Provision of advice on the management of discards in EU fisheries beyond EU waters

Phase I

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Acronyms

CCAMLR	Commission for Conservation of Antarctic Marine Living Resources
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CECAF	Fishery Committee for the Eastern Central Atlantic
CFP	Common Fisheries Policy
CM	Conservation Measure
CNCP	Cooperating Non-Contracting Party
CPC	Cooperating Contracting Party
DCF	Data Collection Framework
EU	European Union
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
LOA	Length Overall
ICES	The International Council for the Exploration of the Sea
IOTC	Indian Ocean Tuna Commission
NAFO	Northwest Atlantic Fisheries Organisation
NCEM	NAFO Conservation and Enforcement Measures
NEAFC	North East Atlantic Fisheries Commission
RFMO	Regional Fisheries Management Organisation
SEAFO	South East Atlantic Fisheries Organisation
SFPA	Sustainable Fisheries Partnership Agreement
SPRFMO	South Pacific Regional Fisheries Management Organisation
SSRU	Small Scale Research Unit
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
UTC	Coordinated Universal Time
WCPFC	Western Central Pacific Fisheries Commission

Abstract

The purpose of this Specific Contract was to provide the Commission with an overview of the existing international obligations regarding the management of discards within select Regional Fisheries Management Organisations or Agreements (RFMOs) and Sustainable Fisheries Partnership Agreements (SFPAs) beyond EU waters, and to identify to what extent such international obligations are aligned or are inconsistent with Article 15 (hereafter the EU landing obligation) of the new Common Fisheries Policy (CFP) regulation, based on all phased and final provisions to be implemented by 2019.

A review of RFMO management measures and SFPA protocols identified a diverse range of binding and non-binding management obligations relevant to discarding within RFMOs and SFPAs. The majority of management measures relevant to the practice of discarding were in place as a means to achieve an alternative objective (e.g. long term management plans, TAC management etc.).

Amongst the following RFMOs and SFPAs reviewed for this study:

- Tuna RFMOs: CCSBT, IATTC, ICCAT, IOTC, WCPFC;
- Non-tuna RFMOs: CCAMLR, CECAF, NAFO, NEAFC, SEAFO, SIOFA, SPRFMO;
- SFPAs: Greenland, Mauritania, Morocco

six RFMO measures (three ICCAT Recommendations and three NAFO Conservation and Enforcement measures) have the potential to lead to fishing activities inconsistent with the EU landing obligation in these regulatory areas. As a result, a total of 28 EU métiers currently active within NAFO, ICCAT and areas of NEAFC which overlap with the ICCAT area will be impacted to varying degrees by a requirement to land catches other international vessels can discard. For many of these métiers, information available on the extent of discards of species subject to the EU landing obligation is limited. It has therefore been difficult to establish the extent to which EU metiers will be impacted by identified potential inconsistencies with the EU landing obligation.

Résumé

L'objectif de ce Contrat Spécifique a été de fournir à la Commission un bilan des obligations internationales concernant les rejets au sein de plusieurs Organisations Régionales de Gestion des Pêches (ORGP) et des Accords de Partenariat de Pêche Durable (« SFPA » en anglais) au-delà des eaux communautaires, et d'analyser dans quelle mesure ces obligations internationales sont en accord ou sont au contraire en conflit avec l'Article 16 (ci-après l'obligation communautaire de débarquement) du règlement de la nouvelle Politique Commune de la Pêche (PCP), compte tenu des mesures qui seront mises en œuvre progressivement jusqu'en 2019.

La révision des mesures de gestion des ORGP et des protocoles des SPFA a permis d'identifier un ensemble important d'obligations contraignantes et non-contraignantes, en ce qui concerne la pratique des rejets au sein des ORGP et des accords de Partenariat de Pêche Durable. La majorité des mesures d'aménagement en rapport avec la pratique des rejets a été mise en place comme une alternative pour atteindre un objectif plus général (par exemple, plan d'aménagement à long terme, mises en place de TAC, etc.).

Parmi les ORGP et les SFPA qui ont été révisés dans le cadre ce cette étude :

- ORGP thonières: CCSBT, IATTC, ICCAT, IOTC, WCPFC;
- ORGP non-thonières: CCAMLR, CECAF, NAFO, NEAFC, SEAFO, SIOFA, SPRFMO;
- SFPAs: Groenland, Mauritanie, Moroc

Six mesures provenant des ORGP (3 recommandations de l'ICCAT et 3 mesures de conservation et de mise en application de la NAFO) peuvent potentiellement aboutir à des activités de pêche inconsistantes avec l'obligation communautaire de débarquement en vigueur dans les eaux sous juridiction européenne. En conséquence, un total de 28 métiers européens en activité dans les aires de compétence de la NAFO, de l'ICCAT, et dans celles la NEAFC qui sont partagées avec l'ICCAT, seront impactés à divers degrés par une obligation de débarquement des captures autre que celles déjà en place au niveau international. Pour plusieurs de ces métiers les informations disponibles sur l'ampleur des rejets d'espèces soumises à l'obligation communautaire de débarquement sont limitées. Il est donc difficile de prévoir dans quelle mesure ces métiers européens seront affectés en raison de cette inconsistance potentielle entre l'obligation de débarquement de l'Union Européenne et les mesures internationales en vigueur sur les rejets.

Executive Summary

Purpose of the specific contract

The purpose of this Specific Contract was to provide the Commission with an overview of the existing international obligations regarding the management of discards within select Regional Fisheries Management Organisations or Agreements (RFMOs) and Sustainable Fisheries Partnership Agreements (SFPAs) beyond EU waters, and to identify to what extent such international obligations are aligned or are inconsitent with Article 15 (hereafter the EU landing obligation) of the new Common Fisheries Policy (CFP) regulation, based on all phased and final provisions to be implemented by 2019.

The objectives of the study were:

1. To identify the gaps to be filled at international level to ensure a level playing field in terms of international common obligations regarding the management of discards; and

2. To advise the Commission in the preparation and participation at the NAFO Ad Hoc Working Group to Reflect on Rules Governing Bycatch, Discards and Selectivity in the NAFO Regulatory Area and in respective follow-up activities.

All applicable international multilateral agreements and the following RFMOs were reviewed to achieve these objectives:

- Tuna RFMOs: CCSBT, IATTC, ICCAT, IOTC, WCPFC
- Non-tuna RFMOs: CCAMLR, CECAF, NAFO, NEAFC, SEAFO, SIOFA, SPRFMO

Although the EU landing obligation does not apply to third country waters and therefore fisheries taking place under Sustainable Fisheries Partnership Agreements (SFPAs), in addressing the above objectives a review of measures in place under the following SFPAs: Greenland, Mauritania, Morocco was also completed on request by DG-MARE.

Tasks to be completed

In order to meet these objectives, the tasks to be performed were as follows:

Task 1. Provide an inventory of the EU's international obligations concerning the management of discards and of all non-binding international recommendations, resolutions or any kind of soft law measures concerning the management of discards and identify:

   a) Obligations applicable to EU vessels by EU legislation but not applicable to all fleets at international level; and
   b) Internationally agreed measures that are binding on the Union and that are incompatible with the discard ban provided by the new CFP Regulation.

Task 2. On the basis of the results of Task 1, identify the different EU fisheries (métiers) in RFMOs and SFPAs that are potentially affected by discard obligations.

And for each of the métiers identified:

Task 3. Provide an overview of the location of the fishing activities.

Task 4. Identify the species that shall be exempted from the landing obligation on the basis of Article 15(4) of the new CFP Regulation, *i.e.*:

   a) Species in respect of which fishing is prohibited and that are identified as such in a Union act adopted in the area of the Common Fisheries Policy; and
   b) Species for which scientific evidence demonstrates high survival rates, taking into account the characteristics of the gear, of the fishing practices and of the ecosystem.

Task 5. Provide an overview of available information for stocks regarding discards and bycatch.

Task 6. Classify them according to the available information on discards as:

a) Fisheries with low discards (e.g. less than 10% of the catch);
b) Fisheries with assumed high discard levels but available data are of low scientific value to support quantitative assessments and overall estimates of discards; and
c) Fisheries with high discards and available data are of sufficient quality to perform quantitative assessments and provide overall estimates of discards.

Task 7. Provide reasons for discards: e.g. management measures limiting catch retention of bycatch species or undersized, quota limited stocks, high grading.

An additional task was undertaken for the North Atlantic Fisheries Organisation (NAFO):

Task 8. Prepare and advise DG MARE on the NAFO Ad hoc Working Group to Reflect on Rules Governing Bycatch, Discards and Selectivity in the NAFO Regulatory Area providing:

a) An analysis of NAFO provisions that encourage or lead to discards and bycatch; and
b) Proposals that on that basis aim at reducing discards and bycatch and increasing selectivity.

General approach to completing tasks

All tasks were completed through desk research and in consultation with key experts in the RFMOs and SFPAs. At the onset of the study a data collection template was devised to facilitate the collation of information for Tasks 1-7. Each partner was responsible for completing these tasks for the RFMOs and/or SFPAs for which it had specific expertise.

In order to complete Tasks 1 and 2 a review of all RFMO management measures, EU SFPA protocols and multilateral agreements (e.g. FAO guidelines, international treaties etc.) was completed. For some RFMOs, this process also required contact with relevant experts and administrators in the respective organisations and national authorities. All obligations were collated into a single inventory, highlighting those which are incompatible with the EU landing obligation. For the purposes of this inventory, the review of measures took into account all phased and final provisions to be implemented by 2019. Measures relating to the management of bycatch which are not relevant to the EU landing obligation were also collated into a separate inventory.

In order to complete Task 1, it was first necessary to identify which species/stocks the EU landing obligation applies based on Article 15(1) of Regulation (EU) No 1380/2013[1]. The EU landing obligation applies to species/stocks for which a catch limit applies under a binding RFMO measure or under a Council Regulation (EC) or, in the case of the Mediterranean, a size limit applies under Annex III of Council Regulation (EC) 1967/2006[2].

For these stocks, it was then necessary to establish whether a binding RFMO/SFPA management measure applied which encourages or specifically ***obligates*** vessels to discard catch. For the purpose of this study, a potential inconsistency with the EU landing obligation was considered only for those measures which specifically obligate vessels to discard catch.

[1] Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R1380&qid=1427376351778&from=EN

[2] Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006R1967&qid=1427375776371&from=EN

Work towards Tasks 4-7 was divided into two activities: i) preparation (collection and compilation of information), and ii) generation of the requested outputs. Each partner sourced the necessary information to complete Tasks 4 to 7 for their respective RFMOs and SFPAs in advance of a partner workshop, at which all partners contributed to the generation of task outputs.

To complete Task 4 for each of the potentially affected métiers, the species caught but exempted from the landing obligation on the basis of Article 15(4a) (prohibited) of the new CFP Regulation and those which might be considered under Article 15 (4b) (high survival) were identified. In order to complete Task 4b specifically, assessment of survival assessment was based primarily on information available for estimates of discard survival and expert judgement of the participants at the partner workshop.

In order to provide an overview of discard and bycatch information available (Task 5), information was gathered from RFMO Scientific Committee reports, relevant Working Group reports, and fine scale observer data where available. Information was presented only for the species/stocks associated with a potential inconsistency with the EU landing obligation. This enabled métiers to be classified for Task 6 according to the information available on discards (e.g. from information rich to information poor). Métiers were classified as having 'low' discard levels if they were <10% of total catch or 'high' discard levels if they represented >10% of total catch[3]. To provide some measure of confidence in the classification each category was further subdivided into:

- low quality data: defined as data with *'low scientific value to support quantitative assessments and overall estimates of discards*'
- high quality data: defined as '*data are of sufficient quality to perform quantitative assessments and provide overall estimates of discards'*

Reasons for discards were identified during the workshop through analysis of information provided within RFMO Scientific Committee reports, and previous contact with experts within relevant RFMO Working Groups.

Due to the highly specific nature of Task 8 and the timing of the contract in relation to the schedule for the Ad Hoc Working Group to Reflect on Rules Governing Bycatch, Discards and Selectivity in the NAFO Regulatory Area, this task was undertaken by a single partner at the time of the kick off meeting. In addition to the provision of advice to DG MARE, a project team member participated in the Ad Hoc Working Group.

International obligations regarding the management of discards

The review of RFMO management measures and SFPA protocols identified a diverse range of binding and non-binding management obligations relevant to discarding within RFMOs and SFPAs. The majority of management measures relevant to the practice of discarding were in place as a means to achieve an alternative objective (e.g. long term management plans, TAC management etc.). Across all of these measures, although some encourage the discarding of catch, relatively few stipulate an obligation for EU vessels to either discard or to not discard (i.e. discard ban). Across all RFMOs and SFPAs, only ten measures were considered to be inconsistent with the EU landing obligation.

Tuna RFMOs

Measures relating to the management of discards are in place within all tuna RFMOs. Within IATTC, IOTC and WCPFC, none of these measures are considered to be inconsistent with the EU landing obligation for EU vessels.

[3] The distinction between 'low' and 'high' discard levels was based on the criteria used for STECF and ICES Catch Comparisons across 85 stocks as detailed in STECF 2013 (STECF-13-23); negligible discards were defined as < 10% of catch and significant discards as >10%.

Within ICCAT there are three measures considered to be inconsistent with the EU landing obligation (Recommendations 2013-02, 2014-01 and 2014-04), affecting all thirteen EU métiers operating within this RFMO. These measures set fishing opportunities and conservation and management measures in the Atlantic Ocean for bigeye tuna, yellowfin tuna, bluefin tuna and swordfish, but also stipulate obligations for vessels to discard these species for various reasons including authorised vessel lists, minimum size limitations and fishery-specific catch allowances. These specific ICCAT measures also have the potential to affect all métiers fishing within NEAFC waters where ICCAT and NEAFC areas overlap.

Non-tuna RFMOs

Three NAFO measures relevant to the management of discards are considered to be inconsistent with the EU landing obligation (Articles 5, 6 and 14 of NAFO Conservation and Enforcement Measures) and affect all ten EU métiers active (or currently inactive) in the NAFO convention area. These measures set target catch and effort limitations, minimum size limits, and bycatch species limits in combination with each other and require EU vessels to discard catch in a wide range of situations.

Several NEAFC measures are relevant to the management of discards, but only ICCAT measures identified above have the potential to affect five of the six métiers fishing within NEAFC waters.

Measures relating to the management of discards are in place within CCAMLR and SPRFMO, but none of these are considered to be inconsistent with the EU landing obligation. In both cases this is due to the lack of an explicit obligation to discard catch within the measures.

No relevant management measures are in place for CECAF, SEAFO or SIOFA.

Sustainable Fisheries Partnership Agreements

There are number of management obligations regarding discarding in the three SFPAs included in this study (Mauritania, Morocco and Greenland).

The Greenland SFPA protocol includes a general discards ban and although there are two derogations to this ban that permit discards of unmarketable catches (Articles 5 and 13 of Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch), these measures do not obligate vessels to discard this catch.

The SFPA protocol Morocco contains a zero bycatch limit for swordfish (which has an EU-specific TAC set under ICCAT and Council Regulation (EC) 104/2015), that may encourage the discarding of this species. However, these measures are not inconsistent with the EU landing obligation on the basis that the measures do not explicitly require vessels to discard catch.

There are no measures included under the SFPA protocol for Mauritania considered to be inconsistent with the EU landing obligation.

Multilateral agreements

The review of multilateral international agreements identified no internationally agreed measures that are binding on the Union that are inconsistent with the EU landing obligation provided by the new CFP Regulation. The majority of multilateral agreements relating to the management of bycatch and discards that are applicable to EU Member States are non-binding FAO guidelines for mitigating key international fisheries management issues (e.g. International Plan of Action for the management of discards) with the remainder being higher level management principles (e.g. Agenda 21, UNEP Regional Seas Programmes, FAO Code of Conduct for Responsible fisheries etc.). All of these measures encourage the implementation of sustainable fisheries management in some way, with most also encouraging minimal ecological impact, but none prescribe any particular approach for the management of discards and none are inconsistent with the EU landing obligation.

EU métiers affected by policy inconsistencies

Across all RFMOS and SFPAs covered by this specific contract we have identified 28 métiers that will potentially be affected by the EU landing obligation to varying extents once all phased and final provisions have been implemented by 2019.

ICCAT EU métiers include one mid-water trawl fishery, two hand and pole line (or bait boat) fisheries, three drifting pelagic longline fisheries, two purse seine fisheries, one trolling fishery, one trap fishery, one trammel net fishery, one set gillnet fishery and recreational fisheries. For all of these métiers, discarding may occur to varying degrees when fish are caught below minimum size limitations (swordfish, bluefin tuna); vessels are not authorised to catch certain species (bigeye and yellowfin tuna); when catch allowances for certain species have been exceeded (bluefin tuna) and when catches of certain species are made by recreational or sport fisheries (bluefin tuna).

NAFO métiers likely to be affected are all bottom otter trawl fisheries, targeting redfish, Greenland halibut, cod, skates and shrimp. The primary official reasons for discarding in all of these métiers result from the bycatch to varying degrees of species with target or bycatch catch limits, or target species below minimum landing sizes. Unofficially, high-grading of target species such as cod and redfish (e.g. selecting for larger individuals) may also lead to discarding.

NEAFC métiers identified to potentially be affected by the EU landing obligation include bottom and mid-water trawl targeting small pelagic and demersal fish species. It is not anticipated that NEAFC métiers identified will be greatly impacted by inconsistency with the EU landing obligation as they relate primarily to incidental catches of ICCAT regulatory species. ICCAT measures limiting the retention and landing of bigeye and bluefin tunas and swordfish may affect five of the six NEAFC métiers identified, but whilst these species have been reported in observer data for some vessels fishing within the area of NEAFC which overlaps with ICCAT, bycatch rates are very low for all three species.

Species exempt from the landing obligation on the basis of Article 15 (4)

For the métiers identified which might be impacted by the EU landing obligation, the table below summarises those species which would be exempt from the EU landing obligation based on Article 15 (4a) which relates to species for which targeted fishing is currently prohibited under related EU regulations.

Prohibited species exemptions stem primarily from Council Directive 92/43/EEC of 21 May 1992 and Council Regulation (EU) No 43/2014, apart from certain deep sea species (in NEAFC) listed under Council Regulation (EU) 1262 /2012 of 20 December 2012.

RFMO/SFPA	Prohibited species
ICCAT	Basking shark, white shark, probeagle shark, bigeye thresher shark, oceanic whitetip shark, hammerhead shark, silky shark
NAFO	Porbeagle shark
NEAFC	Basking shark, porbeagle shark, angel shark, guitarfish and giant manta ray All cetacean species Deep sea species

Species for which some evidence exists (mostly anecdotal) for high post-release survival are summarised in the following table for potentially impacted métiers; further research and evidence gathering would be required in order to determine their suitability for exemption under Article 15(4b).

RFMO/SFPA	High Survival Species
ICCAT	Bluefin tuna*, bigeye tuna*, yellowfin tuna* and swordfish*
NAFO	None
NEAFC	Bluefin tuna*, bigeye tuna*, yellowfin tuna* and swordfish*

** not in purse seine, trammel net or set gillnet métiers*

Identification of species which might be exempt from the EU landing obligation based on their post-release survivability was difficult. There was little information available on survival estimates for species potentially impacted by the EU landing obligation within identified métiers. Generally, stress response and injury of discarded fish vary according to species/stock, gear type/fishing and handling techniques. For this study for most species, determination of survivability was based on consultants' knowledge of the fisheries and species involved.

Many of the pelagic tuna and billfish species taken by ICCAT fisheries, are generally considered to survive the capture and release process well, unless caught in purse seines, trammel nets or gillnets.

While in NAFO, given the depth of the fisheries involved and nature of the gear used, bottom otter trawl fisheries, post-capture survival across all species is expected to be low.

Information available on the extent of discards and bycatch in RFMOs/SFPAs

Discard and bycatch extent and quality of the information available varies across RFMOs and SFPAs and is summarised in the table below for RFMOs in which métiers potentially impacted by the EU landing obligation are currently active.

RFMO/SFPA	Number of métiers			
	Low discards/bycatch (low quality data)	Low discards/bycatch (high quality data)	High discards/bycatch (low quality data)	High discards/bycatch (high quality data)
ICCAT	1	7	-	3
NAFO	-	3	-	2
NEAFC	5	-	-	-

Of all the métiers for which sufficient discards information was available to make an assessment, only five were considered to have high discarding rates: three in ICCAT and two in NAFO. All other métiers were considered to have low discarding rates (e.g. <10%), although for a third of these métiers, and mostly those fishing in the NEAFC area, data used to make this assessment were of a low quality.

The data of highest quality was considered to be generated by observer schemes. However, scientific observer data were only available for a very small number of the métiers across the RFMOs (e.g. NAFO) and only for some vessels within those métiers. For all other métiers data on discards was based on logbook data where available; vessels operating in some RFMOs (e.g. NAFO, NEAFC, ICCAT) are not required to record discards in detail for all species, and in some cases no reporting is required at all.

Phase I Conclusions

Across the following RFMOs and SFPAs reviewed for this study:

- Tuna RFMOs: CCSBT, IATTC, ICCAT, IOTC, WCPFC;
- Non-tuna RFMOs: CCAMLR, CECAF, NAFO, NEAFC, SEAFO, SIOFA, SPRFMO;
- SFPAs: Greenland, Mauritania, Morocco

six RFMO measures have the potential to lead to fishing activities inconsistent with the EU landing obligation in these regulatory areas. A total of 28 EU métiers are currently active across these areas and will be impacted to varying degrees by a requirement to land catches other international vessels can discard.

For many of these métiers, information available on the extent of discards of species subject to the EU landing obligation is limited. It has therefore been difficult to establish the extent to which EU

metiers will be impacted by identified potential inconsistencies with the EU landing obligation. Impacts will be further investigated under Phase II.

Recommended scope of Phase II

The objective of Phase II of this study is to provide recommendations on measures that the EU should promote in RFMOs to align their provisions with the EU landing obligation and on measures to be adopted for the purpose of implementing EU international obligations into EU law, including in particular, derogations from the landing obligation under Article 15.

Based on the review of international measures and obligations relating to the management of discards and bycatch completed under Task 1 of Phase I of the study, the measures to be considered under Phase II are summarised in the table below.

An additional task under Phase II will be to describe possible technical measures that could be adopted in RFMOs to reduce and eliminate discards across the 28 EU métiers identified as potentially being impacted by the EU landing obligation once final provisions have been implemented by 2019.

RFMO/ SFPA	Applicable measures	Métiers affected
Tuna RFMOs		
CCSBT	None	0
IATTC	None	0
ICCAT	ICCAT Recommendations 2013-02, 2014-01 and 2014-04	All métiers (13)
IOTC	None	0
WCPFC	None	0
Non-tuna RFMOs		
CCAMLR	None	0
CECAF	None	0
NAFO	Articles 5, 6 and 14 of NAFO Conservation and Enforcement Measures (NCEM) in 2014 (NAFO/FC Doc. 14/01, Serial No. N6272)	All métiers (10)
NEAFC	ICCAT Recommendations 2013-02, 2014-01 and 2014-04	Five métiers
SEAFO	None	0
SIOFA	None	0
SPRFMO	None	0
Sustainable Fisheries Partnership Agreements		
Greenland	None	0
Mauritania	None	0
Morocco	None	0

1 Introduction

1.1 Purpose of the specific contract

The purpose of this Specific Contract is to provide the Commission with an overview of the existing international obligations regarding the management of discards within select RFMOs and SFPAs beyond EU waters, and to identify to what extent such international obligations align or are inconsistent with the Article 15 (hereafter the EU landing obligation) of the new Common Fisheries Policy (CFP) regulation.

The objectives of the study are:

1. To identify the gaps to be filled at international level to ensure a level playing field in terms of international common obligations regarding the management of discards;

2. To advise the Commission in the preparation and participation at the NAFO Ad Hoc Working Group to Reflect on Rules Governing Bycatch, Discards and Selectivity in the NAFO Regulatory Area and in respective follow-up activities; and

3. To provide recommendations that will aid the Commission in proposing new measures at international level with this purpose.

When initially tendered, this project consisted of two phases, with Phase I covering objectives 1 and 2 and Phase II covering objective 3. However, these phases have now been split into two separate Specific Contracts. This draft final report is related to the first of these Contracts; a second Specific Contract is currently being prepared to cover Objective 3 above, in which recommendations will be made on measures to be adopted for the purpose of implementing EU international obligations into EU law, including in particular, derogations from the landing obligation under Article 15.

1.2 Tasks to be performed

Under this Specific Contract the tasks to be performed were as follows:

Task 1. Provide an inventory of the EU's international obligations concerning the management of discards and of all non-binding international recommendations, resolutions or any kind of soft law measures concerning the management of discards. This inventory should also distinguish between obligations and recommendations applicable within or beyond EU waters or in all areas and also distinguishing between within or outside third country waters.

On the basis of this inventory, the study should identify:

a) Obligations applicable to EU vessels by EU legislation but not applicable to all fleets at international level; and

b) Internationally agreed measures that are binding on the Union and that are incompatible with the discard ban provided by the new CFP Regulation.

Task 2. On the basis of the results of Task 1 the contractor shall identify the different EU fisheries (métiers) in RFMOs and SFPAs that are potentially affected by discard obligations.

Task 3. For each of these fisheries provide an overview of the location of the fishing activities, defined by coordinates in accordance with the World Geodetic System of 1984. VMS as other geo reference data under the data collection framework (DCF) is considered an adequate source to provide with a final map of the fisheries.

Task 4. For each of these fisheries, identify the species that shall be exempted from the landing obligation on the basis of Article 15(4) of the new CFP Regulation, i.e.:

a) Species in respect of which fishing is prohibited and that are identified as such in a Union act adopted in the area of the Common Fisheries Policy; and

b) Species for which scientific evidence demonstrates high survival rates, taking into account the characteristics of the gear, of the fishing practices and of the ecosystem.

Task 5. For each of these fisheries, provide an overview of available information regarding discards and bycatch for individual stocks.

Task 6. Classify fisheries according to the available information on discards:

a) Fisheries with low discards (e.g. less than 10% of the catch);

b) Fisheries with assumed high discard levels but available data are of low scientific value to support quantitative assessments and overall estimates of discards; and

c) Fisheries with high discards and available data are of sufficient quality to perform quantitative assessments and provide overall estimates of discards.

Task 7. Provide reasons for discards: e.g. management measures limiting catch retention of bycatch species or undersized, mixed fisheries and unavoidable bycatch, quota limited stocks, high grading.

Task 8. Prepare and advise DG MARE on the NAFO Ad hoc Working Group to Reflect on Rules Governing Bycatch, Discards and Selectivity in the NAFO Regulatory Area. The tasks would consist in providing:

a) An analysis of NAFO provisions that encourage or lead to discards and bycatch; and

b) Proposals that on that basis aim at reducing discards and bycatch and increasing selectivity.

1.3 Structure of the report

The approach and methodology for completing Tasks 1 to 8 is detailed in Section 2. Following this, our results are provided throughout Section 3, presented as a series of case study reports, presenting results for Tasks 1-7 for each for each RFMO and SFPA, and for multilateral agreements.

- Section 3.1 presents results for the tuna RFMOs (CCSBT, IATTC, ICCAT, IOTC and WCPFC);
- Section 3.2 presents results for the non-tuna RFMOs (CCAMLR, CECAF, NAFO, NEACF, SEAFO, SIOFA, SPRFMO);
- Sections 3.3 presents the results for the SFPAs (Greenland, Mauritania and Morocco); and
- Section 3.4 presents results for multilateral agreements.

Annex 1a provides the inventory of the EU's international obligations concerning the management of discards, including all binding and non-binding international recommendations, resolutions and any kind of soft law measures completed under Task 1. Annex 1b provides an inventory of other measures relating to the management of bycatch which are not relevant to the EU landing obligation for each of the RFMOs and SFPAs.

Annex 2 provides a summary table of the métiers potentially affected by the EU landing obligation across all RFMOs and SFPAs, completed under Task 2.

Annex 3 provides the final deliverable under Task 8.

2 Methodology

2.1 General approach

Prior to starting the tasks a data collection template was devised to facilitate the collation of information for Tasks 1-7 (See Annex 4). Each partner was responsible for completing tasks 1 and 2 and tasks 4-7 for one or more RFMO or SFPA. The template ensured consistency in the work undertaken across all RFMOs by different project partners, and allowed data collection to begin immediately. Task 3 was completed by MRAG.

Work towards Tasks 4-7 was divided into two activities: i) preparation (collection and compilation of information), and ii) generation of the requested outputs. Each partner sourced the necessary information to complete Tasks 4 to 7 for their respective RFMOs and SFPAs in advance of a partner workshop, at which all partners contributed to the generation of task outputs. Deliverables were then finalised after the workshop for submission in the draft final report.

Members of the consortium project team leading work on the RFMOs/SFPAs, along with the key experts consulted for this study, are listed in Annex 5.

2.2 Tasks 1 - Inventory of measures

In Task 1 an inventory was created of the EU's international obligations in the RFMOS and SFPA covered under the scope of this study concerning the management of discards, including all non-binding international recommendations, resolutions or any kind of soft law measures. Obligations identified in all RFMOs and SFPAs were collated into a single inventory, including all measures relevant to the EU landing obligation, highlighting those which are incompatible with the EU landing obligation. For the purposes of this inventory, the review of measures took into account all phased and final provisions to be implemented by 2019. All relevant management obligations were considered, including those that set out specific discard policies (e.g. measures instructing that discarding of one or more species is either required or prohibited), as well as policies that were considered to encourage or lead indirectly to discarding (e.g. measures establishing catch limits or permissible bycatch limits). In several cases this task also required contact with relevant experts and administrators in the RFMOs (listed in Annex 5).

Two steps were involved in identifying:

- Obligations applicable to EU vessels by EU legislation but not applicable to all fleets at international level
- Internationally agreed measures that are binding on the Union and that are incompatible with the discard ban provided by the new CFP Regulation

First it was necessary to identify which species/stocks the EU landing obligation applies based on Article 15(1) of Regulation (EU) No 1380/2013[4]. The EU landing obligation applies to species/stocks for which a catch limit applies under a binding RFMO measure or under a Council Regulation (EC) or, in the case of the Mediterranean, a size limit applies under Annex III of Council Regulation (EC) 1967/2006[5].

[4] Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R1380&qid=1427376351778&from=EN

[5] Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006R1967&qid=1427375776371&from=EN

Second, for these stocks, it was necessary to establish whether a binding RFMO/SFPA management measure applied which encouraged or specifically ***obligated*** vessels to discard catch. For the purpose of this study, a potential inconsistency with the EU landing obligation was considered only for those measures which specifically obligate vessels to discard catch.

Measures relating to the management of bycatch that were not relevant to the EU landing obligation were collated into a separate inventory.

2.3 Task 2 - Identification of métiers

Task 2 was completed simultaneously with Task 1 and involved identification of the different EU fisheries (métiers) in the RFMOs and SFPAs that were affected by a potential inconsistency between the EU landing obligation and a RFMO or SFPA management obligation. In several cases (e.g. in the NAFO Regulation Area) the different métiers potentially affected by a discard obligation were clearly identified in text of the management measure. However, in other areas this task required careful cross referencing and communication with RFMO Secretariats to clarify which métiers might be affected by a particular obligation.

Inconsistencies were identified based on the criteria previously described above under Task 1.

2.4 Task 3 - Mapping métiers

The location of the fishing activities (i.e. the fishing footprint) for each of the potentially affected métiers identified in Task 2 was presented. Task 3 (and indeed all further tasks) was not undertaken for RFMOs/SFPAs for which no potential inconsistencies with the EU landing obligation were identified. Mapping was done either using existing maps, or by mapping fishing effort data. Where effort information was not already available within the consortium, appropriate information was requested from RFMO Secretariats to determine where métiers might be affected by each obligation.

2.5 Task 4 - Exempt species

In Task 4, for each of the potentially affected métiers, the species caught but exempted from the landing obligation on the basis of Article 15(4a) and b)) of the new CFP Regulation were identified. Where an RFMO/SFPA obligation was broad in scope (e.g. a general ban on discards) this task initially required the identification of the species caught (retained and discarded) in each of the affected métiers, with scientific and expert assessments made regarding possible exemption on the basis of this information. For more specific RFMO and SFPA obligations (e.g. a ban on a particular species) this step was not necessary.

In order to complete Task 4b specifically, an initial review of recent Scientific, Technical and Economic Committee for Fisheries (STECF) reports[6] and a recent International Council for the Exploration of the Sea (ICES) workshop report[7] on apparent immediate survivability was carried out with the aim of developing an indicative scale of post-release survivability (e.g. low-high survival probability) as requested by the Terms of Reference for this specific contract. Initially a risk assessment was developed and trialled for this purpose, but was subsequently deemed too subjective to provide a useful assessment of discard survival.

Instead, assessment of post-release survivability was based primarily on information available for estimates of discard survival and expert judgement of the participants at the partner workshop.

[6] STECF 2013 Landing obligation in EU fisheries (STECF-13-23). Publications Office of the European Union, Luxembourg, EUR 26330 EN, JRC 86112, 115 pp; STECF 2014 Landing Obligation in EU Fisheries - part II (STECF-14-01). Publications Office of the European Union, Luxembourg, EUR XXXX EN, JRC XXXX, 67 pp

[7] ICES. 2014. Report of the Workshop on Methods for Estimating Discard Survival (WKMEDS), 17–21 February 2014, ICES HQ, Copenhagen, Denmark. ICES CM 2014/ACOM:51. 114 pp.

2.6 Task 5 – Information available on discards

In Task 5, an overview of available information regarding discards and bycatch was provided on a stock-by-stock basis for each of the potentially affected métiers. Information was presented only for the species/stocks associated with a potential inconsistency with the EU landing obligation. This information was gathered from RFMO Scientific Committee reports, relevant Working Group reports, and fine scale observer data where available.

2.7 Task 6 – Classification of métiers

In Task 6, each of the métiers was classified according to the information available on discards presented in the previous task (e.g. from information rich to information poor). Métiers were classified as having 'low' discard levels if they were <10% of total catch or 'high' discard levels if they represented >10% of total catch[8]. To provide some measure of confidence in the classification each category was further subdivided into:

- low quality data: defined as data with *'low scientific value to support quantitative assessments and overall estimates of discards*'
- high quality data: defined as '*data are of sufficient quality to perform quantitative assessments and provide overall estimates of discards'*

Task 5 and 6 were completed at the workshop.

2.8 Task 7 – Reasons for discards

In Task 7, the reasons for discarding of the applicable species (i.e. those associated with an inconsistency) in each of the métiers were identified. For example, whether due to management measures limiting catch retention of bycatch species or undersized, mixed fisheries and unavoidable bycatch, quota limited stocks, high grading etc. This was done during the workshop through analysis of information provided within RFMO Scientific Committee reports, and previous contact with experts within relevant RFMO Working Groups.

The outputs from this task are reported along with outputs of Task 2. Therefore a separate heading for Task 7 does not appear in this report.

2.9 Task 4-7 - Partner workshop

The aims of the workshop were as follows:

Day 1

- Review métiers identified across all RFMOs and SFPAs and discuss reasons for potential conflicts arising.
- Review results collated to date for each of Task 4-7 in métiers identified.
- Compare high survivability species/species groups potentially caught by métiers identified to ensure consistent selection of species types across different fisheries.

Day 2

- Review classification of métiers regarding information available on discards across métiers identified, based on data request outputs available at the workshop.

[8] The distinction between 'low' and 'high' discard levels was based on the criteria used for STECF and ICES Catch Comparisons across 85 stocks as detailed in STECF 2013 (STECF-13-23); negligible discards were defined as < 10% of catch and significant discards as >10%.

- Analyse data request outputs to explore extent of discards in métiers identified to finalise Tasks 5 and 6.

- Finalise work plan to complete draft final report

2.10 Task 8 – Advice for NAFO ad hoc Working Group on bycatch, discards and selectivity

Task 8 had a highly specific focus and was undertaken at the time of the kick off meeting by IEO. This task involved the preparation of advice for DG MARE on the NAFO Ad hoc Working Group to Reflect on Rules Governing Bycatch, Discards and Selectivity in the NAFO Regulatory Area, and consisted of:

a) An analysis of NAFO provisions that encourage or lead to discards and bycatch;

b) Proposals that on that basis aim at reducing discards and bycatch and increasing selectivity.

In addition to this advice to DG MARE, a project team member participated in the Ad Hoc Working Group. The outputs from Task 8 have previously been received by DG MARE and are also included within this report in Annex 3.

3 Results

The following sections 3.1 to 3.3 present results for Tasks 1 through to Task 6 for each of the RFMOs and SFPAs reviewed under this study. Sections 3.1.1 to 3.1.5 present results for the tuna RFMOs (CCSBT, IATTC, ICCAT, IOTC and WCPFC); Sections 3.2.1 to 3.2.7 present results for the non-tuna RFMOs (CCAMLR, CECAF, NAFO, NEACF, SEAFO, SIOFA, SPRFMO) and sections 3.3.1 to 3.3.3 present the results for the SFPAs (Greenland, Mauritania and Morocco); and Section 3.4 presents results for multilateral agreements. A summary section is presented at the end of each category.

3.1 Regional Fisheries Management Organisations - Tuna

3.1.1 Commission for the Conservation of Southern Bluefin Tuna (CCSBT)

3.1.1.1 Task 1 Inventory

The convention area of the CCSBT is pan-global, covering southern areas of the Atlantic, Indian and Pacific Oceans as shown in Figure 1.

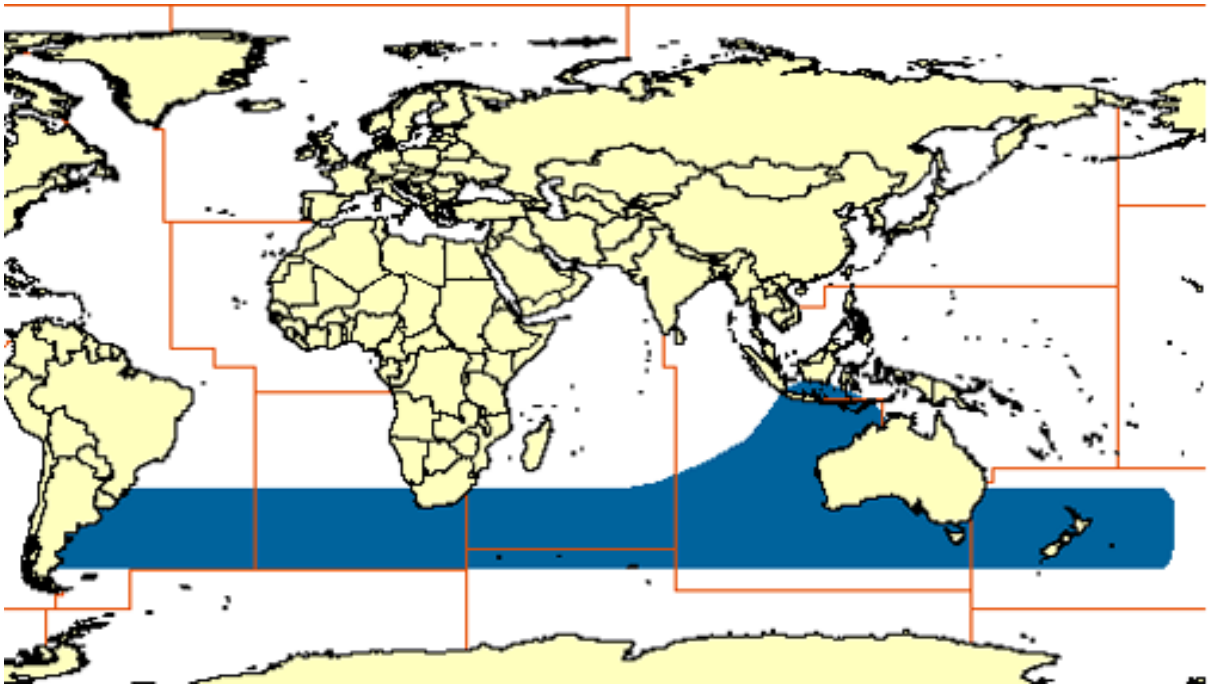

Figure 1 Convention area of the CCSBT. Source: Sea Around Us Project.

