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MSC SUSTAINABLE FISHERIES CERTIFICATION

AGARBA Spain Barents Sea Cod Fishery



Public Certification Report

November 2013

Prepared For:

Asociación Nacional de Armadores de Buques de Pesca de Bacalao

Prepared By:

Food Certification International Ltd



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Glossary

AGARBA	AGARBA (Asociación Nacional de Armadores de Buques de Pesca de Bacalao) is the national association of cod fishery owners and is the client organisation for this assessment.
ASCOBANS	(Bonn Convention's) Agreement on the Conservation of Small Cetaceans in the Atlanto-Scandian and Baltic.
ACOM	ICES Advisory Committee
ACFA	ICES Advisory Committee on Fisheries and Aquaculture
AFWG	ICES Arctic Fisheries Working Group
ARBAC	Asociación de Empresas de Bacalao, Especies Afines y Asociadas
ARVI	AGARBA is part of the Cooperativa de Armadores de Vigo (ARVI), which comprises Pesquera Áncora SLU, a company located in Vigo's port and a part of the UK leader, UK Fisheries, and Velaspex SL, an experienced family-run company.
AZTI	Unidad de Investigación Marina (Basque marine and food technical research institute)
B_{pa}	Precautionary reference point for spawning stock biomass
B_{lim}	Limit biomass reference point, below which recruitment is expected to be impaired.
BBTA	Regional Level of the Russian Federal Fisheries Agency
BDES	Biological Diversity and Ecosystems Strategy
CEPESCA	Confederación Española de Pesca (Spanish fishing industry federation)
CoC	Code of Conduct
CFP	Common Fisheries Policy
CR	Council Regulation
EC	European Commission
EEZ	Exclusive Economic Zone
ETP	Endangered, threatened and protected species
EU	European Union
F	Fishing Mortality
F_{lim}	Limit reference point for fishing mortality that is expected to drive the stock to the biomass limit
F_{pa}	Precautionary reference point of fishing mortality expected to maintain the SSB at the precautionary reference point

FEABP	Federación Española de Armadores de Buques de Pesca
FAO	United Nations Food and Agriculture Organisation
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Sea
IMR	Norwegian Institute of Marine Research
ITQ	Individual Transferable Quota
IUU	Illegal, Unregulated and Unreported fish catches.
IWC	International Whaling Commission
JNRFC	Joint Norwegian – Russian Fisheries Commission
MCS	Monitoring, Control and Surveillance
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NAMMC	North Atlantic Marine Mammal Commission
NEAFC	The North East Atlantic Fisheries Commission
NEA	North East Atlantic
NGO	Non-Governmental Organisation
nm	Nautical mile
OSPAR	Oslo-Paris Convention (Convention for the Protection of the Marine Environment of the North-East Atlantic)
P1	MSC Principle 1
P2	MSC Principle 2
P3	MSC Principle 3
PINRO	Russian Polar Research Institute of Marine Fisheries and Oceanography
PI	MSC Performance Indicator
PO	Producer Organisation
PCDR	Public Certification Report
LDRAC	Long Distance Fleet Regional Advisory Council
SGBYC	ICES Study Group on Bycatch of Protected Species
SONAR	Sound navigation and ranging

SSB	Spawning Stock Biomass
TAC	Total Allowable Catch
UK	United Kingdom
UNCLOS	United Nations Convention on the Law of the Sea
VMS	Vessel Monitoring System
VPA	Virtual Population Analysis
WGMME	ICES Working Group on Marine Mammal Ecology
WGRED	ICES Working Group for Regional Ecosystem Description
WWF	World Wide Fund For Nature

1. Executive Summary

- » This report provides details of the MSC assessment process for the AGARBA Spain Barents Sea Cod fishery for Asociación Nacional de Armadores de Buques de Pesca de Bacalao. The assessment process began in June 2012 and will be concluded at a later date to be determined.
- » A comprehensive programme of stakeholder consultations were carried out as part of this assessment, complemented by a full and thorough review of relevant literature and data sources.
- » A rigorous assessment of the wide-ranging MSC Principles and Criteria was undertaken by the assessment team and a detailed and fully referenced scoring rationale is provided in the assessment tree provided in **Appendix 1.1** of this report.
- » The **Actual Eligibility Date** for this assessment is 31 March, 2013
- » The assessment team for this fishery assessment comprised of Nick Pfeiffer, who acted as team leader and primary Principle 2 specialist; Paul Medley who was primarily responsible for evaluation of Principle 1 and Adolfo Merino who was primarily responsible for evaluation of Principle 3. Paul Macintyre was responsible for traceability / chain of custody considerations.

Client strengths

- » The company clearly demonstrates commitment to long-term sustainability of its fishing operations through its desire to have its catches become MSC certified.
- » The company has effective onshore and on-board management structures and systems that underpin the overall objectives of ensuring sustainability.
- » The company voluntarily opts to use a minimum mesh size of 145mm (the minimum legal mesh size permitted being 130mm). Increased mesh size usage has a positive impact in reducing catches of undersize and unwanted fish.
- » AGARBA displays innovation and leadership. Within Spain it is amongst the first few fishing enterprises to commit to an MSC assessment of its main fishery.
- » AGARBA is active at all levels of fishery management and policy that have a relevance to the sustainability of the fishery. The company co-operates with relevant scientific institutions and participates in industry forums and representative organisations such as CEPESCA and ARVI. It is also active within the Long Distance Fleet Regional Advisory Council.

Client weaknesses

- » The company has limited say and control over its entitlements to fish for NE Arctic cod. A significant proportion of its cod entitlements are subject to the annually negotiated EU-Norway agreement. This portion of their entitlement is considered less secure in the long term.
- » At this stage the company has no quota for Arctic haddock, which is an inevitable bycatch of directed cod fishing activity in the Barents Sea. The company is reliant on negotiations that the Spanish administration must regularly undertake on their behalf with other EU member states in order to have entitlement to land catches of Arctic haddock.

Determination

On completion of the assessment and scoring process, the assessment team concluded that the AGARBA Spain Barents Sea Cod fishery **should be certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries.**

Rationale

There are a number of areas in which the fishery scored well. For example:

- » The status of the stock for both cod and haddock are excellent – a conclusion based on a good level of information and a reliable stock assessment.
- » The management decision rules that govern the exploitation of those stocks are, in the main, well established and robust.

- › The available evidence suggests that the fishery is very clean, with around 98% of catches being of the target stock (cod), with the remaining 2% of catches being dominated by haddock (1%). All bycatch is landed, except for species of that can legally be returned alive to the sea. Bycatch of other species is not contributing to a decline in any species. Discarding of unwanted catch is illegal and is considered unlikely to occur at significant levels.
- › There is an excellent level of bilateral cooperation, particularly between Russia and Norway who share overall responsibility for managing the resource through the Joint Norwegian Russian Fisheries Commission (JNRFC), which takes management decisions for all Arctic cod fisheries that affect the stock. The European Union is also a stakeholder in the management of the EU entitlements to Arctic cod and in respect of member states participation. The level of scientific collaboration between researchers in Russia and Norway has greatly enhanced understanding of the Barents Sea ecosystem – an understanding that directly influences management decisions.
- › All of the key elements of an effective management system and fisheries administration are in place and are in the main working well. This includes appropriate laws, representative structures and management review processes. Management is supported by effective control and enforcement mechanisms.
- › Recent improvements in enforcement cooperation between Norway and Russia, and initiatives such as the NEAFC port state control rules, the EU regulation on IUU fishing and most recently the Memorandum of Understanding between Spain and Norway with respect to Barents Sea fisheries enforcement and inspection, all contribute to further strengthening the control systems in place, which have resulted in a decrease in IUU landings of arctic cod from all fleets that target the stock.

Conditions & Recommendations

- » However, a number of criteria that contribute to the overall assessment score scored less than the unconditional pass mark and therefore trigger a binding condition to be placed on the fishery, which must be addressed in a specified timeframe (at most within the 5 year lifespan of the certificate). Full explanation of these conditions is provided in **Section 1.3** of the report, but in brief, the areas covered by these conditions are:
 - › Retained species information
 - › ETP species management and information
 - › Habitats status, management and information.
- » In addition, the assessment team made one recommendation. As these are not the result of a failure to meet the unconditional pass mark, they are non-binding; however in the opinion of the assessment team, they would make a positive contribution to ongoing efforts to ensure the long-term sustainability of the fishery. Details of these recommendations are provided in **Section 6.3.1** of this report.

For interested readers, the report also provides background to the target species and fishery covered by the assessment, the wider impacts of the fishery and the management regime, supported by full details of the assessment team, a full list of references used and details of the stakeholder consultation process.

FCI Ltd confirms that this fishery is within scope.

2. Authorship and Peer Reviewers

2.1 Assessment Team

Assessment team leader: Nick Pfeiffer

Primarily responsible for assessment under Principle 2

Nick Pfeiffer is a fisheries and marine environmental specialist with a diverse experience and in-depth knowledge of marine fisheries. Nick's experience as a fishery scientist spans 15 years and includes the development of fisheries technical conservation measures for commercial fisheries as well as the evaluation of the impacts of a variety of fishing methods on marine ecosystems. Nick is based in the west of Ireland where he is a founding director of the environmental and ecological services company MERC Consultants. As a marine ecologist and aquatic resource specialist with a particular interest in interactions between nature and both aquaculture and capture fisheries Nick provides a range of aquatic environmental and ecological services mainly in support of aquatic nature conservation, fisheries and aquaculture and marine renewable energy. Nick heads up aquaculture and capture fisheries related aspects of MERC's work while also contributing to other projects such as aquatic habitat mapping, benthic faunal studies and survey work in connection with appropriate assessments for fisheries and aquaculture in Natura 2000 sites.

Nick's academic background includes undergraduate studies in aquaculture and marine science at the University of Plymouth, while he also conducted postgraduate research in fisheries at the University of Georgia and at University College Galway. He was employed as a fisheries scientist with the Irish government from 1992 to 1995. Between 1995 and 1997 Nick was manager of the Marine Fisheries Environment Unit at University College Galway.

Expert team member: Paul Medley

Primarily responsible for assessment under Principle 1

Dr Paul Medley is an experienced fishery scientist and population analyst and modeller, with wide knowledge and experience in the assessment of pelagic stocks (amongst a range of marine fish stocks and ecosystems). He holds a first degree in Biology and Computer Science (1st class honours) from the University of York, and a doctorate from Imperial College, London, based on a thesis "Interaction between Longline and Purse Seine in the South-West Pacific Tuna Fishery".

He has travelled widely and worked with a range of fishery systems and biological stocks, both as principal researcher and as evaluator. He is familiar with MSC assessment procedures, having participated in a significant number of MSC full assessments across a range of fisheries, undertaken a substantial number of pre-assessments and acted as peer reviewer in still others.

He is familiar with a wide range of fisheries in the North East Atlantic and other parts of the world, and over the period 2000 to 2005 he has been serving with the Centre for Independent Experts, University of Miami, as an evaluator of various US fishery research programmes. He has been working with the MSC on the development of guidelines for certification of small scale, data poor fisheries. He is based in York (UK).

Expert team member: Adolfo Merino

Primarily responsible for assessment under Principle 3

Adolfo Merino is a veteran of 15 years in the fisheries sector. He is the founder of ADOMER Internacional Consultores y Soluciones, SL (ADOMER), and he acts also as Director of International INDEMAR Fisheries, Spanish Consultant in the fields of fishery, aquaculture and agro-industry.

He has experience in developing reports and projects, both national and international, focused mainly on fisheries resource management, aquaculture, fishing fleet structures, organisations, marketing, fisheries policy in general and structural funds managing

Mr Merino has a deep knowledge of the fisheries sector in the EU and third world countries from Africa, America and the Middle East.

He has worked as a manager of strategic projects supporting the fisheries sector in Angola and Republic of Sao Tome and Principe. He has provided technical assistance regarding fishery and aquaculture issues and in the identification, formulation and management of development projects of

the fisheries sector in different countries: Dominican Republic, Gabon, Ghana, Namibia, Russia, Seychelles, Vietnam and Yemen

He has participated as Resident Adviser in Fisheries Projects, financed by the European Union, in Estonia and Poland (2003 – 2007) with the objective of supporting the fisheries administrations and sector of the new EU Member States to fulfil their obligations coming from the Common Fisheries Policy.

As director of INDEMAR, Mr Merino has been involved on backstopping of several projects and coordinates a team of more than twenty employees. He collaborates with public fisheries administrations and sector-based associations and companies in the identification and implementation of different projects.

Expert advisor: Paul Macintyre

MSC Chain of Custody and Traceability specialist / Lead Auditor

15 year's management experience within the aquaculture and fish processing sectors. 20 years' experience auditing ISO, HACCP, BRC, GlobalGAP, organic and conventional farming operations within the aquaculture production and fish processing sectors and including MSC Chain of Custody since 2005. ISO 9001 Lead Auditor (QMI 1991); Registered Organic Inspector (DEFRA); Diploma in Advanced Food Hygiene (Queen Margaret University Edinburgh); BRC v5 Food Manufacturing Auditor BRC (London and Manchester); GlobalGAP IFA Trainer (GlobalGAP Cologne); RYA Yachtmaster Offshore (RYA Southport) ; Diploma Photography (Photography Institute)

2.1.1 Peer Reviewers

Peer reviewers used for this report were Luis Ambrosio and Mike Pawson. A summary CV for each is available in the **Assessment downloads** section of the fishery's entry on the MSC website.

2.1.2 Risk Based Framework Training

RBF was not used for this fishery assessment.

3. Description of the Fishery

3.1 Unit(s) of Certification and scope of certification sought

Food Certification International Ltd confirm that the fishery is within scope of the MSC certification sought for the assessment as defined.

Prior to providing a description of the fishery it is important to be clear about the precise extent of potential certification. The MSC Guidelines to Certifiers specify that the unit of certification is “**The fishery or fish stock (biologically distinct unit) combined with the fishing method / gear and practice (= vessel(s) and / or individuals pursuing the fish of that stock)**”.

This clear definition is useful for both clients and assessors to categorically state what was included in the assessment, and what was not. This is also crucial for any repeat assessment visits, or if any additional vessels are wishing to join the certificate at a later date. The unit of certification for the fishery under consideration is as set out below.

The fishery assessed for MSC certification is defined as:

Table 3.1: Unit of Certification

Species:	Atlantic cod (<i>Gadus morhua</i>)
Stock:	The Northeast Arctic cod stock
Geographical area:	ICES subareas I & II
Harvest method:	Bottom otter trawling using 145mm mesh size and greater
Client Group:	Member vessels of AGARBA targeting the Northeast Arctic cod stock in ICES subareas I and II using bottom otter trawl fishing gear.
Other Eligible Fishers:	None

Please note that whilst the Unit of Certification details the full extent of what is being assessed, it is the full and complete Public Certification Report that precisely defines the exact nature of certification for this fishery.

This Unit of Certification was used as it is compliant with client wishes for assessment coverage and is in full conformity with MSC criteria for setting the Unit of Certification.

3.2 Overview of the fishery

3.2.1 Asociación Nacional de Armadores de Buques de Pesca de Bacalao

Fishery Ownership

The client for this fishery assessment is AGARBA (Asociación Nacional de Armadores de Buques de Pesca de Bacalao), National Association of Cod Fishing Owners. AGARBA is part of the Cooperativa de Armadores de Vigo (ARVI), and comprises Pesquera Áncora SLU, a company located and operating from the port of Vigo in Galicia, northwest Spain and VELASPEX, S.L which is based in Pasajes San Pedro in the Basque country. Pesquera Áncora is part of UK Fisheries Ltd. while Velaspex SL is an experienced family owned and run fishing company.

At the time of commencement of the assessment process up to and including the site visit in November 2012, the combined cod entitlement for the AGARBA companies was 39,04% of Spanish national entitlements to both NAFO and Barents Sea cod stocks.

History of the Fishery

By the 1970's many distant water fleets were facing terminal decline as a consequence of the unilateral declaration by many nations of 200 mile exclusive economic zones, within which 'foreign' nations would no longer have any automatic entitlements to fish. During the initial period after the introduction of the 200 mile EEZ in Canadian waters, the Spanish negotiated access to the Grand Banks cod stocks for a limited period. The agreement expired in January 1979 and many Spanish distant water vessels were made redundant overnight. Thereafter, many Spanish distant water cod fishing companies went through a period of contraction until eventually they gained access to some entitlement to fish for northeast Arctic cod as well as cod in the northwest Atlantic North Atlantic Fisheries Organisation (NAFO) fishing area. Currently, Spanish access to cod resources in the Barents Sea is based on historical rights to the resource that was developed by private investors, but which is today subject to Spanish regulation.

Velaspe s.l. is a family company that was constituted as a fishing company in 1929 in the port of Pasajes, in the North of Spain. The cod harvesting started in 1954, since then the activity was focused on this species. After the closure of the Grand Banks ('Terranova') cod fisheries to foreign fleets in the 1970's, the company shifted the focus of its fishing activity to the Barents Sea, where it has been active in cod fisheries since.

Pesquera Ancora is a Spanish fishing company that was bought in 2011 by UK Fisheries Ltd. from Aker Seafood group. Previously, in 2009, it was owned by Transpesca s.a. Pesquera Ancora has a long association with distant water cod fisheries and is one of very few distant water fishing companies of Spanish origin that have retained a significant interest in Atlantic cod fisheries after the closure of the Grand Banks fisheries.

Organisational Structure

Asociación Nacional de Armadores de Buques de Pesca de Bacalao (AGARBA) is an association of ship owners whose activity is focused on cod harvesting. AGARBA was formed in the 1960's to represent and protect the interests of the fishing companies dependent on cod as well as to coordinate their activity. While in the past AGRABA has represented over thirty distant water trawlers belonging to 10 member companies, nowadays it is comprises only two remaining member companies, Pesquera Ancora s.a. and Velaspex s.l. The association has one President and one Vice-president, both of whom previously held appointments as managers of the fishing companies that are part of the association. Regular contact is maintained between the companies and the association President and Vice-president through regular meetings and telephone conversations. AGARBA holds one formal annual general meeting as part of normal operating procedures for the association.

Pesquera Ancora is run by a general manager based in Vigo (Spain) who reports directly to the board of directors of the UK Fisheries Ltd group. Velaspex s.l. has been a member of AGARBA since 1998. The company has a President, a Secretary and a Managing Director. Since 1973, the managing director doesn't belong to the family as a measure of good managerial practice. All key staff are Spanish based and the company retains its family ownership.

As the fleet comprises distant water factory processing vessels that engage in extended fishing trips, the companies that comprise the client group both maintain shore based support staff who are responsible for various aspects of the companies functioning, including sales and marketing, finance

and accounting, negotiation and development of fishing opportunities as well as vessel operations management. Part of routine procedures includes on-going maintenance and updating of operational records and essential documentation that is associated with operating a compliant distant water fleet.

Management normally meet the vessel during the landing events that may take place every four to six weeks during the fishing season in order to ensure on-going commitments with respect to operational procedures, legal obligations, health and safety and product quality are fulfilled. Other management functions such as ensuring that technical support and backup is provided in a timely manner and ensuring that any changes to fishing rules are captured and implemented by on-board management systems are also facilitated during regular on-board meetings with between managers and vessel masters and skippers. Regular communication is maintained via satellite communications during fishing trips.

On-board vessel management is provided by a vessel master who is responsible for all aspects of compliance and safety and who has overall responsibility for - and command - of the ship. A separate fishing skipper normally oversees fishing operations while there is also a processing manager or supervisor who is in charge of fish processing operations on-board.

Changes in circumstances subsequent to the site visit

The site visit for this assessment was conducted during November 2012. At that time, the scope of the assessment included the two vessels and quota entitlements for NE Arctic cod belonging to the two companies that made up the membership of AGARBA (Pesquera Ancora S.L. and Velaspex S.A). At that time the combined entitlement of these two companies to Spanish quota for NE Arctic cod amounted to 39.04%. Pesquera Ancora owned 24.1399% while Velaspex owned 14.8987%.

During December 2012, Pesquera Ancora, which is part of the larger UK Fisheries Ltd group, purchased the vessels and quota entitlements for NE Arctic cod (as well as NAFO cod) along with the well-established *Pescafria* consumer brand from Pesquera Rodriguez S.A, a fishing company based in the Basque country. Pesquera Rodriguez operated two large factory trawlers – *Nuevo Virgen de Lodairo* and *Nuevo Virgen de la Barca* which it used to fish its quota entitlements (27.4749% of Spanish NE Arctic cod quota) for NE Arctic cod.

This development occurred after the start of the AGARBA certification process and after the site visit and scoring meeting had been concluded for the AGARBA fishery. The client made contact with the CAB during January 2013 and indicated their wish to have the new fishing opportunities created by the acquisition of Pesquera Rodriguez vessels and quota included in the AGARBA assessment that was in process. The request was considered by the assessment team and the CAB who referred the issue to the MSC for clarification on the most appropriate means to proceed with the request. The MSC considered that since the newly acquired fishery was already certified under MSC, then it was acceptable to expand the scope of the present assessment to include the newly acquired opportunities of Pesquera Ancora S.L. into the AGARBA assessment. The existing MSC certificate that had been issued to Pesquera Rodriguez S.A. could however not be transferred to Pesquera Ancora S.L. as the *Pescafria*-Pesquera Rodriguez client organization itself (to whom the certificate had been issued) had not been included in the acquisition.

The *Pescafria*-Pesquera Rodriguez fishery underwent a separate process whereby that fisheries MSC certification was withdrawn after the first surveillance audit was carried out during January 2013. In effect the fishery had ceased to exist on upon the sale of quota entitlements and vessels to Pesquera Ancora.

Of key importance in the decision to facilitate the expansion in scope of the AGARBA assessment to include the new fishing opportunities of Pesquera Ancora S.L. was the fact that the Pesquera Rodriguez fishery for NE Arctic cod was certified under the Marine Stewardship Council's Principals and Criteria for Sustainable Fisheries in January 2012.¹

This assessment report encompasses the expanded scope of the AGARBA fishery and takes in the vessels and fishing entitlements acquired after the initial site visit. There were no implications in terms of changes to Units of Certification, changes to management systems or environmental components

¹http://www.msc.org/track-a-fishery/fisheries-search/pescafria-pesquera-rodriguez-barents-sea-cod/files/53a3a0fe58ad1d315198329cfc1af49f9baebd3a/@_@display-file/file_data

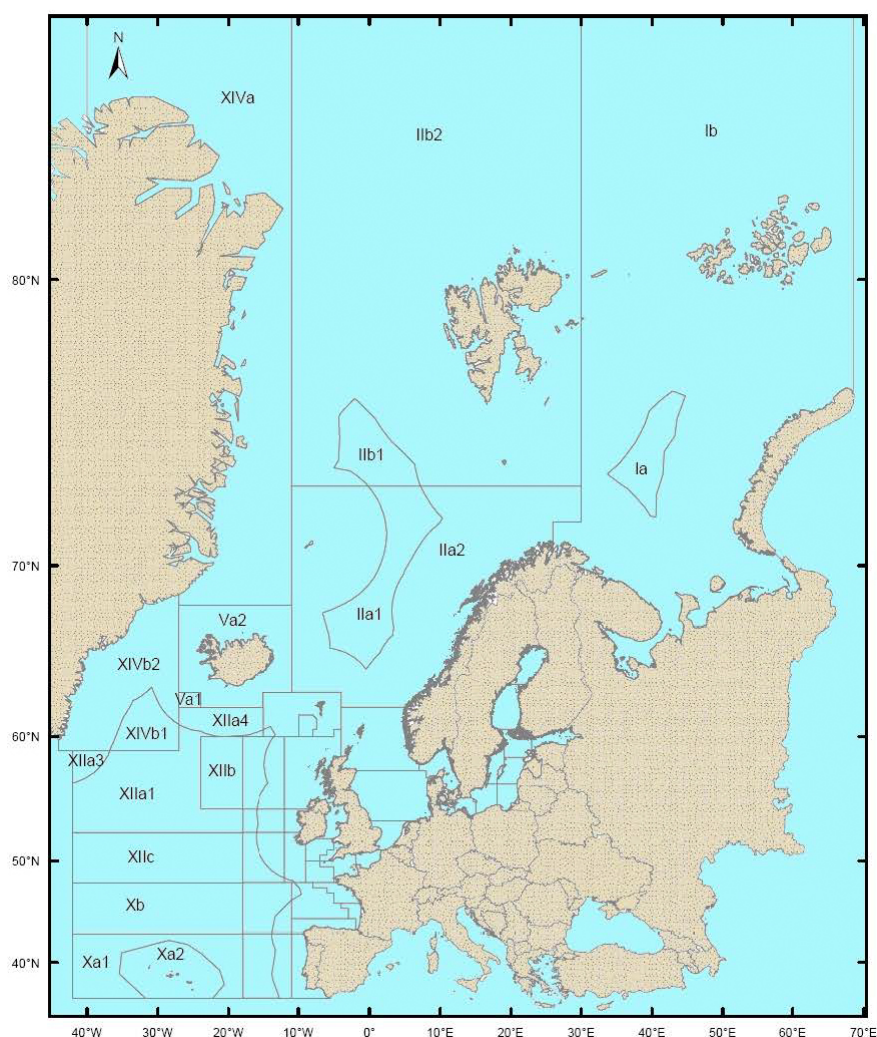
from the expanded fleet and fishery as the outcomes of the Pescafria-Pesquera Rodriguez and AGARBA assessments were practically identical.

Area Under Evaluation

The fishery takes place entirely within ICES areas I & II (See Figure 1).

The area where the fleet is entitled to fish for northeast Arctic cod is entirely under the jurisdiction of Norway, either directly because some of the quota may be taken within the Norwegian Exclusive Economic Zone (EEZ) or indirectly as Norway holds responsibility for control and enforcement within the Svalbard Fisheries Protection Zone (SFPZ), where the majority of the Spanish quota entitlement must be taken. More specific information in relation to fishing areas of the fleet under assessment is provided in later sections of the report.

Figure 1 – ICES fishing areas



Source: Sea Fisheries Protection Authority, Ireland

3.2.2 Species and Fishing Practice

Species type/s

The target species for the fishery under assessment is Atlantic cod *Gadus morhua*. The stock origin is northeast Arctic cod. This report does not aim to provide a scientifically comprehensive description of the species. Interested readers should refer to sources that have been useful in compiling the following summary description of the species.

These may include:

- » Fishbase:
<http://www.fishbase.org/Summary/speciesSummary.php?ID=69&genusname=Gadus&speciesname=morhua&lang=English>
- » Descriptions provided by national scientific bodies, such as Norwegian IMR:
 - › http://www.imr.no/temasider/fisk/torsk/nordautarkisk_torsk_skrei/111219/en
 - › http://www.fisheries.no/ecosystems-and-stocks/marine_stocks/fish_stocks/cod/

The brief species characteristics described below provide only a general overview of the species and have not been used to inform the detailed scoring of the fishery. Instead scoring is based on more specific references referred to later in the report, and assessment tree (**Appendix 1.1**).

Management

The annual meeting of the Joint Russian Norwegian Fisheries Commission fixes the total allowable catches and their sharing between Norway, Russia and third party countries (including the EU). The Commission also stipulates reciprocal access to fisheries in national zones and quota exchanges for joint as well as national stocks. The total allowable catch established by the Commission is based on recommendations on catch levels given by the International Council for the Exploration of the Sea (ICES), where both Norwegian and Russian scientists participate.

According to the 1975 agreements - cod and haddock are shared 50/50 between Russia and Norway. Russia then exchanges part of its northeast Arctic cod and haddock quotas for access to other exclusively Norwegian stocks. In addition, a smaller share of the overall TAC for cod and haddock may be allocated to or traded with other nations. While Norway and Russia share the majority of the quota for both species (approaching 90%), a small but significant proportion of the quota (approximately 14%) is allocated to other fleets including the EU, Faroes and Iceland. A review of 2012 quota allocations shows that Norway received 44.6% of cod the northeast Arctic cod quota whilst Russia received 42%.

For 2012 the International Total Allowable Catch (TAC) for Northeast Arctic cod was agreed by the JNRFC at 751,000t. Under the EU-Norway Agreement, EU entitlements to cod are fixed at 3% of the TAC; one third of which is then further allocated to Spain. The Spanish quota is then further divided according to fixed percentages amongst the Spanish companies that are active in the fishery. The client organisations combined entitlement is 39.04% of the annual Spanish quota for NE Arctic cod.

As outlined previously, after the site visit had been conducted for the assessment but prior to the assessment report being written, the NE Arctic cod quota entitlement of Pesquera Ancora s.l. increased significantly through the acquisition by that company of the already MSC certified Pescafria-Pesquera Rodriguez S.A. fishery for NE Arctic cod. The acquisition resulted in the transfer of two factory trawlers vessels and their corresponding Spanish quota entitlements for NE Arctic cod from Pesquera Rodriguez S.A. to Pesquera Ancora S.L. The acquisition increased the entitlement of Pesquera Ancora S.L to Spanish quota for NE Arctic cod to 51.6148% and that for the AGARBA client group to 66.5135% from the pre-purchase entitlement of 39.04%.

Under the annually negotiated EU-Norway agreement, additional northeast Arctic cod quota is secured for Spanish vessels operating within the Norwegian EEZ.

Fishing Practices

The fleet included within the scope of this certification includes 4 vessels - the Arosa Nueve, Arosa Doce, Nuevo Virgen de Lodairo and the Nuevo Virgen de la Barca. Registration details for these vessels are provided in Table 1. All certified product is caught and processed on-board one or other of these vessels. Client companies that are part of the AGARBA client group own all vessels included under this assessment. All vessels are large (>50m) distant water trawlers with extensive onboard processing and storage capability and are capable of fishing trips of up to 60 days duration. All vessels are stern trawlers that deploy their nets from the rear of the vessels. Catches are brought aboard by retrieving the net up a ramp at the stern of the vessel.

Table 1 - List of AGARBA vessels fishing for NE Arctic cod

Name	Vessel Reg. No.
Arosa Nueve	CO-2-3844
Nuevo Virgen de Lodoiro ²	VI-5-9972
Nuevo Virgen de la Barca ¹	VI-5-9973

Source: AGARBA

Figure 2 - Details for Arosa Nueve



Name: "Arosa Nueve"

Country of Registry: Spain

Built: 1990

Type: Factory freezer stern trawler for cod.

Dimensions: Lt: 56.2m

Tons: Displacement: 1.880T

Main engine: 1.880kW

Speed: 12 Knots

² These vessels were part of the Pesquera Rodriguez MSC certified fishery prior to being acquired by Pesquera Ancora s.l. in December 2012

Figure 3 - Details for Nuevo Virgen de Lodoiro



Name: "NUEVO VIRGEN DE LODAIRO"

Country of Registry: Spain

Type: Factory freezer stern trawler for cod.

Built: 1988

Dimensions: Lt: 56.2m

Tons: Displacement: 1.492T

Main engine: 1.879kW

Speed: 14.5 Knots

An up to date vessel list can be obtained by contacting FCI using the following details:

FCI Fisheries Department

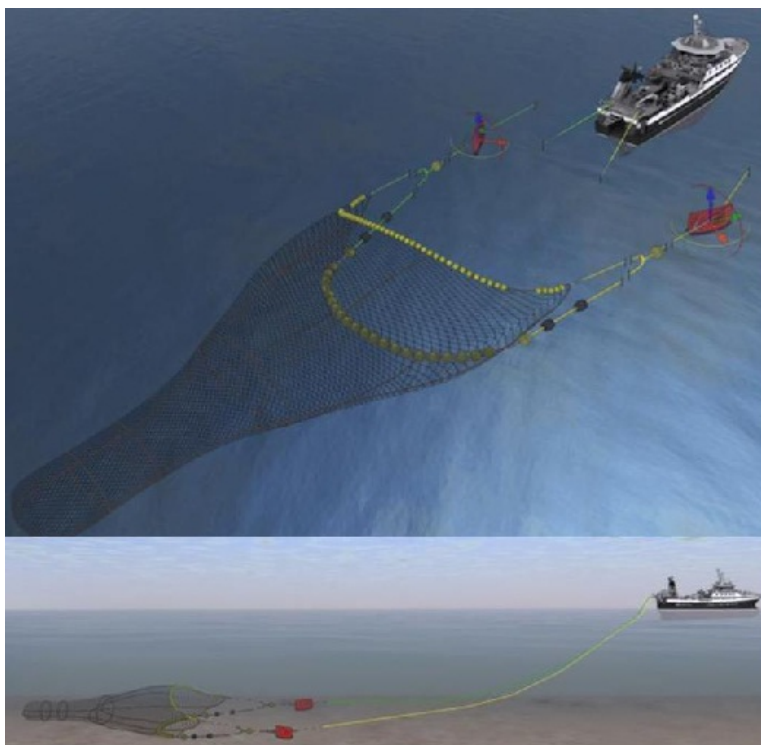
Contact Email: fisheries@foodcertint.com

Contact Tel: +44(0)1463 223 039 (FCI main number)

Presently the fishery operates using demersal otter trawls (or bottom otter trawl) – a gear designed and rigged to have bottom contact during fishing for all of its operations in the Barents Sea. A demersal trawl is a cone-shaped net consisting of a body, closed by a cod end and with lateral wings extending forward from the opening. The two towing warps lead from the vessel to the trawl doors (otter boards) which act as paravanes to maintain the horizontal net opening. Trawl doors may weigh between 2 and 4 tonnes and are pulled across the seabed by the momentum of the vessel. Trawl doors are joined to the wing-end by the bridles that provide further assistance in herding fish into the path of the oncoming net. The net opening is framed by a floating headline and ground gear designed according to the bottom condition to maximise the capture of demersal target species, whilst

protecting the gear from damage. On rough, uneven rocky substrates special rock hopper ground contact gear is used to ensure passage of the gear over seabed obstacles with minimal resulting damage to the net.

Figure 4 - Typical arrangements for demersal stern otter trawler



Source: Rolls Royce

The regulations in force in the Norwegian EEZ and in the Svalbard Fisheries Protection Zone are in accordance with the decisions of the JNRFC. From 2011 onwards, the minimum mesh size for bottom trawl fisheries for cod and haddock is 130 mm for the entire Barents Sea (before 2011 the minimum mesh size was 135 mm in the Norwegian EEZ and 125 mm in the Russian EEZ). The vessels of AGARBA have been using a minimum codend mesh greater than the legal minimum for a number of years prior to the assessment in an effort to minimize bycatch of unwanted or undersize species. Nominally, vessels use a 145mm minimum mesh size.

From 1 January 2011, the technical regulations for the demersal fisheries in the Barents Sea were harmonized so that they are now the same in Norwegian, Russian and Svalbard Fishery Protection Zone waters. The minimum landing size is now 44 cm for cod in all areas (previously it was 47cm in the Norwegian EEZ and 42 cm in the Russian EEZ). The maximum allowable percentage of fish below the minimum size is 15% by number of cod, haddock, and saithe combined in the Norwegian EEZ, and 15% by number of cod and haddock combined in the Russian EEZ. Previously, the maximum percentage was 15% for each species (cod and haddock) in the Russian EEZ. Since January 1997, sorting grids have been mandatory for trawl fisheries in most of the Barents Sea and Svalbard area. As a size sorting device, a grid placed in front of the codend (in the intermediate or extension section of the trawl) can allow effective and reliable escape for fish that is largely independent of catch volumes, unlike diamond meshes which tend to close or become blocked with increasing catch volumes in the codend. There is also some evidence to suggest that survival rates of fish escaping through grids are higher than for those that escape through diamond or square meshes (further detail is provided in the assessment tree in Appendix 1).

Under Norwegian legislation, minimum spacing between bars of the sorting grid must be at least 50mm. The vessels of the certified fleet have opted to use greater minimum grid bar spacing and this is set at 55mm. A variety of studies have been undertaken that examine the effectiveness of

separator grids in the Barents Sea cod fishery. It is generally acknowledged that implementation of the regulation corresponds to an increase in mesh size of approximately 20mm, meaning that effectively the trawl gear fitted with the separator panel is selecting for larger fish and allowing a significantly greater proportion of smaller fish to escape. Assessing the effects of changes in Barents Sea cod fleet selectivity, showed by simulation that there would be substantial gains, in terms of both stock size and catches, from increasing the mean retention length by 5–8 cm relative to the estimated value of 47 cm prevailing before 1997. Catches of 3- and 4-year-olds would decrease, but catches of 6-year-olds and above would increase within a few years. Because such cod attain maturity when they are 6–12 years old (65–105 cm), the proposed increase in retention length would largely affect immature fish. Little direct information exists as yet as to whether the introduction of the grid has had any real effects on stock and catches.

Figure 5 - Photo of the trawl gear used for Barents Sea cod. The rockhopper ground gear can be seen in the foreground while the sorting grid is partially visible at centre right.



Source: Assessment team

The use of instrumentation to monitor gear performance is common in modern bottom otter trawling. Such instruments monitor geometry (door distance, vertical opening, bottom contact, trawl symmetry), trawl depth and water temperature. The weight of catch in the trawl is also closely monitored (using catch sensors) to give an indication of the level of catch and the appropriate time to retrieve the net.

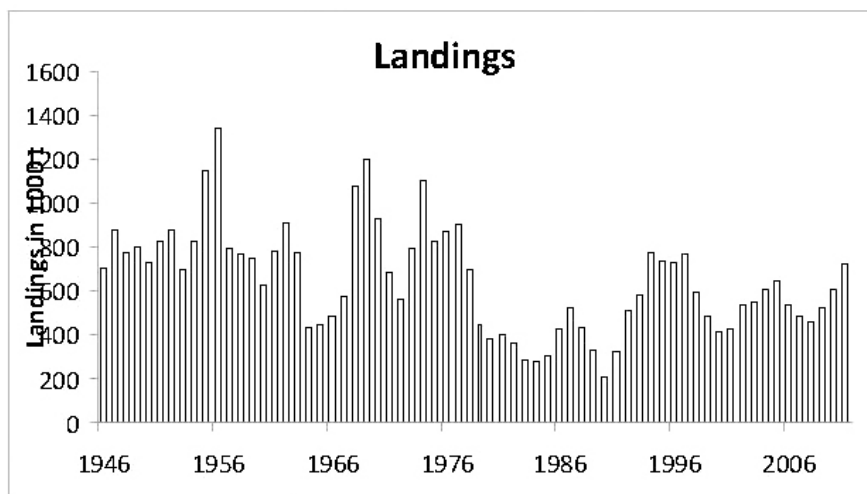
Trawls are typically towed at speeds between 3 to 5 knots, in depths between 150m and 400m. Typical tow time may be around 3 to 5 hours, although this varies according to fish density and seabed characteristics meaning that tows can last as little as 1 hour or as much as 9 hours.

Historical Fishing Levels

The fishery for North-east Arctic cod is conducted both by an international trawler fleet operating in offshore waters and by vessels using gillnets, longlines, handlines and Danish seine operating both offshore and in the coastal areas. 60-80% of the annual landings are from trawlers. Catch quotas were introduced in the trawl fishery in 1978 and for the fisheries with conventional gears in 1989. The Barents Sea groundfish fishery has a long and important heritage. Russian and Norwegian industrial vessels have been targeting cod stocks in the Barents Sea since the mid-19th century, while Spanish long distance vessels have been participating in the fishery since the 1960's. Historically, landings of cod from the Barents Sea have fluctuated, mainly reflecting stock status (Figure 3.6). For cod, landings of 900,000t were experienced in the 1970s, but landings dropped considerably as stock

status declined (landings fell to 212,000t in 1990), before recovering steadily since then. More detail in relation to historical fishing levels is provided in section 3.3.

Figure 6 - Historical fishing levels (landings) in the NE Arctic cod fishery (1946 – 2011)



Source: ICES 2012b

In 2012 the International Total Allowable Catch (TAC) for Northeast Arctic cod was agreed by the JNRFC at 715,000t. Under the EU-Norway Agreement, EU entitlements to cod are fixed at 3% of the TAC; one third of which is then further allocated to Spain. The Spanish quota is then further divided according to fixed percentages amongst a small number of Spanish companies that are active in the fishery. The client association (AGARBA) entitlement is currently 66% of the annual Spanish quota. Under the annually negotiated EU-Norway agreement, additional northeast Arctic cod quota is secured for Spanish vessels operating within the Norwegian EEZ. AGARBA is also entitled to the same fixed proportion of the latter. AGARBA also has a small entitlement to cod quota in the northwest Atlantic (NAFO fishing area). This annual entitlement is very small and is generally not economic to pursue. However the entitlement is normally traded for additional Barents Sea cod quota with another Spanish fishing company under a well-established quota swapping regime that is known and overseen by the Spanish authorities.

Analysis of 2007-2011 landings data provided by AGARBA, shows that the fleet which initially formed the basis for the assessment was responsible for catching 18,527t of NE Arctic cod between 2007 and 2011 (five fishing seasons). Typical annual catches for 2009-2011 were between 4,400t and 5,500t. This approximately equates to between 0.6% and 0.7% of the annual total allowable catch for the stock. The scope of the assessment in terms of volume of landed fish is therefore very small relative to the TAC for the stock. Table 2 summarises catches of northeast Arctic cod for the years 2007-2011 for the vessels of AGARBA.

Table 2 - Landings (tonnes) of northeast Arctic cod, AGARBA 200-2011

Year	2007	2008	2009	2010	2011	Total
Catch (tonnes)	1,412	2,920	4,420	4,295	5,481	18,527

Source: client

As previously described, the scope of the assessment was expanded shortly after the site visit was completed through the purchase by Pesquera Ancora S.L of the fishing vessels and NE Arctic cod quota of Pesquera Rodriguez S.A. Pesquera Rodriguez held 27.4749% of the Spanish quota for Barents Sea cod. In recent years this has equated to between 3,500 and 4,000t of NE Arctic cod catches, excluding any additional entitlements secured through quota swapping (e.g. NAFO cod entitlement exchanges for NE Arctic cod). The client wishes to include the newly acquired fishing opportunity for NE Arctic cod within the scope of the present assessment. **The assessment report therefore includes some 66% of Spanish quota for NE Arctic cod, equating to potential annual cod landings of approximately 9,500t for 2013.**

In the past, the majority of the catch made by AGARBA vessels has been landed to ports in Spain, the principal landing point being Vigo. Occasional landings may be made to Grimsby in the UK. The vessels formerly belonging to Pesquera Rodriguez have for the main part landed their catches in Andenes on the island of Andoy in northern Norway in recent years, although smaller amounts were also landed in the UK and Spain. The business strategy for AGARBA for the future anticipates that landings will be made at Tromsø, Andenes and Alesund in Norway; along with Vigo and Grimsby in Spain and the UK. The possibility of landing Barents Sea cod into Amsterdam in the future is actively under consideration by AGARBA management.

Other Resource Attributes and Constraints

None.

3.2.3 Administrative Framework

User Rights (Legal and Customary Framework)

Russia and Norway share administrative responsibility for managing the NE Arctic cod stock. An agreement, signed in Moscow in 1975 established the Joint Russian Norwegian Fisheries Commission (JRNFC). Since the agreement was enacted, Norway and the Soviet Union/Russia have jointly managed three of the most important fishing stocks in the Barents Sea: cod, haddock and capelin. The annual meeting of the Commission fixes the total allowable catches and their sharing between Norway, Russia and third countries. The Commission also stipulates reciprocal access to fisheries in national zones and quota exchanges for joint as well as national stocks. The total allowable catch established by the Commission is based on recommendations on catch levels given by the International Council for the Exploration of the Sea (ICES), where both Norwegian and Russian scientists participate.

