

FISHERY ASSESSMENT REPORT

IFFO GLOBAL STANDARD FOR RESPONSIBLE SUPPLY OF FISHMEAL AND FISH OIL



Image source: FishBase

| | |
|------------------------|---|
| FISHERY: | Boarfish (<i>Capros aper</i>) |
| LOCATION: | Northeast Atlantic (UK, Ireland & Denmark) |
| DATE OF REPORT: | January 2016 |
| ASSESSOR: | Deirdre Hoare |

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|------------|-------------|--------------|-----------|
| Form No: 9 | Report Ref: | Page 1 of 21 | CCM Code: |
|------------|-------------|--------------|-----------|

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| 1. APPLICATION DETAILS AND SUMMARY OF THE ASSESSMENT OUTCOME | | | |
|--|-----------------------------|---|---|
| Name: | | | |
| Address: | | | |
| Country: UK, Ireland & Denmark | | Zip: | |
| Tel. No. | | Fax. No. | |
| Email address: | | Applicant Code | |
| Key Contact: | | Title: | |
| Certification Body Details | | | |
| Name of Certification Body: | | SAI Global (Ireland) | |
| Assessor Name | Peer Reviewer | Assessment Days | Initial/Surveillance/ Re-certification |
| Deirdre Hoare | Giles Bartlett | 3 | Surveillance |
| Assessment Period | January 2015 – January 2016 | | |
| Scope Details | | | |
| 1. Scope of Assessment | | IFFO Global Standard for Responsible Supply – Issue 1 | |
| 2. Fishery | | Boarfish (<i>Capros aper</i>) | |
| 3. Fishery Location | | Northeast Atlantic (UK, Ireland and Denmark) | |
| 4. Fishery Method | | Pelagic trawl | |
| Outcome of Assessment | | | |
| 5. Overall Fishery Compliance Rating | | Medium | |
| 6. Sub Components of Low Compliance | | None | |
| 7. Information deficiency | | None | |
| 8. Peer Review Evaluation | | Maintain approval | |
| 9. Recommendation | | Maintain approval | |

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|--|
| 2. QUALITY OF INFORMATION |
| Good; primarily government and ICES websites and reports. |
| 3. COMPLIANCE LEVEL ACHEIVED |
| Medium |
| Recommendation |
| Approve fishery |
| 4. GUIDANCE FOR ONSITE ASSESSMENT |
| |
| Based on HIGH compliance findings |
| |
| Based on MEDIUM compliance findings |
| |
| Based on LOW compliance findings |
| |
| 5. ASSESSMENT DETERMINATION |
| <p>The targeted boarfish fishery in the Northeast Atlantic began in 2001, but substantial landings did not begin to occur until the second half of the decade and the fishery was largely unregulated until 2010. As such, many of the medium compliance ratings awarded in this assessment are a reflection of the developing nature of the management of the fishery, and the limited time-series for which scientific data are available.</p> <p>The fishery was first assessed against the IFFO RS standard in 2012, and since that time the level of scientific understanding has improved considerably. Although the essential components of management (such as a restriction of total removals in the form of a TAC) are in place, the evidence available to the assessment team suggests that the management measures applied to the fishery have not developed at an equivalent pace. While fairly detailed management plans have been proposed by the Irish and Danish national fisheries research bodies (in 2010) and the Pelagic AC (in 2012, 2015), neither has been formally adopted nor fully evaluated by ICES for appropriateness. Thus while some of the conditions set in the original assessment have been met, others have not or are unclear (see below).</p> <p>Overall the assessment team considers the management of the fishery to meet the requirements of the IFFO RS standard, but close attention should be paid in future assessments to ensure the ongoing development of management measures in line with the scientific advice.</p> |
| HIGH Compliance |
| A1, A3, B2, C1, D1, D2, E1, E2 |
| MEDIUM Compliance |

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|------------|-------------|--------------|-----------|
| Form No: 9 | Report Ref: | Page 3 of 21 | CCM Code: |
|------------|-------------|--------------|-----------|

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| |
|-----------------------|
| B1, D1, D3 |
| LOW Compliance |
| None |

Original approval conditions (2012) and current status:

1 – Boarfish should be included in the new EU data collection framework, from 2013

Boarfish is currently not included in the EU data collection framework. Based on the available information, the intended reform of the framework has not yet occurred. ICES notes that although sampling has been considered adequate since 2010, “A comprehensive and coordinated sampling scheme and a continuation of the targeted acoustic survey are needed to provide the scientific basis for advice on this species”.

2 – ICES quota recommendations should continue to be adhered to, and any other recommended management actions should be applied.

ICES quota recommendations have been adhered to (see section D1), and there is no evidence of any substantial management recommendations not being applied (see section B2).

3 - The long-term management plan submitted at the RAC meeting July 11th 2012 is complied with by the participating fishers.

The proposed management plan has been revised in 2015. There is evidence from the Irish Stock Book 2015 that the proposed management plan is voluntarily adhered to by fishers. ICES confirmed in its 2015 advice that it is providing advice for this stock following the standard procedures which conforms to the proposed strategy from the Pelagic AC. ICES note that the proposed management strategy follows the rationale for TAC setting procedures used in the ICES advice, but with some additional caution.

4 - Where sea mammals/ sea turtles/sharks are captured there must be documented procedures in place to establish the release of the animal without causing it damage.

There was no evidence available to the assessment team to determine whether there have been any changes to the procedures in place to be applied in the event of mammal/turtle/shark capture.

5 – Bycatch data collation of species other than the target boarfish.

Information on bycatch of other species in the boarfish fishery remains sparse, but is considered minimal. See section D3.

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| Form No: 9 | Report Ref: | Page 4 of 21 | CCM Code: |

| SUMMARY OF LEVEL OF COMPLIANCE | | | | | |
|---|---|---|------------------------|---------------------|----------------|
| | The Management Framework and Procedures | Stock assessment procedures and management advice | Precautionary approach | Management measures | Implementation |
| legal and administrative basis | A1 | | | | |
| Fisheries management should be concerned with the whole stock unit | A2 | | | | |
| Management actions should be scientifically based | A3 | | | | |
| Research in support of fisheries conservation and management should exist | | B1 | | | |
| Best scientific evidence available should be taken into account when designing conservation and management measures | | B2 | | | |
| The precautionary approach is applied in the formulation of management plans | | | C1 | | |
| The level of fishing permitted should be set according to management advice given by research organisations | | | | D1 | |
| Where excess fishing capacity exist, mechanisms should be in established to reduced capacity | | | | D2 | |
| Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment | | | | D3 | |
| A framework for sanctions of violation of laws and regulations should be efficiently exists | | | | | E1 |
| A management system for fisheries control and enforcement should be established | | | | | E2 |