3.1.1.2 Task 1 Inventory

There is a single CCSBT management measure (Resolution) relating to the management of catch, bycatch and discards of southern bluefin tuna (*Thunnus maccoyii*, SBT) that is applicable to EU vessels (Annex 1a).

The Resolution on the Allocation of the Global Total Allowable Catch (agreed at the twenty-first Annual Meeting, 13-16 October 2014)[9] sets out the allocation of TAC for Member and Cooperating Non-Members. The EU, which is a Cooperating Non-Member, receives an annual TAC allocation of 10t, which applies to bycatch by EU vessels targeting species other than southern bluefin tuna in the convention areas of IOTC, WCPFC and ICCAT and is also listed in Council Regulation (EC) 104/2015[10] (Table 1).

[9] CCSBT Twenty-first Annual Meeting report available at : http://www.ccsbt.org/userfiles/file/docs_english/meetings/meeting_reports/ccsbt_21/report_of_CCSBT21.pdf

[10] Council Regulation (EU) 2015/104 of 19 January 2015 fixing for 2015 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union vessels, in certain non-Union waters, amending Regulation (EU) No 43/2014 and repealing Regulation (EU) No 779/2014 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R0104&from=EN

The Resolution on the Allocation of the Global Total Allowable Catch does not stipulate how bycatch exceeding TAC allocations must be treated, i.e. it does not obligate EU vessels to discard any southern bluefin tuna at any time. There is no explicit rule on discarding or retaining southern bluefin tuna once the allocation has been reached. Members and Cooperating Non-Members (CNMs) may define their own policies for this situation. Generally, if southern bluefin tuna are discarded once the allocation has been reached, then for most Members/CNMs, the allocation is not considered to be exceeded. However, if the catch is retained, then the national allocation will be considered to have been exceeded and the Member/CNM is usually expected to pay back the overcatch in accordance with the CCSBT's Corrective Actions Policy[11]. However, in practice this payback rarely takes place.

CCSBT currently has no other obligations related to the management of discards of southern bluefin tuna, except to report all mortalities.[12] Several measures are in place to reduce bycatch and mortality of seabirds, which are summarised within Annex 1b.

For ecologically related species (ERS) such as sharks etc., CCSBT has an ERS Recommendation where Members are to follow the measures of IOTC, WCPFC and ICCAT when fishing in these Convention Areas (and all SBT fishing currently occurs in one of these three Convention Areas). These measures include bans on discarding certain species.

Table 1 Species with catch limits in the CCSBT convention area and the corresponding measures that cause a potential inconsistency with the EU landing obligation.

Species with Catch Limit	FAO Code	Corresponding Measure / Recommendation
Southern bluefin tuna, *Thunnus maccoyii*	SBT	None

3.1.1.3 Task 2 Métiers

No EU métiers currently target southern bluefin tuna in the CCSBT convention area. However, there is potential for EU vessels targeting tropical or temperate tunas in the convention areas of other tuna RFMOs to catch southern bluefin tuna as bycatch.

In recent years only EU vessels targeting swordfish (*Xiphias gladius*, SWO) in the south of the IOTC convention area have reported bycatch of southern bluefin tuna: 3 tonnes in 2011, 4 tonnes in 2012 but zero tonnes in 2013.[13] This métier is not considered to be affected by inconsistency between the EU landing obligation and the CCSBT Resolution on the Allocation of the Global Total Allowable Catch, on the basis that the CCSBT measure does not explicitly obligate EU vessels to discard catch that exceeds the EU TAC allocation.

3.1.1.4 Summary

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the CCSBT convention area, i.e. conservation and management measures set out within the Resolution on the Allocation of the Global Total Allowable Catch. No binding measures currently require EU vessels to discard catches of species with catch limits (i.e. southern bluefin tuna), even when the EU TAC allocation has been exhausted.

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[11] Available at: http://www.ccsbt.org/site/operational_resolutions.php; http://www.ccsbt.org/userfiles/file/docs_english/operational_resolutions/CPG3_CorrectiveActions.pdf

[12] As contained in the Resolution on Reporting all Sources of Mortality of Southern Bluefin Tuna: http://www.ccsbt.org/userfiles/file/docs_english/operational_resolutions/Resolution_Reporting_on_all_Sources_of_Mortality.pdf

[13] Source: CCSBT catch data, available at http://www.ccsbt.org/site/sbt_data.php

No EU metiers active in the CCSBT convention area should be considered under Phase II of this study.

3.1.2 Inter-American Tropical Tuna Commission (IATTC)

The convention area of the IATTC covers the tropical and temperate eastern Pacific Ocean, as shown in Figure 2.

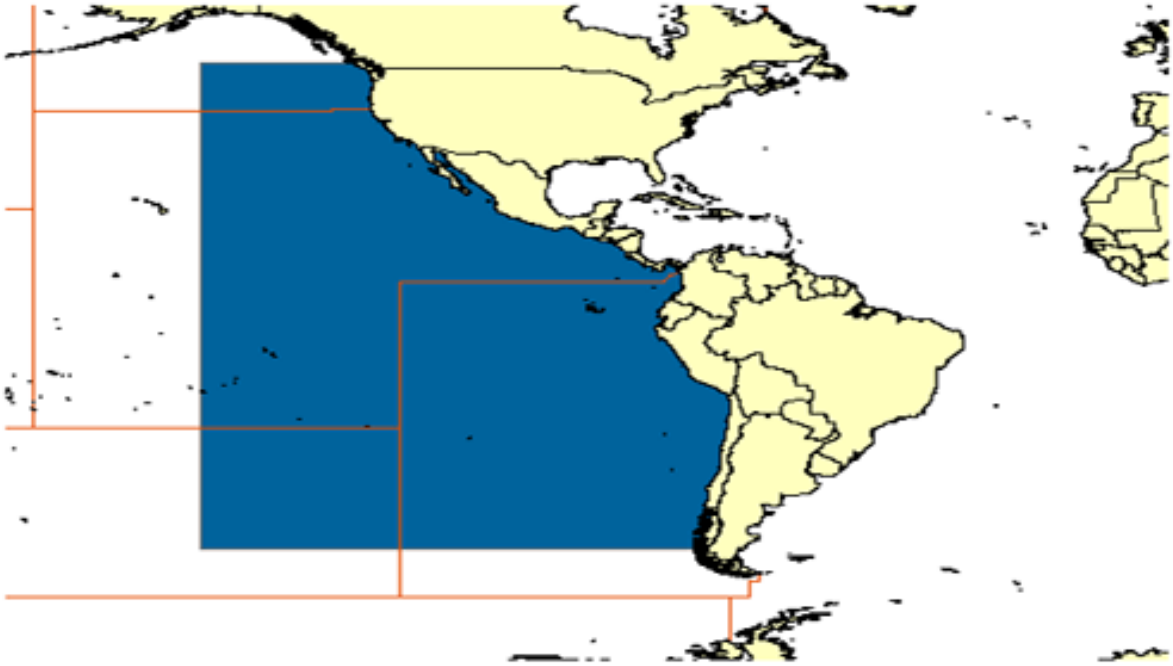


Figure 2 Convention area of the IATTC. Source: http://www.seaaroundus.org/rfmo/

3.1.2.1 Task 1 Inventory

Under Resolution C-13-01 “Tuna conservation in the EPO 2014-2016", IATTC sets TACs for bigeye tuna (*Thunnus obesus*) for longline vessels fishing in the convention area. Bigeye tuna is therefore subject to the landing obligation when caught by vessels fishing with longlines.

Table 2 Species with catch limits in the IATTC convention area and the corresponding measures that cause a potential inconsistency with the EU landing obligation.

Species with Catch Limit	FAO Code	Corresponding Measure / Recommendation
bigeye tuna *Thunnus obesus*	BET	none

C-13-01 also requires all purse seine vessels to first retain on board and then land all bigeye tuna (*Thunnus obesus*, BET), skipjack tuna (*Katsuwonus pelamis*, SKJ), and yellowfin tuna (*Thunnus albacares*, YFT), except fish considered unfit for human consumption for reasons other than size. A single exception shall be the final set of a trip, when there may be insufficient well space remaining to accommodate all the tuna caught in that set.

There is one additional IATTC management measure related to the management of discards non-target species applicable to EU vessels, which only applies to purse seiners.

C-04-05 (Rev 2) requires fishers on purse-seine vessels to promptly release unharmed, to the extent practicable, all sharks, billfishes, rays and other non-target species.

Several additional measures are in place to reduce the bycatch and mortality of seabirds, sea turtles, cetaceans, and shark, which are summarised in Annex 1b.

3.1.2.2 Task 2 Métiers

There are two EU métiers operating in the IATTC convention area. These include Spanish and Portuguese vessels targeting swordfish with drifting pelagic longlines (IATTC_001) and Spanish purse seine vessels targeting tropical tunas (skipjack, yellow fin and bigeye tuna) on FADS and free sets (IATTC_002).

Although the purse seine métier is, is allowed to discard bigeye tuna under Resolution C-13-01 (i.e. when bigeye is unfit for human consumption or last set where there is no sufficient well space), we do not consider there to be a conflict with EU legislation given that technically there is no catch limit for bigeye tuna for vessels fishing using purse seine gears.

It is noted that the pelagic drifting longline fishery for swordfish/blue shark (IATTC_001) has the potential to bycatch bigeye tuna; however an inconsistency with the landing obligation is not considered to exist for longline vessels because there is no obligation for these vessels to discard bigeye tuna under certain circumstances as there is for purse seine vessels under C-13-01..

3.1.2.3 Summary

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the IATTC convention area. No measures currently require EU vessels to discard catches of species with EU catch limits.

No EU metiers active in IATTC convention area should be considered under Phase II of this study

3.1.3 International Commission for the Conservation of Atlantic Tunas (ICCAT)

The convention area of the ICCAT covers the entire tropical and temperate Atlantic Ocean, as shown in Figure 3.

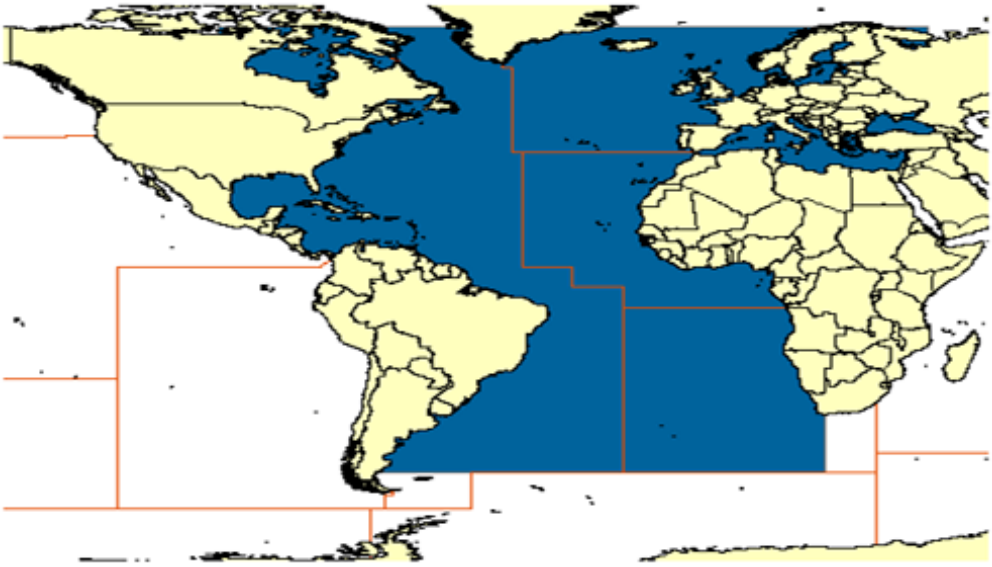


Figure 3 Convention area of the ICCAT. Source: http://www.seaaroundus.org/rfmo/

3.1.3.1 Task 1 Inventory

Within the ICCAT convention area there are several conservation measures (Recommendations) relating to the management of catch, bycatch and discards that are applicable to EU vessels (see Annex 1a).

The application of the EU landing obligation to ICCAT stocks is rather complex. Although there are several stocks for which catch limits apply, and therefore the EU landing obligation applies, a review of these must be combined with a review of additional ICCAT measures relating to matters such as minimum sizes, authorised vessel lists, quota pay-back rules and catch allowances applicable to these stocks. Table 3 provides clarification on which species/stocks are subject to the EU landing obligation, and also details which of these species/stocks are associated with a potential inconsistency with the EU landing obligation based on additional relevant ICCAT measures.

The EU landing obligation applies to north and south Atlantic albacore, north and south Atlantic swordfish, bigeye and yellowfin tuna in the Atlantic, blue marlin and white marlin in the Atlantic and bluefin tuna in the Eastern Atlantic and Mediterranean due to catch limits in place for these species under ICCAT Recommendations.

Potential inconsistencies with the EU landing obligation exist for swordfish in the north and south Atlantic, bigeye tuna and yellowfin tuna in the Atlantic and bluefin tuna in the Eastern Atlantic and Mediterranean because a number of relevant ICCAT regulations specifically require the discarding of these species/stocks under some circumstances.

Swordfish in the north and south Atlantic
Recommendations 2013-02 and 2013-03 set catch limits for north and south Atlantic swordfish (*Xiphias gladius*, SWO) respectively; moreover, paragraph 9 of Recommendation 2013-02 establishes that CPCs shall take the necessary measures to prohibit the taking and landing of swordfish in the *entire* Atlantic Ocean weighing less than a specific weight limit, with some exceptions. Recommendation 2013-04 sets minimum size and other management measures for Mediterranean swordfish.

On the basis of the catch limits set out in Recommendations 2013-02 and 2013-03, the landing obligation applies to swordfish caught in both the north and south Atlantic. However, it does not apply to swordfish caught in the Mediterranean as there is no catch limit and no minimum size established in Annex III Council Reg (EC) 1967/2006.

There is a potential inconsistency between the EU landing obligation and Recommendation 2013-02 due to the obligation set out in paragraph 9 of the latter to discard small swordfish below a minimum weight.

Bigeye and yellowfin tuna in the Atlantic

Recommendation 2014-01 sets yellowfin and bigeye tuna catch limits; moreover, paragraph 4 establishes an ICCAT record of authorized bigeye and yellowfin tuna vessels. Fishing vessels 20 meters LOA or greater not entered into this list are not to be authorized to fish, retain on board, tranship, transport, transfer, process or land bigeye and/or yellowfin tunas from the convention area.

The EU landing obligation applies to bigeye tuna from January 2015 and to yellowfin from January 2017 on the basis of the catch limits set out under Recommendation 2014-01 combined with phased implementation requirements under Article 15(1) a and d respectively of Regulation 1380/2013[14].

There is a potential inconsistency between the EU landing obligation and Recommendation 2014-01 due to the provision of paragraph 4, which potentially requires vessels to discard catch, i.e. vessels not included in the authorized vessels list cannot retain on board bigeye and/or yellowfin tuna.

Bluefin tuna in the Atlantic and Mediterranean

The EU landing obligation applies to bluefin tuna in the Atlantic and Mediterranean from January 2015 on the basis of the catch limits set out under Recommendation 2014-04 combined with requirements under Article 15(1) a of Regulation 1380/2013.

There is a potential inconsistency between the EU landing obligation and Recommendation 2014-04 due to the provisions of various paragraphs, which under some circumstances prohibits vessels from retaining bluefin tuna on board.

In addition to setting catch limits and minimum sizes for bluefin tuna (*Thunnus thynnus*, BFT), Recommendation 2014-04 also includes bycatch limits and bycatch management measures for this species. Paragraph 26 establishes that CPCs shall take the necessary measures to prohibit catching, retaining on board, transhipping, transferring, landing, selling etc. bluefin tuna weighing less than 30 kg or with fork length less than 115 cm. By derogation, paragraph 27 sets a minimum size for bluefin tuna of 8 kg or 75 cm fork length for bluefin tuna caught by baitboats and trolling boats in the eastern Atlantic. For vessels targeting bluefin, there is a catch allowance for incidental catches of bluefin (i.e those below the minimum size limits, see paragraph 28) based on 5% of total catches of fish (by number) retained on board at any time.

Moreover, paragraph 29 stipulates that ICCAT vessels not fishing actively for bluefin tuna are not authorized to retain at any time following each fishing operation, bluefin tuna exceeding more than 5% of the total catch by weight or number of pieces. This prohibition does not apply to CPCs whose domestic legislation requires that all dead fish be landed and all bycatches must be deducted from the quota of the flag State CPC. Furthermore, if no quota has been allocated to the CPC of the fishing vessel or trap concerned or if it has already been consumed, the catching of bluefin tuna as bycatch is not permitted and CPCs shall take the necessary measures to ensure their release.

Paragraph 31 prohibits the catch and retention on board, transhipment or landing of more than one bluefin tuna per vessel per day for Recreational fisheries and sport fisheries. This prohibition does not apply to CPCs whose domestic legislation requires that all dead fish be landed. It also requests

[14] Under Art. 15(1) (a) of Regulation 1380/201, the landing obligation comes into force from 1 January 2015 for small pelagic fisheries and large pelagic fisheries; bigeye tuna is included in the list of large pelagic fisheries, whereas yellowfin is not. Under Art. 15(1) (d), the landing obligation comes into force from 1 January 2017 'for species which define the fisheries'; fisheries for yellowfin tuna will come under this definition.

vessels ensure, to the greatest extent possible, the release of bluefin tuna caught alive, especially juveniles, in the framework of recreational and sport fishing.

The potential inconsistencies with the EU landing obligation will arise for vessels catching bluefin tuna below the minimum sizes, targeting bluefin tuna should their incidental catches of bluefin exceed the 5% allowance, for bycatches of bluefin caught by vessels targeting other pelagic species above the 5% bycatch allowance and for recreational vessels should they catch beyond the per vessel per day limits.

Albacore in the north and south Atlantic

The landing obligation applies to north and south Atlantic albacore (*Thunnus alalunga*, ALB) due to catch limits for set out in Recommendation 2013-05 and 2013-06 respectively. However, should catches overshoot these limits, there is no obligation for vessels to discard due to pay-back rules detailed under paragraph 5 in 2013-05 and paragraph 4 in 2013-06, which allow unused portion or excess of the individual annual catch limits to be added to/deducted from the respective catch limit during or before the adjustment year. Therefore, there are no potential inconsistences with the EU landing obligation for albacore tuna.

Blue marlin and white marlin in the Atlantic

Recommendation 2012-04 establishes catch limits and management measures for blue marlin (*Makaira nigricans*, BUM) and white marlin (*Tetrapturus albidus*, WHM), requesting to the extent possible that as the CPC approaches its landings limits, it shall take appropriate measures to ensure that all blue marlin and white marlin that are alive at the time of boarding are released in a manner that maximises their survival. For CPCs that prohibit dead discards, the landings of blue marlin and white marlin that are dead when brought alongside the vessel, and that are not sold or entered into commerce, shall not count against the catch limits established. In addition, any unused portion or excess of the annual landing limit may be added to/deducted from the respective landing limit during or before the adjustment year. Therefore, although the landing obligation applies to blue and white marlin across the Atlantic, there is no obligation to discard these species as a result of other ICCAT measures.

In addition to the above measures, there are several measures in place to reduce the bycatch and mortality of seabirds (Rec. 2007-07), sea turtles (Rec. 2010-09), and, particularly, sharks (Rec. 2004-10) for which the retention on boards is prohibited for bigeye thresher sharks (Rec. 2009-07), oceanic whitetip shark (Rec. 2010-07), hammerhead sharks (Rec. 2010-08) and silky sharks (Rec. 2011-08). These measures are summarised in Annex 1b.

Table 3 Matrix indicating for each relevant ICCAT species if and why there is a potential inconsistency with the EU landing obligation.

Applicable legislation	RFMO/Union TAC/Quota applies		Minimum Size applies[15]	Landing Obligation applies[16]			Potential inconsistency with the EU LO			Reason for potential inconsistency with LO	Reason there is no inconsistency with LO
Area	Atlantic		Med	Atlantic		Med	Atlantic		Med		
	North	South		North	South		North	South			
SWO	Yes	Yes	No	**Yes**	**Yes**	No	**Yes**	**Yes**	No	**N & S Atlantic SWO:** Due to minimum size established in ICCAT REC 13-02 para 9.	**Med SWO:** LO does not apply because SWO not listed in Annex III of Med EC Reg. 1967/2006
ALB	Yes	Yes	No	**Yes**	**Yes**	No	No	No	No	**NA**	**N Atlantic ALB:** No discard obligation, even when overshooting the quota (pay back rule, ICCAT Rec 13-05, para 5) **S Atlantic ALB:** No discard obligation, even when overshooting the quota (pay back rule, ICCAT Rec 13-06, para 4) **Med ALB:** LO does not apply because ALB not listed in Annex III of Med EC Reg. 1967/2006
BET	Yes		NA	**Yes**		NA	**Yes**		NA	**N & S Atlantic BET:** due to authorized vessels list (ICCAT Rec 14-01 para 4)	NA
YFT	Yes		NA	**Yes**		NA	**Yes**		NA	**N & S Atlantic YFT:** from January 2017[17] due to authorized vessels list (ICCAT Rec 14-01 para 4)	NA

[15] Annex III, Council Reg (EC) 1967/2006

[16] Council Regulation (EU) No. 1380/2013

[17] Article 15 (1)d of Council Regulation (EU) No. 1380/2013

Applicable legislation	RFMO/Union TAC/Quota applies		Minimum Size applies[15]	Landing Obligation applies[16]		Potential inconsistency with the EU LO		Reason for potential inconsistency with LO	Reason there is no inconsistency with LO
Area	Atlantic		Med	Atlantic	Med	Atlantic	Med		
	North	South		North	South	North	South		
BUM & WHM	Yes		No	**Yes**	No	No	No		**Atlantic BUM & WHM:** No discard obligation even when overshooting the quota (pay back rule, ICCAT Rec 12-04, para 3) **Med BUM & WHM:** LO does not apply because BUM & WHM not listed in Annex III of Med EC Reg 1967/2006

Applicable legislation	Union TAC/Quota applies[18]?		Minimum Size applies[19]?	Landing Obligation applies[20]?		Potential inconsistencies with LO?		Reason for potential inconsistency with LO
Area	East Atlantic	Med	Med	East Atlantic	Med	East Atlantic	Med	
BFT	Yes	Yes	Yes	**Yes**	**Yes**	**Yes**	**Yes**	**E Atlantic & Med BFT:** Obligation to discard fish caught in targeted fishery below min size (ICCAT Rec 14-04, para 26) **E Atlantic & Med BFT:** Obligation to discard fish caught in non-targeted fishery above 5% by catch allowance (ICCAT Rec 14-04, para 29) **E Atlantic & Med BFT:** Obligation to discard fish caught in recreational/sport fishery(ICCAT Rec 14-04, para 31)

[18] Council Reg (EC) 104/2015

[19] Annex III, Council Reg (EC) 1967/2006

[20] Reg (EU) No 1380/2013

3.1.3.2 Task 2 Métiers

There are 13 EU métiers that are considered to be affected by potential inconsistencies between the EU landing obligation and ICCAT measures on discards applicable to EU vessels (Table 4). In all instances a potential inconsistency arises should vessels discard bycatch of bluefin tuna, bigeye tuna, yellowfin tuna or swordfish, although for some métiers bycatch of these species is considered to be unlikely. Further detail of the métiers is provided in Table 4 and Annex 2.

- ***ICCAT_01*** Mid-water trawl fisheries for northern albacore taking place in Northeast Atlantic by French and Irish vessels.

- ***ICCAT_02*** Hand and pole line (or bait boat) fisheries for northern albacore and eastern bluefin tuna taking place in ICCAT area Northeast Atlantic and Mediterranean by Cypriot, French, Greek, Italian, Maltese, Portuguese, and Spanish vessels.

- ***ICCAT_03*** Hand and pole line (or bait boat) fisheries for tropical tunas taking place in ICCAT tropical area of Northeast Atlantic by a French, Portuguese, and Spanish vessels.

- ***ICCAT_04*** Traditional small scale drifting pelagic and bottom longline targeting bluefin, albacore or swordfish taking place in the Mediterranean by Cypriot, Croatian, French, Greek, Italian, Maltese, Portuguese, and Spanish vessels.

- ***ICCAT_05*** Drifting pelagic longline targeting swordfish/sharks taking place in East Atlantic by Portuguese and Spanish vessels should they discard bluefin tuna, bigeye tuna or swordfish, and drifting pelagic longline targeting swordfish/sharks taking place in Mediterranean by Cypriot, French, Greek, Italian, Maltese, Portuguese, and Spanish vessels.

- ***ICCAT_06*** Drifting pelagic longline targeting bluefin/albacore taking place in the East Atlantic by Portuguese and Spanish vessels, and drifting pelagic longline targeting bluefin/albacore taking place in the Mediterranean by Cypriot, French, Greek, Italian, Maltese, Portuguese, and Spanish vessels.

- ***ICCAT_07*** Trolling lines fisheries for albacore in ICCAT East Atlantic and Mediterranean Sea by Greek, Italian, Maltese, Portuguese, Spanish and United Kingdom vessels.

- ***ICCAT_08*** Purse seine fisheries for bluefin tuna in the Mediterranean Sea by Croatian, French, Greece, Italian, Maltese, and Spanish vessels.

- ***ICCAT_09*** Purse seine fisheries for tropical tunas in the East Atlantic by French and Spanish vessels.

- ***ICCAT_10*** Traps targeting bluefin tuna in the Atlantic and Mediterranean by Italian, Portuguese and Spanish companies.

- ***ICCAT_11*** Trammel nets fisheries for albacore in the Mediterranean by Italian and Maltese vessels.

- ***ICCAT_12*** Set gillnets fisheries, which are prohibited by ICCAT, for bluefin/albacore in the Mediterranean.

- ***ICCAT_13*** Recreational fisheries for albacore/bluefin in the Atlantic and Mediterranean by Cypriot, French, Greek, Italian, Maltese, Portuguese, and Spanish should they discard bluefin tuna.

Table 4 EU fishing métiers active within the ICCAT convention area that are affected by a potential inconsistency with the EU landing obligation.

Métier Reference #	Target species	Target assemblage	Gear type code	Gear type	LOA (m)	Area, subarea, Division, subdivision	MS involved	No. Vessels involved
ICCAT_01	Albacore (*Thunnus alalunga*, ALB)	Large pelagic fish	OTM	Mid-water otter trawl	-	Atlantic	FR, IE	-
ICCAT_02	Bluefin/albacore *(Thunnus thynnus,* BFT/*Thunnus alalunga*, ALB)	Large pelagic fish	LHP; LHM	Hand and pole lines	-	Atlantic / Mediterranean	CY, FR, EL,IT, MT, PT, ES	-
ICCAT_03	Tropical tunas	Large pelagic fish	LHP; LHM	Hand and Pole lines	-	Atlantic	FR, PT, ES	FR (1), ES (7)
ICCAT_04	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB) and swordfish (*Xiphias gladius,* SWO)	Large pelagic fish	LLD; LLS	Drifting longline: set longlines	-	Atlantic / Mediterranean	CY, FR, EL, HR, IT, MT, PT, ES	-
ICCAT_05	Swordfish (*Xiphias gladius,* SWO)	Large pelagic fish	LLD	Drifting longlines	-	Atlantic / Mediterranean	CY, FR, EL,IT, MT, PT, ES	
ICCAT_06	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB)	Large pelagic fish	LLD	Drifting longlines	-	Atlantic / Mediterranean	CY, FR, EL, IT, MT,ES	-
ICCAT_07	albacore *(Thunnus alalunga*, ALB)	Large pelagic fish	LTL	Trolling lines	-	Atlantic / Mediterranean	EL, HR, IT, MT, PT, PT, ES, UK	-
ICCAT_08	Bluefin tuna *(Thunnus thynnus,* BFT*)*	Large pelagic fish	PS	Purse seine	-	Mediterranean	FR, EL, IT, MT, ES	-
ICCAT_9	Tropical tunas	Large pelagic fish	PS	Purse seine	-	Atlantic	FR, ES	-
ICCAT_10	Bluefin tuna *(Thunnus thynnus,* BFT*)*	Large pelagic fish	FPN	Stationary Uncovered pounds net	-	Atlantic / Mediterranean	IT, PT, ES	-
ICCAT_11	Albacore (*Thunnus alalunga*, ALB)	Large pelagic fish	GTR	Trammel nets	-	Mediterranean	IT, MT	-
ICCAT_12	Tunas	Large pelagic fish	GNS	Set gillnets	-	Mediterranean	Unknown	-
ICCAT_13	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB)	Large pelagic fish	Recreational fisheries		-	Atlantic / Mediterranean	CY, FR, GR, IT, MT, PT, ES	-

3.1.3.3 Task 3 Mapping

The fishing areas of ICCAT métiers for the period 2011-2013 are mapped in the following figures. The respective maps show the coordinates (latitude/longitude) of reported fishing effort as a circle, aggregated for the entire time period, with the size of the circle representing the spatial scale of the

data (e.g. 1x1, 5x5 or 10x10 latitude/longitude reporting squares). Data are from the ICCAT catch and effort dataset.[21]

Notes on the maps:

Maps are not available for métiers ICCAT_06, ICCAT_11, ICCAT_10 and ICCAT_13 as data on activity for these métiers were not available or could not be distinguished from other métiers in the ICCAT catch and effort datasets.

Regarding métier ICCAT_02, the map does not adequately reflect the true extent of fishing activity in the Bay of Biscay, which is the main albacore fishing ground.

Regarding métier ICCAT_05, the map does not adequately reflect the true extent of fishing activity in the East Atlantic.

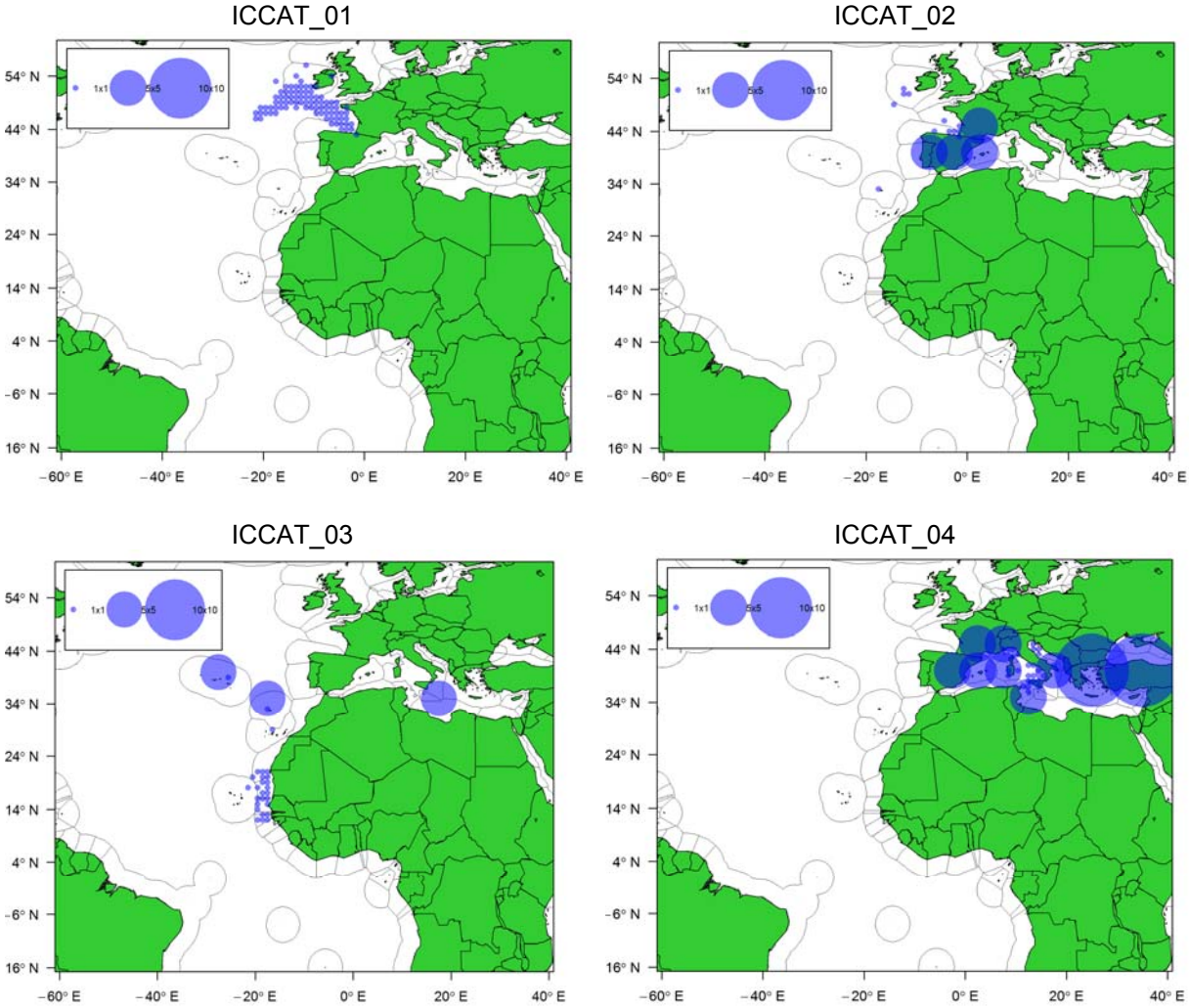


Figure 4 Fishing area for métiers ICCAT_01, ICCAT_02, ICCAT_03, ICCAT_04 for the period 2011-2013. Bubble size indicates the spatial scale of the reported data in the ICCAT catch and effort dataset.

[21] Available from: https://www.iccat.int/en/accesingdb.HTM

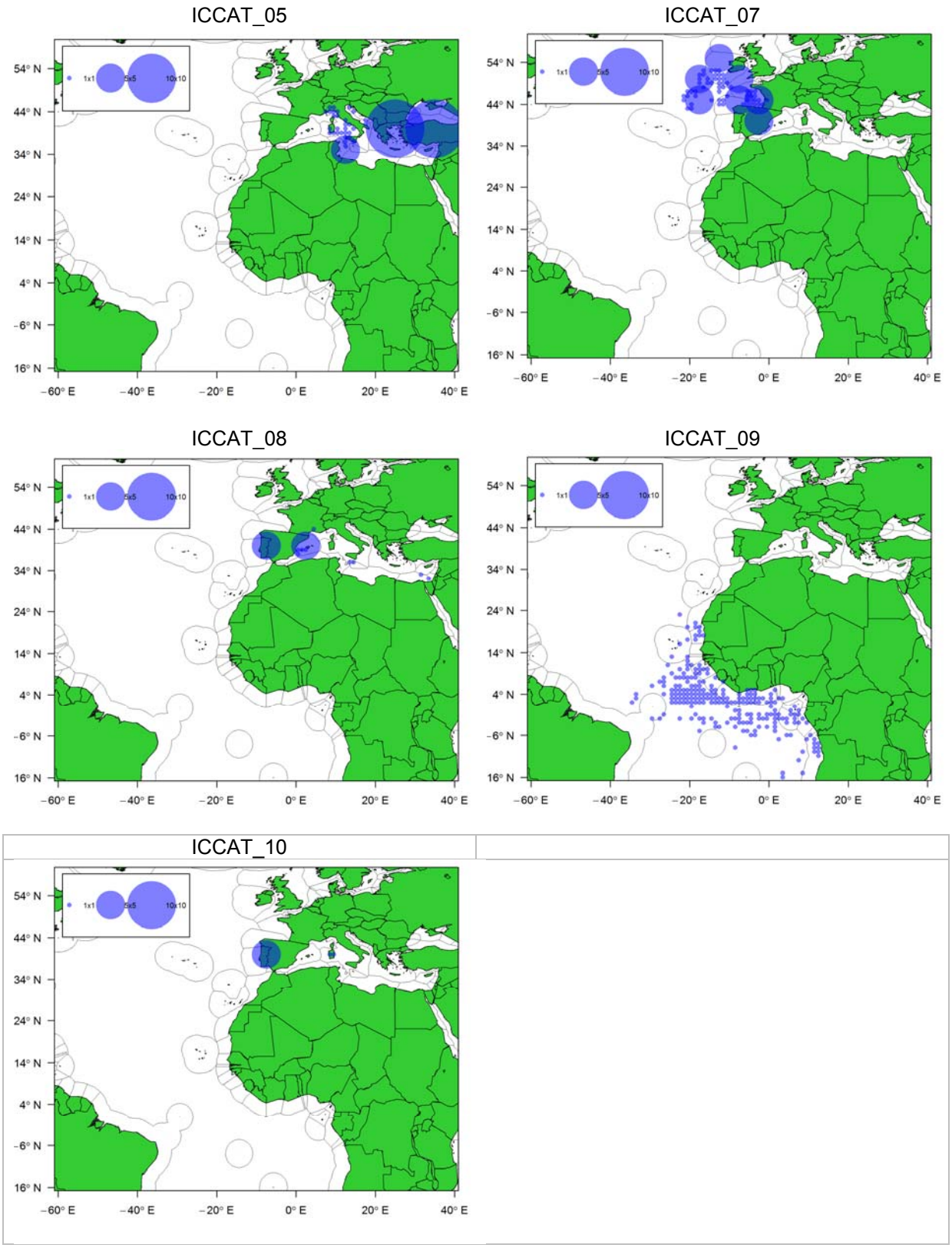


Figure 5 Fishing area for métiers ICCAT_05, ICCAT_07, ICCAT_08, ICCAT-09 and ICCAT_10 for the period 2011-2013. Bubble size indicates the spatial scale of the reported data in the ICCAT catch and effort dataset.

3.1.3.4 Task 4 Exemptions

3.1.3.4.1 4a - Prohibited species

Table 5 provides a list of species that are caught, or have the potential to be caught, by métiers but are exempt from the landing obligation under Article 15(4)a of Regulation (EU) 1380/2013 (prohibited species). Species prohibitions generally apply to all métiers fishing in the area, although not all métiers have the same probability of catching the prohibited species.