No small scale, artisanal or indigenous fisheries are significantly affected by this fishery which takes place in the offshore waters of northern Norway and Svalbard. Furthermore, no groups are given any special access to the fishery, nor is this needed or being called for.

Further details on the administrative framework are contained in sections 3.3 and 3.5 of this report.

3.3 Principle One: Target Species Background

Principle 1 of the Marine Stewardship Council standard states that:

A fishery must be conducted in a manner that does not lead to over fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

Principle 1 covers all fishing activity on the entire arctic haddock and cod stock - not just the fishery undergoing certification. However, the fishery under certification would be expected to meet all management requirements, such as providing appropriate data and complying with controls, therefore demonstrably not adding to problems even if the problems will not cause the certification to fail.

In the following section the key factors which are relevant to Principle 1 are outlined. The primary sources of information on this section are:

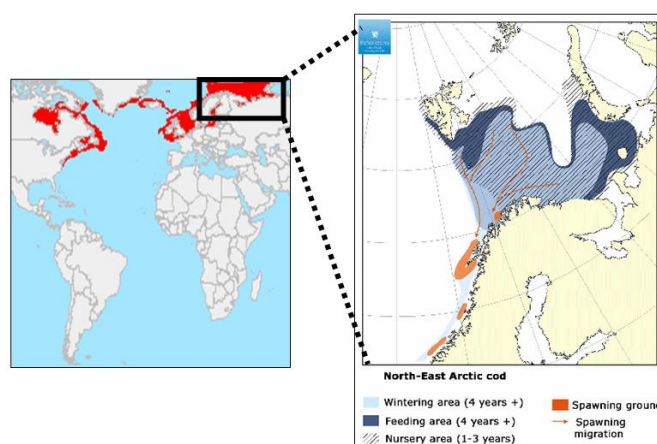
- » Fishbase:
 - › <http://www.fishbase.org/Summary/speciesSummary.php?ID=69&genusname=Gadus&speciesname=morhua&lang=English>
 - › <http://www.fishbase.org/summary/SpeciesSummary.php?genusname=Melanogrammus&speciesname=aeglefinus>
- » ICES Fishmap:
 - › <http://www.ices.dk/marine-data/maps/Pages/ICES-FishMap.aspx>
- » Descriptions provided by national scientific bodies, such as Norwegian IMR:
 - › http://www.imr.no/temasider/fisk/torsk/nordaustrarktisk_torsk_skrei/111219/en

- › http://www.fisheries.no/ecosystems-and-stocks/marine_stocks/fish_stocks/cod/
- › http://www.imr.no/temasider/fisk/hyse/nordostarktisk_hyse/en
- » http://www.fisheries.no/ecosystems-and-stocks/marine_stocks/fish_stocks/haddock/
- » ICES, 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10.
- » ICES 2012. 3.4.3 Northeast Arctic haddock (Subareas I and II). ICES Advice June 2012, Book 3. pp.1-11.
- » ICES. 2012. Report of the Arctic Fisheries Working Group, 20 April–26 April 2012. ICES CM 2012/ACOM:05.

3.3.1 Fishery Resource: Cod (*Gadus morhua*)

Cod is a benthopelagic species (0 – 600m, but typically 150 – 200m), which is widely distributed in a variety of habitats in Northern temperate waters, from the shoreline down to the continental shelf and from the arctic polar front to a latitude of around 35°N (up to 20°C). The North East Arctic stock in the Barents Sea, which is the subject of this assessment, is one of the most important cod stocks, along with the Icelandic stock.

Figure 7 - Global distribution of Atlantic Cod & the NE Arctic stock



Source: www.fishbase.org (Atlantic) and www.fisheries.no (NE Arctic)

Cod are gregarious during the day, tending to form compact schools that swim between 30 and 80 metres above the bottom, and scatter at night.

The earliest reported maturities for the Atlantic cod are at 2 years in its eastern (Oslofjord) and at 4 years in its western distribution. This is one of the world's most fecund fishes, with an average production of 1 million eggs per female. The eggs and the larvae up to 2.5 months are pelagic; subsequently the postlarvae settle to the bottom.

The Barents Sea is the main nursery and feeding area for northeast Arctic cod, in sea temperatures above 0°C (south of the polar front). The main spawning takes place along the Norwegian coast March-April. Eggs and larvae are pelagic and drift from the spawning grounds to the Barents Sea, before becoming demersal in late autumn.

Cod are important predators in the ecosystem. Strong trophic relationships exist between cod, capelin and euphausiids (krill), although they are omnivorous. Larvae and postlarvae feed on plankton, juveniles mainly feed on small crustaceans, progressively replaced by decapods (e.g. krill) and adults predominantly feed on finfish. The Barents sea cod populations tend to follow the spawning capelin to

the Norwegian coast in the spring, whereas in the summer, they leave the coastal area and disperse, feeding on capelin and herring over the Barents Sea. Aside from these core components of the diet, cod are benthic foragers feeding on species such as polychaetes and echinoderms. Feeding occurs at dawn and dusk, but small fish (of less than 20cm) feed continuously.

Cannibalism has also been shown to be a very important process in the population dynamics models and food web models that are central to the ICES assessments of Barents Sea cod.

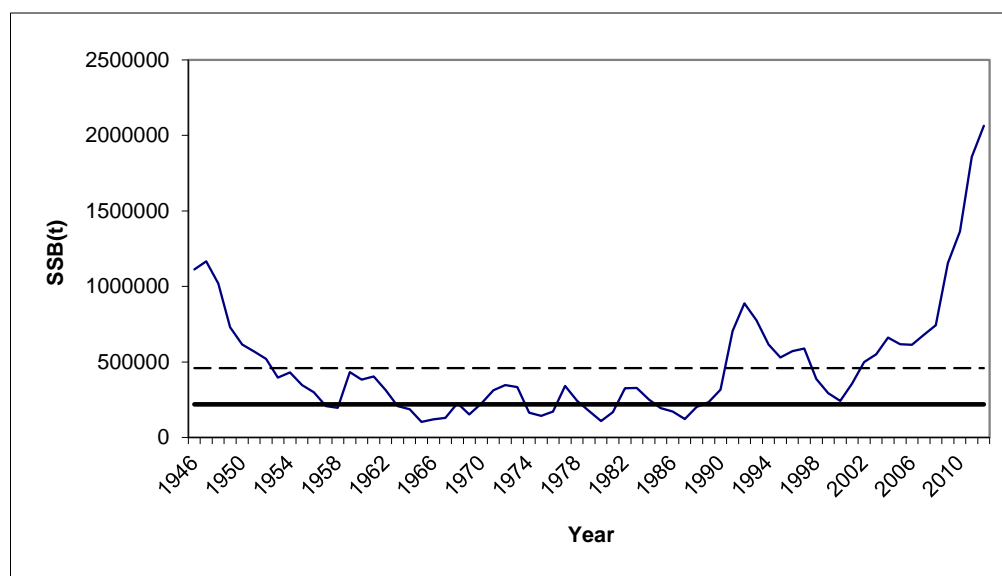
3.3.2 Status of Stocks

The Arctic cod stock is in excellent condition, well above their biomass limit and trigger reference points (Fig. 3.8). The fishery has had low fishing mortalities in recent years compared to their long term average, and fishing mortalities have been at or below their targets.

The reference points have been developed and reviewed over a number of years. The biomass limit reference point is used to define stock status and is based upon the stock recruitment relationships. Cod B_{lim} has been estimated from a change point regression based on the time series of recruitment and spawning stock size obtained from stock assessments (Figure 8). The cod B_{MSY} reference points are clearly defined as trigger points forming part of the harvest control rule, not a target reference point.

The F_{MSY} target reference point is estimated based on stochastic simulations and represents the approximate proportion of the stock that can be caught, which will maximize the expected long-term yield. Cod exhibits density dependent growth and cannibalism is an important factor in mortality, and would imply MSY should be found at a higher fishing mortality than would otherwise be the case. Target fishing mortality (used to set quotas) and spawning stock biomass are consistent with maximum sustainable yield and the precautionary approach, as defined by ICES.

Figure 8 - Stock status time series of cod



NB: Cod time series for the estimated spawning stock biomass relative to B_{lim} (thick lower line) and B_{MSY} (dotted upper line).

Source: ICES Advice for cod I Subareas I and II, June 2012

The primary management objective for cod is to maintain the level of exploitation at a level commensurate with high long-term yields through controlling the Total Allowable Catch (TAC). It has been agreed to set the TAC based on indicators that are routinely estimated from annual stock assessments. The stock assessment and scientific advice also include an assessment of the management performance in relation to its stated objectives. Decisions on TACs and other management measures are made at the annual meeting of the Joint Russian Norwegian Fisheries Commission (JRNFC), which is based on an agreement between Russia and Norway, and is

responsible for agreeing management regulations and controls for the shared Barents Sea fish stocks.

In addition to TACs, the fisheries are regulated by mesh size limitations, a minimum catching size, a maximum bycatch of undersized fish, maximum bycatch of non-target species, closure of areas with high densities of juveniles, and other seasonal and area restrictions. Since January 1997, sorting grids have been mandatory for the trawl fisheries in most of the Barents Sea and Svalbard area. The effects of these regulations have not been evaluated, but they should, if applied correctly, decrease mortality on small fish and non-target species.

The fisheries are controlled by inspections of the trawler fleet at sea, by a requirement to report to catch control points when entering and leaving the EEZs, by VMS satellite tracking for some fleets, and by random inspections of fishing vessels when landing the fish. Keeping a detailed fishing logbook on-board is mandatory for most vessels, and large parts of the fleet report to the authorities on a daily basis.

There has been non-compliance with the TAC regulations, resulting in a significant amount of unreported landings in the past. The main mechanism used in avoiding quota control seems to have been transshipping of fish from the Barents Sea. This has been identified as the main risk to the harvest strategy, affecting both the accuracy of the stock assessment and effectiveness of the harvest control rule. However, no unreported catches have been detected in recent years and risks to the harvest strategy from illegal fishing have receded.

The other potentially significant source of unrecorded mortality is discarding. There is evidence of discarding throughout the Barents Sea for most groundfish stocks, despite discarding being illegal in Norway and Russia. This problem might affect other species rather than cod since there is little incentive to discard cod. Beyond a regulation to ban discarding, this has not been addressed by management controls, but is being investigated through scientific observers.

Ecosystem factors are considered within the management process, but with the exception of some diet information, which is used in the stock assessments, the issues are only considered qualitatively. However, a multispecies model based on the food web including capelin, cod and other species, is used to confirm the single species cod stock assessment. The recent reduction in fishing mortality for cod should provide significant protection for the ecosystem as the fishing effort will have been much reduced. Some areas are closed to fishing, although these are relatively small and have only a low impact on the fishery.

The intention is to set TACs according to well-defined, agreed harvest control rules (management plans). ICES has evaluated the cod harvest control rule and concluded that it is in agreement with the precautionary approach. The harvest control rule applied to Arctic cod was agreed at the 33rd meeting of the Joint Russian Norwegian Fisheries Commission (JRNFC) in November 2004 and amended in at the 38th meeting in November 2009:

The Parties agreed that the management strategies for cod and haddock should take into account the following:

- » conditions for high long-term yield from the stocks
- » achievement of year-to-year stability in TACs
- » full utilization of all available information on stock development

On this basis, the Parties determined the following decision rules for setting the annual fishing quota (TAC) for Northeast Arctic cod (NEA cod):

- » estimate the average TAC level for the coming 3 years based on F_{pa} . TAC for the next year will be set to this level as a starting value for the 3-year period.
- » the year after, the TAC calculation for the next 3 years is repeated based on the updated information about the stock development, however the TAC should not be changed by more than $\pm 10\%$ compared with the previous year's TAC. If the TAC, by following such a rule, corresponds to a fishing mortality (F) lower than 0.30 the TAC should be increased to a level corresponding to a fishing mortality of 0.30.
- » if the spawning stock falls below B_{pa} , the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from F_{pa} at B_{pa} , to $F = 0$ at SSB equal to zero. At SSB-levels below B_{pa} in any of the operational years (current year, a year before and 3 years of prediction) there should be no limitations on the year-to-year variations in TAC.

(Translation from Norwegian)

At the 39th Session of the Joint Norwegian Russian Fisheries Commission in October 2010 it was agreed that the current management plan should be used 'for five more years' before it is evaluated.

The stock assessment uses a virtual population analysis model to estimate fishing mortality and spawning stock size for determination of stock status and application of the harvest control rule. The model requires catch-at-age, abundance indices as data and estimates of maturity-at-age, weight-at-age and natural mortality as input. Data are obtained from landings reports, scientific surveys and catch sampling.

Landings by species are reported as official landings added to any other sources of mortality known to Arctic Fisheries Working Group. There remains some confusion in designating catches between Arctic cod and Norwegian coastal cod, but this error does not affect the Arctic cod assessment.

Russian and Norwegian specialists have obtained estimates of potential unreported landings of cod. Two series of cod IUU catch were made available to ICES for the years 2002-2008, and both were used in carrying out stock assessments, but the advice is based on the series with the higher estimate. Before 2002 and for 2009 onwards IUU catch is assumed to have been negligible.

Discard estimates are not available and are assumed to be zero in the assessments. The effect of not accounting for discarding is unknown, but attempts are being made to address this issue.

Age, lengths and weights are routinely sampled from landings and from within the abundance surveys. These are used to estimate composition of the commercial catch and the stock. Maturity is also routinely sampled within the surveys. There is a routine exchange programme of otoliths among ageing labs to estimate errors and improve methods. Observers are used to collect additional useful information at sea.

The cod stock assessment uses three scientific survey indices and a Russian trawl CPUE index. The indices are derived from acoustic and trawl survey data collected during winter and autumn in the Barents Sea and Lofoten. The surveys are designed to be unbiased in estimating the relative abundance of the stock. Surveys also sample age, length and weight data which are used to estimate age specific abundance indices and weight-at-age composition of the stocks.

Since 1997 all of the surveys used for model fitting have been affected by an incomplete coverage for some of the years, due to Norwegian vessels not been given access to Russian zone and Russian vessels not been given access to Norwegian zone. All indices affected have been corrected as far as possible, but these procedures still increase uncertainty in the indices.

Base natural mortality is assumed to be 0.2 year^{-1} for cod, which is standard practice although it has not been scientifically justified. However, routine sampling of cod stomachs now allows cod predation to be accounted for and therefore the natural mortality of the younger cod and haddock age groups have been adjusted accordingly.

Cod stomach content data is recorded in a joint PINRO-IMR stomach content database. On average about 9 000 cod stomachs from the Barents Sea have been analysed annually in the period 1984-2012. These data are used to calculate the per capita consumption of cod by cod for each prey and predator age group.

Northeast Arctic cod is an important predator of other species in the ecosystem, notably capelin, but also other finfish. Changes in growth, maturity, and cod predation have been linked to the abundance of capelin. Similarly, annual consumption of cod by seals and whales may be inversely related to capelin abundance. The management of Northeast Arctic cod will therefore have implications on the dynamics of these stocks.

Other information on the environment, such as various physical oceanographic indices and biomass of other species, such as capelin, are also collected and made available to the relevant fisheries scientists. Some, but not all, of these data are used.

The main analytical model is the Extended Survivors Analysis (XSA) variant of virtual population analysis. Virtual population analysis uses catch-at-age data to back-calculate the size of each age group. The XSA variant is a simple approach to fitting this type of model and is widely used by ICES for a number of stocks. Although it does not attempt to apply more modern computer intensive fitting techniques and lacks statistical rigor, it is still considered by ICES a robust method for stock assessment as long as the data are of good quality. The particular settings applied to the XSA are described in the working group report.

The main unusual feature of the assessments is the estimate of natural mortality which is adjusted for cod predation. Estimates of cod cannibalism are included in the natural mortality for the cod assessments. Natural mortality due to cannibalism is by far the most significant source of mortality in cod ages 1-2, significant for age 3, but for ages 4 onwards a minor component in most years.

The main uncertainties in the assessments derive from the biased catch statistics and the inconsistencies in the surveys. Bias in the catch statistics appears to have decreased in recent years. The surveys show some inconsistencies may be explained by the inadequate spatial coverage.

Alternatives to the XSA model are routinely applied to Arctic cod. These have included a variant on the VPA approach (TISVPA) and application of an alternative multispecies model (Gadget). The multispecies model is of particular interest as it is beginning to take account of ecosystem effects, but requires much more data. These assessments have broadly agreed with the XSA assessment.

Since 2008, the recruitment estimates for the short term projection has included information on environmental indices (ice coverage, temperature and oxygen saturation at the Kola section, air temperature at Murman coast, and capelin biomass) as well as survey indices available for the age 0-2 year classes.

3.3.3 History of the Fisheries and Management

The cod fishery is conducted both with an international trawler fleet and with coastal vessels using traditional fishing gears. Haddock are taken as bycatch in the cod trawl fishery and, to a lesser extent, in the targeted trawl fishery and by longline. Most of the catch is taken by trawl and the rest by other gears such as longline and gillnet. The ratio between cod and haddock quota and exploitation rate, as well as the size composition and geographical distribution of those stocks, affect the way the fishery is carried out and also influence unreported landings and discards.

From a level of about 900 000 t in the mid-1970s, the total cod catch declined steadily to around 300 000 t in 1983-1985. Catches increased to above 500 000 t in 1987 before dropping to 212 000 t

in 1990, the lowest level recorded since 1945. The catches increased rapidly from 1991 onwards, stabilized around 750 000 t in 1994-1997, but decreased to about 414 000 t in 2000. From 2000-2009, the reported catches were between 400 000 and 520 000 t, and in addition there were unreported catches. Catches have increased in the last couple of years, reaching 720 000 t in 2011.

In recent years, Norway and Russia have accounted for more than 90% of haddock landings. Before the introduction of national economic zones in 1977, UK (mainly England) landings made up 10–30% of the total. The historical high haddock catch of 320 000 t in 1973 divides the time-series into two periods. In the first period, highs were close to 200 000 t around 1956, 1961 and 1968, and lows were between 75 000 and 100 000 t in 1959, 1964 and 1971. The second period showed a steady decline from the peak in 1973 down to the historically low level of 17 300 t in 1984. Afterwards, landings increased to 151 000 t before declining to 26 000 t in 1990. A new increase peaked in 1996 at 174 000 t. Three strong year-classes (2004-2006) are causing peak catches at the present time.

Estimates of unreported catches (IUU catches) of cod have been added to reported landings for the years 2002 and onwards. Since 2008, IUU catches have been estimated as zero.

Catch quotas were introduced in the trawl fishery in 1978 and for the fisheries with conventional gears in 1989. Since January 1997 sorting grids have been mandatory for the trawl fisheries in most of the Barents Sea and Svalbard area. Discarding is prohibited. The minimum catching size of haddock is 40 cm in the Russian Economic zone, the Norwegian Economic zone, and the Svalbard area and 44cm for cod caught north of 62°N. It is allowed that up to 15% (by number) of cod, haddock and saithe is below the minimum catching size, and larger proportions of undersized fish leads to closure of areas. The minimum mesh size in trawl cod ends is 130 mm. The fisheries are controlled by inspections at sea, requirement of reporting to catch control points when entering and leaving the EEZs and by inspections when landing the fish for all fishing vessels. Keeping a detailed fishing logbook on board is mandatory for most vessels, and large parts of the fleet report to the authorities on a daily basis. There is some evidence that the present catch control and reporting systems are insufficient to prevent discarding and under-reporting of catches. Although since 2005 Port State Control (PSC) has been implemented, these should prevent IUU catches at Barents Sea.

3.4 Principle Two: Ecosystem Background

Principle 2 of the Marine Stewardship Council standard states that:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent ecologically related species) on which the fishery depends.

The following section of the report highlights some of the key characteristics of the fishery under assessment with regard to its wider impact on the ecosystem.

Species with which the fishery may interact and their treatment in the assessment

The assessment team reviewed and listed the species that the fishery is believed to have potential to interact with either directly or indirectly, other than the target stock. The species identified were considered under the Principle 2 component as indicated below.

RETAINED Species PI

Haddock	<i>Melanogrammus aeglefinus</i> NE Arctic stock
Redfish	<i>Sebastes marinus</i> , <i>Sebastes mentella</i>
Greenland halibut	<i>Rheinhardtius hippoglossoides</i>
Atlantic halibut	<i>Hippoglossus hippoglossus</i>
Saithe	<i>Pollachius virens</i>
Plaice	<i>Pleuronectes platessa</i>
Wolfish	<i>Anarchicas</i> spp.
Skates and rays	<i>Raja</i> spp.

BYCATCH Species PI

No discard species have been identified during the assessment as all catches are landed.

ENDANGERED, THREATENED AND PROTECTED Species PI

MAMMALS

White sided dolphin	<i>Lagenorychus acutus</i>
White beaked dolphin	<i>Lagenorychus albirostris</i>
Harbour porpoise	<i>Phocoena phocoena</i>
Hooded seal	<i>Cystophora cristata</i>
Harp seal	<i>Pagophilus groenlandicus</i>
Humpback whale	<i>Megaptera novaeangliae</i>
Bowhead whale	<i>Balaena mysticetus</i>
Sei whale	<i>Balaenoptera borealis</i>
Blue whale	<i>Balaenoptera musculus</i>
Fin whale	<i>Balaenoptera physalus</i>
Minke whale	<i>Balaenoptera acutorostrata</i>
Beluga whale	<i>Delphinopterus leucas</i>

ELASMOBRANCHS

Spiny dogfish	<i>Squalus acanthias</i>
Porbeagle shark	<i>Lamna nasus</i>
Blue skate	<i>Dipturus batis</i>
Angel shark	<i>Squatina squatina</i>
Basking shark	<i>Cetorhinus maximus</i>

3.4.1 Retained catch

The fishery is exceptionally clean, with landings of cod being consistently above 98% of the total landed catch. **Table 3** summarises retained species landings data provided to the team for the fishery for the period 2005- 2011, while these have been engaged in the Barents Sea cod fishery. The data relate to the “Arosa” vessels that have been active in the fishery over the period.

Catches are overwhelmingly of the target species, with a significant bycatch of haddock that is retained and landed. The low number and volume of other species present in catches can be accounted for by a number of factors, including:

- » the use of large mesh sizes. The minimum legal mesh size is 130mm however the fishery has voluntarily elected to use 145mm in Norwegian and Svalbard waters, in part to minimise bycatch of other species;
- » the use of separator grids in the fishing gear (compulsory since 1997) see Figure 4.1;
- » the operation of a move on rule / real time closures - to protect juveniles, or in event of high bycatch (see <http://www.fiskeridir.no/english/fisheries/marine-protected-areas>);
- » permanently closed areas to protect spawning / nursery grounds;
- » the high concentrations of cod on the fishing grounds;
- » highly experienced fishing crews. Fishing skippers have been with the company for all or most of their careers years and are knowledgeable on how to capture cod with minimum bycatch, knowing where and when best to target stocks with minimal mixing with other stocks;

Despite the above, it is inevitable that the fishery captures a range of other fish species, most of which are of some commercial value and which must be landed under Norwegian fishing rules. According to landings data for AGARBA vessels (Table 3), retained non-target species accounted for slightly less than 2% of total landings for the period 2009-2012 for the Barents Sea cod fishery. These figures are comparable with independent data from scientific observers that have been presented to the team by AZTI Tecnalia (Table 4) – the Basque country technical research institute that provides scientific support to one of the certified vessels. The assessment team has reviewed AZTI's independent observer data for the Spanish Barents Sea cod fishery and the data demonstrates bulk catches typically comprise a minimum of 90% of cod in this fishery.

There is very little IUU amongst the various fleets that are active in the Barents Sea cod fishery nowadays, it having decreased dramatically from the 1990's. Catch reporting requirements are strictly enforced amongst all participating nations and vessels and there is a high degree of monitoring, control and surveillance. Accordingly, there is high degree of confidence in landings data and these are considered to be accurate and verifiable and very likely to present a true picture of landings.

According to the landings data, apart from cod the main retained species by volume was haddock *Melanogrammus aeglefinus*, which accounted for slightly more than 1% of the landed catch. A range of other species is also retained, including redfish *Sebastes* spp, wolffish *Anarhichas* spp, halibut *Hippoglossus hippoglossus*, Greenland halibut *Reinhardtius hippoglossoides*, and very small quantities of other flatfish such as plaice. For all of these

species, volumes landed amounted to less than 30t (redfish) and 10t for all other species combined weights over the period. Based on these figures the catches are considered to be insignificant in both commercial and stock management contexts.

Some species that may be considered to be vulnerable to fishing impacts on account of slow growth, late maturity and/or low fecundity are present in the retained catch, including redfish and wolffish. Redfish landings are not reported by species and it is probable that specimens of both species known to be present in the area (*Sebastes mentella* and *Sebastes marinus*) are captured. There are some indications that the main catch of redfish is of *S mentella* – the beaked redfish. The beaked redfish stock is not believed to be in a depleted condition and there are signs that some recovery has occurred in recent years. TACs are set relatively high for that stock. *S marinus* – the golden redfish stock is known to be in a parlous state, however. The fishery under assessment has a much lesser catch of golden redfish however. At the reported levels, redfish catch rates in the cod fishery are very unlikely to have a significant impact on stocks; catches amount to in and around 6t per annum and most of this is believed to be of beaked redfish. Spain has a combined quota of c. 90t of redfish for Areas I & II in order to permit landings of redfish, which are managed by TAC, in the fishery. The entitlement is considered to be adequate to permit all redfish captured in the fishery to be legally landed as indicated by discussions with the client fishery and fishing skippers. The situation is similar with respect to catches of Greenland halibut. Catches are minimal and the fleet under assessment is entitled to land any catches up to 7% of the Barents Sea catch. Catches are however insignificant at approximately 1.5t per annum.

The situation with respect to the reporting of wolffish catches is similar in that wolffish catches are not reported by species in the fishery, even though data from AZTI indicates that up to three separate species may be present in the catches – Spotted wolffish *Anarhichas minor*, Northern wolffish *Anarhichas denticulatus* and Atlantic wolffish *Anarhichas lupus*. Anon (2010) refers to the decline in wolffish populations in the western Atlantic and refers to their known vulnerability to impacts from bycatch in trawl and other fisheries. The population status of wolffish populations in ICES Areas I and II is generally poorly understood, although it is also widely believed to have declined in recent years for most species Anon, (2009), ICES (2005).

At the catch rates reported and observed in this fishery it is highly unlikely that the fishery is having a significant impact on wolffish stocks, with catches amounting to around 1.5t per annum for all species that may be encountered. There are no applicable restrictions in terms of Spanish quotas for wolffish landings, although there are limits to the quantities of other species that may be landed in the fishery, generally these are less than 15% of the cod catch, with some lower levels being applicable to other species including redfish and wolffish.

There are a range of measures in place that should ensure that the fishery does not hinder recovery and rebuilding of redfish and wolffish stocks. Actual catch rates are extremely low in the fishery for these species. Other significant factors are that the fishery takes place in mainly offshore waters, outside of the main range of the predominantly inshore and coastal spotted wolffish. Measures that are likely to protect populations of redfish and wolffish include the large mesh size used in the fishery, limited cod quota and the limited area over which the fishery takes place. In addition to the fact that there are other areas which are closed to fishing such as around Bear Island, the fishery is highly spatially concentrated (as confirmed by VMS) and therefore has only a small overlap with the range of the spotted and northern wolffish. Grant et al. (2005) show that wolffish have a high post capture survival, although for most of the area where the fishery operates, return to the sea is not permitted.

Despite this, the assessment team considered that it would be preferable to have greater clarity with respect to the species of redfish and wolffish which are affected by the fishery and the proportions of each species that is typically present in the catch. This issue has been captured during the scoring and has resulted in the raising of a condition in the certification process in relation to catches of these two groups of fishes.

Table 3 - Summary of landed catch for the AGARBA fleet, Barents Sea cod fishery 2009-2011

			Redfish <i>Sebastes</i> spp.	Halibut	Saithe	Greenland halibut	Wolfish	Plaice
t	Cod	Haddock						
2009	4,419.56	89.49	13.99	0.00	0.00	1.64	0.90	0.33
2010	4,294.66	29.52	8.71	1.56	2.01	2.40	0.00	2.41
2011	5,480.95	30.45	9.21	0.00	0.00	0.71	4.28	4.09
TOTAL (t)	14,195.17	149.46	31.91	1.56	2.01	4.74	5.18	6.83
% of total catch over the period	98.6	1.04	0.22	0.01	0.01	0.03	0.04	0.05

Source: Spanish Ministry of Agriculture, Environment and Food

3.4.2 Bycatch

The fishing activity for the assessed fleet takes place mainly in waters of the Svalbard Fishery Protection Zone (SFPZ) and to a lesser extent, the Norwegian Exclusive Economic Zone (NEZ). The NEZ is under direct Norwegian jurisdiction, while Norway is also responsible for administering the Svalbard Fishery Protection Zone. In both areas, under section 15 of the 2009 Norwegian Marine Resources Act, there is a duty on fishing vessels to land all catches. In section 48 of the 2012 *Regulations amending the regulations relating to sea-water fisheries*³ further detail on the discarding ban is laid out, including listing all species that must be landed. This covers cod, haddock as well as most species either reported for, or potentially relevant to the fishery under assessment, such as saithe, Greenland halibut, redfish, wolfish, halibut and skate.

The explicit discard ban covers all waters of the assessed fishery. The discard ban in combination with the technical fishing gear conservation measures and management measures detailed in the regulations, as well as detailed information on bycatch levels for the Spanish Barents Sea cod fishery provided by AZTI Tecnalia (See Table 4) means that there is adequate justification for understanding that the level of discarding or overall bycatch in this fishery is minimal.

³ www.fiskeridir.no/

Table 4 - Description of catches during the Spanish Barents Sea cod fishery between 2007-2012. All catch is landed and there is no significant discarding.

Available data

- Period:** 2007-2012
- Type of data:** Teleost and skates and rays catch (percentage in weight). Biological sampling only for target species.
- Species:** Target and bycatch species (there is not available data for protected species and invertebrates). Species specific information for wolffish and rays available only for some years.

Species	Scientific name	Year		
		2007	2009-10	2011
Cod	<i>Gadus morhua</i>	92.03%	90.048%	89.77%
Haddock	<i>Melanogrammus aeglefinus</i>	2.00%	8.457%	9.38%
Wolffish	<i>Anarhichas spp</i>	2.55%	0.458%	
Spotted wolffish	<i>Anarhichas minor</i>		0.268%	0.29%
Wolffish	<i>Anarhichas lupus</i>		0.118%	
Long rough dab	<i>Hippoglossoides platessoides</i>	0.71%	0.171%	0.18%
Redfish	<i>Sebastes spp.</i>	1.80%	0.288%	0.23%
Northern wolffish	<i>Anarhichas denticulatus</i>		0.074%	
Saithe	<i>Pollachius virens</i>	0.02%	0.024%	0.01%
Lumpfish	<i>Cyclopterus lumpus</i>		0.021%	
Halibut	<i>Hippoglossus hippoglossus</i>	0.13%	0.019%	0.13%
Greenland halibut	<i>Reinhardtius hippoglossoides</i>	0.29%	0.038%	
Rays spp	<i>Raja spp</i>	0.47%	0.008%	
Tusk	<i>Brosme brosme</i>	0.004%	0.007%	
Blue ling	<i>Molva dypterygia</i>		0.001%	

Source: AZTI Tecnalia

The AGARBA vessels attempt to ensure that catches of any unwanted fish or undersize fish are minimised. Vessels utilise the mandatory sorting grid and as part of the overall bycatch reduction strategy the company voluntarily fishes with a minimum (nominal) cod-end mesh size of 145mm (15mm greater than the legal minimum). Use of the larger mesh size ensures that most undersize fish escape from the net. The assessment team also witnessed Norwegian Coastguard Inspection reports of the Arosa Nueve from 2011. The reports demonstrated how catches were routinely inspected in order to check mesh sizes and to see if quantities of undersize fish warranted implementation of the move-on rule, whereby areas may be closed and vessels are required to move their fishing operations if bycatch of undersize fish (principally whitefish species) exceeds the relevant threshold. The Coastguard reports indicated that bycatch of undersize fish is exceptionally low in the clients fishery. Inspection reports indicated a zero % bycatch of undersize fish, while mesh measurements confirmed the actual codend mesh size in use was 151.7mm – considerably greater than the legal minimum. No evidence presented indicated that the move-on rule had been implemented during the previous year.

The captain and fishing skipper of the Arosa Nueve detailed the entire fishing, processing and landing procedures from the moment the vessel leaves port until when it lands some 3 – 4 weeks later. Company executives corroborated the crew assertion that there is no discarding and that everything is landed. The finding is also supported by a Norwegian Coastguard monitoring, control and surveillance system, which through at sea aerial and vessel boarding inspections has a high likelihood of detecting significant levels of discarding.

While there are no main discard species (as per the CR definition), a review of observer data suggests that there is almost certainly some level of interaction with a number of vulnerable species, including redfish and wolffish (both considered under retained species) and elasmobranch species such as rays and skate. Landings data for the fleet under assessment does not indicate any landed ray, skate or shark. Under Norwegian regulations, discarding of catches of these species is prohibited. Despite this, AZTI bulk catch sampling data for Basque Barents Sea cod fisheries indicate that there is a small catch of skates and rays in a typical

Barents Sea cod fishery and other MSC certified fisheries on the same stock also indicate such a bycatch, albeit at very low levels in both cases. This is consistent with the evaluation of the bycatch component of Principal 2 for the Pesquera Rodriguez S.A. Barents Sea cod fishery MSC assessment; whose vessels and fishing entitlements now form part of the current assessment.

Dolgov *et al* (2005) reviewed the distribution and relative abundance of skates in the Barents Sea. The study indicates that common skate are concentrated on the slope edge in the southwestern Barents Sea at depths beyond 400m, extending to over 750m. The preferred habitat and depth range of the species renders their capture unlikely by the fishery. Independent fishery observer data from AZTI tecnalia indicates a low capture rate for elasmobranchs in this fishery. Observer data indicates that a total bycatch of 298kg of skates and rays were captured during multiannual monitoring of 3,350 tonnes of directed cod fishing. Although not specifically identifying which species were involved, the indicated capture rate is most likely insignificant, especially given that it is made up of a range of species.

AZTI data and landings records suggests that interactions with potentially vulnerable skate and ray species are most likely insignificant and unlikely to meet with the requirement for 'main' to be included in consideration for scoring at SG80 for either retained or discarded species. Despite this, the assessment team formed the view that it would be consistent with the *MSC Principles and Criteria for Sustainable Fisheries* that the scale of impact of the fishery in this regard should be more clearly established. To this end, it would be preferable if the fisheries impact with any elasmobranch species was clearer with greater detail in relation to which species are affected as well as the extent of interaction (quantity) and the fate of captured specimens. This is consistent with the assessment teams expectation that the fishery should clearly demonstrate the level of interaction with all vulnerable and sensitive species, be they Retained or ETP species. Given that there is unlikely to be any significant discarding, issues of skate and ray captures have been included in a Condition that relates to the retained species information performance indicator.

A key to ensuring that the cod catch remains very clean is maintenance of a healthy cod stock which ensures that tow times can be kept short on average and that catch rates are high. A number of other measures assist in ensuring that the fishery maintains a negligible bycatch profile. The fact that discarding of most species is banned and all catches must be landed is a clear incentive to minimize unwanted catches. The fact that the fishery takes place in mainly offshore waters, well away from coastal waters means that there is on average a lower diversity of fish fauna. Measures that are likely to assist in eliminating unwanted catches include the large mesh size and mandatory sorting grid used in the fishery. A system of closed areas and real time closures also operates in the Barents Sea and these have been designed around the need to close areas where high numbers of juvenile fish and/or unwanted species may be encountered. There is a high level of compliance overall with fishing rules by the fleet and there is a highly effective system of monitoring, control and surveillance.

While undersize cod and other species such as haddock are processed and landed in the normal way, they are reported separately where they occur at detectable levels and there is no discarding of these species. The main shortcomings of the approach taken towards problem of bycatch and discarding, is that there is little or no market for some of the fish, which must be landed. The discard ban is difficult to enforce all of the time (except when inspectors / observers are on board, or when a surveillance aircraft are overhead). It is therefore possible that a small amount of discarding does take place undetected (across all trawl fisheries in Norwegian, Svalbard or NEAFC waters), however all indications are that there is no significant level of discarding of any species in this fishery.

Potential bycatch of birds has been considered, as has bycatch of invertebrate species. Seabird bycatch is considered very unlikely to occur due to the fact that the fishery take place mainly offshore and uses trawl gears that do not easily interact with birds. Invertebrate bycatch is considered to be inevitable in demersal trawl fisheries. This is mainly of benthic species that get caught while the gear is being towed and do not have an opportunity to escape. While there is no data available that is specific to this fishery, bycatch of invertebrate species is highly unlikely to reach 'main' status, requiring it to be considered at SG80. While some sensitive species maybe involved, the spatial restriction of the fishery for NEA arctic cod mean that relatively small areas of the seabed are actually fished (see VMS plots) and these tend to be the same areas year in year out. Hence the potential impact of the fishery on benthic fauna is considered to be

representative of low risk to most species. Issues related to seabed habitat are considered separately under the habitats PI (2.4).

3.4.3 Endangered, Threatened and Protected species

The fishery has minimal interaction and impact on any species of endangered, threatened or protected species. The CR defines ETP species as those that are recognised by national legislation or by binding international agreement.

Both Norway and Spain are signatories to a number of conventions on species protection and management, notably the Convention on Biological Diversity, which sets out a general framework and national strategy. More specific proposals on species protection are made under the regional and global nature conservation conventions, primarily the Convention on International Trade in Endangered Species (CITES), which Norway and Spain are also signatory to.

The Barents Sea is an important area for Marine mammals. The PINRO / IMR Joint Ecosystem work concludes that the most common marine mammal in the Barents Sea is the white-beaked dolphin (*Lagenorhynchus albirostris* – IUCN Least Concern). Of the baleen whales, minke (*Balaenoptera acutorostrata* – IUCN Least concern), humpback *Megaptera novaeangliae* – IUCN least concern) and fin whales (*Balaenoptera physalus* – IUCN endangered) were the most numerous.

Only the last of these aforementioned marine mammal species is protected by CITES. Two other species of marine mammals, which also occur in the Barents Sea, are also protected by CITES: sei whale (*Balaenoptera borealis* – IUCN endangered) and blue whale (*Balaenoptera musculus* - IUCN endangered). The Joint PINRO / IMR ecosystem report states that blue and sei whales are rarer and occasionally observed in the Barents Sea.

Harp Seals (*Pagophilus groenladicus* - IUCN least concern) are also present in the Barents Sea, but are not protected by CITES. No elasmobranch species occurring in the Barents Sea are protected by CITES, although some of these species are listed by IUCN as critically endangered which do occur in the Barents Sea, such as Common or Blue skate (*Dipturus batis*) Angel shark (*Squatina squatina*) and porbeagle (NE sub-population).

Basking shark are listed on CITES Appendix II and are known to occur in coastal waters of the NEZ, and possibly further offshore at higher latitudes at different time so the year. Basking shark bycatch is recorded occasionally from some deep water industrial trawl fisheries. There are no indicated interactions with Barents Sea cod trawl fisheries.

Table 5 presents a summary of main ETP species for the Barents Sea.

Table 5 - Summary of key ETP mammal and elasmobranch species in the Barents Sea

Common name	Species	Listed status (IUCN)	CITES
MAMMALS			
White sided dolphin	<i>Lagenorychus acutus</i>	LC	
White beaked dolphin	<i>Lagenorychus albirostris</i>	LC	
Harbour porpoise	<i>Phocoena phocoena</i>	LC	
Hooded seal	<i>Cystophora cristata</i>	V	
Harp seal	<i>Pagophilus groenlandicus</i>	LC	
Humpback whale	<i>Megaptera novaeangliae</i>	LC	
Bowhead whale	<i>Balaena mysticetus</i>	LC	
Sei whale	<i>Balaenoptera borealis</i>	EN	
Blue whale	<i>Balaenoptera musculus</i>	EN	
Fin whale	<i>Balaenoptera physalus</i>	EN	
Minke whale	<i>Balaenoptera acutorostrata</i>	LC	
Beluga whale	<i>Delphinopterus leucas</i>	NT	
ELASMOBRANCHS			
Spiny dogfish	<i>Squalus acanthias</i>	V	
Porbeagle shark	<i>Lamna nasus</i>	CE	
Greenland shark	<i>Somniosus microcephalus</i>	NT	
Blue skate	<i>Dipturus batis</i>	CE	
Angel shark	<i>Squatina squatina</i>	CE	
Basking shark	<i>Cetorhinus maximus</i>	V	X

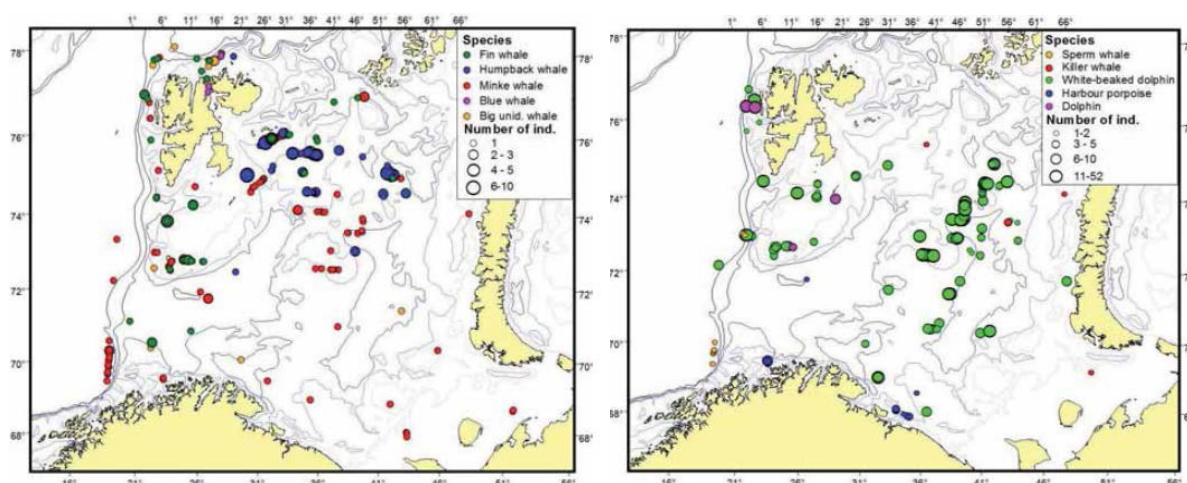
LC-least concern, NT – near threatened, CE-critically endangered, V-vulnerable, EN-endangered

Source: FCI assessment team

Norway (but not Spain) is a member of the North Atlantic Marine Mammal Commission (NAMMCO) - an international body for cooperation on the conservation, management and study of marine mammals in the north Atlantic. NAMMCO provides a mechanism for cooperation on conservation and management for all species of cetaceans (whales and dolphins) and pinnipeds (seals and walrus) in the region, many of which have not before been covered by such an international agreement. The fact that the fishery takes mainly place in waters that are under Norwegian jurisdiction means that NAMMCO is a relevant organization in the context of the fishery under assessment and the management of impacts on ETP species with which NAMMCO are concerned.

Norway and Russia share responsibilities for managing populations of marine mammals in the Barents Sea. Both countries cooperate on projects in the Barents Sea that serve to advance knowledge with respect to marine mammals for the area. For example, PINRO are actively involved in the Trans-north Atlantic Sightings Survey (TNASS), to estimate the summer distribution and absolute abundance of cetacean populations in the North Atlantic. TNASS will represent a considerable enhancement of understanding of cetacean populations in the North Atlantic, in particular in Arctic regions.

