



Government of Republic of Maldives

Ministry of Fisheries and Agriculture
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**MALDIVES NATIONAL REPORT
SUBMITTED TO THE
INDIAN OCEAN TUNA COMMISSION
SCIENTIFIC COMMITTEE - 2013**

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Maldives National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2013

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INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

<p>In accordance with IOTC Resolution 10/02, final scientific data for the previous year was provided to the Secretariat by 30 June of the current year, for all fleets other than longline [e.g. for a National report submitted to the Secretariat in 2013 final data for the 2012 calendar year must be provided to the Secretariat by 30 June 2013)</p>	<p>YES 24/06/2013</p>
<p>In accordance with IOTC Resolution 10/02, provisional longline data for the previous year was provided to the Secretariat by 30 June of the current year [e.g. for a National report submitted to the Secretariat in 2013, preliminary data for the 2012 calendar year was provided to the Secretariat by 30 June 2013].</p> <p>REMINDER: Final longline data for the previous year is due to the Secretariat by 30 Dec of the current year [e.g. for a National report submitted to the Secretariat in 2013, final data for the 2012 calendar year must be provided to the Secretariat by 30 December 2013].</p>	<p>YES 24/06/2013</p>
<p>If no, please indicate the reason(s) and intended actions:</p>	

1. Executive Summary

The Maldivian tuna fishery comprises of four components. The most important is the traditional livebait pole-and-line fishery dating back hundreds of years. The fishery was certified in November 2012. The main target species is skipjack tuna (*Katsuwonus pelamis*). Small amounts (~15-17%) of juvenile yellowfin tuna (*Thunnus albacares*) are also caught in the fishery of which about 4% is bigeye tuna (*Thunnus obesus*). The second and growing component is the handline fishery, which targets exclusively surface dwelling large yellowfin tuna (> 70 cm FL). A Maldivian owned longline fishery is being developed following the termination of the foreign longline licensing in May 2010. A small-scale trolling fishery also exists, which targets neritic species of kawakawa (*Euthynnus affinis*) and frigate tuna (*Auxis thazard*)

Catches of skipjack has been declining following an all time high of around 140,000 t in 2006. Recent years have been of the order of 50,000 – 60,000 t, less than half the recorded catch in 2006. Catches of yellowfin are increasing, thanks to the rapid growth of the handline fishery. No specialized gear is required for handline fishing and so many pole-and-line vessels have switched to handline fishing. Many also practice multi-day and multi-gear fishing, switching them opportunistically. Most recent catches of the yellowfin are around 45,000 t and about 80% of the catch is from handline fishery.

The national data collection is based on an enumeration system which is now almost replaced by a modern logbook data collection system. A web-enabled database will become online by the end of this year to allow compilation and processing of catch and effort data. The web-enabled database will also be used to record tuna purchases by the exporters. The database when fully functional will help maintain records of active fishing vessel and fishing licenses.

Maldives is taking lead in skipjack management strategy evaluation (MSE) work that would allow revising interim reference points and develop harvest controls rules for skipjack and other tropical species. The work is being done in close collaboration with the Working Party on Methods group supervised by an international advisory committee. Its progress is regularly reported to the Secretariat.

Maldives has limited amount of recreational fishing targeting large-bodied reef fish varieties in the so called 'night fishing'. More recently recreational fishing for pelagics is getting popular in the tourism sector. At present there is no formal method of the recording the recreational catches.

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2. Background and General Fishery Information

Maldives is a tuna fishing nation with a long tradition dating back hundreds of years. Until the 1980s the tuna fishery was the mainstay of the Maldivian economy, providing employment and a source of protein for its inhabitants. Tuna products remains the single most important export commodity from the Maldives earning currently about 150 million US\$ a year. Although spectacular growth and expansion of tourism in the country has declined fisheries’ economic importance, tuna fishing continues to be the main economic activity in the outer islands. The fishery sector contributes around 6-8% of GDP.

The largest and most important component of the Maldivian tuna fishery is the livebait pole-and-line fishery targeting skipjack (*Katsuwonus pelamis*). Small amounts (~15-17%) of juvenile yellowfin tuna (*Thunnus albacares*) are also caught in the fishery of which about 4% is bigeye tuna (*Thunnus obesus*). A second and still rapidly growing component of the tuna fishery is the multi-day handline fishery targeting surface dwelling large (>70 cm FL) yellowfin tuna (Adam and Jauharee, 2009). Handline fishing does not require specialised modifying of the vessel except for addition of the handline gear and having facilities for fresh-storage of this high-valued catch. Depending on the locale of operation and availability ice, it is becoming to quite common to conduct two types of fishing on the same trip.

The rapid growth and expansion of the handline yellowfin fishery appears to be having lead declining effort of the pole-and-line component. Recent years have shown rapid increase in catches of yellowfin to offset reduced catches of skipjack. Recorded catches in yellowfin in 2012 were 45,000 MT, more than 5 fold increase compared to 2008 while the catches of skipjack were 54,000 MT in 2012 down by 40% compared with 2008 levels.