KEY: Low Compliance: Medium Compliance: High Compliance:

| | | | |
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| Form No: 9 | Report Ref: | Page 5 of 21 | CCM Code: |

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6. RATIONALE OF THE ASSESSMENT OUTCOME

A. THE MANAGEMENT FRAMEWORK AND PROCEDURE

| LEVEL OF COMPLIANCE | |
|--|--|
| <i>A1. The management of the fishery must include a legal and administrative basis for the implementation of measures and controls to support the conservation of the fishery.</i> | |
| LOW | An administrative framework that ensures an efficient management of the fishery for its conservation is not established. |
| MEDIUM | An administrative framework that ensures an efficient management of the fishery for its conservation is somehow established, but there is evidence of not being efficient to ensure the conservation of the stock. |
| HIGH | A legal and administrative framework that ensures an efficient management of the fishery for its conservation is established and works efficiently toward the conservation of the stock. |

Determination: Robust legal and administrative frameworks continue in place at the EU and national levels, since the 2015 surveillance assessment. H

Europe:

Denmark, the UK and Ireland are Member States of the European Union, and therefore in Community waters implement the Common Fisheries Policy (CFP). In force since 1983, the CFP aims to reconcile resource conservation with the preservation of income and jobs in coastal zones that offer few alternatives in terms of production or employment. It therefore covers not just resources but also markets and structures.

With regard to resource management, the CFP regulations comprise:

- A traditional management tool based on TACs and quotas;
- Technical measures relating to gear or catch;
- Effort-related management, based on vessel engine power and the number of days at sea.

The CFP also provides for the introduction of measures to rebuild, over a period of several years, stocks that are threatened in terms of sustainable harvesting, and for recourse to effort-related management rules to supplement TACs and quotas.

The CFP is periodically reviewed and reformed. The most recent CFP reform process was completed in 2013 and came into effect from the 1st January 2014. Key changes include:

- The introduction of an objective to ‘ensure high long-term fishing yields for all stocks by 2015 where possible, and at the latest by 2020’ (i.e. movement towards an MSY-based approach).
- The gradual (2015-2019) introduction on a fishery-by-fishery basis of a ‘landing obligation’, which effectively bans discarding.
- An overhaul of the management structure, including increased regionalisation and more extensive stakeholder consultation.

Denmark:

The responsible authority for monitoring and enforcing EU and national conservation policies is the Danish Agrifish Agency, which is a part of the Ministry of Food, Agriculture and Fisheries, under the 1999 Fisheries Act. The Agency carries out inspection at sea and landings, as well as verification of EU marketing standards. The Ministry also works for Danish fisheries and aquaculture through

- Regulation and inspections of the fishing industry
- Support for research in fisheries and aquaculture production
- Support for the development of fisheries, the fish industry, fishery harbours and aquaculture

- Fish management and fishing license arrangements for recreational fisheries

The primary provider of scientific information and advice at the national level within Denmark is the National Institute of Aquatic Resources at the Technical University of Denmark (DTU Aqua). DTU Aqua’s stated mission is to conduct research, provide advice, educate at university level and contribute to innovation in sustainable exploitation and management of aquatic resources. DTU Aqua directly advises the Danish Ministry of Food, Agriculture and Fisheries and other public authorities.

UK:

Fisheries management in England and Wales is the responsibility of the Marine Management Organisation (MMO), an executive non-departmental public body sponsored by the UK Government’s Department for Environment, Food and Rural Affairs (DEFRA). The MMO was created by the Marine and Coastal Access Act 2009, and is responsible for data collection, planning, licensing, control and enforcement. Fisheries management is devolved in Scotland and Northern Ireland, where the responsible agencies are Marine Scotland and the Fisheries and Environment Division of the Department of Agriculture and Rural Development, respectively. Each of these bodies is similarly responsible for planning, licensing and enforcement in their respective jurisdictions.

Republic of Ireland:

Marine fisheries in the Republic of Ireland are managed by a number of Divisions within the Department of Agriculture, Food and the Marine. The Department is responsible for, amongst other things, sea fisheries administration, seafood policy and development, harbour management, environmental assessment, and fisheries research. Regulation is the responsibility of the Sea Fisheries Protection Agency (SFPA), created under the Sea-Fisheries and Maritime Jurisdiction Act 2006. The primary provider of scientific information and advice at the national level is the Marine Institute.

International science

Science-based fishery management advice at the international level is provided by the International Council for the Exploration of the Sea (ICES). ICES is a network of more than 1,600 scientists from 200 institutes linked by an intergovernmental agreement (the ICES Convention) to add value to national research efforts. Scientists working through ICES gather information about the marine ecosystem. Besides filling gaps in existing knowledge, this information is developed into unbiased, non-political fishery management advice. The 20 member countries that fund and support ICES use this advice to help them manage the North Atlantic Ocean and adjacent seas. ICES provides annual stock assessment and management advice in relation to the Northeast Atlantic boarfish fishery.