Figure 9 - Distribution of toothed (r) and Baleen (l) whales – August – September 2008



Source: Joint PINRO / IMR Barents Sea ecosystem survey (2008)

The Barents Sea is an important breeding ground for seabirds and is home to unique sea bird colonies, including one of the world's largest puffin colonies. There is a good level of understanding of the bird composition of the Barents Sea, including regional and seasonal distribution patterns. For example, a good source of information is "The status of Marine Birds Breeding in the Barents Sea Region" by T. Anker-Nilssen *et al* (2000), which summarises the findings of collaborative research undertaken by seabird scientists in Russia and Norway, and serves as an invaluable and comprehensive source of information of seabird populations in the Barents Sea. Although seabird bycatch and mortality has been recorded from all types of commercial fisheries, it is recognised that this is most notably the case for longline, set gillnets and driftnet fisheries (SGBYC 2009).

In addition to CITES, Norway also produces a red list using IUCN criteria for rating species risks of extinction. The Norwegian list was most recently updated in 2010. This list contains 12 marine fish species classed as endangered or vulnerable including the Blue skate (*Dipturus batis*), Thornback skate (*Raja clavata*) and Spurdog *Squalus acanthias*.

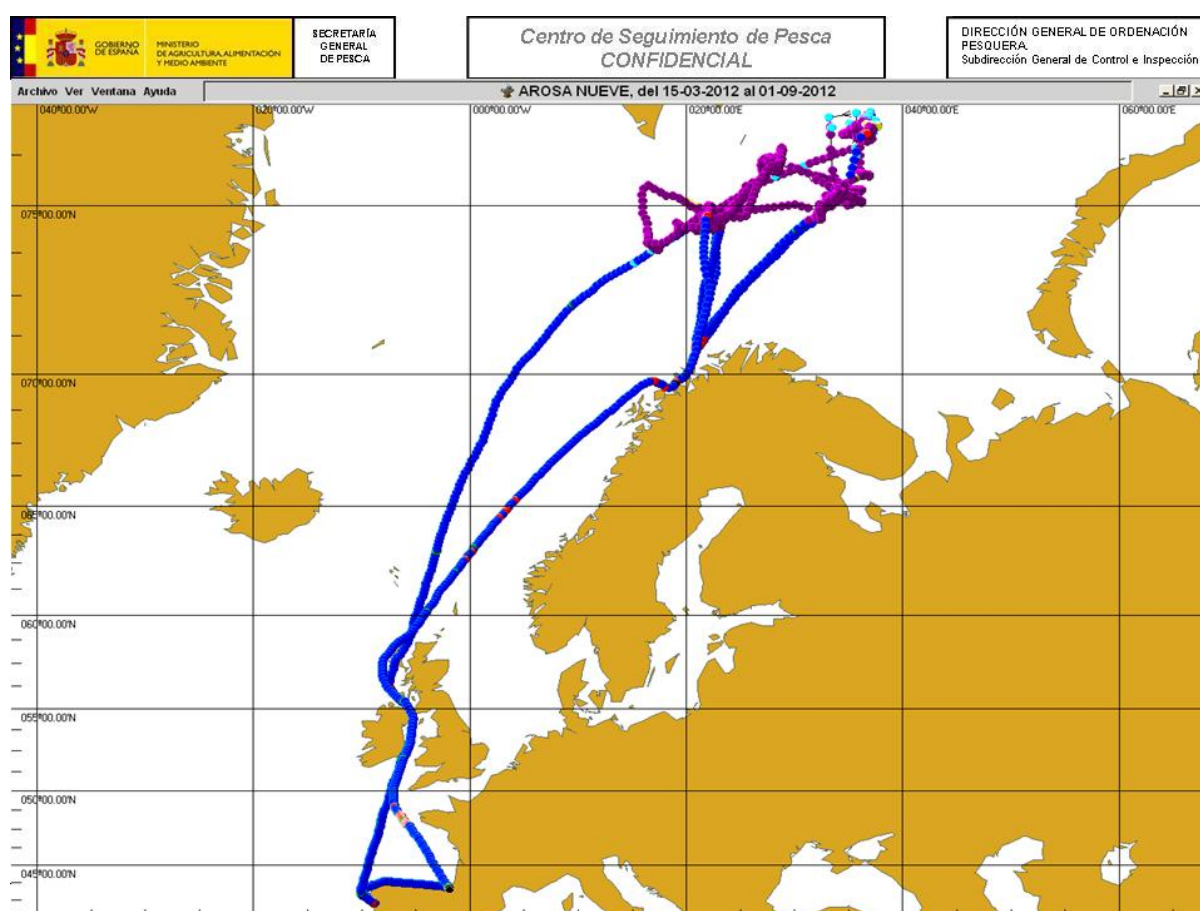
In summary, the only species relevant to this assessment (with the *potential* to interact with the gear) and which are also protected by CITES, are basking shark and a small number of whale and dolphin species. A review of the impact of Norwegian offshore demersal trawl fisheries on marine mammals is available through the ICES Study Group for Bycatch of Protected Species (SGBYC 2009). These results can reasonably be taken as applicable for the fishery under certification (same vessels, same gear, and same area). That study concludes that larger offshore demersal trawl vessels "are regarded as having a relatively low risk for bycatches of marine mammals". Interaction with Basking shark is also considered highly unlikely. The low level of interaction can be attributed to the nature of the demersal trawl gear that the fishery uses, as well as the spatial and temporal aspects of the fishery and basking shark seasonal distributions that indicate low risk based of encounter.

3.4.4 Habitat

Figure 10 presents the distribution of fishing effort by the Arosa Nueve for the fishing year 2012. The gear used in this fishery is relatively heavy demersal trawl gear. Seabed contact relies on armoured rock-hopper type ground gear with large rubber rollers (30-50cm) mounted on heavy ground chain. Heavy steel bobbin floats up to 24" in diameter support wing ends of the net. At one time the fishery operated as a pair trawl fishery, with two vessels being used; each pulling one end of the net. Nowadays the net is fished by a single vessel and demersal trawl doors made of steel and weighing up to 1.5 tonnes each are used to spread the fishing gear and ensure that the net remains open and in close contact with the seabed during fishing.

Figure 10 - Distribution of fishing effort for the Arosa Nueve for 2012 whilst engaged in directed fishing for northeast Arctic cod.

Fishing activity is indicated by purple, vessel hove to is indicated by red and blue points indicated vessel under way.



Source: Spanish Ministry for Agriculture and the Environment

Research conducted since the 1970's has clearly demonstrated that trawling may cause long-term harm to seabed habitats and associated seabed faunal communities. Through repeated trawling events the seabed relief may become less over time and eventually the seabed may become to a relatively flat, featureless plain devoid of vertical structure and/or physical features that often support significant species diversity. A useful overview of the findings of studies into the impacts of demersal trawling on benthic communities and seabed habitats is presented in the FAO fisheries technical paper 472 (Løkkeborg 2005).

Particular types of seabed habitat are known to be more sensitive to mobile gear use than others. Impacts of fishing need to be considered in the context of any natural background disturbance or influence that may be a feature of a particular environment and which may result

from natural processes such as sedimentation, erosion, sand scour, or disturbance caused by wind or ocean waves and currents. Soft sediments are known to be more vulnerable than are sandy ones, whilst rocky seabed habitat may be more physically durable but are often host to sessile animal and plant communities, which may in fact be highly sensitive to disturbance or damage through gear contact. Trawling related damage may occur through destruction of habitat e.g. destruction of biogenic reefs such as corals, horse mussel beds or oyster reefs or through removal of habitat material e.g. the removal of stones and boulders that get brought to the surface in fishing gear. Other types of impact may be less direct but may still have serious consequences for seabed habitats e.g. re-suspension and redistribution of sediments. Changes in stratification of the upper layer of seabed sediments can disturb natural development and structure of sublittoral communities. Damage to habitats usually also features changes in associated living communities. Such changes may be as a direct consequence of removal or destruction of vulnerable species such as slow growing or fragile species or as a result of damage to or removal of habitats on which they depend.

The potential for trawling to damage seabeds may be exacerbated by the fact that fishing is typically concentrated into relatively small areas of the most locally highly productive areas of the continental shelf or slope, well within reach and range of many species of bottom fauna. The fact that these areas are in general quite productive is of significance from a management perspective and is an important consideration when identifying appropriate mitigation.

From an environmental perspective, it is important that management and supporting information are adequate to address the potential of fishing to have serious impacts on seabed habitats.

There is an improving level of information available in relation to the seabed habitats that occur in the areas where the fishery takes place. Seabed mapping undertakings conducted in many parts of the Norwegian EEZ indicate the type and location of the most vulnerable seabed communities that trawling and other activities may impact. General information in relation to the most sensitive and vulnerable seabed habitats in the area is summarised and available through OSPAR at http://www.ospar.org/content/content.asp?menu=00180302000000_000000_000000.

More specific information in relation to vulnerable deep-water corals, burrowing anemones and megafauna and sponge communities in the south-western Barents Sea sector of the Norwegian economic zone is available from the Norwegian seabed mapping portal www.mareano.no.

The richest communities of benthic animals are found along the Norwegian coast and the west coast of Svalbard, where the hard-bottom communities display an unusually high richness of species. Sensitive seabed communities known from the Barents and Norwegian Seas include deep-sea sponge aggregations and deep water coral *Lophelia pertusa* reefs. Many *Lophelia* reefs that are known from the Norwegian Economic zone are found closer to land in Norwegian territorial waters and are therefore not known to be present in areas fished by fleet to which this certification applies. They are also protected through a series of area closures. The Norwegian Fisheries Directorate website www.fisheries.no provides detailed maps showing the location of closed areas, while the information is also contained in the 2009 Marine Resources Act.

Figures 11 and 12 present open source information in relation to Barents Sea and Norwegian Sea sensitive marine communities. The Mareano project is expected to provide additional data for much of the northern sector of the Norwegian EEZ in future years. Figure 13 is an indicative map of Barents Sea seabed sedimentary communities taken from the Barents Sea portal (The Joint Norwegian-Russian Environmental Status Report for the Barents Sea).

While the latter provides some good and improving level of information on seabed habitats in the Barents and Norwegian Seas, there is, as yet, incomplete understanding of Barents Sea benthic habitats and communities with incomplete seabed mapping. This is especially true of areas that may be fished around the Svalbard archipelago for which information in relation to the nature, extent and distribution of seabed habitats is most limited. This makes effective management of the whole Barents Sea environment more difficult in the context of minimising trawling impacts on seabed marine habitats and serves as impediment to effective protection of vulnerable

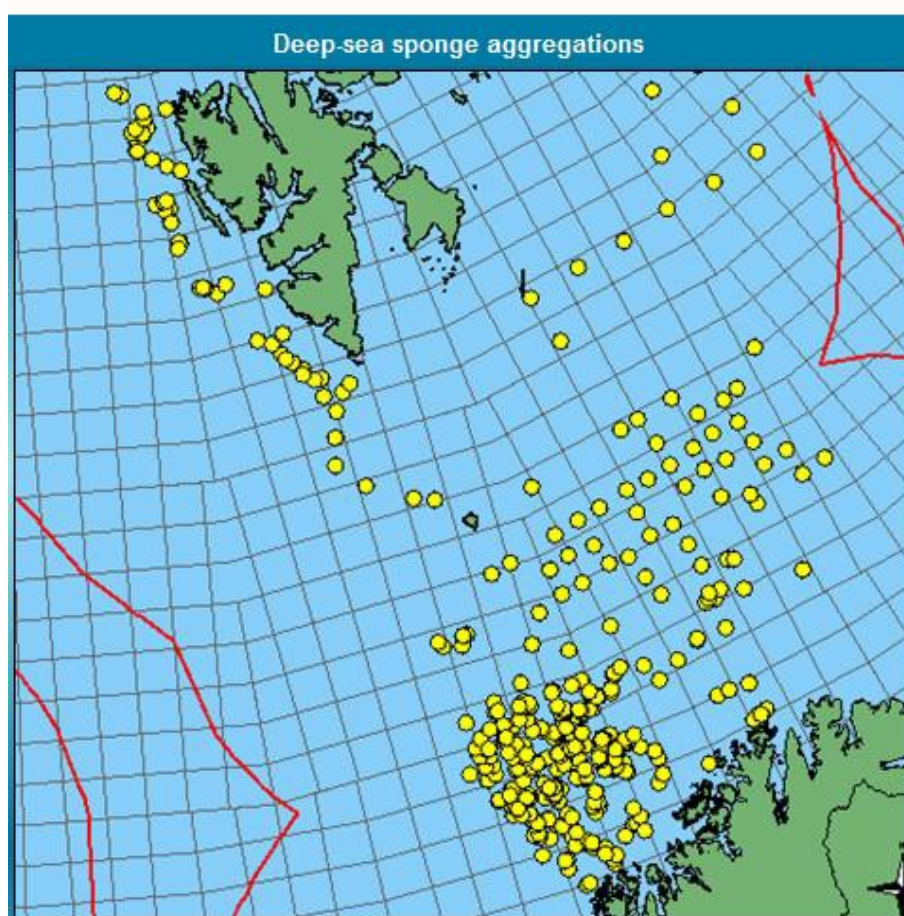
habitats. Nevertheless, it can be argued that present knowledge is adequate to inform precautionary management. With the advent of VMS for all large trawl vessels – including the vessels covered by this assessment – it is now possible to make a detailed and reliable assessment of fishing intensity, accurate at even relatively fine spatial scales.

Figure 11 - Location of a range of vulnerable habitats in the south-western Barents Sea



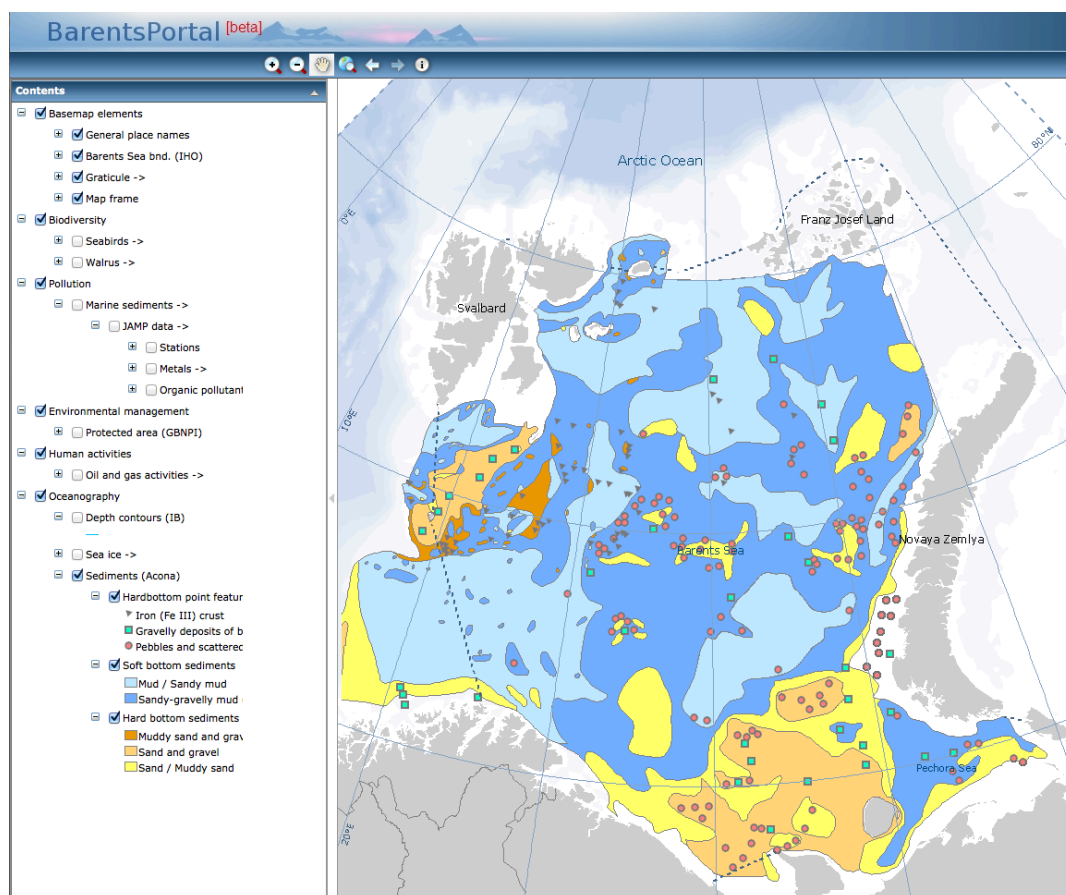
Source: www.mareano.no

Figure 12 - Location of known deep-sea sponge aggregations in the south western Barents Sea



Source: OSPAR

Figure 13 - Map of Barents Sea seabed sedimentary communities



Source: Barents Sea portal

The main contribution to more locally specific scientific studies on impact of bottom trawling on benthic communities in the Barents Sea was made by S.G. Denisenko and N.V. Denisenko, who until the mid-1990s worked in Murmansk Marine Biological Institute of the Kola Branch of Russian Academy of Science and later worked in the Institute of Zoology of the Russian Academy of Science.

Having summarised the data of former soviet state company Sevrybpromrazvedka and Sevryba on fisheries in the Barents Sea in 1955 – 1985, S.G. and N.G. Denisenko (1991) undertook a quantitative estimation of the intensity and impact of bottom trawl operations on benthos in different parts of the Barents Sea. The results showed that the degree of a negative effect of bottom trawling on benthos depends on two main factors: the predominance of organisms with a specific life strategy (defined by sizes and life-span) and the degree of overlapping of trawling tracks during the fishing season.

It is populations of long-lived species and communities formed by those organisms (such as large sponges, sea urchins, sea-cucumbers, gastropods and mussels) that are considered to be the most vulnerable to bottom trawling impacts. Analysis of post capture mortality shows that these large long-living representatives of epifauna die even after a short stay on the deck during handling of catches.

Any overlapping of trawl tracks, continued over several years leads to further abrupt abundance decreases of these organisms. Small bottom organisms with a short life cycle are less exposed to a direct mechanical impact of trawls. However, disturbance of stratification and muddying of the upper layer of sediments becomes an indirect cause of increase of mortality of this group of organisms due to higher intensity of feeding on those species by fish.

The analysis of long-term dynamics of biomass in the Barents Sea shows that bottom trawling has been a significant factor defining the long-term fluctuations of biomass and structure of bottom communities in the Barents Sea in the second part of the 20th century.

According to S.G. Denisenko (2007) 75-80% of gross biomass of benthic communities in the Barents Sea is formed by 15-20 species. Indication of degradation (decrease of biomass and reduction of area) were observed in areas of intensive bottom fisheries, including for many habitat-forming taxons, such as (but not limited to): large sponges (mostly of *Geodia* and *Thenea muricata* genus), mussel (*Astarte crenata* and *Tridonta borealis*), sea urchins of *Strongylocentrotus* genus. A general pattern is observed with a shift toward more opportunistic, short-lived detritus eating organism.

In particular, settlements of bottom filter-feeding organism in the western part of the Barents Sea were worst damaged. Large settlements of sponges that dominated in epifauna of this part of the sea in 1920s - 1930s were almost completely destroyed, resulting changes of trophic benthos structure of entire parts of the sea. The detailed analysis of long-term dynamics of bottom communities on the Kola Section (Denisenko 2001, 2005, Denisenko 2007) showed that during periods of highest fishing activity the decrease of benthos biomass was up to 70%.

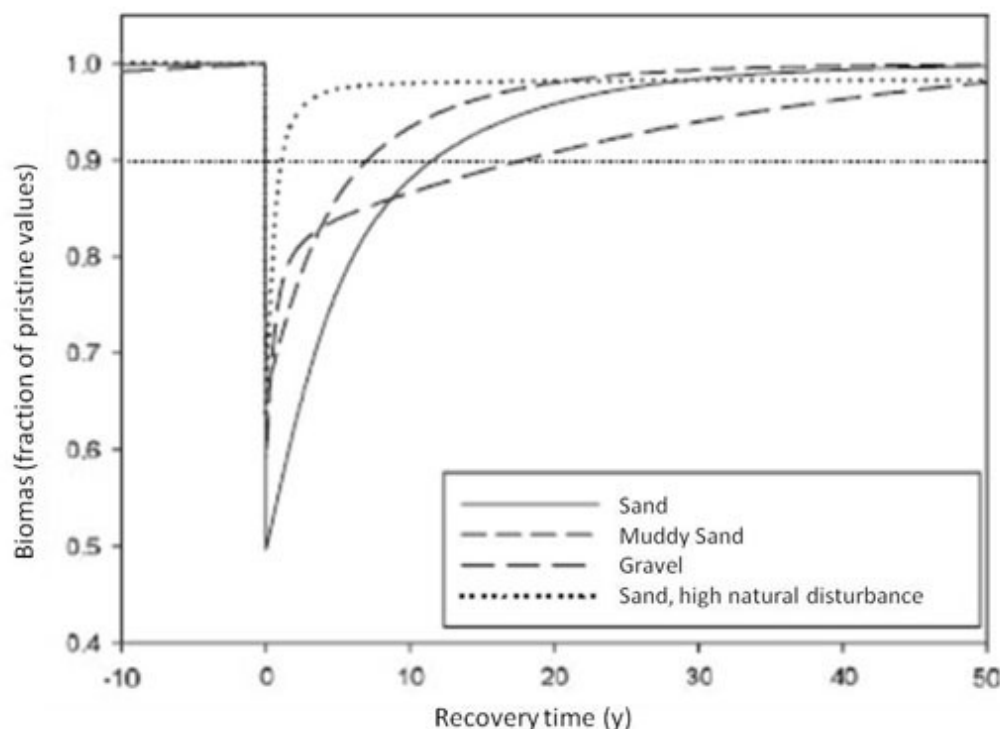
Submarine observations by Aibulatov *et al.* (2005) in the southern part of the Barents Sea (up to 73°N) showed that the traces of trawling operations on the bottom are quite typical, with traces up to 3 – 4 m in width and 0.1 – 0.2m in depth with a 0.1 – 0.3m high excavated mound of sedimentary material at the edges of trenches.

Beginning from 2004 PINRO in cooperation with Norwegian Institute of Marine Research (IMR) every year conducts an integrated ecosystem survey of the Barents Sea and a trawl survey of bottom and near-bottom species is a key element of this programme.

The obtained data suggest that it is high intensity of fishing in the southern part of the Barents Sea that is the reason for low indicators of biodiversity and zoobenthos bycatch biomass in this area. The north-east part of the Barents Sea can be characterized as having no impact of trawl fisheries and therefore the indicators of biodiversity and macrobenthos biomass observed in this area are fairly high.

When considering managing the impact of fisheries on habitats, it is important to have an understanding of the rate of recovery of habitat species if left in an undisturbed state. Denisenko's detailed analysis of long-term dynamics of bottom communities in the Barents Sea (referred to above) showed that significant increases in benthic biomass were observed during periods of reduced fishing intensity during the Second World War. Subsequently, following the peak in fishing intensity in the post war years and the 1960s and 70s, recovery of areas and bio-resources of the most common species, large taxons and trophic groups of zoobenthos was again observed. Rate of recovery is dependent on a number of issues – frequency of disturbance (natural and anthropogenic), productivity, substrate type and species. Hiddink *et al* (2006) modelled benthic recovery rates following trawling events, and showed recovery rates typically in the range of 2.5 to 6 years with the fastest recovery being observed in mud habitats. In the Barents Sea although the majority of the habitats may fall within the more dynamic and sedimentary range (hence quicker recovery), it is notable that some of the species composition and the substrate types on the shelf edge may show far slower recovery characteristics. Reef forming, cold water coral species on hard substrates have the slowest recovery rate.

Figure 14 - Modelled benthic community recovery rates following single trawling event (research undertaken in the North Sea).



Source: Hiddink *et al* 2006.

From a management perspective, Hiddink *et al* (2006) point out that not only is it important to understand the state of the benthic ecosystem and habitat, and the rate of recovery, but also the pressure that it is under. Figure 14 shows modeled benthic community recovery rates for different seabed types following single trawling event. The graphic is taken from research carried out in the North Sea by Hiddink *et al* (2006).

In short, there should be a direct management link between the frequency of fishing activity and the rate of recovery of ecosystems. As this assessment points out in **Appendix 1.1** (assessment tree), management of trawl activity in the Barents Sea is not yet at this point – but lack of information is not an impediment to effective management.

Within the Norwegian EEZ and Svalbard waters, Norway is charged with regulating activities in order to ensure that there is no significant long-term impact or irreversible harm to ecosystem elements or components as a result of fisheries.

Specific consideration is given to managing individual and collective impacts of trawling on the seabed and marine ecosystem of the Barents Sea in the Barents Sea and Lofoten Marine Ecosystem Management Plan, available at <http://www.regjeringen.no/en/dep/md/press-centre/Press-releases/2011/updated-version-of-the-integrated-manage.html?id=635584>.

The plan, revised in 2011 specifically points to the need for more detailed information in relation to seabed habitat distribution and extent as well as to the degree of vulnerability to the effects of trawling. Additional measures to support the implementation of the plan and to inform decision-making are being implemented through the Barents Sea Ecosystem Programme - http://www.imr.no/forskning/programmer/okosystem_barentshavet/en that is being run through the Institute of Marine Research in Bergen.

At present, in Norwegian waters, the management of habitat impacts includes the closure to bottom fishing of five marine protected areas, established under the fisheries legislation to specifically protect coral reefs:

- » Sula Reef (Sularevet, 1999)
- » Iverryggen Reef (2000)
- » Røst Reef (Røstrevet, 2003)
- » Tisler and Fjellknausene (2003)

Norwegian regulations to protect vulnerable benthic habitats in Norwegian waters provides for some of the strictest protection of benthic habitats from trawl impacts anywhere in the world. A new regulatory requirement was introduced during September 2011 whereby any evidence of impacts on corals or sponges (i.e. presence of either or both in the trawl) must be reported. A move-on rule of 2 nautical miles is applied where there is evidence of an encounter (defined as a coral catch of 60kg or greater or a sponge catch of 800 kg or greater).

While the fishery is not considered to likely to reduce habitat structure and function of the Barents Sea to a point where there would be serious or irreversible harm (considered on a bioregional basis) the evaluation found a number of shortcomings with respect to the manner that the fishery interacts with the seabed or in the context of the level of management aimed at mitigating damage by the fishery; or with the level of information available in relation to seabed habitats and communities.

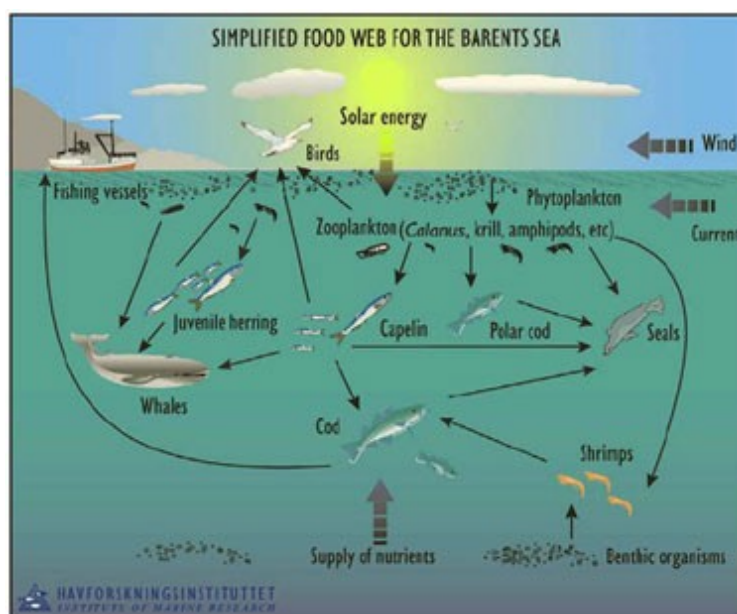
3.4.5 Ecosystem

It is not intended to give a lengthy and detailed description of the ecosystem in this report, but to instead focus on those areas, which are most relevant to the fishery assessment, and to describe initiatives aimed at ensuring that the fishery does not have serious negative impacts on the Barents Sea ecosystem. An interesting source of further information and an overview is available at <http://www.barentsportal.com/barentsportal09/>.

In addition, an ecosystem report is periodically produced by scientists from IMR (Norway) and PINRO (Russia), which provides a thorough overview of the ecosystem and seeks to provide the managing authorities with scientific based advice in order to allow the authorities to make optimal management decisions regarding the long-term utilization of the resources in the Barents Sea area. The most recent of these is the Joint IMR / PINRO State of the Barents Sea Ecosystem Report for 2008 (Stiansen et al 2009). In addition, the ICES arctic fisheries working group (AFWG) also provide a good and detailed overview of the Barents Sea Ecosystem. Although now defunct, the former ICES Working Group on Regional Ecosystem Description (WGREDS) has also provided a useful summary of the Barents Sea ecosystem in the past e.g. www.ices.dk

Although the Barents Sea ecosystem is one of the most productive and commercially important ecosystems in the world, the ecosystem is relatively simple with few fish species of potentially high abundance. These are Northeast Arctic cod, haddock, Barents Sea capelin, polar cod and immature Norwegian Spring-Spawning herring. The last few years there has in addition been an increase of blue whiting migrating into the Barents Sea.

Figure 15 - Simplified food web of the Barents Sea



Source: Norwegian Institute of Marine Research

Northeast Arctic cod is the dominant predator in the Barents Sea ecosystem and the species probably has a stabilising effect on the ecosystem. This is because cod is an opportunistic predator that chooses the most abundant and favourable prey items and thus contributes to dampen outbreaks in prey populations. In addition, at times when prey is generally scarce, cannibalism on younger age classes quickly regulates the cod population to the availability prey.

This role of the cod as a top predator in the Barents Sea is similar to the role of cod in other North Atlantic shelf ecosystems. In the Barents Sea cod remains abundant and there has been no shift from predator dominated (cod) state to a prey (capelin or herring) dominated state. This is in spite of the low levels of spawning stock biomass of both cod and haddock during the 1970s (cod) and 1980s (cod and haddock).

In the Barents Sea, the system seems quite resistant to current levels of anthropogenic impact. However, high fishing pressure has had some effect, resulting in on average smaller individuals meaning that over time the Barents Sea has become potentially more susceptible to large outbreaks and fluctuations in the stocks of small pelagic schooling fish such as capelin and herring. Recent modelling studies support the conclusion of cod's key role in the ecosystem and shows that change in cod mortality from either fishing or cod cannibalism levels have the largest potential effect on the overall equilibrium of the ecosystem (Lindstrøm *et al* 2009).

For now, the available evidence suggests that cod remains the dominant role in the Barents Sea ecosystem. However it is noted that recent increases in Norwegian spring spawning herring may have an unbalancing effect and may even threaten the future role of cod as a dominating species in the system. As long as harvesting of cod is kept below the long-term sustainable limit, and a large herring stock does not impair cod recruitment, the Northeast Arctic cod stock should continue to be relatively strong. However, intensive fishing has probably reduced the ability of the cod to affect the large fluctuations in the stocks of capelin and juvenile herring in the Barents Sea.

In managing potential habitat and ecosystem impacts, industry and management authorities are guided by relevant conventions and agreements, such as The UN Convention on Biological Diversity.

All of the waters of the Barents Sea are included under OSPAR Region 1 – Arctic waters. In spite of this, the Russian Federation is not party to the OSPAR or any of its work areas such as the Biological Diversity and Ecosystems Strategy which is concerned with all human

activities that can have an adverse effect on the ecosystems and the biological diversity of the North East Atlantic. The BDES and sets ecological quality objectives, requires assessments of threatened species and habitats and the development of an ecologically coherent network of marine protected areas and the assessment of human activities which may adversely affect ecosystems.

The Norwegian Government have also developed an ecosystem management plan for the Barents Sea / Lofoten. Of relevance is the fact that the fishery under assessment takes place in either the Norwegian EEZ or the Svalbard Fisheries Protection Zone (also administered by Norway). The Barents Sea and Lofoten Ecosystem Management Plan also highlights the need for and potential focus for future ecosystem management cooperation with all entities with legitimate interests in the resources of the Barents Sea.

The fleet covered by this assessment is fully compliant with (and regularly inspected against) International MARPOL standards of pollution prevention. More sophisticated assessments of impact such as carbon foot printing or waste from fish processing are not required as part of the MSC assessment.

3.5 Principle Three: Management System Background

Principle 3 of the Marine Stewardship Council standard states that:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

In the following section of the report a brief description is made of the key characteristics of the management system in place to ensure the sustainable exploitation of the fishery under assessment.

3.5.1 Legislative framework.

AGARBA fishing activity is focused on North East Arctic cod (*Gadus morhua*) in the waters of the Norwegian Exclusive Economic Zone (EEZ) (above 62° N within the 200 miles of Norwegian EEZ in ICES Div IIa - Norwegian Sea) and within the Fisheries Protection Zone around Svalbard (ICES Div IIb - Spitzbergen and Bear Island).

Norway established its 200-mile Exclusive Economic Zone in 1977⁴, on the basis of the United Nations Conference on the Law of the Sea (UNCLOS)⁵, where it has full jurisdiction over natural resources. It also established a protection zone around Svalbard (1978)⁶ as well as a fishing zone around Jan Mayen (1980).

The AGARBA vessels operate in the Norwegian EEZ within the terms of the agreement on fisheries between Norway and the EU signed in 1980⁷. This agreement is implemented in the form of annual fisheries arrangements. The arrangements allow for the setting of TACs for joint stocks, transfers of fishing possibilities, joint technical measures and issues related to control and enforcement⁸. These cover:

- » the management of quotas from shared stocks (cod, haddock, saithe, whiting, plaice, mackerel and herring in North Sea),
- » the sharing of commons stocks that are not jointly managed (Norway pout, blue whiting, shrimps, anglerfish, etc.) and
- » the exchange of additional quotas from exclusive stocks (cod, haddock and saithe in Norwegian waters in the Barents Sea changed by sprat in the North Sea and Greenland halibut, Atlantic halibut, redfish and shrimp from EU quotas in Greenland waters).

AGARBA vessels catch NEA cod in the Norwegian EEZ under the exchange of quotas from exclusive stocks. Fishing activity cannot start until an agreement is reached in the annual meetings. This has not an exact date or deadline, generating uncertainty for vessels who do not know the date when they can start fishing their quota entitlements until the very last moment.

⁴ Norwegian Act of 17 December 1976 No. 91 relating to the Economic Zone of Norway

⁵ United Nations Convention on the Law of the Sea of 10 December 1982 (UNCLOS). http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf

⁶ Norwegian Regulation of 3 June 1977 No. 6 relating to the Fisheries Protection Zone around Svalbard

⁷ Agreement on fisheries between the European Economic Community and the Kingdom of Norway. Official Journal L 226, 29/08/1980 P. 0048 – 0050. Entry into: force 16 June 1981. Initial period: 10 years to 1991. Extended four further periods of 6 years until 2015. Subsequent tacit renovation for periods of 6 years unless a notice of termination is given.

⁸ http://ec.europa.eu/fisheries/cfp/international/agreements/norway/index_en.htm

AGARBA fishing activity of NEA cod within the Fisheries Protection Zone around Svalbard is possible under the Treaty Concerning the Archipelago of Spitsbergen signed in Paris in 1920⁹. This Treaty recognises the full and absolute sovereignty of Norway over the Archipelago of Spitsbergen, including Bear Island, and the equal rights of ships and nationals of all contracting parties of fishing in this territories and their territorial waters.

The NEA cod stock is managed together by Norway and Russian Federation through the Joint Norwegian-Russian Fisheries Commission (JNRFC). This Commission was established in 1976 to manage cod, haddock and capelin in the Barents Sea¹⁰. The Commission is also involved in other aspects of fisheries regulation, and fishery control bilateral management cooperation. JNRFC has adopted rules for setting annual total allowable catch (TAC) of cod on the basis of the recommendations given by ICES. ICES has evaluated the rule and concluded that it is in agreement with the Precautionary Approach¹¹.

The total quota for NEA cod in 2013 has been set at 1,000,000 tonnes. This quota is 60,000 tonnes above the advisory quota level calculated on the basis of the joint management strategy previously set by the JNRFC. The total quota for cod is divided between Norway, Russia and third countries. Norway's quota for 2013 will be 446,740 tonnes, including 21,000 tonnes of coastal cod and 7,000 tonnes for scientific purposes¹².

Each year, JNRFC allocates 14.15 %¹³ of the total quota of NEA cod to vessels from third countries. This share is based on TAC excluding Norwegian coastal cod and the volume allocated to research and management purposes.

The agreed NEA cod quota to European Union vessels is distributed among the different member states. Each year Council Regulations establishing the fishing opportunities for certain fish stocks is debated and published.

Each member state shares the assigned quota among its fishing vessels or companies, in accordance with its own national regulations.

Under the EU-Norway fishing agreements outlined above, vessels from the different member states interested in using their assigned quota must apply for a fishing license from Norwegian fishing authorities, or must have an existing licence renewed every year.

AGARBA vessels are following relevant Norwegian, European Union and Spanish (flag state) fisheries legislation. Where there are disagreements between Norwegian and EU standards, those of Norway prevail, given that it is responsible for the management of resources of the areas it operates in.

In Spain, the quota is divided among the companies that own boats registered under the census of cod-fishing vessels authorised to operate in those waters and which have historical rights to them.

With the extension of the EEZ to 200 miles in the late 1970s by most of the countries, Spain created an official list of long-distance vessels catching cod in the North Atlantic. On 1 July 1981 the first Order of Spain's Ministry of Agriculture and Fisheries of Spain was issued, regulating the cod fleet's

⁹ Treaty Concerning the Archipelago of Spitsbergen (Svalbard) signed in Paris on 9 February 1920.
<http://www.aeco.no/>

¹⁰ <http://www.jointfish.com/eng/THE-FISHERIES-COMMISSION>

¹¹ http://www.fisheries.no/ecosystems-and-stocks/marine_stocks/fish_stocks/cod/

¹² <http://www.regjeringen.no/en/dep/fkd/press-centre/Press-releases/2012/historically-high-cod-quota-in-the-norwe.html?id=704623>

¹³ <http://www.jointfish.com/eng/STATISTICS/QUOTAS>

fishing activities¹⁴. This Order included a list of all the Spanish ships entitled to a cod quota due to having regularly operated in the traditional fishing grounds and being listed in the specific census for that fleet. A total of 82 vessels that mostly fished "in pairs" were included.

This Ministerial Order is reviewed annually and the updated list of boats and annual distribution of quotas by company is published in Spain's Official State Bulletin. These quotas correspond to Svalbard, Norway and Newfoundland.

The number of Spanish vessels fishing for cod has fallen considerably from the 82 listed in the first census of 1981, to 49 in 1989, 22 in 1995, and 9 vessels in the latest Ministerial Order in 2012¹⁵ (see Table 6 below).

Table 6 - Summary of division of Spanish NE Arctic cod quota for 2013 prior to the acquisition of Pesquera Rodríguez's vessels and entitlements by Pesquera Ancora S.L.

Company	Rate	Fishing vessel
<u>Asociación de Empresas de Bacalao, Especies Afines y Asociadas (ARBAC)</u>		
Valiela, SA	24.4617 %	Monte Meixueiro.
Pesquera Laurak Bat, SA	9.0248 %	Egunabar.
<u>Federación Española de Armadores de Buques de Pesca (FEABP)</u>		
Pesquera Rodríguez, SA	27.4749 %	Nuevo Virgen de Lodairo.
		Nuevo Virgen de la Barca.
<u>Asociación Nacional de Armadores de Buques de Pesca de Bacalao (AGARBA)</u>		
Velasplex, SL	14.8987 %	Bahía de Guipuzcoa.
		Bahía de San Sebastián.
		Arosa Nueve.
Pesquera Ancora, S.L.	24.1399 %	Arosa Catorce.
		Arosa Doce.

Source: Spanish Ministry of Agriculture, Food and Environment

AGARBA is composed by two companies: VELAXPEX, SL and PESQUERA ANCORA, SL.

In the above table of the latest Ministerial Order appears that Velaspex has three vessels and Pesquera Ancora two more. During the site visit, it was explained that "Bahía de Guipuzcoa" and "Bahía de San Sebastián" do not fish anymore and they are in process to be scrapped. Velaspex bought "Arosa Nueve" to Pesquera Ancora in 2010 in order to cover the impossibility of continuing fishing with both "Bahías". Pesquera Ancora was in similar situation: "Arosa Doce" and "Arosa Catorce" were not fishing from several years and one of them is planned to be also scrapped. So, the only fishing activity of the AGARBA during 2011 and 2012 was carried out by the "Arosa Nueve".

At the end of 2012 (almost during the site visit), Pesquera Ancora bought the vessels and rights (all fishing activity) to Pesquera Rodriguez (which was also certified under MSC standards one year

¹⁴ B.O.E. (Spain's Official Journal) number 156, ORDER dated 8 June 1981 through the cod fleet fishing activity is regulated

¹⁵ Resolution dated 23 February 2012, of the General Sea Secretariat, through which the updated cod-fleet census was published. Ministry of Agriculture, Food and Environment.

before). As a result of those changes, the updated situation of AGARBA is that they have four vessels and they are managing the 66.5% of the Spanish cod quota:

Table 7 - Summary of division of Spanish NE Arctic cod quota for 2013 subsequent to the acquisition of Pesquera Rodriguez's vessels and entitlements by Pesquera Ancora S.L.

Company	Rate of Spanish cod quota	Fishing vessel
<i>Asociación de Empresas de Bacalao, Especies Afines y Asociadas (ARBAC)</i>		
Valiela, SA	24.4617 %	Monte Meixueiro.
Pesquera Laurak Bat, SA	9.0248 %	Egunabar.
<i>Asociación Nacional de Armadores de Buques de Pesca de Bacalao (AGARBA)</i>		
Velaspe, SL	14.8987 %	Arosa Nueve.
Pesquera Ancora, S.L.	51.6148 %	Arosa Doce.
		Nuevo Virgen de Lodairo.
		Nuevo Virgen de la Barca.
AGARBA client group total	66.5135 %	4 vessels

Source: Source: Spanish Ministry of Agriculture, Food and Environment

The Spanish cod fleet has a NEA cod quota for 2013 of 10,200 tons in Svalbard, plus 2,453 tons in Norwegian EEZ¹⁶. It has also 2,019 tons in NAFO¹⁷ but it has not been used by AGARBA during the last years. AGARBA swop this NAFO quota with other Spanish companies or vessels that are part of ARBAC. Following these possibilities, AGARBA could fish around 7,000 tons of NEA cod in 2013.

3.5.2 Consultation, roles and responsibilities.

There are a big number of organisations involved in the management of the NEA cod fishery. They are mainly international (ICES, JNRF, NEAFC, NGOs), Norwegian (FD, Institute of Marine Research, Coast Guard), European (European Commission DG MARE, LDRAC, Europêche) and Spanish (Secretariat of the Sea of the Ministry of Agriculture, Food and Environment, Fisheries administrations of regional governments of Galicia and Bask country, FEABP (Spanish Federation of Fishing Vessel Owners), CEPESCA (the Spanish Fisheries Confederation), AZTI, Spanish Oceanographic Institute - IEO).

