Food and Agriculture Organization of the United Nations

Indian Ocean Tuna Commission
Commission des Thons de l'Ocean Indien
iotc ctoi

IOTC REGIONAL OBSERVER SCHEME – BASIC OBSERVER TRAINING CURRICULUM

1. Safety		
Module	**Curriculum**	**Assessment criteria**
1.1. Personal Safety and Social Responsibilities (STCW compliant or equivalent); **COMPULSORY FOR ALL GEARS**	1.1.1. Comply with Emergency Procedures	– The incidents that may result in an emergency are listed. – Typical emergency response on fishing vessels is described. – The information available on a vessel muster list is stated. – The emergency muster and abandon ship signals are stated and the actions to be taken explained. – The correct use of personal safety equipment is explained. – The value of regular and meaningful on board emergency training is discussed. – The initial safety actions that should be taken on joining a new vessel are listed – The meaning of basic IMO safety symbols is stated.
	1.1.2. Knowledge and observation of safe working practices	– The importance of following safe work practices at all times is discussed. – Potential hazards associated with the vessel working environment are identified. – The need for personal protective clothing is understood. – The proper use of safety equipment for the protection of hearing, head, hands, feet, eyes and respiratory system is described. – The content and purpose of material safety data sheets is outlined. – Precautions and procedures required for entering enclosed spaces on a vessel are described.
	1.1.3. Contribute to effective human relationships on board ship	– The importance of maintaining good human and working relationships aboard ship is discussed. – Social responsibilities on board ship are listed. – Individual rights and obligations with respect to the vessel work place are discussed. – The dangers associated with drug and alcohol abuse at sea are described. – The basic principles for conflict resolution are understood.
	1.1.4. Contribute to effective communications on board ship	– The principles of, and barriers to, effective communication between individuals and teams within the ship is discussed. – The importance of the team effect onboard; the adverse effect poor human relations can have on shipboard safety and efficiency is explained.
	1.1.5. Understand and take necessary actions to control fatigue	– Effects of tiredness and extended periods of work are identified and options to mitigate sleep shortage are proposed.

	1.1.6. Take precautions prevent pollution to marine environment	– The effects and impacts of operational or accidental pollution to the marine environment are explained. – Basic procedures to prevent pollution are described. – Regulations that cover pollution (MARPOL etc.) are discussed.
1.2. Personal Survival Techniques (STCW compliant or equivalent) **COMPULSORY FOR ALL GEARS**	1.2.1. Emergency Situations	– The incidents that may result in an emergency are listed. – The emergency muster and abandon ship signals are stated and the actions to be taken explained. – The importance of water tight doors and escape routes explained. – The value of regular and meaningful on board emergency training is discussed.
	1.2.2. Basic emergency actions	– Able to explain and describe (with diagrams if applicable) or practically demonstrate a knowledge of the procedures to be followed by the crew of a vessel in a man overboard situation. – Able to explain and describe and/or practically demonstrate a knowledge of ○ The characteristics of a life jacket ○ Correct stowage of a lifejacket ○ The correct method of putting on a life jacket and how to enter the water wearing a life jacket – Able to explain and describe and/or practically demonstrate a knowledge of: ○ The characteristics of a life buoy ○ Correct stowage of a life buoy ○ Buoyant line and self-igniting light that can be attached to a life buoy ○ The correct use of a life buoy in an emergency – Able to explain and describe and/or practically demonstrate a knowledge of: ○ The characteristics of an immersion suite ○ Correct stowage of an immersion suite ○ The correct method of putting on an immersion suite and how to care and store immersion suite
	1.2.3. Abandon ship and sea survival techniques	– Able to explain and describe and/or practically demonstrate a knowledge of ○ The important parts of a life raft ○ Correct stowage of a life raft ○ The workings of a hydrostatic release unit – Able to explain and describe and/or practically demonstrate a knowledge of ○ Crew preparations to abandon the boat ○ The procedures to launch a life raft ○ The procedures to board a life raft ○ The procedures to right a life raft – Able to explain and describe and/or practically demonstrate a knowledge of the procedures that should be adopted in