Table 5 Species caught in the affected ICCAT métiers that are exempt from the EU landing obligation due to a catch prohibition.

Métier	Species	Prohibition measure	Comments
All ICCAT	Basking shark (*Cetorhinus maximus*)	COUNCIL REGULATION (EU) No 43/2014	Unlikely to be caught in ICCAT fisheries
All ICCAT	White shark (*Carcharodon carcharias*)	COUNCIL REGULATION (EU) No 43/2014	Unlikely to be caught in ICCAT fisheries
All ICCAT	Porbeagle (*Lamna nasus*)	COUNCIL REGULATION (EU) No 43/2014	Likely to be caught in ICCAT fisheries in North and South Atlantic (ICCAT_04 and 05)
All ICCAT	Bigeye thresher shark (*Alopias superciliosus*)	COUNCIL REGULATION (EU) No 43/2014, ICCAT Rec. 2009-07	Bycaught in ICCAT fisheries: longline targeting tunas/swordfish (ICCAT_04, 05, and 06).
All ICCAT	Oceanic whitetip shark (*Carcharhinus longimanus*)	COUNCIL REGULATION (EU) No 43/2014, ICCAT Rec. 2010-07	Bycaught in ICCAT fisheries: in tropical Purse seiners (ICCAT_10) and longline targeting tunas/swordfish (ICCAT_04, 05, and 06).
All ICCAT	Hammerhead shark (Sphyrnidae, except *Sphyrna tiburo*)	COUNCIL REGULATION (EU) No 43/2014, ICCAT Rec. 2010-08	Bycaught in ICCAT fisheries: purse seine (ICCAT_09) and longline targeting tunas/swordfish (ICCAT 04, 05, and 06).
All ICCAT	Silky shark (*Carcharhinus falciformes*)	COUNCIL REGULATION (EU) No 43/2014, ICCAT Rec. 2011-08	Bycaught in ICCAT fisheries: in tropical Purse seiners (ICCAT_10) and longline targeting tunas/swordfish (ICCAT 04, 05, and 06).

3.1.3.4.2 4b - Species with high survival

Table 6 identifies the species that might be considered for exemption from the EU landing obligation under Article 15(4)b Regulation (EU) 1380/2013 (high survival). The summary indicates qualitatively whether the survival estimate for each species is high/low and is based on expert judgement of gear performance. Although post-release survival assessments have been made for shark species caught in longline or purse seine ICCAT métiers and survival estimates are available in the literature, this is not the case for tuna species caught in these fisheries.

Table 6 Post-release survivability of species caught in the affected ICCAT métiers.

	CATCH	DISCARD	SURVIVAL	CATCH	DISCARD	SURVIVAL	CATCH	DISCARD	SURVIVAL	CATCH	DISCARD	SURVIVAL
métier ID#	**bluefin**			**swordfish**			**yellowfin**			**bigeye**		
ICCAT_01		Low	Low		Low			NA			NA	
ICCAT_02	Target	Low	High									
ICCAT_03		Low	High		Low	High	Target	Low	High	Target	Low	High
ICCAT_04	Target	Low	High		Low	High						
ICCAT_05		Low	High	Target	Low	High						
ICCAT_06	Target	Low	High		Low	High						
ICCAT_07		Low	High									
ICCAT_08	Target	Low	High		Low	High						
ICCAT_09					Low	Low	Target	Low	Low	Target	Low	Low
ICCAT_10		Low	HIgh		Low	HIgh						
ICCAT_11	Target	Unknown	Low		Unknown	Low						
ICCAT_12	Target	Unknown	Low		Unknown	Low						
ICCAT_13	Target	Unknown	High		Unknown	High						

3.1.3.5 Task 5 Discard information available

The information presented in the following section is for species which are associated with a potential inconsistency with the EU landing obligation in the ICCAT convention area, i.e. bluefin tuna, bigeye tuna, yellowfin tuna and swordfish.

3.1.3.5.1 ICCAT_01 Mid-water trawl fisheries for northern albacore

It is likely that bycatch and discard rates are quite variable within this métier. In general, there is very low bycatch and discards of bluefin tuna and swordfish because they comprise fish damaged/meshed or crushed during fishing operations (Table 7).

Table 7 ICCAT 01 Mid-water trawl fisheries for northern albacore discards rates.

Data	Total amount of discards (tonnes)	Discard rate (% of total catch)	Seasonal and temporal patterns in discarding	Confidence in the data
Bluefin tuna, *Thunnus thynnus* (BFT)	13.1	0.6	June-July	High
Swordfish, *Xiphias gladius* (SWO)	2.1	0.1	June-July	High

* *based on Irish Annual Report Mid-water trawl information*

3.1.3.5.2 ICCAT_02 Hand and pole line (or bait boat) fisheries for northern albacore and eastern bluefin tuna

It is likely that bycatch and discard rates are quite variable within this métier. In general, the bait boat tuna production is higher than the handline tuna production. However, normally the baitboats exploit monospecific (non-mixed) schools with unappreciable bycatch (e.g. baitboats targeting albacore and bluefin in the Northeast Atlantic). Occasionally they catch bigeye tuna (Ortiz de Zarate et al 2004, 2010) but they are not discarded.

On the other hand, handlining for bluefin tuna is relatively important and in some years comparable (in production) to the bait boat catch of bluefin tuna. However, there is scarce information about bycatch on Mediterranean handlines. According to Gillet et al (2011)[22], the bycatch in some Mediterranean small fisheries (including handline) can be as important as the tuna catch, while in the Northeast Atlantic, bycatch of small fisheries is negligible.

Table 8 ICCAT 02 Hand and pole line (or bait boat) fisheries for northern albacore and eastern bluefin tuna discards rates.

Data	Total amount of bycatch (tonnes)	Discard rate (% of total catch)	Seasonal and temporal patterns in discarding	Confidence in the data
Bigeye tuna, *Thunnus obesus* (BET)*	1-50	0	NA	High

**Bigeye data based on 2002-2003 (Ortiz de Zarate et al 2005[23]) and 2007-2009 (Ortiz de Zarate et al 2011[24]) years, for the Spanish bait boat fishery targeting albacore. The information should not be directly extrapolated to the whole métier.*

3.1.3.5.3 ICCAT_03 Hand and pole line (or bait boat) fisheries for tropical tunas

The main fisheries in this métier comprise baitboats targeting tropical tunas in western Africa, around the Canary Islands and the Azores. There is little scientific information available but the general perception is that the discards are negligible. Normally vessels target skipjack, but the other tropical tunas (yellowfin and bigeye) are also caught. Occasionally, some swordfish and marlins can be caught but there is no scientific quantification of this catch. In the last years, some bluefin tuna have been caught in the bait boat fishery off Dakar, which does not have a quota for this species, thus some discards might have been produced, but there is no data reported on this. In this métier, all the fish caught are usually retained on-board.

3.1.3.5.4 ICCAT_04 and ICCAT_06 Traditional small scale drifting pelagic and bottom longline targeting bluefin/albacore or swordfish

Drifting longline for bluefin, albacore and swordfish using small traditional boats (ICCAT_04), as well as longlines for bluefin and albacore tuna (ICCAT_06) by larger boats occur mostly in the Mediterranean. The latter métier (ICCAT_06) is relatively better monitored and documented. Data

[22] Gillet 2011. Bycatch in small scale tuna fisheries. A global study. FAO Technical Paper 560. 132 pp

[23] V. Ortiz de Zárate, I. Artetxe, C. Rodríguez-Cabello, I. Mosqueira, S. Barreiro (2005). Bigeye (*Thunnus obesus*) by-catch estimates from the albacore Spanish surface fishery in the NorthEast Atlantic 2002-2003. Col. Vol. Sci. Pap. ICCAT, 58(1): 111-118.

[24] Ortiz de Zarate V, B. Perez, M. Ruiz. 2011. Bigeye (*Thunnus obesus*) by-catch estimates from the albacore Spanish surface fishery in the NorthEast Atlantic from 2007 to 2009. Collect. Vol. Sci. Pap. ICCAT, 66(1): 285-292.

based on Fenech-Farrugia et al. (2004[25]) is used to characterize percentages with respect to total catch (mostly in the Maltese area).

Table 9 ICCAT 04 and 06 Traditional small scale drifting pelagic and bottom longline targeting bluefin/albacore or swordfish discards rates.

Data	Total amount of bycatch (kg)	Bycatch rate (% of total catch)	Seasonal and temporal patterns in discarding	Confidence in the data
Swordfish, *Xiphias gladius* (SWO)*	31042	15.14	NA	High

**2002 data for Maltese and Spanish longline fisheries targeting bluefin tuna (Fenech-Farrugia et al. 2004)*

3.1.3.5.5 ICCAT_05 Drifting pelagic longline targeting swordfish

The bycatch rates in the swordfish fishery vary substantially between the Atlantic and the Mediterranean. In both cases, sharks account for the majority of the catch. Swordfish, blue shark, (*Prionace glauca,* BSH) and shortfin mako shark (*Isurus oxyrhinchus*, SMA) account for >90% of the catch in both the Atlantic and the Mediterranean (Mejuto et al 2008[26]). Bycatch rates include the range estimated for Atlantic and Mediterranean waters in 2005-2006. The general categories used comprise 21 shark species, 9 billfish species, 7 tuna species and 11 other species. The list of species is quite extensive and is available from Mejuto *et al.* 2008.

Table 10 ICCAT 05 Drifting pelagic longline targeting swordfish discards rates.

Data	Total amount of bycatch (kg)*	Bycatch rate (% of total catch)	Discard rate (% of total catch)	Seasonal and temporal patterns in discarding	Confidence in the data
Tuna spp.	141-239	1.3-2.2	NA	NA	High
Billfish spp.	0-239	0-2.2	NA	NA	High

**Estimated using an average catch of 10850 tonnes of swordfish for those years.*

3.1.3.5.6 ICCAT_07 Trolling lines fisheries for albacore

Most of the trolling activity for albacore tuna occurs in the Atlantic. Normally the trollers exploit monospecific (non-mixed) schools with unappreciable bycatch. Occasionally they catch bigeye tuna (Ortiz de Zarate et al 2004, 2010) but they are not discarded.

[25] Fenech-Farrugia, A., M. Tawill, J.M. de la Serna, D. Macías. (2004). "By-catch de la pesquería de palangre de superficie dirigido al atún rojo (Thunnus thynnus) en el Mediteráneo Centro-Occidental" SCRS/03/138. Col. Vol. Sci. Pap. ICCAT. 56(3):1213-1217.

[26] Mejuto J., B. García-Cortés, A. Ramos-Cartelle, J. M. de la Serna. 2008. SCRS/2008/045. Scientifiic estimations of bycatch landed by the Spanish surface longline fleet targeting swordfish (Xiphias gladius) in the Atlantic Ocean with special reference to the years 2005 and 2006.

Table 11 ICCAT 07 Trolling lines fisheries for albacore discards rates.

Data	Total amount of bycatch (tonnes)	Discard rate (% of total catch)	Seasonal and temporal patterns in discarding	Confidence in the data
Bigeye tuna, *Thunnus obesus* (BET)*	1-11	0	No discards	High

***** *based on 2002-2003 (Ortiz de Zarate et al 2004) and 2007-2009 (Ortiz de Zarate et al 2010) years, for the Spanish trolling fishery targeting albacore.*

3.1.3.5.7 ICCAT_8 Purse seine fisheries for bluefin tuna

There is limited information but, according to Fromentin & Farrugio (2009[27]), with 190 days observed, swordfish are taken as bycatch and discarded. Scientific Observer data indicates that the percentage of bycatch and/or discards is below 1% (in number of fish) in all cases.

Table 12 ICCAT 08 Purse seine fisheries for bluefin tuna discards rates.

Data	Total amount of discards (number of fish)*	Discard rate (% of total catch)	Seasonal and temporal patterns in discarding	Confidence in the data
Swordfish, *Xiphias gladius* (SWO)*	17	0.07	Summer	High

*from *two fishing trips where 24500 bluefin individuals were caught.*

3.1.3.5.8 ICCAT_9 Purse seine fisheries for tropical tunas

The bycatch rate of the European purse seine fisheries for tropical tuna in the East Atlantic is relatively low but composed of several species. In the Atlantic the discards rates of the bycatch species is low since there is a local market for them. The information provided in Table 13 is from Scientific observer data collected under the EU Data Collection Regulation. However, the observer coverage is low (around 10%) and thus extrapolation to the whole métier is difficult. The list of species is extensive and in the table below only the species groups are shown, the complete list of species can be found in Amande et al. (2010[28]).

Table 13 ICCAT 09 EU purse seine fisheries for tropical tunas discards rates.

Data	Total amount of discards (t)	Bycatch rate (% of total catch)	Seasonal and temporal patterns in discarding	Confidence in the data
Billfish spp.*	239	0.09	NA	High

**Average/year in tonnes, representing 2003-2009, based on Amande et al. (2010)*

[27] Fromentin J. M. and H. Farrugio 20095. Results of the 2003 observer program on board the French purse seiner targeting Atlantic bluefin tuna in the Mediterranean Sea. Col. Vol. Sci. Pap. ICCAT, 58(2): 779-782.

[28] Amande M. J., J. Ariz, E. Chassot, A. Delgado de Molina, D. Gaertner, H. Murua, R. Pianet, J. Ruiz and P. Chavance. 2010. Bycatch of the European purse seine tuna fishery in the Atlantic ocean for the 2003-2007 period. Aquatic Living Resources 23: 353-362.

3.1.3.5.9 ICCAT_10 Traps targeting bluefin tuna

Several species can enter the traps targeting bluefin tuna in the Northeast Atlantic and Mediterranean. However, there is little quantification of bycatch and discard rates. Neves dos Santos et al. (2001[29]) describe 66 species caught by a Portuguese trap (9 target and 57 non-target species). Most species were rare (85%), 8% uncommon, 5% common and 2% very common species. The Scombridae family accounted for 86% of total trap catch in weight, while the remaining was comprised of Scianidae (8%) and Sparidae (4%). The observed discards value was less than 1%.

3.1.3.5.10 ICCAT_11 Trammel nets fisheries for albacore

There is no information available on bycatch or discards for this métier.

3.1.3.5.11 ICCAT_12 Set gillnets fisheries for bluefin/albacore

There is no scientific quantification of the bycatch in this métier.

3.1.3.5.12 ICCAT_13 Recreational fisheries for albacore/bluefin

The available data are relatively poor quality for this métier.

3.1.3.6 Task 6 Métier Classification

Table 14 provides a summary of the classification of métiers as having 'low' (<10% of total catch) or 'high' (>10% of total catch) discard levels. To provide some measure of confidence in the classification each category is subdivided into:– with low quality data; and– with high quality data.

Table 14 Classification of the level of discarding in the affected ICCAT métiers based on the available information (see Task 5).

Métier	Low discard level (low quality data)	Low discard level (high quality data)	High discard level (low quality data)	High discard level (high quality data)
ICCAT_01		X		
ICCAT_02		X		
ICCAT_03		X		
ICCAT_04				X
ICCAT_05				X
ICCAT_06				X
ICCAT_07		X		
ICCAT_08		X		
ICCAT_09		X		
ICCAT_10		X		
ICCAT_11	X			
ICCAT_12	X			
ICCAT_13	X			

Low/high quality data categories are separated depending on the source used: official statistics and/or observer data are considered high quality in this case.

[29] Neves dos Santos M., H. J. Saldanha, A. Garcia. 2002. Observations on by-catch from a tuna trap fishery off the Algarve (Southern Portugal). Col.Vol.Sci.Pap. ICCAT, 54(5): 1726-1732.

3.1.3.7 Summary

There are a number of potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the ICCAT convention area. Several ICCAT measures currently require EU vessels to discard catches of species with catch limits for example when fish are caught below minimum size limitations (swordfish, bluefin tuna); when vessels are not authorised to catch certain species (bigeye and yellowfin tuna); when catch allowances for certain species have been exceeded (bluefin tuna) and when catches of certain species are made by recreational or sport fisheries (bluefin tuna).

All ICCAT metiers listed in section 3.1.3.2 should be considered under Phase II of this study.

3.1.4 Indian Ocean Tuna Commission (IOTC)

The IOTC convention area covers the tropical and temperate regions of the Indian Ocean, as shown in Figure 6.

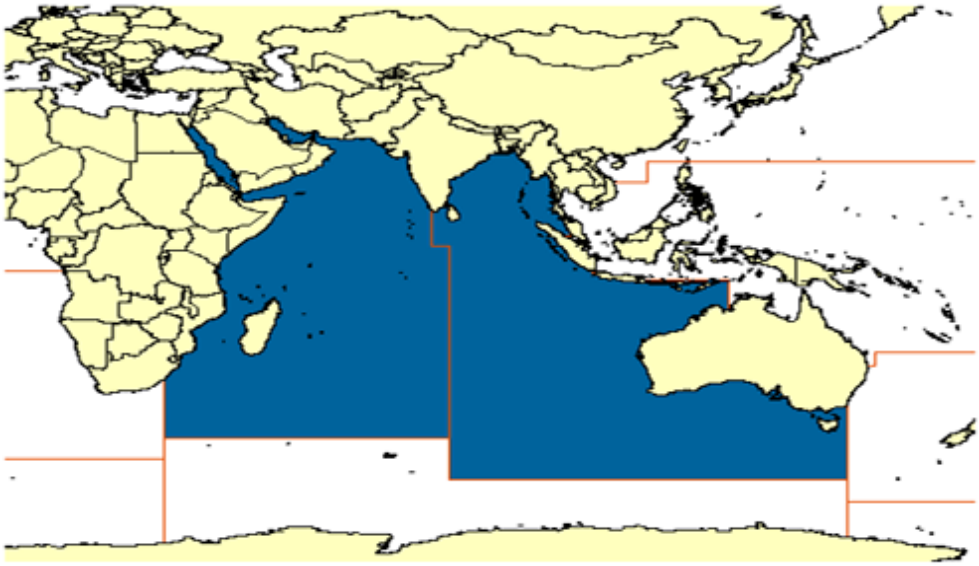


Figure 6 Convention area of the IOTC. Source: http://www.seaaroundus.org/rfmo/

3.1.4.1 Task 1 Inventory

There are no catch limits for tropical tuna species in the IOTC area, and therefore the EU landing obligation does not apply to species targeted there.

However, there is a single IOTC management measure related to the management of discards applicable to EU vessels.

Resolution 13/11 applies to purse seiners (only) and prohibits discarding of bigeye tuna, skipjack tuna and yellowfin tuna. Two derogations are in place that allow (but do not require) discarding when: fish are considered unfit for human consumption for reasons other than size; and, during the final set of a trip, when there may be insufficient well space remaining to accommodate all the tuna caught in that set. This measure is not considered to be inconsistent with the EU landing obligation as it does not require EU vessels to discard fish.

Several measures are in place to reduce the bycatch and mortality of seabirds, sea turtles, cetaceans, and sharks (see Annex 1b).

3.1.4.2 Task 2 Métiers

None of the EU métiers operating in IOTC convention area waters are affected by an inconsistency between the EU landing obligation and IOTC management measures.

3.1.4.3 Summary

There are no catch limits set for species targeted within IOTC and therefore no potential inconsistencies exist between the EU landing obligation and measures applicable to EU vessels operating in the IOTC convention area.

No EU metiers active in the IOTC convention area should be considered under Phase II of this study.

3.1.5 Western & Central Pacific Fisheries Commission (WCPFC)

The WCPFC convention area covers the tropical and temperate regions of the Pacific Ocean, as shown in Figure 7.

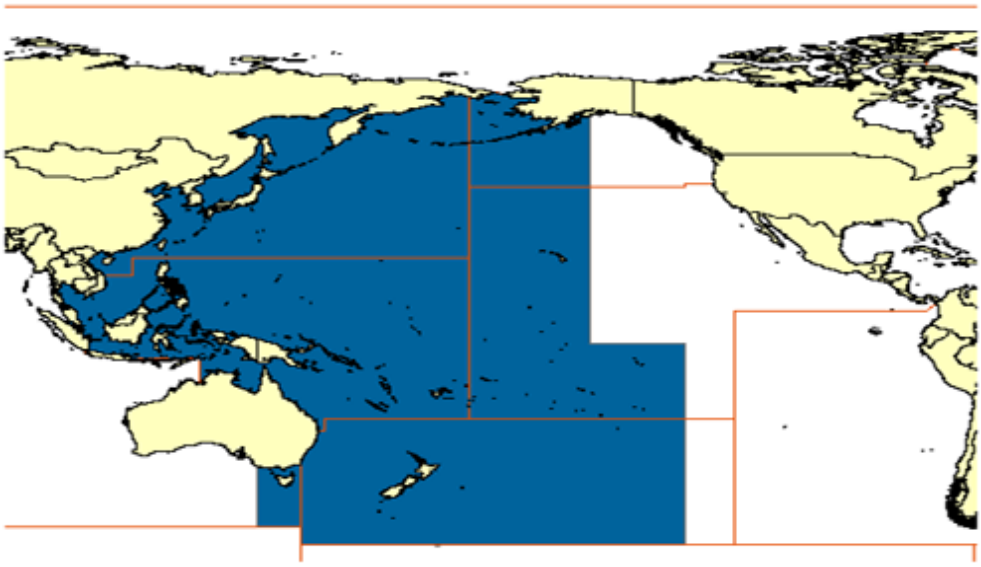


Figure 7 Convention area of the WCPFC. Source: http://www.seaaroundus.org/rfmo/

3.1.5.1 Task 1 Inventory

Conservation and Management Measure 2014-01 WCPFC sets TACs for bigeye tuna for longline vessels. Bigeye tuna is therefore subject to the landing obligation when targeted by longline vessels within WCPFC.

In addition to this measure, WCPFC currently has a single obligation related to the management of discards of target and non-target species for purse seiners that is applicable to EU vessels.

CMM 2009-02 applies to purse seiners (only) and prohibits discarding of bigeye tuna, skipjack tuna and yellowfin tuna. Two derogations are in place that allow (but do not require) discarding when: fish are considered unfit for human consumption for reasons other than size; and, during the final set of a trip, when there may be insufficient well space remaining to accommodate all the tuna caught in that set. This measure is not considered to be inconsistent with the EU landing obligation as it does not obligate vessels to discard fish and no catch limits applying to purse seiners are in place.

Several measures are in place to reduce the bycatch and mortality of seabirds, sea turtles, cetaceans, and sharks (see Annex 1b).

Table 15 Species with catch limits in the WCPFC convention area and the corresponding measures that cause a potential inconsistency with the EU landing obligation.

Species with Catch Limit	FAO Code	Corresponding Measure / Recommendation
bigeye tuna *Thunnus obesus*	BET	None

3.1.5.2 Task 2 Métiers

There are two EU métiers operating in the WCPFC convention area. These include Spanish and Portuguese vessels targeting swordfish with drifting pelagic longlines (WCPFC_001) and Spanish purse seine vessels targeting tropical tunas (skipjack, yellow fin and bigeye tuna) on FADS and free sets (WCPFC_002).

It is noted that the pelagic drifting longline fishery for swordfish/blue shark (WCPFC_001), which has the potential to bycatch bigeye tuna, a species with a WCPFC catch limit when caught by longliners. However, an inconsistency with the landing obligation is not considered to exist for these longline vessels because there is no obligation for these vessels to discard bigeye tuna under certain circumstances as there is for purse seine vessels under CMM 2009-02.

3.1.5.3 Summary

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the WCPFC convention area. No measures currently obligate EU vessels to discard catches of species with catch limits.

No EU metiers active in the WCPFC convention area should be considered under Phase II of this study.

3.1.6 Potential inconsistencies within tuna RFMOs

Potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the tuna RFMOs exist in the case of ICCAT only. Several ICCAT measures currently require EU vessels to discard catches of species with catch limits including swordfish, bigeye and yellowfin tuna and bluefin tuna. Obligations to discard occur to varying degrees across all EU métiers when fish are caught below minimum size limitations (swordfish, bluefin tuna); vessels are not authorised to catch certain species (bigeye and yellowfin tuna); when catch allowances for certain species have been exceeded (bluefin tuna) and when catches of certain species are made by recreational or sport fisheries (bluefin tuna).

It is noted that opportunity to discard species with catch limits exists for CCSBT (i.e. southern bluefin tuna), but there is no binding *requirement* for vessels to discard this species in any circumstances. Similarly, opportunity exists for EU purse seine vessels to discard skipjack, yellowfin and bigeye tuna in the convention areas of IATTC, IOTC and WCPFC but again there is no binding *requirement* for vessels to discard these species. Moreover, catch limits do not apply to any of these species in IOTC across all gears and for purse seine vessels in IATTC and WCPFC, and are therefore not subject to the EU landing obligation.

Consequently, only EU métiers operating in the ICCAT convention area and listed in section 3.1.3.2 should be considered under Phase II of this study.

3.2 Regional Fisheries Management Organisations – Non-tuna

3.2.1 Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

The CAMLR Convention Area is defined in the CAMLR Convention as the area south of the Antarctic Convergence. The Convention also applies in the area south of 60°S to which the 1959 Antarctic Treaty applies. The Convention Area is divided into statistical areas, subareas and divisions, internationally recognised by the Food and Agriculture Organisation of the UN (FAO). The statistical subarea and division boundaries were selected taking into account general oceanographic conditions as well as biological characteristics with a view to grouping areas thought to contain relatively discrete populations of certain species. The three statistical areas are: Area 48 (Atlantic Ocean sector), Area 58 (Indian Ocean sector) and Area 88 (Pacific Ocean sector) (see Figure 8).

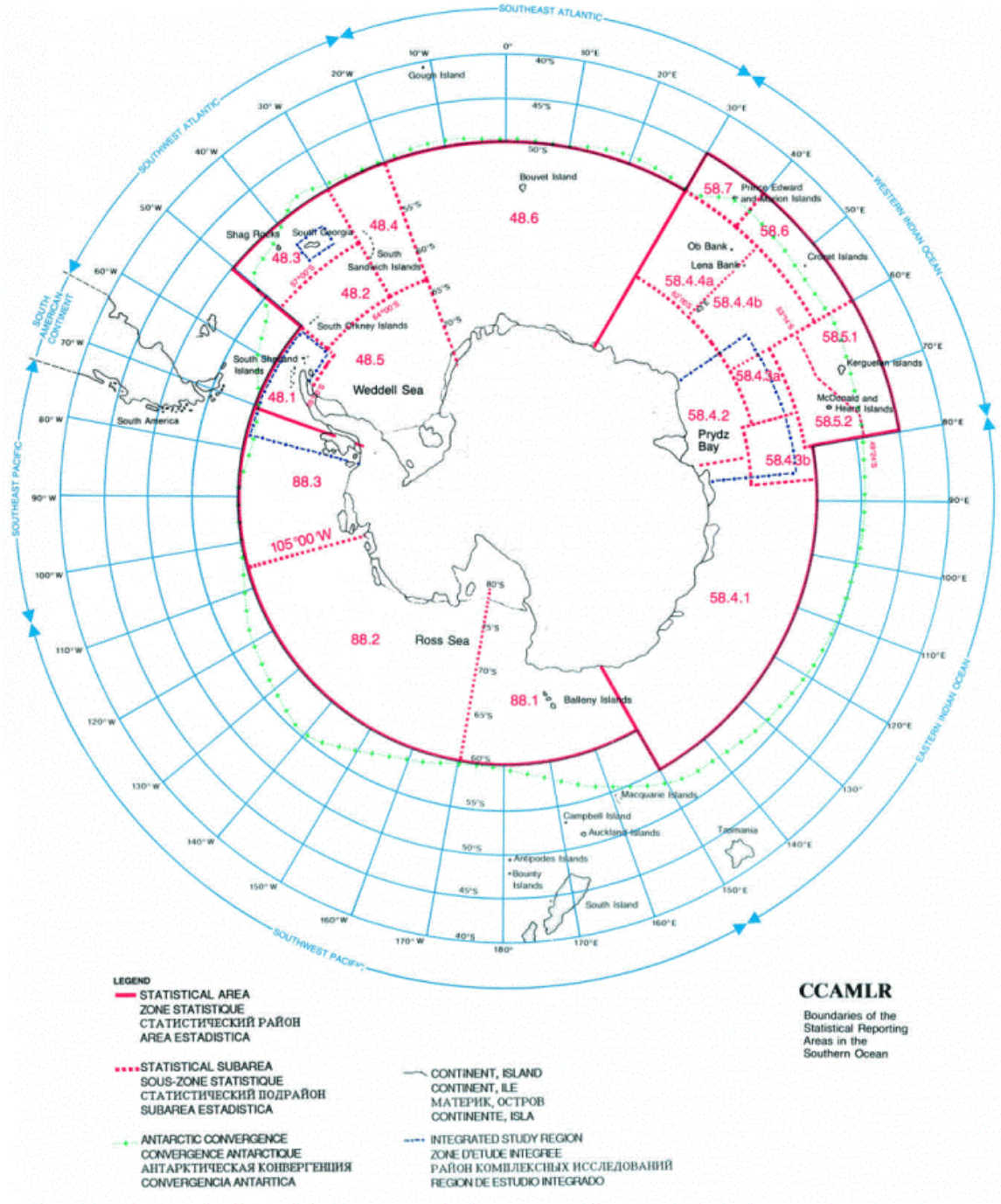


Figure 8 CAMLR Convention Area. Source: CCAMLR website https://www.ccamlr.org/

3.2.1.1 Task 1 Inventory

Within the CCAMLR Convention area there are a large number of Conservation Measures (CMs) relating to the management of bycatch and discards.

There are also a series of CMs which set catch limits for Patagonian toothfish (*Dissostichus eliginoides*) and Antarctic toothfish (*Dissostichus mawsoni*), icefish (*Champsocephalus gunnari*) and krill (*Euphausia superba*) fisheries in specific Subareas and Subdivisions within the Convention area including:

- CM 41-02, 41-03, 41-04, 41-05, 41-06, 41-07, 41-08, 41-09, 41-10 and 41-11
- for toothfish fisheries

- CM 42-01 and 42-02 for icefish fisheries

- CM 51-01, 51-02, 51-03 and 51-07 for krill fisheries

However, of these measures, CM 41-02, 41-03, 41-08, 42-01 and 42-02 set catch limits for toothfish and icefish fisheries within specific Subareas and Subdivisions within third country waters (48.3, 48.4, and 58.5.2) where the landing obligation does not apply. Therefore within the convention area, the landing obligation only applies to toothfish and krill.

Another conservation measure relevant to the landing obligation is CM 26-01, which prohibits the dumping and discharging of offal and discards and applies to areas south of 60°S; in areas north of 60°S, vessels are not prohibited from dumping offal or discarding. Therefore, where fisheries with catch limits exist north of 60°S within the Convention Area i.e. those covered by CMs 41-04, 41-05, 41-06, 41-07, 41-11, 51-01, 51-02, 51-03 and 51-07, there is potential for discarding of species with catch limits to arise. In addition, catches taken south of 60°S, in fisheries covered by CM 41-09, and CM 41-10, may later be discarded when the vessel has entered waters north of 60°S. However, none of these CMs require vessels to discard species with catch limits. Therefore, discards are only likely to occur for practical reasons such as limited hold space or for safety reasons and are limited in quantity for a number of reasons.

Table 16 Species with catch limits in the CCAMLR convention area and the corresponding measures that cause a potential inconsistency with the EU landing obligation

Species with Catch Limit	FAO Code	Corresponding Measure / Recommendation
Patagonian toothfish (*Dissostichus eliginoides*)	TOP	none
Antarctic toothfish (*Dissostichus mawsoni*)	TOA	none
icefish (*Champsocephalus gunnari*)	ANI	none
krill (*Euphausia superba*)	KRI	none

Minimum size limits do not apply to longline fisheries for Patagonian and Antarctic toothfish, and these fisheries are relatively size selective, and rarely catch juvenile fish due to the size of hooks used on the longlines. Therefore toothfish discards are limited and consist primarily of damaged fish e.g. fish which have jelly meat or have been predated upon by isopods.

Krill fisheries also tend to result in very low discard levels due to the selectivity of fishing methods used. However, it is possible that on occasion, krill would be discarded if the catch had become damaged. Spoiled catches occur when enzymes in the krill begin to decompose tissues once the animal is dead; if krill is not processed within a certain amount of time, and decomposition has occurred, the catch is typically discarded as it cannot be used. Although there are quotas for other Subareas (CM 51-02, 51-03, 51-04) currently all krill fishing takes place in Area 48 and most fishing

north of 60°S takes place in 48.3 and 48.4 which represent third country waters. However, some vessels also fish in Subarea 48.2 which covers areas both north and south of 60°S.

There are a number of measures worth highlighting that are relevant to the EU landing obligation, that are not incompatible with it. These measures are summarised in Annex 1b and include:

- measures relevant specifically to Article 15(4)
    - o CM 32-02 which prohibits the catch of certain species in specific subareas and subdivisions under certain circumstances and
    - o CM 32-18 which relates to the live release of sharks caught incidentally in any fishery where possible.

Other measures which relate to discard and bycatch management in CCAMLR which are not relevant to the EU landing obligation are summarised in Annex 1b and include the following:

- CM 33-01, 33-02, 33-03, 41-02, 41-03, 41-08, 41-09, 41-10, 42-02, 42-02 and 51-03 set bycatch limits and management measures for various species in fisheries within certain areas and subareas and Small Scale Research Units (SSRUs).
- Resolution 22/XX/XXV, CM 25-02 and CM 25-03 all relate to minimisation of incidental mortality of seabirds and mammals.

3.2.1.2 Task 2 Métiers

Within the CCAMLR Convention Area there are two fishing métiers in which EU vessels are currently active.

These include a demersal longline fishery for toothfish currently taking place in Divisions 58.4.1 and 58.4.2 by a Spanish vessel (CCAMLR_002) and within subareas 48.1 and 48.2, pelagic trawl fisheries targeting krill, involving two Polish vessels (CCAMLR_003).

However, on the basis that none of the CCAMLR CMs in force explicitly obligate vessels to discard catch limit species, these métiers are not considered to be engaged in activities inconsistent with the landing obligation.

3.2.1.3 Summary

Within the CCAMLR convention area, the landing obligation applies to toothfish species (*Dissostichus eliginoides* and *Dissostichus mawsoni*) and krill (*Euphausia superba*). Although occasional discarding of these species may arise north of 60°S, the associated CMs does not explicitly obligate vessels to discard in these areas. Therefore, there is no potential inconsistency with the EU landing obligation for EU métiers active within this area.

No EU metiers active in the CCAMLR convention area should be considered under Phase II of this study.

3.2.2 Fishery Committee for the Eastern Central Atlantic (CECAF)

3.2.2.1 Task 1 Inventory

CECAF acts exclusively as an advisory body, providing advice on fisheries management issues to its members. Therefore no obligations related to the management of discards are imposed by CECAF itself; all management measures that exist in CECAF waters are contained within the protocols of the respective SFPAs. Consequently, summaries of obligations relating to discards and bycatch in Mauritanian and Moroccan waters are given in Sections 3.3.2 and 3.3.3 respectively.

We note here that at the time of drafting the report the SFPA between the EU and Guinea-Bissau was not in force. However, considering the possibility of a new SFPA in a short-medium term, relevant management measures included under the last protocol are included in the inventory (Annex 1). To briefly summarise these: the management measures established in the previous SFPA protocol defined bycatch limits of 50% cephalopods and fish per fishing trip for shrimper vessels; 9% crustaceans and 9% cephalopods by fishing trip for finfish trawlers; and 9% crustaceans for cephalopod trawlers. These bycatch limits may encourage or result in discarding of excess bycatch, however, because these species are not currently subject to catch limits there is unlikely to be any conflict between these measures and the EU landing obligation.

It is also noted that the EU landing obligation is not applicable in waters subject to a third country sovereignty or jurisdiction (Article 15d), as is the case of Morocco, Mauritania and Guinea-Bissau.

3.2.2.2 Task 2 Métiers

The single affected métier under CECAF has been considered instead under the EU-Morocco SFPA. See Section 3.3.3.

3.2.2.3 Summary

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the CECAF convention area given that CECAF acts exclusively as an advisory body.

No EU metiers active in CECAF waters should be considered under Phase II of this study

3.2.3 North Atlantic Fisheries Organization (NAFO)

The NAFO convention area covers the northwest Atlantic above 35 degree latitude as shown in Figure 7.

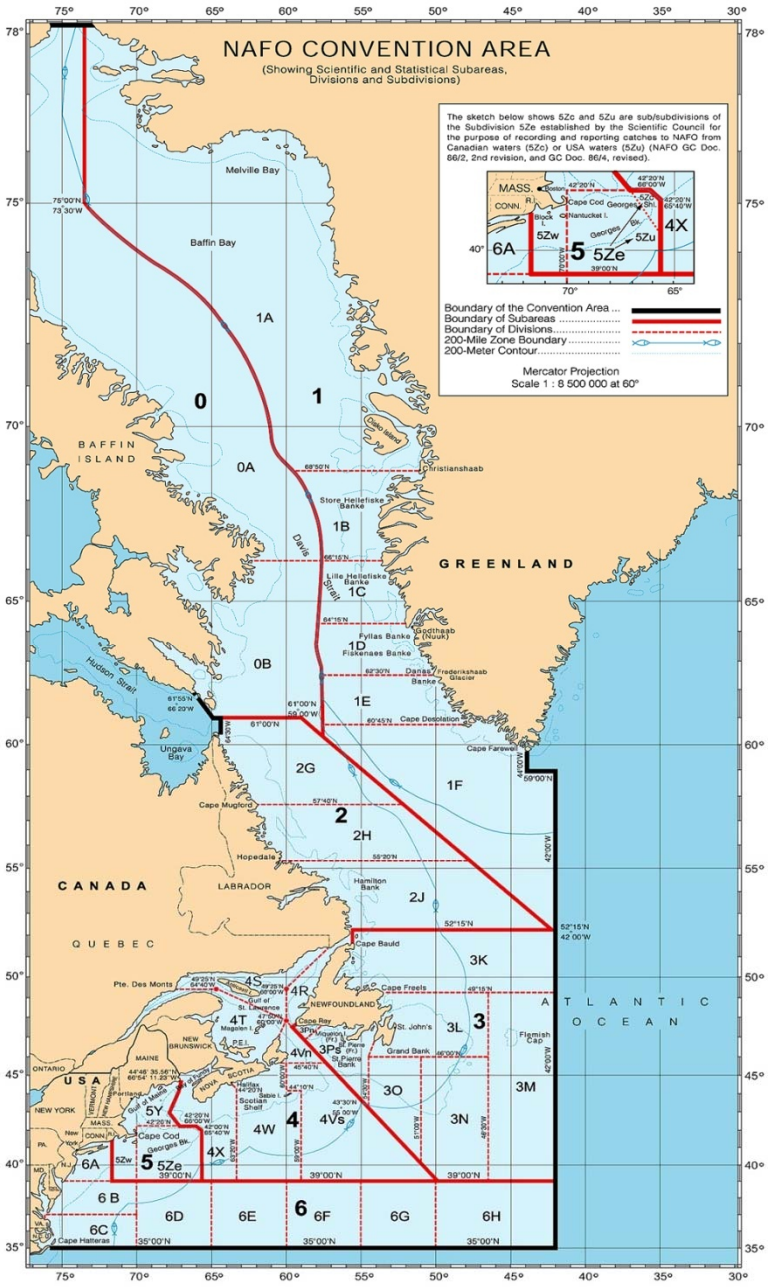


Figure 9 Convention area of the NAFO illustrating NAFO Subareas (numbers) and Divisions (letters). Source: NAFO website http://www.nafo.int/

3.2.3.1 Task 1 Inventory

NAFO Conservation and Enforcement Measures (NCEM) in 2014 (NAFO/FC Doc. 14/01, Serial No. N6272)[30] compiles all the NAFO measures adopted by the Fisheries Commission for fishing in the NAFO Regulatory Area (NRA). The most important NCEM rules concerning the management of bycatch and discards are the following:

- NCEM Article 5 (Catch and Effort Limitations) defines the directed fisheries for different species. This Article establishes that all regulated species in the NAFO area are managed by TACs and quotas, with the exception of Northern shrimp stock in NAFO Div. 3M where the management is carried out by effort allocation (number of fishing days). Table 17 presents the list of NAFO regulated species.