In general terms, the management system is very well known and all involved bodies are highly conscious of their role. Fishermen know perfectly their role in specific aspects such as collecting and transmitting data regarding their activities; these are vital for the proper management of the fishery. AGARBA vessels send reports of their activity per haul to the Spanish authorities via electronic

¹⁶ <http://www.magrama.gob.es/es/prensa/noticias/renovado-el-acuerdo-de-pesca-uni%C3%B3n-europea-%E2%80%93-noruega-/tcm7-250136-16>

¹⁷ <http://www.magrama.gob.es/en/prensa/noticias/espa%C3%B1a-consigue-un-aumento-de-m%C3%A1s-del-50-por-ciento-en-la-cuota-de-bacalao-para-la-flota-espa%C3%B1ola/tcm11-220735-16>

logbook, offering almost real-time control over the quota that has been allocated to the group. Those reports are submitted by Spanish authorities to European Commission and Norwegian authorities

Norwegian legislation considers the fishing industry's participation in a range of management issues, such as the definition of the legislative framework and the flow of information. This participation includes different authorities, the fishing industry, scientific institutions and NGOs. It does not specifically facilitate the participation of foreign fishers operating in its waters but it does facilitate the participation of international scientists and NGOs. Spanish scientists from AZTI and IEO participate in the Arctic Fisheries Working Group of the ICES that advice on management of the NEA cod.

AGARBA is actively involved in the consultation processes via contact with Spanish authorities and the resources that the EU makes available to them: advisory boards, working groups and regular meetings. In the EU and Spain, existing regulations facilitate and encourage stakeholders' participation in the management of fisheries. There are various associations and forums, where opinions can be expressed and comments made. Both in the EU and Norway, regulations governing the management of fisheries are approved following a process of consultation with different stakeholders.

Most of the final decisions of the management system affecting AGARBA activity are agreed during the negotiation meetings under the Agreement on fisheries between the EU and Norway. Those meetings are used to discuss important issues affecting to the fishery but also other external topics such customs tariffs or reciprocal fisheries relations (exchange of different species quota). Representatives from the sector can assist to those meetings as observers.

The European Union also uses the Regional Advisory Councils that were established under the Reform of the Common Fisheries Policy in 2002 as a means of ensuring stakeholder participation in the process of drawing up and developing the fisheries management policies. In the specific case of fishing in Norway, Svalbard and the Barents Sea, interested parties can express their opinions, through the Regional Advisory Council for the Long-Distance Fleet in Non-EU Waters. The LDRAC advises the European Commission on the questions relative to the agreements of fishing with third countries¹⁸.

3.5.3 Long-term objectives.

The Joint Russian–Norwegian Fisheries Commission management plan for NEA cod has been implemented since 2004. This plan considers conditions for high long-term yield from the stocks, achievement of year-to-year stability in TACs, and full utilization of all available information on stock development¹⁹.

The plan was evaluated in 2010 and ICES considers that it is to be in accordance with the precautionary approach.

At the 39th Session of the Joint Russian–Norwegian Fisheries Commission in October 2010 it was agreed that the plan will be in force 'for five more years' until 2015.

The precautionary principle is explicit under Norwegian legislation, the EU's Common Fisheries Policy and the EU-Norway fisheries agreement. It is generally includes all species, but in the case of NEA cod, the degree of scientific knowledge of the fishery, the stock and the habitat can be deemed acceptable.

Ecosystem-based management has been also established in Norwegian waters through the Integrated Management Plan of the Marine Environment of the Barents Sea and the sea areas off the Lofoten Islands (2006, updated in 2011)²⁰. In order to measure progress systematically, the

¹⁸ <http://www.ldrac.eu/en/ldrac>

¹⁹ ICES, 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. p 1-10

²⁰ The Royal Norwegian Ministry of the Environment. Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands.

Norwegian Government has established a system for monitoring the state of the environment by means of indicators, reference values and action thresholds

3.5.4 Incentives for sustainable fishing.

The principles of the Norwegian Fisheries Management system tend to promote sustainable fishing through different measures: regular review of management policy including use of selecting gears, closure of fishing areas, haul by haul reporting of catches through electronic logbook, discards prohibitions, system of inspection and sanctions, register of illegal actors, etc. They are clear, consistent (not arbitrary) and well known for all fishers giving no place for uncertainties.

The participatory approach to management and research encourages fishers to act in sustainable ways. However, linking the fishing opportunities for foreign vessels to negotiations in which an assessment is made considering external issues to the management of the resource (reciprocal exchange of quotas for different species and favourable trading terms) does nothing to encourage the sector to act sustainably. Even if the status of the stock is very good it is not possible to ensure predictability and stability for the AGARBA fleet because of the quota assignment mechanism under EU-Norway agreements.

Besides that, other issues in the management system like the bycatch limits by haul (instead of by trip, which could incite discard) could act as perverse incentives.

Nevertheless the management system also ensures that fishers do not fish unsustainably through a strict monitoring, control and surveillance system. Sustainable behaviour is achieved through the responsible behaviour and conviction of the parties involved as well as through the various mechanisms in place to prevent them from acting irresponsibly: periodic review of policies and management procedures, mechanisms to combat IUU fishing, permanent fishing activity declarations via electronic logbooks and system of inspections and sanctions.

3.5.5 Fishery specific objectives.

The NEA cod stock is closely monitored annually and objectives are explicit in the annual protocols and research programmes of the JNRFC. Commission uses precautionary reference points established by ICES for establishment of TACs. TACs are usually over scientific advice: for 2013 the NEA cod quota was set to 1,000,000 tons (60,000 tons more than the ICES advise, 940,000 tons).

The management plan implemented since 2004 has the objectives of maintaining high long term yield, a high degree of stability in the total quota from year to year and full utilization of all available information on the conditions of the stock.

The Management Plan aims to maintain F at $F_{pa} = 0.40$ and to restrict between year TAC changes to $\pm 10\%$ unless SSB falls below B_{pa} , in which case the target F should be reduced. In 2009 was amended with the condition "if the TAC, by following such a rule, corresponds to a fishing mortality (F) lower than 0.30 the TAC should be increased to a level corresponding to a fishing mortality of 0.30, when SSB is above B_{pa} . This condition applies for 2013".

In addition to quotas, there are regulations aiming at protecting young fish; minimum catching size (44 cm in Norwegian waters)²¹, sorting grid with minimum bar spacing in bottom trawl, and minimum mesh size in trawl (130 mm), Danish seine and gill net. If catches contain more than 15% by number of undersized cod, that particular fishing ground is temporarily closed. Discarding of commercial species is not allowed. By-catches of cod in other fisheries are covered by the total cod quota.

<http://www.regjeringen.no/en/dep/md/Selected-topics/hav--og-vannforvaltning/havforvaltning/integrated-management-of-the-barents-sea.html?id=87148>

²¹ <http://www.fiskeridir.no/english/recreational-fishing/minimum-sizes>

3.5.6 Decision-making processes.

The JNRFC has a mechanism for taking decisions through the Standing Committee that meets 3 or 4 times a year. Through this committee, the actions and measures necessary to meet the objectives of the fishery are established.

The starting point for the decision-making process is the scientific advice provided by the ICES as well as Norway's scientific institutes (the IMR, or Institute of Marine Research) and Russia's scientific institutes (the PINRO, or the Russian Institute for Polar Research). Norwegian and Russian scientists meet annually to discuss various aspects of research and resource management related to the Barents Sea. They are also members of the ICES's Arctic Fisheries Working Group along with other international scientists.

Once the committee has recommended a TAC for Arctic cod, the Norwegian and Russian authorities are responsible for managing the fishing activity. In Norway, this management activity is the responsibility of the Ministry of Fisheries and Coastal Affairs and, more specifically, the Fisheries Directorate.

This decision-making process for establishing fishery rules in Norway is known as "The Regulatory Chain"²² and is a cyclical and repetitive process.

- » The Fisheries Directorate (FD) draws up the necessary regulations and applies them after they have been approved by the Minister. The FD normally consults the fishing industry and other stakeholders on the draft regulations. The FD is also responsible for: enforcing the regulations that are drawn up; controlling and monitoring; maintaining contact with the industry, research institutions and stakeholders; and keeping the industry and general public informed.
- » The FD usually presents its regulatory proposals for managing the following year's quotas in open meetings held in November or December each year. After these meetings, the DF presents its recommendation regarding management regulations for quotas for the following year to the Ministry.
- » Disagreements with these regulations give rise to further meetings at which the differences are discussed and usually resolved.
- » Regulations are normally valid for one year but if necessary adjustments can be made before they expire.
- » The experience gained during the year as well as statistical data on catches and landings are used for scientific analysis the following year.

EU vessels fishing under EU-Norway agreements also take part in the decision-making process. However, in this case, their relationship is with authorities of the EU and its member states rather than with Norwegian authorities. The process of consultation and decision-making in the EU is fairly similar to Norway's "Regulatory Chain", and includes scientific advice, the involvement of industry and social stakeholders. It brings together experience and statistics from previous years.

Prior to negotiation meetings between the EU and Norway, EU agents meet each other and other national and European authorities, in order to reach an agreement. This is then carried by the EU representatives to the negotiations with Norway. These negotiations are conducted solely by the authorities without intervention from the industry.

The resolution of disputes that could not be reached during the different discussion meetings between the parties may be subject to further meetings or, in more severe cases, may be taken to court (national or international, depending on jurisdiction).

3.5.7 Compliance and enforcement.

The Norwegian FD is responsible for monitoring compliance and enforcement of applicable rules as well as the terms agreed between Norway and the EU. Control and monitoring of activities at sea is

²² http://www.fisheries.no/resource_management/setting_quotas/The-regulatory-chain/

done by the Norwegian Coast Guard. The Norwegian Directorate of Fisheries also inspects activities on the fishing grounds.

AGARBA vessels are equipped with satellite-based vessel monitoring systems (VMS), which inform Norwegian, Spanish and EU authorities of the vessel's position at any given time. Since January 2011, the vessels have also been operating an on-board electronic logbook that provides information on activities by haul.

In addition, fishing vessels are subject to stringent controls in all Norwegian fishing waters. The Norwegian Coast Guard performs more than 1800 inspections of Norwegian and the foreign vessels that fish in Norwegian waters annually.²³

Captains are required to provide the managing authority with all relevant data on their activities via on-board log reports and whenever they are inspected or contacted via radio. Consistency between what is declared and what has actually taken place is also checked during inspections.

Foreign vessels must report their catches to Directorate of Fisheries when they enter or exit the Norwegian EEZ and regularly when they are fishing inside.

The landing of catches must be done at an authorised port in accordance with NEAFC rules, with advance notice of arrival being provided so that inspections can be conducted.

Upon the landing of catches, the landings data are checked against the fishing rights of the vessel. This task is performed by the fish Directorate of Fisheries in Norway or by the authorities of the European Member State in which AGARBA is landing (UK and Spain).

Norwegian, Spanish and EU authorities play an important informational role by making companies aware of any changes to regulations that affect their activity. This ensures that skippers are up to date at all times. On the 9th of January 2013, a Memorandum of Understanding between Spain and Norway was signed in relation to the monitoring, control and surveillance of landings of fish coming from the Barents Sea. The MoU specifically refers to sharing of information on landings and inspection of landings of Barents Sea cod in a further effort to minimise instances of IUU.

3.5.8 Research plan.

There is a Comprehensive research program on living marine resources approved in 2012 by the 40th Session of the Joint Russian – Norwegian Fisheries Commission²⁴ and a continue evaluation of the research information in the ICES Arctic Fisheries Working Group (AFWG)²⁵.

Scientific advice is based on systematic stock monitoring and on catch data. Several institutions are involved: Norwegian Institute of Marine Research, Russian Institute for Polar Research and, in the specific case of AGARBA activity, the Spanish Oceanographic Institute and AZTI. An effective coordination exists among all research institutions thanks to ICES AFWG and Norwegian FD (which approves foreign marine scientific research in Norway's EEZ and continental shelf).

Scientific researchers normally adapt their activities to management needs, issuing periodic reports before the annual review of TACs and taking its long-term goal into account.

The results from the research plans are provided to managing authorities and sometimes published on the ICES website or the website of the relevant research centre

²³ <http://www.fiskeridir.no/english/fisheries/control-and-enforcement>

²⁴ Protocol of the Annual Meeting between Norwegian and Russian Scientists. Hamm i Senja, 12-16 March 2012.

²⁵ ICES 2012. Report of the Arctic Fisheries Working Group 2012 (AFWG), 20-26 April 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM:05. 633 pp.

3.5.9 Monitoring and management performance evaluation.

The management system is reviewed almost every year through discussions with the sector and through EU-Norway fishery agreements.

The stock and ecosystem status are monitored every year by the Norwegian Institute of Marine Research together with Russian Institute for Polar Research (PINRO). Data and assessment methodology is subject to continuous internal scientific review within ICES. ICES involve external scientists in review of its methodology on a regular basis.

Since 1995, the Norwegian Ministry of Fisheries and Maritime Affairs has submitted an annual report to Parliament. The report analyses the performance of the system and focuses mainly on the way in which agreements with third countries are implemented.

The Norwegian National Audit Office also conducts regular reviews of the functioning of the country's various public administrations, including the Fisheries Administration (2004).

The European Union meanwhile has also reformed its CFP, based on regular assessments of its impact.

Spain also reports to the European Commission regularly on the relevance, coherence, efficiency and effectiveness of its fisheries management system. The European Union administration is subject to regular external audits from the European Court of Auditors (ECA) which is focused in financial management but it also considers other issues (efficiency, environmental issues, etc.).

Norway, Spain and the European Union as FAO member organisations take part in the FAO's Committee on Fisheries (COFI). The COFI is a subsidiary body of the FAO Council which examines the main issues and problems relating to fishery and aquaculture. It makes recommendations on a regular basis to governments, regional fishery organisations, NGOs, fishermen, the FAO and the international community.

4. Evaluation Procedure

4.1 Harmonised Fishery Assessment

At the time of writing, 6 MSC assessments had already been completed on this stock (detailed below) and findings presented in published assessment reports. In addition 1 MSC assessment targeting this stock are currently underway (also detailed below).

These formed an important background resource for the assessment team - collating and reporting on available stock and fishery information, as well as highlighting areas of stakeholder and assessment team concerns.

Completed assessments

- » Norway North East Arctic cod:
<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/Norway-north-east-arctic-offshore-cod/Norway-north-east-arctic-offshore-cod>
- » Comapêche and Euronor cod and haddock:
http://www.msc.org/track-a-fishery/certified/arctic-ocean/comapeche_euronor_cod_haddock
- » Barents Sea cod and Barents Sea haddock:
<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/barents-sea-cod-and-haddock/barents-sea-cod-and-haddock>
- » UK Fisheries/DFFU/Doggerbank Northeast Arctic cod, haddock and saithe:
http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/uk_fisheries_dffu_doggerbank_northeast_arctic_cod_haddock_saithe
- » Faroe Island North East Arctic cod:
http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/faroe_island_north_east_arctic_cod
- » FIUN Barents & Norwegian Seas cod and haddock:
http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/fiun_barents_and_norwegian_seas_cod_and_haddock/fishery-name

Assessments in progress

None.

4.1.1 Harmonisation Details

Harmonisation meeting/s

No harmonisation meeting was carried out during this assessment. In spite of this, close attention was paid to both the scoring and the conditions and recommendations applied to other overlapping fisheries to ensure a broadly harmonised approach between the different fisheries previously certified and in assessment for the same stock. This does not mean strict adherence to the same scores given for overlapping fisheries. It is reasonable for there to be some degree of difference in interpretations or circumstance at the time of different assessments – but it does ensure that overall conclusions are broadly aligned, and importantly that conditions applied to one fleet are equally and fairly applied to other fleets with the same characteristics.

4.2 Previous assessments

Summary of previous assessments of the client operation, conclusions reached and past compliance with specified conditions: None.

Assessment conclusion: n/a

Compliance with conditions: n/a

4.3 Assessment Methodologies

This fishery was assessed using version 1.2 of the MSC Certification Requirements and version 1.2 of the MSC Full Assessment Reporting Template.

4.3.1 Assessment Tree

The Default Assessment Tree was used without adjustment for this assessment.

4.4 Evaluation Processes and Techniques

4.4.1 Site Visits

In November 2012, 3 members of the assessment team, supported by an FCI staff member, undertook a site visit to San Sebastian and Madrid, Spain. This enabled a scheduled programme of consultations to take place with key stakeholders in the fishery – including skippers, scientists, fishery protection officers, NGOs, fishery managers and technical support staff. Prior notification of this site visit was issued on the MSC website, in the July edition of Pesca Internacional and on Intrafish in order that all relevant stakeholders were aware of the opportunity to meet with the assessment team.

Itinerary of field activities

Day 1 – Monday 5 November, 2012 - Madrid

- » On day 1, the assessment team met with 4 stakeholders in Madrid to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

Day 2 – Tuesday 6 November, 2012 - Madrid

- » On day 2, the assessment team met with 2 stakeholders to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

Day 3 – Wednesday 7 November, 2012 – San Sebastian

- » On day 3, the assessment team visited 1 vessel from the client group specified under the Unit of Certification and met privately with 2 vessel skippers. This was to provide further detail on the fishing methods and practice in use under this fishery assessment and to give the vessel skippers / owners an opportunity to provide any feedback or comments they wished in an open and transparent manner.

Additional individuals contacted during field activities: None.

4.4.2 Consultations

Stakeholder issues

Written and verbal representations were provided to the assessment team expressing a range of views, opinions and concerns. The team is of the view that matters raised have been adequately debated and addressed as a part of the scoring process for this fishery, and that none of the issues raised, therefore, require separate attention beyond that represented in this report.

Interview Programme

Following the collation of general information on the fishery, a number of meetings with key stakeholders were scheduled by the team to fill in information gaps and to explore and discuss areas of concern.

Meetings were held as follows:

Table 8 - Interview Programme

Name	Position	Organisation
Jorge Romon	Assistant Director	Arvi
Ivan Lopez	Managing Director	Velapex
Ignacio Urcola	Managing Director	Agarba
Javier Garat Pérez	Secretary General	CEPESCA
Juan Manuel Liria Franch	Vice President	CEPESCA
Raul Garcia	Vice chair	WWF Spain
Carlos Aldereguía	Executive Secretary	Long Distance Regional Advisory Council
Carmen Margarita Mancebo Robledo	Jefa de Área de relaciones Pesqueras Internacionales	Secretaría General del Mar, Ministerio De Medio Ambiente Y Medio Rural Y Marino
Pedro Esteban Sepulveda Anglo	Head of Section	Ministerio De Medio Ambiente Y Medio Rural Y Marino
Marina Santurtun	Research Co-ordinator	AZTI Tecnalia Marine Research Division
Guzman Diez	Main scientific Researcher	AZTI Tecnalia Marine Research Division
Jon Ruiz	Scientific Researcher	AZTI Tecnalia Marine Research Division
Jesus Sanz de Urturi	Skipper	Agarba
Manuel Santome Perez	Skipper	Agarba
Jose Gonzalez	General Assistant	CEPESCA
Rocio Bejar	General Assistant	CEPESCA

Summary of Information Obtained

Stakeholder meetings discussed a wide range of issue relevant to the Barents Sea cod fisheries.

1. International management and agreement of Barents Sea cod management along with division of Barents Sea cod quota. Management of haddock bycatch was discussed with all stakeholders.
2. Environmental indicators such as retained species, bycatch species, habitats, endangered protected and threatened species interactions as well as ecosystem effects of fishing were discussed.
3. Management of Spanish fisheries and the long distance fleet as well as management of Spanish distant water fisheries and fishing entitlements was discussed in detail.
4. Practical aspects of the fishing operations were discussed onboard vessels.
5. Industry representation, business structure and relationships within the client group were discussed.
6. Illegal fishing, control and enforcement in the cod fisheries of the Barents Sea and Svalbard/Norwegian waters were discussed.
7. Stock status for target and main retained stocks were discussed along with scientific advice for recent years.

This list is not exhaustive but aims to provide an understanding of the range of issues discussed.

4.4.3 Evaluation Techniques

Public Consultation

A total of 9 stakeholder individuals and organisations having relevant interest in the assessment were identified and consulted during this assessment. The interest of others not appearing on this list was solicited through the postings on the MSC website, and by advertising in the July edition of Pesca Internacional and on Intrafish. These were felt to be the most appropriate media for making these public announcements as Pesca Internacional and Intrafish have significant readership / uptake in the primary stakeholder locations for this fishery and the processes used on the MSC website for tracking and announcing the various stages of the assessment as it progresses - from Full Announcement through to Certification - form an ideal tool through which to channel stakeholder interest and keep them abreast of the important stages of the assessment as a whole.

Initial approaches were made by email and followed up by phone. Issues raised during correspondence were investigated during research and information gathering activities, and during interviews.

Most stakeholders contacted during this exercise either indicated that they had no direct interest in this fishery assessment, or that they had no particular cause for concern with regard to its assessment to the MSC standard.

Process

The MSC is dedicated to promoting “well-managed” and “sustainable” fisheries, and the MSC initiative focuses on identifying such fisheries through means of independent third-party assessments and certification. Once certified, fisheries are awarded the opportunity to utilise an MSC promoted eco-label to gain economic advantages in the marketplace. Through certification and eco-labelling the MSC works to promote and encourage better management of world fisheries, many of which have been suggested to suffer from poor management.

The MSC Principles and Criteria for Sustainable Fisheries form the standard against which the fishery is assessed and are organised in terms of three principles:

- » **MSC Principle 1** - Resource Sustainability
- » **MSC Principle 2** - Ecosystem Sustainability
- » **MSC Principle 3** - Management Systems

A fuller description of the MSC Principles and Criteria and a graphical representation of the assessment tree is presented as **Appendix 1a** to this report.

The MSC Principles and Criteria provide the overall requirements necessary for certification of a sustainably managed fishery. To facilitate assessment of any given fishery against this standard, these Criteria are further split into Sub-criteria. Sub-criteria represent separate areas of important information (e.g. Sub-criterion 1.1.1. requires a sufficient level of information on the target species and stock, 1.1.2 requires information on the effects of the fishery on the stock and so on). These Sub-criteria, therefore, provide a detailed checklist of factors necessary to meet the MSC Criteria in the same way as the Criteria provide the factors necessary to meet each Principle.

Below each Sub-criterion, individual ‘Performance Indicators’ (PIs) are identified. It is at this level that the performance of the fishery is measured. Altogether, assessment of this fishery against the MSC standard is achieved through measurement of 31 Performance Indicators. The Principles and their supporting Criteria, Sub-criteria and Performance Indicators that have been used by the assessment team to assess this fishery are incorporated into the scoring sheets (**Appendix 1.1**).

Scoring of the attributes of this fishery against the MSC Principles and Criteria involves the following process:

- » Decision to use the MSC Default Assessment Tree contained within the MSC Certification Requirements (Annex CB)
- » Description of the justification as to why a particular score has been given to each sub-criterion
- » Allocation of a score (out of 100) to each Performance Indicator

In order to make the assessment process as clear and transparent as possible, the Scoring Guideposts are presented in the scoring table and describe the level of performance necessary to

achieve **100** (represents the level of performance for a Performance Indicator that would be expected in a theoretically 'perfect' fishery), **80** (defines the unconditional pass mark for a Performance Indicator for that type of fishery), and **60** (defines the minimum, conditional pass mark for each Performance Indicator for that type of fishery). The Assessment Tree and Scoring Guideposts for the AGARBA Spain Barents Sea Cod fishery are shown as **Appendix 1.1** to this report.

Scoring outcomes

There are two, coupled, scoring requirements that constitute the Marine Stewardship Council's minimum threshold for a sustainable fishery:

- » The fishery must obtain a score of 80 or more for each of the MSC's three Principles, based on the weighted average score for all Criteria and Sub-criteria under each Principle.
- » The fishery must obtain a score of 60 or more for each Performance Indicator.

A score below 80 at the Principle level or 60 for any individual Performance Indicator would represent a level of performance that causes the fishery to automatically fail the assessment. A score of 80 or above for all three Principles results in a pass.

5. Traceability

5.1 Eligibility Date

The **Actual Eligibility Date** for this fishery will be the 31 March, 2013. This means that any fish caught by the certified fleet following that date will be eligible to enter the chain of custody as certified product if and when certification is ultimately granted. The rationale for this date is that it meets with the client's wishes, for commercial reasons, for the date to be set at the earliest point at which the Certification Requirements allow.

The measures taken by the client to account for risks within the traceability of the fishery – and therefore generating confidence in the use of this date for target eligibility – are detailed in the rest of this section.

5.2 Traceability within the Fishery

Traceability up to the point of first landing has been scrutinised as part of this assessment and the positive results reflect that systems in place are deemed adequate to ensure fish is caught in a legal manner and is accurately recorded. The report and assessment trees describe these systems in more detail, but briefly traceability can be verified by:

- » no transshipment;
- » a geographically restricted fishery enabling concentrated inspection effort;
- » accurate reporting – electronic log books (regularly inspected and cross-checked with processing outputs);
- » verified landings data (including data on other retained species) are used for official monitoring of quota up-take and national statistics;
- » a high level and sophisticated system of at-sea monitoring, control and surveillance, both in Norwegian and Svalbard FPZ waters, including routine boarding and inspection, spotter planes, VMS; and electronic logbooks.
- » close cooperation between EU, Spanish and Norwegian regulatory and enforcement authorities and no immunity from prosecution in other jurisdictions;
- » reporting prior to landing with limited tolerance;
- » a high level of inspection of landings prior to unloading. Officially calibrated weighing systems of landing.

The above is considered sufficient to ensure fish and fish products invoiced as such by the fishery originate from within the evaluated fishery and no specific risk factors have been identified.

5.2.1 Evaluation of Risk of Vessels Fishing Outside of UoC

Cod and cod products caught by the UoC can be physically identified from the vessels onboard traceability system that allows the origin (date and area of capture) of all labeled products to be determined. There is no elevated risk of vessels fishing outside the UoC. The stock is spatially restricted in its occurrence and while companies may have entitlement to fish for NAFO cod, the same vessels are not used in that fishery and the client normally trades or exchanges NAFO cod quota for additional NE Arctic cod quota. The fishery occurs in a restricted season, according to tight controls – including quota control. Based on the foregoing it is considered highly unlikely that client vessels could land other species, transshipped cod or cod from other stock areas and present these as from the certified fishery without this being detected. The internal procedures and enforcement activities as listed in Section 5.2 ensure that there is minimal risk of catch from units outside the UoC being sold as certified. The fish products are properly marked on board the fishing vessel, vessels are inspected at sea from time to time as well as during landing.

5.2.2 Risk of Substitution of Mixing Certified / Non-Certified Catch

There is no elevated risk of vessels fishing outside the UoC. Vessels have little or no explicit entitlement to catch other species in the Barents Sea, although catches of haddock may be retained up to pre-determined limits. Fish products and their origin are properly marked on board the fishing vessel and vessels are inspected at sea and during landing. The fishery is spatially restricted and occurs in a restricted season, according to tight controls – not least quota control. There is only a low risk that vessels catching other species of fish or cod from other areas could process and present such catches as certified Barents Sea cod. This is due to requirements for reporting on catches by fishing areas. NAFO cod cannot be fished during the same fishing trips as when Barents Sea cod are caught and it is not realistic to expect that certified vessels would be likely to pursue other cod stocks as they do not have quota for these and there would be evidence of unauthorized fishing activity from VMS records. There is a comprehensive inspection regime – including at sea inspections in operation both in the SFPZ and the NEZ as well as at points of landing that is highly likely to detect deliberate substitution of species. Vessels carry VMS at all times and are required to report catches by species to the Spanish Ministry on a daily basis. There is cross-referencing between landing declarations, logbook reporting and sales notes. Finally, the market is known to be sensitive to substitution of cod with other species and there maybe economic incentive to label other species of fish as cod, the reality is that the market is unlikely to accept such mislabeled fish, quite apart from the risk of detection. Verification of processed product onboard against logbook entries is a routine control point for Norwegian and Spanish inspectorates.

5.2.3 At sea processing

All vessels are equipped to fully process catches at sea, including freezing and final packaging of product for onward delivery to the end market. This is permitted within the scope of this certificate and has been considered as part of this assessment. However, only labeled and identifiable product in the form of those listed below are covered by the assessment:

- » skinless cod fillets block frozen or interleaved
- » skin on cod fillets block frozen or interleaved
- » headed and gutted frozen cod (boxed)
- » headed and gutted frozen cod (carton)
- » headed and gutted frozen cod (bagged)
- » gutted head on
- » gutted head off

Fillets are typically presented as individual interleaved frozen fillet packed in paper cartons that are then labeled. Fillets may also be block frozen, wrapped and sealed in brown paper packaging and clearly labeled. Headed and gutted product is normally landed block frozen and packed in brown paper bags with bags being individually labeled. Unloading and onward transport is typically in palletized form. Frozen headed and gutted or gutted only product may also be packaged loose in brown bags.

Once discharged from the vessel, all product is weighed in the packaged form and the net weight of fish product landed is calculated by making deductions for packaging materials. Net landed weights are then converted to live weight using conversion factors acceptable to the control authority. The final live weight for quota purposes is then calculated and corrected in the landings declaration to the authority and the onboard logbook.

Other forms of fish products that may emanate from the certified vessels are not covered by this assessment and are therefore not eligible to carry the MSC logo. These include fish and any species other than cod from the northeast Arctic cod stock.

5.2.4 Trans-Shipment

No trans-shipment takes place in this fishery and the certification explicitly excludes fish that have been trans-shipped at sea.

5.3 Eligibility to Enter Further Chains of Custody

Only Northeast Arctic cod caught in the manner defined in the Unit of Certification (**Section 3.1**) under restrictions detailed throughout the body of the final Public Certification Report for this fishery shall be eligible to enter the Chain of Custody. Chain of Custody should commence following the first point of landing, at which point the product shall be eligible to carry the MSC logo (under restrictions imposed by the MSC Chain of Custody standard). There are no restrictions on the fully certified product entering further chains of custody. The Asociación Nacional de Armadores de Buques de Pesca de Bacalao is in the process of acquiring separate Chain of Custody certification.

5.3.1 Eligible points of landing

Eligible points of landing are as follows:

- » Port of Vigo, Galicia, NW Spain
- » Port of Passajes, Basque country
- » Port of Andenes, Andoy, Norway
- » Port of Tromsø, Norway
- » Port of Alesund, Norway
- » Port of Grimsby, UK
- » Port of Amsterdam, Holland

5.3.2 Parties eligible to use the fishery certificate

The only party that is eligible to use the certificate is the client group. Vessels of the client group are listed in Table 5.1.

Table 5.1 - List of AGARBA vessels fishing for NE Arctic cod

Name	Vessel Reg. No.
Arosa Nueve	CO-2-3844
Arosa Doce	CO-2-3845
Nuevo Virgen de Lodairo	VI-5-9972
Nuevo Virgen de la Barca	VI-5-9973

6. Evaluation Results

6.1 Principle Level Scores

Table 9 - Final Principle Scores

Principle	Score
Principle 1 – Target Species	88.1
Principle 2 - Ecosystem	81.3
Principle 3 – Management System	91.1

6.2 Summary of Scores

Principle	Component	PI No.	Performance Indicator (PI)	Score
One	Outcome	1.1.1	Stock status	100
		1.1.2	Reference points	80
		1.1.3	Stock rebuilding	n/a
	Management	1.2.1	Harvest strategy	85
		1.2.2	Harvest control rules & tools	80
		1.2.3	Information & monitoring	90
		1.2.4	Assessment of stock status	90
Two	Retained species	2.1.1	Outcome	80
		2.1.2	Management	85
		2.1.3	Information	70
	Bycatch species	2.2.1	Outcome	100
		2.2.2	Management	80
		2.2.3	Information	80
	ETP species	2.3.1	Outcome	85
		2.3.2	Management	75
		2.3.3	Information	75
	Habitats	2.4.1	Outcome	70
		2.4.2	Management	75
		2.4.3	Information	75
	Ecosystem	2.5.1	Outcome	90
		2.5.2	Management	90
		2.5.3	Information	90
Three	Governance and policy	3.1.1	Legal & customary framework	95
		3.1.2	Consultation, roles & responsibilities	85
		3.1.3	Long term objectives	100
		3.1.4	Incentives for sustainable fishing	80

Principle	Component	PI No.	Performance Indicator (PI)	Score
	Fishery specific management system	3.2.1	Fishery specific objectives	90
		3.2.2	Decision making processes	90
		3.2.3	Compliance & enforcement	95
		3.2.4	Research plan	90
		3.2.5	Management performance evaluation	90

6.3 Summary of Conditions & Recommendations

Table 10 - Summary of Conditions

Condition number	Condition	Performance Indicator
1	Retained species information recording	2.1.3
2	ETP Species management	2.3.2
3	ETP Species information	2.3.3
4	Habitats outcome status	2.4.1
5	Habitats management	2.4.2
6	Habitats information	2.4.3

The full narrative relating to conditions is presented in Appendix 1.3.

6.3.1 Recommendations

There is one recommendation for this fishery. Please see details below:

Recommendation 1

It is recommended that the client group through, its industry representative bodies and the Spanish government, acting through the EU, further engage with Norwegian authorities with a view to achieving practical and sustainable solutions for dealing with the largely unavoidable bycatch of Northeast Arctic haddock that is associated with the Northeast Arctic cod fishery. Present rules, whereby limits to bycatch volumes are applied on a haul-by-haul basis are seen as possibly increasing the risk of unsustainable practices such as discarding of haddock catches. More workable solutions that contribute to overall sustainability are likely to exist and the client organisation is encouraged to continue efforts in this regard during the life of the certificate.

6.4 Determination, Formal Conclusion and Agreement

The fishery attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any MSC Criteria.

The decision to uphold this determination was confirmed by FCI's decision making entity following a recommendation by the assessment team, and review by stakeholders and peer reviewers.

Following this decision by the assessment team, and review by stakeholders and peer-reviewers, the determination will be presented to FCI's decision making entity that this fishery has passed its assessment and should be certified.

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Appendix 1. Scoring and Rationale

Appendix 1a – MSC Principles & Criteria

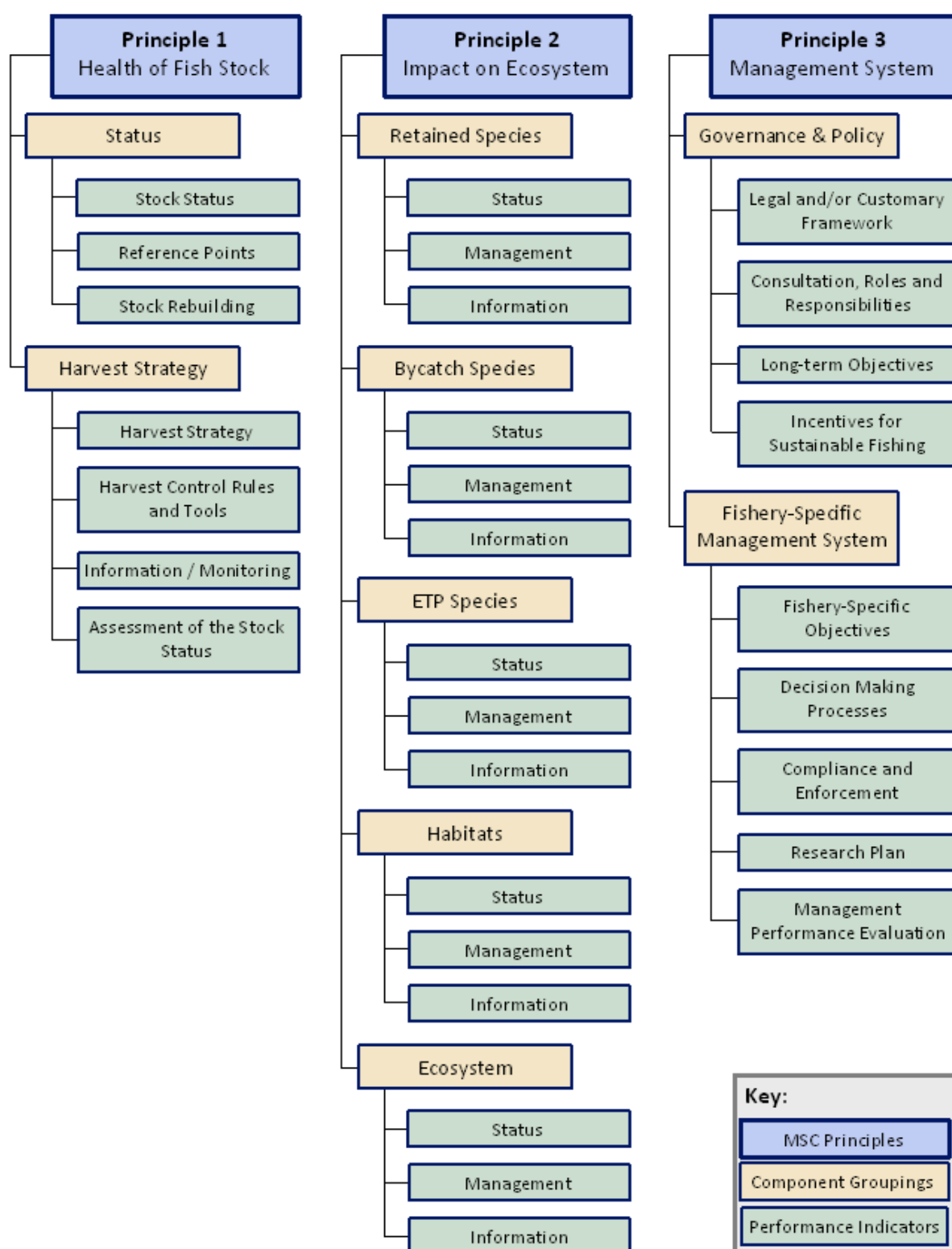


Figure A1 - Graphic of MSC Principles & Criteria

Below is a much-simplified summary of the MSC Principles and Criteria, to be used for over-view purposes only. For a fuller description, including scoring guideposts under each Performance Indicator, reference should be made to the full assessment tree, complete with scores and justification, contained in **Appendix 1.1** of this report. Alternately a fuller description of the MSC Principles and Criteria can be obtained from the MSC website (www.msc.org).

Principle 1

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

Intent:

The intent of this Principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short-term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

Status

- » The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing.
- » Limit and target reference points are appropriate for the stock (or some measure or surrogate with similar intent or outcome).
- » Where the stock is depleted, there is evidence of stock rebuilding and rebuilding strategies are in place with reasonable expectation that they will succeed.

Harvest strategy / management

- » There is a robust and precautionary harvest strategy in place, which is responsive to the state of the stock and is designed to achieve stock management objectives.
- » There are well defined and effective harvest control rules in place that endeavour to maintain stocks at target levels.
- » Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
- » The stock assessment is appropriate for the stock and for the harvest control rule, takes into account uncertainty, and is evaluating stock status relative to reference points.

Principle 2

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends

Intent:

The intent of this Principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

Retained species / Bycatch / ETP species

- » Main species are highly likely to be within biologically based limits or if outside the limits there is a full strategy of demonstrably effective management measures.
- » There is a strategy in place for managing these species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.
- » Information is sufficient to quantitatively estimate outcome status and support a full strategy to manage main retained / bycatch and ETP species.

Habitat & Ecosystem

- » The fishery does not cause serious or irreversible harm to habitat or ecosystem structure and function, considered on a regional or bioregional basis.
- » There is a strategy and measures in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.
- » The nature, distribution and vulnerability of all main habitat types and ecosystem functions in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery and there is reliable information on the spatial extent, timing and location of use of the fishing gear.

Principle 3

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Intent:

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

Governance and policy

- » The management system exists within an appropriate and effective legal and/or customary framework that is capable of delivering sustainable fisheries and observes the legal & customary rights of people and incorporates an appropriate dispute resolution framework.
- » Functions, roles and responsibilities of organisations and individuals involved in the management process are explicitly defined and well understood. The management system includes consultation processes.
- » The management policy has clear long-term objectives, incorporates the precautionary approach and does not operate with subsidies that contribute to unsustainable fishing.

Fishery specific management system

- » Short and long term objectives are explicit within the fishery's management system.
- » Decision-making processes respond to relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.
- » A monitoring, control and surveillance system has been implemented. Sanctions to deal with non-compliance exist and there is no evidence of systematic non-compliance.
- » A research plan provides the management system with reliable and timely information and results are disseminated to all interested parties in a timely fashion.

Appendix 1.1 Performance Indicator Scores and Rationale

Evaluation Table PI 1.1.1

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	It is likely that the stock is above the point where recruitment would be impaired.
			See SG100
80	a	Y	It is highly likely that the stock is above the point where recruitment would be impaired.
			See SG100
	b	Y	The stock is at or fluctuating around its target reference point.
			See SG100
100	a	Y	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
			The spawning stock biomass is well above Blim, the point where recruitment would be impaired. ICES classifies the stock as having full reproductive capacity and being harvested sustainably. The SSB has been above Bpa since 2002 and current biomass has recovered to biomass levels observed at the start of the time series (1946). It is therefore highly unlikely that the current level of the spawning stock biomass is impairing recruitment.
	b	Y	There is a high degree of certainty that the stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years .
			The SSB has been above Bpa (B_{MSY} trigger) since 2002 and therefore has been well within the target region over this period. Fishing mortality was reduced from well above Flim in 1999 to below F_{MSY} in 2007. The high biomass can be attributed in part to higher than expected recruitment, and biomass continues to be higher than expected. The fishing mortality is now in the range that is associated with high long-term yield, and if this is maintained, the working group believes that the stock should remain well above Bpa.
References		» ICES, 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10.	
Stock Status relative to Reference Points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Target reference point	B_{MSY} trigger	460 000t SSB	$SSB_{2012} = 2\ 062\ 626t$ $SSB / B_{MSY} = 4.48$ in 2012
	F_{MSY}	0.40	$F_{2011}/F_{MSY} = 0.26/0.4 = 0.66$
Limit reference point	Blim	220 000t SSB	$SSB/Blim = 9.38$ in 2012
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 1.1.2

PI 1.1.2		Limit and target reference points are appropriate for the stock	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.
			See SG80
80	a	Y	Reference points are appropriate for the stock and can be estimated.
			Reference points have been set for fishing mortality and spawning stock biomass, which are appropriate for the stock, available data and analyses. They were agreed in 2003 (ICES 2003: ACFM 11). The values are $B_{lim} = 220\,000\text{ t}$, $B_{pa} = 460\,000\text{ t}$, $F_{lim} = 0.74$ and $F_{pa} = 0.40$. Calculations based on yield per recruit gave $F_{0.1} = 0.11$. The reference points have been estimated based on past output from stock assessments.
	b	Y	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.
			B_{lim} is based on a “change point regression”. The stock recruitment relationship is weak, but there are a group of lower recruitments at the lowest stock sizes below this limit. These have been used to estimate safe stock levels, where there is no evidence of recruitment decline. Although there is a fishing mortality limit ($F_{lim} = 0.74$) under the current harvest control rule it does not appear to have any purpose.
	c	Y	The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.
			<p>The target reference point is the fishing mortality target (F_{MSY}). Evaluation of the harvest control rule has shown that the target fishing mortality is consistent with high long-term yields and a low risk of depleting the productive potential of the stock.</p> <p>The biomass reference point related to the target (B_{pa}) is a trigger point for the harvest control rule. B_{pa} has been set at 460 000 t which is the lowest SSB estimate having >90% probability of remaining above B_{lim}. Although B_{pa} can be used to set the region containing the target biomass, it is not the target itself. The target biomass depends on the target F_{MSY} which is used to set the total allowable catch as part of the harvest control rule.</p> <p>The reference points have been shown to be consistent with MSY. The JNRF has agreed that the long-term objective should be maximum sustainable yield (MSY) and a re-evaluation was undertaken which confirmed that the reference points and associated control rule were consistent with this objective.</p>
	d	NA	Key low trophic level species, the target reference point takes into account the ecological role of the stock.
			Cod is not a low trophic level species, but it is an important predator in the ecosystem. This is considered under scoring issue c.
100	b	N	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues .
			The approach adopted in defining the limit reference point does not indicate that precaution is being applied in relation to any factors beyond the past stock and recruitment time series.