Pelagic AC

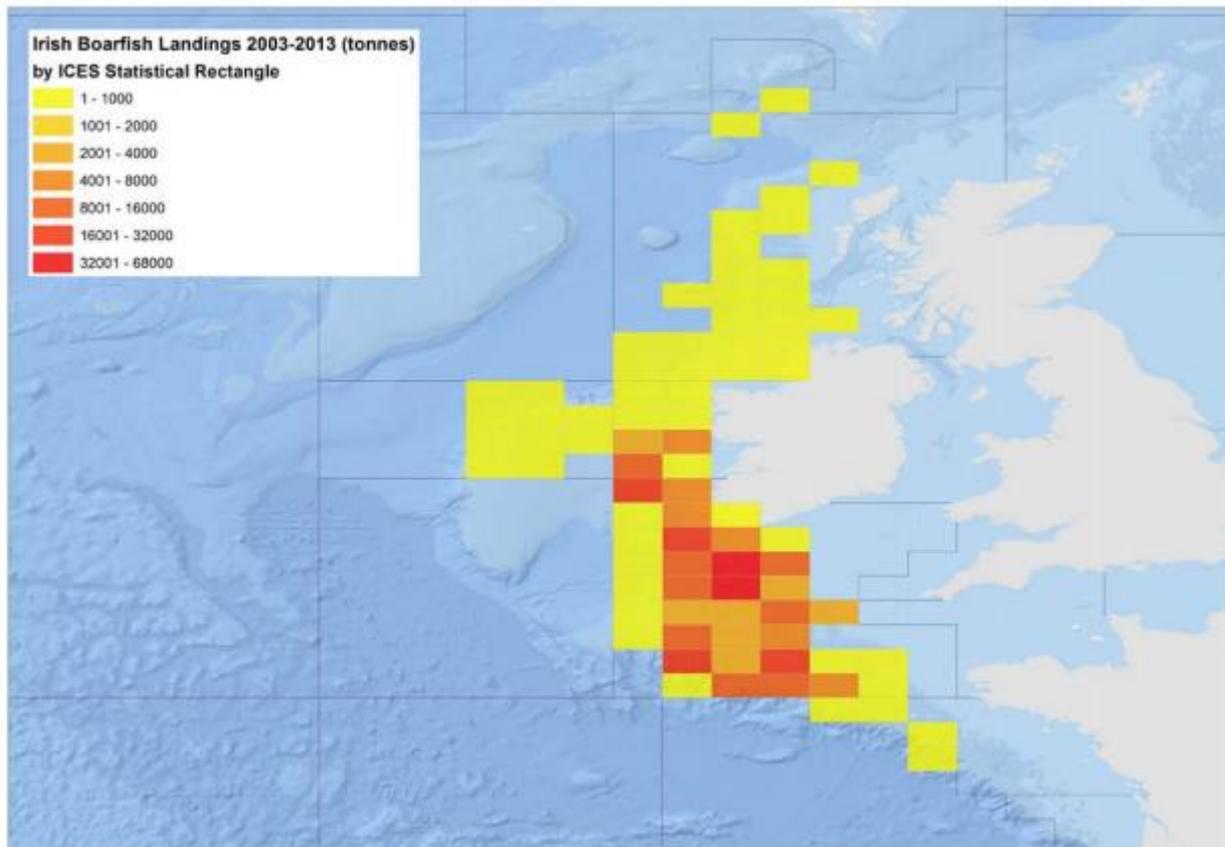
Also of relevance to the management of the boarfish fishery in the Northeast Atlantic is the Pelagic Advisory Council (Pelagic AC). The Pelagic AC, formerly known as the Pelagic RAC, is one of seven currently active advisory councils created as part of the CFP in 2002, and is partially funded by the EU. The purpose of the Pelagic AC is to provide advice on the management of European pelagic fish stocks on behalf of the fisheries sector and other stakeholders. It has been involved throughout the development of the boarfish fishery in recent years, and amongst other activities created the proposed management plan currently under consideration by ICES (see section A3).

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|------------|-------------|--------------|-----------|
| Form No: 9 | Report Ref: | Page 7 of 21 | CCM Code: |
|------------|-------------|--------------|-----------|

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| | | |
|---|---|----------|
| R1 – R5, R14 – R18 | | |
| LEVEL OF COMPLIANCE | | |
| <i>A2. Fisheries management should be concerned with the whole stock unit over its entire area of distribution and take into account fishery removals and the biology of the species.</i> | | |
| LOW | Fisheries management is not concerned with the whole stock unit over its entire area of distribution and do not take into account any of the matters listed in 'A1'. | |
| MEDIUM | Fisheries management is concerned with matters listed in 'A1' but not entirely. Fisheries, in relation to 'A1' statement, should improve to ensure the long term conservation of the marine resource. | |
| HIGH | Fisheries management should be concerned with the whole stock unit over its entire area of distribution and take into account: <ul style="list-style-type: none"> • All fishery removals • The biology of the species | |
| <p><i>Determination: The fishery management unit does not currently encompass the entire biological stock distribution. However, it does cover the area in in which all targeted fishery removals occur, and management decisions are made on the basis of scientific advice for the entire stock. All fishery removals are considered along with the biology of the species.</i></p> <p>The current assessment and management unit is appropriate with the exception of a small northern portion of Division IXa based on preliminary genetic results (ICES, 2015b). Based on analyses of IBTS data (ICES, 2015b) and the lack of boarfish in the PELACUS acoustic survey in spring 2015, biomass in northern Division IXa is expected to be small relative to the overall biomass in the TAC area. There is no evidence of significant immigration to or emigration from the TAC area from populations to the south or from oceanic waters.</p> <p>Figure A2(i) shows the location of boarfish catches between 2003 and 2013 by Irish vessels, and is representative of the location of the boarfish fishery in general. The EU management area, over which the TAC is set, encompasses the entirety of the area in which boarfish are caught, but does not encompass the entire biological stock. The TAC covers boarfish in Subareas VI, VII and VIII only, meaning that Subareas IV and IX are not covered. However, as has been noted, at the time of this report no targeted boarfish fishery occurred in these Subareas.</p> <p>ICES reports that commercial catch data are considered to be quite complete, including boarfish discards in non-directed fisheries. Total catch in 2014 were estimated to be 45,231t, of which 1,813t was discards. ICES also considers the biology of boarfish in its stock assessments and subsequent advice; of particular relevance is the characteristic of asynchronous batch spawning, meaning that there is no specific spawning event or location. Other characteristics considered include age at recruitment, maximum age, growth rates, maturity data and natural mortality rates.</p> | | M |



A2(i) – Irish boarfish landings 2003 – 2013 (representative of all boarfish landings). From the ICES advice, 2014 (R8).



ICES Boarfish advice area. From the ICES Boarfish Popular Advice, October 2015 (R20)

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|------------|-------------|--------------|-----------|
| Form No: 9 | Report Ref: | Page 9 of 21 | CCM Code: |
|------------|-------------|--------------|-----------|

