



## E-training tool descriptor

Supra-category: IOTC ROS Scientific Field Observer Training (IOTC ROS SFO)  
Category: Tuna Pole and Line Onboard Data Collection and Recording (IOTC ROS TR20)

The following case study is designed to familiarized observers with data gathering processes and priorities for the tuna pole and line fisheries, the type of information gathered and how to capture it into the relevant IOTC ROS data collection forms. This exercise also aims to raise observers' awareness on work and sampling protocols to follow when deployed on-board a tuna pole and line fishing vessel.

The narrative of the exercise is in three formats:

1. explanatory narratives for the exercise to provide certain information in situations which the observer would be expected to record (provided in italics); and
2. extracts from an observer's daily notebook (which they would be expected keep onboard);
3. information that an observer would record while on deck or sampling.

As far as possible, the exercise and information are designed to be as realistic and practical to what an observer is likely to experience in the field.

### **IOTC ROS Guidelines to be followed**

Guidelines for observers on tuna pole and line vessel.

### **Filled data forms provided**

FORM 1-PL IOTC REGIONAL OBSERVER SCHEME VESSEL AND TRIP INFORMATION SHEET

### **Data forms to be filled in**

FORM 2-PL IOTC REGIONAL OBSERVER SCHEME LONGLINE GEAR SPECIFICATIONS

FORM 3A-PL DAILY ACTIVITY LOG

FORM 3B-PL BAIT FISHING EVENT

FORM 3-PL IOTC REGIONAL OBSERVER SCHEME FISHING EVENT

FORM 4-PL IOTC REGIONAL OBSERVER SCHEME FISHING EVENT - CATCH DETAILS

FORM 5-PL IOTC REGIONAL OBSERVER SCHEME- CATCH DETAILS - BIOMETRIC INFORMATION

FORM 6-PL IOTC REGIONAL OBSERVER SCHEME FISHING EVENT – CATCH DETAILS –  
BIOLOGICAL DATA AND SAMPLE COLLECTION

FORM 7-PL VESSEL TRANSHIPMENT





## Case Study: Observer deployment on a Pole and Line Fishing Vessel

*Note that all dates and times given are expressed in UTC.*

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### **24/02/2022**

*You embarked on the Maldivian tuna pole and line vessel, AALIYA, in Malé, Maldives on the 24 February 2022 at 07:00 UTC.*

*On the same day as you embarked, you asked the captain for detailed vessel information. The captain allowed you to consult the following documents: vessel registration, fishing license, safety certificate, fishing gear characteristics, crew list. the electronic devices, the fishing gear and the crew; and gave you a tour of the bridge to check vessel electronic equipment present.*

**TASK 1** Fill in Form 1-PL with the information provided in the text and collected by the observer when consulting vessel documents and during the guided visit to the bridge (report to [vessel information](#) section).

**TASK 2** Fill in Form 2-PL with the information provided collected by the observer when consulting vessel documents (see [vessel information](#)); and during the guided visit to main deck recorded in the [notebook](#).

### **25/02/2022**

*The vessel left the port of Malé, Maldives on the 25 February 2022 to begin its trip. The vessel starts steaming to the fishing grounds at 04:00 UTC (4° 10,84' N / 073° 30,50'E).*

*As instructed during training you have recorded on your notebook, vessel position every two hours and when a fishing event starts.*

**TASK 3** Start filling in Form 3A – PL with the information recorded in the observer [notebook](#).

*Two hours later, at 06h00, as soon as the vessel leaves the territorial waters, the watchkeepers pick their binoculars and start searching for tuna.*

*At sunset (13:00 UTC), the vessel stops searching for tuna and starts steaming to the coast to fish for bait. The vessel drops anchor at a distance of 2 nautical miles from the coast and a depth of 10 meters. The night is calm, there's no wind, and the sea looks like a mirror.*

*Five crew deploy a lift net operated from the pole and line vessel, turn the vessel lights used for bait fishing, and start chumming at 15h15.*