- NCEM Article 6 regulates the bycatch retention on board of the regulated stocks when these are fished as bycatch in other fisheries, by establishing retention limits. This implies that catches bigger than these retention limits must be discarded.

- NCEM Article 12 deals with the conservation and management of sharks. This article prohibits discarding any part of shark retained on board except the head, guts or skin and prohibits vessels from having shark fins on board that total more than 5% of the total weight of sharks on board, up to the first point of landing.

- NCEM Article 14 establishes that no vessel shall retain on board any fish smaller than the minimum size approved, which it shall immediately return to the sea.

NCEM Articles 5, 6 and 14 in combination with each other have the potential to create an inconsistency with the EU landing obligation.

Table 17 Species with catch limits in the NAFO convention area and the corresponding measures that cause a potential inconsistency with the EU landing obligation.

Species with Catch Limit	FAO Code	Corresponding Measure / Recommendation
Cod (*Gadus morhua*)	COD	Articles 5, 6 and 14 of NAFO Conservation and Enforcement Measures (NCEM) in 2014 (NAFO/FC Doc. 14/01, Serial No. N6272)
Redfish (*Sebastes spp*)	RED	
American plaice (*Hippoglossoides platessoides*)	PLA	
Yellowtail flounder (*Limanda ferruginea*)	YEL	
Witch flounder (*Glyptocephalus cynoglossus*)	WIT	
White hake (*Urophycis tenuis*)	HKW	
Capelin (*Mallotus villossus*)	CAP	
Skates (*Raja spp.)*	SKA	
Greenland halibut (*Reinhardtius hippoglossoides*)	GHL	
Squid *(Illex* spp.)	SQI	
Shrimp (*Pandalus borealis*)	PRA	

[30] Since the time of writing this has been replaced by Northwest Atlantic Fisheries Organization Conservation and Enforcement Measures. 2015. NAFO/FC Doc. 15/01 Serial No. N6409.

3.2.3.2 Task 2 Metiérs

Within the NAFO Regulatory Area (NRA) there are four fishing métiers (based on DCF métier Level 6 i.e. mesh size) that can be used by the EU fleet:

- NAFO_001 (OTB_MDD_130-219_0_0) targeting mixed demersal species in NAFO Division 3LMNO with 130 mm mesh size.
- NAFO_002 (OTB_MDD_>=220_0_0) targeting skates in Divisions 3NO with 280 mm mesh size at less than 200 meters depth. Yellowtail flounder (*Limanda ferruginea*), cod (*Gadus morhua*) and American plaice (*Hippoglossoides platessoides*) are the species with most discards, due to NCEM Article 6.
- NAFO_003 (OTB_CRU_40-59_1_22) targeting shrimp (*Pandalus borealis*) in Division 3LM with 40 mm mesh size at depth between 300-500 meters. The shrimp fishery in Division 3L was closed in 2015 and in Division 3M was closed in 2011. Almost all of the discards in this métier were redfish (*Sebastes spp*) due to NCEM Article 6, and probably also the low economic value of small redfish caught by this métier.
- NAFO_004 (OTB_CEP_>=60_0_0) targeting short finned squid (*Illex* spp.) in NAFO Subarea 3 and 4 with 60 mm mesh size. In recent years there has not been EU fleet operating with this métier because the catches of this species have been very sporadic. There is not much information available about catch and discards of this métier.

However, for studying discards it is necessary to further define métier NAFO_001 based on level 7 (species objective) because the bycatch and discards for different target species in métier NAFO_001 are very different. Based on the DCF level 7 (target species) we have divided NAFO_001 into the following seven métiers.

Métiers with activity in recent years and with information about the catch and by catch composition:

- NAFO_001_GLH (OTB_MDD_130-219_0_0_GLH) targeting Greenland halibut (*Reinhardtius hippoglossoides*) in Divisions 3LMNO at more than 600 meters depth with demersal 130 mm mesh size gear. Most of the discarded species are bycatch species with little economic value such as roughhead grenadier (*Macrourus berglax*).
- NAFO_001_RED (OTB_MDD_130-219_0_0_RED) targeting redfish in Divisions 3LMNO with demersal 130 mm mesh size gear in the 200-600 depth strata. Discards in this métier are a result of the NAFO redfish catch and effort limitation and bycatch regulations (NCEM Article 5 and 6) and also high-grading of catches. Fishermen may retain bigger higher value fish discarding smaller lower value individuals. If 50% of the TAC is caught before July 1, the fishery must be closed for that Member State till July, the most valuable catches of species may be retained in place of smaller specimens to avoid having to close the fishery. American plaice and yellowtail flounder are also discarded in accordance with NCEM Article 6.
- NAFO_001_COD (OTB_MDD_130-219_0_0_COD) targeting cod in Division 3M at depth between 150-550 meters with 130 mm mesh size gear. Cod is the species most commonly discarded in accordance with NCEM Article 14 (prohibiting undersized fish), but also due to high-grading. Redfish caught as bycatch are also discarded in accordance with NCEM Article 6, but probably also due to the low economic value of this species compared with cod.

Métiers with very low activity in the last years due to the catch low levels of the target species and with scarce catch and discards information:

- NAFO_001_HKW (OTB_MDD_130-219_0_0_HKW) targeting white hake (*Urophycis tenuis*) in Division 3NO at depth between 200-600 meters with 130 mm mesh size gear. This species is caught as bycatch in other métiers.

And métiers without activity in the last years due to the moratorium of the target species and without information:

- NAFO_001_WIT (OTB_MDD_130-219_0_0_WIT) targeting witch flounder (*Glyptocephalus cynoglossus*) in Division 3LNO at depth between 100-600 meters with 130 mm mesh size gear. The fishery in Divisions 3NO was opened in 2015.
- NAFO 001 PLA (OTB_MDD_130-219_0_0_PLA) targeting American plaice in Division 3LNO at depth between 100-600 meters with 130 mm mesh size gear. This fishery at present is in moratorium.
- NAFO 001 CAP (OTB_MDD_130-219_0_0_CAP) targeting capelin (*Mallotus villossus*) in Division 3NO at depth between 100-300 meters with 130 mm mesh size gear. This fishery at present is in moratorium.

Under the measures described in section 3.2.3.1, it is considered that all of these EU NAFO métiers are affected by a potential inconsistency with the EU landing obligation (Table 18) due to the requirement to discard regulated bycatch species as set out by Article 6 of NCEM "Bycatch Retention on Board of Stocks Identified in Annex I.A as Bycatch" and Article 14 "Minimum Fish Size Requirements".

Table 18 EU fishing métiers active within the NAFO convention area that are affected by a potential inconsistency with the EU landing obligation.

Métier Reference #	Target species	Target assemblage	Gear type code	Gear type	LOA (m)	Area, subarea, Division	MS involved	No. Vessels involved
NAFO_001_COD	*Gadus morhua* (COD)	Mixed demersal fish	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3M,	DK, FR, LT, EE, PT, GB, ES	35 (> 40 m)
NAFO_001_RED	*Sebastes spp.* (RED)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LMNO,	LT, EE, PT, ES	30 (> 40 m)
NAFO_001_GLH	*Reinhardtius hippoglosoides* (GHL)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LMNO,	LT, EE, PT, ES	30 (> 40 m)
NAFO_001_HKW	*Urophycis tenuis* (HKW)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3NO,	PT, ES	Very low activity (little information)
NAFO_001_WIT	*Glytocephalus cynoglossus* (WIT)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LMNO,	LT, EE, PT, ES	Fishery in DIV 3NO open in 2015
NAFO_001_PLA	*Hippoglossoides platessoides* (PLA)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LNO,	-	Fishery in moratorium
NAFO_001_CAP	*Mallotus villossus* (CAP)	Demersal species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3NO,	-	Fishery in moratorium
NAFO_002	*Amblyraja radiate* (SKA)	Mixed demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3NO.	ES, PT	20 (> 40 m)
NAFO_003	*Pandalus borealis* (PRA)	Crustaceans	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LM.	EE, ES, DK, FR, IS, LT.	Moratorium from 2015
NAFO_004	*Illex sp.* (SQI)	*Illex*spp.	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Subarea 3 and 4	-	Very low activity (little information)

3.2.3.3 Task 3 Mapping

In NAFO there is no official haul by haul data available to map the activity of the different métiers. Spanish NAFO observer data available allows mapping of activity of the Spanish fleet by mesh size (DCF level 6). The fishery footprint for DCF level 6 métiers in the 2011-2013 period, based on NAFO observer data from the Spanish fleet (extracted from NAFO SCS Doc. 14/06; 13/07 and 12/09) is shown in Figure 10. The Spanish fleet is involved in all of the EU fisheries and métiers in NRA. The effort of the Spanish fleet in the NRA is more than 40% of the total EU fleet effort, thus the footprint of the Spanish fishery should be very similar to the EU fleet footprint in the NRA.

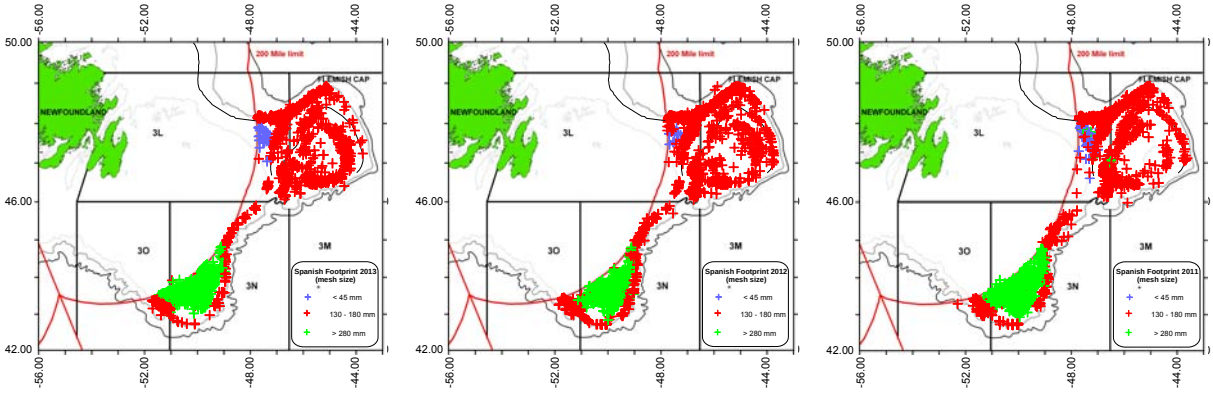


Figure 10 Fishing activity of the NAFO_001 (red), NAFO_002 (green) and NAFO_003 (blue) métiers operating in NAFO Regulatory Area (NRA) by year for the 2011-2013 period. Data were obtained from the NAFO observer programme and represent recorded haul positions.

3.2.3.4 Task 4 Exemptions

3.2.3.4.1 4a - Prohibited species

Table 19 provides a list of species that are caught, or have the potential to be caught, by métiers but are exempt from the landing obligation under Article 15(4a) (prohibited species). Species prohibitions generally apply to all métiers fishing in the area, although not all métiers have the same probability of catching the prohibited species.

In the 2014 NCEM there are no prohibited species, although the prohibition of porbeagle shark in Council Regulation No 43/2014 Article 12.1 is applicable to EU vessels and relevant in particular to the métiers NAFO_001_RED and NAFO_002. However, it is noted that no porbeagle sharks have been caught in the NAFO EU scientific trawl surveys in the last 5 years.

Table 19 Species caught in the affected NAFO métiers that are exempt from the EU landing obligation due to a catch prohibition.

Métier	Species	Prohibition measure	Comments
NAFO_001_RED	Porbeagle shark, *Lamna nasus*	Council Regulation No 43/2014 Article 12.1	Incidental commercial catches. Do not appear in the scientific Surveys.
NAFO_002	Porbeagle shark, *Lamna nasus*	Council Regulation No 43/2014 Article 12.1	Incidental commercial catches. Do not appear in the scientific Surveys.

3.2.3.4.2 4b - Species with high survival

Table 20 identifies the species that might be considered for exemption from the EU landing obligation under Article 15(4)b Regulation (EU) 1380/2013 (high survival). The summary indicates whether a survival estimate is available and the associated reference.

The EU métiers in NAFO Regulatory Area are bottom otter trawl fisheries. There is little information available on post-release survival rates of species discarded in these trawl fisheries, and the information that is presented is based on very old studies. Other information presented is based on fixed-gear fisheries: gillnets, longlines and handlines.

Typically survival rates of the bottom otter trawl discards are lower than others métiers. The depth at which a species is caught is a factor in its post-release survival rate. Therefore, the survival rate of species caught in the métier NAFO_001_GLH is considered to be low because this métier operates between 600 and 1400 meters depth. The métiers NAFO_001_RED, NAFO_001_COD and NAFO_003 operate between 200 and 600 meters depth and the survival rates for the species caught are likely to be higher than for NAFO_001_GLH. With the same reasoning, the métier with the highest survival rate (across all species caught) should be the NAFO_002 because it works at less than 200 meters depth.

Table 20 Post-release survivability estimates (unknown, low medium or high) of species caught in the affected NAFO métiers. The métier target species is shaded grey.

Species	Métier					References
	NAFO_001 GLH	NAFO_001 RED	NAFO_001 COD	NAFO_002	NAFO_003	
Greenland halibut (*Reinhardtius hippoglossoides*)	Low	Medium	Unknown	No catches	Unknown	Pers. comm. (F. González, IEO)
American plaice (*Hippoglossoides platessoides*)	Low	Medium	Medium	Medium	Unknown	Pers. comm. (F. González, IEO)
Witch flounder (*Glyptocephalus cynoglossus*)	Low	Medium	Unknown	High	Unknown	Pers. comm. (F. González, IEO)
Cod (*Gadus morhua*)	Unknown	Low	Low	Low	Unknown	Benoit and hurlbut (2010[31])
Skates (*Raja* spp.)	High	High	Unknown	High	Unknown	Benoit and Hurlbut (2010)
Yellowtail flounder (*Limanda ferruginea*)	Unknown	Medium	No catches	Medium	No catches	Benoit and hurlbut (2010)
Redfish (*Sebastes spp*)	Unknown	Low	Low	Low	Low	Pers. comm. (F. González, IEO)
Shrimp (*Pandalus borealis*)	No catches	No catches	No catches	No catches	Unknown	

3.2.3.5 Task 5 Discard information available

The best available information on discarding in NAFO métiers is the Spanish Scientific Observers data, which covers around the 20% of the Spanish total effort in the NRA. Discard information is collected as auxiliary information to the catch length distribution and hence there is no formal

[31] Benoît, H.B., and Hurlbut, T. 2010. Incidental catch, discards and potential post-release survival of fish captured in fixed-gear groundfish fisheries in NAFO 4T (Estuary and southern Gulf of St. Lawrence). DFO Can. Sci. Advis. Sec. Res. Doc. 2010/031. iii + 21 p.

sampling in place to study discarding. Spanish Scientific Observers data does however prove a reasonably clear picture of the catch and discards composition of the different EU métiers working in the NRA. Due to the lack of the sampling design it is difficult to conclude anything about seasonal and temporal patterns in discarding.

The following information is based on Spanish Scientific Observer data (2010-2013) on bycatch and discards rates for the various EU métiers working in the NRA. The bycatch and discard percentage relates to the total catch including all species combined (including target species). The table totals include all discards of all species caught (regulated and unregulated).

3.2.3.5.1 NAFO_001_GLH Greenland Halibut in Divisions 3LMNO discards rates.

Redfish comprise the main bycatch regulated species in the Greenland halibut fishery in Divisions 3LMNO at more than 600 meters depth. However, the redfish catch percentage is normally less than 5% and the discards of this species is very low.

Table 21 NAFO_001_GLH Greenland Halibut in Divisions 3LMNO discards rates.

Data	Bycatch rate (% of total catch)	Discard rate (% of total catch)	Age/size composition of discards	Confidence in the data
Greenland halibut (*Reinhardtius hippoglossoides*)	86%	0%	No	Medium
Witch flounder (*Glyptocephalus cynoglossus*)	1%	0%	No	Medium
Cod (*Gadus morhua*)	1%	0%	No	Medium
Skates (*Raja* spp.)	1%	0%	No	Medium
American plaice (*Hippoglossoides platessoides*)	1%	0%	No	Medium
Total		6%		Medium

3.2.3.5.2 NAFO_001_RED Redfish in Divisions 3LMNO

Greenland halibut, American plaice, cod and witch flounder represent the main bycatch species in the redfish fisheries in Division 3M, 3LN and 3O. Normally the catch percentage of each of these species is less than 5%. These fisheries usually take place at between 200-600 meters depth. Redfish discards in this fishery are a result of the NAFO redfish bycatch regulations (NCEM Article 6) and high-grading of catches containing small redfish. The discards of bycatch species are related to bycatch regulations applicable to species in moratoria (NCEM Article 6) such as cod and American plaice.

Table 22 NAFO_001_RED Redfish in Divisions 3LMNO

Data	Bycatch rate (% of total catch)	Discard rate (% of total catch)	Age/size composition of discards	Confidence in the data
Redfish (*Sebastes spp*)	67%	10%	Yes	Medium
Cod (*Gadus morhua*)	11%	0%	No	Medium
Greenland halibut (*Reinhardtius hippoglossoides*)	7%	0%	No	Medium
American plaice (*Hippoglossoides platessoides*)	4%	1%	No	Medium
Yellowtail flounder (*Limanda ferruginea*)	4%	1%	No	Medium
Skates (*Raja* spp.)	3%	1%	No	Medium
Witch flounder (*Glyptocephalus cynoglossus*)	2%	0%	No	Medium

Data	Bycatch rate (% of total catch)	Discard rate (% of total catch)	Age/size composition of discards	Confidence in the data
Total		14%		Medium

3.2.3.5.3 NAFO_001_COD Cod in Division 3M discards rates.

The most important bycatch species in the cod fishery in Division 3M at depths between 150-550 meters is redfish (7%), due to the NAFO redfish bycatch regulations (NCEM Article 6). However, cod is also discarded by this fishery due to the minimum length size (NCEM Article 14) for this species. In some cases cod is discarded due to high-grading, where vessels retain only larger fish with a high price and discard smaller but legally sized fish.

Table 23 NAFO_001_COD Cod in Division 3M discards rates.

Data	Bycatch rate (% of total catch)	Discard rate (% of total catch)	Age/size composition of discards	Confidence in the data
Cod (*Gadus morhua*)	87%	3%	Yes	Medium
Redfish (*Sebastes spp*)	11%	2%	Yes	Medium
Total		5%		Medium

3.2.3.5.4 NAFO_002 Skate in Divisions 3NO discards rates.

This fishery is carried out at less than 200 meters depth in Divisions 3NO and has a high percentage of bycatch by weight (37%). American plaice (19%) and Cod (6%) are both moratoria species in these divisions, are therefore the two main bycatch species of this fishery, with the main reason to discard them being the NAFO bycatch regulations (NCEM Article 6).

Table 24 NAFO_002 Skate in Divisions 3NO discards rates.

Data	Bycatch rate (% of total catch)	Discard rate (% of total catch)	Age/size composition of discards	Confidence in the data
Skates (*Raja* spp.)	53%	3.3%	Yes	Medium
Yellowtail flounder (*Limanda ferruginea*)	15%	3.4%	Yes	Medium
American plaice (*Hippoglossoides platessoides*)	15%	1.6%	Yes	Medium
Cod (*Gadus morhua*)	12%	0.8%	Yes	Medium
Total		12.0%		Medium

3.2.3.5.5 NAFO_003 Shrimp in Divisions 3LM discards rates.

The shrimp fishery seems to have a very low level of bycatch (2%) since the implementation of the mandatory sorting grids. The main bycatch species is redfish. This fishery usually takes place between 200-600 meters depth. The shrimp fishery in Div. 3M is in moratorium since 2011 and the shrimp fishery in Div. 3L will be in moratorium in 2015.

Table 25 NAFO_002 Skate in Divisions 3NO discards rates.

Data	Bycatch rate (% of total catch)	Discard rate (% of total catch)	Age/size composition of discards	Confidence in the data
Shrimp (*Pandalus borealis*)	96%	0%	No	Medium

Data	Bycatch rate (% of total catch)	Discard rate (% of total catch)	Age/size composition of discards	Confidence in the data
Redfish (*Sebastes spp*)	4%	4%	Yes	Medium
Total		4%		Medium

3.2.3.6 Task 6 Métier Classification

Table 26 provides a summary of the classification the different EU métiers working in the NRA as having 'low' (<10% of total catch) or 'high' (>10% of total catch) discard levels. To provide some measure of confidence in the classification each category is subdivided into:– with low quality data; and– with high quality data.

The data for NAFO_001_RED and NAFO_002 was categorized as high quality because it was collected as part of an EU observer programme.

Table 26 Classification of the level of discarding in the affected NAFO métiers based on the available information (see Task 5).

Métier	Low discard level (low quality data)	Low discard level (high quality data)	High discard level (low quality data)	High discard level (high quality data)
NAFO_001_GLH		X (6%)		
NAFO_001_RED				X (14%)
NAFO_001_COD		X (5%)		
NAFO_002				X (12%)
NAFO_003		X (4%)		

3.2.3.7 Summary

There are ten EU métiers in the NAFO convention area affected by potential inconsistencies between the EU landing obligation and NAFO management measures, in particular Article 6 of NCEM "By-catch Retention on Board of Stocks Identified in Annex I.A as By-catch" and Article 14 "Minimum Fish Size Requirements". All are bottom otter trawl metiers.

All ten metiers identified in Table 18 should be included in Phase II of this study.

The primary official reasons for discarding in all of these métiers relate to bycatch to varying degrees of species with target or bycatch catch limits, or target species below minimum landing sizes. Unofficially, high-grading of target species such as cod and redfish (e.g. selecting for larger individuals) also leads to discarding. The NCEM Articles 5, 6 and 14 in combination with each other have the potential to create an inconsistency with the EU landing obligation.

The level of discards varies between metiers, with NAFO_001_RED and NAFO_002 targeting redfish and skates generating the greatest quantities of discards.

One of the major problems in determining the extent of discarding within NAFO is the lack of detailed information at haul by haul level for catch and discard composition. There may be a solution to this paucity of information in the near future with the obligation to submit and make available log book data and haul by haul NAFO Observers data.

3.2.4 North East Atlantic Fisheries Commission (NEAFC)

The North East Atlantic Fisheries Commission (NEAFC) is the RFMO for the North East Atlantic. The regulatory area stretches from southern Greenland, east to the Barents Sea, and south to Portugal. NEAFC decides upon conservation and/or management measures for the regulatory area. Measures are decided by the Parties which make up the Commission on the basis of scientific advice from an independent scientific body the International Council for the Exploration of the Sea (ICES).

The NEAFC regulatory area covering the north east Atlantic Ocean, is shown in Figure 11.

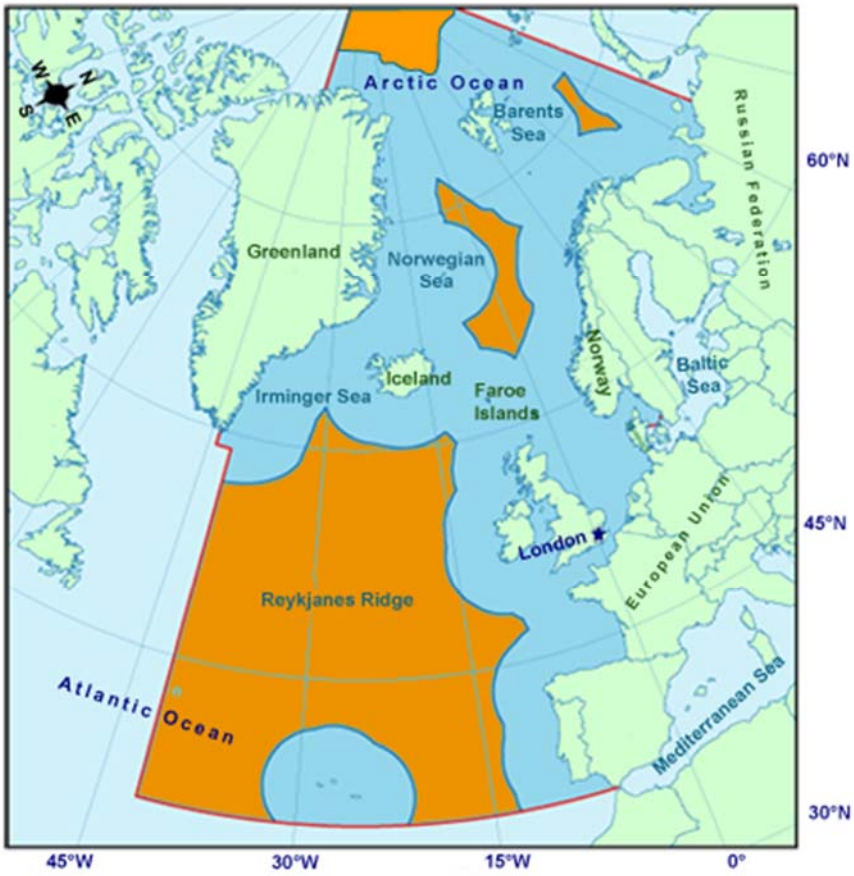


Figure 11 The NEAFC regulatory area. Source: NEAFC website http://www.neafc.org/page/27

3.2.4.1 Task 1 Inventory

NEAFC currently has several recommendations[32] in relation to the management of discards and bycatch, including several discarding recommendations:

i. Recommendation XVI:2010 is on the prohibition of discarding or releasing catches of any of the species listed in Annex I A) of the Scheme of Control and Enforcement[33], i.e. redfish, Norwegian spring spawning herring, blue whiting, mackerel and haddock. This measure is not inconsistent with the EU landing obligation on the basis that the EU has objected to this

[32] http://www.neafc.org/managing_fisheries/measures/current

[33] http://www.neafc.org/scheme

recommendation, and therefore it does not bind the Union on the basis of Article 12(2)(b) NEAFC Convention.

ii. NEAFC Recommendation 8:2015 is on the prohibition of all directed fishing of spurdog in the NEAFC Regulatory Area. Incidental catches of this resource have to be released unharmed, to the extent possible. All available data on spurdog, including data on discarding have to be submitted to ICES; and

iii. NEAFC Recommendation 7:2015 is on the prohibition of all directed fishing of porbeagle shark in the NEAFC Regulatory Area. Any incidental catches of this resource have to be released unharmed, to the extent possible. All available data on porbeagle shark have to be submitted to ICES.

None of the above measures will inconsistent with the EU landing obligation. Although NEAFC Recommendation 8:2015 and NEAFC Recommendation 7:2015 stipulate prohibition of targeted fishing on spurdog *(Squalus acanthias*) and porbeagle sharks respectively, they do not specifically require discarding of these species but only requires vessels 'release' incidental catches.

Some measures stipulate data collection obligations for discards only:

iv. NEAFC Recommendation 4:2014 on the management of roundnose grenadier. All available data of this resource have to be submitted to ICES including catches, bycatch, discards and activity information;

v. NEAFC Recommendation 4:2012 on the management of basking sharks. All available data on basking shark, including fisheries data, have to be submitted to ICES for further evaluation of the state of the resource;

vi. Article 9 in the 2014 NEAFC Scheme of Control and Enforcement on the Recording of Catch and Fishing Effort. All catches retained on board and the amount of fish discarded should be reported on a daily basis.

These above measures are not inconsistent with the EU landing obligation since they relate to data collection. The limitation in recommendation 1:2014 is considered to be complimentary to the EU landing obligation under Article 15.

Besides the NEAFC recommendations, several ICCAT measures also apply within NEAFC waters. Some of these are considered to lead to possible inconsistencies with the EU landing obligation. The ICCAT measures concern specific species: North Atlantic swordfish, East Atlantic/Mediterranean bluefin tuna and bigeye tuna. See ICCAT section 3.1.3.1 and Annex 1a for more details.

Table 27 Species with catch limits in the NEAFC convention area (under ICCAT) and the corresponding measures that cause a potential inconsistency with the EU landing obligation.

Species with Catch Limit	FAO Code	Stock	Corresponding Measure / Recommendation
Bigeye tuna, *Thunnus obesus*	BET	Atlantic	ICCAT Rec 14-01
Yellowfin tuna *Thunnus albacares*	YFT	Atlantic	ICCAT Rec 14-01
Bluefin tuna, *Thunnus thynnus*	BFT	East Atlantic and Mediterranean	ICCAT Rec 14-04
Swordfish, *Xiphias gladius*	SWO	North Atlantic	ICCAT Rec 13-02

3.2.4.2 Task 2 Métiers

Within the NEAFC Regulatory Area there are at least six fishing métiers in which EU vessels are active that might be potentially affected by inconsistency with the EU landing obligation (Table 28).

Table 28 EU fishing métiers active within the NEAFC convention area.

Métier Reference #	Target species	Target assemblage	Gear type code	Gear type	LOA (m)	Area, subarea, Division, subdivision	MS involved	No. Vessels involved
NEAFC_001	*Herring (Clupea harengus*)	small pelagic species	OTM	Midwater otter trawl	40+	ICES I+II	NL, DE, DK, UK	18 trips in 2011
NEAFC_002	Unknown	Demersal fish	OTB	Bottom otter trawl	Unknown	ICES I+II	UK, FR, DE	122 trips in 2011
NEAFC_003	Unknown	Small pelagic	PS	Purse seine	Unknown	ICES I+II	DK	2 trips in 2011
NEAFC_004	Redfish (*Sebastes mentella)*	Demersal fish	OTM	Midwater otter trawl	Unknown	Unknown	ES	Unknown
NEAFC_005	Unknown	Deep water species	OTB	Bottom otter trawl	Unknown	Unknown	ES	Unknown
NEAFC_006	Redfish (*Sebastes mentella)*	Redfish and grenadiers	OTM	Midwater otter trawl	Unknown	Unknown	ES	Unknown

i. NEAFC_001 (OTM_SPF_32-69_0_0) Pelagic trawl fisheries targeting herring (*Clupea harengus,* HER*)*, and to a lesser extent other pelagic species. The Netherlands, UK (Scotland), Germany and Denmark are involved in this métier; However, based on analysis of data of the Dutch discard monitoring programme we consider that fishing activity of NEAFC_001 is negligible.

ii. NEAFC_002 (OTB_DEF_>=120_0_0) Bottom trawl fisheries on demersal fishes. The UK (England and Scotland), Germany, and France are involved in this métier; Activity of these métiers in NEAFC is based on the assumption of the overlap between ICES areas I, II, XII and XIV and NEAFC areas. Although activity in the ICES areas does not necessarily mean there is activity in the NEAFC area as well (see métier NEAFC_001 above).

iii. NEAFC_003 (PS_SPF_32-69_0_0) Purse seine fisheries on small pelagic fish. Denmark is involved in this métier. Activity of this métier in NEAFC is based on the assumption of the overlap between ICES areas I, II, XII and XIV and NEAFC areas. Although activity in the ICES areas does not necessarily mean there is activity in the NEAFC area as well (see métier NEAFC_001 above).

iv. NEAFC_004 (OTM_DEF_100-129_0_0) Pelagic mid-water trawl fisheries targeting redfish. Spain is involved in this métier.

v. NEAFC_005 (OTB_DWS_100-129_0_0) Bottom trawl fisheries targeting deepwater species. Spain is involved in this métier.

vi. NEAFC_006 OTM_DEF_100-129_0_0 Pelagic mid-water trawl fisheries targeting redfish and grenadiers. Spain is involved in this métier.

We note that this list of metiérs is incomplete. From the information provided by the NEAFC website we know that besides deep sea species and redfish also fisheries targeting blue whiting and haddock are also active within the NEAFC regulatory area, but it is unclear whether EU vessels are engaged within these fisheries. The NEAFC Secretariat was not able to disclose specific information on métiers active within in the NEAFC regulatory area.

A potential inconsistency with the landing obligation exists for all EU metiers listed above (and in Table 28), except NEAFC_005 should vessels incidentally catch ICCAT regulatory species. Vessels will be obligated to discard catches of swordfish or bluefin tuna below ICCAT minimum size limitations; catches of bigeye and yellowfin tuna if they are not on ICCAT authorised vessel lists or catches of bluefin tuna when catch allowances for this species have been exceeded (see 3.1.3.1 for more details).

3.2.4.3 Task 3 Mapping

Due to data access and availability, it was only possible to map the fishing activity of NEAFC_001 (OTM_SPF_32-69_0_0).

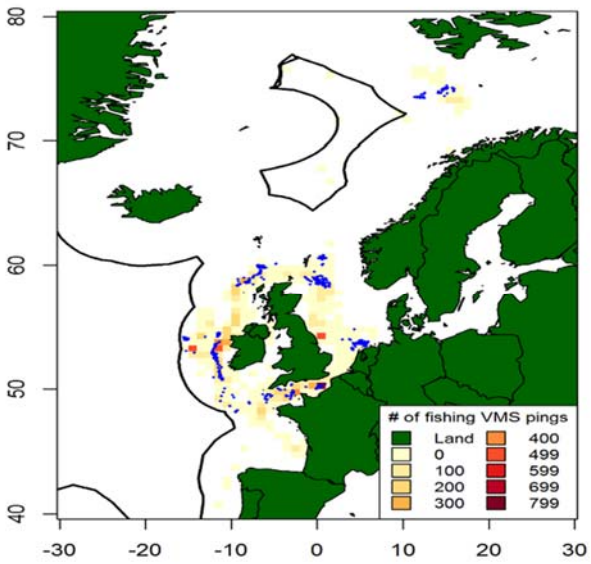


Figure 12 Fishing activity of the mid-water otter trawl on small pelagic species operating in the NEAFC regulatory area and surrounding waters in 2013. VMS data were obtained for the Dutch Pelagic freezer-trawler fleet active in the Northeast Atlantic. Data were aggregated to ices rectangle, year.

3.2.4.4 Task 4 Exemptions

3.2.4.4.1 4a - Prohibited species

Table 29 provides a list of species that are caught, or have the potential to be caught, but are exempt from the landing obligation under Article 15(4a) (prohibited species). Species prohibitions generally apply to all métiers fishing in the area, although not all métiers have the same probability of catching the prohibited species.

Table 29 List of species caught in the affected NEAFC métiers that are exempt from the landing obligation due to a catch prohibition.

Métier	Species	Prohibition measure	Comments
All NEAFC métiers	Basking shark (*Cetorhinus maximus)*, Porbeagle *(Lamna nasus)*, Angel shark (*Squatina* spp.), guitarfishes and giant manta ray (*Manta birostris*)	Council Regulation (EU) 43/2014 of 20 January 2014,	Porbeagle and basking sharks are incidentally caught in NEAFC_001 (OTM_SPF_32-69_0_0). There was no information available on bycatches of the other métiers. However, based on experience from the observer programme on NEAFC_001, it can be assumed that the other métiers, in particular the other pelagic fisheries, also have an incidental bycatch of these species.
All NEAFC métiers	Mammals, i.e. Long-finned pilot whale (*Globicephala melas*) and Grey seal (*Halichoerus grypus*), sea turtles	COUNCIL DIRECTIVE 92/43/EEC of 21 May 1992	Mammals (seals and cetaceans) and turtles are incidentally caught in NEAFC_001. There was no information available on bycatches of the other métiers. However, based on experience from the observer programme on NEAFC_001, it can be assumed that the other métiers, in particular the other pelagic fisheries, also have an incidental bycatch of these species.
All NEAFC métiers	Deep sea species	Council regulation (EU)1262 /2012 of 20 December 2012	Deep sea species are incidentally caught in NEAFC_001. There was no information available on bycatches of the other métiers. However, based on experience from the observer programme on NEAFC_001, it can be assumed that the other métiers also have an incidental bycatch of these species.

3.2.4.4.2 4b - Species with high survival

Table 30 highlights the shortage of information available on estimates of post-release survival for species subject to the landing obligation and potentially caught by EU metiers currently active within NEAFC.

Table 30 Post-release survivability of species caught in the affected NEAFC métiers.

Métier	Species	Post-release survival estimate	References
NEAFC_001, NEAFC_002, NEAFC_003, NEAFC_004,NEAFC_006	swordfish (*Xiphias gladius)*	No published information or anecdotal on survival in trawling	n/a
	bluefin tuna *(Thunnus thynnus)*	No published information or anecdotal on survival in trawling	n/a
	bigeye tuna (*Thunnus obesus)*	No published information or anecdotal on survival in trawling	n/a
	yellowfin tuna (*Thunnus albacares)*	No published information or anecdotal on survival in trawling	n/a

3.2.4.4.2.1 Circumstances of discarding

Discards of billfishes and tuna are quite unlikely to happen in these métiers, because these species are not very common in NEAFC waters. However we cannot exclude the bycatch of these species, because in the Dutch observer programme, some of these species (e.g. bluefin tuna) or similar species (e.g. *Sarda sarda*) are reported incidentally.

3.2.4.4.2.2 Discard relevance

The discard numbers for these species can be considered very low, although sampling effort may not be sufficient to support this.

3.2.4.4.2.3 Survival estimates/assessments

Because of the rarity of bycatch of ICCAT regulated species in trawl and purse seine fisheries, there are no relevant survival studies known.

There are survival studies known for hook-and-line fisheries, but their results are not representative for trawling and purse seine.

3.2.4.5 Task 5 Discard information available

The NEAFC secretary does not collect or request métier-disaggregated catch data. For the EU Member States data, a specific data call would need to be launched. Specific discard data for the NEAFC regulatory area only was therefore not available for this study.

3.2.4.6 Task 6 Métier Classification

Table 31 provides a summary of the classification of métiers as having 'low' (<10% of total catch) or 'high' (>10% of total catch) discard levels. To provide some measure of confidence in the classification each category is subdivided into:– with low quality data; and– with high quality data.

Table 31 Classification of the level of discarding in the affected NEAFC métiers based on the available information (see Task 5).