		○ Rescuing someone with the use of the rescue quoit ○ First entering the life raft ○ Enhancing survival in the life raft ○ Main dangers to cope with in sea survival are listed – Able to explain and describe and/or practically demonstrate a knowledge of ○ What hypothermia is and its symptoms ○ How to protect against hypothermia ○ How to treat hypothermia ○ Minimising loss of body heat in the water – Explain and describe and/or demonstrate how to ○ Correct use of 3 common pyrotechnics ○ Identify the correct pyrotechnic for use according to the situation described – Able to explain and describe eight internationally recognised distress signals (to include at least one from each group – sight, sound, pyrotechnics, radio)
	1.2.4. Emergency Radio Equipment	– Able to explain and describe basic principles of 121.5 and 406 EPIRBs – Practically demonstrate how to correctly operate 121.5 and 406 EPIRBs – Identify the actions required when an EPIRB is activated accidentally – Practically demonstrate how to correctly operate a radio VHF and HF and send a distress message.
1.3. Observer Health and Safety practices onboard a vessel **COMPULSORY FOR ALL GEARS**	1.3.1. Health issues that can be experienced onboard and personal first aid	– Procedures and practices to maintain work and personal hygiene at all times are explained. – Effects of tiredness and extended periods of work are identified and options to mitigate sleep shortage are proposed. – Challenges in cultural interactions in the work place are identified and strategies to mitigate are proposed. – Basic health issues that can be experienced onboard are identified and solutions proposed.
	1.3.2. Safe working practices onboard a vessel engaged in active fishing.	– The importance of following safe work practices at all times is discussed. – Potential hazards associated with a vessel engaged in active fishing are identified. – The need for personal protective clothing is understood and tits proper use for the protection of hearing, head, hands, feet, eyes and respiratory system is described. – Precautions and procedures required for entering enclosed spaces on a vessel are described. – The need for the use of safety gear when working on deck is described and the gear detailed. – The importance of having a working knowledge of the safety equipment found onboard a vessel is

		explained.
	1.3.3. Safety protocols (including pre-safety inspections and at-sea transfers), emergency communication and contact information;	– The importance and procedure to undertake a pre-sea safety inspections and vessel safety tour is explained. – The importance of regular communications is understood and procedures to follow in case of an emergency communication are expounded. – Procedures to follow and potential dangers that may be encountered during personnel transfers from one vessel to another are described.
2. Electronics		
Module	**Curriculum**	**Assessment criteria**
2.1. Basic notions on navigation, navigation equipment and electronic fishing aids **COMPULSORY FOR ALL GEARS**	2.1.1. Navigation and positioning (including latitude/longitude; course and speed)	– Use and understand latitude and longitude to correctly plot a position on a chart – Position is obtained from a GPS or chart plotter and transferred to a chart correctly. – Vessel heading is obtained from a GPS, chart plotter or compass (gyro or magnetic) and transferred correctly on to a chart using the compass rose and a parallel ruler – Distinguish between True and Magnetic North with reference to the heading of the vessel provided by different navigational aids. – Use information provided to calculate a future position, estimated distance and time of arrival (ETA)
	2.1.2. Electronic navigation equipment usage and limitations (GPS; plotters; echo-sounders and sonar)	– Identify the functions of, and principal information provided by: GPS; chart plotter; gyro compass; magnetic compass; – Understands the dangers associated with misinterpreting information obtained from navigational aids.
	2.1.3. Principal functions of electronic fishing aids and the information they provide.	– Identify the functions of, and principal information provided by: sonar; echo sounder; net depth instruments; Doppler current meter; bird radar; SST meter; GPS buoys; echo sounding buoys; radio beacon buoys; and XBT (Bathythermograph)
2.2. Parameters of meteorology and	2.2.1. Understanding and recording: 1) wind	– Correctly identifies electronic fishing aid(s) used to obtain current direction and speed; – Correctly records current direction and speed using the right units (cardinal units or degrees / knots). – Identifies electronic fishing aid(s) used to obtain SST and records SST correctly.