Two minor components of the tuna fishery are longline and trolling fisheries. Maldives used to have licensed foreign longline fleet operating in the outer EEZ (100 miles and beyond). During the height of the fishery some 30-40 vessels operated in the Maldivian waters and beyond. Reporting and monitoring of the longline fishery was of sub-optimal. Due to pressure from the pole-and-line fishermen, licensing for foreign fishing was finally brought to end in mid-2010. Until November 2011, there was no longline fishing in Maldivian waters. Maldivian vessel operated in during 2012 which increased from 4 to 12 in 2013. Vessel monitoring is mandatory and all vessels are now monitored round the clock.

The trolling is component targets coastal species of Kawakawa (*Euthynnus affinis*) and Frigate tuna (*Auxis thazard*) (Ahusan and Adam, 2011a, Ahusan and Adam, 2011b). Total catches are of the order 7,000 – 8000 per year (Ahusan and Adam, 2012). Trolling vessels are normally ex- pole-and-line vessels relegated to trolling due to their small size.

Pole-and-line fishing is still restricted to coastal areas no extending more than around 60-70 miles from the atoll boundary. Fishing effort is highest around the anchored fishing aggregating devices (aFADs) located 12-15 miles range. Longline fishing takes in the outer EEZ from 100 miles and beyond.

3. Fleet structure

The fishing fleet has undergone several changes following the mechanization beginning in 1973. The current fleet is a mix wooden hulled and fibre reinforced plastic (FRP) vessels. Vessels are characterized by having long and open-deck at the stern with a high-rise super structure forward of the vessel. Two rows of the FRP ice-boxes are commonly placed on the open deck, a characteristic of handline fishing vessels targeting yellowfin tuna. It is also becoming popular to have inbuilt FRP boxes into the hull for keeping ice or slurry (RSW).

Pole-and-line and handline fishing is conducted from identical vessels and switching from handline to pole-and-line or vice versa is done at no extra cost. Vessels have multiple bait-wells for carrying live scads for handline or regular bait for the pole-and-line fishing. The most important visible feature of the handline vessels are the large ice-boxes (0.5 – 1.5 t capacity) placed on open fishing platform. Often they are placed in pairs on either side of the engine hatch (2, 4, or 6 numbers are common). Relatively large number of vessels is known to conduct both types of fishing on single trips lasting around 10-14 days.

Following the cessation EEZ longline foreign licensing in May 2010, the Ministry is working to introduce a Maldivian longline fleet. A total 14 Maldivian-owned vessels have been registered and licensed since the fishery officially began in November 2011. However, vessels did not start operating until May 2012. Most of these vessels are steel-hulled with capacity ranging from 15-700 GRT.

Similar to foreign longline licensing programme, vessels are allowed to operate in outer EEZ of 100 nautical miles and beyond. Vessels are mandated to carry VMS with strict conditions on logbook reporting. Maldives maintain an active vessel registry updated and informed to IOTC on a regular basis.

In order to comply with the EU-IUU Regulation, a new “Regulation for Fishing Licensing, Fish Processing for Exports and Aquaculture” was introduced in January 2010. Vessels fishing for tuna must have a fishing license if the catches are to be sold for collector for export. Similarly “Regulation on Fishing and Export of Large Yellowfin Tuna” introduced at the same time that handline and longline fishing operation targeting yellowfin / bigeye tuna, including the VMS on longline vessels.

At the time of this writing there are about 750 registered vessels (excluding LL vessels) that have valid fishing license. Since virtually all vessels would be selling their catch to exporters it is unlikely there will be many active tuna vessel without a fishing license. The Ministry of Fisheries and Agriculture is currently revising the licensing scheme that would deal more clearly with the emerging multi-gear (HL+PL) fishing operation.

Table 1: Number of vessels operating in the IOTC area of competence, by type.

Year	Vessel type	Length Range							
		< 07.5	> 07.5 < 12.5	> 12.5 < 17.5	> 17.5 < 22.5	> 22.5 < 27.5	> 27.5 < 32.5	> 32.5 < 37.5	> 37.5
2010	Engine row boat	12	--	--	--	--	--	--	--
2010	Mechanized Mas dhoani	-	29	88	83	133	58	8	--
2010	Mechanized vadhu dhoani	6	4	--	--	--	--	--	--
2011	Engine row boat	11	--	--	--	--	--	--	--
2011	Longline vessel	--	--	2	--	2	--	--	--
2011	Mechanized Mas dhoani	--	35	123	125	203	81	10	--
2011	Mechanized vadhu dhoani	9	6	--	--	--	--	--	--
2012	Engine row boat	10	--	--	--	--	--	--	--
2012	Longline vessel	--	--	3	--	--	--	--	--
2012	Mechanized Mas dhoani	1	50	121	151	223	84	12	--
2012	Mechanized vadhu dhoani	3	6	--	--	--	--	--	--
2013	Engine row boat	4	--	--	--	--	--	--	--
2013	Longline vessel	--	1	5	2	--	--	--	7
2013	Mechanized Mas dhoani	--	23	117	141	224	68	11	--
2013	Mechanized vadhu dhoani	1	6	--	--	--	--	--	--

4. Catch and effort (by species and gear)

Reported national tuna landings in 2012 were just over 100,000 t. Of these over 53% was skipjack and 45% was yellowfin tuna. A small quantity of bigeye tuna is caught along with yellowfin component in the pole-and-line, estimated around 3-4% (Anderson, 1996). Analysis of recent tag release data has shown those estimates remain more or less the same (Adam et al., 2012).