Métier	Low discard level (low quality data)	Low discard level (high quality data)	High discard level (low quality data)	High discard level (high quality data)
NEAFC_001	X			
NEAFC_002	X			
NEAFC_003	X			
NEAFC_004	X			
NEAFC_006	X			

Although there are no discard data available for the NEAFC area, we assume that the discard of billfishes and tuna in this area will be negligible. These species are not very common in the NEAFC area and are only incidentally caught.

3.2.4.1 Summary

There are at least five fishing métiers in which EU vessels are active that are potentially affected by potential inconsistencies between the landing obligation and ICCAT management measures (but no NEAFC measures). The risk of this inconsistency is considered low, because it can be assumed that the bycatch of applicable species (bluefin, bigeye and yellowfin tuna, and swordfish) in the NEAFC regulatory area will be negligible. However, these metiers will be considered under Phase II of the study.

An oversight of all EU métiers active in the NEAFC regulatory area is lacking. The NEAFC Secretariat was not able to disclose specific information on métiers active within in the NEAFC regulatory area. Neither does the NEAFC secretary collect or request métier-disaggregated catch data. For the EU Member States data, a specific data call would need to be launched in Phase II of this study.

3.2.5 South East Atlantic Fisheries Organisation (SEAFO)

The convention area of the SEAFO, covering the south-eastern Atlantic Ocean, is shown in Figure 13

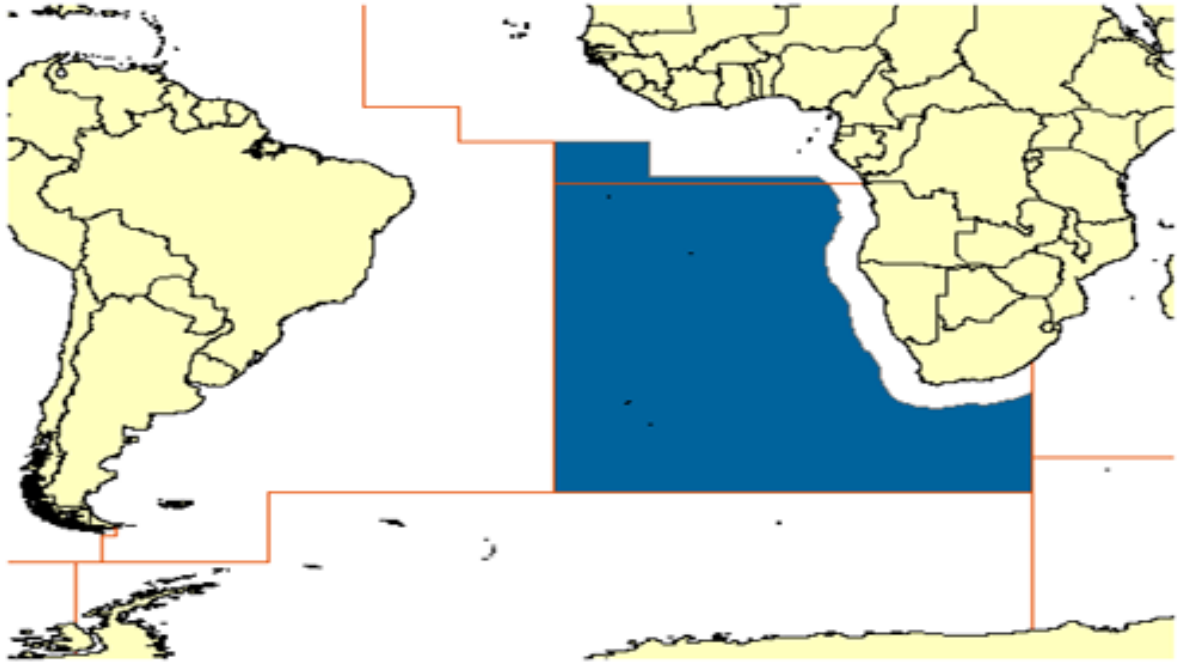


Figure 13 Convention area of the SEAFO. Source: http://www.seaaroundus.org/rfmo/

3.2.5.1 Task 1 Inventory

SEAFO currently has no obligations related to the management of discards for any of its stocks. However, its system of observation, inspection, compliance and enforcement contains two obligations on reporting discards data.

Article 10b - Information on fishing activities: The cumulative catches by species (using the relevant FAO 3 Alfa Code) by live weight (Kg), the proportion of the catch by live weight (Kg) retained on board, including retained bycatch species and discarded TAC species; and (c) for each haul:

i. Catch retained on board by species in live weight (Kg) and an estimation of the amount of fishery resources discarded (Kg), by species;

ii. All non TAC species discarded for which the total live weight is less than 10 kg, may be reported using the 3 alpha code MZZ (Miscellaneous Marine Species);

iii. The type of gear (trawl, pots, longline, etc.);

iv. The description of gear (number of hooks, number of pots, size of the trawl, etc.);

v. The longitude and latitude co-ordinates of shooting and hauling; and

vi. The date and time of shooting and hauling (UTC).

Article 11b – Communication of vessel movements and catches: The catch shall be recorded by species (using the relevant FAO 3 Alfa Code) and by live weight (Kg), including retained bycatch species and discarded TAC species, every 5 days, or more frequently as required by the Contracting Party.

3.2.5.2 Task 2 Métiers

No EU métiers are considered to be affected by an inconsistency between the EU landing obligation and SEAFO measures regarding discards.

3.2.5.3 Summary

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the SEAFO convention area. No measures currently obligate EU vessels to discard catches of species with catch limits.

No EU metiers active in the SEAFO convention area should be considered under Phase II of this study

3.2.6 South Indian Ocean Fisheries Agreement (SIOFA)

The convention area of the SIOFA, covering the western and south-eastern Indian Ocean, is shown in Figure 16.

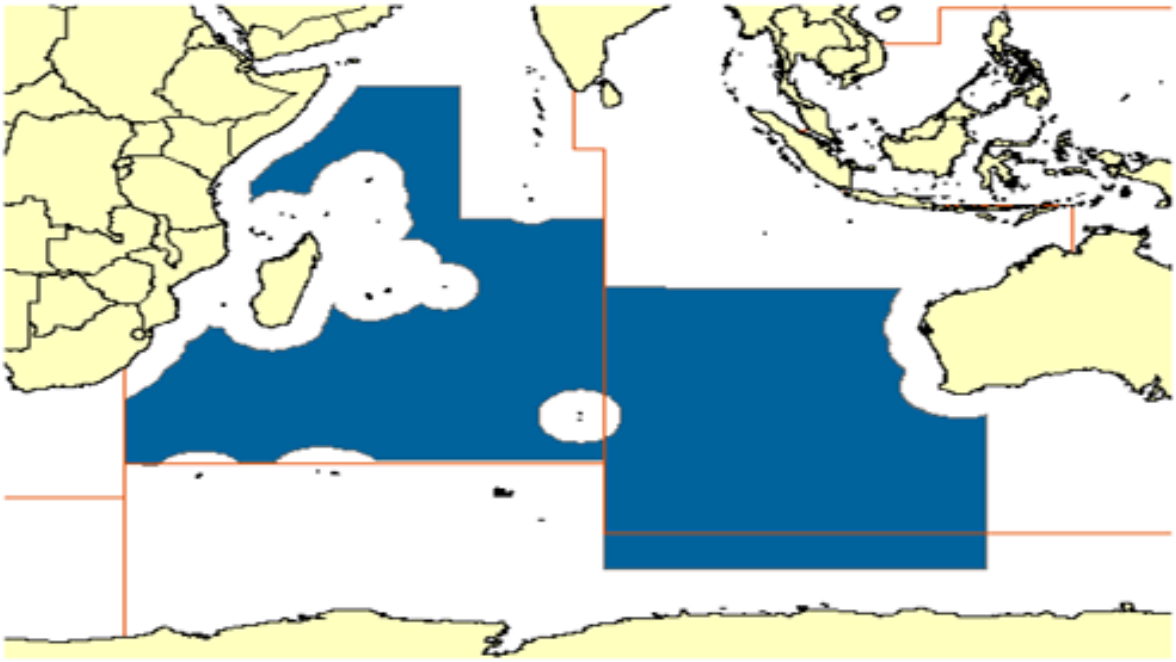


Figure 14 Convention area of the SIOFA. Source: http://www.seaaroundus.org/rfmo/

3.2.6.1 Task 1 Inventory

SIOFA currently has no obligations of any kind related to the management of discards for any of its stocks. Note that SIOFA is a very new organisation, and since its creation has been dealing with a range of issues in order to strengthen the operation and effectiveness of its Convention.

3.2.6.2 Task 2 Métiers

No EU métiers are considered to be affected by an inconsistency between the EU landing obligation and SIOFA measures regarding discards.

3.2.6.3 Summary

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the SIOFA convention area. No measures currently obligate EU vessels to discard catches of species with catch limits.

No EU métiers active in the SIOFA convention area should be considered under Phase II of this study.

3.2.7 South Pacific Regional Fisheries Management Organisation (SPRFMO)

The convention area of the SPRFMO, covering the entire southern area of the Pacific Ocean, is shown in Figure 15.

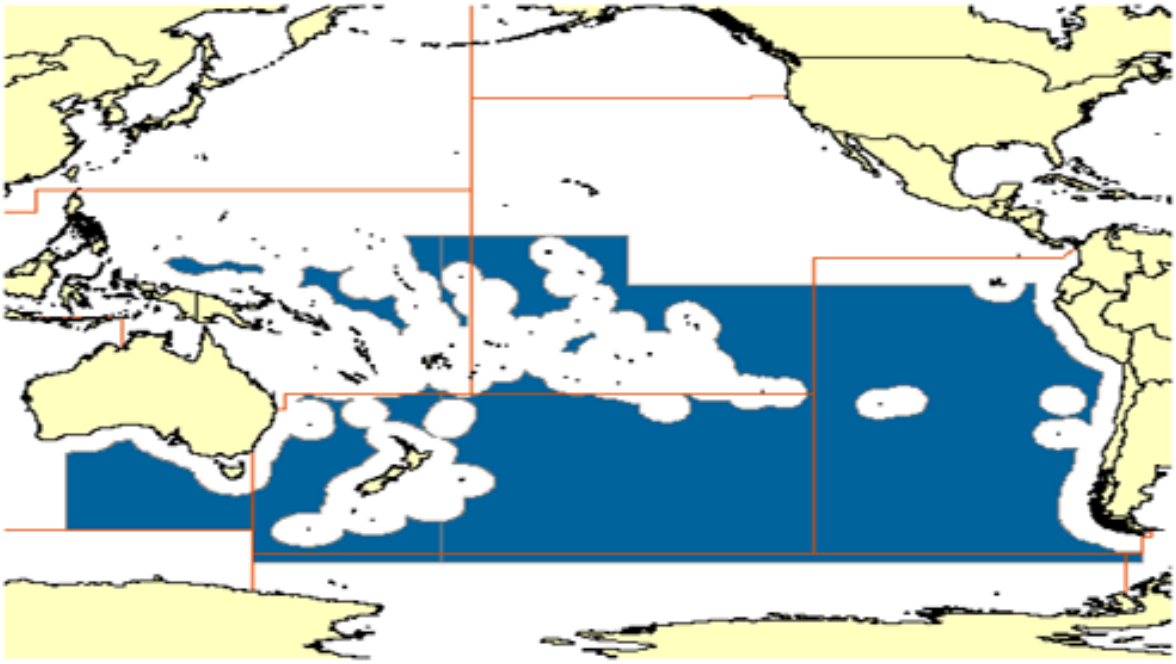


Figure 15 Convention area of the SPRFMO. Source: http://www.seaaroundus.org/rfmo/

3.2.7.1 Task 1 Inventory

SPRFMO currently has a single obligation related to the management of discards.

The measure CMM 3.01 set out conservation and management measures for Chilean jack mackerel (*Trachurus murphyi,* CJM), which includes provisions on fishing vessels authorised to participate in the fishery for Chilean jack mackerel, the effort management for these vessels and the TAC and allocation of TAC for Member and Cooperating–Non-Contracting Parties (CNCPs). Measure CMM3.01 requires that Members and CNCPs must close their fishery for jack mackerel when reported catches are 100% of their allocation, although there is no provision that vessels must discard any catch at any time.

Although not a management measure, one of SPRFMO's Conservation and Management Principles is that "*discards, catch by lost or abandoned gear and impacts on other species and marine ecosystems shall be minimised*" (Article 3, Para 1(x) of the Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean). Also, measures CMM 2.01 and CMM 2.05 require all Members and CNCPs to provide data to the Secretariat in accordance with CMM 2.02 (The Data Standards), although no other instructions of the management of discards is given.

Table 32 Species with catch limits in the SPRFMO convention area and the corresponding measures that cause a potential inconsistency with the EU landing obligation.

Species with Catch Limit	FAO Code	Corresponding Measure / Recommendation
Chilean jack mackerel (*Trachurus murphyi)*	CJM	None are applicable.

3.2.7.2 Task 2 Métiers

No EU métiers are considered to be affected by an inconsistency between the EU landing obligation and SPRFMO measures regarding discards.

It is noted that a single EU métier has been actively targeting Chilean jack mackerel in the SPRFMO convention area in recent years. This métier, SPRFMO_001, included a single mid-water otter trawl vessel in 2013[34], flagged to Lithuania, which fished exclusively in the high seas region of the SPRFMO convention area during May-November. This métier is not considered to be affected by inconsistency between the EU landing obligation and the SPRFMO measure CMM 3.01, which sets out catch limits for Chilean jack mackerel, on the basis that the SPRFMO measure does not explicitly require EU vessels to discard catch that exceeds the EU TAC allocation.

3.2.7.3 Summary

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the SPRFMO convention area, i.e. conservation and management measures set out within CMM 3.01. No measures currently obligate EU vessels to discard catches of species with catch limits (i.e. Chilean jack mackerel), even when the EU allocation has been exhausted.

No EU metiers active in SPRFMO convention area should be considered under Phase II of this study.

[34] In 2014 – which is outside the scope of this study – two mid-water otter trawl vessels were registered as actively targeting jack mackerel in the SPRFMO convention area: 1 flagged to Germany, 1 flagged to Netherlands.

3.2.8 Potential inconsistencies within non-tuna RFMOs

Potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the non-tuna RFMOs exist in the case of NAFO and NEAFC only.

There are ten EU métiers in the NAFO convention area that are affected by potential inconsistencies between the EU landing obligation and NAFO management measures, in particular Article 6 of NCEM "Bycatch Retention on Board of Stocks Identified in Annex I.A as Bycatch" and Article 14 "Minimum Fish Size Requirements". All are bottom otter trawl métiers. All ten métiers identified in Table 18 should be included in Phase II of this study.

Within NEAFC there are at least five fishing métiers in which EU vessels are active that are potentially affected by potential inconsistencies between the EU landing obligation and ICCAT management measures. The risk of this inconsistency is considered low, because it can be assumed that the bycatch of applicable species (bluefin, bigeye and yellowfin tuna, and swordfish) in the NEAFC regulatory area will be negligible. However, the five métiers identified in Table 28 (except NEAFC_005) should be included in Phase II of this study.

It is noted that opportunity to discard species with catch limits exists for CCAMLR (toothfish and krill) and for SPRFMO (i.e. Chilean jack mackerel), but there is no binding *requirement* for vessels to discard these species in any circumstances.

3.3 Sustainable Fisheries Partnership Agreements

3.3.1 Greenland SFPA

The Greenland SFPA encompasses the entire Greenlandic EEZ, although fishing grounds are in southern areas as shown in Figure 16.

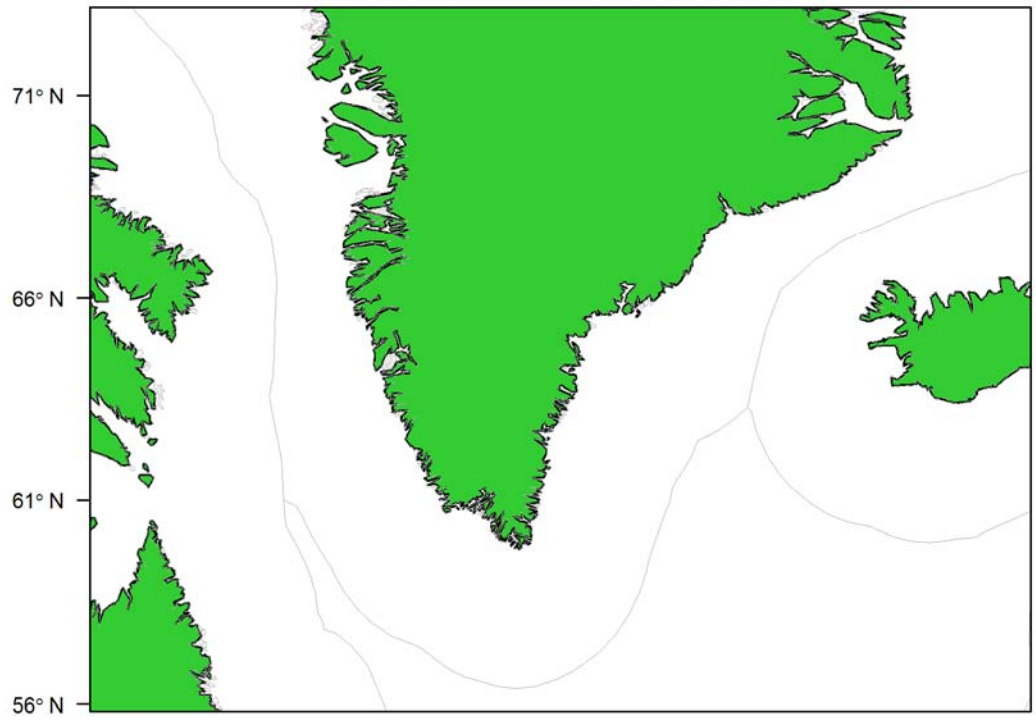


Figure 16 Geographic area covered by the Greenland SFPA.

3.3.1.1 Task 1 Inventory

Under the Greenland FPA protocol, EU vessels operating in the Greenlandic EEZ shall abide by the applicable bycatch rules for species and fish stocks distributed in Greenlandic waters. Executive Order No 14 of 6 December 2011 outlines the management of bycatch and discards in Greenlandic waters. The separate measures included under this Executive Order are detailed in Annex 1a.

Within the executive order, bycatch are defined as catches of species not covered by the fishing licence of the vessel or individuals below the minimum size requirements for commercial catches. Minimum sizes are listed for the following species Atlantic cod (*Gadus morhua,* COD), coalfish (*Pollachius virens,* POK), ling (*Molva molva,* LIN), blue ling (*Molva dypterygia,* BLI), haddock (*Melanogrammus aeglefinus,* HAD), Greenland halibut (*Reinharditius hippoglossoides,* GHL), (*Hippoglossus hippoglossus,* HAL), male snow crabs (*Chionoecetes opilio CRQ*), Redfish (*Sebastes marinus,* REG), Deepwater redfish (*Sebastes mentella,* REB) and American plaice (*Hippoglossoides platessoides,* PLA).

There are a number of general bycatch management measures covered by Articles 6 through to 11. These stipulate move-on rules or change in gear associated with various bycatch limits prescribed for fishing operations (other than pound net and crab pots). Separate measures are applied to shrimp trawlers and vessels depending on whether they have permission to process catches on board or not. None of these measures are incompatible with the EU landing obligation.

There is also a discard ban in place. Article 5(2) of the order stipulates that "*any catch shall be kept on board and be landed*" other than for species/fisheries for which a derogation is in place. Derogations to the ban on discards are detailed under Article 4(1-4), Article 5(1) and Article 13(2).

Derogations listed under Article 4(1-4) are compatible with the EU landing obligation because they relate to bycatch of organisms considered to have a high probability of survival and should therefore be released in live condition as far as possible. They include:

a. Halibut not caught in trawls;

b. Male snow crabs less than minimum size and female snow crabs (apart from those infected with bitter crab disease); and

c. Undersized fish caught in pound nets.

The derogations listed under Article 5(1) and Article 13(2) have the potential to be incompatible with the EU landing obligation.

Article 5(1) stipulates that catches damaged in the course of processing on board 'may be thrown overboard' as 'unmarketable discards', but these discards must be weighed and entered into logbooks before discarding. This derogation therefore has the potential to impact all fisheries in which EU vessels participate, depending on the extent to which they generate unmarketable discards.

Article 13(2) applies a derogation to shrimp trawlers due to Danish legislation in place, which prohibits the processing of fish on board shrimp trawlers. Where fish bycatch includes marketable species with catch limits, this bycatch may then be discarded as a result of the Danish legislation.

However, it is noted that both of these derogations allow but do not require vessels to discard catch in any given situation, and as such are not considered to be inconsistent with the EU landing obligation.

Table 33 identifies the species that have EU catch limits in Greenlandic waters, and are therefore subject to the EU landing obligation. There are no measures in place considered to cause a potential inconsistency with the EU landing obligation for these species.

Table 33 Species with catch limits as established under the Greenland SFPA and the corresponding measures that cause a potential inconsistency with the EU landing obligation.

Species with EU catch limit	FAO Code	Corresponding Measure / Recommendation
Cod (*Gadus morhua)*	COD	None
Pelagic redfish (*Sebastes* spp.)	RED	
Demersal redfish (*Sebastes* spp.)	RED	
Greenland halibut (Reinhardtius hippoglossoides)	GHL	
Atlantic halibut (*Hippoglossus hippoglossus*)	HAL	
Northern prawn (*Pandalus borealis*)	PRA	
Capelin (*Mallotus villosus*)	CAP	
Snow crab (*Chionoecetes opilio*)	CRQ	
Grenadier (*Macrourus* spp.)	GRV	

3.3.1.2 Task 2 Métiers

There are eight EU métiers currently active within the Greenland SFPA, these include

- 30 mid-water otter trawl vessels targeting the deep pelagic stock component of pelagic redfish in ICES subareas XIVb1 and XIIa (GL_001);
- 5 bottom otter trawl vessels targeting demersal redfish in ICES subarea XIb2 (GL_002);

- 1 mid-water otter trawler targeting northern prawn in NAFO Division 1 and ICES Area V (GL_003) and four vessels targeting this species in subarea XIVb2 (GL_004);
- 15 vessels targeting cod in NAFO subdivision 1F and ICES subarea XIVb2 (GL_005);
- 5 vessels targeting Greenland halibut in NAFO Division 1 (GL_006) and in ICES area V and subarea XIVb2 (GL_007); and
- Prior to 2013 vessels targeting capelin in ICES area V and subarea XIVb (GL_008).

However, as the derogations to the discard ban in place under Executive Order No 14 of 6 December 2011 do not obligate vessels to discard catches, none of these metiers will be impacted by the EU landing obligation.

Table 34 EU fishing métiers active within Greenlandic waters.

Métier Reference #	Target species	Target assemblage	Gear type code	Gear type	LOA (m)	Area, subarea, Division, subdivision	MS involved	No. Vessels involved
GL_001	Pelagic redfish (deep pelagic stock component)	Small pelagic fish	OTM	Mid-water otter trawl	40+	XIVb1, XIIa (deep pelagic mgmt. unit)	DK, ES, LV, LT	16 (2012), 14 (2013)
GL_002	Demersal redfish	Demersal fish	OTB	Bottom otter trawl	40+	XIVb2 (demersal mgmt. area)	DE	5 (2013)
GL_003	Northern prawn	Crustaceans	OTM	Mid-water otter trawl	40+	NAFO 1	DK	1 (2012, 2013)
GL_004	Northern prawn	Crustaceans	OTM	Mid-water otter trawl	40+	ICES V, XIVb2	DK, EE	4 (2012, 2013)
GL_005	Cod	Demersal fish	OTB	Bottom otter trawl	40+	NAFO 1F and ICES XIVb2	DE, UK	9 (2012), 6 (2013)
GL_006	Greenland halibut	Demersal fish	OTB	Bottom otter trawl	40+	NAFO 1	DE	5 (2012 and 2013)
GL_007	Greenland halibut	Demersal fish	OTB	Bottom otter trawl	40+	ICES V, XIVb2	DE	5 (2012 and 2013)
GL_008	Capelin	Small pelagic fish	OTM	Mid-water otter trawl	40+	ICES V, XIVb	DK	None (2012 and 2013)

3.3.1.3 Summary

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the Greenland EEZ under the scope of the Greenland SFPA, i.e. those measures set out within Executive Order No 14 of 6 December 2011.

No EU metiers active in the Greenland EEZ under the scope of the Greenland SFPA should be considered under Phase II of this study.

3.3.2 Mauritania SFPA

The Mauritania SFPA encompasses the entire Mauritania EEZ as shown in Figure 17.

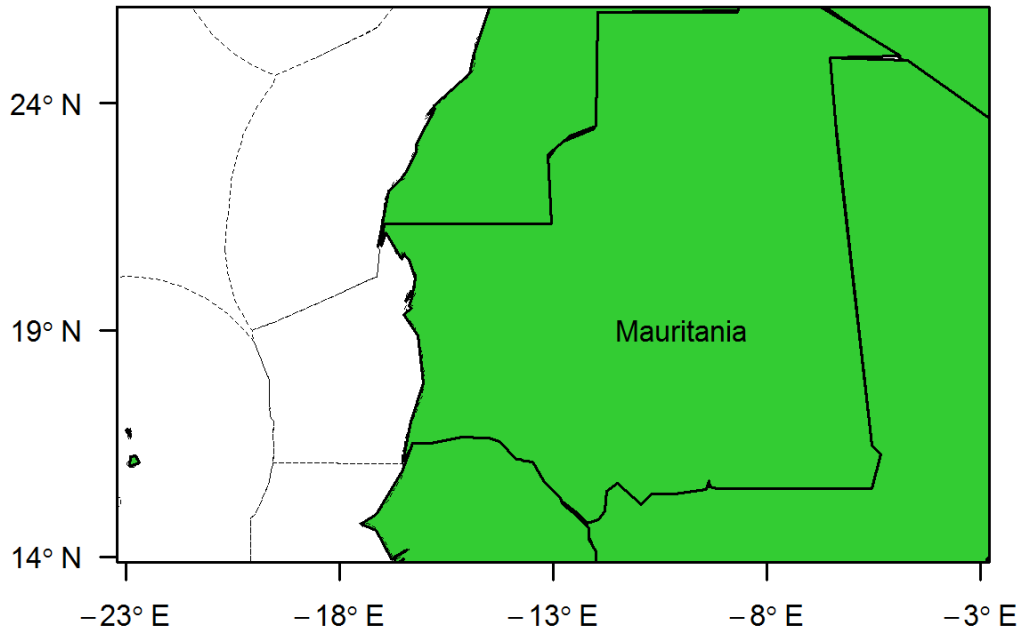


Figure 17 Geographic area covered by the Mauritania SFPA.

3.3.2.1 Task 1 Inventory

Measures relevant to the management of discards in Mauritania are contained within the protocol of the SFPA between the EU and the Islamic Republic of Mauritania (Council Decision of 18 December 2012, 2012/827/EU, Official Journal of the European Union, 2012) and in the Decision of the EU/Mauritania Joint Committee of 5 November 2013 (2014/36/EU, Official Journal of the European Union, 2013), where technical conditions are modified for fishing categories 1 and 7. We note here that at the time of writing the report the SFPA between the EU and Mauritania had already expired.

There are five measures limiting bycatch included in the fishing datasheets for each fishing category of the protocol. These bycatch limits (which include 0% limits; cf. prohibited species) are intended to minimise bycatch of non-target species, and may indirectly encourage discarding. However, none of the measures *require* EU vessels to discard catch at any time.

The current EU-Mauritania agreement protocol establishes 0% bycatch limits for spiny lobsters (*Panulirus* spp., SLV) for the crustacean fishing vessels (fishing category No 1); cephalopods and crustaceans for black hake trawlers and bottom longliners (fishing category No 2); cephalopods (except squid) and crustaceans for pelagic freezer and non-freezer trawlers (fishing categories No 7 and No 8); and fish, cephalopods and crustaceans other than the target species for crab trappers (fishing category No 4).

Non-zero bycatch limitations are established for: crustacean fishing vessels (15% of fish, 8% of cephalopods and 10% of crabs); for black hake trawlers (25% of fish) and longliners (50% of fish); for vessels fishing for demersal species other than black hake with gear other than trawls (10% of the live weight of the target species of group of species); and for pelagic freezer trawlers (3% of the live weight of the target species or group of species).

In addition, there are minimum sizes established for all the métiers involved in the SFPA EU-Mauritania that may encourage the discarding of undersized catch.

None of the bycatch or size limitations mentioned above are considered to be incompatible with the EU landing obligation (ignoring for the sake of this exercise that the waters of Mauritania are under third-party jurisdiction).

3.3.2.2 Task 2 Métiers

None of the EU métiers operating in Mauritanian waters under the SFPA is potentially affected by discards obligation.

3.3.2.3 Summary

There are no EU métiers that are considered to be affected by a potential inconsistency between the EU landing obligation and the terms of the Mauritania SFPA protocol.

No EU metiers operating within the Mauritania SFPA should be considered under Phase II of this study.

3.3.3 Morocco SFPA

The Morocco SFPA encompasses the entire Morocco EEZ as shown in

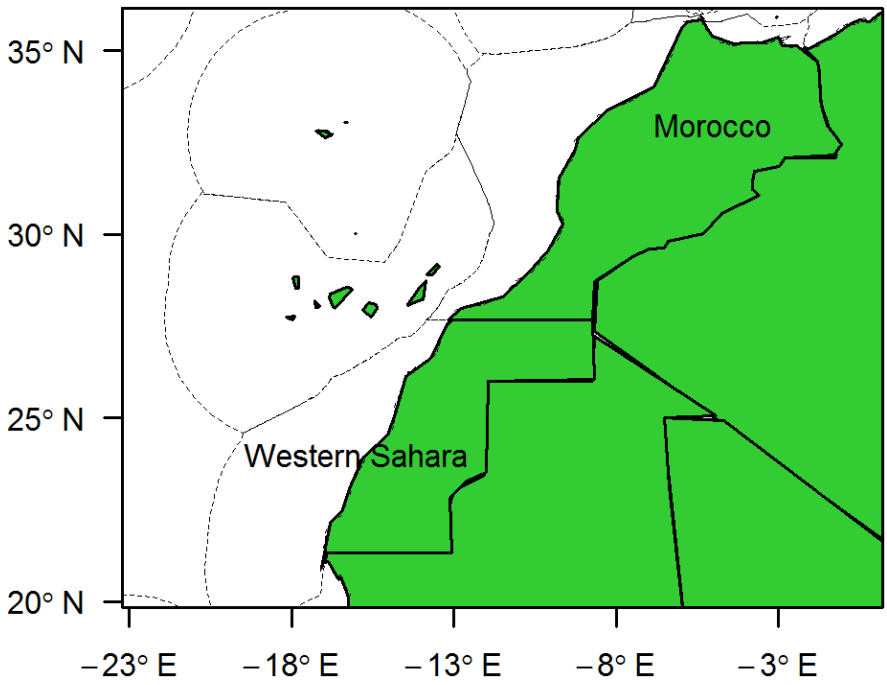


Figure 18.

Figure 18 Geographic area covered by the Morocco SFPA.

3.3.3.1 Task 1 Inventory

Measures relevant to the management of discards in Morocco are contained within the protocol of the SFPA between the EU and the Kingdom of Morocco[35] that has been recently implemented with the reopening of the EU fishery in Moroccan waters in September 2014.

There are four measures limiting bycatch included in the fishing datasheets for different fishing categories of the protocol, which include 0% limits; cf. prohibited species, and are intended to minimise bycatch of non-target species, and therefore may indirectly encourage discarding.

The EU-Morocco agreement protocol establishes a 0% bycatch limit for: swordfish *Xiphias gladius* (SWO) and surface (i.e. pelagic) sharks for the small-scale fishing category using bottom longlines in the North (See Annex 1a); cephalopods and crustaceans for the small-scale fishing category using rods and lines in the South, and for the demersal fishing category using longlines and trawls (See Annex 1b).

Only one of these bycatch limitations applies to a species for which an EU-specific TAC applies. This is the case of the 0% bycatch limitation of swordfish for the small scale fishery (bottom longliners) in North Morocco. Swordfish is a species submitted to an ICCAT TAC in North Atlantic waters, also

[35] Protocol between the European Union and the Kingdom of Morocco setting out the fishing opportunities and financial contribution provided for in the Fisheries Partnership Agreement between the European Union and the Kingdom of Morocco. Official Journal of the European Union 07-12-2013, L328/2-39. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22013A1207(01)&from=EN

listed within Council Regulation (EC) 104/2015[36] and therefore the EU landing obligation applies based on Article 15(1) (see Table 35). However, the bycatch limitation under the EU-Morocco Fishery agreement does not stipulate how bycatch exceeding 0% limit must be managed and therefore there is no specific obligation to discard catches of swordfish.

Table 35 Species with catch limits in the Morocco SFPA and the corresponding measures that cause a potential inconsistency with the EU landing obligation.

Species with Catch Limit	FAO Code	Corresponding Measure / Recommendation
swordfish *Xiphias gladius*	SWO	None

Non-zero bycatch limitations are also established for: the small scale fishing vessels operating in the South with rods and lines (5% of other demersal species); demersal trawlers and longliners (5% of deep-sea sharks) and pelagic or semi-pelagic trawlers (2% of other species).

3.3.3.2 Task 2 Métiers

One EU métier operates in Moroccan waters under the current SFPA within the small scale fishery of bottom longliners operating in North Morocco (MOR_001) to which the bycatch limitation under the EU-Morocco Fishery agreement applies.

The fishing area for this fleet is restricted to the North zone of Morocco (North of 34°18′00″ N) and beyond 6 nautical miles. The vessels operating with this Fishing category are authorized to fish with bottom-set longlines, with: a) a maximum number of 10 000 hooks per longline and a maximum number of five bottom-set longlines for those vessels < 40 GT, or b) a maximum number of 15 000 hooks per longline and a maximum number of eight bottom-set longlines for those vessels between 40 and 150 GT. Size 6 hooks are used for this fishery. A total of 30 vessels (27 Spanish and 3 Portuguese) were involved in this fishery during the last Protocol. A number of 35 vessels are allowed to fish with this fishing Category in the current Protocol. This métier mainly targets three species of Trichiuridae; the silver scabbardfish *Lepidopus caudatus* (SFS), the largehead hairtail *Trichiurus lepturus* (LHT) and the black scabbardfish *Aphanopus carbo* (BSF), which constitutes around 80% of landings, followed by different species of Sparidae. The fishery is carried out at depths ranging between 445 and 500 m.

This métier might potentially be affected by the EU landing obligation, should vessels involved catch swordfish. No information is currently available on discards generated by this fleet; it is not currently sampled under the DCF and scientific observations onboard have not been carried out to date. However, certain characteristics inherent to this fishery (type of bait used, hook line thickness) suggest that the probability of swordfish bycatch is likely to be very low.

Given the absence of an obligation to discard swordfish under the bycatch limitation, this metier is not considered to be affected by the potential inconsistency between the bycatch limitation and the EU landing obligation.

3.3.3.3 Summary

Only one measure under the current protocol of the SFPA EU-Morocco applies to both a species for which an EU-specific TAC applies and to a fleet in which an EU métier is active. However on the basis that the 0% bycatch limitation in place under the protocol does not explicitly require vessels to

[36] Council Regulation (EU) 2015/104 of 19 January 2015 fixing for 2015 the fishing opportunities for certain fish stocks and groups of fish stocks, applicable in Union waters and, for Union vessels, in certain non-Union waters, amending Regulation (EU) No 43/2014 and repealing Regulation (EU) No 779/2014 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R0104&from=EN

discard bycatch of swordfish, the EU métier targeting Trichiuridae is not considered to be obligated to land all swordfish bycatch.

Additional collection of data on discards generated by this métier is required in order to confirm the extent to which swordfish are discarded by EU vessels as a result of the bycatch limitation.

There are therefore no EU métiers that are considered to be affected by a potential inconsistency between the EU landing obligation and the terms of the Morocco SFPA protocol.

No EU metiers operating within the Morocco SFPA should be considered under Phase II of this study.

3.3.4 Potential inconsistencies within SFPAs

There are no potential inconsistencies between the EU landing obligation and measures applicable to EU vessels operating in the SFPAs.

Although derogations to the discard ban applicable with the scope of the EU-Greenland SFPA protocol currently permit EU vessels to discard catches of species with catch limits (see 3.3.1.1) that have been damaged during production (i.e. in the gear or during processing on board) and are considered to be unmarketable as a result, these measures do not explicitly obligate vessels to discard these catches.

Similarly, it is noted that opportunity to discard species with catch limits exists in both the Mauritanian and Moroccan SFPAs (i.e. swordfish, under an EU TAC set by ICCAT), but there is no binding *requirement* for vessels to discard this species in any circumstances.

3.4 Multilateral Agreements

3.4.1 Task 1 Inventory

There are a small number of multilateral agreements relating to the management of bycatch and discards in fisheries that are applicable to EU Member States (Annex 1). The majority of these agreements are non-binding FAO guidelines for mitigating key international fisheries management issues (e.g. International Plan of Action for the management of discards, sharks, fishing capacity etc.), with the rest being higher level management principles (e.g. Agenda 21, UNEP Regional Seas Programmes, FAO Code of Conduct for Responsible fisheries etc.). All of these measures encourage the implementation of sustainable fisheries management in some way, with most also encouraging minimal ecological impact, but none prescribe any particular approach for the management of discards. None are inconsistent with the EU landing obligation.

The key multilateral agreements are:

- Agenda 21, Rio World Summit (1992). A non-binding, voluntarily implemented action plan of the United Nations with regard to sustainable development. With regards to discarding and bycatch in fisheries, the agreement has three relevant paragraphs in Chapter 17: Paragraph 17.46(c): minimize waste in the catch of target species and minimize bycatch of non-target species; Paragraph 17.50: minimize incidental catch; and Paragraph 17.55: take measures to reduce discards. These non-binding measures encourage the implementation of sustainable fisheries management with minimal ecological impact, but do not mandate any particular management approach.

- FAO Guidelines. Under the FAO the following agreements have been adopted; Code of Conduct for Responsible Fisheries; FAO Agreement to promote compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas; and Port State Measures. The relevance of these agreements is purely advisory and includes States' responsibilities to minimise discards of non-target species, both fish and non-fish species, enhance selectivity of gears and techniques and to collect sufficient discards data to be adequate for stock assessment purposes.

- FAO International Guidelines on Bycatch Management and Reduction of Discards (2011). These guidelines include the identification of key management considerations and measures necessary to ensure the conservation of target and non-target species, as well as affected habitats. They are voluntary and constitute an instrument of reference to help States and RFMO/As in formulating and implementing appropriate measures for the management of bycatch and reduction of discards in all fisheries and regions of the world.

- FAO International Plan of Action for the conservation and Management of Sharks (1999). The aim of the IPOA-Sharks is to "minimize unutilized incidental catches of sharks; minimize waste and discards from shark catches in (for example, requiring the retention of sharks from which fins are removed); and encourage full use of dead shark."