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| | |
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| R6 – R8, R20 | |
| LEVEL OF COMPLIANCE | |
| <i>A3. Management actions should be based on long-term conservation objectives</i> | |
| LOW | Management actions are not based on long term management objectives. |
| MEDIUM | Management actions are based on long term management objectives. However the actions are not scientifically formulated. |
| HIGH | Management actions are based on long term management objectives, and actions are science based. |
| <p>Determination: Management of the fishery is based on specific long-term objectives, and measures conform to scientifically-formulated ICES advice. ICES confirmed in its 2015 advice that it is providing advice for this stock following the standard procedures which conforms to the proposed strategy from the Pelagic AC.</p> <p>Management plan proposed by the Pelagic AC in 2015</p> <p><i>This management strategy aims to achieve sustainable exploitation of boarfish in line with the precautionary approach to fisheries management, FAO guidelines for new and developing fisheries, and the ICES form of advice.</i></p> <p><i>1) The TAC shall be set in accordance with the following procedure, depending on the ICES advice</i></p> <p><i>a) If category 1 advice (stocks with quantitative assessments) is given based on a benchmarked assessment, the TAC shall be set following that advice.</i></p> <p><i>b) If category 1 or 2 (qualitative assessments and forecasts) advice is given based on a non-benchmarked assessment the TAC shall be set following this advice.</i></p> <p><i>c) If category 3,4,5 or 6 advice is given, the TAC shall be set following that advice. Categories 3-6 are described below as follows :</i></p> <p><i>i) Category 3: stocks for which survey-based assessments indicate trends. This category includes stocks with quantitative assessments and forecasts which for a variety of reasons are considered indicative of trends in fishing mortality, recruitment, and biomass.</i></p> <p><i>ii) Category 4: stocks for which only reliable catch data are available. This category includes stocks for which a time series of catch can be used to approximate MSY.</i></p> <p><i>iii) Category 5: landings only stocks. This category includes stocks for which only landings data are available.</i></p> <p><i>iv) Category 6: Category 6 – negligible landings stocks and stocks caught in minor amounts as bycatch</i></p> <p><i>2) Notwithstanding paragraph 1, if, in the opinion of ICES, the stock is at risk of recruitment impairment, a TAC may be set at a lower level.</i></p> <p><i>3) If the stock, estimated in the either of the 2 years before the TAC is to be set, is at or below Blim or any suitable proxy thereof, the TAC shall be set at 0 t.</i></p> <p><i>4) The TAC shall not exceed 75 000 t in any year.</i></p> <p><i>5) The TAC shall not be allowed to increase by more than 25% per year. However there shall be no limit on the decrease in TAC.</i></p> <p><i>6) Closed seasons, closed areas, and moving on procedures shall apply to all directed boarfish fisheries as follows:</i></p> <p><i>a) A closed season shall operate from 31 March to 31 August. This is because it is known that herring and mackerel are present in these areas and may be caught with boarfish.</i></p> <p><i>b) A closed area shall be implemented inside the Irish 12-mile limit south of 52°30 from 12 February to 31 October, in order to prevent catches of Celtic Sea herring, known to form aggregations at these times.</i></p> <p><i>c) If catches of other species covered by a TAC amount to more than 5% of the total catch by day by ICES statistical rectangle, then all fishing must cease in that rectangle for 5 consecutive days.</i></p> <p>Since ICES began providing advice for the stock in 2011, quota recommendations (and subsequently TACs) have been based on average catch (in 2011), an F_{MSY} proxy (in 2012), an MSY-approach based on the Schaefer</p> | |

surplus production model (in 2013), ICES data-limited approach (in 2014), and Exploratory Bayesian Schaefer surplus production model (in 2015).

In August 2012 the Pelagic Regional Advisory Council (RAC, now Pelagic AC) presented a draft management plan to ICES which contains detailed harvest control rules for all levels of information availability, from a default TAC to be set in the case of the absence of a stock assessment, through biomass estimates, up to high-certainty estimates of biomass and F-value. The plan was revised and an updated management plan proposal was published in July 2015.

ICES confirmed in its 2015 advice that it is providing advice for this stock following the standard procedures which conforms to the proposed strategy from the Pelagic AC. ICES note that the proposed management strategy follows the rationale for TAC setting procedures used in the ICES advice, but with some additional caution.

It is not clear whether any of the proposed measures have been implemented (either by regulation or voluntarily), and the TAC is not currently set using the proposed harvest control rules.

R6 – R8, R21

B. STOCK ASSESSMENT PROCEDURES AND MANAGEMENT ADVICE

LEVEL OF COMPLIANCE

B1. Research in support of fisheries conservation and management should exist.

| | |
|---------------|--|
| LOW | Research to support the conservation and management of the stock, non-target species and physical environment does not exist |
| MEDIUM | Research to support the conservation and the management of the stock, non-target species and physical environment exists, however research programmes could be significantly improved to decrease scientific advice uncertainty. |
| HIGH | Research to support the conservation and the management of the stock, non-target species and physical environment exist, and existent research is considered most adequate for the long term conservation of the target, non-target and physical environment |

Determination: Management is supported by both fishery-dependent and fishery-independent data collection. Although the most recent ICES advice considers the stock data-limited, this is primarily due to short time-series, which are themselves a reflection of the relatively new nature of the targeted boarfish fishery.

M

ICES has conducted annual stock assessments and provided management advice for the fishery since 2011. Assessments and advice are supported by a combination of fishery-dependent and fishery-independent data collection, and by more general research on the other fisheries and regional ecosystems relevant to the boarfish stock.

Fishery-dependent research

Length-frequency data are available for catches since 2007, and are converted into catch number-at-age data using a standard Age Length Key (ALK), which itself was constructed based on 814 aged fish from Irish, Danish and Scottish caught samples in 2012. Fishery-dependent sampling consists of the collection of approximately 6kg of boarfish (around 150 fish), which are measured to the nearest 0.5cm. Further data, including otolith-based aging and sexing, are collected from 5 fish per length class. The current sampling target is one 6kg sample per 1,000kg of landings per ICES Division.

Fishery-independent research

Stock assessments also utilise two combined acoustic surveys and six bottom-trawl survey indices. The MHAS and BFAS are used to produce an estimate of the total boarfish biomass present in the stock. In addition, six bottom trawl surveys are used to provide an index of abundance. These are the French Celtic Sea and Biscay Survey (EVHOE), 1997-present; the Irish Groundfish Survey (IGFS), 2003-present; the West of Scotland Groundfish Survey (WCSGFS), 1986-present; the Spanish Porcupine Bank Survey (SPPGFS), 2001-present; the Spanish North Coast Survey (SPNGFS), 1991-present; and the CEFAS English Celtic Sea Groundfish Survey (ECSGFS), 1982-2003. The fishery-dependent ALK is applied to IBTS number-at-length data to provide an age-structured index.