Total tuna catches reached an all time high of over 167,000 t in 2006 but have been declining since then. A reason for this decline in total catches is the sharp and continuing decrease of skipjack catch. Skipjack catches dropped from a record high of 138,000 in 2006 to 53,400 in 2103. This is a drop of more than 60% decline (Figure 1).

Yellowfin tuna is the second most important species in the tuna fishery. Catches of yellowfin is increased dramatically, thanks to rapid growth of the handline yellowfin fishery that targets surface dwelling schools of the large yellowfin (> 70 cm FL). Catches of total yellowfin reached an all time of high of 43,000 t in 2012, which is an increase of 26% from the previous year. Close to 75% of the yellowfin catch is from the handline fishery targeted for export (Adam, 2009).

The small-scale trolling fleet targets Kawakawa (*Euthynnus affinis*) and frigate tuna (*Auxis thazard*) in the coastal areas and atoll lagoons. The main trolling fleet effectively died in the late 1980s due to improved socio-economic changes. These days catch of kawakawa and frigate is mainly from pole and vessels (Ahusan and Adam, 2011a and b). Total catches of these two species ranged about 5,000 – 6,000t per annum.

Longline fleet used to be foreign-owned and operated in the EEZ, beyond 100 miles under licensed and joint venture arrangements. Issuing of licenses to foreign vessels was been suspended from March 2010. However, in 2011 Maldives has re-started a longline fishery allowing exclusively for Maldivian-owned vessels. At the time of the writing 12 vessels have been licensed to fish outside 100 miles within the EEZ. Catch by species by gear and effort trends is shown in Table 2, Figure 2 and Figure 3.

Fishing effort is measured in number of fishing days. This was the most natural and easiest since fishing takes place on day-trips leaving early in the morning and returning by evening. In the past, the uniform fleet structure and use of essentially pole-and-line method for most of the tuna catches makes the choice for unit of effort satisfactory. However, with increasing efficiency of vessels (size, engine horse power, fish hold and bait capacity, and operational factors) the day of fishing should be standardized to use the CPUE data (Kolody et al., 2011; Rishi et al., 2013)

Table 2. Annual catch and effort by gear and primary species in the IOTC area of competence for the 2008-2012.

Year	Gear	SKJ	YFT	KAW	FRG	Effort (days)
2008	PL	85,584	16,766	1,672	3,837	120,451
2008	HL	471	4,785	162	86	26,009
2008	LL	169	1,177	21	15	12,190
2008	TR	849	983	220	118	34,456
2009	PL	65,018	15,279	2,099	4,740	124,466
2009	HL	666	3,523	516	294	28,892
2009	LL	2	1,090	1	0	9,174
2009	TR	381	676	426	160	39,006
2009	NEI	122	47	0	7	1,843
2010	PL	71,585	11,679	2,756	2,902	114,217
2010	HL	1,322	9,003	12	16	20,178
2010	TR	814	1,153	438	206	30,640
2010	NEI	-	-	2	1	429
2011	PL	52,489	9,650	1,816	1,344	84,832
2011	HL	4,870	24,518	406	228	44,709
2011	LL	-	1	2	1	47
2011	TR	313	1,406	197	123	19,935
2012	PL	51,134	10,896	1,012	481	79,005
2012	HL	1,981	32,969	376	309	51,875
2012	LL	-	113	-	-	42
2012	TR	276	999	97	31	16,334