- Convention on Migratory Species (CMS). This convention stands slightly apart from the other agreements in that the purpose is not addressing issues of discarding or fisheries management specifically, but rather conserving specific species. The Convention lists several species in its appendices that are caught as target catch or bycatch in one or more fisheries worldwide (e.g. several shark species.); however, the text of the CMS does not prescribe nor recommend management measures, only determines that measures should be implemented to conserve these species within a Member's jurisdiction.

4 Phase I Summary and scope for Phase II

4.1 Review of international management obligations

The review of RFMO management measures and SFPA protocols identified a diverse range of binding and non-binding management obligations relevant to discarding within RFMOs and SFPAs. The majority of management measures relevant to the practice of discarding were in place as a means to achieve an alternative objective (e.g. long term management plans, TAC management etc.). Across all of these measures, although some encourage the discarding of catch, relatively few obligate EU vessels to either discard or to not discard (i.e. discard ban). Six measures are considered not to be in line with the EU landing obligation by specifically obligating vessels to discard catches and are therefore considered to be potentially inconsistent with the EU landing obligation and will be the focus of Phase II of this study (Table 36).

Table 36 Measures causing inconsistencies with the EU landing obligation by RFMO/SFPA.

RFMO/ SFPA	Applicable measures	Métiers affected
Tuna RFMOs		
CCSBT	None	0
IATTC	None	0
ICCAT	ICCAT Recommendations 2013-02, 2014-01 and 2014-04	All métiers (13)
IOTC	None	0
WCPFC	None	0
Non-tuna RFMOs		
CCAMLR	None	0
CECAF	None	0
NAFO	Articles 5, 6 and 14 of NAFO Conservation and Enforcement Measures (NCEM) in 2014 (NAFO/FC Doc. 14/01, Serial No. N6272)	All métiers (10)
NEAFC	ICCAT Recommendations 2013-02, 2014-01 and 2014-04	Five métiers
SEAFO	None	0
SIOFA	None	0
SPRFMO	None	0
Sustainable Fisheries Partnership Agreements		
Greenland	None	0
Mauritania	None	0
Morocco	None	0

4.1.1 Tuna RFMOs

Measures relating to the management of discards are in place within all tuna RFMOs. Within IATTC, IOTC and WCPFC, none of these measures are considered to be inconsistent with the EU landing obligation for EU vessels.

Within ICCAT there are three measures considered to be inconsistent with the EU landing obligation (Recommendations 2013-02, 2014-01 and 2014-04), affecting all thirteen EU métiers operating within this RFMO. These measures set fishing opportunities and conservation and management measures in the Atlantic Ocean for bigeye tuna, yellowfin tuna, bluefin tuna and swordfish, but also stipulate obligations for vessels to discard these species for various reasons including authorised vessel lists, minimum size limitations and fishery-specific catch allowances. These specific ICCAT measures also

have the potential to affect all métiers fishing within NEAFC waters where ICCAT and NEAFC areas overlap.

4.1.2 Non-tuna RFMOs

Three NAFO measures relevant to the management of discards are considered to be inconsistent with the EU landing obligation (Articles 5, 6 and 14 of NAFO Conservation and Enforcement Measures) and affect all ten EU métiers active (or currently inactive) in the NAFO convention area. These measures set target catch and effort limitations, minimum size limits, and bycatch species limits in combination with each other and require EU vessels to discard catch in a wide range of situations.

Several NEAFC measures are relevant to the management of discards, but only ICCAT measures identified above have the potential to affect five of the six métiers fishing within NEAFC waters.

Measures relating to the management of discards are in place within CCAMLR and SPRFMO, although none of these are considered to be inconsistent with the EU landing obligation. In both cases this is due to the lack of an explicit obligation to discard catch within the measures.

No relevant management measures are in place for CECAF, SEAFO or SIOFA.

4.1.3 Sustainable Fisheries Partnership Agreements

There are a number of management obligations regarding discarding in the three SFPAs included in this study (Mauritania, Morocco and Greenland).

The Greenland SFPA protocol includes a general discards ban and although there are two derogations that permit discards of unmarketable catches (Articles 5 and 13 of Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch), these measures do not obligate vessels to discard this catch.

The SFPA protocol Morocco contains a zero bycatch limit for swordfish (which has an EU-specific TAC set under ICCAT and Council Regulation (EC) 104/2015) that may encourage the discarding of this species. However, these measures are not inconsistent with the EU landing obligation on the basis that the measures do not explicitly require vessels to discard catch.

There are no measures included under the SFPA protocol for Mauritania considered to be inconsistent with the EU landing obligation.

4.1.4 Multilateral agreements

The review of multilateral international agreements identified no internationally agreed measures that are binding on the Union that are inconsistent with the EU landing obligation provided by the new CFP Regulation. The majority of multilateral agreements relating to the management of bycatch and discards that are applicable to EU Member States are non-binding FAO guidelines for mitigating key international fisheries management issues (e.g. International Plan of Action for the management of discards) with the remainder being higher level management principles (e.g. Agenda 21, UNEP Regional Seas Programmes, FAO Code of Conduct for Responsible fisheries etc.). All of these measures encourage the implementation of sustainable fisheries management in some way, with most also encouraging minimal ecological impact, but none prescribe any particular approach for the management of discards and none are inconsistent with the EU landing obligation.

4.2 EU métiers affected by policy inconsistencies

Across all RFMOS and SFPAs covered by this specific contract we have identified 28 métiers that will potentially be affected by the EU landing obligation to varying extents once all phased and final provisions have to be implemented by 2019 (Table 37). These métiers will be the focus of Phase II of this study.

Table 37 Métiers affected by inconsistencies with the EU landing obligation by RFMO/SFPA.

Métier Reference #	Target species	Gear type	Area, subarea, Division, subdivision
ICCAT			
ICCAT_01	Albacore (*Thunnus alalunga*, ALB)	Mid-water otter trawl	Atlantic
ICCAT_02	Bluefin/albacore *(Thunnus thynnus,* BFT/*Thunnus alalunga*, ALB)	Hand and pole lines	Atlantic/ Mediterranean
ICCAT_03	Tropical tunas	Hand and Pole lines	Atlantic
ICCAT_04	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB) and swordfish (*Xiphias gladius,* SWO)	Drifting longline: set longlines	Atlantic/ Mediterranean
ICCAT_05	Swordfish (*Xiphias gladius,* SWO)	Drifting longlines	Atlantic/ Mediterranean
ICCAT_06	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB)	Drifting longlines	Atlantic/ Mediterranean
ICCAT_07	albacore *(Thunnus alalunga*, ALB)	Trolling lines	Atlantic/ Mediterranean
ICCAT_08	Bluefin tuna *(Thunnus thynnus,* BFT*)*	Purse seine	Mediterranean
ICCAT_09	Tropical tunas	Purse seine	Atlantic
ICCAT_10	Bluefin tuna *(Thunnus thynnus,* BFT*)*	Stationary Uncovered pounds net	Atlantic/ Mediterranean
ICCAT_11	Albacore (*Thunnus alalunga*, ALB)	Trammel nets	Mediterranean
ICCAT_12	Tunas	Set gillnets	Mediterranean
ICCAT_13	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB)	-	Atlantic/Mediterranean
NAFO			
NAFO_001_COD	Atlantic cod (*Gadus morhua*)	Bottom otter trawl	NAFO Reg. Area, Div. 3M,
NAFO_001_RED	Redfish (*Sebastes* spp.)	Bottom otter trawl	NAFO Reg. Area, Div. 3LMNO,
NAFO_001_GLH	Greenland halibut (*Reinhardtius hippoglosoides*)	Bottom otter trawl	NAFO Reg. Area, Div. 3LMNO,
NAFO_001_HKW	White hake (*Urophycis tenuis*)	Bottom otter trawl	NAFO Reg. Area, Div. 3NO,
NAFO_001_WIT	Witch flounder (*Glyptocephalus cynoglossus*)	Bottom otter trawl	NAFO Reg. Area, Div. 3LMNO,
NAFO_001_PLA	American plaice (*Hippoglossoides platessoides*)	Bottom otter trawl	NAFO Reg. Area, Div. 3LNO,
NAFO_001_CAP	Capelin (*Mallotus villossus,* CAP)	Bottom otter trawl	NAFO Reg. Area, Div. 3NO,
NAFO_002	Thorny skate (*Amblyraja radiata*)	Bottom otter trawl	NAFO Reg. Area, Div. 3NO.
NAFO_003	Northern prawn (*Pandalus borealis,* PRA)	Bottom otter trawl	NAFO Reg. Area, Div. 3LM.
NAFO_004	Shortfin squids (*Illex* spp.)	Bottom otter trawl	NAFO Reg. Area, Subarea 3 and 4
NEAFC			
NEAFC_001	Herring (*Clupea harengus*)	Mid-water otter trawl	ICES I+II
NEAFC_002	Mixed fisheries	Bottom otter trawls	ICES I+II
NEAFC_003	Mixed pelagic	Purse seine	ICES I+II
NEAFC_004	Redfish (*Sebastes* spp.)	Pelagic mid-water trawl	ICES I + II

Métier Reference #	Target species	Gear type	Area, subarea, Division, subdivision
NEAFC_006	Redfish and grenadiers (*Sebastes* spp.and *Macrourus* spp.)	Pelagic mid-water trawl	ICES XII+XIV

ICCAT EU métiers include one mid-water trawl fishery, two hand and pole line (or bait boat) fisheries, three drifting pelagic longline fisheries, two purse seine fisheries, one trolling fishery, one trap fishery, one trammel net fishery, one set gillnet fishery and recreational fisheries. For all of these métiers, discarding may occur to varying degrees when fish are caught below minimum size limitations (swordfish, bluefin tuna); vessels are not authorised to catch certain species (bigeye and yellowfin tuna); when catch allowances for certain species have been exceeded (bluefin tuna) and when catches of certain species are made by recreational or sport fisheries (bluefin tuna).

NAFO métiers likely to be affected are all bottom otter trawl fisheries, targeting redfish, Greenland halibut, cod, skates and shrimp. The primary official reasons for discarding in all of these métiers result from the bycatch to varying degrees of species with target or bycatch catch limits, or target species below minimum landing sizes. Unofficially, high-grading of target species such as cod and redfish (e.g. selecting for larger individuals) may also lead to discarding.

NEAFC métiers identified to potentially be affected by the EU landing obligation include bottom and mid-water trawl fisheries targeting small pelagic and demersal fish species. It is not anticipated that NEAFC métiers identified will be greatly impacted by inconsistency with the EU landing obligation. ICCAT measures limiting the retention and landing of bigeye, yellowfin and bluefin tunas and swordfish also apply within the area of NEAFC which overlaps with ICCAT. Whilst these species have been reported in observer data for some EU vessels, bycatch rates are very low for all three species.

Annex 1a Task 1 Inventory of measures relevant to the management of discards

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
Tuna RFMOs								
CCSBT								
Resolution on the Allocation of the Global Total Allowable Catch (agreed at the twenty-first Annual Meeting, 13-16 October 2014)	Sets out the allocation of TAC for Member and Cooperating Non-Members. The EU, which is a Cooperating Non-Member receives a TAC allocation of 10t, which applies to bycatch by EU vessels targeting species other than southern bluefin tuna (*Thunnus maccoyii)* in the convention areas of IOTC, WCPFC and ICCAT. This measure does not stipulate how bycatch exceeding the EU TAC allocation must be treated, i.e. it does not obligate EU vessels to discard any southern bluefin tuna at any time.	Y		X		IOTC_001	Y	N
IATTC								
IATTC C-04-05 (REV 2) Consolidated resolution on bycatch	This resolution includes a commitment on the: 1) reduction of the incidental mortality of juvenile tunas, including a condition for the full retention by purse seine of target species: bigeye (*Thunnus obesus*), skipjack *(Katsuwonus pelamis)* and yellowfin *(Thunnus albacares),* unless considered unfit for human consumption for reasons other than size or when there is insufficient well space remaining to accommodate all the tuna caught in that set; and, 2) requiring the release of non-target species (sharks, turtles, billfishes, etc.)	Y	X	X		IATTC_01 IATTC_02	Y	N
IATTC C-13-01 Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean During 2014-2016	This measure sets total annual catch limits for bigeye tuna caught by longline vessels by China, Japan, Korea and Chinese Taipei (54, 381 tonnes in total) and all other CPCs must ensure that the total annual catches of bigeye tuna by their longline vessels in the Convention Area during 2014-2016 do not exceed the greater of 500 metric tons or their respective catches of bigeye tuna in 2001.	Y	X	X		IATTC_01, IATTC_02	Y	N
ICCAT								
Rec. 2012-04 Recommendation by ICCAT to further	An annual limit of 2,000 t for blue marlin *(Makaira nigricans)* and 400 t for white marlin/spearfish *(Kajikia albidus/Tetrapturus angustirostris)* is	Y	X	X		ICCAT_01 to ICCAT_14	Y	N

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
strengthen the plan to rebuild blue marlin and white marlin stocks	established for these stocks, for 2013, 2014 and 2015.							
Rec. 2013-02 Recommendation by ICCAT for the conservation of North Atlantic swordfish	9. In order to protect small swordfish *(Xiphias gladius)*, CPCs shall take the necessary measures to prohibit the taking of and landing of swordfish in the entire Atlantic Ocean weighing less than 25 kg live weight, or in alternative, 125 cm lower jaw fork length (LJFL); however, the CPCs may grant tolerances to boats which have incidentally captured small fish, with the condition that this incidental catch shall not exceed 15 percent of the number of swordfish per landing of the total swordfish catch of said boats. 10. Notwithstanding the provisions of paragraph 10, any CPC may choose, as an alternative to the minimum size of 25 kg/ 125 cm LJFL, to take the necessary measures to prohibit the taking by its vessels in the Atlantic Ocean, as well as the landing and sale in its jurisdiction, of swordfish (and swordfish parts), less than 119 cm LJFL, or in the alternative 15 kg, provided that, if this alternative is chosen, no tolerance of swordfish smaller than 119 LJFL, or in the alternative 15 kg, shall be allowed. For swordfish that have been dressed, a cleithrum to keel (CK) measurement of 63cm can also be applied. A Party that chooses this alternative minimum size shall require appropriate record keeping of discards. The SCRS should continue to monitor and analyze the effects of this measure on the mortality of immature swordfish.	Y	X	X		All ICCAT métiers	Y	Y
Rec. 2013-03 Recommendation by ICCAT for the conservation of South Atlantic swordfish	A total allowable catch (TAC) shall be 15,000 t for North Atlantic swordfish for 2014, 2015 and 2016. Annual Catch limits of 4824 tonnes applies for EU.	Y	X	X		All ICCAT métiers except those operating in the Mediterranean Sea	Y	N
Rec. 2013-04 recommendation by ICCAT for management measures for Mediterranean swordfish in the framework of ICCAT	8. In order to protect small swordfish, CPCs shall take the necessary measures to prohibit the catching, retaining on board, transhipping, landing, transporting, storing, selling, displaying or offering for sale Mediterranean swordfish measuring less than 90 cm LJFL or, in alternative, weighing less than 10 kg of round weight or 9 kg of gilled and gutted weight, or 7.5 kg of dressed weight (gilled, gutted, fins off, part of head off). However, the CPCs may grant tolerances to vessels which have incidentally captured small fish below the minimum size, with the	Y	X	X		All ICCAT métiers	Y	N

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
	condition that this incidental catch shall not exceed: a) 10% by weight or/and number of pieces per landing of the total swordfish catch of said vessels (in 2012), b) 5% by weight or/and number of pieces per landing of the total swordfish catch of said vessels as from 2013.							
Rec. 2013-05 supplemental recommendation by ICCAT concerning the North Atlantic albacore rebuilding program	An annual Total Allowable Catch (TAC) of 28,000 t is established for 2014, 2015 and 2016.	Y	X	X		All ICCAT métiers	Y	N
Rec. 2013-06 Recommendation by ICCAT on the southern Albacore catch limits for the period 2014 to 2016	The annual Total Allowable Catch (TAC) for albacore *(Thunnus alalunga)* caught in the Atlantic Ocean South of 5ºN shall be 24,000 t for the period 2014 to 2016, this being the TAC that will permit the rebuilding of the stock with at least 50% probability by 2020.	Y	X	X		All ICCAT métiers	Y	N
Rec. 2014-01 Recommendation by ICCAT on a Multi-Annual Conservation and Management Program for Tropical Tunas	This measure sets an annual Total Allowable Catch (TAC) of 85,000 t for bigeye tuna. and of 110,000 t for yellowfin tuna for 2012 and subsequent years of the Multi-annual Program. 4. The Commission shall establish and maintain an ICCAT record of authorized tropical tuna vessels. Fishing vessels 20 meters LOA or greater not entered into this record are deemed not to be authorized to fish, retain on board, tranship, transport, transfer, process or land bigeye and/or yellowfin and/or skipjack tunas from the Convention area.	Y	X	X		All ICCAT métiers	Y	Y
Rec. 2014-04 Recommendation by ICCAT amending the recommendation 12-03 by ICCAT to establish a multi-annual recovery plan for bluefin tuna in the eastern Atlantic and Mediterranean	29. CPCs shall take the necessary measures to prohibit catching, retaining on board, transhipping, transferring, landing, transporting, storing, selling, displaying or offering for sale bluefin tuna *(Thunnus thynnus)* weighing less than 30 kg or with fork length less than 115cms. 30. By derogation of paragraph 29, a minimum size for bluefin tuna of 8 kg or 75cms fork length shall apply to the following situations in accordance with the procedures set out in Annex 1. 31. For catching vessels and traps fishing actively for bluefin tuna, an incidental catch of maximum 5% of bluefin tuna weighing between 8 and 30 kg or with fork length between 75-115 cm may be authorized. 32. Catching vessels not fishing actively for bluefin tuna are not authorized to retain at any time following each fishing operation, bluefin	Y	X	X		All ICCAT métiers	Y	Y

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
	tuna exceeding more than 5% of the total catch by weight or number of pieces. Number of pieces shall only apply to tuna and tuna-like species managed by ICCAT. This prohibition does not apply to CPCs whose domestic legislation requires that all dead fish be landed. 57. The Commission shall establish and maintain an ICCAT record of all catching vessels authorized to fish actively for bluefin tuna in the eastern Atlantic and Mediterranean Sea. 60. The Commission shall establish and maintain an ICCAT Record of all tuna traps authorized to fish for bluefin tuna in the eastern Atlantic and Mediterranean Sea. For the purposes of this recommendation, tuna traps not entered into the record are deemed not to be authorized to be used to fish for, retain, transfer or land bluefin tuna.							
IOTC								
IOTC Resolution 13/11 on a ban on discards of bigeye tuna, skipjack tuna, yellowfin tuna, and a recommendation for non-targeted species caught by purse seine vessels in the IOTC area of competence	This measure requires all purse seine vessels to retain on board and then land all bigeye tuna (*Thunnus obesus*), skipjack tuna *(Katsuwonus pelamis)*, and yellowfin tuna *(Thunnus albacares)* caught, except fish considered unfit for human consumption or where there is insufficient well space to accommodate all tuna (bigeye tuna, skipjack tuna or yellowfin tuna) in the fish wells.	Y	X			IOTC_004	Y	N
WCPFC								
CMM 13-01	This measure includes for bigeye tuna (*Thunnus obesus*) applicable only to longline vessels flagged to China, Indonesia, Japan, Korea, China Taipei and USA and instructions aimed to managing PS fishing activity.	Y	X	X		WCPFC_001 WCPFC_002	Y	N
Resolution 2005-03 Resolution on non-target species	Encourages vessels operating in fisheries managed under the WCPFC Convention to avoid to the extent practicable, the capture of all non-target fish species that are not to be retained. Any such non-target fish species that are not to be retained, shall, to the extent practicable, be promptly released to the water unharmed.	N	X		Y	WCPFC_001 WCPFC_002	Y	N

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
Non-tuna RFMOs								
CCAMLR								
CCAMLR CM 26-01 (2009) General environmental protection during fishing	Vessels fishing south of 60°S shall be prohibited from dumping or discharging: (i) offal (ii) discards. 'Discards' are defined as whole fish or other organisms returned to the sea dead or with low expectation of survival, as described in Observer Logbook L5 form; 'Offal' is defined as bait and by-products from the processing of fish and other organisms, including parts or sections of fish or organisms which are by-products of processing	Y	X[37]	X		All	Y	N
CCAMLR CM 32-02 Prohibition of directed fishing	Directed fishing for the following species blackfin icefish (*Chaenocephalus aceratus),* patagonian toothfish (*Dissostichus eliginoides),* toothfish *(Dissostichus spp.),* Carlberg's lanternfish (*Electrono carlsbergi),* humped rockfish (*Gobionothothen gibberifrons), Lepidonothen squamifrons,* marbled rockcod *(Notothenii rossii),* yellowfin notothen *(Patagonothen guntheri),* South Georgia icefish *(Pseudochaenichthys georgianus)* and for all other finfish is prohibited in the following subareas and divisions under various circumstances 48.1, 48.2, 48.3, 58.4.4.a, 58.4.4.b, 58.5.1, 58.5.2, 58.6, 58.7, 88.2 and 88.3	Y		X		All	Y	N
CCAMLR CM 41-04 Limits on the exploratory fishery for *Dissostichus* spp. in Statistical Subarea 48.6 in the 2013/14 season	The total catch of *Dissostichus* spp. in Statistical Subarea 48.6 in the 2013/14 season shall not exceed a precautionary catch limit of 538 tonnes.	Y		X		NA	Y	N

[37] South of 60°S CCAMLR Convention area

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
CCAMLR CM 41-05 Limits on the exploratory fishery for *Dissostichus* spp. in Statistical Division 58.4.2 in the 2013/14 season	The total catch of *Dissostichus* spp. in Statistical Division 58.4.2 in the 2013/14 season shall not exceed a precautionary catch limit of 35 tonnes	Y		X		CCAMLR_002	Y	N
CCAMLR CM 41-06 Limits on the exploratory fishery for *Dissostichus* spp. on Elan Bank (Statistical Division 58.4.3a) outside areas of national jurisdiction in the 2013/14 season.	Fishing for Dissostichus spp. on Elan Bank (Statistical Division 58.4.3a) outside areas of national jurisdiction shall be limited to the exploratory fishery by France and Japan. The fishery shall be conducted by one (1) French and one (1) Japanese flagged vessels using longlines only. The total catch of *Dissostichus* spp. on Elan Bank (Statistical Division 58.4.3a) outside areas of national jurisdiction in the 2013/14 season shall not exceed a precautionary catch limit of 32 tonnes.	Y		X		CCAMLR_001	Y	N
CCAMLR CM 41-07 (2013) Limits on the exploratory fishery for *Dissostichus* spp. on BANZARE Bank (Statistical Division 58.4.3b) outside areas of national jurisdiction in the 2013/14 season	The total catch of *Dissostichus* spp. on BANZARE Bank (Statistical Division 58.4.3b) outside areas of national jurisdiction in the 2013/14 season shall not exceed a precautionary catch limit of 0 tonnes.	Y		X		NA	Y	N
CCAMLR CM 41-11 (2013) Limits on the exploratory fishery for *Dissostichus* spp. in Statistical Division 58.4.1 in the 2013/14 season	Fishing for *Dissostichus* spp. in Statistical Division 58.4.1 shall be limited to the exploratory longline fishery by Japan and Spain and the total catch shall not exceed a precautionary catch limit of 724 tonnes. The by-catch in this fishery shall be regulated as set out in Conservation Measure 33-03	Y		X		CCAMLR_002	Y	N
CCAMLR CM 51-01 (2010) Precautionary catch limitations on *Euphausia superba* in Statistical Subareas 48.1, 48.2, 48.3 and 48.4	The total combined catch of *Euphausia superba* in Statistical Subareas 48.1, 48.2, 48.3 and 48.4 shall be limited to 5.61 million tonnes in any fishing season.	Y		X	X	CCAMLR_003	Y	N

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
CCAMLR CM 51-02 (2008) and CM 51-03 (2008) setting Precautionary catch limitation on *Euphausia superba* in Statistical Divisions 58.4.1 and 58.4.2	The total catch of *Euphausia superba* shall be limited to 2.645 million tonnes in any fishing season in Statistical Division 58.4.1 and 440 000 tonnes in any fishing season in Statistical Division 58.4.2	Y		X		NA	Y	N
CCAMLR CM 51-04 (2013) General measure for exploratory fisheries for *Euphausia superba* in the Convention Area in the 2013/14 season	Unless otherwise specified, the catch limit for krill shall be 15 000 tonnes in any statistical subarea or division.	Y	X			NA	Y	N
CCAMLR CM 51-07 (2011) Interim distribution of the trigger level in the fishery for *Euphausia superba* in Statistical Subareas 48.1, 48.2, 48.3 and 48.4	Sets trigger levels for the distribution of krill catches amongst subareas 48.1, 48.2, 48.3, and 48.4 at 25%, 45%, 45% and 15% of the total catch limit.	Y			X	X	Y	N
NEAFC								
NEAFC Recommendation XVI: 2010 of 1 February 2010 on a discard ban which has entered into force on 3 March 2010.	Each Contracting Party shall ensure that its fishing vessels operating in the NEAFC Regulatory Area are prohibited from discarding or releasing catches of any of the species listed in Annex I A) of the Scheme of Control and Enforcement, i.e. Redfish (*Sebastes* spp.), Norwegian Spring Spawning Herring (*Claupea harengus*), Blue whiting (*Micromesistius poutassou)*, Mackerel (*Scombridae* spp.) and Haddock *(Melanogrammus aeglefinus).*	N		X (NEAFC Regulatory Area)		NEAFC_001, NEAFC_002, NEAFC_003	Y	N
NEAFC Recommendation 8: 2015 of 6 February 2015 on Spurdogs, which has entered into force on 6 February 2015 and is applicable until 31 December 2016.	Each Contracting Party shall prohibit all directed fishing of Spurdog (*Squalus* spp.) in the NEAFC Regulatory Area by vessels flying its flag. Any incidental catches of this resource shall be promptly released unharmed, to the extent possible. Contracting Parties shall submit to ICES all available data on Spurdog, including data on discarding.	Y		X (NEAFC Regulatory Area)		NEAFC_001, NEAFC_002, NEAFC_003	Y	N

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
NEAFC Recommendation 7: 2015 of 6 February 2015 on Porbeagles, which has entered into force on 6 February 2015 and is applicable until 31 December 2016.	Each Contracting Party shall, from 2012 to 2014, prohibit all directed fishing of Porbeagle *(Lamna nasus)* in the NEAFC Regulatory Area by vessels flying its flag. Any incidental catches of this resource shall be promptly released unharmed, to the extent possible. Contracting Parties shall submit to ICES all available data on Porbeagle.	Y		X (NEAFC Regulatory Area)		NEAFC_001, NEAFC_002, NEAFC_003	Y	N
ICCAT Rec. 13-02, 14-01 and 14-04	See details of each Recommendation above.	Y		X (ICCAT Convention area)		NEAFC_001, NEAFC_002, NEAFC_003	Y	Y
NAFO								
NAFO Conservation and Enforcement Measures 2014 (NCEM, 2014*). Article 5.- Catch and Effort Limitations	All stocks identified in Annex I.A or I.B of the NCEM are managed by TACs and quotas with the exception of Northern shrimp (*Pandalus borealis)* stock in NAFO Division 3M, in which management is carried out by effort allocation (number of fishing days).	Y		X (NAFO Regulatory Area)		NAFO_001_COD, NAFO_001_RED, NAFO_001_GLH, NAFO_002, NAFO_003	Y	Y
NAFO Conservation and Enforcement Measures 2014 (NCEM, 2014). Article 6.- Bycatch Retention on Board of Stocks Identified in Annex I.A as Bycatch When No Directed Fishery is Permitted	Each Contracting Party shall ensure that its vessels minimise bycatch of species from stock identified in Annex I. A while operating in the Regulatory Area. A species shall be classified as bycatch when no quota has been allocated, a ban on fishing for a particular stock is in force (moratoria); or the "Others" quota for a particular stock has been fully utilized.	Y		X (NAFO Regulatory Area)		NAFO_001_COD, NAFO_001_RED, NAFO_001_GLH, NAFO_002, NAFO_003	Y	Y
NAFO Conservation and Enforcement Measures 2014 (NCEM, 2014). Article 14 - Minimum Fish Size Requirements	No vessel shall retain on board any fish smaller than the minimum size established in accordance with Article 14 (NCEM, 2014), which it shall immediately return to the sea.	Y		X (NAFO Regulatory Area)		NAFO_001_COD, NAFO_001_RED, NAFO_001_GLH, NAFO_002, NAFO_003	Y	Y

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
SPRFMO								
CMM 3.01 Conservation and Management Measure for *Trachurus murphyi*	Only fishing vessels duly authorized pursuant to Article 25 of the Convention and in accordance with CMM 2.05 (2014) that are flagged to Members and Cooperating Non-Contracting Parties (CNCPs) shall participate in the fishery for Chilean jack mackerel (*Trachurus murphyi)* in the Convention Area. The total catch of *Trachurus murphyi* in the area to which this CMM applies in accordance with paragraph 1 shall be limited to 410 000 tonnes. Members and CNCPs are to share in this total catch in the tonnages. Members or CNCPs shall close the fishery for its flagged vessels when the total catch of its flagged vessels is equivalent to 100% of its catch.	Y		X (SPRFMO convention area)		SPRFMO_001	Y	N
SFPAs								
Morocco								
EU-Morocco Fishing Agreement . Bycatch limitation. Fishing Category n.2: Small-scale fishing/north	This measure defines, *inter alia*, a bycatch limitation of 0% swordfish (*Xiphias gladius)* and pelagic sharks	Y			X	MOR_001	Y	N

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
Greenland								
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 5(2)	Ban on discards; subject to exceptions included in section 4 and 5 (1) all catch shall be kept on board and landed.	Y	X		X	All	Y	N
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 4(1)	Derogation for halibut (*Hippoglossus* spp.) (non-trawls); any Halibut taken as a bycatch with any other equipment aside from trawls shall be returned to the sea, as far as possible in live condition.	Y	X		X	NA	Y	N
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 4(2)	Derogation for male (<MLS) and female crabs; Male crabs that are smalller than the minimum size along with female crabs shall be returned to the sea, as far as possible in live condition.	Y	X		X	All	Y	N
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 4(4)	Derogation for pound net bycatch (<MLS); Undersized fish caught during pound net fishing shall be returned to the sea, as far as possible in live condition.	Y	X		X	NA	Y	N
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 13(2)	Derogation for shrimp trawlers; The Gov of Greenland is entitled to grant derogations from the discard ban until shrimp trawlers are authorised to acquire facilities for processing fish onboard a shrimp trawler.	Y	X		X	GL_003, GL_004	Y	N
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 5(1)	Derogation for fish damaged during processing ('unmarketable discards'); Any catch damaged during processing onboard may be thrown overboard as "unmarketable discards", these are collected and weighed in the logbook prior to discard.	Y	X		X	All	Y	N
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 13(1)	Derogation for experimental fishing; for licences for experimental fishing the Gov of Greenland may grant derogations from the minimum sizes and bycatch restrictions	Y	X		X	NA	Y	N

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
Multilateral agreements								
Agenda 21, Rio World Summit (1992)	Agenda 21 is a non-binding, voluntarily implemented action plan of the United Nations with regard to sustainable development. With regards to discarding and bycatch in fisheries, the agreement has three relevant paragraphs in Chapter 17: • Paragraph 17.46(c): minimize waste in the catch of target species and minimize bycatch of non-target species; • Paragraph 17.50: minimize incidental catch; and • Paragraph 17.55: take measures to reduce discards. These non-binding measures encourage the implementation of sustainable fisheries management with minimal ecological impact, but do not mandate any particular management approach.	N	X				Y	N
FAO Guidelines (various)	Under the FAO the following agreements have been adopted; • Code of Conduct for Responsible Fisheries; • FAO Agreement to promote compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas; and • Port State Measures. The relevance of these agreements is purely advisory and includes States' responsibilities to minimise discards of non-target species, both fish and non-fish species, enhance selectivity of gears and techniques and to collect sufficient discards data to be adequate for stock assessment purposes.	N	X				Y	N
FAO International Guidelines on Bycatch Management and Reduction of Discards (2011)	These guidelines include the identification of key management considerations and measures necessary to ensure the conservation of target and non-target species, as well as affected habitats. They are voluntary and constitute an instrument of reference to help States and RFMO/As in formulating and implementing appropriate measures for the management of bycatch and reduction of discards in all fisheries and regions of the world.	N	X				Y	N
FAO International Plan of Action for the conservation and Management of Sharks (1999)	The aim of the IPOA-Sharks is to "minimize unutilized incidental catches of sharks; minimize waste and discards from shark catches in (for example, requiring the retention of sharks from which fins are removed);	N	X				Y	N

International measure	Short description	Binding (Y/N)	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
	and encourage full use of dead shark."							
FAO International Plan of Action for the Management of Fishing Capacity (1999)	The management of fishing capacity should be based on the Code of Conduct for Responsible Fisheries and should: "achieve the conservation and sustainable use of fish stocks and the protection of the marine environment consistent with the precautionary approach, the need to minimize bycatch, waste and discard and ensure selective and environmentally safe fishing practices".	N	X				Y	N
FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (2001)	Voluntary instrument that applies to all States and entities and to all fishers, for use in dealing with IUU fishing in its various manifestations (including discards). These measures focus on all State responsibilities, flag State responsibilities, coastal State measures, port State measures, internationally agreed market-related measures, research and regional fisheries management organizations.	N	X				Y	N
Regional Seas Conventions (RSCs)	The UNEP Regional Seas Programmes function through action plans and within 12 of the regional programmes the Parties have adopted a convention setting out what governments must do to implement their Action Plan. This includes 4 European Regional Sea Conventions. The action plan objective most relevant to discarding and bycatch is: “Endeavor to effectively apply an ecosystem approach in the management of the marine and coastal environment in order to protect and restore the health, productivity and resilience of oceans and marine ecosystems, and to maintain their biodiversity, enabling their conservation and sustainable use for present and future generations”.	Y	X				Y	N