oceanography relevant to scientific fisheries observers. **COMPULSORY FOR ALL GEARS**		speed & direction, 2) the Beaufort scale, 3) sea state (height & direction), 4) sea waves vs. swell and 5) sea surface temperature.	– Able to explain the difference between sea waves and swell. – Correctly identifies and records sea and swell height and direction using the right units (meters / cardinal units or degrees). – Identifies equipment used to obtain wind direction and speed; – Correctly identifies and records wind speed and direction using the right units (cardinal units or degrees / knots). – Correctly describe sea state, using the Beaufort wind scale to estimate wind speed.
2.3. Radio communication protocols (VHF, HF & Inmarsat) **COMPULSORY FOR ALL GEARS**	2.3.1.	Equipment communication and use (VHF, HF & Inmarsat)	– Identify the different communication equipment that can be present on a fishing vessel and its usage: Satellite phone, MF/HF transmitters, VHF transmitters, NAVTEX, Inmarsat.
	2.3.2.	Setting up a radio telephone to transmit and receive (VHF, HF & Inmarsat)	– Identify the emergency frequencies to be used with VHF, MF and HF radios.
	2.3.3.	Emergency messages (distress, urgency and safety messages)	– Explain how to set up and adjust a VHF radio to transmit and receive an emergency message.
3. Management			
Module	**Curriculum**		**Assessment criteria**
3.1. Basic concepts of fisheries management **COMPULSORY FOR ALL GEARS**	3.1.1.	Basic concepts of fisheries management including target species; bycatch species; non-target species, retained catch, discarded catch and overfishing	– The following terminology used to classify fishing catch is explained: target species; bycatch species; non-target species, retained catch and discarded catch – The impacts of overfishing on target species are summarised – The impacts of overfishing on bycatch species are summarised
3.2. IOTC Agreement and CMMs relevant to	3.2.1.	IOTC organisational structure, function and responsibilities	– Understand IOTC organisational structure, functions responsibilities and process for the establishment and implementation of Resolutions. – IOTC role is discussed with reference to the regional fisheries scheme.

scientific observers **COMPULSORY FOR ALL GEARS**	3.2.2. IOTC CMMs relevant to scientific observers including ✓ recommended mitigation measures ✓ recommended good practices	– Be aware of Commission Conservation and Management Measures relevant to the work of scientific observers. – Demonstrate knowledge of Commission recommended mitigation measures to reduce the fishing impact on protected, endangered or threatened (PET), species that include seabirds, cetaceans, turtles and protected shark species. – Be aware of IOTC best practices for handling and safe release of non-target marine fauna (seabirds, marine mammals, turtles, sharks).
3.3. Role of fisheries observer programs in fisheries management **COMPULSORY FOR ALL GEARS**	3.3.1. Regarding high seas transhipments, conservation management measures, the regional register of vessels, and the terms and conditions of access agreements;	– Role of the fisheries observer is explained regarding high seas transhipments, conservation management measures and the regional register of vessels.
	3.3.2. The objectives of different categories of observers. *(Scientific-data collection / Compliance – monitoring / Fisheries –data collection + monitoring).*	– Observer categories are detailed and respective objectives explained.
4. Vessel Operations		
Module	**Curriculum**	**Assessment criteria**

4.1. Pelagic longline **COMPULSORY FOR LL TRAINING**	4.1.1. Vessel Identification and Characteristics ✓ Nautical terminology ✓ Vessel structure ✓ Vessel identification and markings ✓ Working and observation areas ✓ Key personnel	– Understand basic nautical terminology and demonstrate knowledge of basic vessel structure. – Identify a vessel (from a photo or draw) using its marking (name, port of registration, registration number, call sign) – Demonstrate working knowledge of the structure of a pelagic longliner and possible different configurations. – Recognise (from photos or draws) working and observation areas on pelagic longliners with different configurations. – Detail rank and function of officers and crew of key importance to observer work.
	4.1.2. Fishing gear and related equipment, design and specifications	– Be acquainted with the different components of a pelagic longline. – Able to identify distinct longline systems based on mainline storage method. – Recognise (from photos or draws) fishing apparats used on a longliner.
	4.1.3. Fishing operations	– Knowledge of general procedures in longline fishing operations (setting, hauling, processing).
	4.1.4. Fisheries impacts and inter-actions ✓ Species of special interest that interact with the fisheries ✓ Depredation ✓ By-catch mitigation methods ✓ Code of good practice for the release of PETS	– Understand the impact of longline fishing on PET species and understand how different recommended mitigation measures are deployed to prevent un-wanted by-catch. – Be aware of inter-actions such as depredation and capable of identifying depredatory species by the type of mark left on target species. – Detail IOTC best practices for the handling and safe release of seabirds and marine turtles.
4.2. Tuna purse-seine **COMPULSORY FOR PS TRAINING**	4.2.1. Vessel Identification and Characteristics ✓ Key personnel ✓ Nautical terms ✓ Vessel structure ✓ Vessel identification and markings	– Understand basic nautical terminology and demonstrate knowledge of basic vessel structure. – Identify a vessel (from a photo or draw) using its marking (name, port of registration, registration number, call sign) – Demonstrate working knowledge of the structure of a tuna purse-seiner. – Recognise (from photos or draws) working and observation areas on tuna purse-seiners with different configurations. – Detail rank and function of officers and crew of key importance to observer work.
	4.2.2. Fishing gear, design and specifications	– Be acquainted with the different components of the tuna purse-seine gear. – Able to identify distinct processing and storing methods used by tuna purse-seiners.