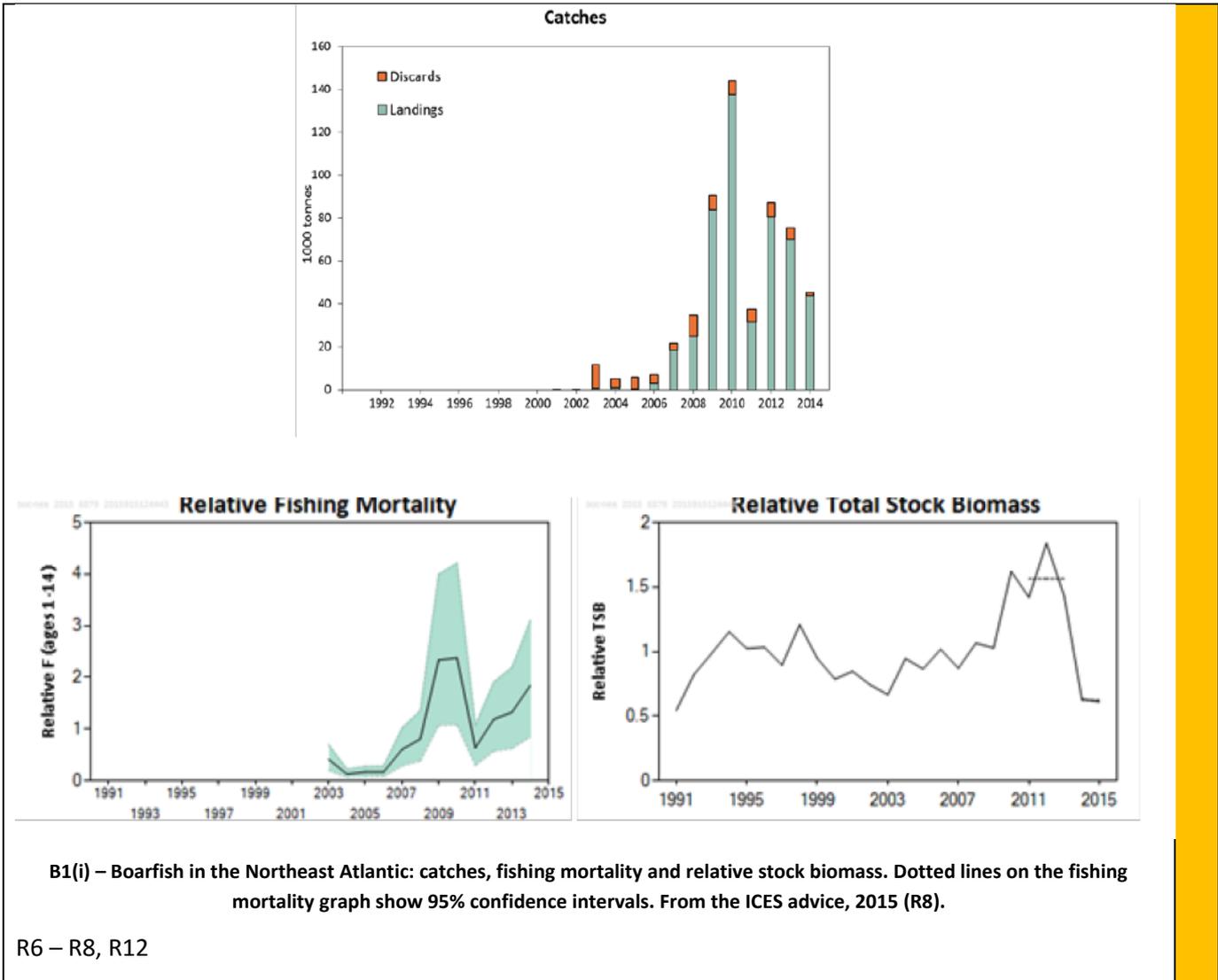
Quality of Data

ICES found in the 2015 advice that the acoustic survey data were considered reliable estimates within the survey area, though they may not fully cover the stock area, but there is high uncertainty in the estimates of total biomass due to the short time-series. Bottom-trawl survey indices were considered indicative of trends in their respective areas. The commercial catch data are thought to be quite complete, including discards from other fisheries from 2003 onwards. It is thought that discarding due to bycatch fisheries prior to 2003 were likely to have been small in comparison with subsequent catches.

The ICES framework for category 3 stocks was applied. This category includes stocks for which survey indices (or other indicators of stock size such as reliable fishery-dependant indices; e.g. lpue, cpue, and mean length in the catch) are available that provide reliable indications of trends in stock metrics such as mortality, recruitment, and biomass. The Schaefer surplus production model provides an index of total stock biomass (TSB) which is used as the index of stock development. The advice is based on a comparison of the two latest index values (index A) with the three preceding values (index B), multiplied by the recent advised catch.

Boarfish is not currently included under the EU Data Collection Framework, although there has been an intention to include it in after any revision of the Framework since the fishery was first assessed against the IFFO RS standard in 2012. The information available to the assessment team suggests that the Framework has still yet to be revised since that time.

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| Form No: 9 | Report Ref: | Page 12 of 21 | CCM Code: |



B1(i) – Boarfish in the Northeast Atlantic: catches, fishing mortality and relative stock biomass. Dotted lines on the fishing mortality graph show 95% confidence intervals. From the ICES advice, 2015 (R8).

R6 – R8, R12

LEVEL OF COMPLIANCE

B2. Best scientific evidence available should be taken into account when designing conservation and management measures.

| | |
|---------------|--|
| LOW | Scientific advice is not taken into account when designing conservation and management measures. |
| MEDIUM | Scientific advice is taken into account, when designing conservation and management measures. However some areas of discrepancy are identified that could have a significant impact in the long term conservation of the marine environment. |
| HIGH | Scientific advice is taken into account, when designing conservation and management measures, in a comprehensive manner. |

Determination: ICES research and advice is the primary source of scientific information for developing fishery conservation and management measures. The organisations supporting the CFP are structured to ensure the inclusion of best available scientific evidence in the decision-making process.

ICES advice in relation to the setting of boarfish quotas has been followed since it was first provided in 2011. Fishery stakeholders have been pro-active in the development of potential management plans and technical measures, evidenced by the proposals put forward by the Irish and Danish national fisheries research bodies in 2010 and the Pelagic AC in 2012 and 2015. At the time of the original IFFO RS assessment of this fishery, it was reported that the technical measures proposed in the 2010 management plan, including closed seasons and temporary regional closures, were being voluntarily adhered to by fishers. A closed season from 15th March to 31st August has been followed by participating vessels on a voluntary basis in 2011-2015, as

anecdotal evidence suggested that mackerel and boarfish are caught in mixed aggregations during this period. The long term management plan, proposed by the PAC, has not been enshrined in legislation to date. This plan follows a previous long term plan and an earlier interim management plan. ICES note that the proposed management strategy follows the rationale for TAC setting procedures used in the ICES advice, but with some additional caution. ICES therefore consider that the proposed management strategy is precautionary.

R6 – R10

C. THE PRECAUTIONARY APPROACH

LEVEL OF COMPLIANCE

C1. The precautionary approach is applied in the formulation of management plans.

| | |
|---------------|--|
| LOW | The precautionary approach is not applied in the formulation of management plans. |
| MEDIUM | The precautionary approach is applied, however not all uncertainties are taken into account. |
| HIGH | The precautionary approach is applied, taking into account uncertainties relating to the dynamic of fish population (recruitment, mortality, growth and fecundity), and the impact of the fishing activities, such as discards and by-catch of non-target species as well as on the physical environment (Habitats). |

Determination: There is consideration of the precautionary approach throughout the management of the boarfish fishery, and uncertainties appear to be fully taken into account.