Annex 1b Task 1 Inventory of measures relevant to the management of bycatch

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
Tuna RFMOs								
IATTC								
IATTC C-05-03 Resolution on the conservation of sharks caught in association with fisheries in the eastern Pacific Ocean	CPCs should establish and implement a national plan of action for conservation and management of shark stocks, in accordance with the FAO IPOA-Sharks. This includes, *inter alia*, that CPCs shall encourage the release of live sharks, especially juveniles, to the extent practicable, that are caught incidentally and are not used for food and/or subsistence.	Y	X	X		IATTC_01 IATTC_02	N	N
IATTC C-11-10 Resolution on the conservation of oceanic whitetip sharks caught in association with fisheries in the Antigua convention area	CPCs shall prohibit retaining onboard, transhipping, landing, storing, selling, or offering for sale any part or whole carcass of oceanic whitetip sharks *(Carcharhinus longimanus)* in the fisheries covered by the Antigua Convention. CPCs shall require vessels flying their flag to promptly release unharmed, to the extent practicable, whitetip sharks when brought alongside the vessel	Y	X	X		IATTC_01 IATTC_02	N	N
IATTC C-13-04 Collection and analyses of data on fish-aggregating devices	This measure provides principles for the design of non-entangling FADs. It also states that CPCs shall prohibit their flag vessels from setting a purse seine on a school of tuna associated with a live whale shark (*Rhincodon typus)*, if the animal is sighted prior to the commencement of the set. CPCs shall require that, in the event that a whale shark is not deliberately encircled in the purse seine net, the master of the vessel shall ensure that all reasonable steps are taken to ensure its safe release	Y	X	X		IATTC_02	N	N
IATTC C-04-07 Resolution on a three year program to mitigate the impact of tuna fishing on sea turtles	This resolution puts in place a three year program with the following main objectives: a) collection and analysis of all available information on interactions with sea turtles ;b) mitigation measures for reducing sea turtle bycatch; c) industry education; d) capacity building in coastal developing countries; and, e) reporting.	Y	X	X		IATTC_01 IATTC_02	N	N
IATTC C-07-03 Resolution to mitigate the impact of tuna fishing vessels on sea turtles	This measures includes instructions aimed at reducing interactions with turtles and reducing their mortality due to bycatch	Y	X	X		IATTC_01 IATTC_02	N	N
IATTC C-11-02 Resolution to mitigate the	This measures includes instructions aimed at reducing interactions with	Y	X	X		IATTC_01	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
impact on seabirds of fishing for species covered by the IATTC.	seabirds and reducing their mortality due to bycatch							
IOTC								
IOTC Resolution 12/04 on the conservation of marine turtles	CPCs shall require fishermen on vessels targeting species covered by the IOTC Agreement to bring aboard, if practicable, any captured marine turtle that is comatose or inactive as soon as possible and foster its recovery, including aiding in its resuscitation, before safely returning it to the water	Y	X			IOTC_001 IOTC_002 IOTC_003 IOTC_004	N	N
IOTC Resolution 12/09 on the conservation of thresher sharks (Alopiidae) caught in association with fisheries in the IOTC area of competence	Fishing Vessels flying the flag of an IOTC Member or Cooperating Non-Contracting Party (CPCs) are prohibited from retaining on board, transhipping, landing, toring, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family *Alopiidae.*	Y	X			IOTC_001 IOTC_002 IOTC_003 IOTC_004	N	N
IOTC Resolution 13/04 on the conservation of cetaceans	CPCs shall prohibit their flagged vessels from intentionally setting a purse seine net round a cetacean in the IOTC area of competence, if the animal is sighted prior to the commencement of the set	Y	X			IOTC_004	N	N
IOTC Resolution 13/05 on the conservation of whale sharks (*Rhincodon typus*)	CPCs shall prohibit their flagged vessels from intentionally setting a purse seine net round a whale shark *(Rhincodon typus)* in the IOTC area of competence, if it is sighted prior to the commencement of the set	Y	X			IOTC_004	N	N
IOTC Resolution 13/06 on a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries	CPCs shall prohibit, as an interim pilot measure, all fishing vessels flying their flag and on the IOTC Record of Authorised Vessels, or authorised to fish for tuna or tuna-like species managed by the IOTC on the high seas to retain onboard, tranship, land or store any part or whole carcass of oceanic whitetip sharks *(Carcharhinus longimanus).*	Y	X			IOTC_001 IOTC_002 IOTC_003 IOTC_004	N	N
ICCAT								
Rec. 2009-07 - Recommendation by ICCAT on the conservation of thresher sharks caught in association with fisheries in the ICCAT convention area	CPCs shall prohibit, retaining onboard, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of bigeye thresher sharks (Alopias superciliosus) in any fishery with exception of a Mexican small-scale coastal fishery with a catch of less than 110 fish. CPCs shall require vessels flying their flag to promptly release unharmed, to the extent practicable, bigeye thresher sharks when brought along side for taking on	Y	X			ICCAT_01 to ICCAT_14	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
	board the vessel							
Rec. 2010-07 Recommendation by ICCAT on the conservation of oceanic whitetip shark caught in association with fisheries in the ICCAT convention area	CPCs shall prohibit retaining onboard, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of oceanic whitetip sharks (Carcharhinus longimanus) in any fishery.	Y	X			ICCAT_01 to ICCAT_14	N	N
Rec. 2010-08 Recommendation by ICCAT on hammerhead sharks (family Sphyrnidae) caught in association with fisheries managed by ICCAT	CPCs shall prohibit retaining onboard, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of hammerhead sharks of the family Sphyrnidae (except for the bonnethead shark, Sphyrna tiburo), taken in the Convention area in association with ICCAT fisheries. CPCs shall require vessels flying their flag, to promptly release unharmed, to the extent practicable, hammerhead sharks when brought alongside the vessel	Y	X			ICCAT_01 to ICCAT_14	N	N
Rec. 2011-08 Recommendation by ICCAT on the Conservation of Silky Sharks Caught in Association with ICCAT Fisheries	CPCs shall require fishing vessels flying their flag and operating in ICCAT managed fisheries to release all silky sharks (Carcharhinus falciformis) whether dead or alive, and prohibit retaining on board, transshipping, or landing any part or whole carcass of silky shark	Y	X			ICCAT_01 to ICCAT_14	N	N
Rec. 2004-10 Recommendation by ICCAT concerning the conservation of sharks caught in association with fisheries managed by ICCAT	CPCs shall take the necessary measures to require that their fishermen fully utilize their entire catches of sharks. Full utilization is defined as retention by the fishing vessel of all parts of the shark excepting head, gutand skins, to the point of first landing	Y	X			ICCAT_01 to ICCAT_14	N	N
Rec. 2007-07 Recommendation by ICCAT on Reducing Incidental Bycatch of Seabirds in Longline Fisheries	CPCs shall seek to achieve reductions in levels of seabird bycatch across all fishing areas, seasons and fisheries, through the use of effective mitigation measures	Y	X			ICCAT_01 to ICCAT_14	N	N
Rec. 2010-09 Recommendation by ICCAT on the bycatch of sea turtles in ICCAT fisheries	This measures includes instructions aimed at reducing interactions with turtles and reducing their mortality due to bycatch	Y	X			ICCAT_01 to ICCAT_14	N	N
WCPFC								
CMM 2007-04 Conservation and Management Measure to Mitigate the Impact of Fishing for Highly Migratory Fish Stocks on Seabirds	CCMs shall, to the extent possible, implement the FAO IPOA-Seabirds	Y	X	X		WCPFC_001	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
CMM 2008-03 Conservation and Management of Sea Turtles	Commission Members, Cooperating non-Members and participating Territories (CCMs) will implement, as appropriate the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations and to ensure the safe handling of all captured sea turtles	Y	X	X		WCPFC_001 WCPFC_002	N	N
CMM 2009-02 Conservation and management measure on the application of high seas FAD closures and catch retention	The objectives of this measure is to ensure consistent and robust application of FAD closures and catch retention in the high seas between through the specification of minimum standards. Also, to apply high standards to the application of the FAD closure and catch retention in order to remove any possibility for the targeting of aggregated fish, or the discard of small fish. The measure provides an exception to allow the discarding of fish if unfit for human consumption or when there is insufficient well space to accommodate all fish caught in that set	Y	X	X		WCPFC_002	N	N
CMM2010-07 Conservation and Management Measure for Sharks	CMMs shall implement FAO IPOA-Sharks, and report on its implementation	Y	X	X		WCPFC_001 WCPFC_002	N	N
CMM 2011-03 Conservation and Management Measure to Address the Impact of Purse Seine Activity on Cetaceans	CCMs shall prohibit their flagged vessels from setting a purse seine net on a school of tuna associated with a cetacean in the high seas and exclusive economic zones of the Convention Area, if the animal is sighted prior to commencement of the set	Y	X	X		WCPFC_002	N	N
CMM 2011-04 Conservation and Management Measure for Oceanic Whitetip Sharks	This CMM prohibits the retention, transhipment or storing of oceanic whitetip sharks *(Carcharhinus longimanus)* on fishing vessels. It also requires all vessels to record interactions with this species and the prompt release of this fish caught as soon as possible, and in a manner that results in as little harm to the shark as possible	Y	X	X		WCPFC_001 WCPFC_002	N	N
CMM 2012-04 Conservation and Management Measure for protection of Whale Sharks from Purse Seiner Fishing Operations	This CMM prohibits purse seine sets on a school of tuna associated with a whale shark *(Rhincodon typus)* if the animal is sighted prior to the commencement of the set. It also requires all vessels, in the case of a whale shark is not deliberately encircled, to ensure that all reasonable actions are carried out to ensure its safe release and to record interactions with this species in the logbooks and the authority of the flag State	Y	X	X		WCPFC_001 WCPFC_002	N	N
CMM 2012-07 Conservation and Management Measure for Mitigating Impacts of Fishing on Seabirds	This measures includes instructions aimed at reducing interactions with seabirds and reducing their mortality due to bycatch	Y	X	X		WCPFC_001	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
CMM 13-08 Conservation and Management Measure for Silky Sharks	CMMs shall prohibit vessels flying their flag from retaining on board, transhipping, storing on a fishing vessel, or landing any silky shark *(Carcharhinus falciformis)* caught in the Convention Area, in whole or in part, in the fisheries covered by the Convention	Y	X	X		WCPFC_001	N	N
CCSBT								
Recommendation to Mitigate the Impact on Ecologically Related Species of Fishing for Southern bluefin Tuna	Implement the International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries (IPOA-Seabirds), the International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks), and the FAO Guidelines to reduce sea turtle mortality in fishing operations (FAO-Sea turtles)	N	X			n/a	N	N
CCSBT standards to be applied by members and non-members	Mandatory use of Tori poles is required by all Members in all longline SBT fisheries below 30o south	Y	X			n/a	N	N
Non-tuna RFMOs								
CCAMLR								
CCAMLR CM 25-02 (2009) Minimisation of the incidental mortality of seabirds in the course of longline fishing or longline fishing research in the Convention Area	Measures stipulated to minimise interactions with seabirds during longline fishing including line weighting requirements, night setting, prohibition of the dumping of offal during setting, use of streamer lines and use of Bird Exclusion Devices (BED).	Y	X			CCAMLR_001, CCAMLR_002	N	N
CCAMLR CM 25-03 (2011) Minimisation of the incidental mortality of seabirds and marine mammals in the course of trawl fishing in the Convention Area	Measures stipulated to minimise interaction with seabirds and mammals during trawling, including reduced illumination, prohibition of discharge of offal and discards during the shooting and hauling of trawl gear, washing of nets prior to shooting, use of gear configuration to minimise period of time net is on the surface of the water.	Y	X			CCAMLR_003	N	N
CCAMLR Conservation Measure 32-18 (2006) Conservation of sharks	Any bycatch of shark, especially juveniles and gravid females, taken accidentally in other fisheries, shall, as far as possible, be released alive	Y	X			All	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
CCAMLR CM 33-01 (1995) Limitation of the bycatch of *Gobionotothen gibberifrons*, *Chaenocephalus aceratus*, *Pseudochaenichthys georgianus*, *Notothenia rossii* and *Lepidonotothen squamifrons* in Statistical Subarea 48.3	In any directed fishery in Statistical Subarea 48.3 in any fishing season, the bycatch of humped rockfish (*Gobionotothen gibberifrons)* shall not exceed 1 470 tonnes; the bycatch of blackfin icefish (*Chaenocephalus aceratus)* shall not exceed 2 200 tonnes; and the bycatch of South Georgia icefish (*Pseudochaenichthys georgianus)*, marbled rockcod (*Notothenia rossii)* and *Lepidonotothen squamifrons* shall not exceed 300 tonnes each	Y			X	None	N	N
CCAMLR CM 33-02 (2013) Limitation of bycatch in Statistical Division 58.5.2 in the 2013/14 season	In directed fisheries in Statistical Division 58.5.2 in the 2013/14 season, the bycatch of unicorn icefish (*Channichthys rhinoceratus)* shall not exceed 150 tonnes, the bycatch of *Lepidonotothen squamifrons* shall not exceed 80 tonnes, the bycatch of grenadiers (*Macrourus* spp.) shall not exceed 360 tonnes and the bycatch of skates and rays shall not exceed 120 tonnes. For the purposes of this measure, *Macrourus* spp. and 'skates and rays' should each be counted as a single species	Y			X	None	N	N
CCAMLR CM 33-03 (2013) Limitation of bycatch in new and exploratory fisheries in the 2013/14 season	Bycatch limits are in place in relevant SSRUs for skates and rays at 5% of the catch limit of toothfish (*Dissostichus* spp.) or 50 tonnes, whichever is greater; for grenadiers (*Macrourus* spp.) at 16% of the catch limit for *Dissostichus* spp. or 20 tonnes, whichever is greater; and all other species combined 20 tonnes. Move-on rules apply If the bycatch of any one species is => 1 tonne in any one haul or set.	Y		X		CCAMLR_001, 002	N	N
CCAMLR CM 41-02 Limits on the fishery for *Dissostichus eleginoides* in Statistical Subarea 48.3 in the 2013/14 and 2014/15 seasons	The bycatch of finfish shall not exceed 120 tonnes for skates and rays and 120 tonnes for grenadiers (*Macrourus* spp) in each season. For the purpose of these bycatch limits, '*Macrourus* spp.' and 'skates and rays' shall each be counted as a single species. Move-on rules apply If the bycatch of any one species is => 1 tonne in any one haul or set.	Y			X	NA	N	N
CCAMLR CM 41-03 Limits on the fishery for *Dissostichus* spp. in Statistical Subarea 48.4 in the 2013/14 season	The bycatch of finfish shall not exceed 3.5 tonnes for skates and rays and 11 tonnes for grenadiers (*Macrourus* spp.) Move-on rules apply If the catch of skates and rays exceeds 5% or the catch of *Macrourus* spp. reaches 150 kg and exceeds 16% of the catch of toothfish (*Dissostichus* spp.) in any one haul or set. For the purpose of these bycatch limits, '*Macrourus* spp.' and 'skates and rays' shall each be counted as a single species.	Y			X	NA	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
CCAMLR CM 41-08 Limits on the fishery for *Dissostichus eleginoides* in Statistical Division 58.5.2 in the 2013/14 season.	Fishing shall cease if the bycatch of any species reaches its bycatch limit as set out in Conservation Measure 33-02.	Y			X	NA	N	N
CCAMLR CM 41-09 Limits on the exploratory fishery for *Dissostichus* spp. in Statistical Subarea 88.1 in the 2013/14 season	The total bycatch in Statistical Subarea 88.1 in the 2013/14 season shall not exceed a precautionary catch limit of 152 tonnes of skates and rays, and 430 tonnes of grenadiers (*Macrourus* spp.) Within these total bycatch limits, individual limits apply within SSRUs within 88.1.	Y		X		NA	N	N
CCAMLR CM 41-10 Limits on the exploratory fishery for *Dissostichus* spp. in Statistical Subarea 88.2 in the 2013/14 season	The total bycatch in Statistical Subarea 88.2 in the 2013/14 season shall not exceed a precautionary catch limit of 50 tonnes of skates and rays, and 62 tonnes of grenadiers (*Macrourus* spp.) Within these total bycatch limits, individual limits apply within SSRUs.	Y		X		NA	N	N
CCAMLR CM 42-01 Limits on the Fishery for *Champsocephalus gunnari* in Statistical Subarea 48.3 in the 2013/14 season	If bycatch in any one haul of any of the species named in CM 33-01 is >100 kg and exceeds 5% of the total catch of all fish by weight, or is ≥ 2 tonnes, then the fishing vessel shall move to another location at least 5 n miles distant. Vessels shall use net binding and consider adding weight to the codend to reduce seabird captures during shooting operations. Should any vessel catch a total of 20 seabirds, it shall cease fishing and shall be excluded from further participation in the fishery in the 2013/14 season.	Y			X	NA	N	N
CCAMLR CM 42-02 Limits on the fishery for *Champsocephalus gunnari* in Statistical Division 58.5.2 in the 2013/14 season	Fishing shall cease if the bycatch of any species reaches its bycatch limit as set out in Conservation Measure 33-02.	Y			X	NA	N	N
Resolution 22/XXV International actions to reduce the incidental mortality of seabirds arising from fishing	CCAMLR invites listed RFMOs (IATTC, ICCAT, SEAFO, IOTC, CCSBT, CPPS, SWIOFC, WCPFC, WIOTC, SIOFA), consistent with the FAO's Code of Conduct for Responsible Fisheries and the IPOA-Seabirds, to implement or develop, as appropriate, mechanisms to require the collection, reporting and dissemination of annual data on seabird incidental mortality.	N	NA			NA	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
NEAFC								
NEAFC Recommendation 4:2012 of 3 January 2012 on Basking Sharks, which has entered into force on 3 February 2012 and is applicable until 31 December 2014.	As an interim measure, pursuant to Article 5 and 6 of the Convention on Future Multilateral Cooperation in the North East Atlantic Fisheries, Contracting Parties have agreed that no directed fishery for basking shark *(Cetorhinus maximus)* shall be undertaken in the Convention Area from 2012 to 2014. Contracting Parties are urged to make available all data on basking shark, including fisheries data, available to ICES for further evaluation of the state of the resource.	Y		X (NEAFC Regulatory Area)		NEAFC_001, NEAFC_002, NEAFC_003	Y	N
NEAFC Recommendation 4: 2014 on the Management of Roundnose Grenadier of 10 December 2013 and in force from 4 April 2014 until 31 December 2014.	This establishes a TAC for 2014. Contracting Parties shall submit all data on the relevant fishery to ICES, including catches, bycatch, discards and activity information.	N		X (NEAFC Regulatory Area)		NEAFC_001, NEAFC_002, NEAFC_003	N	N
Amended NEAFC Recommendation 1: 2014 on Redfish in ICES I and II of 18 November 2013, which has entered into force on 25 February 2014 and is applicable until 31 December 2014.	Amongst other conditions this sets out a limitation of 1% on bycatch of pelagic redfish (*Sebastes mentella*) on board in other non-target fisheries in ICES Sub-areas I and II shall be applied. All bycatch shall be properly documented and reported.	Y		X (ICES subareas I and II)		NEAFC_001, NEAFC_002, NEAFC_003	N	N
NAFO								
NAFO Conservation and Enforcement Measures 2014 (NCEM, 2014). Article 12.- Conservation and Management of Sharks	The article puts in place specific conservation and management measures for shark stating that up to the point of offloading, no fishing vessel shall discard any part of shark retained on board except the head, guts or skin.	Y		X (NAFO Regulatory Area)		NAFO_001_COD, NAFO_001_RED, NAFO_001_GLH, NAFO_002, NAFO_003	N	N
SFPAs								
Morocco								

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
EU-Morocco Fishing Agreement . Bycatch limitation. Fishing Category n.3: Small-scale fishing/south	This measure defines, *inter alia*, a bycatch limitation of 0% cephalopods and crustaceans, and 5% of other demersal species	Y			X	MOR_002	N	N
EU-Morocco Fishing Agreement . Bycatch limitation. Category no.4. Demersal fishing (trawlers)	This measure defines, *inter alia*, a bycatch limitation of 0% of cephalopods and crustaceans, and 5% of deep-sea sharks	Y			X	MOR_003	N	N
EU-Morocco Fishing Agreement. Bycatch limitation. Category no.4. Demersal fishing (longliners)	This measure defines, *inter alia*, a bycatch limitation of 0% of cephalopods and crustaceans, and 5% of deep-sea sharks.	Y			X	MOR_004	N	N
EU-Morocco Fishing Agreement. Bycatch limitation. Category no.6. Industrial pelagic fishing	This measure defines, *inter alia*, a bycatch limitation of a maximum of 2 % of other species. The list of permitted bycatch species is stipulated by the Moroccan regulations on 'small pelagic fisheries in the South Atlantic.	Y			X	MOR-005	N	
Mauritania								
EU-Mauritania Fishing Agreement . Minimum size and bycatch. Fishing Category n.1: Crustacean fishing vessels.	This measure defines, *inter alia*, a bycatch limitation of 15% fish, 10% bs, and 8% cephalopods. Spiny lobsters (*Palinuridae* spp.) are a prohibited bycatch species. Minimum sizes: deep water rose shrimp *(Parapenaeus longirostris)*: 6cm; southern pink shrimp *(Penaeus notialis)* and Caramote prawn *(Penaeus kerathurus)*: 200 ind/kg.	Y			X	MAU_001	N	N
EU-Mauritania Fishing Agreement . Minimum size and bycatch. Fishing Category n.2: Black hake trawlers.	This measure defines, *inter alia*, a bycatch limitation of fish at 25% (trawlers) and 50% (longliners). Cephalopods and crustaceans are also prohibited bycatch species Minimum sizes established for 25 species of fish, 4 species of cephalopods and 6 species of crustaceans	Y			X	MAU_002	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
EU-Mauritania Fishing Agreement. Minimum size and bycatch. Fishing Category n.2: Black hake bottom longliners	This measure defines, *inter alia*, a bycatch limitation of fish at 50%. Cephalopods and crustaceans are also prohibited bycatch species. Minimum sizes established for 25 species of fish, 4 species of cephalopods and 6 species of crustaceans.	Y			X	MAU_003	N	N
EU-Mauritania Fishing Agreement . Minimum size and bycatch. Fishing Category n.3: Vessels fishing for demersal species other than hake with gear other than trawls	This measure defines, *inter alia*, a bycatch limitation of 10% of the target species or group of species (live weight) Minimum sizes established for 25 species of fish, 4 species of cephalopods and 6 species of crustaceans	Y			X	MAU_004	N	N
EU-Mauritania Fishing Agreement . Minimum size and bycatch. Fishing Categories n.7 and 8: Pelagic Freezer Trawlers and non freezer pelagic trawlers.	This measure defines, *inter alia*, a bycatch limitation of 3% of the total for the target species or group of species (live weight). Cephalopods (except squid) and crustaceans are prohibited bycatch species Minimum sizes established for 25 species of fish, 4 species of cephalopods and 6 species of crustaceans	Y			X	MAU_005	N	N
EU-Mauritania Fishing Agreement . Minimum size and bycatch. Fishing Category n.4: Crabs	This measure prohibits the bycatch of fish, cephalopods and crustaceans other than the target species Minimum sizes established for 6 crustacean species.	Y			X	MAU_006	N	N
Guinea-Bissau								
EU-Guinea-Bissau Fishing Agreement. Bycatch limitation. Fishing Category n.2: Shrimper trawlers	There is a bycatch limitation of 50% cephalopod and fish by fishing trip	Y			X	GBIS_001	N	N
EU-Guinea-Bissau Fishing Agreement . Bycatch limitation. Fishing Category n.1: Freezer (cephalopods and finfish) trawlers	There is a bycatch limitation of 9% crustaceans and 9% cephalopods by fishing trip (for finfish trawlers) and 9% crustaceans (for cephalopod trawlers)	Y			X	GBIS_002	N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
Greenland								
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 6 – 11: Change of fishing grounds in the event of bycatch	For fishing operations other than pound nets and crab pots, a move-on rule of 5 nautical miles applies if bycatch is >10% of total catch per haul, unless >60 hours has passed or trawl grates/panels have been installed. This move-on rule applies to shrimp fishing if bycatch >5% of the total catch per haul. Bycatch of halibut shall not exceed 5 tons rounded weight within 1 voyage. Bycatch onboard vessels with processing permission shall not be >10% of the total catch of the vessel after 10 24 hr period and after 4 24hr periods for vessels without processing permission. When the quota for a species has been exhausted, its bycatch must not be >5% in other fishing operations within the quota area, unless permitted by the ship owners licence due to international agreements.	Y	X		X		N	N
Government of Greenland Executive Order No. 14 of 6 December 2011 on Fishing Bycatch; Article 12: Closing an area (1)	The Ministry of Fisheries Hunting and Agriculture shall be entitled to close a marine area to fishing with certain gears if bycatch recorded in the area are too large. A closed area may be reopened when supervised fishing in the area indicates bycatch regulations are no longer violated.	Y	X		X		N	N
Multilateral agreements								
Convention on the Conservation of Migratory Species of Wild Animals (CMS)	The Convention on the Conservation of Migratory Species of Wild Animals (also known as the Bonn Convention) aims to conserve terrestrial, marine and avian migratory species throughout their range. The instruments of this treaty lay a legal foundation for internationally coordinated conservation measures throughout any animals' migratory range. With regards to discarding and bycatch in fisheries, the CMS list several species in its appendices that are caught as target catch or bycatch in one or more fisheries worldwide. However the text does not prescribe nor recommend management measures.	Y	X				N	N
Rome Declaration on Illegal, Unreported and Unregulated Fishing (2005)	This declaration reiterates the need to implement the measures adopted in the IPOA-IUU (i.e.: review of national legislation, implementation of internationally agreed boarding, inspection procedures and vessel	N	X				N	N

International measure	Short description	Binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Métier ID #	Relevant to EU landing obligation?	Incompatible with EU landing obligations?
	markings. It also called for the adoption of new actions such as exchange of VMS and observer data.							

Annex 2 Métiers potentially affected by conflicting obligations on discards

Métier Reference #	Target species	Target assemblage	Gear type code	Gear type	LOA (m)	Area, subarea, Division, subdivision	MS involved	No. Vessels involved
Métiers within Tuna RFMOs								
ICCAT								
ICCAT_01	Albacore (*Thunnus alalunga*, ALB)	Large pelagic fish	OTM	Mid-water otter trawl	-	Atlantic	FR, IE	-
ICCAT_02	Bluefin/albacore *(Thunnus thynnus,* BFT/*Thunnus alalunga*, ALB)	Large pelagic fish	LHP; LHM	Hand and pole lines	-	Atlantic/Mediterranean	CY, FR, EL,IT, MT, PT, ES	-
ICCAT_03	Tropical tunas	Large pelagic fish	LHP; LHM	Hand and Pole lines	-	Atlantic	FR, PT, ES	FR (1), ES (7)
ICCAT_04	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB) and swordfish (*Xiphias gladius,* SWO)	Large pelagic fish	LLD; LLS	Drifting longline: set longlines	-	Atlantic/Mediterranean	CY, FR, EL,HR, IT, MT, PT, ES	-
ICCAT_05	Swordfish (*Xiphias gladius,* SWO)	Large pelagic fish	LLD	Drifting longlines	-	Atlantic/Mediterranean	CY (22), FR, EL,IT, MT, PT, ES	-
ICCAT_06	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB)	Large pelagic fish	LLD	Drifting longlines	-	Atlantic/Mediterranean.	CY (9) FR, EL, IT, MT (39) Spain	-
ICCAT_07	albacore *(Thunnus alalunga*, ALB)	Large pelagic fish	LTL	Trolling lines	-	Atlantic/Mediterranean	EL, HR, IT, MT, PT, PT, ES, UK	-
ICCAT_08	Bluefin tuna *(Thunnus thynnus,* BFT*)*	Large pelagic fish	PS	Purse seine	-	Mediterranean	FR, EL (1), IT, MT (1), ES	-
ICCAT_9	Tropical tunas	Large pelagic fish	PS	Purse seine	-	Atlantic	FR (10) ES (14)	-

Métier Reference #	Target species	Target assemblage	Gear type code	Gear type	LOA (m)	Area, subarea, Division, subdivision	MS involved	No. Vessels involved
ICCAT_10	Bluefin tuna *(Thunnus thynnus,* BFT*)*	Large pelagic fish	FPN	Stationary Uncovered pounds net	-	Atlantic/Mediterranean	IT, PT, ES	-
ICCAT_11	Albacore (*Thunnus alalunga*, ALB)	Large pelagic fish	GTR	Trammel nets	-	Mediterranean	IT, MT	-
ICCAT_12	Tunas	Large pelagic fish	GNS	Set gillnets	-	Mediterranean	Unknown	-
ICCAT_13	Bluefin/albacore *(Thunnus thynnus, BFT/Thunnus alalunga*, ALB)	Large pelagic fish	Recreational fisheries		-	Atlantic/Mediterranean	CY, FR, GR, IT, MT, PT, ES	-
Métiers within Non Tuna RFMOS								
NAFO								
NAFO_001_COD	Atlantic cod (*Gadus morhua*)	Mixed demersal fish	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3M,	DK, FR, LT, EE, PT, GB, ES	35 (> 40 m)
NAFO_001_RED	Redfish (*Sebastes* spp.)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LMNO,	LT, EE, PT, ES	30 (> 40 m)
NAFO_001_GLH	Greenland halibut (*Reinhardtius hippoglosoides*)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LMNO,	LT, EE, PT, ES	30 (> 40 m)
NAFO_001_HKW	White hake (*Urophycis tenuis*)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3NO,	PT, ES	Very low activity (little information)
NAFO_001_WIT	Witch flounder (*Glyptocephalus cynoglossus*)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LMNO,	LT, EE, PT, ES	Fishery in DIV 3NO open in 2015

Métier Reference #	Target species	Target assemblage	Gear type code	Gear type	LOA (m)	Area, subarea, Division, subdivision	MS involved	No. Vessels involved
NAFO_001_PLA	American plaice (*Hippoglossoides platessoides*)	Demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LNO,	-	Fishery in moratorium
NAFO_001_CAP	Capelin (*Mallotus villossus,* CAP)	Demersal species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3NO,	-	Fishery in moratorium
NAFO_002	Thorny skate (*Amblyraja radiata*)	Mixed demersal + deep water species	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3NO.	ES, PT	20 (> 40 m)
NAFO_003	Northern prawn (*Pandalus borealis,* PRA)	Crustaceans	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Div. 3LM.	EE, ES, DK, FR, IS, LT.	Moratorium from 2015
NAFO_004	Shortfin squids (*Illex* spp.)	*Illex* spp.	OTB	Bottom otter trawl	>40	NAFO Reg. Area, Subarea 3 and 4	-	Very low activity (little information)
NEAFC								
NEAFC_001	Herring (Clupea harengus)	small pelagic species	OTM	Midwater otter trawl	40+	ICES I+II	NL, DE, DK, UK	18 trips in 2011
NEAFC_002	Mixed fisheries	demersal fish	OTB	Bottom otter trawls	Unknown	ICES I+II	DE, UK, FR	122 trips in 2011
NEAFC_003	Mixed pelagic	small pelagic fish	PS	Purse seine	Unknown	ICES I+II	DK	2 trips in 2011
NEAFC_004	Redfish (*Sebastes* spp.)	Demersal species	OTM	Pelagic mid-water trawl	Unknown	ICES I + II	ES	Unknown
NEAFC_006	Redfish and grenadiers (*Sebastes* spp. And *Macrourus* spp.)	Demersal species	OTM	Pelagic mid-water trawl	Unknown	ICES XII+XIV	ES	Unknown

Annex 3 Task 8 Advice to DG MARE on the NAFO Ad hoc Working Group to Reflect on Rules Governing Bycatch, Discards and Selectivity in the NRA.

An analysis of NAFO provisions that encourage or lead to discards and bycatch

The NAFO Conservation and Enforcement Measures 2014 (NCEM, 2014) compile all the NAFO measures adopted by the Fisheries Commission to fishing in NAFO Regulatory Area (NRA). The following sections discuss in detail each of the articles related with discards and bycatch.

Article 5 – Catch and Effort Limitations

Quotas (Art. 5.1 and 5.2)

All stocks identified in Annex I.A or I.B of the NCEM are managed by TACs and quotas with the exception of Northern shrimp stock in NAFO Division 3M, in which management is carried out by effort allocation (number of fishing days).

For any one haul, the species which comprises the largest percentage, by weight, of the total catch in the haul shall be considered as being taken in a directed fishery for the stock concerned (Art. 5.2).

Quotas and Effort (Art. 5.3 and 5.4)

Each Contracting Party shall limit the catch by its vessels so that the quota allocated to that Contracting Party in accordance with Annex I.A is not exceeded (Art 5.3.a). One of the main problems in managing the fisheries by TAC is the difficulty experienced in controlling real-time catches versus TAC limits. As a result of these difficulties and the associated problems with controlling discards at sea, the TAC is controlled through landings rather than on catches.

Each Contracting Party shall ensure that no more 3M redfish is retained onboard its vessels after the estimated date when 100% of the 3M redfish TAC is taken, as notified in accordance with paragraph 12 of this Article (Art. 5.3.c); This measure forces to discard all redfish bycatch in all 3M fisheries (Cod, Greenland halibut) after the directed 3M redfish fishery is closed. One measure that could avoid these discards is to distribute part of the redfish TAC in other fisheries such as cod and Greenland halibut. This distribution should be based on the bycatch levels of the different fisheries.

Closure of Fisheries for Stocks Subject to Quota or Fishing Effort (Art 5.5)

Each Contracting Party shall close its fishery for stocks listed in Annex I.A in the Regulatory Area on the date on which the available data indicates that the total quota allocated to that Contracting Party for the stocks concerned will be taken, including the estimated quantity to be taken prior to the closure of the fishery, discards, and estimated unreported catch by all vessels entitled to fly the flag of that Contracting Party (Art. 5.5.a); Discards declared of target fishery species would force to close early the fishery according to this legislation. It is very rare that the discards are declared to early close the fishery.

Each Contracting Party shall close its directed fishery for 3M redfish between the date the accumulated reported catch is estimated to reach 50% of the 3M redfish TAC, as notified in accordance with paragraph 12 of this Article, and 1 July (Art. 5.5.d); When catches rates of redfish are high, this rule may cause the discards of the small redfish specimens to not close the fishery and get catch with more commercial benefit. If the aim of this measure is to distribute the catch throughout the year, probably it would be better achieved with an effort distribution along the year based on the CPUEs information. This option could probably reduce the level of discards but not eliminate them.

Each Contracting Party shall close its directed fishery for 3M redfish once the accumulated reported catch is estimated to reach 100% of the 3M redfish TAC, as notified in accordance with paragraph 12 of this Article (Art. 5.5.e); When catches rates of redfish are high, this rule may cause the discards of the small redfish specimens to not close the fishery and get catch with more commercial benefit. Probably an effort distribution along the year based on the CPUEs information could solve the early closure of this fishery. This option could probably reduce the level of discards but not eliminate them.

Each Contracting Party shall ensure that, after a closure of its fishery in accordance with this paragraph, no more fish of the stock concerned is retained on board the vessels entitled to fly its flag

unless otherwise authorized by the CEM (Art. 5.5.h); This rule applies to stock subject to an "Others" quota and forces to discard the bycatch in other fisheries of the closed stocks fishing under "Others" quota.

Re-opening of a Closed Fishery (Art. 5.6) and Quota Adjustments (Art. 5.7 and 5.8)

Catch in excess of a quota allocated to a Contracting Party may result in a deduction of allocations of that stock during a future quota period, if so decided by the Fisheries Commission. Such a deduction (Art. 5.7): This could be a tool to avoid the TAC over fishing, but it is very difficult that a Contracting Party declare a TAC over fishing. It is a problem of control the real catches, normally the controlled is landing more than catches.

Article 6 - Bycatch Retention on Board of Stocks Identified in Annex I.A as Bycatch When No Directed Fishery is Permitted

A species shall be classified as bycatch when no quota has been allocated in a Division, a ban on fishing for a particular stock is in force (moratoria); or the "Others" quota for a particular stock has been fully utilized.

Maximum retention on board of species classified as bycatch:

- for cod in Division 3M and redfish in 3LN: 1250 kg or 5%, whichever is the greater;
- for cod in Division 3NO: 1000 kg or 4%, whichever is the greater;
- for all other stocks listed in Annex I.A where no specific quota has been allocated to the flag State Contracting Party: 2500 kg or 10%, whichever is the greater;
- where a ban on fishing applies (moratoria), or when the "Others" quota opened to for that stock has been fully utilized: 1250 kg or 5%, whichever is the greater; and once the directed fishery for redfish in Division 3M is closed in accordance with Article 5.5 (d): 1250 kg or 5%, whichever is the greater.

These points force discards of bycatch of different species when the catches are bigger than the stipulated percentage or weight. It is very difficult to solve this problem because in many cases the stipulated bycatch is low compared to the natural mixture of species in a given Division. Some bycatch species have a big economic importance and in many cases the effort is directed to catch the allowed bycatch percentage taking in account the quantity of fish on board. It would require a good spatial and temporal mapping of the distribution of the different species for studying possible measures (seasonal or area closures) to reduce this kind of bycatches.

When the weight of any species subject to the bycatch limits exceeds the greater of the limits specified in any one haul, vessels do one of the following:

I. Move a minimum of 10 nautical miles from any position of the previous tow/set throughout the subsequent tow/set;
II. Leave the Division and not return for at least 60 hours if the bycatch limits specified are again exceeded following the first tow/set after moving in accordance with paragraph (i);
III. Undertake a trial tow for a maximum duration of 3 hours before starting a new fishery following an absence of at least 60 hours. If the stocks subjected to bycatch limits form the largest percentage, by weight, of the total resultant catch in the haul, this should not be considered as a directed fishery for those stocks, and the vessel must immediately change position in accordance with provisions in above situations in accordance with paragraph (i) and (ii); and
IV. Identify any trial tow after conducted in accordance with paragraph 6(b) and record in the fishing logbook the coordinates pertaining to the start and end locations of any trial tow conducted.

In a directed fishery for shrimp, the move referred to in the previous paragraphs shall apply when, for any one haul, the quantity of the total groundfish stock listed in Annex I.A exceeds 5% in Division 3M or 2.5% in Division 3L.

In a directed fishery for skate with a legal mesh size appropriate for that fishery, when the first time that catches of stocks for which bycatch limits apply, as specified in paragraph 2, comprise the largest percentage by weight of the total catch in a haul, they shall be considered as incidental catch, but the vessel shall immediately move as specified in the above paragraph.

The percentage of bycatch in any one haul is calculated as the percentage, by weight, for each stock listed in Annex I.A of the total catch from that haul.

These measures are very inefficient at reducing bycatch because they are based on hauls and it is impossible to control all haul by haul catches of all vessels. In order for these measures to more efficient at reducing bycatch, it would be necessary to collect commercial catch independent information in real time to know the catch composition in the different areas. Spatial or time closures could reduce the bycatch level in some fisheries.

Article 9 – Northern Shrimp

This article is not directly related with governing bycatch and discards but establishes temporary fishing closures areas to avoid the by catches of juveniles of other species.

Division 3M

To avoid the catch of juveniles fishes, no vessel shall fish for shrimp in Division 3M between 00:01 UTC on 1 June and 24:00 UTC on 31 December in the following area:

	Latitude	Longitude
1 (same as no.7)	47°55'0 N	45°00'0 W
2	47°30'0 N	44°15'0 W
3	46°55'0 N	44°15'0 W
4	46°35'0 N	44°30'0 W
5	46°35'0 N	45°40'0 W
6	47°30'0 N	45°40'0 W
7 (same as no. 1)	47°55'0 N	45°00'0 W

The 3M shrimp fishery is closed now. This polygon delimits an area at less than 200 meters depth where juveniles of different species are distributed. This is quite a good measure because most of the shrimp fishery takes place at a depth of more than 200 meters, while effort at less than 200 meters has a lower shrimp CPUE and produces a greater bycatch ratio of juvenile fishes. The measure could be implemented for all year rather than only in the second half of the year.

Division 3L

No vessel shall fish for shrimp in Division 3L at a depth less than 200 meters in an area east of a line bound by the following area:

	Latitude	**Longitude**
1	46°00´00” N	47°49´00” W
2	46°25´00” N	47°27´00” W
3	46°42´00” N	47°25´00” W
4	46°48´00” N	47°25´50” W
5	47°16´50” N	47°43´50” W

This polygon delimits an area less than 200 meters depth where juveniles of different species are distributed. This is quite a good measure because most of the shrimp fishery takes place at depth

more than 200 meters and effort at less than 200 meters has a lower shrimp CPUE and a greater bycatch ratio of juvenile fishes.

Article 12 – Conservation and Management of Sharks

Up to the point of offloading, no fishing vessel shall discard any part of shark retained on board except the head, guts or skin.

It is not allowed to have onboard shark fins that total more than 5% of the weight of whole sharks onboard, up to the first point of landing.

Sharks are not a big problem in the demersal NAFO bottom trawl fisheries. The shark catches in these fisheries are quite low.

Article 13 - Gear Requirements

This article is not directly related with governing the bycatch and discards but is related with the selectivity of the gears for the different fisheries.

Mesh Sizes (in accordance with Annex III.A.)

No vessel shall fish with a net having a mesh size smaller than prescribed for each of the following species:

a) 40 mm for shrimps and prawns (PRA);
b) 60 mm for short finned squid (SQI);
c) 280 mm in the codend and 220 mm in all other parts of the trawl for skate (SKA);
d) 130 mm for all other groundfish, as defined in Annex I. C.;
e) 100 mm for pelagic *Sebastes mentella* (REB) in Subarea 2 and Divisions 1F and 3K; and
f) 90 mm for redfish (RED) in the fishery using mid-water trawls in Division 3O, 3M and 3LN. Within this fishery mid-water trawl means trawl gear that is designed to fish for pelagic species, no portion of which is designed to be or is operated in contact with the bottom at any time. The gear shall not include discs, bobbins or rollers on its footrope or any other attachments designed to make contact with the bottom. The trawl may have chafing gear attached.

Use of Attachments

No vessel shall use any means or device that obstructs or diminishes the size of the meshes.

Vessels fishing for shrimp in Divisions 3L or 3M shall use sorting grids or grates with a maximum bar spacing of 22 mm. Vessels fishing for shrimp in Division 3L shall also be equipped with toggle chains with a minimum length of 72 cm as measured in accordance with Annex III.B.

Sorting grid devices reduced discards and bycatch levels in shrimp fisheries. It would be necessary to consider similar elements to other NAFO trawl fisheries.

Article 14 - Minimum Fish Size Requirements

No vessel shall retain on board any fish smaller than the minimum size established in accordance with Table 4, which it shall immediately return to the sea. Fish size refers to fork length for Atlantic cod; whole length for other species.

Table A1 Minimum size rules set out in NAFO Conservation and Enforcement Measures 2014. Sizes refer to gilled and gutted fish whether or not skinned; fresh or chilled, frozen, or salted.

Species	Whole	Head Off	Head and Tail Off	Head Off and Split
Atlantic Cod	41 cm	27 cm	22 cm	27/25 cm**
Greenland halibut	30 cm	N/A	N/A	N/A
American plaice	25 cm	19 cm	15 cm	N/A
Yellowtail flounder	25 cm	19 cm	15 cm	N/A

***Lower size for green salted fish.*

Notwithstanding Canadian vessels, which shall abide by their equivalent national regulations which require landing of all catch.

Where the number of undersized fish in a single haul exceeds 10% of the total by number of fish in that haul, the vessel shall for its next tow maintain a minimum distance of 5 nautical miles from any position of the previous tow.

This measure requires discarding fish below the minimum legal size and it is very inefficient at reducing catches of undersized fish because it is based on hauls and it is impossible to control all catches haul by haul of all vessels. To avoid the undersized fish it would be necessary to complete selectivity studies to well define the legal gear mesh size according to the minimum landing size. These selectivity studies together with a good spatial and temporal mapping of the distribution of juveniles of the different species could help to reduce this kind of discards.