*The operation to catch the bait of school and close the net is completed at 15h30 minutes later and the fish is entirely scooped into the holding tanks at 15h45.*





*The catch contains no fish bycatch as far as you can see, but the crew notify you of a sea turtle, identified as a Loggerhead turtle, swimming in the net. You cannot bring the sea turtle onboard, but estimate the weight at 80 kgs and 80 cm length. The crew manages to release it successfully. The sea turtle looked stressed, but in good health otherwise.*

*Following this, you ask the crew to fill in your 10L plastic basket (with holes at the bottom to drain the water), directly from the net (following the same procedure used to transfer the bait from the net to the bait tanks). You end up with a fish sample of approximately 200 g of fish for sampling. You place your sample in the fish hold with ice, to process it on the following morning, since it will be easier to identify the different fish species in the daylight.*

**TASK 4** Fill in Form 3B – PL with the information provided in the text above and recorded by the observer in the observer [notebook](#). Refer to Guidelines for Observers on Pole and Line Vessels.

## **26/02/2022**

*On February 26<sup>th</sup>, the ship set off at 00:45 and starts searching for tuna schools. At 01:00, the watchman reports birds in the distance and a FAD appears as the vessel approaches. On the sonar, the skipper notices a school of tuna of estimated 5 MT and decides to fish it.*

*The sprayers are activated, and chumming starts at 01:15. The anemometer indicates a wind of 3 knots and the sea is calm. This is the first fishing event (set) the vessel is doing during the observed trip.*

*Fish start to boil at the surface, taking live bait and the first fish is hooked and landed 2 minutes after the sprayers go on. Seven crew are actively fishing manually using bamboo poles. Three (3) of them use lures, and four (4) of them jiggers to fish.*

*You decide to focus on only one crewmember and to count all the fish he catches. At the same time, you pull aside for later sampling every third fish he lands independently of the fish species (for sampling protocol for catch estimation refer to Guidelines for Observers on Tuna Pole and Line).*

*At 01:30, no more fish are landed, the fishermen store their poles and the sprayers are turned off; you note the time the set ends.*

*You move around the main deck, where the crew is storing the catch in the hatches. You count and measure all bycatch species caught. After which you measure for length frequency the fish you've placed aside during the fishing event (for sampling protocols for the collection of biological data refer to Guidelines for Observers on Tuna Pole and Line).*

*Before leaving the Deck, you ask the crew if any fish was kept for cooking and they tell you that 5 skipjack tuna, with a combined weight of 13 kg were taken to the galley.*

*The crew replaces the FAD satellite buoy with a buoy from the AALIYA. You ask the crew to describe the FAD and to show you the buoy that was attached, they say that both the FAD raft and the tail was covered with a large mesh net.*





*You inspect the satellite buoy; its markings indicate that the buoy belongs to the AALIYA and it has written on it the number. You notice that the buoy is equipped with artificial lights.*

*After finalizing the sampling, the observer changes and goes back to the cabin to fill in IOTC ROS data collection form.*

**TASK 5** Continue filling Form 3A-PL with the information in the text, recorded in the observer [notebook](#) and on the [observer slate](#).

**TASK 6** Fill in Form 3-PL with the information provided in the text and recorded in the [notebook](#).

**TASK 7** Continue filling Form 3A-PL with the information recorded in the observer [notebook](#).

**TASK 8** Estimate fishing event catch composition based on the information provided on the text and recorded on [observer slate](#). Fill in Form 4-PL.

**TASK 9** Fill in Form 5-PL with information provided on the [observer slate](#).

At 07h00 the engines stop and the vessel starts drifting. The chief engineer informs the skipper that there's a mechanical failure, that he can do a quick fix, but the vessel will need to return to port to replace a engine piece. At 10h00 the vessel starts slowly steaming towards the port.



