sufficient bait is over the net it was rapidly hauled back and the captured fish transferred into the flooded wells (bait holds) of the sailing *masdhoni*. Circulation of water within the bait wells were maintained by hand-bailing, a laborious task at which crew members took turns.

By mid 1970s motorization of the fishing vessels were underway and this enabled the fishers to exploit new fishing ground resulting an increase in catch. The diving masks became

available for the fishers following the inception of tourism in the Maldives at the same time. Both motorization and use of masks enabled the fishermen to deploy larger liftnets, catch more bait and increased their ability to hold larger quantities of bait in the holds as pumps were used for circulating water in the holds. Overtime fishers constructed larger vessels (>80 feet) and making it possible for them to stay out in the open ocean for longer periods without returning to the port. Larger vessels enabled fishers to carry more ice, livebait, fuel and provided better accommodation for the crew. It also increased the effort and catch too but it led drastically increased the running cost.

Maldives pole-and-line catch

The pole and line tuna catch comprises of mainly skipjack and small yellowfin tuna. In addition bigeye, kawakawa and frigate tuna are caught. Almost all the skipjack, kawakawa and frigate are caught by pole and line. There is some difficulty in identifying clearly bigeye and yellowfin catches by pole and line fishes often report small bigeye tuna caught as yellowfin tuna and pole and line catch are rarely separated from the handline catch.

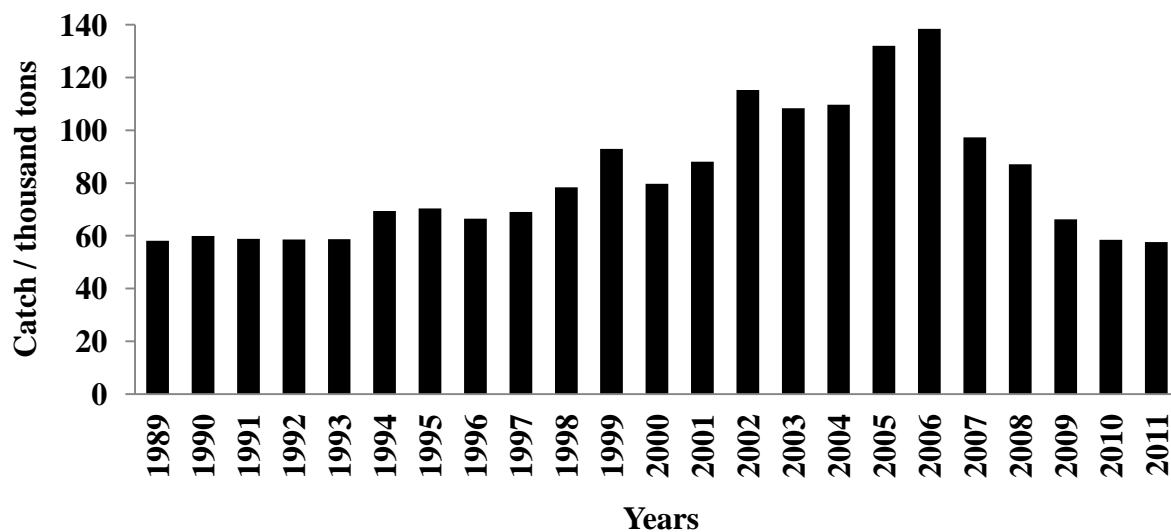


Figure 1: Skipjack tuna landing reached its peak in 2006. Almost all the skipjack tuna are caught by pole and line using livebait (MOFA data).

Since 2006 the skipjack tuna catch landing in the Maldives has declined (figure 1). This has resulted in fishers targeting several species (both pelagic and reef fish) using more than one gear (pole and line and handline) during fishing operations. Today it is common to find many of pole and line fishers to target large yellowfin tuna using handline gear. The catch in a multiday fishing operation can comprise of both large yellowfin caught by handline and small yellowfin with other species of tuna caught by pole and line gear.