		– Recognise (from photos or draws) vessels and fishing apparats used by tuna purse-seiners.
	4.2.3. Fish aggregating devices (FADs) ✓ drifting vs anchored FADs ✓ ecological vs non-ecological FADs	– Explain the difference between anchored and drifting FADs – Understand IOTC FAD definition and able to name at least 1 artificial (man-made) FAD and 3 natural floating objects. – Capable of distinguishing the different components of a man-made FAD and naming materials used in the construction of ecological FADs. – Able to explain the reasons for the usage of artificial FADs
	4.2.4. Fishing operations	– Detail search and detection operations conducted by tuna purse-seiners (direct and indirect). – Knowledge of general procedures in purse-seine fishing operations (setting, circling, pursing, hauling, brailling and shifting).
	4.2.5. Fisheries impacts and inter-actions ✓ Species of special interest that interact with the fisheries ✓ The FAD "problem" ✓ By-catch mitigation ✓ methods ✓ Code of good practice for the release of PETS	– Understand the impact of tuna purse-seine fishing on PET species, particularly the impact of FADs. – Be aware of recommended best practices to minimize or prevent un-wanted by-catch and/or by-catch mortality. – Detail IOTC best practices for the handling and safe release of marine turtles.
4.3. Pole and line **COMPULSORY FOR P&L TRAINING**	4.3.1. Vessel Identification and Characteristics ✓ Key personnel ✓ Nautical terms ✓ Vessel structure ✓ Vessel identification and markings	– Understand basic nautical terminology and demonstrate knowledge of basic vessel structure. – Identify a vessel (from a photo or draw) using its marking (name, port of registration, registration number, call sign) – Demonstrate working knowledge of the structure of a pole and line vessel. – Recognise (from photos or draws) working and observation areas on a pole and line vessel. – Detail rank and function of officers and crew of key importance to observer work.
	4.3.2. Fishing gear, design and specifications	– Be acquainted with the different components of the pole and line gear for tuna and bait fishing (if any). – Able to identify distinct processing and storing methods used. – Recognise (from photos or draws) fishing apparats used.

	4.3.3. Fish aggregating devices (FADs) ✓ drifting vs anchored FADs ✓ ecological vs non-ecological FADs	– Explain the difference between anchored and drifting FADs – Understand IOTC FAD definition and able to name at least 1 artificial (man-made) FAD and 3 natural floating objects. – Capable of distinguishing the different components of a man-made FAD and naming materials used in the construction of ecological FADs. – Able to explain the reasons for the usage of FADs
	4.3.4. Fishing operations including bait-fishing	– Detail search and detection operations conducted by pole and line vessels (direct and indirect). – Knowledge of procedures in pole and line bait fishing operations (setting, circling, pursing, hauling and brailling). – Knowledge of procedures in pole and line tuna fishing operations (chumming, fishing, processing).
	4.3.5. Fisheries impacts and inter-actions ✓ Species of special interest that interact with the fisheries ✓ Bait fishing bycatch ✓ By-catch mitigation methods ✓ Code of good practice for the release of PETS	– Understand the impact of pole and line bait and tuna fishing on PET species, particularly the impact of FADs. – Be aware of recommended best practices to minimize or prevent un-wanted by-catch and/or by-catch mortality. – Detail IOTC best practices for the handling and safe release of marine turtles.
4.4. Gillnet **COMPULSORY FOR GN TRAINING**	4.4.1. Vessel Identification and Characteristics ✓ Key personnel ✓ Nautical terms ✓ Vessel structure ✓ Vessel identification and markings	– Understand basic nautical terminology and demonstrate knowledge of basic vessel structure. – Identify a vessel (from a photo or draw) using its marking (name, port of registration, registration number, call sign) – Demonstrate working knowledge of the structure of an industrial pelagic gillnet vessel. – Recognise (from photos or draws) working and observation areas on an industrial gillnet vessel. – Detail rank and function of officers and crew of key importance to observer work.
	4.4.2. Fishing gear, design and specifications	– Be acquainted with the different components and characteristics of the pelagic industrial gillnet gear (set, trammel and drift nets). – Recognise (from photos or draws) fishing apparats used.
	4.4.3. Fishing operations	– Knowledge of procedures with the industrial pelagic gillnet fishing operations (setting and hauling). – Able to identify distinct processing and storing methods used.