Article 30 – Observer Program

This article is not directly related with governing bycatch and discards but establishes the NAFO Observer Program. The NAFO observer program could be a key tool for discard and bycatch data collection and in order to control the implementation of the management measures.

Every fishing vessel shall at all times in the Regulatory Area carry at least one independent and impartial observer. The observers on board such vessels carry out only the following duties:

a) monitor compliance with the CEM, in particularly verify logbook entries including the composition of catch by species, quantities, live and processed weight; and hail and VMS reports;

b) maintain detailed records of the daily activity of the vessel whether fishing or not;

c) for each haul, record the gear type, mesh size, attachments, catch and effort data, coordinates, depth, time of gear on the bottom, catch composition, discards and retained undersized fish;

d) monitor the functioning of the satellite tracking system and report on any interruptions or interference therewith;

e) use a pre-agreed code to report to an inspection vessel within 24 hours, any infringement of the CEM;

f) perform such scientific work as the Fisheries Commission may request; and

g) as soon as possible after leaving the Regulatory Area, and at the latest at arrival of the vessel in port, submit the report, as set out in Annex II.M, in electronic format, to the flag State Contracting Party and, if an inspection in port occurs, to the local port inspection authority. The flag State Contracting Party forwards the report to the Executive Secretary within 30 days following the arrival of the vessel in port.

NAFO has a very complete program of observers on board, but the implementation of the NAFO observer program is not adequate to protect its independence and ensure a good quality of the collected data. Measures should be taken to professionalize observer work and ensure independence

of data reported by observers. The NAFO observer program should be a key point for discard and bycatch data collection in order to control the implementation of the management measures.

Task 8b – Proposals that on that basis aim at reducing discards and bycatch and increasing selectivity

Introduction

Discards are fish that are caught at sea and thrown overboard for a number of reasons (typically because these fish have no market value or legislative constraints forbid their landing and sale). Discarding in commercial fisheries is widely regarded as a waste of natural resources, disruptive to marine ecosystems and ethically undesirable.

To understand discard and bycatch issues it will be necessary to develop a bycatch Management Plan that identifies current bycatch and discards problems. This plan should provide:

- Information on the types of fishing conducted or considered, including the vessels and gear types, fishing areas, levels of fishing effort, duration of fishing as well as the target and bycatch species and their sizes;
- A risk assessment to identify the specific nature and extent of bycatch and discard problems in the fishery should be carried out as a basis for prioritization and planning;
- A review of the effectiveness of existing initiatives to address the bycatch and discard problems identified in the risk assessment;
- A review of the potential effectiveness of alternative methods to address the bycatch and discard problems identified in the risk assessment;
- An assessment of the impacts of bycatch management and discard reduction measures on fishing operations and, in the case of States, on livelihoods to ascertain the potential effects of their implementation and the support necessary to facilitate their uptake;
- A review of the systems for the regular monitoring of the effectiveness of measures for bycatch management and reduction of discards assessed against the management goals;
- A regular assessment of plans and management measures for adjustment, as appropriate.

This document analyses the different fisheries conducted in the NAFO Regulatory Area and tries to identify the specific nature and extent of bycatch and discard problems in these fisheries. It also analyses the existing initiatives to address bycatch and discard problems in NAFO and proposes some alternative methods to address the bycatch and discard problems in NRA, based mainly on the FAO International Guidelines on bycatch Management and Reduction of Discards (FAO, 2011[38]).

Reasons for Discarding

There are several different reasons to discard fish. Generally, the main reason to discard catches is that within the specific context the benefits from discarding are greater than the benefits from landing. Looking more closely, we can roughly distinguish five important reasons for discarding, and five types of discard problems related to these different reasons:

1. **Over-quota and bycatch fish:** when the quota or bycatch for a particular species has been fully fished, all extra catches of this species have to be discarded according to NCEM articles 5.3, 5.5 and 6.3. The alternative for the fishermen would be black landings of over-quota fish. The quota is one of the more important reasons to discard in NAFO directed fisheries (redfish, cod) and bycatch regulations is one of the more important reasons to discards species in moratoria as American plaice and cod;

[38] FAO (2011) International guidelines on bycatch management and reduction of discards. Food and Agriculture Organization of the United Nations. ISBN 978-92-5-006952-4.

2. **Undersized fish**: according to NCEM, fishermen are not allowed to retain on board fish smaller than Minimum Fish Size (Article 14), so if undersized fish are caught the only legal option is to discard these catches. In NAFO there are only four species with legal Minimum Fish Size (Atlantic Cod, Greenland halibut, American plaice and yellowtail flounder). Undersized fish in general is not an important reason for discarding in the NAFO fisheries; only in the 3M cod fishery could this be a significant reason for discarding.
3. **Low value species**: for some species the market price is so low that landings costs cannot be covered; the costs of keeping on board and landing are higher than the costs of discarding. This is the main reason for discarding some species in NAFO (*Macrourus berglax*, *Coryphaenoides rupestris*, *Nezumia bairdi*, etc.) most of them are by catches of the Greenland halibut fishery.
4. **High-grading**: This involves discarding low value grades of a species in order to land only the high value grades. High-grading is usually related to individual quota or, in some cases, to limited storage capacity onboard. This is an important reason to discard in NAFO in the redfish and cod fisheries. Normally the fish with greater length have a better market and price, and the fishermen discard the smaller fish.
5. **Non-commercial species:** typically all species for which there is no market are discarded because there is no reason to land them. In NAFO this is a reason for discarding some bycatch species in the Greenland halibut fishery.

Information on NAFO Fisheries

Article 4 of the FAO International Guidelines on bycatch Management and Reduction of Discards sets out guidelines to develop bycatch Management Plans to try to solve the bycatch and discard problems. The first step of these plans should be identify and assess fisheries where bycatch and discards occur and specify the requirements for management actions.

In NAFO there is not much information available on discards. Most of the official data are related to landings and the bycatch and discards data are scarce and of poor quality. In 2011, the discards and bycatch composition of the Spanish fleet targeting Greenland halibut (*Reinhardtius hippoglossoides*) in NAFO divisions 3LMNO during 2008-2009 was analyzed (Ibarrola and X. Paz, 2011[39]). Data showed a reduced (4.3 % in weight) but highly variable discard rate. The main discarded species were the macrourids: *Macrourus berglax*, *Coryphaenoides rupestris* and *Nezumia bairdi,* together with another two fish species: *Antimora rostrata* and *Amblyraja radiata*. The target species (Greenland halibut) was intermittently discarded. The discard rate showed no pattern or trend.

One of the main motives to discard is the NAFO TAC and bycatch regulations. In 2012, NAFO Scientific Council analyzed the levels of bycatch of the different fisheries and countries (NAFO, 2012). The information provided by Canada and Spain was the best information available for the study of bycatch in the different NRA fisheries. Based on this information it can be concluded that the bycatch problems and discards reasons are quite different depending on the fishery in question.

The fisheries in order of the importance of the bycatch and discards problem are:

1. The fisheries with the highest bycatch are the skate and the yellowtail flounder fisheries. Both fisheries operating at less than 200 meters depth in Divisions 3NO. Cod and American plaice, which are species in moratoria in these divisions, are two of the main bycatch species of these fisheries and the main reason to discard them is the NAFO bycatch regulations (NCEM Art. 6.3.).

[39] Ibarrola T. P. and Xabier Paz. 2011. Discards and by-catch in Spanish fleet targeting Greenland halibut (Reinhardtius hippoglossoides) in NAFO Divisions 3LMNO: 2008 and 2009. NAFO SCR Doc. 11/8 Serial No. N5888

2. The cod fishery in Division 3M, operating at depths between 150-550 meters, has high bycatch of redfish (7%). The discard problem in this fishery is related to the NAFO redfish bycatch regulations (NCEM articles 5.3, 5.5 and 6.3), but also with high-grading and fish less than minimum legal size (NCEM Art. 14) for cod.
3. The redfish fisheries in Division 3M, 3LN and 3O have as main bycatch species Greenland halibut, American plaice, cod and witch flounder. Normally the catch percentage of each of these species is less than 5%. These fisheries operate between 200-600 meters depth. The discarding of redfish in this fishery is related with the NAFO redfish regulations (NCEM articles 5.3 and 5.5), and with small redfish catches. The discards of bycatch species are related with bycatch regulations of species in moratoria (NCEM Art. 6.3.), i.e. cod and American plaice.
4. The white hake directed fishery in Division 3NO has been declining over the past five years and skates species have been the principal bycatch species, ranging from 0.5% in 2007 to 19.2% in 2011. There are a variety of other species taken in the fishery that generally have accounted for less than 4% as bycatch. The discards in this fishery are related with the NAFO bycatch regulations (NCEM articles 6.3). This fishery has little significance in the NRA.
5. The Greenland halibut fishery in Divisions 3LMNO, operating at more than 600 meters depth, has as main important bycatch species the roughhead grenadier and the redfish. Normally the catch percentage of each of these species is less than 5%. The main reason to discard in this fishery is because bycatch species are non-commercial/low value.
6. The shrimp fishery seems to have a very low level of bycatch. The main bycatch species is the redfish. This fishery operates between 200-600 meters depth.

Data Collection and bycatch Assessments.

Article 5 of the FAO International Guidelines on bycatch Management and Reduction of Discards sets out that States and RFMO/As should develop strategies for the long-term collection of accurate data appropriate to the scale and type of fishery. This should take into account the importance to management of fishery-specific and species-specific estimates of total catch, size distributions of catch, discards, as well as spatial and temporal variability in bycatch and discard mortality. Where necessary, States and RFMO/As should strive to achieve a level and scope of observer programs sufficient to provide quantitative estimates of total catch, discards, and incidental takes of living aquatic resources.

In NAFO the available official data to study the bycatch and discards issue are not enough; more of the data is aggregated and the quality of the catch and discards data are not adequate to have a quantitative assessment of the discards problems. NAFO has a very complete program of observers on board, but the implementation of this system of NAFO observers is not the more adequate to protect its independence and ensure a good quality of the collected data. Measures should be taken to professionalize their work and ensure their independence. NAFO observer program should be a key point for the discards and bycatch data collection and to control the implementation of the management measures.

Other measures that could improve the bycatch and discards data collections would be to give economic and fisheries benefits for the countries or vessels that provide better quality of data.

Measures to manage bycatch and reduce discards.

First of all, fishermen should work hand in hand with the Administrations to develop concrete measures for avoiding unwanted catches. To reduce the bycatch, it is essential that the implemented measures be discussed and accepted by the fishermen to ensure their effectiveness and the proposed measures must be easy to implement and control and does not pose great economic losses. Recognizing that it is very difficult to find measures that are effective in all fisheries, measures

often work best when they are specific to a species or fishery. Hence, a combination of different measures may be the most effective approach to avoid or reduce bycatch and discards in the NRA

Possible measures can be classified in the following groups:

1. **Input and output controls**. Input controls include limiting the amount of fishing effort or capacity (limiting vessel numbers of a specified size, prohibiting new entrants, instituting buy-back schemes). Output controls include limiting catch through, e.g. total allowable catch, or quotas of target, incidental or discarded bycatch species. In NAFO the input controls have improved in the Greenland halibut fishery. The effort and capacity have had a steep decrease in the last years, mainly due to the implementation of the Greenland halibut Management plan. In the redfish fishery could be implemented control effort measures to prevent the early closed of the fishery and thus prevent discards of bycatch of this species in other fisheries. In the output controls NAFO has improved in the last years including part of the redfish bycatch in the TACs quotas. However, there is room for improvement in this point studying the individual or fleet quotas. Individual quotas would help to a better control of catches and the implemented measures. There are some fisheries that could be managed under effort more than the TAC as the 3M redfish. The problem is that the vessels can participate in the same trip in different fisheries and should be very difficult to manage and control different fisheries with different tools (effort, TAC, etc).
2. **Improvement of the design and use of fishing gear and bycatch mitigation devices.** Utilizing technological measures to improve selectivity and reduce bycatch and discards. Gear technology and altered fishing methods can reduce bycatch. The NAFO shrimp fisheries installed bycatch reduction devices (sorting grids) and it seems that this measure has been quite effective in preventing bycatch. It will be necessary to study other bycatch reduction devices for the rest of the NAFO trawl fisheries. The bycatch of the skate fishery could be reduced with devices similar to the sorting grids. It may be commercially viable for some NAFO fisheries to introduce alternative fishing methods or gears (long lines) that result in a lower bycatch to target catch ratio than the previously employed method.
3. **Spatial and temporal measures.** Spatial and temporal restrictions of fishing, especially in locations and during periods of high concentration of bycatch species groups, can contribute to reducing fisheries bycatch. Seasonal closures might also be able to contribute to reversing and preventing the overexploitation of the NAFO stocks. Spatial restrictions could be a good tool to reduce the level of bycatch of certain species. Thus restricting the Greenland halibut effort to greater than 700 m was a positive measure to reduce the bycatch of juvenile fish of different species in this fishery and with a minimal impact on the fishery. In the shrimp fisheries, the effort restriction at less than 200 meters depth was effective to protect juveniles of different species with low impact in the fishery. Depth restrictions, as they are implemented in the shrimp and Greenland halibut fisheries, could decrease the rate of bycatch in the yellowtail flounder and skate fisheries although such measures are likely to be very difficult to manage. These fisheries are normally conducted at less than 150 meters deep and it could be regulated that all effort in these fisheries should be carried out at less than 150 meters deep.

   Temporal closures are another tool could be explored to reduce the bycatch problem in certain fisheries. Morgan (2008[40]) analyzed the cod bycatch in the yellowtail flounder fishery and concluded that there was substantial potential to decrease bycatch of Division 3NO cod in the Canada fishery for yellowtail flounder by avoiding fishing in certain months or decreasing the catch of yellowtail flounder in the months with the highest bycatch.

[40] Morgan M.J. 2008. Spatial distribution of Div. 3NO cod in Canadian surveys and temporal distribution of by-catch in Canadian fisheries: possible means to decrease by-catch? NAFO SCR Doc. No. 08/23 Serial No. N5521

To implement these spatial and temporal measures further studies of all fisheries and their bycatch would be needed. In particular, it would require a good spatial and temporal mapping of the distribution of the different species for studying possible measures (seasonal or area closures) to reduce this kind of bycatches. It is likely that some of the closures are beneficial for some species and detrimental to others. To implement these measures an observer scheme would be required to provide immediate feedback of the bycatch levels.

4. **Limits and/or quotas on bycatches and discards.** These measures are related with the input and output controls. In recent years NAFO has made some improved in this area by including some bycatch in the TACs. However, there is room for improvement in this point. This measure could be implemented for all TACs. The bycatch of one regulate species in other fisheries should be take in account to establish the final TAC level. Other measure that could improve the bycatch and discard issues is the possibility that each fishing trip will take place only in a single fishery and not in several as it is the case now. This measure would aid the control of the bycatch at port.
5. **Economic incentives for managing bycatch and reducing discards.** States should take into consideration the fact that fishermen are more likely to comply with management measures and adopt fishing techniques that are designed to manage bycatch and reduce discards, if such measures improve their revenue, the quality of their catch, their operational efficiency and/or safety. Any measure to prevent discards will be much more effective if accompanied by economic incentives and does not represent a significant loss of benefits to fishermen. They would be suitable measures involving economic benefits to fishermen with lower discard rates. One measure to avoid the non commercial species discards would be to open new markets with economic incentives for these species.

Task 8c – In addition to this advice to DG MARE, participate in the Fisheries Commission Ad hoc Working Group to Reflect on the Rules Governing Bycatches, Discards and Selectivity in the NAFO Regulatory Area (Dartmouth, Nova Scotia, Canada, 7-8 July 2014).

A project team member participated in the Fisheries Commission Ad hoc Working Group to Reflect on the Rules Governing Bycatches, Discards and Selectivity in the NAFO Regulatory Area that held in Dartmouth, Nova Scotia, Canada, 7-8 July 2014. The minutes of this meeting are as follows:

The Fisheries Commission (FC) *ad hoc* working group to reflect on the rules governing bycatches, discards and selectivity met at the NAFO Headquarters in Dartmouth, NS, Canada, during 7-8 July 2014.

Representatives from Canada, Denmark (in respect of the Faroe Islands and Greenland) (DFG), European Union (EU), Japan, Norway, the Russian Federation, and the USA were in attendance. Observers from Ecology Action Centre and World Wildlife Fund were in attendance.

The meeting was chaired by Sylvie Lapointe (Canada). It was noted that this WG have significant science component, and that the Scientific Council (SC) should be adequately represented at this WG. In the absence of the SC Chair, the SC Coordinator, Neil Campbell was asked to attend the meeting.

The author participated in the event, to provide scientific assistance to the EU delegation, on behalf of the specific contract for the provision of advice on the management of discards in EU fisheries beyond EU waters (DG-MARE, European Commission, Specific Contract No. 3 under Framework Contract No. MARE/2012/21).

The full report (NAFO/FC Doc. 14/06) is available in the NAFO SharePoint (http://archive.nafo.int/open/fc/2014/fcdoc14-06.pdf). The most important subjects are summarized:

Agenda and Terms of Reference (ToR)

The agenda was adopted and there was not need to review again the Terms of Reference.

FAO International Guidelines on Bycatch Management and Reduction of Discards

These guidelines were endorsed by the FAO Committee on Fisheries at its meeting in Rome, Italy in February 2011 and are intended to assist States and Regional Fisheries Bodies like NAFO.

During the presentation done by the NAFO Secretariat, several sections of the Guidelines and their specific provisions were identified and highlighted, as these were deemed relevant to NAFO. These sections are: Management Framework; Bycatch Management Planning; Data Collection and Bycatch Assessments; Research and Development; Measures to Manage Bycatch and Reduce Discards; Monitoring Control and Surveillance (MCS).

It was stressed, as example, the importance of standardized logbooks and VMS data, as well as observer programs.

The WG was in agreement that NAFO policies and measures concerning bycatch and discards should be in alignment with international instruments such as the FAO International Guidelines. It became known that FAO currently does not have a monitoring program on the implementation of the Guidelines; but NAFO could inform FAO about its initiative in this regard.

Flag State practices concerning bycatch, discards and selectivity

Presentations were made by Canada, Norway, EU, USA and DFG on their bycatch and discard policies and practices.

Norway has a long history dealing with the discard ban (since 1987). It is recognized that there is a need for supporting mechanisms to help the fishermen to avoid to be set in a situation where they feel a need to discard. The whole management system needs to be designed in a way that will counter the discards, and also needs to be in a continuous development. One of the key principles, of Canada, is effective accounting for all catch including bycatch and non-retained catch. Bycatch and discard issues are generally fisheries-specific and its solutions are developed with stakeholders based on a suite of tools and measures. The scope, of the landing obligation in the new EU Common Fisheries Policy, covers all catches under TAC management and its implementation for North Sea and Atlantic waters starts in 2016 and will be gradual to be fully in place in 2019. DFG informed that in the Faroese fisheries, that since 1994, discards are prohibited and all fish must be landed. USA informed that it uses a variety of tools.

The WG found the presentations to be informative and they formed a good basis for discussion. The WG encouraged CPs to continue the information sharing regarding their policies and best practices on catch and discards.

Review and Discussion of NAFO Conservation and Enforcement Measures (NCEM) provisions governing bycatch, discards and selectivity

The Secretariat presentation, based on the 2013 daily catch reports (CATs), presented the bycatch (as well as temporal variability of bycatch and discards) of major stocks (cod, redfish, Greenland halibut, yellowtail, and skates) on the NAFO Regulatory Area. It highlighted the specific provisions in the NCEM that governs bycatch and discards, and the need for consistency in the use of terms and clarity in the intent of meaning in the NCEM was also stressed.

From the presentation it was observed that there are higher incidences of bycatch in certain fisheries and areas such as in the Thorny skate in Div. 3N or in the Cod and Redfish fisheries in Flemish Cap (Div. 3M). Some bycatch anomalies were observed, for example, bycatch consisting of witch flounder and skates in the Flemish Cap, which are currently unregulated. This analysis relied on the “rejects” information contained in the CAT reports. CAT reports only provide information on a broad level (i.e. Division taken and other species caught during the same day). The debate – whether CPs forward tow-by-tow data to the Secretariat – remains unresolved. It was noted the similar debates have ensued in other NAFO bodies or WGs. Due to the limited data available, the WG expressed concern that the reported quantities may not reflect the true magnitude of the actual bycatch or discards. The

reasons for discards seem complex. It was noted that further analysis in these areas should be considered.

A proposal to amend Article 5, specifically the sub-articles relating to retaining the catch of the fish stocks after their fishery closure was brought, and provides some discussion. Although the WG was unable to come to a consensus on this proposal, other approaches to improve or reform the current system were briefly discussed.

Under the general discussion on how to manage bycatch and reduce discards, EU presented a discussion paper entailing three general steps: 1) determining the dimension of the problem, 2) identifying NCEM provisions and other factors that might incentivize discards, and 3) identifying potential management measures. The working paper was not adopted by the WG but provided a basis for discussion, in particular on the dimension of issues related to discards and contributed to the identification of specific recommendations to FC.

Recommendations to forward to the Fisheries Commission

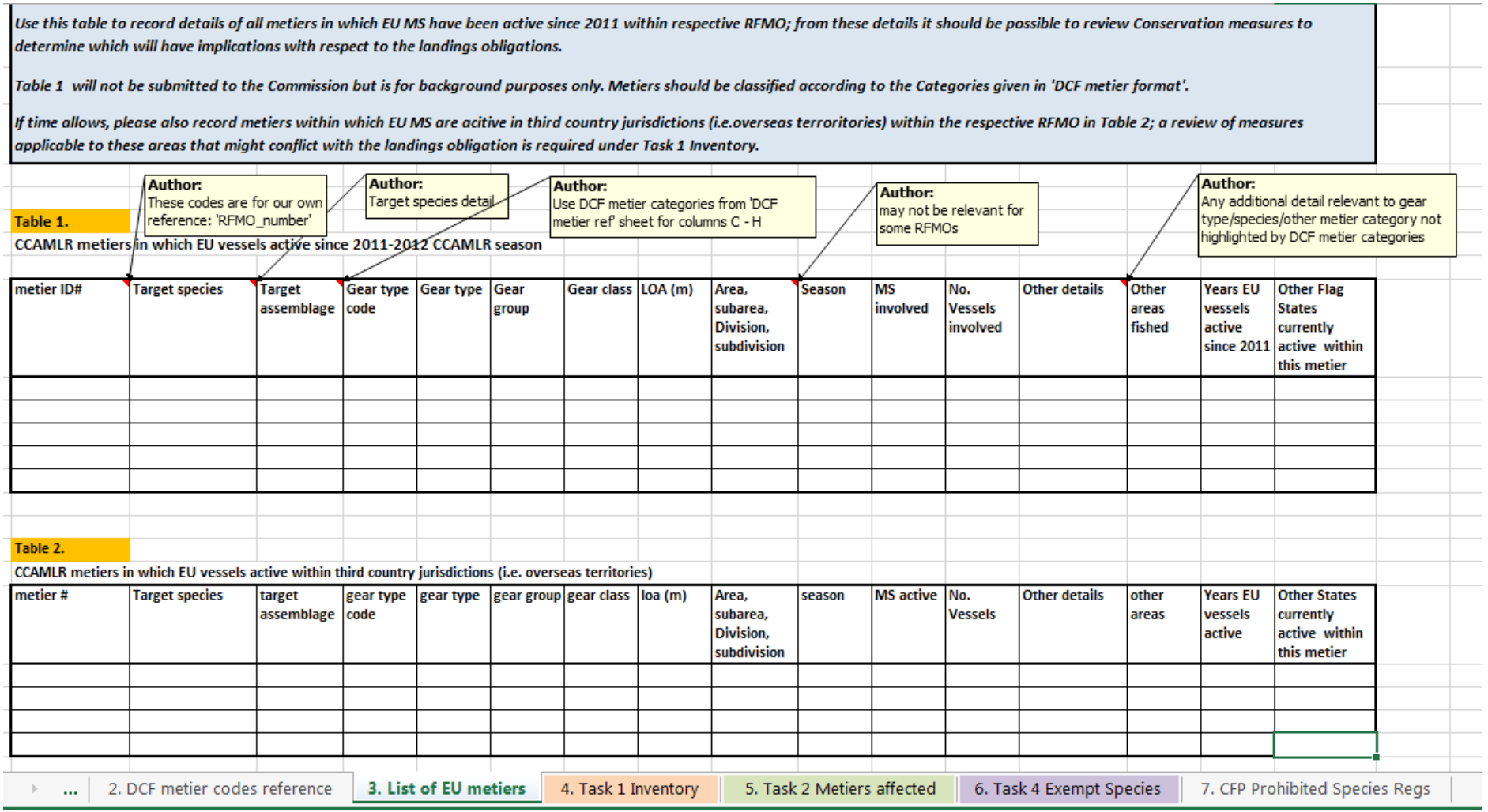
Several recommendations were made to present to the Fisheries Commission and are fully listed as follows:

Noting the negative impacts that bycatch and discards may have on regulated species in the NAFO Regulatory Area, it is recommended:

1. That the Fisheries Commission continue to address this issue by inter alia allowing this WG to continue;
2. That the objectives of this Working Group focus on effective management of bycatch and minimization of discards in the NAFO Regulatory Area, to the extent practicable, by recommending appropriate policy and regulatory changes that recognize the diverse factors influencing and incentivizing bycatch and discards in each fishery, the current biological status of affected species, and domestic legislation affecting bycatch and discards;
3. That the Fisheries Commission consider amendments to the management measures and approach for managing 3M redfish fishery that address factors promoting discards;
4. That the FC task STACTIC to support the WG as necessary including the development of standardized language for bycatch and discards throughout the CEM, including clarifying ambiguous or inconsistent terminology;
5. That the FC include SC on this issue as necessary through this WG. To start with the FC-SC dialogue will give specific consideration to the discussions of this WG;
6. That the Secretariat continue to analyse data about bycatch and discards in NAFO fisheries. The analysis in particular should identify areas and fisheries of concern; identify anomalies and trends regarding bycatch and discards; and give priority to species under moratorium or instances where there may be conservation issues;
7. That Contracting Parties continue to share available information on domestic practices and/or policies to address bycatch and discards;
8. That the FC give further consideration to improving bycatch and discards data availability and quality, including options already identified in other NAFO bodies. This would be made available to the Secretariat, SC and the WGs of the FC and SC for the purpose of undertaking bycatch and discard analysis;

That the FC work jointly with SC to task appropriate NAFO bodies to develop a draft definition of bycatch and to compile a draft list of bycatch species per GC Action Plan (GC Doc 12/1).

Annex 4 Data Collection Template for Task s 1, 2, 4a amd 4b.



Use this table to record details of all metiers in which EU MS have been active since 2011 within respective RFMO; from these details it should be possible to review Conservation measures to determine which will have implications with respect to the landings obligations.

Table 1 will not be submitted to the Commission but is for background purposes only. Metiers should be classified according to the Categories given in 'DCF metier format'.

If time allows, please also record metiers within which EU MS are acitive in third country jurisdictions (i.e.overseas terroritories) within the respective RFMO in Table 2; a review of measures applicable to these areas that might conflict with the landings obligation is required under Task 1 Inventory.

Author: These codes are for our own reference: 'RFMO_number'

Author: Target species detail

Author: Use DCF metier categories from 'DCF metier ref' sheet for columns C - H

Author: may not be relevant for some RFMOs

Author: Any additional detail relevant to gear type/species/other metier category not highlighted by DCF metier categories

Table 1.

CCAMLR metiers in which EU vessels active since 2011-2012 CCAMLR season

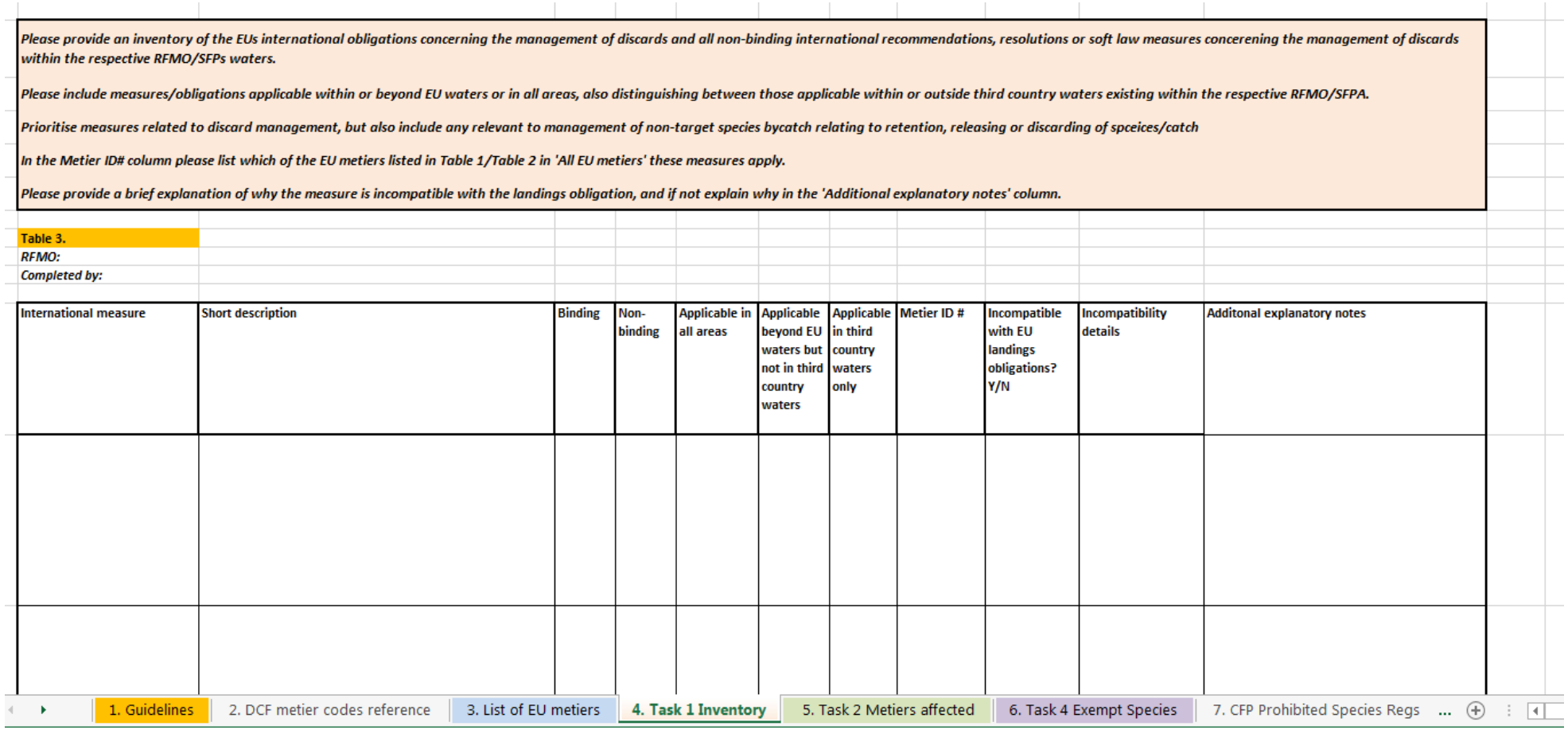
metier ID#	Target species	Target assemblage	Gear type code	Gear type	Gear group	Gear class	LOA (m)	Area, subarea, Division, subdivision	Season	MS involved	No. Vessels involved	Other details	Other areas fished	Years EU vessels active since 2011	Other Flag States currently active within this metier

Table 2.

CCAMLR metiers in which EU vessels active within third country jurisdictions (i.e. overseas territories)

metier #	Target species	target assemblage	gear type code	gear type	gear group	gear class	loa (m)	Area, subarea, Division, subdivision	season	MS active	No. Vessels	Other details	other areas	Years EU vessels active	Other States currently active within this metier

... | 2. DCF metier codes reference | 3. List of EU metiers | 4. Task 1 Inventory | 5. Task 2 Metiers affected | 6. Task 4 Exempt Species | 7. CFP Prohibited Species Regs



Please provide an inventory of the EUs international obligations concerning the management of discards and all non-binding international recommendations, resolutions or soft law measures concerening the management of discards within the respective RFMO/SFPs waters.

Please include measures/obligations applicable within or beyond EU waters or in all areas, also distinguishing between those applicable within or outside third country waters existing within the respective RFMO/SFPA.

Prioritise measures related to discard management, but also include any relevant to management of non-target species bycatch relating to retention, releasing or discarding of spceices/catch

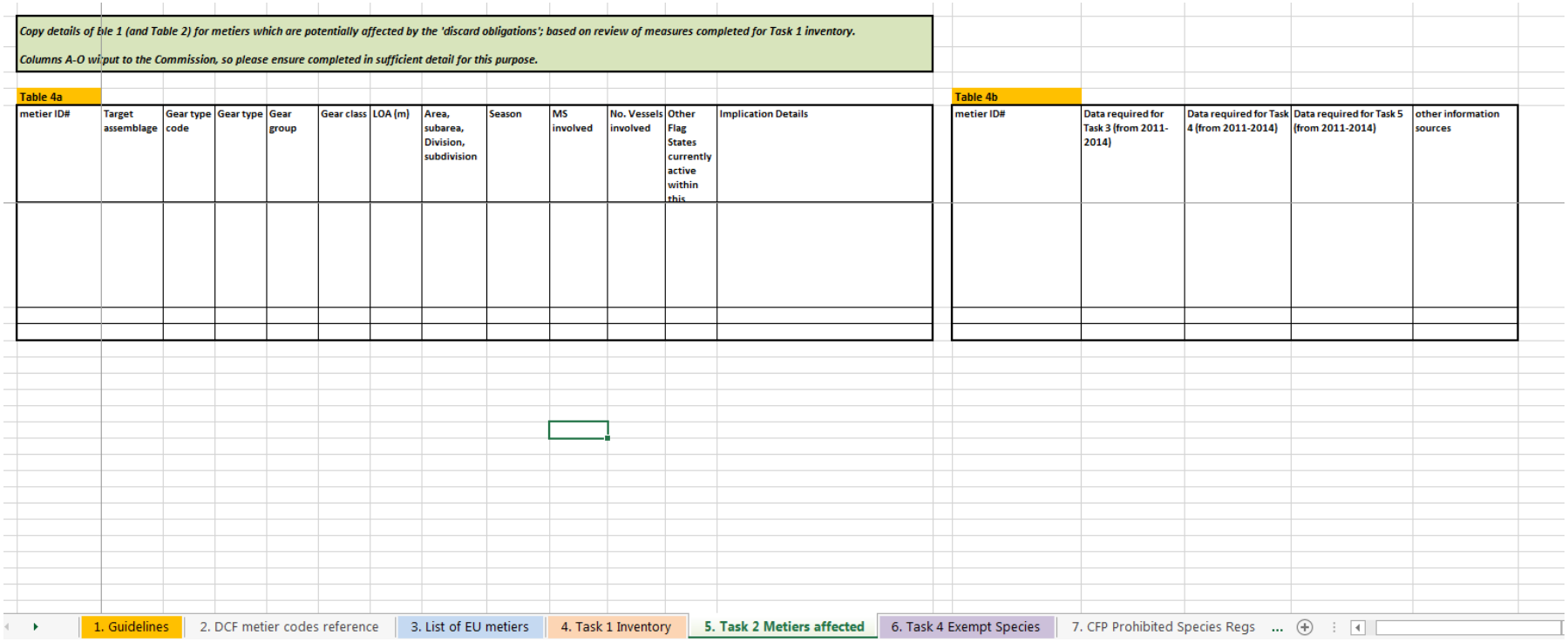
In the Metier ID# column please list which of the EU metiers listed in Table 1/Table 2 in 'All EU metiers' these measures apply.

Please provide a brief explanation of why the measure is incompatible with the landings obligation, and if not explain why in the 'Additional explanatory notes' column.

Table 3.
RFMO:
Completed by:

International measure	Short description	Binding	Non-binding	Applicable in all areas	Applicable beyond EU waters but not in third country waters	Applicable in third country waters only	Metier ID #	Incompatible with EU landings obligations? Y/N	Incompatibility details	Additonal explanatory notes

1. Guidelines | 2. DCF metier codes reference | 3. List of EU metiers | 4. Task 1 Inventory | 5. Task 2 Metiers affected | 6. Task 4 Exempt Species | 7. CFP Prohibited Species Regs ...



Copy details of ble 1 (and Table 2) for metiers which are potentially affected by the 'discard obligations'; based on review of measures completed for Task 1 inventory.

Columns A-O wi put to the Commission, so please ensure completed in sufficient detail for this purpose.

Table 4a

metier ID#	Target assemblage	Gear type code	Gear type	Gear group	Gear class	LOA (m)	Area, subarea, Division, subdivision	Season	MS involved	No. Vessels involved	Other Flag States currently active within this	Implication Details

Table 4b

metier ID#	Data required for Task 3 (from 2011-2014)	Data required for Task 4 (from 2011-2014)	Data required for Task 5 (from 2011-2014)	other information sources

1. Guidelines | 2. DCF metier codes reference | 3. List of EU metiers | 4. Task 1 Inventory | 5. Task 2 Metiers affected | 6. Task 4 Exempt Species | 7. CFP Prohibited Species Regs ...

In completing Task 1 inventory, you may come across examples of species caught in the EU metiers affected which are likely to be exempt from the landings obligation either because fishing for them is prohibited, or because there is evidence demonstrating their high probability of survival if released alive.

A provisional list of these species can be complied below in Table 5.

Table 5.

Exempt Species (*species name/Family/* species group)	Prohibited(P)/high survival (HS)?	If Prohibited, please list relevant EC Reg	If high survival, please provide details and/or reference and/or Measure	metier ID# Caught	Target species

... | 2. DCF metier codes reference | 3. List of EU metiers | 4. Task 1 Inventory | 5. Task 2 Metiers affected | **6. Task 4 Exempt Species** | 7. CFP Prohibited Species Regs

Annex 5 Consortium project team and contributing key experts in the study.

Key Expert	Organisation	RFMO/SFPA
Consortium experts		
Haritz Arrizabalaga	AZTI Tecnalia	ICCAT
Hilario Murua	AZTI Tecnalia	ICCAT, IOTC, IATTC, WCPFC
Josu Santiago	AZTI Tecnalia	ICCAT
Alicia Delgado	IEO	ICCAT
Eva García Isarch	IEO	CECAF, Mauritania SFPA, Morocco SFPA
Javier Ariz	IEO	IATTC, WCPFC
Lourdes Fernández Peralta	IEO	Morocco SFPA
Edwin van Helmond	IMARES	NEAFC
Miguel Neves dos Santos	IPMA	IOTC, ICCAT
John Pearce	MRAG Ltd	CCSBT
Rebecca Mitchell	MRAG Ltd	CCAMLR, Greenland SFPA, ICCAT
Tim Davies	MRAG Ltd	SPRFMO, SIOFA, CCSBT, Greenland SFPA
Non-consortium experts		
Christoph Stransky	Thuenen Institute of Sea Fisheries	NEAFC
Bob Kennedy	CCSBT	CCSBT
Craig Loveridge	SPRFMO	SPRFMO