In addition to the ICES advice being provided on a precautionary approach basis, the revised draft management plan proposed by the Pelagic AC in 2015 takes full consideration of precautionary aspects of fishery management. A range of harvest control rules were proposed to enable TAC level to reflect the changing level of survey and other data available for the stock. The proposed plan also includes an annex titled “Application of the Precautionary Approach to a new and developing fishery”, in which the Pelagic AC details the extent to which the approach applied to that date (August 2012) reflected the FAO guidelines.

ICES notes that the proposed management strategy follows the rationale for TAC setting procedures used in the ICES advice, but with some additional caution. ICES therefore consider that the proposed management strategy is precautionary.

| Rule | Assessment | Uncertainty | Condition | Procedure |
|----------------|----------------|-------------|--|--|
| 1.1.a 1.1.b | SSB and F | Low | SSB > B _{trigger} SSB < B _{trigger} | F _{target} SSB * (F _{target} / B _{trigger}) |
| 1.2.a 1.2.b | SSB and F | Higher | SSB > B _{trigger} SSB < B _{trigger} | F _{target} SSB * (F _{target} / B _{trigger}) * G |
| 1.3.a 1.3.b | F | Any | F < F _{target} F > F _{target} | Reference TAC * G RTAC + (-RTAC / F _{lim} -F _{pa})*(F-F _{pa}) * G |
| 1.4.a 1.4.b | U | Any | U > U _{pa} , TAC = U < U _{pa} , TAC = | Reference TAC * G U * (Reference TAC / U _{pa}) * G |
| 1.5. | Survey biomass | Any | TAC _{y,q3,4} = TAC _{y+1, q1} | ASB * 1-exp ^{-F_{0.1}} * G * 0.62 ASB * 1-exp ^{-F_{0.1}} * G * 0.38 |
| 1.6 | None | | No information on stock status and no risk of recruitment impairment | TAC = 33,000 t (interim management plan TAC) |

C1(i) – Proposed harvest control rules for the boarfish fishery. For the definitions of variables please refer to the proposed management plan (R9). From the Pelagic RAC proposed management plan (R9).

Measures to limit the impact of the fishery on non-target species and the physical environment are also in place:

Closed seasons, closed areas and moving on procedures shall apply to all directed boarfish fisheries as follows: i A closed season shall operate from 15th March to the 31st August. This is because it is known that herring and mackerel are present in these areas and may be caught with boarfish.

ii A closed area shall be implemented inside the Irish 12 mile limit south of 52°30 from 12th February to 31st October, in order to prevent catches of Celtic Sea herring, known to form aggregations at these times.

iii If catches of other species covered by TAC, amount to more than 5% of the total catch by day by ICES statistical rectangle, then all fishing must cease in that rectangle for 5 consecutive days.

R6 – R9

D. MANAGEMENT MEASURES

LEVEL OF COMPLIANCE

D1. The level of fishing permitted should be set according to management advice given by research organisations.

| | |
|---------------|--|
| LOW | The level of fishing permitted is not set according to management advice given by research organisations. |
| MEDIUM | The level of fishing permitted is higher than management advice given by research organisations. However, the difference is not considered to have a significant impact of the sustainability of the stock |
| HIGH | The level of fishing permitted is set according to management advice given by research organisations. |

Determination: The level of fishing permitted has been set in line with ICES advice in every year since it was first provided in 2011. Final landings have not exceeded the total boarfish quota.

Prior to 2011, there was no restriction on the total level of fishing permitted and the targeted boarfish fishery was effectively unregulated. As a result of increasing annual landings, a notional TAC was set for the first time in 2011, which considerably reduced total landings. In addition to the targeted boarfish quota, western and North Sea horse mackerel landings are permitted to contain up to 5% boarfish bycatch; this value is included in the ICES TAC calculation, and the subsequent ICES advice represents the quota recommendation for the targeted fishery only. Since the first ICES advice was published, for the 2012 season, it has been used to inform the TAC in every year. Additionally, total landings have been lower than the combined TAC and bycatch quota in every year since these were first set. Figure D1(i), below, summarises this information.

The most recent TAC, for 201, was also set in line with the ICES advice, at 42,637t.

| Year | ICES advice | Predicted catch corresp. to advice | TAC* | Bycatch quota** | ICES catch |
|------|------------------------|------------------------------------|---------|-----------------|------------|
| 2001 | None | - | None | None | 0.1 |
| 2002 | None | - | None | None | 0.9 |
| 2003 | None | - | None | None | 11.3 |
| 2004 | None | - | None | None | 5.0 |
| 2005 | None | - | None | None | 5.9 |
| 2006 | None | - | None | None | 7.1 |
| 2007 | None | - | None | None | 21.0 |
| 2008 | None | - | None | None | 33.8 |
| 2009 | None | - | None | None | 89.9 |
| 2010 | None | - | None | None | 143.9 |
| 2011 | None | - | 33 | 9.8 | 36.9 |
| 2012 | No increase in catches | 82 | 82 | 9.9 | 80.7 |
| 2013 | MSY approach | 82 | 82 | 9.5 | 75.4 |
| 2014 | MSY approach | 133.957 | 133.957 | 7.1 | 45.2 |
| 2015 | DLS approach | 53.296 | 53.292 | 4.8 | |
| 2016 | Precautionary approach | ≤ 42.637 | | | |

Weights in thousand tonnes.

* EU and international waters of Subareas VI, VII, and VIII.

** The maximum permitted bycatch (5%) of boarfish allowed to be subtracted from the EU quotas for western and for North Sea horse mackerel. The 5% applies to boarfish, whiting, and haddock and/or mackerel.

D1(i) – ICES quota recommendations, TACs and landings for Boarfish in EU waters, 2001-2016. From the ICES advice, 2015 (R8)

R8, 11

LEVEL OF COMPLIANCE

D2. Where excess fishing capacity exist, mechanisms should be in established to reduced capacity to allow for the recovery of the stock to sustainable levels.

| | |
|---------------|--|
| LOW | Mechanisms to allow for recovery of the stock to sustainable levels are not established. |
| MEDIUM | Mechanisms to allow for recovery of the stock to sustainable levels are somehow established. However there is no evidence of the efficiency of the methods used. |
| HIGH | Mechanisms are established to reduce capacity to allow for the recovery of the stock to sustainable levels and there are evidences of recovery. |

Determination: Mechanisms are established to manage European fishing capacity, both in general and (through the application of an annual quota) specifically in the case of the Northeast Atlantic boarfish fishery.