	4.4.4. Fisheries impacts and inter-actions ✓ Species of special interest that interact with the fisheries ✓ PETS bycatch and mortality ✓ By-catch mitigation ✓ methods ✓ Code of good practice for the release of PETS	– Understand the impact of industrial pelagic gillnet fishing on PET species. – Be aware of recommended mitigation measures to minimize or prevent un-wanted by-catch and/or by-catch mortality. – Detail IOTC best practices for the handling and safe release of sea-birds, marine turtles, marine mammals and sharks.
5. Species Identification		
Module	**Curriculum**	**Assessment criteria**
5.1. Nomenclature and anatomical features **COMPULSORY FOR ALL GEARS**	5.1.1. Nomenclature for recording family, genus and species	– Understand the need of using nomenclature for recording family, genus and species and the danger of incorrect identification from using common names.
	5.1.2. Identify the anatomical and diagnostic features of ✓ Bony fish ✓ Cartilaginous fish (sharks and rays)	– Identify the anatomical differences between bony and cartilaginous fish. – Detail the basic external anatomical diagnostic features of bony fish used for species identification – Detail the basic external anatomical diagnostic features of cartilaginous fish (sharks and rays) used for species identification
	5.1.3. Identify PETs diagnostic features: ✓ Seabirds ✓ Sea mammals ✓ Marine turtles	– Detail the basic external anatomical diagnostic features used for the identification of marine turtles, seabirds and marine mammal species
5.2. Identify target and bycatch species encountered in the longline fishery using diagnostic features	5.2.1. Identify main IO adult tropical and neritic tuna species	– Adult tropical and neritic tuna species are recognized by means of their diagnostic anatomical features
	5.2.2. Identify IO billfish species	– Billfish species are recognized by means of their diagnostic anatomical features

COMPULSORY FOR LL FISHERY	5.2.3. Identify most prevalent IO shark species	– IO shark species encountered in longline fishery are recognized by means of their diagnostic anatomical features
	5.2.4. Identify most prevalent by-catch species	– The fish bycatch species encountered in longline fisheries are recognized by means of their diagnostic anatomical features
	5.2.5. Use identification guides to correctly identify fish and PET species	– Demonstrate use of the species identification guides to correctly identify fish and PET species, common name, scientific name, and FAO Species Code
5.3. Identify target and bycatch species encountered in the purse-seine fishery using diagnostic features **COMPULSORY FOR PS FISHERY**	5.3.1. Identify main IO adult tropical and neritic tuna species	– Adult tropical and neritic tuna species are recognized by means of their diagnostic anatomical features
	5.3.2. Identify main IO juvenile tropical tuna species	– Juvenile yellowfin and bigeye tuna species are recognized by means of their diagnostic anatomical features (external and internal)
	5.3.3. Identify IO billfish species	– Billfish species are recognized by means of their diagnostic anatomical features
	5.3.4. Identify most prevalent IO shark species	– IO shark species encountered in tuna purse-seine fishery are recognized by means of their diagnostic anatomical features
	5.3.5. Identify most prevalent by-catch species	– The fish bycatch species encountered in tuna purse-seine fisheries are recognized by means of their diagnostic anatomical features
	5.3.6. Use identification guides to correctly identify fish and PET species	– Demonstrate use of the species identification guides to correctly identify fish and PET species, common name, scientific name, and FAO Species Code
5.4. Identify target and bycatch species encountered in the	5.4.1. Identify main IO adult tropical and neritic tuna species	– Adult tropical and neritic tuna species are recognized by means of their diagnostic anatomical features