## VESSEL INFORMATION

### Vessel details

Ships name:	AALIYA
IOTC Reg No	13521
Flag:	Maldives
Country registration	Maldives
Port of registration	Malé
National reg No:	20434
Radio call sign:	8QA2346
IMO No:	7805966
E-mail:	<a href="mailto:owner@mvdifishing.com">owner@mvdifishing.com</a>
Phone N°:	008816223866250
Fax N :	008816223866251

### Vessel Characteristics

Vessel Type	Pole and Line
GT	21
Length Over All	23.40 m
Fishing gear	Pole and line (purse net for bait fishing)
Hull material	Wood
Speed	Max: 12 knots / Cruise: 8 knots
Range	24 days
Main engine:	Caterpillar / 500 HP
Fish storage capacity	22 m3

### Administrative information

Owner	Ali Hassan Nooranmaage, HA, Ivandhoo
Operator	Ali Hassan
Captain	 Mohamed Sayed
Fishing master	Mohamed Sayed
Crew	8

### Licenses

URT	AALIYA	Maldives	89244	From 2022-01-01 to 2023-12-31	Tuna & tuna like species
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### Navigation and detection equipment

- 1 radios HF and 1 VHF
- 1 bird radar
- 1 radars
- 1 acoustic depth sounder
- VMS and AIS
- Fisheries Information System
- Satellite communication system
- 1 track plotters
- 1 sonars
- 1 doppler current meter
- 1 WEATHER FACSIMILE
- 1 VMS FURUNO
- 1 bathythermograph

### Fishing gear and catch storage

Manual poles (bamboo)

Handmade jiggers and lures

Hooks C16, without barble

Live bait hold size: 5 m<sup>3</sup>

Fish storage: wells Ice slurry, refrigerated  
seawater





## OBSERVER NOTEBOOK

24/02/2022

All times in UTC

06H00

- Arrived in Port of Malé to board Maldivian tuna pole and line vessel AALIYA
- Put mobile phone time into UTC
- Left laptop time in Maldives (MDV) local time
- Meet the captain
- Conducted vessel-pre-safety inspection with the captain (all ok)

06H50

- Confirmed embarkation with coordinator by phone

07H00

- Embarked on the Maldivian tuna pole and line vessel AALIYA
- Will be sharing a cabin with Chief Engineer. It's a small, but comfortable cabin on officers' deck and has a desk to work on. Sharing a bathroom with other officers on deck.
- Went to the bridge to ask the captain for detailed vessel information start filling Form 1-PL

08H00

- Lunch with the officers

09H00

- Visited vessel main deck with bosun. Vessel equipped with bamboo poles.
- Explained to the bosun the work I'm to do. Bosun agreed that I can place myself near the bait tank to collect fish caught by the crew fishing nearby. He also agrees that I can go up to the summer bridge (on top of the bridge) if I find it easier to count fish caught from there.
- Request the bosun to instruct the crew to provide me with a bucket of bait for every bait operation, to be collected directly from the net following the same process as when transferring bait fish from the net to the tank. Also request the bosun to instruct the crew to leave bycatch species on deck so I can count and sample them at the end of fishing event
- Bosun showed me where to keep my oil skinks, hard hat, boots and sampling equipment and tells me to stay clear of the fishermen while the fishing event is ongoing due to the dangers of fish travelling through the air or slide on deck.

11H00 - Organizing my cabin and relaxing

15H00 - Dinner

17H00 - Going to sleep



25/02/2022

04h00 - Leaving port - 04°10,84' N / 073°30,50'E

06h00 - Searching - 04°00.88' N / 073°33.52'E

08h00 - Searching - 03°50,33'S and 073°35,86'E

10h00 - Searching - 03°35.46'N / 073°45.53'E

12h00 - Searching 03°35.50'N / 073°45.51'E

14h00 - Anchored (preparing for bait fishing) - 03°30'19.97"N and 073°44'30.27"E

15h15 - Fishing for bait - 03°30'19.97"N and 073°44'30.27"E

50 buckets of 10 Liters transferred from the net to the fish tanks\*

1 bucket of 1 liter collected for sampling

1 Loggerhead turtle caught on the net and released alive.

16h00 - Anchored for the night with the engine off - 03°30'19.97"N and 073°44'30.27"E

26/02/2022

00H45 - Start Searching - 03°30'19.97"N and 073°44'30.27"E

01H00

- watchman detected a FAD via bird activity in the distance
- sonar indicates a school of tuna of 30 MT
- SW current of 5 knots at 20 meters deep

01H15 - Sprayers on, start chumming- start fishing - 02°59.74'N and 074°06,038'E. Wind 3 knots, sea calm (check Beaufort scale on the manual).