The EU CFP includes provisions to limit, and historically reduce, total fishing capacity through a combination of subsidising fishery exits and restricting new entries. The entry-exit regime, which applies to the majority of EU Member State vessels, is one of the main pillars of the European-wide fishing capacity management system.

Stock-specific capacity limitation is applied primarily through the annual boarfish quota. Figure D1(i) indicates there is not an excess of fishing capacity in the fishery, as total landings have not exceeded the level recommended by ICES. It is also unlikely that this fishery will see excess capacity in the immediate future, as if quotas continue to be set at the levels advised by ICES this should restrict the ability of new vessels to enter the developing fishery faster than the stock is deemed capable of supporting.

R13

LEVEL OF COMPLIANCE

D3. Management measures should ensure that fishing gear and fishing practices do not have a significant impact on non-target species and the physical environment.

| | |
|---------------|--|
| LOW | There are no management measures to prevent the impact of the fishing methods and fishing practices on non-target species and the physical environment. |
| MEDIUM | There are management measures to prevent the impact of the fishing methods and fishing practices on non-target species and the physical environment. However it is not science based. |
| HIGH | There are management measures to prevent the impact of the fishing methods and fishing practices on non-target species and the physical environment. Measures are based on scientific information. |

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| M | <p><i>Determination: In general the impacts of the boarfish fishery on non-target species are thought to be minimal. However there is limited available information on the specific management measures in place, particularly in relation to the minimisation of bycatch. There is also a lack of detailed information on the impacts of the fishery on PET species.</i></p> <p>Non-target species</p> <p>ICES reports that boarfish catches are generally free of non-target species between September and February. At other times of the year there is known to be some mackerel bycatch. Although overall information on bycatch in the boarfish fishery is limited, it is thought to be minimal. The interim management plan proposed by Ireland in 2010 included a number of measures intended to minimise the quantity of bycatch in the boarfish fishery, including closed seasons in March-August and September-October, and temporary regional closures where the proportion of bycatch is higher than 5%. According to the Irish Stock Book 2015 the closures have been followed by participating vessels on a voluntary basis in 2011-2015.</p> <p>Ecosystems</p> <p>ICES stock assessments include full consideration of all the available ecosystems information, both in general terms and when specifically considering the boarfish stock. The ecological role and significance of boarfish in the Northeast Atlantic is largely unknown, although in some regions they are thought to be an important part of the food web. Boarfish have strong spines on their dorsal and anal fins, and a covering of ctenoid scales, and so are considered unlikely targets for predation. However there is some evidence to suggest they may be important in the diets of some species. ICES also includes consideration of the potential environmental impacts on the boarfish stock; for example, the increased abundance of the species in the 1990s and 2000s is thought to have been caused by higher than usual water temperature during the spawning season.</p> <p>ETP species</p> <p>Several studies have reported the interaction of dolphins with midwater/pelagic trawl fisheries in the NE Atlantic, and a European Commission study group considered monitoring for cetacean by-catch to be a priority issue in other pelagic fisheries. Overall information on the impact of this fishery on ETP species is limited, partially due to its comparatively recent development. Marine mammals and seabirds in EU waters are currently protected by a set of directives, conventions (e.g. Bern Convention and the Habitats Directive) and multilateral international agreements.</p> <p>From 2005 to 2011, 703 days of observations were carried out in a range of Irish pelagic trawl fisheries through independent observer programmes, technical trials, fisheries surveys and the data collection framework. No cetacean bycatch occurred during the independent observer work while four common dolphins were observed as bycatch as part of a fishery survey conducted in 2006. http://www.bim.ie/our-work/projects/monitoringinteractionsbetweenirishfisheriesandprotectedspecies/</p> <p>Physical Environment</p> |
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| Form No: 9 | Report Ref: | Page 17 of 21 | CCM Code: |

Pelagic trawling is generally considered to have virtually no impact on the benthic environment, although some interactions have been reported.

R6 – R8

E. IMPLEMENTATION

LEVEL OF COMPLIANCE

E1. There should be a framework for sanctions of violation of Laws and regulations.

LOW A framework for sanctions of violation of Laws and regulations do not efficiently exist.

MEDIUM A framework for sanctions of violation of Laws and regulations do exist but do not work efficiently.

HIGH A framework for sanctions of violation of Laws and regulations exists and is proven to be efficient.

Determination: A framework for sanctions of violations exists and is generally considered to work efficiently.

To ensure that fishing rules are applied in the same way in all member countries, and to harmonise the way infringements are sanctioned, the EU has established a list of serious infringements of the rules of the common fisheries policy. EU countries must include in their legislation effective, proportionate and dissuasive sanctions, and ensure that the rules are respected.

As from 1 January 2012, EU countries are required to have introduced a point system for serious infringements. Under the scheme, national authorities will:

- assess alleged infringements involving vessels registered under its flag, using standard EU definitions;
- impose a pre-set number of penalty points on vessels involved in serious infringements (points are recorded in the national registry of fisheries offences);
- suspend the vessel’s licence for 2, 4, 8 or 12 months when a pre-set number of points have been accumulated in a 3-year period.

Points are attributed to the fishing licence that is linked to a vessel, so they will stay with the vessel even when it is sold on to a new owner. Monitoring the number of cases detected and the nature and the level of the sanctions imposed is a key part of the Commission's task of ensuring a level playing field for all EU fishers. 2008 Council Regulation (EC) No 1005/2008 established a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing. Through EU Fishery Policy and Regulations, Member States must apply effective, proportionate and dissuasive sanctions against natural or legal persons engaged in IUU activities. A maximum sanction of at least five times the value of the fishery products obtained is provided for with regard to the committing of the said infringement.

In the event of a repeated infringement within a five-year period, the Member States shall impose a maximum sanction of at least eight times the value of the fishery products obtained by committing the serious infringement.

Infringements of CFP rules are dealt with by the Member State concerned. In Denmark the Danish Agrifish Agency is the competent authority with responsibility of enforcement of sanctions and penalties with respect to the prosecution of fishery rules. In England and Wales this body is the MMO; in Scotland Marine Scotland; in Northern Ireland the Fisheries and Environment Division; and in the Republic of Ireland the SFPA.

R14 – R18, R23 – R25

LEVEL OF COMPLIANCE

E2. A management system for fisheries control and enforcement should be established.

LOW A management system for fisheries control and enforcement is not established.