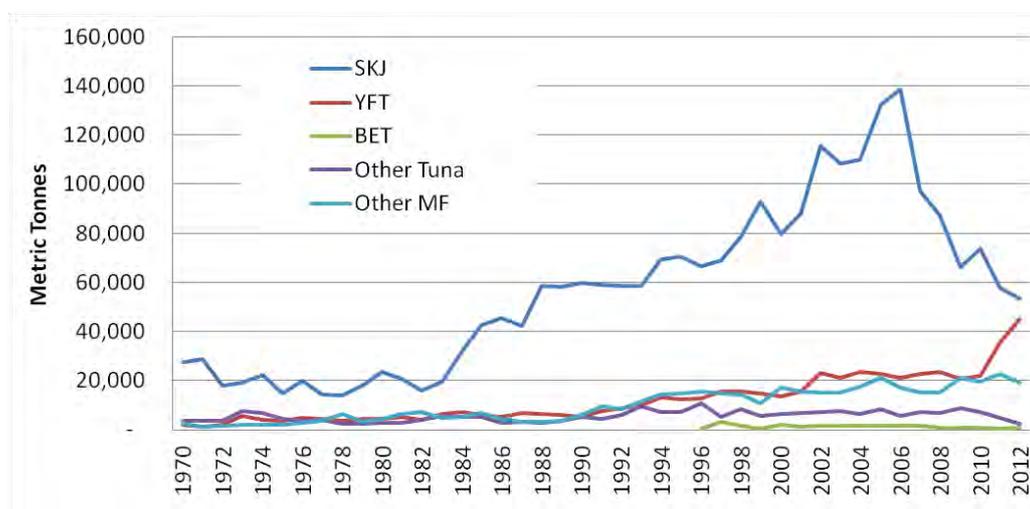


Figure 1: Historical annual catch for the national fleet by species

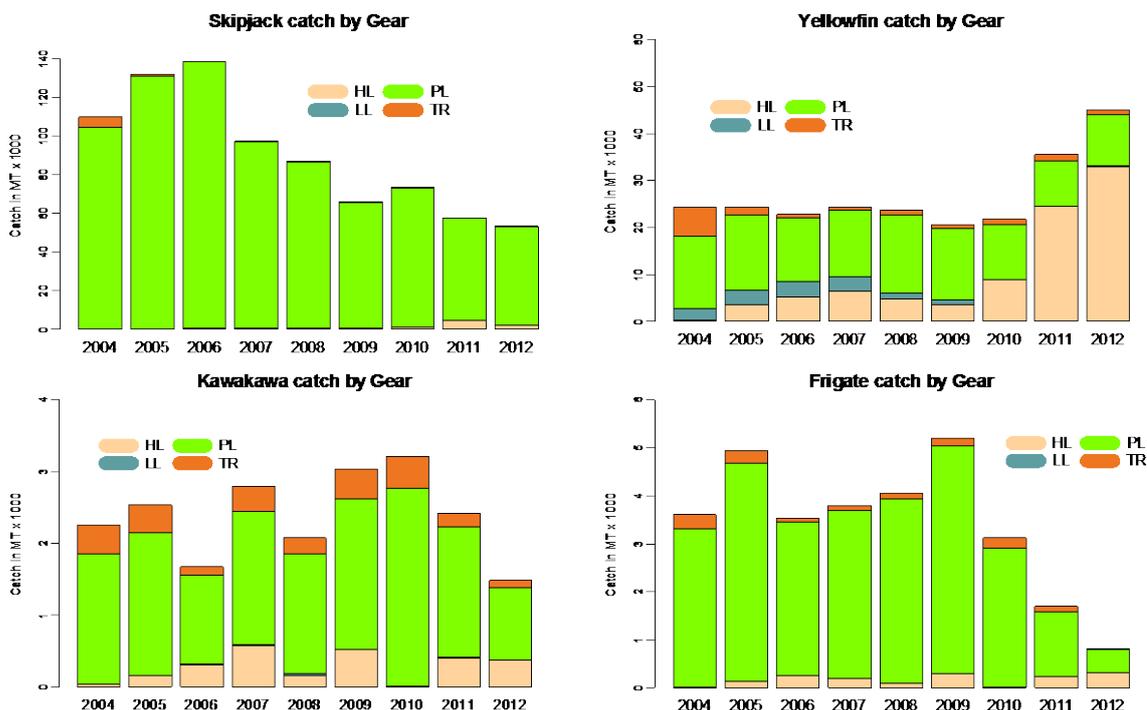


Figure 2: Catch trends by gear for each species for the last 5 years

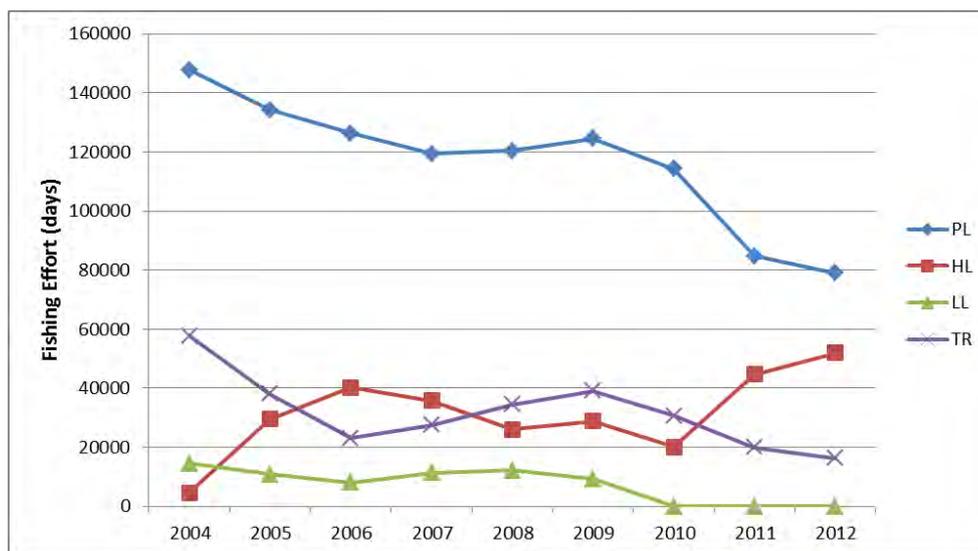


Figure 3: Trends in fishing effort by gear type for the last five years.