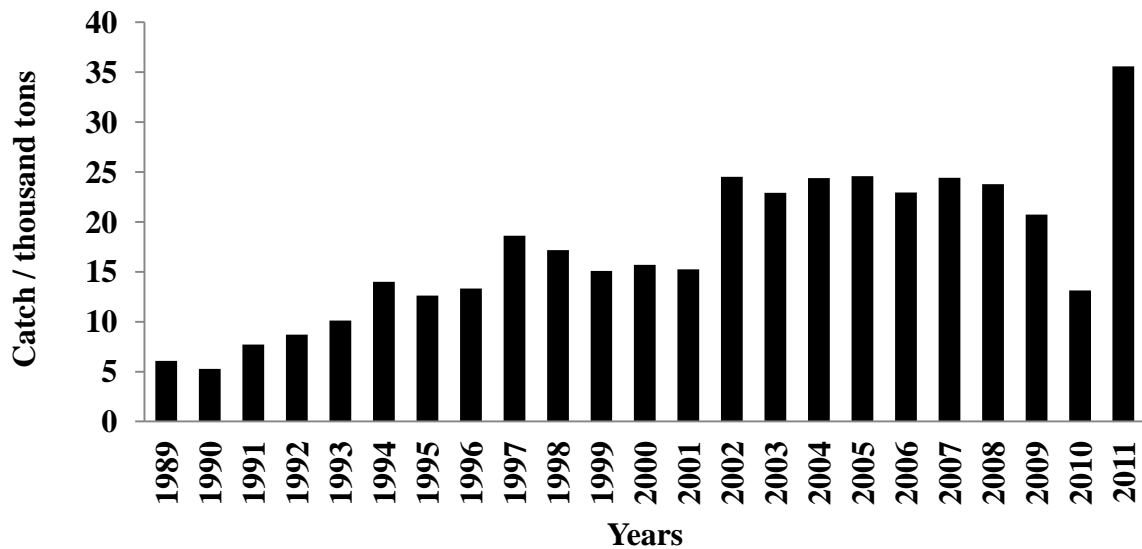


Figure 2: Yellowfin tuna landing increased drastically in 2011. Small yellowfin tuna are caught using pole and line while large yellowfin tuna are caught using handline and longline (MOFA data).

The declining catches in the pole and line fishery and the increasing in price of large yellowfin tuna encouraged several pole and line fishers to target large yellowfin using handline resulting in an increase in yellowfin tuna landings in 2011 (figure 2). In the recent years the number of kawakawa and frigate tuna caught has also declined (figure 3).

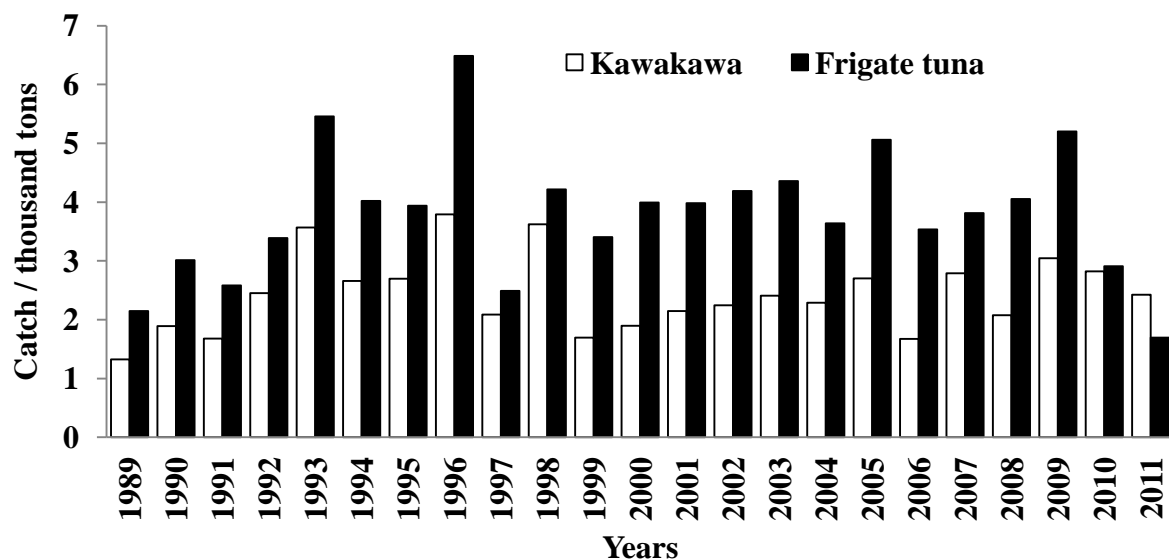


Figure 3: Kawakawa and frigate tuna landing decreased in the recent years after reaching a peak in 2009. Almost all kawakawa and frigate tuna are caught using pole and line. (MOFA data).

Several fishers claim that the decline in catches in the pole and line fishery could be due to more vessels switching to handline fishing targeting large yellowfin.

Increase in size of pole-and-line vessel

The decline pole and line catches coupled with increasing in fuel and operation costs also discourage fishers to leave the port. Increasing catches in the middle of the last decade resulted in fishers investing in larger vessels (figure 4) which was soon found uneconomical resulting in several fishers abandoning their vessels in the following years.