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|------------|-------------|---------------|-----------|
| Form No: 9 | Report Ref: | Page 18 of 21 | CCM Code: |
|------------|-------------|---------------|-----------|

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| MEDIUM | A management system for fisheries control and enforcement is established but do not work efficiently. |
| HIGH | A management system for fisheries control and enforcement is established and works efficiently. |

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| H | <p><i>Determination: Management systems for fisheries control and enforcement are established and are generally considered to work effectively.</i></p> <p>To ensure that the rules of the CFP are followed in practice, the policy also includes a control system with the necessary tools to enforce them. This system is designed to:</p> <ul style="list-style-type: none"> • ensure that only the allowed quantities of fish are caught • collect the necessary data for managing fishing opportunities • clarify the roles of EU countries and the Commission • ensure the rules are applied to all fishers in the same way, with harmonised sanctions across the EU • ensure that fisheries products can be traced back and checked throughout the supply chain, from net to plate <p>The system was laid down in the Control Regulation (Council Regulation (EC) No 1224/2009) which entered into force on 1 January 2010. Europe-wide coordination of control and enforcement activities is provided by the European Fisheries Control Agency (EFCA), which aims to ensure the uniform and effective application of the rules of the CFP by the Member States.</p> <p>In practice, CFP control as carried out by the Member States' control authorities can be broken down into three broad areas: conservation, structures, and markets. Conservation measures cover issues such as quota management or the implementation of technical measures (e.g. mesh sizes). Inspections are used to ensure that the fishing gear on board vessels meets official norms and that the information entered in log-books. Structural policy plays a key role in the search for a balance between the fishing capacity of Member States, the fishing effort actually deployed, and the available fish resources. Checks are therefore necessary to establish that allocated days-at-sea have not been exceeded. Finally, national inspections are not limited to the catching sector, but also include all operations from landing and marketing to storage and transportation. Operators must, at all times, be in possession of proper documentation detailing the origin, nature, quantity and quality of fish involved in transactions, so that it can be cross-checked with data in log-books and from other sources, such as fish auctions.</p> <p>As with the application of sanctions, the bodies responsible for control and enforcement in the individual states are the Danish Agrifish Agency in Denmark; the MMO in England and Wales; Marine Scotland in Scotland; the Fisheries and Environment Division in Northern Ireland; and the SFPA in the Republic of Ireland.</p> <p>R14 – R18, R23 – R25</p> |
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| 7. KEY STAKEHOLDERS |
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8. REFERENCES

- R1 – European Parliament Directorate-General for Internal Policies, Policy Department B, “Fisheries in Denmark”, September 2013: [http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/513972/IPOL-PECH_ET\(2013\)513972_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/513972/IPOL-PECH_ET(2013)513972_EN.pdf)
- R2 – EU Common Fisheries Policy overview: http://ec.europa.eu/fisheries/cfp/index_en.htm
- R3 – EU Common Fisheries Policy reform: http://ec.europa.eu/fisheries/reform/index_en.htm
- R4 – ICES, “Who we are”: <http://www.ices.dk/explore-us/who-we-are/Pages/Who-we-are.aspx>
- R5 – DTU Aqua, “Mission, vision and tasks”: http://www.aqua.dtu.dk/english/About/Mission_vision
- R6 – ICES WGWIDE report, 2015, Chapter 6 (Northeast Atlantic Boarfish): <http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2015/WGWIDE/08%20WGWIDE%20report%20-%20Sec%2006%20Northeast%20Atlantic%20Boarfish.pdf>
- R7 – ICES WGWIDE report, 2014, Annex 02E – Stock Annex: Northeast Atlantic Boarfish: <http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2014/WGWIDE/18%20WGWIDE%20report%20-%20Annex%2002E-Stock%20Annex%20Northeast%20Atlantic%20Boarfish.pdf>
- R8 – ICES advice, Boarfish in the Northeast Atlantic, September 2015: <http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2015/2015/boc-nea.pdf>
- R9 – Pelagic RAC draft boarfish management plan, August 2012: <http://www.pelagic-ac.org/media/pdf/Boarfish%20management%20plan%202012%20Pelagic%20RAC.pdf>
- R10 - Pelagic AC Revision draft management strategy for Northeast Atlantic boarfish proposed by the Pelagic AC (July 2015): <http://www.pelagic-ac.org/media/pdf/1415PAC%20151%20Revised%20management%20strategy%20boarfish.pdf>
- R11 – EU quotas 2016: http://www.consilium.europa.eu/en/meetings/agrifish/2015/12/st15276_en15_pdf
- R12 – ICES advice basis, May 2014: http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/1.2_Advice_basis_2014.pdf
- R13 – EU fishing capacity management: http://ec.europa.eu/fisheries/cfp/fishing_rules/fishing_fleet/index_en.htm
- R14 – Marine Management Organisation, About: <https://www.gov.uk/government/organisations/marine-management-organisation/about>
- R15 – Marine Scotland, about: <http://www.gov.scot/About/People/Directorates/marinescotland>
- R16 – Northern Ireland Fisheries and Environment Division: <http://www.dardni.gov.uk/index/fisheries.htm>
- R17 – Republic of Ireland Department of Agriculture, Food and the Marine, fisheries information: <http://www.agriculture.gov.ie/fisheries/>
- R18 – SFPA, about: <http://www.sfpa.ie/AboutUs/AboutSFPA.aspx>
- R19 – Pelagic AC, about: <http://www.pelagic-ac.org/aboutus>

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| Form No: 9 | Report Ref: | Page 20 of 21 | CCM Code: |

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R20 - ICES boarfish popular advice, September 2015:

http://ices.dk/sites/pub/Publication%20Reports/Advice/Popular%20advice/boc-nea_popular.pdf

R21 – ICES Special Request advice, October 2013, “EC request to ICES to evaluate the proposed long-term management plan for boarfish and possible in-year revision of the TAC for 2013”:

http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/Special%20requests/EU_boarfish_MP.pdf

R22 – CFP control and enforcement overview: http://ec.europa.eu/fisheries/cfp/control/index_en.htm

R23 – CFP Infringements and Sanctions:

http://ec.europa.eu/fisheries/cfp/control/infringements_sanctions/index_en.htm

R24 – CFP Control Regulation: [http://eur-](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:343:0001:0050:EN:PDF)

[lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:343:0001:0050:EN:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:343:0001:0050:EN:PDF)

R25 – EFCA, about: http://efca.europa.eu/pages/home/about_objectives.htm

R26 - EFCA annual report, 2013:

http://efca.europa.eu/pages/docs/basic%20docs/GeneralReports/ANNUAL%20REPORT%202013_EN.pdf

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