pole & line fishery using diagnostic features **COMPULSORY FOR P&L FISHERY**	5.4.2. Identify main IO juvenile tropical tuna species	– Juvenile yellowfin and bigeye tuna species are recognized by means of their diagnostic anatomical features (external and internal)
	5.4.3. Identify IO billfish species	– Billfish species are recognized by means of their diagnostic anatomical features
	5.4.4. Identify most prevalent IO shark species	– IO shark species encountered in pole and line fishery are recognized by means of their diagnostic anatomical features
	5.4.5. Identify most prevalent by-catch species	– The fish bycatch species encountered in pole and line fisheries are recognized by means of their diagnostic anatomical features. – The bait fish species encountered in pole and line fisheries are recognized by means of their diagnostic anatomical features
	5.4.6. Use identification guides to correctly identify fish and PET species	– Demonstrate use of the species identification guides to correctly identify fish and PET species, common name, scientific name, and FAO Species Code
5.5. Identify shark and bycatch species encountered in the gillnet fishery using diagnostic features **COMPULSORY FOR GN FISHERY**	5.5.1. Identify main IO adult tropical and neritic tuna species	– Adult tropical and neritic tuna species are recognized by means of their diagnostic anatomical features
	5.5.2. Identify main IO juvenile tropical tuna species	– Juvenile yellowfin and bigeye tuna species are recognized by means of their diagnostic anatomical features (external and internal)
	5.5.3. Identify IO billfish species	– Billfish species are recognized by means of their diagnostic anatomical features
	5.5.4. Identify most prevalent IO shark species	– Main IO shark species encountered in gillnet fishery are recognized by means of their diagnostic anatomical features
	5.5.5. Identify most prevalent by-catch species	– The main fish bycatch species encountered in gillnet fisheries are recognized by means of their diagnostic anatomical features
	5.5.6. Use identification guides to correctly identify fish and PET species	– Demonstrate use of the species identification guides to correctly identify fish and PET species, common name, scientific name, and FAO Species Code

6. Observer Work		
Module	**Curriculum**	**Assessment criteria**
6.1. The Observer **COMPULSORY FOR ALL GEARS**	6.1.1. Observer duties, code of conduct and status	– Outlines the importance of maintain professional integrity, being impartial and following approved standard Code of Conduct, as detailed in IOTC ROS OM v1.2. – Description includes the status and duties of fisheries observers as provided for in IOTC Res 11/04. – Explain the importance of observer work, and the impact of collecting inadequate or falsified data.
	6.1.2. Procedures to follow when onboard ✓ Hierarchy ✓ Work and confidentiality ✓ Cultural awareness	– Describe protocols an observer should follow while onboard concerning hierarchy and presentation to avoid potential conflict with vessel captain and officers. – Outline the importance of respecting crew culture and customs to avoid potential conflict. – Description includes potential areas of conflict between fisheries observers and vessel owners/operators with reference to commercial sensitivity and information disclosure.
6.2. Sampling **COMPULSORY FOR ALL GEARS**	6.2.1. Sampling programs employed in regional Indian Ocean tuna fisheries 6.2.2. Fisheries observer roles and tasks in relation to regional sampling programs	– Demonstrate general knowledge of sampling programs in place regionally in the Indian Ocean Tuna fisheries and the roles of fisheries observers in relation to these sampling programs.
	6.2.3. Data collection tools, units, codes and formats ✓ Use, maintenance and calibration of sampling equipment ✓ Prescribed data forms, units and codes	– Demonstrate the use, maintenance and calibration of sampling equipment; – Identify the method established by the regional observer scheme for measuring fish length and weight according to species type and anatomical features. – Accurately measure and weight fish using the method appropriate to species type – Fish length and weight measurements are recorded using the data format and codes established by the regional fisheries observer scheme.

	6.2.4. Weights and measures ✓ Accurately measure and record species lengths and weights (tuna, billfish, sharks, rays, other fish, sea-turtles and sea-birds)	
	6.2.5. Biological sampling ✓ Collect, preserve, store and record samples ✓ Photograph / preserve a species for ID	– Explain how to collect, preserve, store and record samples – Familiar with protocols for the photographing and preservation of an individual spp. for ID. – Able to store and record samples in accordance with specified procedures.
6.3. Longline onboard data collection and recording **COMPULSORY FOR LL GEAR**	6.3.1. Estimate weights, volumes and ratios ✓ total catch in set ✓ ratio of species in set ✓ amount of bycatch ✓ amount of discards ✓ catch retained on board ✓ vessel hold capacity	– Explicate the concepts of: set total catch; catch composition; bycatch; discards; and retained catch weight. – Calculate vessel hold capacity from information provided. – Correctly execute 3 exercises for the calculation of set total catch, bycatch, discards and retained catch.
	6.3.2. Mandatory data to be collected during longline fishing 6.3.3. Data gathering processes and priorities 6.3.4. Data recording procedures	– Correctly interpret at least 2 realistic written simulations of credible longline fishing scenarios and fill in national fisheries agencies and/or IOTC form templates with a minimum verified accuracy of 75%. – Correctly use and interpret supporting guidelines, species codes and identification resources for the completion of national fisheries agencies and/or IOTC form templates. – Correctly use prescribed units and codes for the completion of national fisheries agencies and/or IOTC form templates.
	6.3.5. Information to be gathered on interactions, the effectiveness of mitigation measures	– Recognize species of special interest and be aware of levels of vulnerability. – Familiar with species groups that are likely to interact with pelagic longline gear and with main mitigation methods and good practices for species handling and release recommended by the IOTC. – Correctly interpret and record a given simulated interaction with a species of special interest, the use and effectiveness of recommended mitigation measure.