PI 1.1.2		Limit and target reference points are appropriate for the stock	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	N	The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome, or a higher level , and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty .
			The fishing mortality target reference point is set at a relatively high level. This is justified due to the effects of density dependent growth and mortality. There is empirical evidence of cannibalism, used in the stock assessment, which indicates adult density dependent mortality. There is also some indication of higher weight-at-age at the more recent lower stock densities (although this could be due to other causes besides density). Analyses taking account of density dependent mortality suggest F_{MSY} will be between 0.25 and 0.6 year ⁻¹ . Although a relatively high fishing mortality target may turn out to be close to F_{MSY} , there is a lack of scientific evidence confirming this. Therefore, the current reference points are not sufficiently precautionary to meet the SG100.
References			<ul style="list-style-type: none">» ICES, 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10.» ICES. 2012. Report of the Arctic Fisheries Working Group, 20 April–26 April 2012. ICES CM 2012/ACOM:05.» ICES. 2011. Report of the Arctic Fisheries Working Group, 28 April–4 May 2011. ICES CM 2011/ACOM:05.» ICES (2010) Report of the Arctic Fisheries Working Group (AFWG). 22-28 April 2010. Lisbon, Portugal /Bergen, Norway. ICES CM 2010/ACOM:05» Y. A. Kovalev, V. A. Korzhev (2004) Is the inclusion of NEA cod cannibalism data into assessment a step forward or two steps back? Working Document № 9 to the AFWG, May 2004» Kovalev, Y. A., Bogstad, B. (2005) Evaluation of maximum long-term yield for Northeast Arctic cod. 11th Norwegian-Russian Fisheries Science Symposium, Murmansk, Russia 15-17 August 2005: "Ecosystem Dynamics and Optimal Long Term Harvest in the Barents Sea Fisheries".
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 1.1.3

PI 1.1.3		Where the stock is depleted, there is evidence of stock rebuilding	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a		Where stocks are depleted rebuilding strategies which have a reasonable expectation of success are in place.
	b		A rebuilding timeframe is specified for the depleted stock that is the shorter of 30 years or 3 times its generation time. For cases where 3 generations is less than 5 years, the rebuilding timeframe is up to 5 years.
	c		Monitoring is in place to determine whether they are effective in rebuilding the stock within a specified timeframe.
80	a		Where stocks are depleted rebuilding strategies are in place.
	b		A rebuilding timeframe is specified for the depleted stock that is the shorter of 20 years or 2 times its generation time . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.
	c		There is evidence that they are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within a specified timeframe.
100	a		Where stocks are depleted, strategies are demonstrated to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the specified timeframe .
	b		The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the depleted stock.
References			
OVERALL PERFORMANCE INDICATOR SCORE:			NA
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 1.2.1

PI 1.2.1		There is a robust and precautionary harvest strategy in place	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points.
			See SG80
	b	Y	The harvest strategy is likely to work based on prior experience or plausible argument.
			See SG80
	c	Y	Monitoring is in place that is expected to determine whether the harvest strategy is working.
			Data is routinely collected and evaluated to check on the performance of the harvest strategy. Reporting by the independent scientific authority, ICES, is in the public domain. (See SG80b)
80	a	Y	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.
			The elements for a good responsive harvest strategy are present. There is an agreed harvest control rule which is based on annual stock assessment and independent scientific advice. The management decision making appears well informed and consideration is given to a wide number of issues besides stock size, including wider ecosystem issues. The historic performance of the assessment and harvest strategy is routinely presented and provides an overview of the changes in the perception of the state of the stock in relation to SSB, fishing mortality and recruitment. Since 2010 when the rule was amended, TACs have been set according to the harvest control rule.
	b	Y	Although the TAC remains the main control, other technical measures are applied to improve the performance of the fishery. These include minimum mesh size, minimum landing size, a maximum bycatch of undersized fish and/or non-target species and seasonal or permanent areas closed to fishing to protect juveniles and bycatch species. There is a "move-on" rule related to proportion of bycatch species and undersize fish. The number of vessels allowed to operate in the fishery is limited by licenses. Since January 1997, sorting grids have been mandatory for the trawl fisheries in most of the Barents Sea and Svalbard area. The effects of these regulations have not been evaluated, although data exist which might allow an evaluation to take place.
			The harvest strategy may not have been fully tested but monitoring is in place and evidence exists that it is achieving its objectives.
			The catches are well monitored with the exception of the IUU catch and discards (see PI 1.2.3). In addition, age and survey information provide an independent assessment of the performance of the harvest strategy as they give independent information on biomass and the exploitation rates.
			The harvest strategy is subject to review through the normal management processes. It is monitored by ICES Arctic Fisheries Working Group which reports annually on the state of the stock and other issues arising in the fishery important to fisheries management. Parts of this review are made public, such as reports from ICES on management performance. There is evidence that this information is used by national Governments and the Joint Norwegian Russian Fisheries Commission.

PI 1.2.1		There is a robust and precautionary harvest strategy in place	
SG	Issue	Met? (Y/N)	Justification/Rationale
100	a	N	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the target and limit reference points.
			The harvest strategy might be considered to be designed if the objectives and constraints had been used to formulate the various controls on fishing, which has not been the case. The approach adopted has been based more on trial and error, where the controls have been implemented to see whether they achieve the desired outcome or have been reactive to perceived impacts, such as high bycatch rates and capture of small fish.
	b	N	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
			The agreed management plan has been followed for the last two years. Given that the current harvest strategy has not been in place long, it cannot be considered to be fully evaluated. However, monitoring is in place and the recent relatively high stock biomass strongly indicates overall objectives are being met as fishing mortality has been reduced to levels more consistent with long-term sustainable exploitation.
	d	Y	The harvest strategy is periodically reviewed and improved as necessary.
			The harvest strategy is subject to review through the normal management processes. Parts of this review are made public, such as reports from ICES on management performance. No external or special reviews of the overall management strategy have been undertaken. Nevertheless, the bilateral agreement ensures that it is in the interest of both parties to review the performance of the harvest strategy to ensure that it is effective. There is evidence of on-going improvements in the management plan.
References		<div>» ICES, 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10.</div> <div>» ICES. 2011. Report of the Arctic Fisheries Working Group, 28 April–4 May 2011. ICES CM 2011/ACOM:05.</div> <div>» ICES. 2012. Report of the Arctic Fisheries Working Group, 20 April–26 April 2012. ICES CM 2012/ACOM:05.</div> <div>» Joint Norwegian-Russian Environmental Status Report for the Barents Sea. http://www.barentsportal.com/barentsportal09/</div>	
OVERALL PERFORMANCE INDICATOR SCORE:			85
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 1.2.2

PI 1.2.2		There are well defined and effective harvest control rules in place	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.
			See SG80
	c	Y	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.
			See SG80
80	a	Y	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.
			A management plan has been agreed since 2004 with the objectives of maintaining high long-term yield, year-to-year stability, and full utilization of all available information on stock dynamics. The current plan aims to maintain fishing mortality at $F = 0.40 \text{ year}^{-1}$ and restrict between-year TAC change to $\pm 10\%$ unless SSB falls below B_{pa} ; in this case the target F should be reduced. The plan was amended in 2009 to try to ensure fishing mortality does not fall below 0.3 unless biomass is below B_{pa} . The fishing mortality has been below the target level since 2006.
			Based on evaluations made in 2006 and 2007, ICES considers the management plan to be in accordance with the precautionary approach. If conditions change to outside the range assumed in management plan evaluation (with respect to biological conditions, assessment quality, and implementation error), the management plan would be revised. Further evaluation and revision of the harvest control rule is planned for 2015.
	b	Y	The total quota for north-east Arctic cod in 2013 has been set at 1 000 000 t, 60 000 t above the harvest control rule. Although the quota appears safe ($F < F_{MSY}$), the small departure from the harvest control rule, which has been followed in 2011 and 2012, undermines confidence in the harvest control rule continuing to be "well defined".
			The selection of the harvest control rules takes into account the main uncertainties.
			The rule has been tested through computer simulation against the main sources of implementation error. The worst levels of implementation error tested in 2007 of around 40% indicated that there was less than 3% chance for which the agreed HCR no longer is precautionary. The evaluation did not take into account models of cod cannibalism in the population model, although this is likely to improve the stability of the rule. Simulations do show that the rule has attributes which should maintain good performance with respect the conservation objectives. The target fishing mortality is considered a reasonable approximation for obtaining maximum sustainable yield in the long term.
	c	Y	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.
			Norwegian and Russian authorities have the administrative mechanisms and enforcement infrastructure to ensure compliance with this rule. The JNRFC agrees the TAC and quotas for each nation's fleet participating in the North-East Arctic cod fishery and the fishery can be closed when quotas are taken. The activity and catch landing of all fishing vessels is subject to regular monitoring. Catches are monitored and counted against the TAC during the year.
			Although TAC regulations are in place, there has been a significant amount of unreported landings in the past. The main way used to evade quota control seems to have been trans-shipping of fish from the Barents Sea. Unreported landings will reduce the effect of management measures and will undermine the intended

PI 1.2.2		There are well defined and effective harvest control rules in place	
SG	Issue	Met? (Y/N)	Justification/Rationale
			objectives of the harvest control rule. It is therefore important that management agencies ensure that all catches are counted against the TAC. The estimates of unreported landings have been reduced considerably from 2006 to 2008, which can probably be attributed to the introduction of port state control in the NEAFC area from 1 May 2007. For 2008, the Norwegian estimate of 15 000 t unreported landings is around 3% of the international reported catch and appears sufficiently low not to undermine the effectiveness of the harvest control rule. Since 2008, IUU catch has been estimated at zero. Assuming that IUU catches in future remain negligible, the evidence indicates that tools are effective in controlling exploitation to the required levels. However, the evidence does not yet clearly show that the HCR works, which is required to meet SG100.
100	b	N	<p>The design of the harvest control rules takes into account a wide range of uncertainties.</p> <p>It is not possible to say that the rule is designed or that it takes into account a wide range of uncertainties. <i>Ad hoc</i> adaptations have been applied without determining beforehand whether they will meet management criteria. Furthermore, there have been several departures from the rule in response to perceived poor performance in practice. A lack of design is demonstrated by the inclusion of an objective (the limits on inter-annual variation) as part of the control, which has presented problems when implemented. While the HCR may be robust to the main uncertainties, the HCR performance in relation to systematic effects, such as changes in capelin abundance, climate change and so on, is not so clear.</p>
	c	N	<p>Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.</p> <p>The evidence does not yet clearly show that the TAC achieves levels required by the HCR. Given the recent history of IUU and an unknown level of discarding, there is room for doubt as to the level of control.</p>
	References		
			<p>» ICES. 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10.</p> <p>» ICES. 2012. Report of the Arctic Fisheries Working Group, 20 April–26 April 2012. ICES CM 2012/ACOM:05.</p> <p>» ICES. 2011. Report of the Arctic Fisheries Working Group, 28 April–4 May 2011. ICES CM 2011/ACOM:05.</p> <p>» ICES 2009. Report of the Arctic Fisheries Working Group, 21 - 27 April 2009. ICES CM 2009/ACOM:02.</p> <p>» ICES. 2007. Report of the Arctic Fisheries Working Group, Vigo, Spain 18-27 April 2007. ICES C.M. 2007/ACFM:16, 651 pp.</p>
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 1.2.3

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.
			See SG100
	b		Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.
			See SG100
80	a	Y	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
			See SG100
	b	Y	Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule , and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.
			<p>The harvest control rule requires accurate estimates of the exploitable biomass, spawning stock biomass, and fishing mortality. These estimates are obtained from the stock assessment (see PI 1.2.4), which requires catches, age composition and abundance indices.</p> <p>The fisheries are controlled by inspections of the trawler fleet at sea, i.e. by a requirement to report to control points when entering and leaving the EEZs, VMS satellite tracking, and by random inspections of fishing vessels when landing the fish. Keeping a detailed fishing logbook on-board is mandatory for most vessels, and large parts of the fleet report to the authorities on a daily basis. Landings are reported, although enforcement has not been complete, with significant transshipped landings thought to have escaped detection in the past.</p> <p>Age, weight, length and maturity composition data are taken using random sampling from landings and survey catches. Routine otolith exchanges among laboratories are carried out for both cod and haddock to validate ageing. Discrepancies are seldom more than 1 year, and the results show an improvement over time, despite still observing discrepancies for cod in the magnitude of 15-30%. There is some systematic difference between countries. Catches are converted to catch-at-age based on age and length samples.</p> <p>Cod stomach content data is recorded in a joint PINRO-IMR stomach content database. On average about 9 000 cod stomachs from the Barents Sea have been analysed annually in the period 1984-2012. These data are used, among other things, to calculate the per capita consumption of cod by cod for each half-year.</p> <p>One commercial catch-per-unit-of-effort data (cpue) series and three annual survey series are used as indices of stock abundance. The current survey approach has been applied since 1995. A combination of coordinated acoustic and trawl surveys are carried out each year by Russia and Norway in the Barents Sea and by Norway on the Lofoten spawning grounds. In addition, cpue are gathered from various fleets and the Russian trawl data are used as an index in the assessment. Survey data exist for the period 1981-2012, and complete series are available 1994-2012.</p> <p>The area coverage of surveys has been incomplete in 1997, 1998, 2002, 2003, 2006 and 2007 mainly due to lack of shared access to the Norwegian and Russian Economic Zones. The survey indices were corrected for the assessment as far as possible, but this problem can only be eliminated by better co-operation between the Norwegian and Russian authorities. The Norwegian survey in 2012 was incomplete due to a technical problem, but otherwise surveys have been more consistent since</p>

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	Issue	Met? (Y/N)	Justification/Rationale
			2007. The biases in catch estimates and survey indices do not invalidate the stock assessment.
	c	Y	<p>There is good information on all other fishery removals from the stock.</p> <p>At past AFWG meetings it has been recognized that there has been substantial mis/under-reporting of catches and discarding throughout the Barents Sea for most groundfish stocks.</p> <p>There is growing evidence of discarding throughout the Barents Sea for most groundfish stocks, despite discarding of commercial fish being illegal in Norway and Russia. There are currently no estimates of discards for NEA cod, NEA haddock, redfish or Greenland halibut. Estimates in future may be available from observer programs and comparison of at-sea versus port sampling. While attempts to obtain better discard data continue, the lack of information adds to the uncertainty in the assessment. However, there does not seem to be currently any incentive to discard arctic cod.</p> <p>Illegal, unregulated and unreported (IUU) catches have been a problem in the Barents Sea. Since 2002, when the Norwegian and Russian governments reached agreement on a harvest control rule (HCR) and tighter catch reporting, there has been a significant recent improvement. Two series of IUU catch were made available to ICES for the years 2002-2008, but the advice is based on one series only (the higher IUU catch estimate). An IUU catch estimate allows a valid stock assessment to be completed, but contributes to uncertainty in results.</p> <p>The highest risk occurs where controls are likely to be least effective, and most uncontrolled landings are likely to be through transshipment. As implied by the World Bank Governance Indicators, landings and subsequent trade of fish within Russian jurisdiction may also be higher risk of being unrecorded. Although the problems may not be fully resolved and some IUU fishing continued in 2008, the Russian and Norwegian governments have agreed to maintain pressure for full catch disclosure and established a protocol whereby the unreported catches can be estimated and appropriate adjustments made to catch data for stock assessment purposes.</p> <p>The AFWG (2012) reports that no IUU activities have been detected since 2008 and it therefore appears that IUU activity has been eliminated or reduced to a negligible level. Past IUU catches are estimated with sufficient precision for use in a precautionary way in the stock assessment. While this is subject to ongoing monitoring, it is clear that the fishery has met objectives of eliminating significant IUU.</p>
100	a	Y	<p>A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.</p> <p>There is a comprehensive range of data available for the Barents Sea fisheries, including complete fleet information, biological data on the stocks and extensive environmental indices. These are not all used in the harvest strategy.</p> <p>Environmental indices and information on cod diet is used to inform the stock assessment and improve estimates of abundance and status. Estimates of cannibalism are included in natural mortality. In addition, since 2008, the recruitment predictions have included information on environmental drivers (ice coverage, temperature and oxygen saturation at the Kola section, air temperature at Murman coast, and capelin biomass).</p> <p>The life history of cod in the Norwegian and Barents Seas is well known and documented, including spawning ground areas where eggs, larvae and juvenile fish disperse. There is agreement over the separation between the Norwegian coastal cod stock and arctic cod stock.</p>

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	Issue	Met? (Y/N)	Justification/Rationale
			Various oceanographic and ecosystem data, including water temperatures and the abundance of other relevant species. While information may not be directly used in the stock assessment, ecological relationships relevant to management advice have been assessed. The management of Northeast Arctic cod will have implications on the dynamics of prey and predator populations. For example, Northeast Arctic cod is an important predator on other species in the ecosystem, notably capelin. Changes in cod growth, maturity, and cannibalism are linked to the abundance of capelin, whereas annual consumption of cod by seals and whales may be inversely related to capelin abundance.
	b	N	<p>All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.</p> <p>Although the stock abundance, fishery removals and abundance indicators are monitored at a level of accuracy and coverage consistent with the harvest control rule, abundance indices and catches are not monitored accurately enough to meet the SG100.</p> <p>Norwegian sampling of commercial catches has been less precise because a Norwegian port sampling programme ceased in mid-2009. The poor sampling caused problems in estimating Norwegian catches for the oldest ages in 2010. The AFWG reports that a small Norwegian port sampling programme from 2011 and onwards and an expansion of the high seas reference fleet has improved the situation somewhat, but there are still gaps for certain gears and areas. Russian sampling of commercial catches has also shown a declining trend.</p> <p>With discarding and past IUU, decreased sampling of catches (on which the assessment method depends) and surveys having not been consistent enough in recent years, the SG100 is not met.</p>
References			<ul style="list-style-type: none"> » ICES. 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10. » ICES. 2012. Report of the Arctic Fisheries Working Group, 20 April–26 April 2012. ICES CM 2012/ACOM:05. » ICES. 2011. Report of the Arctic Fisheries Working Group, 28 April–4 May 2011. ICES CM 2011/ACOM:05. » ICES 2009. Report of the Arctic Fisheries Working Group, 21 - 27 April 2009. ICES CM 2009/ACOM:02. » ICES. 2007. Report of the Arctic Fisheries Working Group, Vigo, Spain 18-27 April 2007. ICES C.M. 2007/ACFM:16, 651 pp. » Stransky, C., Baumann, H., Fevolden, S., Harbitz, A., Høie, H., Nedreaas K. H., Salberg, A., Skarstein, T.H. (2007) Separation of Norwegian coastal cod and Northeast Arctic cod by otolith morphometry. ICES CM 2007/L:10 » MRAG (2009) Barents Sea Cod and Haddock: Control System and IUU Risk Assessment. Final Report HK1228 to Ocean Trawlers, November 2009. » Worldbank Worldwide Governance Indicators http://info.worldbank.org/governance/wgi/index.asp
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 1.2.4

PI 1.2.4		There is an adequate assessment of the stock status	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	b	Y	The assessment estimates stock status relative to reference points.
			A stock assessment estimates the spawning stock biomass and fishing mortality relative to reference points defined for these indicators.
	c	Y	The assessment identifies major sources of uncertainty.
			See SG80
80	a	Y	The assessment is appropriate for the stock and for the harvest control rule.
			See SG100
	c	Y	The assessment takes uncertainty into account .
			<p>The major uncertainties are identified in the annual assessments and their implications examined and reported as part of the management advice. However specific advice is presented as a table of options for fishing mortality (TAC), but does not report outcomes in relation to the uncertainties in the data and assessment. The main uncertainties in this assessment derive from the biased catch statistics and inconsistencies in the surveys.</p> <p>Biased catch statistics have been considered through generating alternative unreported catch figures which have been added to the total catch in the stock assessment and accounts for the IUU catch. The effect of IUU catches has also been assessed with respect to the HCR. It was concluded that at the higher levels of estimated IUU, the HCR may not be delivering precautionary management and therefore the precautionary nature of the HCR is conditional on low IUU catches (see PI 1.2.2). Considerable effort has been spent in recent years decreasing IUU catch making data collection more reliable in estimating catches, thereby decreasing uncertainty in the assessment.</p> <p>The survey results show some inconsistency which may be explained by incomplete spatial coverage of surveys in 2006/2007 and 2012 (see PI 1.2.3). With the elimination of IUU catch, this is the main source of error. Although the sampling bias is unknown, it has been identified by the assessment and should be eliminated as it is only a problem of co-operation between the management authorities.</p> <p>Estimates of sampling error are to a large degree lacking or are incomplete for the input data used in the assessment. However, the uncertainty has been estimated for some parts of the input data, and the harvest control rule has been tested against suspected data error levels, covering the main uncertainties.</p>
	e	Y	The assessment of stock status is subject to peer review.
			<p>The assessment is subject to internal review through the working group process, which produces a consensus report. The report itself is externally reviewed and reviewers' comments are published as an annex to the report. The review is by correspondence, and although not in depth (for example, reviewers cannot request sensitivity runs for that year's assessment), still allows independent assessment of the working group's results which has a demonstrable impact within the management cycle. Because the assessment has been peer reviewed, the SG80 for the fourth scoring issue is met, but the review is not rigorous enough (i.e. separate and substantial internal and external review) to meet the SG100 fourth scoring issue.</p>

PI 1.2.4		There is an adequate assessment of the stock status	
SG	Issue	Met? (Y/N)	Justification/Rationale
100	a	Y	The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.
			The stock size is estimated on an annual basis and its status relative to biological reference points is assessed. The assessment methodology and level of accuracy is sufficient to apply the harvest control rule effectively.
			The principal assessment model is the XSA (extended survivors analysis) version of virtual population analysis. The model is suitable for the available data. XSA is a generic age structured stock assessment, and one of the many variants of VPA. It is used by ICES for a number of stocks, has been widely tested and is generally considered robust as long as the catch-at-age and survey data are reliable. Species and stock-specific parameters are used in the model as appropriate.
			There is a significant body of research and monitoring data on growth and reproduction. The mature fish aggregate along the Polar front to feed in summer where their annual growth increment and fecundity is significantly influenced by the abundance of, primarily, capelin and to a lesser extent, herring. Growth (weight at age) and maturity are estimated each year, taking account of their variability in the assessment.
			The assessment method also includes an estimate of the consumption of cod by cod, which is thought to be a significant source of mortality particularly of 3 and 4 year old fish. Therefore, significant adult density dependent mortality is accounted for in the assessment.
		Therefore, this indicates that the assessment is not only appropriate for the stock and for the harvest control rule, but also it takes into account the major features relevant to the biology of the species and the nature of the fishery.	
	c	N	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
			While the main stock assessment does fit using a likelihood function, the estimates are not treated as probability density functions. Importantly the results are not reported as probabilities and probabilities are not considered as part of the management advice.
	d	Y	The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
			As well as XSA, alternative software for fitting VPA models has been used over the years. In 2009, TISVPA and a “survey calibration” method were applied to the same data. These give basically the same results as XSA, although XSA continues for the main assessment for consistency. Since 1999, a new assessment model (Fleksibest-now Gadget) has been used to provide an alternative assessment approach. This is a multispecies model of the cod life cycle, and allows more informed advice based on ecosystem considerations. The results from the GADGET model is in broad agreement with the XSA model in that the current stock size is close to the highest values seen over the last 20 years. There is some indication in the model results that recruitment may now be dropping from the recent high levels.
	e	N	The assessment has been internally and externally peer reviewed.
			The review is not rigorous enough (i.e. separate and substantial internal and external review) to meet the SG100 fourth scoring issue.
References		»	ICES. 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10.

PI 1.2.4		There is an adequate assessment of the stock status	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<ul style="list-style-type: none"> » ICES. 2012. Report of the Arctic Fisheries Working Group, 20 April–26 April 2012. ICES CM 2012/ACOM:05. » ICES. 2011. Report of the Arctic Fisheries Working Group, 28 April–4 May 2011. ICES CM 2011/ACOM:05. » ICES 2009. Report of the Arctic Fisheries Working Group, 21 - 27 April 2009. ICES CM 2009/ACOM:02.
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 2.1.1

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Main retained species are likely to be within biologically based limits (if not, go to scoring issue d below).
			Scored at SG80.
	c	Y	If main retained species are outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.
			Scored at SG80.
	d	Y	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.
			Scored at S80.
80	a	Y	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).
			<p>Accurate and regularly updated information is available on the catch of all fish species that may be retained in the fishery. The Spanish Ministry of Agriculture, Food and Environment has provided data on landed catches of all species taken in the fishery by the fleet under assessment for the period 2007-2011 to the assessment. The data show that the fishery captures and lands a range of species other than cod including haddock, redfish <i>Sebastes</i> spp., halibut, saithe, Greenland halibut, wolffish and plaice. Additional data collected during an at sea observer programme operated by AZTI (Basque country research and development organization) has also been available to the assessment. Both the official landings and AZTI datasets indicate that cod comprises a minimum of 90% of the bulk catch.</p> <p>Officially reported landings are overwhelmingly of the target species – northeast Arctic cod (98.6%). Species captured along with northeast Arctic cod and which are landed are haddock (1%), redfish <i>Sebastes</i> spp. (0.22%), halibut (0.1%), saithe (0.1%), Greenland halibut 0.3%), wolffish <i>Anarchicas</i> spp. (0.04%) and plaice (0.05%).</p> <p>Data from AZTI indicates typical catches comprise cod (90%), haddock (9%), redfish <i>Sebastes</i> spp. (0.2%) and spotted wolffish (0.29%). AZTI sample the raw catch prior to any grading and in this context the data includes any undersize fish. The most notable difference between the reported landings for the fleet and AZTI catch sampling data is in relation to the level of haddock reported as being caught; while there are further smaller differences in relation to quantities of other species captured. The difference in haddock catch is explained simply: as the client fleet does not have quota entitlement to catch and land haddock directly (there is a bycatch limit set at 19% per haul), the fleet actively seeks to avoid catches of haddock by moving to areas where cod catches are cleaner and by moving to other fishing grounds whenever haddock are encountered in significant quantities in hauls. Discarding of haddock is illegal and is considered highly unlikely to occur, in part due to a comprehensive and strict MCS. Other differences in catch composition between reported landings and AZTI sampling data can most likely be accounted for by the fact that AZTI sampling activity takes place mainly in the early part of the year when the cod are fished at the southern limits of the stocks' distribution and closer to the Norwegian mainland. By contrast, the fleet is mainly active during the summer months when the fish are targeted much farther north and in the Svalbard Fishery Protection Zone. It is reasonable to expect that catch composition will vary with significant geographical variations in the fishery.</p>

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>According to an analysis of the official fleet landings data for the years 2009-2011, there are no species that meet with the CR definition of 'main' retained species, based on volume of landing (equal to or greater than 5% of the total live weight catch).</p> <p>The 2011 ICES advice for northeast Arctic haddock states that Spawning Stock Biomass has been above Bpa since 1989. SSB been increasing since 2000 and is presently at the highest recorded.</p> <p>Despite this, some species of redfish (notably <i>Sebastes marinus</i>) and wolffish with which the fishery interacts, are considered to be vulnerable on account of life history characteristics and are known or believed to have poor stock status. Landings data and catch sampling data provided by AZTI does not differentiate between redfish species caught and it is uncertain which species comprises the bulk of the catch although the catch is believed to be comprised mainly of beaked redfish <i>Sebastes mentella</i>, for which there is a directed fishery in international waters and an agreed TAC of 7,500 t for 2012. The SSB has been increasing since 1992 and is now estimated to be around 600kt. Measures put in place to protect juvenile have proven successful and the stock is considered to be in good condition. The greatest concern for redfish is in relation to <i>Sebastes marinus</i> - SSB has been decreasing since the 1990s and is currently at the lowest level in the time-series. Fishing mortality has been increasing since 2005 and is currently at the highest level in the time-series. Recruitment is very low. Despite the risk that the fishery catches some <i>S. marinus</i> in reality, the actual redfish catch level in this fishery (31 tonnes over three fishing seasons) is so low as to be justifiably considered insignificant in the context of ICES advice and the current assessment and no further consideration of the impact of this fishery on redfish is considered necessary based on the observed catch levels; however it is acknowledged that it would be preferential to have clarity with respect to the main redfish species which is captured.</p> <p>Despite uncertainty over the species of wolffish that the fishery interacts (indications from AZTI data are however that this is mainly Spotted wolffish <i>Anarhichas minor</i>), once again the level of catch is also exceptionally low (5 tonnes over three fishing seasons) and is justifiably considered insignificant in the context of the current assessment on this basis. However it is acknowledged that it would be preferential to have clarity with respect to the species of wolffish which is/are captured.</p> <p>For Greenland halibut, ICES advises that on the basis of precautionary considerations, catches should not be allowed to increase and should not exceed 15 000 t for 2013. The level of retained Greenland halibut in this fishery (c. 1.5t per annum) is considered to be insignificant in the context of ICES advice. According to ICES "there are signs that the regulations of the last two decades have improved the status of the stock".</p> <p>In evaluating this PI, the assessment concluded that there are no main retained species and that catches of <i>Sebastes</i> spp. and <i>Anarhichas</i> spp. are entirely incidental and occur at such exceptionally low levels that they are highly unlikely to have implications for the stock status of those species. The most prominent retained catch is haddock and there is a high degree of certainty that the stock is within biologically based limits.</p> <p><i>Harmonisation with previous certifications on the same stock</i></p> <p>At time of writing, six other fisheries for NEA cod are certified under the MSC scheme. A number of these (two certified, one in certification) achieved lower scores for 2.1.1 (<80 – raising a Condition). The Ocean Trawlers fishery for northeast Arctic cod and haddock achieved a lower score under the present PI, mainly on account of the level of retained redfish <i>Sebastes</i> spp. and wolffish <i>Anarhichas</i> spp. catches. The awarded score resulted in a Condition being applied to the certification with respect to retained catches.</p> <p>Similarly, the certified Norwegian northeast Arctic cod Offshore fishery is required to comply with a Condition in relation to the retained species component, in particular as it relates to incidental catches of the depleted Norwegian coastal cod stock.</p>

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>The FIUN certification (in progress) was discussed with the assessment team responsible for that certification and it was found that there are significant catches of both wolfish and redfish in that fishery (of the order of >500t each per annum). The fishery was awarded a lower score on the account of the bycatch of golden redfish and wolfish.</p> <p>Four other fisheries for Barents Sea cod have been certified and scores for 2.1.1 achieved 80 or higher.</p> <p>The current assessment has explicitly considered this aspect of the previous certifications as part of the harmonization process in an effort to ensure consistency of outcomes across the certifications. In doing so, the assessment determined some clear differences between the retained catch profiles of the fishery under assessment and those of the aforementioned three fisheries which incurred scores of <80 for 2.1.1.</p> <p>In carrying out harmonization, with respect to Norwegian coastal cod, certification of the Norwegian northeast Arctic offshore cod raised a condition in relation to the potential that that fishery had potential to impact the Norwegian coastal stock, which was known to be in a depleted state. The assessment team noted that no such condition was raised in the Ocean Trawlers certification for northeast Arctic cod. ICES accept that for all practical and stock assessment purposes, the Norwegian coastal cod stock is delimited by the Norwegian 12 nautical mile territorial waters boundary i.e. that stock is confined to waters inside of 12nm from the Norwegian baseline (Norwegian territorial waters). The present fishery does not operate within Norwegian territorial waters, as it's entitlement to fish within Norwegian waters relates only to the Exclusive Economic Zone and not territorial waters. This is quite apart from the fact that this fishery is a trawl fishery - most demersal trawl fisheries are banned within 12nm of the coast under Section 8 of the Norwegian Act of June 30 1983 no.40. While derogations are provided for certain fisheries, these are not available to the cod fleet or to foreign vessels. Therefore, in harmonizing with the evaluation, scoring and conditions for the existing certifications on the same stock, the assessment team determined that there was a negligible probability that the fishery under assessment could or would interact with Norwegian coastal cod to a significant degree. Accordingly, Norwegian coastal cod has not been considered as a retained species and no condition was raised in respect of this species and this outcome is consistent with the Ocean Trawlers certification.</p> <p>With respect to redfish retained catch, the Ocean Trawlers assessment found that levels of <i>Sebastes mentella</i> retained in that fishery amounted to almost 1% of total landed volumes of all species. Total certified landings exceed 90,000t pa (haddock and cod). Accordingly the indicated level of retained catch of redfish is close to 1,000 tonnes per annum. This represents a significant proportion of the ICES recommended TAC for that species (c. 8,600t for 2010). Given the current poor state of redfish stocks in Areas I and II and the observed level of interaction with redfish, it is appropriate that that fishery should have a condition imposed in relation to redfish retained catch as part of the certification. The situation is broadly similar for the Norwegian northeast Arctic Offshore cod fishery. Landings of cod for that fishery amounted to 58,000 tonnes in 2008 and a similarly high level of redfish bycatch is implicated for that fishery. Again, a condition in relation to incidental capture of redfish is appropriate to the fishery's certification under the scheme. By contrast, the observed level of redfish catch in the fishery under assessment is much lower, as indicated by landings declarations and data compiled by the Basque research institute AZTI Tecnalia. Most recent AGARBA landings data available to the assessment team also indicate that for the years 2009-2011 (comprising three fishing seasons) a total 32 tonnes of redfish was landed in this fishery along with 7,730 t of cod. This equates to 0.2% of the total landed catch for this fishery. The assessment has considered that this level of redfish incidental catch is not significant in the context of the management of redfish stocks. Accordingly it has not impacted on scoring of PI 2.1.1 at SG80 and a condition was not implicated.</p>

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>The situation is similar with respect to wolffish retained catch and there is a clear difference between the present fishery assessment and that of the impending FIUN assessment (in certification) which has demonstrated much higher levels of interaction with redfish and wolffish.</p> <p>The score for 2.1.1 for this fishery is therefore more appropriately harmonized with the scores of the MSC certified Pesquera Pescafria Rodriguez, Faroese, UK/DFFO and Compeche Barents Sea cod fisheries.</p>
	c	Y	<p>If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.</p> <p>There are no main retained species in the fishery that are believed to be outside of biologically based limits. Catches of <i>Sebastes</i> spp. and <i>Anarhchicas</i> spp. are minimal and while there is uncertainty over the species composition of both redfish and wolffish catches there are sufficient measures in place to ensure that the fishery would not hinder recovery or rebuilding of the most vulnerable of species of either genus.</p> <p>A number of measures are considered to be particularly relevant:</p> <ul style="list-style-type: none">» Limit to the spatial scale of the fishery» Limit to the scale of the cod fishery (TAC)» Mandatory catch reporting» Comprehensive MCS» Minimum mesh size rules» Ban on discarding» Use of VMS» Use of selectivity device (grid) <p>These measures work together to limit the impact of the fishery on retained species and are considered to comprise a partial strategy to manage impacts on retained catches.</p>
100	a	N	<p>There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.</p>
			<p>There is not a high degree of certainty that all retained species are within biologically based limits and are fluctuating around their target reference points.</p>
	b	N	<p>Target reference points are defined and retained species.</p>
			<p>Not scored. Target reference points are defined for some retained species (haddock) but not all species.</p>
References			<ul style="list-style-type: none">» Anon (2012) Unpublished data from AZTI onboard observer programme, Spanish Barents Sea cod fishery.» ICES (2012). Advice for NE Arctic haddock. ICES Advice 2012, Book 3» ICES (2012). Advice for Greenland halibut in Area I & II.» ICES (2012) Advice for Redfish <i>Sebastes mentella</i> in Areas I & II.» ICES (2012) Advice for Redfish <i>Sebastes marinus</i> in Areas I» _Norway North East Arctic cod: http://www.msc.org/track-a-fishery/certified/north-east-atlantic/Norway-north-east-arctic-offshore-cod/Norway-north-east-arctic-offshore-cod

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<ul style="list-style-type: none"> » Comapêche and Euronor cod and haddock: http://www.msc.org/track-a-fishery/certified/arctic-ocean/comapeche_euronor_cod_haddock » Barents Sea cod and Barents Sea haddock: http://www.msc.org/track-a-fishery/certified/north-east-atlantic/barents-sea-cod-and-haddock/barents-sea-cod-and-haddock » UK Fisheries/DFFU/Doggerbank Northeast Arctic cod, haddock and saithe: http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/uk_fisheries_dffu_doggerbank_northeast_arctic_cod_haddock_saithe » Faroe Island North East Arctic cod: http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/faroe_island_north_east_arctic_cod
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.1.2

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are measures in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.
			Scored at SG80.
	b	Y	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).
			Scored at SG80.
80	a	Y	There is a partial strategy in place, if necessary that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.
			Logbook recording or retained catches and fishery sampling observer data confirms that northeast Arctic haddock is the only main retained species in the fishery. Spain and the AGARBA fishery do not have any direct entitlement to northeast Arctic haddock quota. Haddock is not a target species in the fishery however it is captured as an inevitable consequence of fishing for cod. In order to facilitate the fishing of cod with a retained catch of haddock, AGARBA catches of haddock have in the past been facilitated through quota swapping with EU member states or Norway. Ensuring that catches of haddock are legal and are accounted for in quotas and the TAC is fundamental to the management of the retained species catch. More recently, catches of haddock have been accepted as being an inevitable consequence of fishing for cod and formal arrangements have been put in place through the EU/Norway agreement in 2011 whereby catches of haddock taken within the Svalbard Fishery Protection Zone are permitted up to a maximum of 19%, measured on a per haul basis.
			Northeast Arctic haddock is subject to a long-term management plan that has clearly defined stock and fishing mortality reference points. The management plan was agreed by the Joint Russian–Norwegian Fisheries Commission in 2004. It was modified in 2007 from a three-year rule to a one-year rule on the basis of the HCR evaluation conducted by ICES. The plan is to be used until 2015. ICES has evaluated the modified management plan and concluded that it is in accordance with the precautionary approach.
			Unreported catches have decreased in recent years and were close to zero in 2009 and 2010 (ICES, 2011). Discarding is illegal in Norwegian EEZ and in the Svalbard fisheries zone and indications are that the discard ban is routinely and strictly enforced. The fisheries are controlled by inspections at sea and when landing fish, by a requirement to report to catch control points when entering and leaving the NEZ and Svalbard FPZ, and by VMS satellite tracking for EU and Norwegian fleets.
			TAC regulations for haddock, Greenland halibut and Redfish species (both species) are in place. Spain has a quota of c.90 t for golden redfish which is adequate to permit all landing of incidentally captured golden redfish while there is a directed Spanish fishery for beaked redfish in Areas I&II, for which Spain has either direct quota or negotiates quota through quota swapping arrangements. As part of the annual fishing permit issued to each company within the client group by the Spanish Ministry, there are clear bycatch limits set with respect to wolffish, redfish and Greenland halibut, amongst others. The fishery is also regulated by a minimum landing size, a minimum mesh size in trawls, a maximum bycatch of undersized fish (15% for cod), maximum bycatch of non-target species, closure of areas with high density of juveniles, and other area and seasonal restrictions. Since January 1997, sorting grids have been mandatory for the trawl fisheries in most of the Barents Sea and Svalbard area. A system of real-time closure system has been in operation along the Norwegian coast and in the Barents Sea since 1984 that is aimed at protecting juvenile fish. Based on scientific research vessel data and mapping of areas by hired

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>fishing vessels, fishing is prohibited in areas where the proportion by number of undersized cod, haddock, and other species combined has been observed by inspectors to exceed 15%. The time of notice before a closure of an area comes into force is 2–4 hours for national vessels and 7 days for foreign vessels (including EU vessels). Before or parallel to a closure, the Norwegian Coast Guard may request vessels not to fish in an area where too many small fish have been observed during their inspections. An area that has been closed is not re-opened until it is documented to be low in juvenile fish by trial fishing within the area by the Surveillance Service.</p> <p>In addition to the temporary closed areas, some areas are permanently closed either protect juvenile cod and haddock (such as around Bear Island). The use of selective gear technology in the demersal fisheries since 1997 has also reduced the catch and possible discarding of juveniles.</p> <p>From 1 January 2011 onwards, the minimum mesh size for bottom trawl fisheries for cod and haddock is 130 mm for the entire Barents Sea (before it was 135 mm in the Norwegian EEZ and 125 mm in the Russian EEZ). However, the AGARBA fishery operates using a minimum codend mesh size that is considerably greater than this (generally 145mm but up to 150 mm). This is confirmed by reports of inspections of mesh sizes by the Norwegian Coast guard, which have shown the actual codend mesh size to be between 151mm.</p> <p>From 1 January 2011, the technical regulations for the demersal fisheries in the Barents Sea were harmonized so that the minimum landing size is 40 cm for haddock in all areas (previously it was 44 cm in the Norwegian EEZ and 39 cm in the Russian EEZ). The maximum allowable percentage of fish below the minimum size in catches is 15% by number of cod, haddock, and saithe combined in the Norwegian EEZ and Svalbard fisheries zone.</p> <p>The fisheries are controlled by Norwegian Coast Guard inspections of the trawler fleet at sea, by a requirement to report catches at control points when entering and leaving the Norwegian EEZ, and by inspections when landing fish in Norway, the UK or Spain. Discarding is not permitted in Norwegian or Svalbard waters.</p>
	b	Y	<p>There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.</p> <p>There is an appropriate level of information available with respect to the catch of retained species in the fishery. Information in relation to the retained catch supports a management response that is appropriate to ensure impacts of the fishery on retained catch species are within acceptable limits. The response is considered to be adequate and is sufficiently detailed so as to ensure the fishery does not pose a risk of serious or irreversible harm to retained species. The strategy has not been specifically tested however.</p>
	c	Y	<p>There is some evidence that the partial strategy is being implemented successfully.</p> <p>Scored at SG100.</p>
100	a	N	<p>There is a strategy in place for managing retained species.</p> <p>The SG80 partial strategy comprises measures but this does not fully meet with CR definition of a strategy (“a cohesive and strategic arrangement”).</p>
	b	N	<p>Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.</p> <p>There has been no testing of the (partial) strategy, as would be needed to support a high confidence that it was working.</p>

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	Y	There is clear evidence that the strategy is being implemented successfully.
			The fishery is a targeted cod fishery. There is a small catch of haddock, redfish, wolffish and redfish which is retained, however these catches are minimal and the fishery seeks to operate in areas where bycatch of all other species is low. The northeast Arctic haddock stock is at an all-time high and the stock has consistently been above Bpa since 1989. SSB been increasing since 2000 and is presently at the highest recorded. Fishing mortality is assessed as being consistent with MSY objectives and the stock is being harvested sustainably. There is evidence that the fleet seeks to avoid capture of Greenland halibut, wolffish and redfish while fishing for cod, this is evidenced by the very low landings of these species (discarding of these species is illegal) and is supported by fisheries observer data. Beaked redfish stock biomass has largely recovered, as indication of effective management of removals of that stock. Bycatch of all other retained species is exceptionally low and the management of retained species is effective in limiting the impact of the fishery on this component. There is a high level of MCS and there is no evidence of routine breaches of fishing rules.
	d	N	There is some evidence that the strategy is achieving its overall objective.
			No evidence that objectives were being met for all species was provided to the assessment team that permitted scoring at SG100 for d. Evidence would need to relate to ALL retained species, not just main retained.
References		» ICES (2011). Advice for NE Arctic haddock. ICES Advice 2011, Book 3 » ICES (2012). Advice for NE Arctic haddock. ICES Advice 2012 » Anon (2012) Unpublished data from AZTI onboard observer programme, Spanish Barents Sea cod fishery. AZTI Tecnalia, Passajes, Basque Country, Spain.	
OVERALL PERFORMANCE INDICATOR SCORE:			85
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.1.3