5. Recreational fishery

Big game fishing is popular among the tourists and it is now common practice to have an outfit in every resort. Common target species are sail fish (*Makaira* spp.) and Dolphin fish (*Coryphaena hippurus*), but also large yellowfin and skipjack tuna. Dogtooth tuna (*Gymosarda unicolor*) are often caught on the troll lines operated off the outer atoll reef. Casting using poppers, rod and reel is also popular big game fishing activity targeting mainly large jacks off the reef and seamounts. Tourist resorts have separate fishery landings forms and it is expected that their catch are recorded in the national fishery statistics. Some resorts are reporting their monthly landings from the recreational fishery to MRC.

Tourist night fishing is very popular among the tourists and targets wide-bodied reef fish varieties (Fam: Lutjanids, Lethrinids, Serranids, Carangids, etc). It is extremely rarely that tourist night fishing catches

pelagic species such as tuna and often the catch is small compared to the local public night fishing activities

Similar to tourist night fishing, the general public enjoys the recreational night fishing. Literally hundreds of trips per year are undertaken throughout the country. The fishery targets wide-bodied reef fish varieties (Fam: Lutjanids, Lethrinids, Serranids, Carangids, etc.) There are no institutionalized mechanisms for recording catch. Unlike in other countries, Maldives does not have fishing clubs where recreational fisheries are data recorded

Reef fishing logbooks have been recently introduced and being enforced slowly. This arrangement is expected to improve the landings of billfishes in the Maldives (Para 79 and 80, IOTC–2012–SC15–R[E], 2012)

6. Ecosystem and bycatch issues

Maldives has a highly selective form of fishing with zero bycatch and no discards. The pole-and-line method alone contributes more than 70% of the total tuna landings. Similarly handline fishing method and trolling methods are also highly selective with no bycatch and discards. Currently less than 1% of tuna is caught from longline which contributes catches of non-target, associated and dependent species (such as sharks etc).

Maldives imposed a 10 year moratorium on catching or harming of turtles in 1998. The moratorium was renewed in 2008 extending further 10 years with ban on egg-harvesting. Maldives is also a signatory for the IOSEA MoU signed on April 2010.

Livebait is critical for the skipjack pole-and-line fishery and considered as retained species. The species exploited by tuna fleet are characterized by short generation times and high intrinsic rates of population growth. These are species that are not easily overexploited. Maldives has recently intensified monitoring of this fishery and are in the process of developing a livebait fishery management plan.

6.1. Sharks

Shark fishing is banned in Maldives waters including the EEZ. The ban is effective from May 2010. However, with the introduction of longline fishing between 100nm to 200nm in the EEZ of Maldives, there is a possibility of shark by-catches. Provisions are in place in “Regulation on Fishing and Export of Large Yellowfin Tuna” to minimise the by-catch of sharks in adherence to IOTC Resolution 05/05. The Regulation requires shark by-catch to be reported, released if alive, and landed intact to be destroyed if it is dead. Currently 14 longline vessels are in operation in Maldivian EEZ.

Total number and weight of sharks by species retained and discarded will be known once the logbooks data analysed. The work will be completed and reported in 2014.

6.2. Seabirds

The interaction with seabirds is minimal in handline, pole-and-line, trolling fisheries and longline fisheries. New logbook data collection system allows the fisherman to report such interaction and currently there is none reported. “Regulation on Fishing and Export of Large Yellowfin Tuna” mandates longline fishing vessels to implement at least one seabird mitigation measure to reduce by-catch of seabirds. These measures are in adherence to IOTC Resolution no: 10/06.

6.3. Marine Turtles

Maldives is signatory to the Indian Ocean – Southeast Asian (IOSEA) Marine Turtle Memorandum of Understanding. A second 10-year Turtle Moratorium is in force from 2008-2018 that includes banning of hunting, taking, or harming turtles, including harvesting of eggs. Regulation on Fishing and Export of Large Yellowfin Tuna describes turtle mitigation measures during longline fishing operations, including release of live turtles having de-hookers and line cutters on vessels.

6.4. Other ecologically related species

Whale sharks and dolphins are protected under fisheries regulation. Even though, pole and line fishermen target skipjack tuna from dolphin associated schools, the interaction is minimal and there has been zero dolphin catches.

Table 2: Observed annual catches of species of special interest by species (seabirds, marine turtles and marine mammals) by gear for the national fleet, in the IOTC area of competence.

	Seabirds	Marine Turtles	Marine Mammals
2007	0	0	0
2008	0	0	0
2009	0	0	0
2010	0	0	0
2011	0	0	0

7. National data collection and processing systems

The data collection and reporting system is based on total enumeration of the catch requiring conversion factors for estimating weight of the catch. Vessels reports catch and effort data (number of days fished) to it respective island council offices where the vessels are registered. There the data is aggregated by vessel by month providing catch by species in number along with the number of day fished.