	and good practices	
	6.3.6. Cross-cheeking data with entries made in vessel logbook and fulfilment of logbooks;	– Recognise the need and importance of checking consistency between observer estimated data (e.g. catches) and entries made in the vessel logbook; – Familiar with the vessel logbook contents and structure; – Describe the importance of assisting vessel officers with the correct filling of vessel logbook; – Correctly cross-check observer estimated data with logbook entries interpret and correct wrong or missing entries on a logbook given simulated logbook.
6.4. Purse-seine onboard data collection and recording **COMPULSORY FOR PS GEAR**	6.4.1. Estimate weights, volumes and ratios ✓ total catch in set ✓ ratio of species in set ✓ amount of bycatch ✓ amount of discards ✓ catch retained on board ✓ vessel hold capacity	– Explicate the concepts of: set total catch; catch composition; bycatch; discards; and retained catch. – Explain methods to set estimate total catch weight. – Estimate total catch weight using brail volume and number. – Understand processes to estimate catch composition of an associated and of an un-associated tuna school. – Calculate vessel hold capacity from information provided. – Correctly execute 3 exercises for the calculation of set total catch, bycatch, discards and retained catch.
	6.4.2. Data to be collected during purse-seine fishing 6.4.3. Data gathering processes and priorities 6.4.4. Data recording procedures	– Correctly interpret at least 2 realistic written simulations of credible purse-seine fishing scenarios and fill in national fisheries agencies and/or IOTC form templates with a minimum verified accuracy of 75%. ○ PS fishing on a free school; ○ PS equipped with a discharge opening at the lower deck fishing on an associated school; ○ PS not equipped with a discharge opening at the lower deck fishing on an associated school; ○ PS fishing on a free school and conducting shifting. – Correctly use and interpret supporting guidelines, species codes and identification resources for the completion of national fisheries agencies and/or IOTC form templates. – Correctly use prescribed units and codes for the completion of national fisheries agencies and/or IOTC form templates.

	6.4.5. Information to be gathered on interactions, the effectiveness of mitigation measures and good practices	– Recognize species of special interest and be aware of levels of vulnerability. – Familiar with species groups that are likely to interact with tuna purse-seine gear and with main mitigation methods and good practices for species handling and release recommended by the IOTC. – Correctly interpret and record a given simulated interaction with a species of special interest, the use and effectiveness of recommended mitigation measure.
	6.4.6. Cross-cheeking data with entries made in vessel logbook and fulfilment of logbooks;	– Recognise the need and importance of checking consistency between observer estimated data (e.g. catches) and entries made in the vessel logbook; – Familiar with the vessel logbook contents and structure; – Describe the importance of assisting vessel officers with the correct filling of vessel logbook; – Correctly cross-check observer estimated data with logbook entries interpret and correct wrong or missing entries on a logbook given simulated logbook.
6.5. Pole and line onboard data collection and recording **COMPULSORY FOR P&L GEAR**	6.5.1. Estimate weights, volumes and ratios for tuna fishing ✓ total catch in set ✓ ratio of species in set ✓ amount of bycatch ✓ amount of discards ✓ catch retained on board ✓ vessel hold capacity	– Explicate the concepts of: set total catch; catch composition; bycatch; discards; and retained catch weight. – Calculate bait tanks and vessel hold capacity from information provided. – Correctly execute 3 exercises for the calculation of set total catch, bycatch, discards and retained catch.
	6.5.2. Data to be collected during pole and line fishing 6.5.3. Data gathering processes and priorities 6.5.4. Data recording procedures	– Correctly interpret at least 2 realistic written simulations of credible pole and line fishing scenarios and fill in national fisheries agencies and/or IOTC form templates with a minimum verified accuracy of 75%. o fishing on a free school; o fishing on an associated school; o fishing for bait; – Correctly use and interpret supporting guidelines, species codes and identification resources for the completion of national fisheries agencies and/or IOTC form templates. – Correctly use prescribed units and codes for the completion of national fisheries agencies and/or IOTC form templates.