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Qualitative information is available on the amount of main retained species taken by the fishery.
			Scored at SG80.
	b	Y	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.
			Scored at SG80.
	c	Y	Information is adequate to support measures to manage main retained species.
			Information is adequate to support a comprehensive strategy to manage haddock, but is significantly less so with respect to wolffish and redfish catches. For this it is considered that information is <i>adequate to support measures</i> to manage impacts on these species. This is largely due to the absence of clear information on the species of wolffish and redfish that are affected, as well as the lack of defined reference points for these stocks.
80	a	Y	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.
			While there are no 'main' retained species, there is qualitative and quantitative information in relation to the quantities of retained catch taken in the fishery. Catch data for all retained species are recorded on a haul by haul basis and are recorded daily in onboard electronic logbooks. Catch data for the landed catch by the fleet under assessment is available through the Spanish ministry with responsibility for fisheries. Data is not specific in relation to catches of different redfish and wolffish species/stocks and the data are grouped by genus (<i>Sebastes</i> and <i>Anarhichas</i> spp.) for reporting of redfish and wolffish catches.
			There is an annual programme of monitoring of catches through an observer programme run by AZTI Tecnalia. Data present a broadly similar profile catches when compared to landings data.
	b	Y	Information is sufficient to estimate outcome status with respect to biologically based limits.
			Accurate information in relation to the catch of retained fish that are landed is available. Clearly defined biologically based limits are known for the main retained species (haddock). Wolffish, Greenland halibut and redfish retained catches are highly unlikely to have a discernible impact at stock level. It is considered that information on retained catches - which is collected on an ongoing basis - is sufficient to estimate outcome status with respect to biologically based limits for haddock. For other retained species (even though not considered 'main') the level of information is likely to be adequate for managing impacts at stock level, based on the very small relative volumes of these species that are taken.
	c	N	Information is adequate to support a partial strategy to manage main retained species.
			Scored at SG60. Condition 1 applies to this PI.
	d	N	Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)
			Uncertainty over the species of wolffish and redfish that are retained in the fishery will not allow for early detection of increased risk to the most vulnerable wolffish and redfish species. While overall catches are recorded and reported, changes in the

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
			fishery that might have implications for other affected species cannot be monitored in the context of wolfish and redfish given the present level of information. Consequently this scoring issue cannot be awarded and the fishery has scored below 80, requiring a condition to be raised. Condition 1 applies to this PI.
100	a	N	
			Scored at SG80.
	b	N	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
			Scored at SG80.
	c	N	Information is adequate to support a comprehensive strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
			Scored at SG60.
	d	N	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
			Not scored.
References		<ul style="list-style-type: none">» Anon (2012) Unpublished data from AZTI onboard observer programme, Spanish Barents Sea cod fishery. AZTI Tecnalia, Passajes, Basque Country, Spain.» ICES (2012). Advice for NE Arctic haddock. <i>ICES Advice 2012, Book 3</i>» ICES (2012). Advice for Greenland halibut in Area I & II.» ICES (2012) Advice for Redfish <i>Sebastes mentella</i> in Areas I & II.» ICES (2012) Advice for Redfish <i>Sebastes marinus</i> in Areas I» Norway North East Arctic cod: http://www.msc.org/track-a-fishery/certified/north-east-atlantic/Norway-north-east-arctic-offshore-cod/Norway-north-east-arctic-offshore-cod» Comapêche and Euronor cod and haddock: http://www.msc.org/track-a-fishery/certified/arctic-ocean/comapeche_euronor_cod_haddock» Barents Sea cod and Barents Sea haddock: http://www.msc.org/track-a-fishery/certified/north-east-atlantic/barents-sea-cod-and-haddock/barents-sea-cod-and-haddock» UK Fisheries/DFFU/Doggerbank Northeast Arctic cod, haddock and saithe: http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/uk_fisheries_dffu_doggerbank_northeast_arctic_cod_haddock_saithe» Faroe Island North East Arctic cod: http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/faroe_island_north_east_arctic_cod» Stiansen & Filin (2008) Joint PINRO / IMR Report of the state of the Barents Sea Ecosystem in 2007, with Expected Situation and Considerations for Management	

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
OVERALL PERFORMANCE INDICATOR SCORE:			70
CONDITION NUMBER (if relevant):			1

Evaluation Table: PI 2.2.1

PI 2.2.1		The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Main bycatch species are likely to be within biologically based limits (if not, go to scoring issue b below).
			Scored at SG100
	b	Y	If main bycatch species are outside biologically based limits there are mitigation measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding.
			Scored at SG100
	c	Y	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the bycatch species to be outside biologically based limits or hindering recovery.
			Scored at SG100
80	a	Y	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).
			Scored at SG100.
	b	Y	If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.
			Not scored directly as no stocks are affected to the extent that they are considered likely to be outside of biologically based limits. There is a partial strategy in place comprising measures that are likely to ensure that the fishery under assessment does not hinder recovery and rebuilding of stocks that may become depleted at some point in the future.
100	a	Y	There is a high degree of certainty that bycatch species are within biologically based limits.
			There are no by catch species in this fishery. The fishery is a directed fishery and in excess of 98% of the catch is comprised of the target stock. A range of commercial species that are retained and landed for consumption makes up the remainder, as described in 2.1.1. Potential discards (even though discarding is banned and is not believed to occur to a significant degree) of retained species have been captured under 2.1.1. There no species that are discarded all of the time (a requirement for a species to be considered as discard under the CR)
			There may be occasional exceptional captures of non-commercial species however indications from stakeholders are that this is unusual and is likely to have insignificant impact. With respect to invertebrate bycatch, it is highly likely that some macrobenthos is legally discarded. Research shows that this is likely to be dominated by abundant and productive benthic invertebrate species such as starfish (<i>Ctenodiscus crispatus</i>) and brittlestars (<i>Ophiura sarsi</i>). Smaller benthic species are considerably less likely to be caught in the larger than minimum legal mesh sizes that are used in this fishery. There is no known bycatch of bird species in the fishery. There is no bird bycatch in the fishery. In the context of harmonization several existing certifications of Barents Sea cod fisheries have also scored 2.2.1 at SG100,

PI 2.2.1		The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups	
SG	Issue	Met? (Y/N)	Justification/Rationale
References			<ul style="list-style-type: none"> » Anon (2012) Unpublished data from AZTI onboard observer programme, Spanish Barents Sea cod fishery. AZTI Tecnalia, Passajes, Basque Country, Spain. » Norway North East Arctic cod: http://www.msc.org/track-a-fishery/certified/north-east-atlantic/Norway-north-east-arctic-offshore-cod/Norway-north-east-arctic-offshore-cod » Comapêche and Euronor cod and haddock: http://www.msc.org/track-a-fishery/certified/arctic-ocean/comapeche_euronor_cod_haddock » Barents Sea cod and Barents Sea haddock: http://www.msc.org/track-a-fishery/certified/north-east-atlantic/barents-sea-cod-and-haddock/barents-sea-cod-and-haddock » UK Fisheries/DFEU/Doggerbank Northeast Arctic cod, haddock and saithe: http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/uk_fisheries_dffu_doggerbank_northeast_arctic_cod_haddock_saithe » Faroe Island North East Arctic cod: http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/faroe_island_north_east_arctic_cod
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.2.2

PI 2.2.2		There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are measures in place, if necessary, which are expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.
			Scored at SG80.
	b	Y	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).
			Scored at SG80.
80	a	Y	There is a partial strategy in place, if necessary, for managing bycatch species at levels that are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.
			There is a partial strategy in place for managing and minimising bycatch. The partial strategy comprises a range of measures that are considered likely to assist in managing bycatch species. Most measures have not been specifically designed and do not explicitly address bycatch. Because the measures are not designed to manage impacts on the bycatch component specifically, this PI cannot be considered at SG100. Measures include a discard ban (both in Russian and Norwegian economic zones and the Svalbard Fisheries zone), voluntary use of a minimum mesh size that is considerably larger than the legal minimum, a system of real time closures, compulsory use of separator grid in the trawl configuration to serve as a bycatch reduction device, and appropriate use closed areas to protect key life stages and important nursery and spawning areas. There is also a 'move-on' rule that applies to catches of undersize species or unacceptable species mixes. In addition, AGARBA company vessels actively seek to avoid areas where they are likely to capture significant volumes of fish for which they have no quota, or for which there may be no market, but which they must land according to Norwegian fishing rules that do not allow for the return of most species of fish that are dead or dying.
	b	Y	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or the species involved.
			The fishery is exceptionally clean and there are no significant interactions with species that have not been considered under 2.1.1 (retained). Accordingly it is reasonable to have confidence that the partial strategy – which has not been designed to manage impacts on bycatch species specifically - is likely to work; given that the nature and scale of the bycatch issue is understood specifically in relation to the vessels of the fleet under assessment.
	c	Y	There is some evidence that the partial strategy is being implemented successfully.
			There is evidence of the implementation and enforcement of real time closures, catch reporting, adherence to quota and closed areas, mesh size regulations, separator grid use and enforcement of the discard ban. Effective Implementation of these measures has contributed to the situation where the outcome PI for 2.2 has scored.
100	a	N	There is a strategy in place for managing and minimising bycatch.
			There is only a partial strategy, it is not a strategy or a cohesive and strategic arrangement.
	b	N	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
			The partial strategy has not been specifically tested and does not support high confidence that it will work.

PI 2.2.2		There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	N	There is clear evidence that the strategy is being implemented successfully.
			Only a partial strategy not a strategy is in place. Discarding is not believed to be significant however available evidence does not support scoring at SG100 as it is limited and not based on outcomes.
	d	N	There is some evidence that the strategy is achieving its objective.
			Not scored. No specific objectives have been defined for the partial strategy, hence this cannot be scored.
References		<ul style="list-style-type: none">» Anon (2010) Norwegian fishing rules for 2010. http://www.fiskeridir.no/english/fisheries/regulations» Norwegian Fishing rules for EU vessels 2012. http://www.fiskeridir.no/english/content/download/27744/248770/version/1/file/20120725+-+EU.pdf	
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.2.3

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Qualitative information is available on the main bycatch species affected by the fishery.
			Scored at SG80.
	b	Y	Information is adequate to broadly understand outcome status with respect to biologically based limits
			Scored at SG80.
	c	Y	Information is adequate to support measures to manage bycatch.
			Scored at SG80.
80	a	Y	Qualitative information and some quantitative information are available on the amount of main bycatch species affected by the fishery.
			Data from the AZTI's independent catch sampling programme regularly documents the typical nature and scale of bycatch in the fishery and thereby supports the development of appropriate bycatch management responses. AZTI have monitored the Spanish Barents Sea fishery in 13 out of the last 16 years and data compiled from the monitoring of the fishery over these years has been available to the assessment. The data provide both qualitative and quantitative information in relation to unsorted catches. Clear, robust regulations are in place in Norwegian and Svalbard waters that serve to prevent discarding. A key purpose of the no-discard legislation is to improve the information base for assessments of less commercial species so that all fishing related mortality can be accurately and verifiably established. Information in relation to invertebrate bycatch is also available for cod fisheries in the Barents Sea (Stiansen & Filin, 2008), although it is not specific to the client vessels that are part of the assessment.
	b	Y	Information is sufficient to estimate outcome status with respect to biologically based limits.
			Sufficient information that is usually updated annually, is available from catch sampling by observers through AZTI Tecnalia in order to determine whether the fishery presents a risk in terms of stock status for affected bycatch species. AZTI data indicate that any significant by catches of non-target species are of those, which have been considered under the retained species component of the assessment. The main stocks likely to be affected by the fishery are haddock, wolffish, Greenland halibut, redfish and saithe. Available data and general understanding of this fishery and the state of affected non target stocks is sufficient to understand that the fishery presents a very low risk to the stocks status of any non-target species that may be encountered.
	c	Y	Information is adequate to support a partial strategy to manage main bycatch species.
			Information is adequate to support management responses to limit the impacts of the fishery on bycatch species. The fishery is understood to be exceptionally clean with catches of the target stock constituting in excess of 90% of the bulk catch. The composition of the bulk catch is monitored at least annually for the Spanish Barents Sea cod fishery by onboard observers who participate in at least one full fishing trip (up to 28 days) per annum and the data are available from AZTI to inform and support management measures and a partial strategy. There is comprehensive and ongoing monitoring of the fishery by the Norwegian Coastguard. Inspections at sea by the NCG examine the proportion of non-target species as well as undersize species present in bulk catches and the 'move-on' rule can be implemented to force

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch	
SG	Issue	Met? (Y/N)	Justification/Rationale
			vessels to out of areas where there are significant catches of unwanted fish or undersize fish. Information from the fleet under assessment indicates that the only time the 'move-on' rule is implemented by the NCG in relation to this fleet, is where there are high levels of haddock bycatch (a retained species).
	d	Y	<p>Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p> <p>There is an ongoing annual catch sampling and observer programme operated by AZTI that covers an appropriate level of effort of the fleet under certification. Observer programmes on other fleets that operate in the Barents Sea cod fishery also collect and publish data in relation to bycatch in this fishery. Overall data on bycatch is collected at sufficient frequency in order to detect any increase in risk to new or previously unrecorded bycatch species, or increased risk due to changes in abundance or changed fishing practices.</p>
100	a	N	<p>Accurate and verifiable information is available on the amount of all bycatch and the consequences for the status of affected populations.</p>
			<p>Accurate and verifiable information is not collected with appropriate frequency or all potentially discarded species including those that can be legally discarded. Levels of discarding are not verifiable for the most part, although there is general understanding supported by some evidence.</p>
	b	N	<p>Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty.</p>
			<p>Insufficient information is available to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty with respect to all species that may be discarded.</p>
	c	N	<p>Information is adequate to support a comprehensive strategy to manage bycatch, and evaluate with a high degree of certainty whether a strategy is achieving its objective.</p>
			<p>Available information does not support scoring this issue at SG100 for all species that may be discarded legally in the fishery.</p>
d	N	<p>Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.</p>	
		<p>Information does not support scoring this issue at SG100 for all species that may be discarded legally in the fishery. There is infrequent verification of discard species and discard volumes.</p>	
References		<p>» Anon (2010) Norwegian fishing rules for 2010. http://www.fiskeridir.no/english/fisheries/regulations</p> <p>» Anon (2012) Unpublished data from AZTI onboard observer programme, Spanish Barents Sea cod fishery. AZTI Tecnalia, Passajes, Basque Country, Spain.</p> <p>» Norwegian Fishing rules for EU vessels 2012. http://www.fiskeridir.no/english/content/download/27744/248770/version/1/file/20120725+-+EU.pdf</p> <p>» Norway North East Arctic cod: http://www.msc.org/track-a-fishery/certified/north-east-atlantic/Norway-north-east-arctic-offshore-cod/Norway-north-east-arctic-offshore-cod</p>	

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<ul style="list-style-type: none"> » Comapêche and Euronor cod and haddock: http://www.msc.org/track-a-fishery/certified/arctic-ocean/comapeche_euronor_cod_haddock » Barents Sea cod and Barents Sea haddock: http://www.msc.org/track-a-fishery/certified/north-east-atlantic/barents-sea-cod-and-haddock/barents-sea-cod-and-haddock » UK Fisheries/DFFU/Doggerbank Northeast Arctic cod, haddock and saithe: http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/uk_fisheries_dffu_doggerbank_northeast_arctic_cod_haddock_saithe » Faroe Island North East Arctic cod: http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/faroe_island_north_east_arctic_cod
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.3.1

PI 2.3.1		The fishery meets national and international requirements for the protection of ETP species The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.
			Scored at SG100.
	b	Y	Known direct effects are unlikely to create unacceptable impacts to ETP species.
			Scored at SG80.
80	a	Y	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species.
			Scored at SG100.
	b	Y	Direct effects are highly unlikely to create unacceptable impacts to ETP species.
			Various acceptable levels of bycatch for cetacean species are proposed by ASCOBANS, IWC etc. The most conservative of these is a total bycatch across all fisheries of 1% per annum for individual cetacean species. Given the level of knowledge in relation to this fishery it is reasonable to conclude that the fishery under assessment makes no contribution towards a 1% annual removal of any cetacean species in the Barents Sea. Harp seal populations in the area are subject to a targeted harvest and any potential interaction (unlikely) is certain to be negligible considered in light of the existence of a managed commercial harvest of harp seal in Canada, Russia and Norway. While some level of interaction with elasmobranchs is likely, it is unrecorded for this fishery. Indications from other certified fisheries for the same stock are that the level of interaction is very low and highly unlikely to create unacceptable impacts.
	c	Y	Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.
			Indirect effects of fisheries on ETP species may include issues such as competition for food resources, ghost fishing by lost gears and environmental degradation such as pollution. Undocumented cetacean mortality through ghost fishing is not an issue in the demersal trawl fishery as trawl gears only present a risk of capture while they are being towed. Where gear becomes entangled, for example on seabed obstructions, it can and is normally recovered by releasing one side of the tow configuration and hauling the other. In some cases use of grapnel hooks maybe necessary. Gear is expensive and there is little economic sense in giving up on a recovery attempt. The main determinants of whale and dolphin species abundance is zooplankton and capelin abundance in the Barents Sea and in this sense the demersal trawl cod fishery is unlikely to be of consequence in competing for food resources. The fleet under assessment operates clear waste management procedures and vessels are fully MARPOL compliant. Pollution from the certified vessels is therefore not likely to impact on ETP species.
100	a	Y	There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species.
			There are no indications that any ETP fish species are regularly captured in the fishery.

			<p>ETP species with which the fishery could theoretically interact includes some elasmobranchs (sharks and rays), rare or threatened fish species and marine mammals (whales, dolphins and seals). Being a trawl fishery that takes place well away from coastal waters, it is considered implausible that the fishery could interact in a significant manner with seabirds.</p> <p>There are no indications that this fishery interacts with Basking shark or any other species of elasmobranch, cetacean or pinniped that are listed under any binding international agreement or national (Norwegian or EU) legislation.</p> <p>Many species of sharks and rays have a higher susceptibility to impacts at population level through incidental capture and mortality in commercial fisheries. While not meeting with a strict interpretation of the ETP component definition, species of elasmobranchs (most notably skates and rays) – may also be taken incidentally in the fishery, and AZTI data do show a small bycatch of rays, although official landings records for the fleet do not indicate any interaction. Under harmonization requirements, the assessment team reviewed parallel MSC Barents Sea cod certifications. An existing MSC certified Barents Sea cod fishery operated from the Basque country has demonstrated a retained catch of skates and rays. During the site visit some reference was also made to very occasional captures of Boreal shark (Greenland shark) <i>Somniosus microcephalus</i> in the fishery by a stakeholder, although no quantitative data were available in respect of frequency of capture or the fate of captured specimens. Greenland shark appears to be an extremely long-lived and slow-growing elasmobranch with limited reproductive capacity that was once targeted for its liver oil in Norway, Iceland and Greenland and catches reached 32,000 sharks/year in the 1910s.</p> <p>Some fish species that may be more vulnerable to the effects of fishing at population level do exist and the landings data and catch sampling data indicates a retained and landed catch of wolffish and redfish. These species have been considered under the Retained species component of the assessment.</p> <p>Knowledge in relation to ETP interaction for demersal trawl fisheries suggests that cetacean bycatch occurs only extremely rarely in this fishery, while seal bycatch may occur but is also exceptionally rare in the offshore fishery, well away from any seal haul outs. This is supported by a review of the impact of Norwegian offshore demersal trawl fisheries on marine mammals presented by the ICES Study Group for Bycatch of Protected Species (SGBYC, 2009). These results can reasonably be taken as applicable for the fishery under certification (same fishery, similar vessels, same gear, same area). This concludes that larger offshore demersal trawl vessels “are regarded as having a relatively low risk for bycatches of marine mammals”. The potential bycatch of seals has been considered and indications are that this is also an exceptional infrequent and rare event. In the context of commercial seal hunts that take place in the region, fishery related bycatch is considered highly unlikely to be significant at population level.</p>
			<p>b</p> <p>N</p> <p>There is a high degree of confidence that there are no significant detrimental direct effects of the fishery on ETP species.</p> <p>This issue could not be scored at SG100 because there is limited evidence available to the assessment team to support this statement in relation to the fishery. This would require complete understanding of the nature and scale of interaction between ETP and the fishery.</p>
			<p>c</p> <p>N</p> <p>There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.</p> <p>There is not a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species This issue could not be scored at SG100 because there is limited evidence available to the assessment team to support this statement in relation to the fishery. This would require complete understanding of the nature and scale of interaction between ETP and the fishery.</p>
			<p>References</p> <p>» Dolgov et al 2002. By---catch of Skates in Trawl and Long---Line Fisheries in the</p> <p>» Barents Sea. NAFO Scientific Council Meeting September 2002.</p>

	<ul style="list-style-type: none">» Dolgov, A. V., A. A. Grekov, I. P. Shestopal, and K. M. Sokolov. (2005). By-catch of Skates in Trawl and Long-Line Fisheries in the Barents Sea. J. Northw. Atl. Fish. Sci., 35: 357---366» Drevetnya, K. V., Dolgov A.V., Sokolov K.M., Gusev E.V., and Grekov. A.A. Skates in the Barents Sea: stock status and catch by fishing fleet. 2005 ICES Annual Science Conference. Elasmobranch Fisheries Science (Session N) CM 2005/ N:11» SGBYC (2009). Report of the Study Group for Bycatch of Protected Species (SGBYC), 19– 22 January 2009, Copenhagen, Denmark. ICES CM 2009/ACOM:22. 117 pp.» SGBYC (2010). Report of the Study Group for Bycatch of Protected Species (SGBYC), 1–4 February 2010, Copenhagen, Denmark. ICES CM 2010/ACOM:25. 123 pp.» WGEF(2008). Report of the Working Group Elasmobranch Fishes (WGEF), 3–6 March 2008, Copenhagen, Denmark. ICES CM 008/ACOM:16. 332 pp.» Larsen T., Nagoda D., and Andersen, J.R. 2003. The Barents Sea Ecoregion. A biodiversity assessment. WWF» ICES Advice (2009)1.5.1.3 New information on impact of fisheries on components of the ecosystem.» Stiansen & Filin (2008) Joint PINRO / IMR Report of the state of the Barents Sea Ecosystem in 2007, with Expected Situation and Considerations for Management .	
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		NA

Evaluation Table: PI 2.3.2

PI 2.3.2		The fishery has in place precautionary management strategies designed to:	
		<ul style="list-style-type: none"> • Meet national and international requirements; • Ensure the fishery does not pose a risk of serious harm to ETP species; • Ensure the fishery does not hinder recovery of ETP species; and • Minimise mortality of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	<p>There are measures in place that minimise mortality, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.</p> <p>There is a partial strategy, comprised of a number of measures, which is expected to limit the potential impacts of the fishery on ETP species. Spain has ratified a number of conventions on species protection and management, including the Convention on Biological Diversity and CITES which establish overarching objectives for ETP species conservation. Spain is also a member of the International Whaling Commission, which advocates measures to reduce bycatch of marine mammals and accurate recording to inform scientific understanding and abundance estimates. ICES plays an important role in informing the strategy to minimise impacts on ETP species, in particular through the work of the Study Group on Protected Species (SGBYC) and the working group on marine mammal ecology (WGMME). Through the working groups research findings are disseminated and relevant issues relating to fishery impacts on ETP species by fleets are identified by national authorities and may be discussed amongst relevant experts. Spain participates at a working level in both the WGMME and the SGBYC.</p> <p>Under the Norwegian Marine Resources Act of 2009, there is a provision within the Act (section 15) for the Ministry to lay down a duty to land bycatches of other marine organisms, including plants, marine mammals and seabirds, or a duty to provide reports on such bycatches. This provision has not yet been exercised, but demonstrates the ability to expand the system.</p> <p>At the level of the certified fleet, there are no specific undertakings with regard to managing the impact of the fishery on ETP species. In particular, the implementation and operation of a Code of Conduct that explicitly refers to national and international requirements for protection of ETP species and which clearly sets out company policies in relation to ETP and bycatch species as well as a strategy and measures for minimizing impacts would be appropriate to a fishery of this scale. A suitable operational Code of Practice would be appropriate in the context of managing impacts on individual vulnerable species or groups of species such as elasmobranchs (sharks and rays) and for ensuring that mortality of the most vulnerable species is minimized. As presently operated, it is unclear whether or not the fishery interacts with any vulnerable elasmobranch species and if so, to what extent. While the scale of the potential problem is believed to be small, the fact that there is an incomplete management strategy identified through the absence of an appropriate Code of Conduct, means that the fishery falls short of SG80 for this PI. It is considered appropriate to capture the issue with regard to elasmobranchs under the ETP management PI on account of the fact that landings data for the fleet does not show any interaction, while independent observer data and stakeholder comment suggests that there is some interaction with elasmobranchs. Yet under Norwegian fishing rules, no discarding is permitted. Greater clarity is appropriate with respect to this issue and the shortcoming could be addressed through the design and implementation of an appropriate Code of Conduct for the vessels. This could provide far greater clarity on levels of interaction, the species involved and the fate of captured specimens. A Condition has been raised in this regard under the certification. Condition 2 applies to this PI.</p>
	b	Y	<p>The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).</p>
			Scored at SG80.

PI 2.3.2		The fishery has in place precautionary management strategies designed to: <ul style="list-style-type: none"> • Meet national and international requirements; • Ensure the fishery does not pose a risk of serious harm to ETP species; • Ensure the fishery does not hinder recovery of ETP species; and • Minimise mortality of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
80	a	N	There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species.
			There is a partial strategy in place not a strategy, it is not cohesive or strategic in its arrangement nor is it appropriate to the scale, intensity and cultural context of the fishery.
	b	Y	There is an objective basis for confidence that the strategy will work, based on information directly about the fishery and/or the species involved.
			The low levels of bycatch associated with this fishery also relates to ETP species. There is good information in relation to the ETP species that may be present in the area where the fishery takes place and with which the fishery may interact. The low likelihood of interaction between the fishery and ETP means that the risks to populations of ETP species are also likely to be very low. The fishery is spatially restricted and is also limited by season. Fishing is by demersal trawl and uses a net with a relatively low opening height. The fishery does not use encircling gears or gillnet/driftnet fisheries. There is a high degree of MCS and there is no evidence of serial non-compliance with any fishery rules by the fleet under assessment. Accordingly there is a reasonable basis for confidence that the present management response will work in the context of endangered, threatened or protected species.
	c	Y	There is evidence that the strategy is being implemented successfully.
			The fishery has demonstrated a high degree of compliance with all fishing rules as well as both domestic (Spanish) and Norwegian fisheries and environmental legislation. Spain (largely through the work of the Basque country research institute – AZTI and the Institute of Oceanography) contributes to and is active within relevant scientific agencies including ICES working groups. Some data are available to indicate an ongoing low level of interaction. Relevant ICES working group participants are in agreement that demersal trawl fisheries are of lower concern in terms of marine mammal and bird bycatch than are many other fisheries.
100	a	N	There is a comprehensive strategy in place for managing the fishery's impact on ETP species, including measures to <input type="checkbox"/> minimise mortality that is designed to achieve above national and international requirements for the protection of ETP species.
			Scored at SG60.
	B	N	The strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.
			Scored at SG80.
	c	N	There is clear evidence that the strategy is being implemented successfully.
			Scored at SG80.
	d	N	There is evidence that the strategy is achieving its objective.
			Scored at SG80.

PI 2.3.2		The fishery has in place precautionary management strategies designed to: <ul style="list-style-type: none"> • Meet national and international requirements; • Ensure the fishery does not pose a risk of serious harm to ETP species; • Ensure the fishery does not hinder recovery of ETP species; and • Minimise mortality of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
References			» CITES list of parties: http://www.cites.org » WGMME (2009). Report of the Working Group on Marine Mammal Ecology (WGMME), February 2–6 2009, Vigo, Spain. ICES CM 2009/ACOM:21. 129 pp. » Norwegian Marine Resources Act 1009. http://www.fiskeridir.no/english/fisheries/regulations/acts/the-marine-resources-act
OVERALL PERFORMANCE INDICATOR SCORE:			75
CONDITION NUMBER (if relevant):			2

Evaluation Table: PI 2.3.3

PI 2.3.3		Relevant information is collected to support the management of fishery impacts on ETP species including:	
		<ul style="list-style-type: none"> Information for the development of the management strategy; Information to assess the effectiveness of the management strategy; and Information to determine the outcome status of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.
			Scored at SG80.
	B	Y	Information is adequate to broadly understand the impact of the fishery on ETP species.
			Scored at SG80.
	c	Y	Information is adequate to support measures to manage the impacts on ETP species.
			Present levels of information support the measures that are in place to manage impacts on the main groups of ETP (marine mammals) but are not considered adequate to support measures to manage impacts on some other vulnerable species that may also be affected by the fishery. Other groups of vulnerable species such as elasmobranchs are not subject to any specific monitoring or recording and there is a difference between the landings declaration for the assessed fleets (which shows no catch of rays and skates or sharks) and AZTI catch sampling data that consistently demonstrates a bycatch of rays and skate in the fishery. Additionally, stakeholder comment points to occasional capture of Greenland shark. While there may well be a plausible explanation for this difference, no further information was available to the assessment team and scoring at SG80 for this scoring issue was not therefore possible. There is a need for more detailed and specific information in relation to levels of vulnerable species catches in the fishery under assessment, as well as the species involved and the fate of captured specimens. A Condition on the certification is indicated due to scoring at SG60 for this PI. Condition 3 applies to this PI.
80	a	Y	Sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.
			There is sufficient data in relation to marine mammal and fish bycatch to allow the impact of fishing to be quantitatively estimated. Data collected by the Basque research institute AZTI indicates no ETP interaction and a likely low level of interaction with other vulnerable fish species such as sharks and rays. While recent landings data for the fleet under assessment does not show any interaction with vulnerable/ETP species, data for other MSC certified fisheries on the same stock shows that small volumes of skates and rays may be captured and landed. These data show similarly low levels of interaction with vulnerable species as do data from AZTI.
	b	Y	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.
			The joint Russian Polar Research Institute of Marine Fisheries and Oceanography (PINRO) and Norwegian Institute of Marine research (IMR) Report on the State of the Barents Sea ecosystem gives a good explanation of the ETP species which occur in the Barents Sea, including their spatial and temporal distribution and lifestyle characteristics. There is a long history of marine mammal survey work informing abundance estimates in the Barents Sea, using several different survey from mark-recapture experiments, breeding surveys (harp seals - since the mid-1980s) and more recently transect surveys either by ship (for whales) or spotter plane (for cetaceans). In part the necessity for these surveys derives from ICES advice, which

PI 2.3.3		Relevant information is collected to support the management of fishery impacts on ETP species including: <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
			states that any of the quotas for harvesting marine mammal species commercially must be based on estimates, which are less than 5-years old. Not all species receive the same level of monitoring and inevitably those which are most threatened or those with commercial value receive most attention. Annual vessel monitoring surveys undertaken by the Norwegian Institute of Marine Research target minke whales and other large baleen whales and provide abundance estimates every 6 years. Since 2002 the distribution patterns of marine mammals in the Barents Sea have also been observed from research vessels during the Joint PINRO / IMR ecosystem survey, further enhanced by aircraft observations and observations from fishing and coastguard vessels. In addition VMS data gives precise details about vessel location and fishing patterns of client vessels, to enable the potential for interaction to be determined. The final piece of information to support a full strategy to manage impacts is an understanding of the gear interaction with key ETP species. This is known in a general context and there is a reasonable understanding that the interaction is likely to be low. This is supported by information from Norwegian fisheries that Norway submits to the ICES SGBYC, for trawl fisheries in the Barents Sea. Further information has been available from AZTI scientists who report that no ETP species have been recorded from the Spanish Barents Sea cod fishery in any of the observer trips undertaken.
	c	N	Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.
			Information is not sufficient to measure trends and support a full strategy to manage impacts on ETP species.
100	a	N	Information is sufficient to quantitatively estimate outcome status of ETP species with a high degree of certainty.
			Scored at SG80.
	b	N	Accurate and verifiable information is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.
			Scored at SG80.
	c	N	Information is adequate to support a comprehensive strategy to manage impacts, minimise mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
			Scored at SG60.
References		» Anon (2012) Unpublished data from AZTI onboard observer programme, Spanish Barents Sea cod fishery. AZTI Tecnalia, Passajes, Basque Country, Spain. » Dolgov et al 2002. By---catch of Skates in Trawl and Long---Line Fisheries in the Barents Sea. NAFO Scientific Council Meeting September 2002. » Dolgov, A. V., A. A. Grekov, I. P. Shestopal, and K. M. Sokolov. (2005). By---catch of Skates in Trawl and Long---Line Fisheries in the Barents Sea. J. Northw. Atl. Fish. Sci., 35: 357---366	

PI 2.3.3		Relevant information is collected to support the management of fishery impacts on ETP species including: <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
			» Drevetnya, K. V., Dolgov A.V., Sokolov K.M., Gusev E.V., and Grekov. A.A. Skates in the Barents Sea: stock status and catch by fishing fleet. 2005 ICES Annual Science Conference. Elasmobranch Fisheries Science (Session N) CM 2005/ N:11 » SGBYC (2009). Report of the Study Group for Bycatch of Protected Species (SGBYC), 19– 22 January 2009, Copenhagen, Denmark. ICES CM 2009/ACOM:22. 117 pp. » SGBYC (2010). Report of the Study Group for Bycatch of Protected Species (SGBYC), 1–4 » February 2010, Copenhagen, Denmark. ICES CM 2010/ACOM:25. 123 pp. » WGEF(2008). Report of the Working Group Elasmobranch Fishes (WGEF), 3–6 March 2008, Copenhagen, Denmark. ICES CM 008/ACOM:16. 332 pp.
OVERALL PERFORMANCE INDICATOR SCORE:			75
CONDITION NUMBER (if relevant):			2

Evaluation Table: PI 2.4.1

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
60	a	Y	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
			<p>The fishing gear used in the fishery under assessment comprises relatively robust demersal trawl gear, with heavy steel trawl doors, steel bobbins and heavy duty rock hopper configured ground gear. Gear is designed for fishing on the slope edge from waters of 150m down to 450m in areas that are characterised by relatively flat seabeds comprised of mixed substrates that includes, sand, cobble, broken shell and occasionally softer sedimentary seabeds. The gear must be able to withstand routinely encountered with bedrock and boulder seabed habitats without causing catastrophic damage to fishing gear and disruption to fishing operations with resulting economic loss. Heavy mobile trawl gears are known to impact on seabed habitat structure and function and also associated communities of epifaunal and infaunal species. The impacts of experimental trawling have been studied on a high seas fishing ground in the Barents Sea (Kutti et al., 2005). Trawling seems to affect the benthic assemblage mainly through re-suspension of surface sediment and through relocation of shallow burrowing infaunal species to the surface of the seafloor.</p> <p>A review of sensitive seabed habitats likely to occur within the area where the fishery takes place was conducted. Sources of data included the Norwegian seabed mapping portal www.mareano.no as well as the OSPAR maps of sensitive seabed communities (www.ospar.org) as well as the Norwegian fisheries directorate website www.fisheries.no. Sensitive seabed communities known from the Barents Sea include deep-sea sponge aggregations and deep-water coral <i>Lophelia pertusa</i> reefs. Many deep-water <i>Lophelia</i> reefs that are known to exist within the Norwegian Economic zone are protected through a series of area closures.</p> <p>Discussions with vessel crew confirmed that while there was an invertebrate bycatch, this was not considered especially large and did not comprise particularly vulnerable species such as deep water corals, although sponges were known to occur in catches from time to time. While much of the seabed where the fishery takes place (on the slope edge) is sedimentary, discussions indicated that occasionally stones and rocks may be brought to the surface within nets. The gear configuration used in the fishery corroborates the likelihood that hard substrates may be encountered.</p> <p>The degree to which the impact of trawl gear on habitats can be regarded as 'serious or irreversible for habitat structure (considered on a regional or bioregional basis) and function is dependent on a range of factors including the spatial distribution and extent of vulnerable habitats, overlap of the fishery with sensitive habitats, frequency of encounter, the nature of impacts as well as (often limited) information with respect to the rate of recovery in event of trawl operations ceasing. Irreversibility may imply regime change or loss / extinction of key habitat species (i.e. recovery would never occur), whereas serious may imply major change in the structure and diversity of species assemblages. Benthic biodiversity studies in the Barents Sea show that in general, although biomass was shown to decrease from the 1920s to the 1960s (attributed in part to both climatic factors and intensive fishing activity), recent years have seen a steady increase in benthic biomass from 2005-2007 across the Barents sea, but with the notable exception of the Western slope / shelf edge, where more sessile and vulnerable species, such as sponges, benefit from harder substrate, high primary production and strong currents to re-suspend food. In spite of some local decline, benthic species which are potentially vulnerable to trawl impact remain well represented in survey data and there is no indication of benthic species being threatened with local extinction. There is considerable natural variation in the distribution of benthic habitat forming species, due to factors such as productivity, substrate type and sedimentary environment, as result in some areas of fishing activity, benthic communities are likely to be more dynamic and less vulnerable to impact. In these areas it could be strongly argued that the spatially concentrated cod</p>

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
			<p>trawl fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm considered on a regional or bioregional basis.</p> <p>However, fishing activity also has the ability to further influence the natural variation in benthic community assemblages. For example, data suggest that it is high intensity of fishing in the southern part of the Barents Sea that is the reason for low indicators of biodiversity and zoobenthos bycatch biomass. By contrast the north-east part of the Barents Sea with less trawl intensity can be characterized higher levels of biodiversity and macrobenthos biomass. In terms of recovery of habitat species if left in an undisturbed state, studies of long-term dynamics of bottom communities in the Barents Sea showed that significant increases in benthic biomass were observed during periods of reduced fishing intensity during the Second World War. Subsequently, following a peak in fishing intensity in the post war period up to the 1960s and 70s, recovery of areas and bio-resources of the most common species, large taxons and trophic groups of zoobenthos was again observed.</p> <p>Rate of recovery is dependent on a number of issues – frequency of disturbance (natural and anthropogenic), productivity, substrate type and species. Benthic recovery rates following trawling events, are typically in the range of 2.5 to 6 years. Rocky habitat communities that are characterised by long lived and slow growing species that dependent on sexual reproductive strategies are generally the slowest to recover. In the Barents Sea although the majority of the habitats may fall within the more dynamic and sedimentary range (hence quicker recovery), it is notable that some of the species composition and the substrate types on the shelf edge may show far slower recovery characteristics. Reef forming, cold water coral species on hard substrates have the slowest recovery rate (potentially well beyond the 2.5 – 6 year range noted above for large reef forming species). The main species of coral (i.e. <i>Lophelia</i> spp.) that is particularly vulnerable to trawl impact (potentially qualifying as a serious or irreversible impact) are located in Norwegian coastal waters – largely within Norwegian territorial waters and therefore beyond the area fished by the certified vessels. Furthermore, the Norwegian authorities have closed five such areas to trawl fishing. In the areas still fished by the fishery under assessment, the principal areas of potential threat / risk are on vulnerable sessile species along the shelf edge and in waters around Svalbard and off the Norwegian coast – in particular sponge species but also some coral species. For now there is no protection in the form of closed areas for these species (aside from the exclusion zones around Svalbard and Bear Island), however it is likely that a cessation in fishing activity would result in gradual recovery of these habitats. Because of the known spatial concentration of the fishery into two or three relatively small areas, it is considered unlikely that the fishery would reduce habitat structure and function to the point where there would be serious or irreversible harm considered on a regional or bioregional basis.</p> <p>Because of a lack of specific habitat protection in all areas that may potentially be fished (especially within the Svalbard fisheries zone), and the obvious capacity of the heavy trawl gear used in this fishery to have a negative impact, it cannot be concluded that any such impact is highly unlikely to be serious or irreversible. Because of this the fishery has been considered as only meeting the scoring guides at SG60. Accordingly, a condition has been raised.</p> <p><u>Harmonisation with existing certifications on the same stock</u></p> <p>The evaluation, scoring, justification and Condition pertaining to this PI have been harmonized with that of the existing Marine Stewardship Council certifications on the same stock. No significant differences were found between the current fishery and the previous certifications in relation PI 2.4.1. For this reason a Condition has been raised as part of the current assessment which is consistent with the general requirements of the Condition applied in the other fisheries as well as in relation to much of the specific detail of previous Conditions. Condition 4 applies to this PI.</p>

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
80	a	P	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
			Partially met. The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function, because of the known spatial concentration of the fishery into two or three relatively small areas of the Barents Sea/Svalbard FPZ.
100	a	N	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
			Scored at SG60.
References			» Hiddink J.G., Jennings S., and Kaiser M.J (2006). Indicators of the Ecological Impact of Bottom-Trawl Disturbance on Seabed Communities. <i>Ecosystems</i> (2006) 9: 1190–1199
			» Denisenko N.V., Denisenko S.G. 1991. On impact of bottom trawling on benthos in the Barents Sea// Environmental situation and protection of flora and fauna of the Barents Sea. Apatity, published by Kola Science Centre of USSR Academy of Science. S. 158-164.
			» Denisenko S.G. 2007. Zoobenthos of the Barents Sea under conditions of changing climate and human intervention. S. 418-511- In book: Dynamics of marine ecosystems and contemporary problems of protection of biological potential of Russian seas.
			» Denisenko S.G., 2008. Macrozoobenthos of the Barents Sea under conditions of changing climate and human intervention. Synopsis of Doctor of Science Thesis (biology). SPb: ZIN RAN. 45 s.
			» Dinmore, D. E. Duplisea, B. D. Rackham, D. L. Maxwell, and S. Jennings 2004. Impact of a large-scale area closure on patterns of fishing disturbance and the consequences for benthic communities. <i>ICES Journal of Marine Science</i> , 60: 371–380. 2003
			» Grekov, A.A. and Pavlenko A.A. 2011 A comparison of longline and trawl fishing practices and suggestions for encouraging the sustainable management of fisheries in the Barents Sea, — Moscow---Murmansk, World Wide Fund For Nature (WWF), 50p.
			» Jennings, S., Dinmore, T.A., Duplisea, D.E., Warr, K.J., Lancaster, J.E., 2001. Trawling disturbance can modify benthic production processes. <i>J. Animal Ecol.</i> 70, 459-475.
			» Kaiser, M. J., Edwards, D. B., Armstrong, P. J., Radford, K., Lough, N. E. L., Flatt, R. P., and Jones, H. D. 1998 Changes in megafaunal benthic communities in different habitats after trawling disturbance. – <i>ICES Journal of Marine Science</i> , 55: 353–361.
			» Kenchington, E.L.R., K.D. Gilkinson, K.G. MacIsaac, C. Bourbonnais-Boyce, T.J. Kenchington, S.J. Smith & D.C. Gordon Jr. 2006. Effects of experimental otter trawling on benthic assemblages on Western Bank, northwest Atlantic Ocean. <i>Journal of Sea Research</i> 56: 249-270.
			» Kutti, T., Høisæter, T., Rapp, H.T., Humborstad, O.B., Løkkeborg, S. and Nøttestad, L. 2005. Immediate effects of experimental otter trawling on a sub-arctic benthic assemblage inside Bear Island Fishery Protection Zone in the Barents Sea. In <i>Benthic Habitats and the Effects of Fishing</i> . P.W. Barnes and J.P. Thomas (Eds.). American Fishery Society Symposia.
			» MAREANO Seabed mapping project - http://www.mareano.no

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
OVERALL PERFORMANCE INDICATOR SCORE:			70
CONDITION NUMBER (if relevant):			3