01h30 - Fishing stops

01H35 - Note: Crew replacing FAD satellite buoy with a buoy from the AALIYA

- both the raft and the tail of FAD covered with a large mesh net
- satellite buoy n°33 from FV Comodo IV - equipped with artificial lights
- Estimation of retained catch (1<sup>st</sup> officer) = 1105 kg
- Bait used 100 kg
- Discards - Common dolphin (dead, entangled in FAD)



03h00 - Steaming  $02^{\circ}58'2.41''N$  and  $073^{\circ}57'20.32''E$

05h00 - Steaming  $02^{\circ}50.17'N$  and  $074^{\circ}03.03'E$

07h00 - Drifting with the engine off -  $02^{\circ}31.60'N$  and  $073^{\circ}56.34'E$

07h30 - Exhaustive sampling bait caught during the previous night for species composition

Species	Number	Weight
Anchovies	105	300 g
Fusiliers	53	150 g
Silversides	10	50 g
Cardinal fishes	78	100 g
		1/2 kg

10h00 - There's a problem with the engine and the captain decides to go back to the port.

12 - Steaming -  $02^{\circ}41'57.44''N$  and  $073^{\circ}53'38.90''E$

14 - Steaming -  $02^{\circ}51'38.41''N$  and  $073^{\circ}51'16.59''E$



27/02/2022

01h00 - Steaming -  $03^{\circ}42'59.01''N$  and  $073^{\circ}54'46.14''E$

03h00 - Steaming -  $03^{\circ}51'0.29''N$  and  $073^{\circ}49'3.48''E$

05h00 - Steaming -  $03^{\circ}59'36.78''N$  and  $073^{\circ}41'58.65''E$

07h28 - Arrived port -  $04^{\circ}10,84' N / 073^{\circ}30,50'E$

08h00 - Disembarkation

## OBSERVER SLATE

Number of fish caught by one fisher during the pole and line set (random sampling protocol followed for the estimation of fishing event catch composition):

<i>SPECIES</i>	<i>WEIGHT (EM)</i>	<i>NUMBER</i>
<i>Euthynnus affinis</i> (KAW)	12 Kg	12
<i>Thunnus albacares</i> (YFT)	8 Kg	4
<i>Thunnus obesus</i> (BET)	5 Kg	2
<i>Katsuwonus pelamis</i> (SKJ)	81 Kg	43
<u>TOTAL</u>	<u>115 Kg</u>	<u>61</u>

SSIs: Dead Common dolphin (DCO) brought onboard by the crew, measured for reference length using a plastic flexible tape, weight estimated by eye. Dolphin entangled in FAD, net wrapped around fluke (tail) - drowned.

Other bycatch exhaustively sampled: *Coryphaena hippurus* (DOL) 9 Kg

<u>Spp.</u>	<u>Fate</u>	<u>N°</u>	<u>Processing type</u>	<u>Weight (kg)</u>	<u>Length (cm)</u>	<u>Condition at capture</u>	<u>Condition at release</u>
DOL	Retained	3	RD	6	87	A1	NA
DOL	Retained	3	RD	3	66	A1	NA
DCO	Discarded dead	1	N/A	90	203	Dead	w/a - dead

Length frequency sampling of retained catch

SKJ (FL in cm): 36/32/29/32/36/32/39/36/32/29/29/31/26/34/27/30/28/33/32/30  
/27/32/30/27, 31, 29, 30, 27

YFT (FL in cm): 30/27/35/29

BET (FL in cm): 27 / 28

KAW (FL in cm): 28 / 27 / 34 / 31 / 29