	6.5.5. Information to be gathered on interactions, the effectiveness of mitigation measures and good practices	– Recognize species of special interest and be aware of levels of vulnerability. – Familiar with species groups that are likely to interact with pole and line gear and with main mitigation methods and good practices for species handling and release recommended by the IOTC. – Correctly interpret and record a given simulated interaction with a species of special interest, the use and effectiveness of recommended mitigation measure.
	6.5.6. Cross-cheeking data with entries made in vessel logbook and fulfilment of logbooks	– Recognise the need and importance of checking consistency between observer estimated data (e.g. catches) and entries made in the vessel logbook; – Familiar with the vessel logbook contents and structure; – Describe the importance of assisting vessel officers with the correct filling of vessel logbook; – Correctly cross-check observer estimated data with logbook entries interpret and correct wrong or missing entries on a logbook given simulated logbook.
6.6. Gillnet data collection and recording **COMPULSORY FOR GN GEAR**	6.6.1. Estimate weights, volumes and ratios ✓ total catch in set ✓ ratio of species in set ✓ amount of bycatch ✓ amount of discards ✓ catch retained on board ✓ vessel hold capacity	– Explicate the concepts of: set total catch; catch composition; bycatch; discards; and retained catch weight. – Calculate vessel hold capacity from information provided. – Correctly execute 3 exercises for the calculation of set total catch, bycatch, discards and retained catch.
	6.6.2. Data to be collected during gillnet fishing 6.6.3. Data gathering processes and priorities 6.6.4. Data recording procedures	– Correctly interpret at least 2 realistic written simulations of credible pelagic gillnet fishing scenarios and fill in national fisheries agencies and/or IOTC form templates with a minimum verified accuracy of 75%. – Correctly use and interpret supporting guidelines, species codes and identification resources for the completion of national fisheries agencies and/or IOTC form templates. – Correctly use prescribed units and codes for the completion of national fisheries agencies and/or IOTC form templates.
	6.6.5. Information to be gathered on interactions, the effectiveness of mitigation measures	– Recognize species of special interest and be aware of levels of vulnerability. – Familiar with species groups that are likely to interact with pelagic gillnet gear and with main mitigation methods and good practices for species handling and release recommended by the IOTC. – Correctly interpret and record a given simulated interaction with a species of special interest, the use and effectiveness of recommended mitigation measure.

	and good practices	
	6.6.6. Cross-cheeking data with entries made in vessel logbook and fulfilment of logbooks;	– Recognise the need and importance of checking consistency between observer estimated data (e.g. catches) and entries made in the vessel logbook; – Familiar with the vessel logbook contents and structure; – Describe the importance of assisting vessel officers with the correct filling of vessel logbook; – Correctly cross-check observer estimated data with logbook entries interpret and correct wrong or missing entries on a logbook given simulated logbook.
6.7. Vessel sighting and transhipment activities **COMPULSORY FOR ALL GEARS**	6.7.1. Information use for monitoring and surveillance	– Lists information usage for regional fisheries monitoring and management.
	6.7.2. Information to be gathered by fisheries observers	– Understands the meaning and means for the collection of required information on vessels sightings. – Understands the meaning and means for the collection of required information on vessel transhipments.
	6.7.3. Information recording	– Correctly interpret a given simulated vessel sighting and fill in national fisheries agencies and/or IOTC form templates with a minimum verified accuracy of 75%. – Correctly interpret a given simulated vessel transhipment and fill in national fisheries agencies and/or IOTC form templates with a minimum verified accuracy of 75%.
6.8. Electronic trip reports (format and contents) **COMPULSORY FOR ALL GEARS**	6.8.1. Detailed daily journal	- Able to keep a sequential, easy to read and understandable daily journal during training.
	6.8.2. IOTC Observer trip report template and reporting procedures	- Capable of using daily journal relevant entries and written simulations and filled report templates to prepare Observer Trip Report following IOTC report template and reporting procedures.
	6.8.3. Observer trip report submission - timeline and circulation	- Demonstrate knowledge of timelines for the submission and circulation of observer trip reports.

6.9. Electronic data recording **OPTIONAL TRAINING**	6.9.1. Instruction on electronic data bases to cover data capture from data sheets.	Demonstrate ability to capture data from data sheets into a database with an accuracy of at least 75%.