Evaluation Table: PI 2.4.2

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.
			Scored at SG80.
	b	Y	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).
			Scored at SG80.
80	a	Y	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.
			A number of measures are in place, which although not expressly designed to manage the impact of the fishery on seabed habitats, are beneficial in this context, and which contribute measurably to restricting the likelihood of serious or irreversible harm being caused to seabed habitats. The restricted spatial scale of the fishery means that only a small proportion of the fishable seabed habitat is subjected to trawling activity; while there is also a well-monitored quota system in place and vessels adhere to their entitlements. The overall level of fishing effort as measured by numbers of participant vessels in the Spanish long distance fleet has declined sharply since the 1980's and now numbers no more than 5 vessels. The fishery is seasonal – trawling is not constant and the fishery does not take place for 7 or 8 months of the year. The vessels utilise VMS which provides an accurate means of monitoring fishing effort distribution. VMS data facilitates assessment of risk levels in relation to known distribution of vulnerable and sensitive habitats. The fleet utilises modern navigational equipment that means that onboard navigational capacity and systems can support initiatives aimed at limiting seabed impacts by avoiding certain areas or by reducing or eliminating fishing effort in sensitive or closed areas.
	b	Y	From a scientific perspective, the fishery collaborates and co-operatives with the Basque marine research institute AZTI. Scientists from AZTI participate in relevant ICES working groups where they may present data in relation to onboard observer programmes (including data from the fishery under assessment) for consideration by the working groups. Spanish scientists from the Institute of Oceanography (Vigo) also participate in the Arctic Fisheries Working Group (AFWG). In this way data from the fishery may influence scientific advice as well as formulation of policy and future strategy for managing the environmental consequences of the fishery. Ongoing Russian and Norwegian investigations in the Barents Sea are expected to yield greater resolution in the future in the context of the nature, distribution and extent of vulnerable and/or sensitive species and habitats.
			There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.
			Given that overall fishing effort is far reduced from its peak in the 1970s, and that the pattern of fishing effort leaves many areas untrawled or lightly trawled, it can be argued that there is some objective basis for confidence that the partial strategy will work. Certainly there is good representation of the most vulnerable habitats – likely to suffer serious or irreversible harm – being protected, such that loss or localised extinction of species is highly unlikely. In tandem with improved control and management of the biological resource, there is renewed and enhanced research effort into many facets of the marine environment, especially the nature, distribution and extent of sensitive seabed habitats. There have been significant technological advances that have improved the accuracy and resolution of seabed mapping in recent years also. Increased interest in the extraction of oil and gas in the Barents Sea is also adding to the research base, however it is unclear whether information from oil and gas research will be available to entities with responsibility for managing the Barents Sea ecosystem. Technological advances have enhanced knowledge of the seabed and now mean that it is more feasible to conduct baseline surveys in

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
SG	Issue	Met? (Y/N)	Justification/Rationale
			virgin areas and to monitor the impacts of human activity on deep-sea habitats and benthos.
	c	N	<p>There is some evidence that the partial strategy is being implemented successfully.</p> <p>While there is evidence to indicate that the management partial strategy is being implemented, it has not been possible to determine that this is being done so successfully and that intended changes are occurring. There are no particular undertakings for the fleet that precludes their fishing in areas of sensitive habitats that are not subject to area closures. The assessment team were of the view that it was reasonable to expect the fishery to record interactions with vulnerable seabed habitats in an on board log and to endeavor to provide the relevant authorities with additional data in relation to the distribution of habitats that may be vulnerable to damage through mobile gears. As a result it has not been possible to award the final scoring guide at SG80 and a condition has been raised. Condition 5 applies to this PI.</p>
100	a	N	There is a strategy in place for managing the impact of the fishery on habitat types.
			Scored at SG80.
	b	N	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
			Scored at SG80.
	c	N	There is clear evidence that that strategy is being implemented successfully.
			Scored at SG60.
	d	N	There is some evidence that the strategy is achieving its objective.
			Scored at SG80.
References		<p>» (WGDEC) 26–30 March 2012 Copenhagen, Denmark ICES CM 2012/ACOM:29 ICES Advisory Committee.</p> <p>» Larsen T., Nagoda D., and Andersen, J.R. 2003. The Barents Sea Ecoregion. A biodiversity assessment. WWF: http://www.panda.org/about_our_earth/all_publications/?12202/The-Barents-Sea-Ecoregion-A-biodiversity-assessment</p> <p>» Mareano programme http://www.mareano.no</p> <p>» NEAFC request on identification of vulnerable marine ecosystems, including definitions and assessment of fishing activities that may cause significant adverse impacts on such ecosystems</p> <p>» ICES 2012. Report of the ICES/NAFO Joint Working Group on Deep---water Ecology</p>	
OVERALL PERFORMANCE INDICATOR SCORE:			75
CONDITION NUMBER (if relevant):			3

Evaluation Table: PI 2.4.3

PI 2.4.3		Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There is basic understanding of the types and distribution of main habitats in the area of the fishery.
			OSPAR have available detailed data in relation to the nature and distribution of the most sensitive habitat types in the Barents Sea, although this is incomplete with respect to cold-water Lophelia corals. There is an opportunity for understanding of habitat types in the area of the fishery to be improved. The areas of habitat that the MAREANO project have already mapped in detail give an indication of what can be achieved in terms of seabed habitat mapping with adequate resources. To date, the project has identified many vulnerable seabed habitats in the Norwegian Economic zone. While both PINRO and IMR have developed a reasonably good understanding of seabed substrate types and characteristic benthic fauna in different areas of the Barents Sea, there is incomplete understanding of the nature, extent and distribution of vulnerable habitats in all of the areas where the fishery takes place, most notably within the Svalbard fisheries zone. The area of impact of the fishery is known and the potential impacts of the gear use on vulnerable and sensitive habitats is known at a level of detail that is appropriate to the scale and spatial context of the fishery. However there is incomplete knowledge with respect to the nature, extent and distribution of all vulnerable seabed habitats that may be impacted by the fishery in the areas where the fishery takes place. Consequently, scoring this issue at SG80 is not possible and a Condition has been raised.
	b	Y	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear. Scored at SG80.
80	a	N	The nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.
			Scored at SG60. <u>Harmonisation with other MSC certified fisheries for BSC</u> Most previous MSC certifications on the same stock have scored 80 or above for this PI and have not required the implementation of a Condition under 2.4.3. As part of the present certification however, it was found that there were significant knowledge gaps in relation to seabed habitats and communities in some of the areas fished by this fleet. In order to ensure that the fishery does not pose any long-term threat to sensitive habitats or species, a Condition was raised in particular in relation to the activity of trawling in the Svalbard Fishery Protection Zone, where the majority of the certified catch is taken. The imposition of this Condition is deemed necessary and the requirements of same are appropriate to the scale of the issue, and this is consistent with the assessment findings for an existing MSC certification for a Basque fleet that is active in the same fishery. Condition 6 applies to this PI.
	b	Y	Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear. The impacts on various bottom types of fishing with trawl gears have been the focus of extensive research efforts that are ongoing. For the trawl gears in use within the area where the fishery takes place, it is known that extensive damage can be inflicted on long lived ultra-slow growing deep water corals as well as on less vulnerable, but nevertheless slow to regenerate, sponge aggregations. Video evidence has been collected from deep water coral reefs in the north Atlantic that documents extensive damage from mobile fishing gears, while the impact of the gear on other habitats is subject to

			ongoing research in specific regions, including the Barents Sea. There is comprehensive data available on the spatial extent, timing and location of gear use.
	c	Y	<p>Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).</p> <p>Fishing permits require that all vessels that are active in either the NEZ of SFPZ must use VMS. Accordingly, there is ongoing reliable collection of accurate data in relation to fishing effort and distribution. Data in relation to the distribution of vulnerable habitats and seabed communities is being improved over time. There is an ongoing programme of investigation into the status of target stocks (assessment) and knowledge in relation to stock status can be used an indicator of risk to seabed communities and habitats on the basis that reduced stock biomass is likely to lead to an intensification off fishing effort in order to maintain catches.</p>
100	a	N	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
			Scored at SG60.
	b	N	The physical impacts of the gear on the habitat types have been quantified fully.
			Scored at SG80.
	c	N	Changes in habitat distributions over time are measured.
			Scored at SG80.
References		<p>» MAREANO Seabed mapping project - http://www.mareano.no</p> <p>» Anon. 2009. Survey report from the joint Norwegian/Russian ecosystem survey in the Barents Sea August-October 2008 volume 1.IMR/PINRO Joint Report Series, No. 1/2009. ISSN 1502-8828. 103 pp.</p> <p>» Denisenko N.V., Denisenko S.G. 1991. On impact of bottom trawling on benthos in the Barents Sea// Environmental situation and protection of flora and fauna of the Barents Sea. Apatity, published by Kola Science Centre of USSR Academy of Science. S. 158-164.</p> <p>» Denisenko S.G. 2007. Zoobenthos of the Barents Sea under conditions of changing climate and human intervention. S. 418-511- In book: Dynamics of marine ecosystems and contemporary problems of protection of biological potential of Russian seas.</p>	
OVERALL PERFORMANCE INDICATOR SCORE:			75
CONDITION NUMBER (if relevant):			3

Evaluation Table: PI 2.5.1

PI 2.5.1		The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
60	a	Y	The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
			Scored at SG100.
80	a	Y	The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
			Scored at SG100.
100	a	P	There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
			Key interactions are thought to be between cod and other gadoid species, mammals such as harp seals and minke whales, and the capelin (Barents Sea) and other fish that gadoids, mammals and seabirds feed upon. Ecopath food web studies of cod suggest that the species is not a critical prey species of any one predator species identified, although gadoids are potentially important for minke whale when pelagic species are less abundant. Cod is a key predator species, and as a result impacts on prey species (capelin in particular) is thought to be significant at high population sizes. Capelin, a low trophic status and key species in the Barents Sea ecosystem in terms of food web dynamics, is also at high stock levels. Capelin is a key prey species of particular importance to mammals and birds. The impact of changes in cod biomass on competition for prey, examined using multispecies models, does not appear to be significant due to changes in prey preferences.
			There is evidence that many of the key elements of the ecosystem are in good shape. Of relevance to cod and haddock, both stocks are increasing and harvested at sustainable levels. While stocks of saithe have declined in recent years, ICES concludes that current exploitation levels remain sustainable. By contrast, stocks of Greenland halibut and redfish are at low levels but there are indications that the Greenland halibut stock is increasing and there are signs of improved recruitment in deep-sea redfish. In both cases however the low stock levels are not caused by the fishery under assessment, but rather by other targeted fisheries or by high bycatch levels in other fisheries.
			There is good understanding of the factors affecting the negative change in other ecosystem elements. Higher temperatures, declining sea ice and lower recent recorded zooplankton levels are all driving change in the ecosystem – also beyond the immediate influence of the fishery under assessment. The continued declining population trends and breeding failure of several seabird species, such as northern fulmar, black-legged kittiwake, razorbill, Atlantic puffin and common guillemot is similar to patterns seen elsewhere in the Northeast Atlantic. This is very likely to be caused by food shortage, predation from an increasing population of white-tailed eagles and lagged effects from previous by-catch in (particularly long line and gill net fisheries) fisheries. Again, the fishery under assessment is highly unlikely to play a significant role in these observed changes.
			There is some evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Having been depleted in the past, many stocks of fish in the Barents Sea are stable or increasing. ECOSIM modelling of indirect effects suggests that there are no major trophic consequences (notably on cetaceans) of changing harvest rates of cod within the boundaries of established sustainable limits. There is no evidence of declines in marine mammal populations based on current monitoring information. Sufficient evidence

PI 2.5.1		The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
			is therefore available on the consequences of current levels of removal of target species to suggest no unacceptable impacts of the fishery on the Barents Sea ecosystem.
References			<p>» Anon. 2009. Survey report from the joint Norwegian/Russian ecosystem survey in the Barents Sea August-October 2008 volume 1. IMR/PINRO Joint Report Series, No. 1/2009. ISSN 1502-8828. 103 pp.</p> <p>» Dommasnes, A., Christensen, V., Ellertsen, B., Kvamme, C., Melle, W., Nøttestad, L., Pedersen, T., Tjelmeland, S. and Zeller, D., 2002. An Ecopath model for the Norwegian and Barents Sea. In: S. Guénette, V. Christensen, D. Pauly. (eds) Fisheries impacts on North Atlantic ecosystems: models and analyses. Fisheries Centre Research Reports 9(4).</p> <p>» Blanchard, J.L., Pinnegar, J.K., and Mackinson, S. (2002). Exploring marine mammal-fishery interactions using 'Ecopath with Ecosim': modelling the Barents Sea ecosystem. Cefas Science Series Technical Report No. 117. 52p.</p> <p>» Integrated Management Plan for the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands – 2006 http://www.regjeringen.no/en/dep/md/Selected-topics/hav--og-vannforvaltning/havforvaltning/integrated-management-of-the-barents-sea.html?id=87148</p> <p>» Lindstrøm, U. Smout, S., Howell, D., Bogstad, B. 2009. Modelling multi-species interactions in the Barents Sea ecosystem with special emphasis on minke whales and their interactions with cod, herring and capelin. Deep Sea Research Part II: Topical Studies in Oceanography Volume 56, Issues 21–22, October 2009, Pages 2068–2079</p> <p>» Stiansen, J.E., Korneev, O., Titov, O., Arneberg, P. (Eds.), Filin, A., Hansen, J.R., Høines, Å., Marasaev, S. (Co-eds.) 2009. Joint Norwegian-Russian environmental status 2008. Report on the Barents Sea Ecosystem. Part II – Complete report. IMR/PINRO Joint Report Series, 2009(3), 375 pp. ISSN 1502-8828.</p> <p>» Folkow, L.P., Haug, T., Nilssen, K.T., and Nordøy, E.S. (1997). Estimated food consumption of Minke whales Balaenoptera acutorostrata in Northeast Atlantic waters in 1992-1995. ICES CM 1997/CG:01.</p>
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.5.2

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are measures in place, if necessary.
			Scored at SG100.
	b	Y	The measures take into account potential impacts of the fishery on key elements of the ecosystem.
			Scored at SG100.
	c	Y	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).
			Scored at SG80.
80	a	Y	There is a partial strategy in place, if necessary.
			Scored at SG100.
	b	Y	The partial strategy takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.
			Scored at SG100.
	c	Y	The partial strategy is considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).
			There are no obvious weaknesses in the overall strategy, in so far as it encompasses the key elements of research, objective setting, implementation measures, monitoring of implementation, outcome assessment and review/adaptation. The generally much improved condition of the two largest exploitable stocks in the Barents Sea (cod and haddock) supports the argument that initiatives in recent years that have aimed to stabilize and protect the biological resources of the shelf area have been effective and are likely to continue to be so given adherence to the overall plan.
	d	Y	There is some evidence that the measures comprising the partial strategy are being implemented successfully .
			There is some evidence that the ecosystem approach towards managing the fisheries of the Barents Sea is being implemented. The Institute of Marine research in Bergen operates the Barents Sea Ecosystem Programme, which seeks to carry out targeted research, and monitoring in order to underpin overarching plans to manage the entire ecosystem. A number of projects have developed multispecies assessment models for the Barents Sea including the Gadget and MULTSPEC models (Brogstad and Howell, 2010, Borgstad et al 2010). There has been very significant progress with respect to reduction of IUU fishing (Norwegian Ministry of Rural and Coastal Affairs, 2010). The Norwegian initiative to map the seabed habitats of the Barents Sea is ongoing (see www.mareano.no) while the initiative has recently been extended to include parts of the mid Norwegian shelf that extends between northern Finnmark and Svalbard.
100	a	Y	There is a strategy that consists of a plan , in place.
			The fisheries take place mainly in Norwegian waters or in waters of the Svalbard fisheries protection areas that are administered by Norway. There is a strategy for managing the impact of fisheries on the Barents Sea ecosystem. The Norwegian Parliament adopted an Integrated ecosystem management plan for the Barents Sea and the sea areas off Lofoten in 2006. This was the first regional ecosystem management plan for a Norwegian sea area, and a milestone in the work towards

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>establishing an ecosystem-based management in Norwegian sea areas. The management plan set the overall framework for both existing and new activities in the Barents Sea. The purpose of the management plans is to provide a framework for value creation through the sustainable use of natural resources and ecosystem services in the sea areas and at the same time maintain the structure, functioning, productivity and diversity of the ecosystems of the areas. The management aims to ensure that activities in the area do not threaten the environment and living resources and thus future opportunities for continued value creation. The management plan includes targets for a range of subjects on different levels:</p> <ul style="list-style-type: none"> » Biological diversity – including fisheries » Pollution prevention – including hazardous substances Acute oil pollution/environmental risk » Safe seafood » Value creation from economic activity <p>Different projects improves knowledge to the management plan: Environmental monitoring and research</p> <ul style="list-style-type: none"> » Seabed mapping » Geological mapping » Seabird distribution » Screening of hazardous chemicals <p>The management plan is flexible and is regularly updated taking into account new knowledge and developments. The first update took place in 2010.</p> <p>The plan recognises that fisheries represents the most important man-made influence to the ecosystem and aims to control impacts of fisheries by further developing and implementing ecosystem based resource management. The plan addresses the most relevant aspects of Barents Sea fisheries as these are understood to have potential consequences at an ecosystem level and aims to support ecosystem-based fisheries management; support the implementation of ecological measures in fishery management based on increased use of multispecies assessment; reduce bycatch of fish, seabirds, and marine mammals, and reduce effects on bottom fauna; increase in the number of target species that are managed sustainably using a precautionary approach; implement measures to reduce illegal, unregulated, and unreported (IUU) fishing; enforce a global ban on selling IUU fish; encourage closer cooperation with the EU, Russia, and others to enhance surveillance, and including the prosecution of fishers violating existing rules (e.g. discarding, catching undersized fish, unacceptable modifications to gear); prevent the introduction of alien species and protect valuable and threatened habitats. Many of these measures are in place while more are being developed. The plan has been developed by established experts in ecosystem management and takes into account well-understood functional relationships between the fishery and the components and elements of the ecosystem.</p>
	b	Y	<p>The strategy, which consists of a plan, contains measures to address all main impacts of the fishery on the ecosystem, and at least some of these measures are in place. The plan and measures are based on well-understood functional relationships between the fishery and the Components and elements of the ecosystem.</p> <p>This plan provides for development of a full strategy that restrains impacts on the ecosystem to ensure the fishery does not cause serious or irreversible harm.</p> <p>The aim of the plan is to establish a holistic and ecosystem based management of activities in the Barents Sea in order to ensure that existing fisheries (and of other) activities together with transport and petroleum extraction activities do not constitute excessive pressure on the environment. Under the plan, all activities will be managed</p>

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>within the context that the total environmental pressure from activities should not threaten the structure, functioning and productivity of the ecosystem. The plan and the measures which it implements, or which have shaped the development of the plan itself, are indicative of a substantive understanding of the inter-relationships between fishing activities and the main ecosystem components (biotic and abiotic); and elements including fish/bird/mammal diversity and abundance, seabed habitats and water quality of the Barents Sea.</p> <p>With respect to fisheries, the plan implements</p> <ul style="list-style-type: none"> » Area-based management, where activities and measures are adjusted to the environmental quality of the ecosystems » Protection of the most valuable and vulnerable areas against negative pressures, included oil pollution » Reduction of long-range pollution » Strengthening fisheries management » Developing control of the state of the environment in the Barents Sea through coordinated and systematic environmental monitoring » Strengthening the knowledge base through better surveys and increased research <p>The plan establishes the context and explicitly provides for development of a full suite of management protocols, measures and tools that collectively will aim to restrict the potential for fisheries to have negative impacts on the Barents Sea ecosystem (see above).</p>
	c	N	<p>The measures are considered likely to work based on prior experience, plausible argument or information directly from the fishery/ecosystems involved.</p> <p>Scored at SG80. No specific information has been provided to the assessment team in order to score this issue at SG100. This scoring issue refers to measures whereas at SG80 it refers to a partial strategy.</p>
	d	N	<p>There is evidence that the measures are being implemented successfully.</p> <p>Scored at SG80. There is some evidence that the ecosystem approach towards managing the fisheries of the Barents Sea is being implemented SG80. Greater evidence in relation to the status of all stocks of fish, marine mammals and seabirds together with some ecosystem modeling may indicate scoring at SG100, however this has not been available to the assessment team.</p>
	References		<ul style="list-style-type: none"> » Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands (management plan). http://www.regjeringen.no/en/dep/md/Selected-topics/hav--og-vannforvaltning/havforvaltning/integrated-management-of-the-barents-sea.html?id=87148 » http://arcticgovernance.custompublish.com/norway-and-integrated-oceans-management-the-case-of-the-barents-sea.4651095-142902.html » Hoel , A.H., von Quillfeldt, C.H., Olsen, E. 2009 Norway and Integrated Oceans Management – the Case of the Barents Sea. REPORT SERIES NO 129 Norsk Polar Institutt » Howell, D., and Bogstad, B. 2010. A combined Gadget/FLR model for management strategy evaluations of the Barents Sea Fisheries. ICES Journal of Marine Science, 67:000–000. » Bogstad,b., Hauge, K.H. and Øyvind, U 1997. MULTSPEC – A Multi-species Model for Fish and Marine Mammals in the Barents Sea. J. North. Atl. Fish. Sci., Vol. 22: 317–341

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>» Norwegian ecosystem management plan for the Barents Sea. http://icesjms.oxfordjournals.org/content/64/4/599.full.pdf Norwegian Ministry of Fisheries and Coastal Affairs, 2010.</p> <p>» http://www.regjeringen.no/en/dep/fkd/Press-Centre/Press-releases/2010/Very-good-results-in-combating-illegal-fishing.html?id=601898</p> <p>» Mareano Project. www.mareano.no</p> <p>» Report of the Norwegian-Russian workshop HAV 5 Biological – Geological Seabed Mapping and Monitoring in the Barents Sea. Murmansk, PINRO 7-10 2011. Eds. Lis Linda; Jorgensen, Natasja Anisimova, Anne Britt Storeng.</p>
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.5.3

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Information is adequate to identify the key elements of the ecosystem (e.g., trophic structure and function, community composition, productivity pattern and biodiversity).
			Scored at SG80.
	b	Y	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, and have not been investigated in detail .
			Scored at SG100.
80	a	Y	Information is adequate to broadly understand the key elements of the ecosystem.
			Relative to most large-scale marine ecosystems, the Barents Sea is reasonably well researched and the key abiotic and biotic elements of the aquatic ecosystem are broadly understood. The level of understanding is improving with ongoing research efforts led by Russian and Norwegian scientific programmes. The level of commitment to protecting the biological resources of the Barents Sea is evidenced by the relatively healthy stock status for key species as well as the nature and scale of ongoing biological and environmental research programmes.
	b	Y	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information and some have been investigated in detail .
			Scored at SG100.
	c	Y	The main functions of the Components (i.e., target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known .
			There is a good understanding of the function of key ecosystem components, such as the target species (cod), and any bycatch species (there are no significant bycatch species), ETP species (marine mammals) and habitats (productive nursery areas). There does remain opportunity for improving the quantifiable level of understanding of the certified fishery on some of these components – notably habitats and vulnerable species such as ray and skate, as referred to in 2.2 and 2.3.
	d	Y	Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.
			Scored at SG100.
	e	Y	Sufficient data continue to be collected to detect any increase in risk level (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).
			The quantity and scope of information collected through routine monitoring, control and surveillance of all Barents Sea cod fisheries is appropriate to the scale of the fishery. Sufficient data continue to be collected to detect any significant increase in risk to any of the major components. Because of the detailed level of monitoring that this fishery receives (landings, VMS, bycatch monitoring etc.) it is considered that data is sufficient to detect any increase in risk level that may have implications for outcome status scores, and to detect changes in the effectiveness of measures specifically designed to manage impacts or to mitigate against serious impacts.
100	b	Y	Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated .
			Key elements of the ecosystem are biotic (living resources) and abiotic (environmental parameters). The main interactions of the fishery with these elements are either known or can be inferred. It is known that the fisheries of the Barents Sea are heavily influenced by environmental conditions and there is clear evidence of

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem	
SG	Issue	Met? (Y/N)	Justification/Rationale
			changing conditions such as gradual warming of the region and a marked decrease in the extent of sea-ice cover. The effects of oceanographic conditions on recruitment and stock dynamics are broadly understood and are the subject of ongoing investigations. The interaction between the fishery and the biotic elements of the ecosystem has been investigated and are subject to ongoing research through both Norwegian and Russian organisations. Results of research into the impact of the fishery on the Barents Sea ecosystem are presented through a number of ICES working groups including the Arctic Fisheries Working Group, SGBYC, WGMME, WGEF and others. Ecosystem (Ecopath and Ecosim) modelling has shown that the main impact of the fishery (the removal of the target species) is unlikely to have significant consequences for the ecosystem at current and projected levels of F, based on forecast stock sizes.
	c	N	The impacts of the fishery on target, Bycatch and ETP species are identified and the main functions of these Components in the ecosystem are understood .
			Scored at SG80. There is outstanding uncertainty with respect to the function of these components in the Barents Sea ecosystem such as that it prevents scoring at SG100.
	d	Y	Sufficient information is available on the impacts of the fishery on the Components and elements to allow the main consequences for the ecosystem to be inferred.
			Data is collected from the fishery on an ongoing basis in relation to total landings for all affected species. There is regular monitoring of bulk catches and raw catches are sampled for at least one fishing trip per annum in the Spanish Barents Sea cod fishery. Any increased risk to bycatch or ETP species is likely to be captured. There is a comprehensive VMS in operation for the fleet. The Marine Resources Act and associated regulations, along with the ongoing commitments to carry out research such as the IMR Barents Sea Ecosystem Project along with projects such as MAREANO are generating new information to ensure that future management of the Barents Sea ecosystem will be have available necessary supporting information and data. New and updated data is being generated all the time with respect to the Barents Sea ecosystem elements. Information is not optimal with respect to impacts of the fishery on seabed habitats, however this issue has been captured directly under the Habitats component of the assessment and duplication of the issue is not appropriate.
	e	N	Information is sufficient to support the development of strategies to manage ecosystem impacts.
			Scored at SG80. While there are strategies in place to manage the ecosystem, information collection is not considered adequate to allow for ongoing assessment of risk and modification of existing strategies in light of uncertainty, for example climate change.
References			<ul style="list-style-type: none"> » Anon (2012) Unpublished data from AZTI onboard observer programme, Spanish Barents Sea cod fishery. AZTI Tecnalia, Passajes, Basque Country, Spain. » Bogstad, b., Hauge, K.H. and Øyvind, U 1997. MULTSPEC – A Multi-species Model for Fish and Marine Mammals in the Barents Sea. J. North. Atl. Fish. Sci., Vol. 22: 317–341 » Hoel , A.H., von Quillfeldt, C.H., Olsen, E. 2009 Norway and Integrated Oceans Management – the Case of the Barents Sea. REPORT SERIES NO 129 Norsk Polar Institutt » Howell, D., and Bogstad, B. 2010. A combined Gadget/FLR model for management strategy evaluations of the Barents Sea Fisheries. ICES Journal of Marine Science, 67:000–000.

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<ul style="list-style-type: none"> » Norwegian ecosystem management plan for the Barents Sea http://icesjms.oxfordjournals.org/content/64/4/599.full.pdf » Norwegian Ministry of Fisheries and Coastal Affairs, 2010. http://www.regjeringen.no/en/dep/fkd/Press-Centre/Press-releases/2010/Very-good-results-in-combating-illegal-fishing.html?id=601898 » Mareano Project. www.mareano.no » Report of the Norwegian-Russian workshop HAV 5 Biological – Geological Seabed Mapping and Monitoring in the Barents Sea. Murmansk, PINRO 7-10 2011. Eds. Lis Linda; Jorgensen, Natasja Anisimova, Anne Britt Storeng. » Stiansen, J.E., Korneev, O., Titov, O., Arneberg, P. (Eds.), Filin, A., Hansen, J.R., Høines, Å., Marasaev, S. (Co-eds.) 2009. Joint Norwegian-Russian environmental status 2008. Report on the Barents Sea Ecosystem. Part II – Complete report. IMR/PINRO. Joint Report Series, 2009(3), 375 pp. ISSN 1502-8828.
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 3.1.1

PI 3.1.1		<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and Incorporates an appropriate dispute resolution framework. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2.
			The management system for NEA cod is based on the Joint Norwegian-Russian Fisheries Commission (JNRFC) established in 1974 and which first session was held in 1976 ⁽¹⁾ .
			The AGARBA fishing activity takes place in Norwegian EEZ and in the Svalbard Fishery Protection Zone under Norwegian management in accordance with the Treaty Concerning the Archipelago of Spitsbergen (Svalbard) signed in Paris on 9 February 1920 ⁽²⁾ . The AGARBA vessels operate within the terms of the agreement on fisheries between Norway and EU ⁽³⁾ , and under relevant Norwegian, European Union and Spanish (flag state) fisheries legislation.
			The EU and Norway have ratified the United Nations Convention on the Law of the Sea of 10 December 1982 ⁽⁴⁾ which set out the principle that all States have a duty to adopt appropriate measures to ensure sustainable management of marine resources and to cooperate with each other to this end.
			The management system follows the principles set out in the FAO Code of Conduct for Responsible Fisheries ⁽⁵⁾ , which includes the application of a precautionary approach. It also complies with the requirements in the UN Fish Stocks Agreement ⁽⁶⁾ regarding reference points and application of the precautionary approach.
			Norway and EU have implemented actions against IUU fishing in accordance with the FAO Global Plan of Action against IUU fishing ⁽⁷⁾ .
			The Norwegian Marine Resources Act ⁽⁸⁾ includes principles for management of wild living marine resources containing “a precautionary approach in accordance with international agreements and guidelines”, “an ecosystem approach that takes into account habitats and biodiversity” and “ensuring that harvesting methods and the way gear is used take into account the need to reduce possible negative impacts on living marine resources”.
			The objectives of the legal framework are clearly aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2.
	b	Y	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.
			See SG80
	c	Y	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability of the fishery.
			See SG100

PI 3.1.1		<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
	d	Y	<p>The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> <p>See SG100</p>
80	b	Y	<p>The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery.</p> <p>The Svalbard Treaty and the bilateral Agreement on Fisheries between EU and Norway incorporate mechanism for legal disputes. In practice, resolution of most issues in the context of the fishery is achieved through negotiation. More serious disputes may be referred to the courts through legal actions.</p> <p>There is a “latent” dispute regarding the Norway’s declaration of the Fisheries Protection Zone (FPZ) around Svalbard in 1977 and the feeling that Norway is not applying measures equally to all the Svalbard Treaty Contracting Parties. Recent facts of setting up quotas for Greenland halibut and Haddock in this FPZ have been considered by some UE member states as a violation of the Svalbard Treaty because the equally access to the natural resource to all the contracting parties was not ensured.</p> <p>This dispute exists and it could go even worse for other interests such as oil and gas exploration in the area, but it is beyond the context of the fishery and It cannot be considered as an issue of “respect for laws”. As a matter of fact, this system has been accepted during the last years when Norway established measures for cod in the same way. This dispute does not affect to the state of the resources or the habitat. It is related only with the distribution of the access rights to those resources. It is highly desired that this dispute will be solved before going worse, but in the meanwhile, the weakness of one party while negotiating cannot be considered as a fail in the effectiveness of the fisheries management system.</p> <p>Other measures that could create dispute and affect to the stock (i.e., closure of areas, limitation of bycatch) are normally accepted or submitted to negotiation when Norway imposes them. Where there were disagreements between Norwegian and EU standards (discards, for example) those of Norway prevailed, given that it is responsible for the management of resources of the area.</p>
			<p>The management system or fishery is attempting to comply in a timely fashion within binding judicial decisions arising from any legal challenges.</p> <p>See SG100</p>
			<p>The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> <p>See SG100</p>
	d	Y	<p>The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p> <p>See SG100</p>

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: <ul style="list-style-type: none">Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2;Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; andIncorporates an appropriate dispute resolution framework.	
SG	Issue	Met? (Y/N)	Justification/Rationale
100	b	N	The management system incorporates or subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective .
			The management system incorporates a transparent mechanism for the resolution of legal disputes between the EU and Norway that is appropriate to the context of the fishery. Most issues are submitted to negotiation. Results of negotiations are public Nevertheless, in practice, this mechanism has proven not to solve all disputes properly.
			During the negotiations meetings other issues are also considered which are not connected to the fishery (annual tariff quotas for products originating in Norway, reciprocal fisheries relations, etc.). This creates distortions due to the fact that some disputes are not solved but “compensated” with other disputes.
			This issue together with the latent dispute mentioned before (see SG80) regarding the interpretation of the legal basis for management in the FPZ around Svalbard, make that the current reference point does not meet the SG100.
	c	Y	The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges.
			The management system is not subject to continuing court challenges and there are not evidences of disrespect or defiance of the law. Norwegian Ministry of Fisheries and Coastal Affairs and, more specifically, the Fisheries Directorate, is responsible for management of marine resources, developing regulations and enforcement of fisheries regulations. This system avoids legal disputes. The resolution of disputes that could not be reached during the different discussion meetings between the parties may be subject to further meetings or, in more severe cases, may be taken to court.
d	Y	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	
		The AGARBA fishing activity does not interfere with rights of people dependent of fishing for food and livelihood. Nevertheless, the same management system includes a principle for <i>ensuring that management measures help to maintain the material basis for Sami culture</i> (Section 7, bullet g) of the Norwegian Act of 6 June 2008 no. 37 relating to the management of wild living marine resources).	
References			(1) Joint Norwegian – Russian Fisheries Commission: http://www.jointfish.com/eng (2) Treaty Concerning the Archipelago of Spitsbergen (Svalbard) signed in Paris on 9 February 1920: http://www.aeco.no/ (3) Agreement on fishing between the European Community and the kingdom of Norway and subsequent agreed accords of bilateral fisheries consultations. Council Regulation, of 27 June 1980, on the conclusion of the fishing agreement between the European Economic Community and the Kingdom of Norway; OJ L226 of 29/08/1980, p.47: http://ec.europa.eu/world/agreements/downloadFile.do?fullText=yes&treatyTranSId=485

PI 3.1.1		<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>(4) United Nations Convention on the Law of the Sea of 10 December 1982 (UNCLOS). http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf</p> <p>(5) FAO Code of Conduct for Responsible Fisheries adopted in the FAO Conference 1995. http://www.fao.org/docrep/005/v9878e/v9878e00.HTM</p> <p>(6) The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (in force as from 11 December 2001): http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm</p> <p>(7) International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU). 2001: http://www.fao.org/docrep/003/y1224e/y1224e00.HTM</p> <p>(8) Norwegian Act of 6 June 2008 no. 37 relating to the management of wild living marine resources. http://www.fiskeridir.no/english/fisheries/regulations</p>
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			-

Evaluation Table: PI 3.1.2

PI 3.1.2		<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood .
			See SG100
	b	Y	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.
			See SG80
80	a	Y	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.
			See SG100
	b	Y	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.
			The Norwegian fisheries management system ⁽¹⁰⁾ and the European Common Fisheries Policy ⁽¹¹⁾ include consultation processes involving authorities, fishing industry, scientific institutions and NGOs. In both systems, regulations governing the management of fisheries are approved following a process of consultation with different stakeholders.
			The management system demonstrates consideration of the information obtained mainly from scientific advice (ICES yearly catches advice ⁽⁹⁾ on the basis of the Joint Russian–Norwegian Fisheries Commission management plan) and from fishing activity (data collected and transmitted by fishers).
			The Agreement on fishing between the EU and Norway includes twice-yearly negotiation meetings. During the preparation of these meetings, both delegations collect information, comments and opinions from their fishing industry, scientific institutions and NGOs.
	c	Y	The consultation process provides opportunity for all interested and affected parties to be involved.
			The Norwegian fisheries management system does not specifically facilitate the participation of foreign fishers operating in its waters but it does facilitate the participation of international scientists and NGOs. Spanish scientists (from AZTI and IEO) participate in ICES Arctic Fisheries Working Group which advice guides decisions of the JNRFC management plan.
			During the preparation of bilateral negotiations under the Agreement on fisheries between the EU and Norway, the EU fishers operating in Norwegian waters have the opportunity to express comments and opinions to their EU representatives. But they cannot participate in the negotiation meetings. Recently, presence of stakeholders has been allowed in those meetings but just as observers. They have no voice.

PI 3.1.2		<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>	
SG	Issue	Met? (Y/N)	Justification/Rationale
100	a	Y	<p>Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.</p> <p>Both fisheries management process in Norway and in EU involve a great number of stakeholders. They have been long time implemented and all organisations and individuals involved know perfectly their role and responsibilities for all the areas (current skipper of Arosa 9 fishes in Norwegian waters since 1976). The systems include different authorities, the fishing industry, scientific institutions and NGOs.</p> <p>AGARBA is member of different Spanish and European bodies such as FEABP (Spanish Federation of Fishing Vessel Owners), CEPESCA (the Spanish Fisheries Confederation) and Européche (the Association of National Organisations of Fishing Enterprises in the EU)⁽¹²⁾.</p> <p>As EU fleet fishing in Norway, Svalbard and the Barents Sea, AGARBA can also express their opinions, through the Regional Advisory Council for the Long-Distance Fleet in Non-EU Waters (LDRAC).</p>
	b	N	<p>The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used.</p> <p>Most of the final decisions of the management system are agreed during the negotiation meetings under the Agreement on fisheries between the EU and Norway. Those meetings are used to discuss important issues affecting to the fishery but also other external topics such customs tariffs or reciprocal fisheries relations (exchange of different species quota).</p> <p>As a result, sometimes, consistency between taken decision and provided information is not appreciated. For example, the scientific opinion can suggest an increase in catches of cod in Norwegian waters but this does not occur by lack of quota exchange opportunities with other stocks in Community waters. These "interference" difficult to know how the information is used and SG100 is not achieved.</p>
	c	N	<p>The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.</p> <p>The consultation process provides opportunity for all interested and affected parties to be involved but with some restrictions which make that it could not be considered that the process provides encouragement or facilitates their engagement.</p> <p>Main restrictions are the participation of stakeholders in the negotiation meetings between EU and Norway just as observers, and the limitation of foreign fishers operating in Norwegian waters to take part in its consultation process (they are just involved providing information useful for management and, sometimes, participating in research campaigns).</p>
References		<p>(9) ICES, 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10.</p> <p>(10) The regulatory chain. http://www.fisheries.no/resource_management/setting_quotas/The-regulatory-chain/</p> <p>(11) Maritime affairs and Fisheries EC Consultations. http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/index_en.htm</p>	

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	
SG	Issue	Met? (Y/N)	Justification/Rationale
			(12) Europeche http://www.europeche.org/index.php?option=com_content&view=article&id=40&Itemid=21
OVERALL PERFORMANCE INDICATOR SCORE:			85
CONDITION NUMBER (if relevant):			-

Evaluation Table: PI 3.1.3

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
60	a	Y	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are implicit within management policy
			See SG100
80	a	Y	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy.
			See SG100
100	a	Y	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy.
			<p>The Joint Russian–Norwegian Fisheries Commission management plan for NEA cod has been implemented since 2004. This plan considers <i>conditions for high long-term yield from the stocks, achievement of year-to-year stability in TACs, and full utilization of all available information on stock development</i> ⁽¹³⁾.</p> <p>The plan was evaluated in 2010 and ICES considers that it is to be in accordance with the precautionary approach.</p> <p>At the 39th Session of the Joint Russian–Norwegian Fisheries Commission in October 2010 it was agreed that the plan will be in force ‘for five more years’ until 2015.</p> <p>Ecosystem-based management has been also established in Norwegian waters through the Integrated Management Plan of the Marine Environment of the Barents Sea and the sea areas off the Lofoten Islands (2006, updated in 2011) ⁽¹⁴⁾. In order to measure progress systematically, the Norwegian Government has established a system for monitoring the state of the environment by means of indicators, reference values and action thresholds.</p>
References			<p>(13) ICES, 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. p 10.</p> <p>(14) The Royal Norwegian Ministry of the Environment. Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands: http://www.regjeringen.no/en/dep/md/Selected-topics/hav--og-vannforvaltning/havforvaltning/integrated-management-of-the-barents-sea.html?id=87148</p>
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 3.1.4

PI 3.1.4		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
60	a	Y	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.
			See SG80
80	a	Y	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.
			<p>The principles of the Norwegian Fisheries Management system tend to promote sustainable fishing through different measures: regular review of management policy including use of selecting gears, closure of fishing areas, haul by haul reporting of catches through electronic logbook, discards prohibitions, system of inspection and sanctions, register of illegal actors, etc. All these measures are consistent with achieving the outcomes expressed by MSC Principles 1 and 2. They are clear, consistent (not arbitrary) and well known for all fishers giving no place for uncertainties.</p> <p>Nevertheless, there are some issues in the management system that does not act as positive incentives.</p> <p>For example, instability in the system for allocating quotas takes away the sense of stewardship of the resource; bycatch limits by haul (instead of by trip) could incite discard. These examples could be considered as perverse incentives arising from the system. A bigger participatory approach to the management of those issues would be desirable.</p> <p>But it is also true that the same system ensures that fishers do not fish unsustainably through a strict monitoring, control and surveillance system, and that the sense of responsibility of the fishers under assessment avoid that these measures act as perverse incentives.</p> <p>The mentioned “sense of responsibility” has been corroborated for the AGARBA reaction to these measures, i.e., the answer to the instability generated by the system for allocating quotas, has been a drastic decrease on the fishing capacity (6 AGARBA vessels were scrapped during the last 5 years) and the answer to the bycatch limits by haul originated that skippers followed the “move on” rule even if the haddock caught was less than the 19% allowed.</p> <p>AGARBA skippers attempted to avoid repeating hauls in the same area even when the catches were right in the first set (good sizes, quantities and species compositions). This has been possible to be carried out during 2012 because of the good conditions of the cod stocks but it has a very high extra cost (time and fuel consumption moving from one place to other).</p> <p>In accordance with the above mentioned it can be stated that perverse incentives do not arise, so SG80 is met. But it is not clear whether this happens because the system seeks to ensure that or thanks to other considerations (responsibility, peer pressure, fear of sanctions, etc.). What it seems clear it that the system does not explicitly considers incentives in a regular review of management policy which is required to meet SG100.</p> <p>In addition to that, controversial positions regarding contribution to sustainable fishing of subsidies such as fuel taxes exemptions for fishing vessels do not recommend higher scoring than SG80.</p>

PI 3.1.4		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
100	a	N	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure they not contribute to unsustainable fishing practices.
			See SG80
References			(15) http://www.fisheries.no/ (16) Council Regulation (EU) No 44/2012 of 17 January 2012 fixing for 2012 the fishing opportunities available in EU waters and, to EU vessels in certain non-EU waters for certain fish stocks and groups of stocks which are subject to international negotiations or agreements. (OJ L 25, 17.1.2012, p. 55.)
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 3.2.1