Complication on clearly separating catch by gear has occurred due to the prominence attached to vessel type rather than gear (Adam et al., 2012). Due to historical reasons it is assumed the 'pole-and-line vessels' will always use pole-and-line gear and so the vessel type is assigned to gear type in the monthly aggregated forms. Until 1990s this system of reporting and compiling has worked relatively well accurately reflecting the tuna catch and effort in the country. However, the sale of catch to collectors and start of multiday and multi-gear fishing from 'pole-and-line' vessels has led to reduction in quality and reliability of the data. In order to address this growing issue a logbook system was introduced in 2010 which is being established.

The two systems of recording are still in place. For the first time, in 2012, logbook data was used as the primary source of data to compile the national statistics supplemented by the data from the island councils and from the fish collectors. The logbook data will also allow Maldives to report data by the required 1 x 1 degree resolution and separated by the catches around aFADs and free schools. The plan is to withdraw the island reporting system by 2014

7.1. Logsheet data collection and verification

Logbook data collection was introduced in 2006. Data collection through logbooks was introduced for the second time in January 2010. The introduction was preceded by a revision of the fishery regulation which required licensing of fishing vessels among others and making data reporting mandatory. Experience during this last two and half years shows that it has not be easy for the fishermen. Part of the problem was too much information was asked from fishermen and the size of the logbook. Based on the experience the first two years, the logbooks were re-revised and re-introduced in 2013 in adherence of IOTC Resolution 13/03.

A web-enabled fishery information system is being developed to further improve the current database and will go online by the end of the year. The system will allow integrating vessel registry, fishing licenses, fish collection and logbook data to provide a comprehensive system of compilation and reporting.

Logbook data verification may only be done through an observer system. The preparatory work to start an observer programme system has been completed. Funding is required for training and deployment of observers.

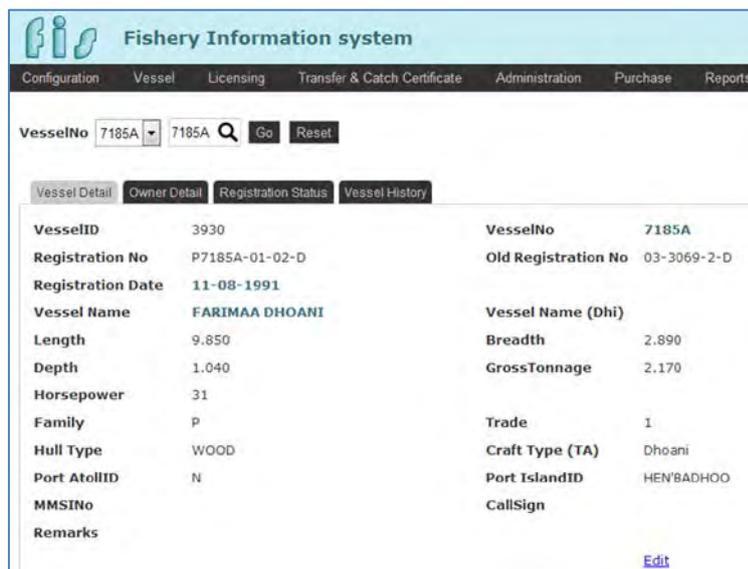


Figure 4: Screen capture of new Fishery Information System (FIS) showing Vessel Module

7.2. Vessel Monitoring System

Vessel monitoring was established in early 2012, but was not fully functioning until August 2013. Starting from November 2011 Maldives started trials of the systems by installing vessel-locating devices (VLDs) on two longline vessels. For various reasons the trial period went for a year, eventually terminating the contract with the service provider. A new service contract was successfully negotiated and signed in August 2013, which allowed resumption of the installation of the VLDs on the vessels. At the time of writing there nine longline vessels with the VLDs, which are monitored round the clock (Figure 2). Under the current regulations following arrangements have been made.

1. Effective from November 2014, all longline fishing vessels should have the VMS on board.
2. Vessels licensed for handline yellowfin tuna fishing, should to install VLD by January 1, 2014
3. And pole and line fishing vessels holding a valid license has to have a vessel-locating device installed in the fishing vessel by 1 June 2014.