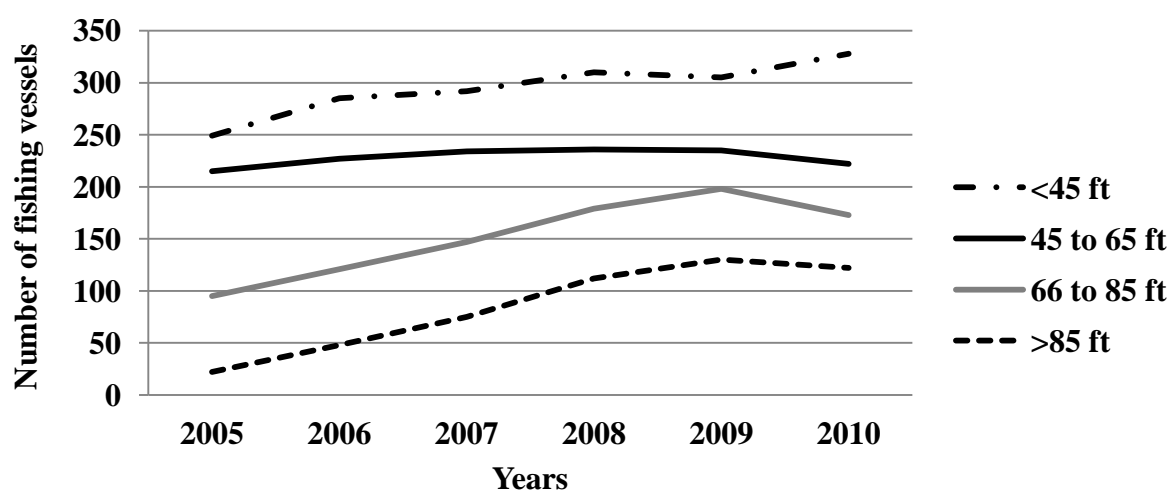


Figure 4: With increasing in pole and line catches around 2006 more fishers invested in large vessels (MOFA data).

The declining in catches in the pole and line fishery over the recent years has forced number of fishers to abandon their vessels or use the vessels for other activities resulting in reducing fishing effort (figure 5).

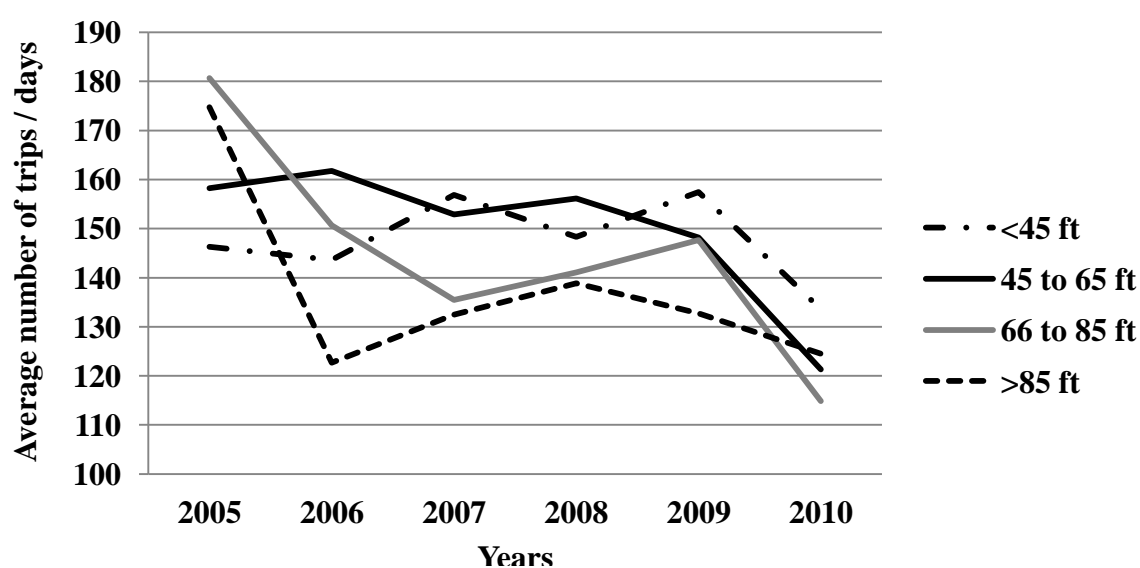


Figure 5: Average number of fishing trips declined with declining catches in the pole and line fishery (MOFA data).

Conclusion

In the past Maldivian pole and line tuna fishers had few challenges as there were always plenty of tuna in the water around Maldives. The decline in tuna catches since 2006 and the increasing in fuel cost for operating the large vessels has caused several fishers to abandon their vessels. In addition the increasing demand on the livebait stocks has also resulted in local depletion of livebait stocks during some season making it difficult for the fishers to take their vessels out of the harbour. These challenges have had some effect in maintaining the fishing effort.