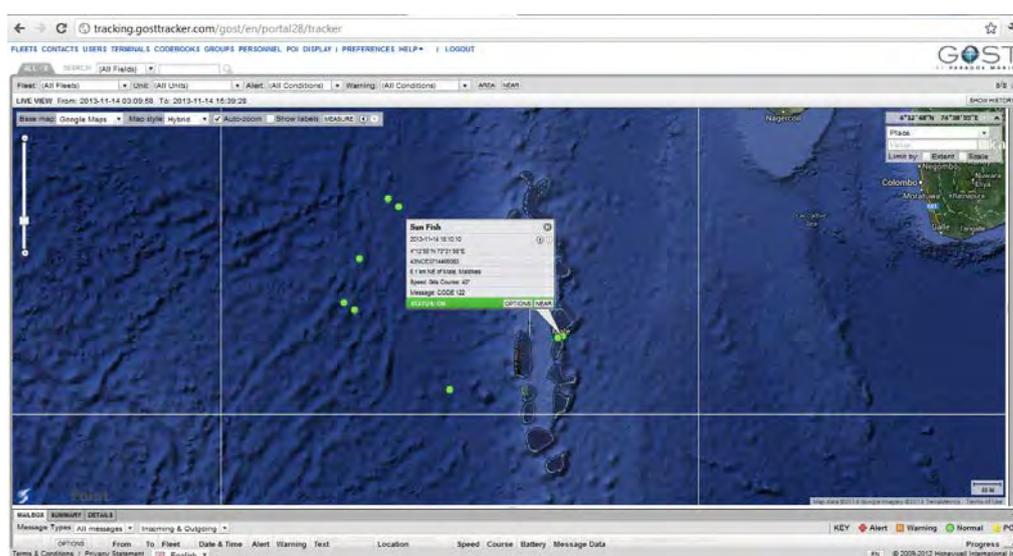


Figure 5: Screen capture of the Maldives VMS System. Currently 9 longline vessels have VLDs, monitored round the clock by the Fisheries Management Agency, of the Ministry of Fisheries and Agriculture

7.3. Observer Programme

An observer scheme has so far not been introduced in the Maldives. However, preparations on trainings of observe and administrative arrangements are under way. Accommodating observers on the board vessel have been made mandatory in the longline fishing license agreements. Budget constraints have been the biggest issues. It is expected some level of funding will be available in 2014 to start this programmes.

7.4. Port sampling programme

A port sampling programme is not in place yet. It should be noted that under the implementation of EU – IUU fresh fish collectors (fish buyers) are required to record the details of catch and report to the Ministry which is being used as part of the issuing of catch certificate and to corroborate with the fishermen reported logbooks. A review of the fishermen-filed officer programme was undertaken recently and recruits are being made in the main fish collection areas for port-sampling.

Table 3: Number of individuals measured, by species by gear for 2012

Gear	SKJ	YFT	KAW	BET	Grand Total
PL	9,334	1,168	122	239	10,863
HL	-	4,862	77	-	4,939
Grand Total	9,334	6,030	199	239	15,802

7.5. Unloading/Transshipment

This section is not applicable to Maldives as Maldivian-flagged vessels do not tranship at sea in the IOTC Convention Area.

8. National research programs

It has been mentioned in earlier reports that catch effort database in the Maldives required cleaning and improvements in the way compilation takes place. This has now become more important following the introduction of the logbook system and entry of catch data / collection from multiple points via the web.

A small grant funding (US\$ 35,000 for one year) has been sought to hire to work on the database for rectifying those issue. A database specialist has been hired and work is in progress. A summary of the research programmes are given in the table below.

Table 4: Summary table for national research programs.

Project title	Period	Countries involved	Budget total	Funding source	Objectives	Short description
Development of Fishery Information System (FIS) web-enabled database	2012-2016	Local	US\$ 81,000	International NGOs	To develop an integrated database to enter and compile fishery information	The database is constructed modular. At the heart of the database is the Vessel Registry information, linked to Vessel Licenses, logbook data, fish purchase data. The database will also allow issuing fishing licenses and catch certificates required for export to EU
Development of SKJ Harvest Control Rules	2013-2015	Local	US\$ 50,000	Int'l NGOs and local industry	To improve SKJ reference points, and develop harvest control	A consultant is hired to develop SKJ MSE work in collaboration with the IOTC Secretariat

					rules through Management Strategy Evaluations	and WPM Group (see Adam et al. 2013)
Pilot project to assess the feasibility of using an electronic monitoring system to collect data from the fisheries in Maldives	2014-106	Maldives and the IOTC Secretariat	US\$ 600,000	GEF/WB (applied, funding not approved)	To improve and make efficient collection of the nominal catches at landing sites	Monitoring officers will be employed at three largest landing sites to test the feasibility of electronic pens and tablets. The tablets will interrogate web-enabled database over 3G GSM network to fill the landings and sent the form via internet.

9. Implementation of Scientific Committee Recommendations and Resolutions of the IOTC relevant to the SC

The table below summarises the progress Maldives has made to recommendations of the Scientific Committee and Specific Resolutions relevant to the work of the Scientific Committee.

Table 5: Summary response on the progress made to recommendation of the SC and specific Resolutions relevant to the work of the Scientific Committee.

Res. No.	Resolution	Scientific requirement	CPC progress
05/05	Concerning the conservation of sharks caught in association with fisheries managed by IOTC	Paragraphs 1–12	Sharks are banned from the Maldives waters (the entire EEZ). The ban is effective from May 2010. The only fishery likely to catch shark would be longline fishery. Currently there are fourteen active longline vessels (targeting BET/YFT) operating between 100nm to 200nm of Maldives EEZ. The Regulation on Fishing and Export of Large Yellowfin Tuna requires shark by-catch to be reported and landed intact to be destroyed.
10/02	Mandatory statistical requirements for IOTC members and cooperating non contracting parties	Paragraphs 1–7	Maldives has been regularly providing catch and effort data for the stock assessment work of the working party meetings. Maldives have submitted the 2012 catch and effort data on June 24, 2013. Maldives have now officially started its own longline fishery in November 2011. Fourteen have obtained LL licenses. Data of these vessels have also been sent to IOTC on 24 June 2013. Detailed data will be sent by the end of the year/
10/06	On reducing the incidental bycatch of seabirds in longline fisheries. Reminder: Resolution 12/06 will supersede Resolution 10/06 on 1 July 2014	Paragraphs 3–7	The Appendix 2 of “Regulation on Fishing and Export of Large Yellowfin Tuna” gives 6 ways to mitigate the bycatch of seabirds. Implementation of one of these mitigation measures is mandatory.
11/04	On a regional observer scheme	Paragraph 9	Maldives has developed an observer manual in 2012. Budget allocation request has been made to initiate observer programme in 2014.
13/03	On the recording of catch and effort by fishing vessels in the IOTC area of competence	Paragraphs 1–11	Logbook data collection system has been established in 2010 and has been revised in 2013 based on the new requirements. Each fishing vessel should have a logbook on board to record catch and effort.
12/04	On the conservation of marine turtles	Paragraphs 3, 4, 6–	Maldives is signatory to the Indian Ocean – Southeast Asian (IOSEA) Marine Turtle Memorandum of Understanding. A

Res. No.	Resolution	Scientific requirement	CPC progress
		10	second 10-year Turtle Moratorium is in force from 2008-2018 that includes banning of hunting, taking, or harming turtles, including harvesting of eggs. Regulation on Fishing and Export of Large Yellowfin Tuna, in Appendix 3, describes turtle mitigation measures during longline fishing operations, including release of live turtles having de-hookers and line cutters on vessels.
12/09	On the conservation of thresher sharks (family alopiidae) caught in association with fisheries in the IOTC area of competence	Paragraphs 4–8	Sharks are banned from EEZ. Regulation on Fishing and Export of Large Yellowfin Tuna in several instances refers to recording of the sharks and landing their carcasses for inspection. . Regular inspection will be conducted when the observer programme is initiated in 2014.

10.Literature Cited

- Adam, M.S and A.R Jauhary (2009).Handline yellowfin tuna fishery of the Maldives. Working paper submitted to WPTT 2009, Mombasa, Kenya, 14pp.
- Adam, M.S, H. Sinan, S. Rasheed and R. Abdulla (2012). Notes on Presence of ‘Other Marine Fish’ in the Maldives Pole-and-line catch. Information paper presented at the Working Party on Tropical Tunas, Mauritius,24-29 October 2012. [IOTC-2012-WPTT14-INF04], 15 pages.
- Adam, M.S, J. Million, A. R. Jauharee and M. Ahusan (2012, presentation only). Exploratory Analysis of Maldives Tagging Data Releases during RTTP, 2004-2009. Presented at the Indian Ocean Tuna Tagging Symposium, Mauritius, 30 Oct- 02 November 2012.
- Adam, M.S, R. Sharma, N. Bentley (2013) Progress and arrangements for Management Strategy Evaluation of Indian Ocean Skipjack tuna. Paper submitted to the 15th Working Party of Tropical Tuna, 23-28 October, San Sebastian, IOTC-2013-WPTT15-33, 11 pages.
- Adam, M.S., H. Sinan, S. Rasheed, R. Abdulla (2012). Notes of the presence of ‘Other Marine Fish’ in the Maldives Pole-and-line catch. Paper submitted to 14th Session of the Working Party on Tropical Tuna, Mauritius, 24-29 October 2012, IOTC-2012-WPTT14-INF04, 13 pages.
- Ahusan, M &M. S. Adam (2011a).Kawakawa (*Euthynnus affinis*) fishery in Maldives. Paper presented at the WPNT 2011, Chennai, India 10 pages
- Ahusan, M &M. S. Adam. (2011b). Frigate tuna (*Auxisthazard*) fishery in Maldives. Paper presented at the WPNT 2011, Chennai 10 pages
- Anderson, R.C. (1996) Bigeye tuna in the Maldives, Maldives Marine Research Bulletin, 2: 41-54.
- IOTC (2012) Report of the Fifteenth Session of the IOTC Scientific Committee. Mahé, Seychelles, 10–15 December 2012. IOTC–2012–SC15–R[E]: 288 pp.
- Kolody, D and M. S. Adam (2011).Maldives Skipjack Pole-and-Line Fishery Catch Rate Standardization 2004-2010. Paper submitted to Working Party on Tropical Tuna, Paradise Island Resort, Malé, Maldives. 36 pages.
- Kolody, D. and M.S. Adam and R.C. Anderson 2010.Catch rate standardization for the Maldivian Skipjack pole-and-line fishery 1970- 2007. Working paper submitted to WPTT2010, Mahé, Seychelles. 23pp



Sharma, R, Geehan, and M. S. Adam (2013) Maldives skipjack pole and line fishery catch rate standardization 2004–2011: reconstructing historic CPUE till 1985, Paper presented at Working Party on Tropical Tunas. IOTC–2013–WPTT15–32.

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