PI 3.2.1		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2	
SG	Issue	Met? (Y/PN)	Justification/Rationale
60	a	Y	Objectives , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system.
			See SG100
80	a	Y	Short and long-term objectives , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
			See SG100
100	a	Y	Well defined and measurable short and long-term objectives , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
			<p>Northeast Arctic (NEA) cod stock is annually monitored and short and long term objectives are explicit in the annual protocols and research programmes of the JNRFC⁽¹⁷⁾. The management plan implemented since 2004 has the objectives of maintaining high long term yield, a high degree of stability in the total quota from year to year and full utilization of all available information on the conditions of the stock. This Plan is in accordance with precautionary approach and consistent with the MSY framework ⁽¹⁸⁾.</p> <p>The management objectives are demonstrably consistent with achieving the outcomes expressed by MSC's Principle 1.</p> <p>There are also objectives which consider minimising the environmental impact of the fishing operations (Principle 2). Norwegian Regulations relating to bottom fishing activities on July 2011⁽¹⁹⁾ pursue to protect vulnerable benthic habitats (live coral and live sponge) and they apply to bottom fishing activities in the Economic Zone of Norway, the fisheries zone around Jan Mayen and the Fisheries Protection Zone around Svalbard. But there are not long-term objectives that could be considered well defined and measurable so SG100 for Principle 2 is not met (only for Principle 1).</p>
References			<p>(17) http://www.jointfish.com/eng</p> <p>(18) ICES, 2012. 3.4.1 Cod in Subareas I and II (Northeast Arctic cod). ICES Advice June 2012, Book 3. pp.1-10.</p> <p>(19) Regulations relating to bottom fishing activities in the Economic Zone of Norway, the fisheries zone around Jan Mayen and the Fisheries Protection Zone around Svalbard, 1 July 2011.</p>
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 3.2.2

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.
			See SG80
	b	Y	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.
			See SG80
80	a	Y	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.
			There are established decision-making processes in the Permanent Committee of the JNRFC that result in measures and strategies to achieve the fishery-specific objectives.
			There are also other established decision-making scenes like the annual Regulatory Meeting in Norway and the discussions with the EU Commission before the yearly review of the conditions of the EU-Norway Agreement.
	b	Y	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
			The regulatory system for fisheries management in Norway is defined as an interactive and iterative process based on incremental changes (The regulatory chain). This system incorporates the scientific research advice, negotiations with other states, public consultation meetings, statistics data and information from previous experiences.
			The system respond to serious and important issues in a transparent, timely and adaptive manner as it occurs with the temporary closure of fishing grounds when certain amount of undersized cod is reported in the catches.
	c	Y	Nevertheless, it cannot be considered that respond to "all issues" (SG100) with the same transparency due to the recent experiences of unequal distribution of haddock quotas without consultation or explanations.
			Decision-making processes use the precautionary approach and are based on best available information.
	d	Y	The application of the precautionary approach in the management system is based on scientific advice on the impacts of different catch levels from the ICES, and the implementation of catch levels in line with such advice in bilateral negotiations and national decision-making ⁽²¹⁾ .
			Control of the catches is based on an electronic reporting system for fishing vessels which ensure the best possible information regarding position, fishing activity and catches.
			Explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
			See SG100

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives	
SG	Issue	Met? (Y/N)	Justification/Rationale
100	b	N	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
			See SG80
	d	Y	<p>Formal reporting to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p> <p>The results from meetings in the JNRFC and EU-Norway negotiations are distributed to the fishing industry and to all interested stakeholders. The yearly report of ICES is easily available to all interested agents. Results of scientific research can be also found in the web site of the Norwegian Directorate of Fisheries⁽²²⁾.</p>
References		<p>(20) http://www.fisheries.no/resource_management/setting_quotas/The-regulatory-chain/</p> <p>(21) http://www.fisheries.no/ecosystems-and-stocks/Environmental-measures/Environmental_principles_in_fisheries_management/</p> <p>(22) http://www.fiskeridir.no/english/fisheries/marine-scientific-research</p>	
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 3.2.3

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Monitoring, control and surveillance <u>mechanisms</u> exist are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.
			See SG80
	b	Y	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.
			See SG100
	c	Y	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.
			See SG100
80	a	Y	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.
			The Norwegian Directorate of Fisheries (FD) is responsible for monitoring, compliance and enforcement of applicable rules ⁽²³⁾ as well as the terms agreed between Norway and the EU. The system includes issues of licences, reporting requirements and inspections (on board and on harbour).
			AGARBA vessels must report their catches to Norwegian DF when they enter or exit the Norwegian EEZ. They have also to use the electronic logbook to send the catches report detailed haul-by-haul. Following the "Flag State Principle" the position reporting and the electronic catch and activity reporting is submitted to the Vessel Monitoring Centre (VMC) of the flag State (Madrid – Spain) and then Spain send the information to the EU and to the Norwegian Fisheries Monitoring Centre (FMC) in Bergen.
			Together with reporting requirements, the MCS system also includes a strong inspection developed by the FD and by the Norwegian Coast Guard.
	b	Y	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.
			See SG100
	c	Y	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.
			See SG100
	d	Y	There is no evidence of systematic non-compliance.
			The last inspections sheets of AGARBA vessels show some remarks and a few warnings (dimensions of the chains of the selection grid) but no infringements or penalties. There is no evidence of systematic non-compliance.
100	a	N	A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
			Scored at SG80. Some difficulties were detected with the transmission of the electronic logbook declaration when the vessels are operating in the northern areas (over 78°N). The use of different systems of transmission of data (Spanish and

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with	
SG	Issue	Met? (Y/N)	Justification/Rationale
			Norwegian) has created some problems to the skippers. As the transmission of data must be per haul, these transmission difficulties originate the cessation of the fishing activity until the data is received by the Spanish VMC. This seems to be a punctual problem between the Spanish fisheries administration and AGARBA which arose when the new requirements of electronic logbook were enforced (2011). This should be internally checked and solved in order to meet SG100.
	b	Y	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence. Non-compliances and violations are subject to sanctions that vary from warning to loss of the fishing licence and heavy economics penalties. Sanctions and liabilities are included in Chapters 11 and 12 of the Norwegian Marine Resources Act ⁽²³⁾ .
	c	Y	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery. Data from inspections and track of the activity during the last years indicate that there is a high degree of confidence that fishers comply with the management system. Captains are required to provide information regularly (electronic logbook detailed and sent by haul) and with all relevant data on their activity whenever they are inspected.
References		(23) Act of 6 June 2008 no. 37 relating to the management of wild living marine resources	
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 3.2.4

PI 3.2.4		The fishery has a research plan that addresses the information needs of management	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.
			See SG100
	b	Y	Research results are available to interested parties.
			See SG80
80	a	Y	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
			See SG100
	b	Y	Research results are disseminated to all interested parties in a timely fashion.
			Results of research plan can be found in the Norwegian FD web site ⁽²¹⁾ and in the ICES yearly report. The information is publicly available. Some results are even published in scientific journals.
100	a	Y	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
			There is a Comprehensive research program on living marine resources approved in 2012 by the 40 th Session of the Joint Russian – Norwegian Fisheries Commission ⁽²⁴⁾ and a continue evaluation of the research information in the ICES Arctic Fisheries Working Group (AFWG) ⁽²⁵⁾ .
			Scientific advice is based on systematic stock monitoring and on catch data. Several institutions are involved: Norwegian Institute of Marine Research, Russian Institute for Polar Research and, in the specific case of AGARBA activity, the Spanish Marine Oceanographic Institute and AZTI. An effective coordination exists among all research institutions thanks to ICES AFWG and Norwegian FD (which approves foreign marine scientific research in Norway's EEZ and continental shelf).
			In general, the Scientific Institutions provide the management system with reliable and timely information.
			The research program of the JRNFC is updated yearly including different aspects in accordance with the national research programs. It is a very complete program considering aspects of the P1, P2 and P3. As an example ^(25b) Example , aspects included on this program are: (i) planning and coordination of investigations and submitting of results, (ii) investigations on fish and shrimps stocks, including stock size, structure and distribution, (iii) fishing technology and selectivity of fishing gears, (iv) optimal harvesting of commercial species in the Barents Sea (BS) ecosystem, (v) Monitoring of pollution levels in BS, (vi) investigations on age and growth of fish, (vii) marine mammals, (viii) plankton, (ix) investigations on survey methodology, (x) investigation of interspecific interactions, (xi) practical cooperation matters between IMR and PINRO, (xii) Russian and Norwegian Environment reporting matters, (xiii) exchange program of scientists, or (ivx) catch volumes needed for investigations of marine resources and monitoring of the most important commercial species, as well as management tasks.
			All the aspects of the system are integrated in a yearly proposed document which includes protocol for regular discussion of the results and exchange of information.

			JRNFC Research program is not limited to the information demanded by the management needs as it is revealed with aspects such monitoring the pollution levels in BS or investigation of interspecific interactions. It also identifies gaps as it could be the need to develop a common methodology of acoustic estimation of target strength of fish, or the necessity of improvement of the methodology of the analysis of the Commercial CPUE data.
	b	N	<p>Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.</p> <p>Not all the results are widely available. AGARBA complains about the limited information that receives from Spanish Research Institute when cooperating in observers on board Programmes. It seems that the information goes to managing authorities and scientific forums but not to the fishers. SG100 cannot be met.</p>
References			<p>(24) Protocol of the Annual Meeting between Norwegian and Russian Scientists. Hamm i Senja, 12-16 March 2012.</p> <p>(25) ICES 2012. Report of the Arctic Fisheries Working Group 2012 (AFWG), 20-26 April 2012, ICES Headquarters, Copenhagen. ICES CM 2012/ACOM:05. 633 pp.</p> <p>(25b) Example of aspects extracted from JNRFC research program on living marine resources from years 2009 and 2013</p> <p>(http://www.regjeringen.no/upload/FKD/Vedlegg/Kvoteavtaler/2009/Russland/vedlegg%2010%2015101100%20-%20endelig.pdf)</p> <p>(http://www.regjeringen.no/upload/FKD/Vedlegg/Kvoteavtaler/2013/Russland/Vedlegg_10.pdf).</p>
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 3.2.5

PI 3.2.5		<p>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives</p> <p>There is effective and timely review of the fishery-specific management system</p>	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	The fishery has in place mechanisms to evaluate some parts of the management system.
			See SG100
	b	Y	The fishery-specific management system is subject to occasional internal review.
			See SG100
80	a	Y	The fishery has in place mechanisms to evaluate key parts of the management system
			<p>The existing evaluation mechanism cover key parts of the management system: The assessment of the status of the stock is carried out annually and together with scientific advice. This is the basis for the following year new stock management rules. Most of the management rules are discussed yearly and their efficiency is analysed by research bodies and managing authorities or stakeholders during the review of the Agreements. Legal framework and environmental issues are also submitted to discussion and regular review.</p> <p>But it cannot be considered that the evaluation mechanism cover “all” parts of the management system because discussions about some important parts, like equal access to the resources in accordance with the Treaty of Paris, are not considered or no correction measures derives if they are evaluated (SG100 is not met).</p>
	b	Y	The fishery-specific management system is subject to regular internal and occasional external review.
			See SG100
100	a	N	The fishery has in place mechanisms to evaluate all parts of the management system.
			See SG80
	b	Y	The fishery-specific management system is subject to regular internal and external review .
			<p>The stock and ecosystem status are monitored every year by the Norwegian Institute of Marine Research together with Russian Institute for Polar Research (PINRO). Data and assessment methodology is subject to continuous internal scientific review within ICES. ICES involve external scientists in review of its methodology on a regular basis.</p> <p>In Norway, regular external review of regulations and enforcement aspects occurs annually since 1995 through a report to Parliament. A major review of the effectiveness of the management system was carried out by the National Audit Office in 2003-2004⁽²⁶⁾⁽²⁷⁾.</p> <p>Norway also reports bi-annually on the performance of its management system to the Committee of Fisheries of FAO.</p> <p>Spain also reports to the European Commission regularly on the relevance, coherence, efficiency and effectiveness of its fisheries management system. And the European administration is subject to regular external audits from the European Court of Auditors (ECA)⁽²⁸⁾ which is focused in financial management but it also considers other issues (efficiency, environmental issues, etc.).</p>

References	<p>(26) Document no. 3:13 (2003- 2004) The Office of the Auditor General's study of the management of fish resources. http://www.riksrevisjonen.no/en/SiteCollectionDocuments/Dokumentbasen/Engelsk/Document%203/Eng_Doc_3_13_2003_2004.pdf</p> <p>(27) The Office of the Auditor General's follow-up of the parallel audit with the Accounts Chamber of the Russian Federation of the management of the fish resources in the Barents Sea and the Norwegian Sea (2010-2011). http://www.riksrevisjonen.no/Rapporter/Documents/2010-2011/Dokument%203/Dokumentbase_3_8_2010_2011.pdf</p> <p>(28) Annual report European Court of Auditors (ECA) http://eca.europa.eu/portal/pls/portal/docs/1/18320745.PDF</p>
OVERALL PERFORMANCE INDICATOR SCORE:	90
CONDITION NUMBER (if relevant):	

Appendix 1.2 Risk Based Framework (RBF) Outputs

RBF was not used for this fishery.

Appendix 1.3 Conditions

There are 6 conditions for this fishery.

Condition 1.

Performance Indicator	2.1.3 Retained species information score
Score	70
Rationale	<p>A number of species that are sensitive or vulnerable to population effects through fishing pressure are routinely captured as non-target bycatch in the fishery. Species affected include Redfish <i>Sebastes mentella</i> and <i>Sebastes marinus</i>, three species of wolf fish <i>Anarchicas</i> spp. – <i>A. lupus</i>, <i>A. minor</i> and <i>A. denticulatus</i>. Ray and skate species are also likely to be impacted, however the species that may be involved are uncertain in this case.</p> <p>Scoring issues c. and d. at SG80 require that information is adequate to support a partial strategy to manage main retained species and that sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy).</p>
Condition	There is insufficient data in relation to which species are captured and what quantities of each are concerned for both redfish and wolffish. There is no indication in the companies' landings data that skate and ray are landed however information on captured specimens for skates in particular is necessary in order to manage potential impacts on these species also.
Milestones	<p>1st Surveillance Audit: Have developed and implemented on-board all vessels a comprehensive Code of Conduct that includes clear guidance and instruction on recording of catches of redfish and wolffish as well as skates and rays during all tows and for all fishing trips while engaged on the cod fishery. The Code of Conduct should include specific instructions to crews as well as providing visual aids to assist in identification of species. Score 70.</p> <p>2nd Surveillance Audit: Data from the first year of implementation of the Code of Conduct in relation to sensitive or vulnerable bycatch should be available. Score 70.</p> <p>3rd Surveillance Audit: Data in relation to potentially vulnerable bycatch species should continue to be collected and results summarised for the second year of recording. Rescoring of the PI may be appropriate at this stage and the Condition may be closed out if the data show that levels of interaction are within acceptable limits. Score 80.</p>
Client action plan	<p>1st Year: A Code of Conduct for Incidental catches where it is said how the company will act to manage the incidental catches will be implemented on-board every ship. The whole crew will be instructed following this Code on Conduct, there will be a specific point where the crew will be instructed on how to recognize the different species with the use of visual aids. This instruction will be recorded in the Book of Incidental Catches. This Book will also contain guidance to recognize every different species that can be caught, guidance on how to proceed with those species and incidental catches where the skipper and/or officers will record all the incidental catches by tow. In that Log book, it will be recorded the quantities of incidental catches of redfish, wolffish, skates, rays and other species, its tow and the fishing area where it has happened.</p> <p>2nd Year: The Book of Incidental Catches will be accessible on the bridge of every ship. An analysis of the previous year's data will be done so all the areas with significant incidental catches will be localized. This information will be recorded in the chapter of Sensible Areas Detected of the Book of Incidental Catches. During this second year we will keep on recording on the log book as previous year all information related with the incidental catches so the process of localization areas will continue. The new members of the crew will be instructed on the Code of Conduct.</p> <p>3rd Year: The analysis and collection of data of incidental catches will continue. The localisation of areas with significant incidental catches will continue and all the new areas will be recorded with the previous detected areas. The new members of the crew will be instructed on the Code of Conduct.</p>
Consultation on condition	BOOK of INCIDENTAL CATCHES, referred chapters

Condition 2.

Performance Indicator	2.3.2 Endangered, Threatened and Protected species
Score	75
Rationale	Scoring issue c. at SG80 requires that there is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. There is no specific management strategy for ETP species within the fishery. There is no Code of Conduct in place.
Condition	Develop a management strategy for ETP species that is designed to meet national and international requirements and <ul style="list-style-type: none"> - ensures the fishery does not pose a risk of serious or irreversible harm to ETP species; - ensures the fishery does not hinder recovery of ETP species; and - minimise mortality of ETP species
Milestones	Year 1 – Have developed a suitable ETP management strategy that is proportionate to the threat that the fishery presents to ETP species. The strategy should capture elements of national and international requirements for ETP species that may be affected in the cod fishery and should detail how the fishery plans to avoid significant levels of negative direct and indirect impacts. The strategy should detail how incidents of capture are recorded and should provide for reporting on outcomes. Design and implement a suitable Code of Conduct. Score 70. Year 2 – Have implemented an ETP management strategy and Code of Conduct on all vessels in the fleet. Score 80.
Client action plan	1st Year: the skippers and officers will be informed about national and international regulations on ETP, a copy of this regulations will be accessible in the Book of Incidental catches log book. The code of conduct will be developed according to the changes in the regulations, the previous experience and the ship's limitation. The crew will be instructed on how to proceed according to the different levels of incidental by catches in order to prevent negative direct and indirect impact. It will be mentioned how the production on-board will be guided. It will be specified when the ship has to stop fishing in that areas and when the ship forbidden to fish in a specific zone and date. A copy of those instructions will be accessible in the Book of Incidental Catches. 2nd Year, The management strategy will be implemented in all the ships.
Consultation on condition	BOOK of INCIDENTAL CATCHES, referred chapters.

Condition 3.

Performance Indicator	2.3.3 Endangered, Threatened and Protected species
Score	75
Rationale	There are no data available to confirm the level of interaction by vessels with ETP species. There is no recording system in place for recording of interactions with ETP species with the certified fleet. Scoring issue c. at SG80 requires that information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.
Condition	Design and implement a recording system onboard all vessel that will detail all ETP species that may be encountered during fishing, together with photographic identification keys and interaction recording template. Recording templates should capture details such as location, date, species involved, circumstances and outcome.
Milestones	Year 1 – Have developed a suitable ETP recording system and implemented on-board all vessels in the certified fleet, recording of interactions to be required for all trips on all vessels in the cod fishery. Score 75. Year 2 – Have available summarised data from first year of recording of interactions. Score 80.
Client action plan	In the 1st year , we will create a chapter in the Book of Incidental Catches to record the species involved Incidental by-catches, the quantities of every incident and the coordinates. If in any incidental by catch there is a species that the members of the crew are not able to recognize they will take a photo or a sample and put it in the book and will ask specialist till this species is

Performance Indicator	2.3.3 Endangered, Threatened and Protected species
	recognized. In the Book of Incidental Catches there will be a chapter with a guide to identify the different ETP species. In 2nd and following years we will keep on recording data into the ETP incidental catches log book.
Consultation on condition	BOOK of INCIDENTAL CATCHES, referred chapters.

Condition 4.

Performance Indicator	2.4.1 Habitat outcome
Score	70
Rationale	The heavy trawl gear used by the fishery has the potential to cause damage to seabed habitats and associated communities. The location of the most vulnerable seabed communities (<i>Lophelia pertusa</i>) reefs within the Norwegian EEZ has been partially mapped and the main areas of representative habitats are closed to demersal trawling. Mapping is ongoing under the Mareano programme. The fishery largely takes place outside of the Norwegian EEZ, within the Svalbard Fishery Protection area (around Bear Island and the west coast of Svalbard in particular) and there may be additional areas of particularly vulnerable seabed habitats in this area. At SG80, 2.4.1 requires that The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
Condition	Implement a system for recording interactions with sensitive seabed types. For the purposes of this condition, sensitive habitats and communities could be taken as meaning those as listed by OSPAR at http://www.ospar.org/content/content.asp?menu=00180302000014_000000_000000 . Develop and Implement a Code of Conduct that requires recording and reporting of interactions. Provide data in relation to impacts through sampling of catch material and invertebrate fauna that indicates seabed types fished.
Milestones	Year 1: With independent scientific input, develop strategic approach to evaluating quantitative and qualitative impact /interaction of certified fishery with sensitive seabed habitats and communities of Svalbard fishery protection zone, including in particular biogenic reef forming fauna and deep sea sponge communities. Develop a plan that will generate practical information from catch material sampling in relation to seabed type and biological community through sampling of invertebrate fauna bycatch. Provide aggregated annual VMS plots of all fishing effort by the certified vessels engaged in the cod fishery for the first year of certification. Score=70. Year 2: Have implemented recording of interactions with sensitive seabed habitats through the Code of Conduct. Have implemented a project to sample seabed material and fauna captured in trawls in the SFPZ during a number of fishing trips. Provide aggregated annual VMS plots of all fishing effort by the certified vessels engaged in the cod fishery for the second year of certification. Score=70. Year 3: Have available data in relation to seabed interactions and invertebrate / seabed material catches for the main areas where the fishery takes place. Data should be generated from onboard sampling and should details species and numbers/volumes/biomass captured for individual hauls. Provide aggregated annual VMS plots of all fishing effort by the certified vessels engaged in the cod fishery for the third year of certification. Score=80.
Client action plan	In 1st year: we will create a Habitat Management Book where we will put in different chapters all the information related with the interaction between the ships and the habitats. This book will be used to collect all the practical information from catch material sampling in relation to seabed type and biological communities. This book will contain the following information; Vulnerable Habitat detected, code on conduct on how to prevent damages to vulnerables habitats and how to recognize vulnerables habitat, the crew instruction validation on recognizing vulnerable habitat area interaction, the latest legislation related to the vulnerable habitat management, scientific information about the possible type of vulnearbles habitat in Barents Sea, Svalbard and Norwegian Economic Zone especially what it referred to reef forming fauna, sea sponge communities and invertebrate catches and all the information related with the invertebrate fauna bycatch, a guide on how to proceed with the vulnerable area detected and a chapter where to record all the tow where the ship has interacted with an vulnerable habitat such as reef, sponges, deepsea fauna , seabed fauna, this information will be plotted on a map according to the VMS information of the season.

Performance Indicator	2.4.1 Habitat outcome
	<p>2nd year. We will implement a project to sample seabed fauna and material in the SFPZ in four trips. This information will be recorded in the Vulnerable Habitat Detection Log Book. The vulnerable habitat detection log book will keep on been the records. The vulnerable habitat detected document will be renewed with the new information. In the vulnerable habitat log book will recorded all the catches that have signs that there has been an interaction with a vulnerable habitat. The type of sign will be specified and samples of those evidences will be stored on board the ship.</p> <p>During the 3rd year the collection of all the data will continue and the analysis of this data will continue.</p>
Consultation on condition	We will have the Habitat Management Book on the bridge.

Condition 5.

Performance Indicator	2.4.2 Habitat management
Score	75
Rationale	Scoring issue c. at SG 80 requires that there is some evidence that the partial strategy is being implemented successfully. This has not been possible as there is insufficient evidence that a strategy is being implemented successfully.
Condition	There are no specific measures within the certified fleet that are designed to manage habitat impacts. Specifically, the Norwegian Regulation relating to bottom fishing activities in the Economic Zone of Norway, the fisheries zone around Jan Mayen and the Fisheries Protection Zone around Svalbard of 1 st July 2011 issued under sections 16, 36 and 47 of the Act of 6 th June 2008 No.37 relating to the management of wild living marine resources (Marine Resources Act) needs to be implemented across the certified fleet as a minimum. The regulation requires the fleet to calculate the quantity of indicators of vulnerable benthic habitats, as live coral and live sponge.
Milestones	<p>Year 1. Develop Code of Conduct that requires recording and reporting of habitat interactions with live corals and sea sponges in particular and implement requirement across all vessels active in the cod fishery. The client should implement a Code of Conduct that clearly sets out what actions crews are required to take if and when they encounter vulnerable seabed habitats during fishing operations. Score=70.</p> <p>Year 2. Demonstrate that the Norwegian Regulation relating to bottom fishing activities in the Economic Zone of Norway, the fisheries zone around Jan Mayen and the Fisheries Protection Zone around Svalbard of 1st July 2011 issued under sections 16, 36 and 47 of the Act of 6th June 2008 No.37 has been implemented in the fishery. Have available results from first year of implementation of recording of interactions through the Code of Conduct and also demonstrate that the Norwegian regulation is being complied with. Score=80.</p>
Client action plan	<p>1st year: We will develop and implement a Code of Conduct of habitat interactions. This Code on Conduct will be based on the Regulation, especially the ones applicable to the Norwegian economic Zone, the fish protection around Svalbard and the zone around Jan Mayen, and the ships limitation. This code will involve the whole crew that interacts with the net operations; it will be specified how the crew member that see the net content must act and how the captain or first officer must act in case there are evidences of interaction with a vulnerable habitat, with special attention if the interaction is with live corals and sea sponges.</p> <p>2nd year: We will analyse the data recorded. We will check that the data provided by the ship are in accordance with the scientific studies. We will do the necessary modifications to comply with the Marine Resources Act, those modification will be recorded in the Habitat Management Book as strategies to avoid vulnerable habitats.</p>
Consultation on condition	We will have on the bridge the Habitat Management Book.

Condition 6.

Performance Indicator	2.4.3 Habitat Information
Score	75
Rationale	At SG80 for scoring issue a. the CR requires that the nature, distribution and vulnerability of all main habitat types in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery. It has not been possible to score this issue at SG80. The assessment found that there were significant knowledge gaps in relation to seabed habitats and communities in some of the areas fished by this fleet. In order to ensure that the fishery does not pose any long-term threat to sensitive habitats or species, a Condition was raised in particular in relation to the activity of trawling in the Svalbard Fishery Protection Zone, where the majority of the certified catch is taken.
Condition	Requires recording of information in relation to seabed habitat types and vulnerable seabed habitats in particular that the fishery interacts with. It is intended that additional information will allow the scoring of issue c. at SG80.
Milestones	Year 1 – design and implement recording system within the Code of Conduct for recording anecdotal information in relation to seabed habitats. Score = 70. Years 2, 3 and 4 – record detailed information on an ongoing basis with regard to the seabed types encountered in specific locations. The data should be summarized annually and special attention should be paid to recording sensitive or vulnerable seabed habitat types. At the end of the period the data should be entered into a GIS or similar tool for presenting knowledge on seabed habitats gathered from fishing operations. Score=80.
Client action plan	1st year: The Code on conduct will be implemented, and the interactions with the seabed will be recorded in the Vulnerable Habitat Detection Log Book, those record will include the place where there's been an interaction with a vulnerable habitat, the evidences that demonstrate this and the date. We will have a map of the vulnerable habitat situation in the Habitat Management Book so the captain and officers can consult it. There the type of seabed vulnerability will be specified. The following year, the record of this information will continue and also the analysis of the data obtained. This process will go until completing a plot map with all the vulnerable areas in the fishery area we have had interaction.
Consultation on condition	We will have the Habitat Management Book on the bridge.

Appendix 2. Peer Review Reports

Peer Reviewer 1

Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes	Certification Body Response
<u>Justification:</u> The fishery reaches or exceeds 80 points for each of the principles of the MSC , which indicates that the conclusion is correct		FCI Comment: No response required

<i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i>	Yes	Certification Body Response
<u>Justification:</u> There are six conditions, all of them related to the Principle 2 of the MSC standards. I consider that the conditions are properly written to achieve the SG80 outcome on schedule.		FCI Comment: No response required

If included:

<i>Do you think the client action plan is sufficient to close the conditions raised?</i>	Yes	Certification Body Response
<u>Justification:</u> All client actions are perfectly detailed and are sufficiently clear so that the client can execute on time		FCI Comment: No response required

General Comments on the Assessment Report (optional)

The assessment report is very well structured, clear and concise in their conclusions and recommendations. The three principles of the MSC have been resolved with high technical ability and a great knowledge of the standard.

FCI Comment: Peer Reviewer 1 comment noted in this regard.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.1.1	Yes	Yes	NA	The score of this PI is 100. The information available is relevant and sufficient enough for scoring this PI appropriately. The ICES information available (2012) is the best and most updated one.	FCI Comment: No response required
1.1.2	Yes	Yes	NA	The certifier gave a score of 80 for this PI. The reference points used are accurate for this stock according to the information available. The Atlantic cod fisheries has been successfully evaluated by ICES for the last decades, as opposed to the management problems faced in the past by the mentioned fishery.	FCI Comment: No response required
1.1.3	-	-	NA	NA	
1.2.1	Yes	Yes	NA	The certifier gave a score of 85 for this PI. The harvest strategy in place is robust and precautionary but the management plan has only two years. It would therefore be necessary more time to have a better scenario in the fishery in the longer term. The 85 is correct. The information available used is sufficient for this PI	FCI Comment: No response required
1.2.2	Yes	Yes	NA	The certifier gave a score of 80 for this PI. ICES information available is sufficient for this PI. Harvest control rules in place are adequate. However, with the results of the implemented measures it still would not be possible to have enough	FCI Comment: No response required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				information to exceed 80 for this PI.	
1.2.3	Yes	Yes	NA	The certifier gave a score of 90 for this PI. There are enough information to support the harvest strategy according to the PI evaluation. In addition to the information available from ICES, there are sufficient scientific publications on this fishery so, it is considered that the outcome is well documented.	FCI Comment: No response required
1.2.4	Yes	Yes	NA	The certifier gave a score of 90 for this PI. The information available in scientific forums, mainly ICES, is adequate for scoring this PI. The stock status assesment is annual and is subject to internal peer review.	FCI Comment: No response required
2.1.1	Yes	Yes	NA	The certifier gave a score of 80 for this PI. There is sufficient information about retained species in this fishery. The five MSC certification for cod in the North Atlantic exist and the ICES reports are taken into account in the rationale/explanation for this PI. I consider that this is the best information available.	FCI Comment: No response required
2.1.2	Yes	Yes	NA	The certifier gave a score of 85 for this PI. There is an appropriate level of information available with respect to the catch of retained species but the strategy in place is partial. I consider that the information used an the	FCI Comment: No response required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				rationale/explanation for this PI is adequate.	
2.1.3	Yes	Yes	Yes	The certifier gave a score of 70 for this PI with one condition raised. There is sufficient related information available to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species. The others MSC certifications included in the references support technically the score proposed.	FCI Comment: No response required
2.2.1	Yes	Yes	NA	The certifier gave a score of 100 for this PI. I consider that all the relevant information available was used. There are no bycatch species in this fishery similarly to the expressed in others certifications of Barents sea cod have also scored this PI at 100.	FCI Comment: No response required
2.2.2	Yes	Yes	NA	The certifier gave a score of 80 for this PI. All the relevant information available was used.	FCI Comment: No response required
2.2.3	Yes	Yes	NA	The certifier gave a score of 80 for this PI. The information used in campaigns AZTI observers should be sufficient for the purpose of this PI scoring. However, it would be appropriate to incorporate the references used for a better understanding of the data presented.	FCI Comment: additional references have been inserted.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.3.1	Yes	Yes	NA	The certifier gave a score of 85 for this PI. They are not evidences that ETP species are regularly captured in the fishery. I consider that all the relevant information available was used for this PI. The references used are enough for this PI.	FCI Comment: No response required
2.3.2	Yes	Yes	Yes	The certifier gave a score of 75 for this PI with one condition raised. The information used to complete the question for this PI is adequate. The conditions raised are clear and concise and their compliance should serve to achieve the SG80.	FCI Comment: No response required
2.3.3	Yes	Yes	Yes	The certifier gave a score of 75 for this PI with one condition raised. The information used to complete the question for this PI is adequate. The conditions raised are clear and concise and their and compliance should serve to achieve the SG80.	FCI Comment: No response required
2.4.1	Yes	Yes	Yes	The certifier gave a score of 70 for this PI with one condition raised. The use of trawl gear determines the outcome of this performance indicator. Harmonization with other MSC certification of the same stock determines the same result. Therefore, The same conditions as for the other evaluations have been applied. Existing information is clear and comprehensive for understanding the indicator score. The	FCI Comment: No response required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				condition proposed are achievable the SG80 within the proposed timeframe. Note an error in the numbering of the proposed condition. The correct number would be 4.	
2.4.2	Yes	Yes	Yes	The certifier gave a score of 75 for this PI with one condition raised. The information and the rationale used adequately supported the score given. I consider adequate the condition proposed for this performance indicator and should be achievable the SG80 within of the timeline proposed. Note an error in the numbering of the proposed condition. The correct number would be 5.	FCI Comment: error corrected.
2.4.3	Yes	Yes	Yes	The certifier gave a score of 75 for this PI with one condition raised. As in the previous case, the information and the rationale used, adequately support the score given. I consider adequate the condition proposed for this performance indicator and should be achievable the SG80 within of the timeline proposed. Note an error in the numbering of the proposed condition. The correct number would be 6.	FCI Comment: error corrected.
2.5.1	Yes	Yes	NA	The certifier gave a score of 90 for this PI. I consider that all the relevant information available has been used to score this indicator while I support the given scoring. The information used is fully supported with the included references list .	FCI Comment: No response required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.5.2	Yes	Yes	NA	The certifier gave a score of 90 for this PI. I consider that all the relevant information available has been used to score this indicator, and supports the given scoring. The information used is fully supported with the included references list.	FCI Comment: No response required
2.5.3	Yes	Yes	NA	The certifier gave a score of 90 for this PI. The certifier gave a score of 90 for this PI. I consider that all the relevant information available has been used to score this indicator, and supports the given scoring. The information used is fully supported with the included references list.	FCI Comment: No response required
3.1.1	Yes	Yes	NA	The certifier gave a score of 95 for this PI. this performance indicator has been developed with the best available information. The study area has a comprehensive and transparent regulatory framework. Therefore, I consider that the score given is fully supported on existing information and this has been adequately explained in the evaluation of this PI.	FCI Comment: No response required
3.1.2	Yes	Yes	NA	The certifier gave a score of 100 for this PI. Available information proves that the management system is completely coincident with MSC requirements for this indicator. I believe that the references used to develop this indicator should be enlarged.	FCI Comment: additional references have been inserted.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
3.1.3	Yes	Yes	NA	The certifier gave a score of 85 for this PI. Information used for the development of this indicator is adequate. The references used are appropriated for this PI.	FCI Comment: No response required
3.1.4	Yes	Yes	NA	The certifier gave a score of 80 for this PI. I consider that all the relevant information available has been used to score this indicator, and supports the given scoring.	FCI Comment: No response required
3.2.1	Yes	Yes	NA	The certifier gave a score of 90 for this PI. The Information used shows that the fishery has clear, specific objectives to achieve the results of MSC's Principles 1 and 2. I consider that all the relevant information available has been used to score this indicator and supports the given scoring. The information used is fully supported with the included references list .	FCI Comment: No response required
3.2.2	Yes	Yes	NA	The certifier gave a score of 90 for this PI. Information used shows that the fishery-specific management system including effective decision-making processes (a esta frase parece que le falta algo). I consider that all the relevant information available has been used to score this indicator and supports the given scoring. The information used is fully supported with the included references list i.	FCI Comment: No response required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
3.2.3	Yes	Yes	NA	The certifier gave a score of 95 for this PI. Information used shows that the there is a MCS mechanisms adequated (no se entiende esta frase). I consider that all the relevant information available has been used to score this indicator and supports the given scoring. The information used is supported with the included references list .	FCI Comment: No response required
3.2.4	Yes	Yes	NA	The certifier gave a score of 90 for this PI. The nformation used shows that the fishery has a research plan according to the PI objectives. I consider that all the relevant information available has been used to score this indicator and supports the given scoring. The information used is supported with the included references list.	FCI Comment: No response required
3.2.5	Yes	Yes	NA	The certifier gave a score of 90 for this PI. I consider that all the relevant information available has been used to score this indicator and supports the given scoring. The information used is not supported with references list and It should be incorporated .	FCI Comment: additional references have been inserted.

Peer Reviewer 2

Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes	Certification Body Response
<p><u>Justification:</u></p> <p>The overall scoring in this assessment is justified by the evidence presented, though more information needs to be provided in the comments against many of the SG100 PIs, rather than just referring to the corresponding SG80 PI (especially where SG80 is satisfied, but SG100 is judged not to be). I am also concerned that scoring on some aspects of the fishery's management is coloured by the client's frustration about quota allocation, when the system otherwise appears to be operating well in relation to MSC principles and criteria.</p>		<p>FCI Comment: Additional scoring commentary has been provided for SG100 scores not achieved where this is appropriate according to the CR. It can be considered that system operates well in relation to MSC principles and criteria but, in order to give a clearer description of the situation, the report also includes details that reflect the client's "concern" about quota allocation methods (not "frustration"). This concern appears here as a result of harmonisation with previous assessments too (UK Fisheries Ltd/DFFU/Doggerbank Northeast Arctic cod, haddock and saithe)</p>

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	No	Certification Body Response
<p><u>Justification:</u></p> <p>Condition 1 does not address the shortfall of information needed to manage potential impacts on retained species, and needs to be rewritten to require an appropriate Code on Conduct to be implemented and the results analysed, as laid out in the Milestones.</p> <p>Conditions 2 and 3 OK</p> <p>Conditions 4, 5, and 6 are concerned with habitat impact outcome, management and information respectively, and there is quite a lot of overlap in the requirements put on the fishery and in the Client's Action Plan. In order to help the client expedite this plan, I suggest that these conditions, milestones and the action plan are revisited to more clearly identify what is required for each PI.</p>		<p>FCI Comment: The condition explicitly requires a Code of Conduct to be implemented by the client fleet as it has been written. The Condition explicitly addresses the information that is required in order to meet with SG80 for scoring issues c. and d. Data in relation to catches of retained species will be recorded separately in an on-board log. The client has undertaken to carry out analysis of data in the Client Action Plan.</p> <p>Conditions 4 is specific to the Habitats outcome PI. Milestones are different for each PI where appropriate. The CR requires that each PI scoring <80 will have its own condition. It is somewhat inevitable that there is overlap between conditions that relate to PI under the same component, especially Conditions 4 (2.4.1 - outcome) and Condition 6 (2.4.3 - information). Scoring of Condition 2.4.1 requires additional information to achieve SG80 if that score is appropriate. Scoring issue a. for 2.4.3 specifically requires that the nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery. Hence the condition also requires recording of habitat interaction detail within the fishery. The client action plan in relation to Conditions 3 and 4 has been amended.</p>

Do you think the client action plan is sufficient to close the conditions raised?	No	Certification Body Response
<u>Justification:</u> Condition 1. OK, but could be better worded. Condition 3. Is about ETP species, not sensitive seabed habitats and communities (belongs to Condition 4 or 6). An appropriate ETP species action plan is required. Conditions 4, 5 and 6. See above.		FCI Comment: all conditions have been reviewed and changes have been made to the condition and/or client action plan where this has been indicated and has been deemed appropriate by the assessment team.

General Comments on the Assessment Report (optional)

Overall: Whilst the information presented as background to this assessment is comprehensive, it is very repetitive with respect to some issues (see below), which has resulted in conflicting statements. There is also a great deal of detail on some elements that are not particularly relevant to the assessment. It would help the reader (and peer reviewers) considerably if a thorough editing job was performed at this stage to make sure that the report dealt with only salient information and evidence, simply and without undue repetition.

FCI Comment: the report follows a predetermined template and hence there may be repetition. While information may be presented more than once, this avoids the need to search for disparate information in different sections of the report.

Glossary: is rather extensive, and some acronyms do not appear in the report. Please check, and also omit any that just appear once.

FCI: the glossary has been reviewed and amended where appropriate.

Conditions & Recommendations: could usefully be expanded. For example, you have already stated that the fishery is very clean, with around 98% of catches being cod and 1% being haddock. So, a brief explanation of what is further required for retained species information (species identification of *Sebastes* and wolffish) would aid understanding. Similarly, what (briefly) is inadequate about management and information on ETP species (rays?) and habitats status? This would help to balance the rather glowing account of the fishery's attributes. You made one recommendation with respect to haddock catches, which should be outlined here.

FCI Comment: It is assumed that the PR is referring to Section 6.3."Conditions and Recommendations". These are outlined in Section 6. Conditions are detailed further in Appendix 1.3 together with the Client Action Plan. The one Recommendation is outlined in the relevant section of the report. It is not referred to in Appendix 1.3 as this refers to 'Conditions' (only).

What additional information may be required regarding retained species is detailed in the relevant Condition in Appendix 1.3. The same is true for the Conditions that relate to ETP management and information. To add in this information under 6.3 would lead to further repetition which the assessment team and FCI template strives to minimise. The fishery's positive attributes are balanced by the narrative of the body of the report, scoring and associated justifications which clearly demonstrate where the fishery falls short of the standard.

3.2.1 Fishery Ownership: you have made it clear that the UoC involves only the Northeast Arctic cod stock (IVES Sub-areas I and II). Why refer to the NAFO cod stock?

FCI Comment: NAFO cod is referred to as the client company owns entitlement to NAFO cod. That is of direct interest in the context of traceability as the client fleet are deep sea processing vessels. NAFO cod also features in the development of the deep sea cod fishery by Spanish vessels and the Barents Sea fishery while separate to NAFO was part of the range of cod stocks pursued and exploited historically by Spanish deep sea vessels.

I'm not sure if much of the information in "History of the fishery", "Organisational structure" and "Changes in circumstances subsequent to the site visit" is actually relevant to this assessment (it doesn't really matter how the fishery came to be what it is today, and the ownership switches are very confusing), and it really only requires a brief summary of the ownership and fleet structure (i.e. 3 vessels?) as it stands for the current assessment to be presented.

FCI Comment: The report follows a predetermined template design and all FCI assessment reports incorporate these sections, with the exception of the section "Changes in Circumstance". This section was introduced to reflect the fact that a significant expansion of the certification in terms of vessels and quotas occurred after the site visit and this needed to be captured and explicitly referred to in the report so as that all stakeholders were made clearly aware of the development. The decision to report on this was taken after considerable discussion and dialogue on the matter with MSC.

It is not useful to keep reiterating (again and again) what fraction (to 6 decimal places) the client's allocation is of the Spanish NE Arctic cod quota, and detail such as "The acquisition increased the entitlement of Pesquera Ancora S.L to Spanish quota for NE Arctic cod to 51.6148% and that for the AGARBA client group to 66.5135% from the pre-purchase entitlement of 39.04%" is confusing and surely irrelevant when the UoC's quota clearly represents <1% of the Sub-area I&II cod TAC (as you later note). You later (page 55) state that the client group has 66.5% of the Spanish NEA cod quota for 2013 (12,653 t), which looks like some 8,414 t. So why do you say that AGARBA could fish around 7,000 t of NEA cod in 2013, and what relevance to this assessment has the 2,019 t of cod quota in NAFO waters?

FCI Comment: NAFO cod are referred to because NAFO cod is part of the distant water cod entitlements that are held by Spanish fishing companies and this needs to be explicitly referred to as it is relevant in the context of traceability (Chain of Custody) and represents a potential risk that needs to be (and is) referred to in the report. NAFO cod is also traded or exchanged with other Spanish companies for Barents Sea cod and the final catch entitlements of vessels and in part determined by exchanges of NAFO cod quota for Barents Sea cod quota. The fact that UoC may represent <1% of the Sub-area I&II cod TAC is irrelevant – this assessment is required to report fully on the fishery under assessment, no matter how small it may be in the overall context.

The Spanish cod quota is distributed among Spanish companies on the basis of a Ministerial Decree regulating the cod fleet's fishing activity. This legislation includes four decimal places and companies get used to it not accepting any rounding up.

It is important that you show the UoC's fishing areas somewhere, and Figure 10 - Distribution of fishing effort for the Arosa Nueve for 2012 whilst engaged in directed fishing for northeast Arctic cod – needs a more informative caption. What do the different colours on the track plot represent?

FCI comment: additional detail has been added to the Figure that better explains the information presented.

Fishing Practices: I understand that this draft report remains to be edited, but it is impossible to review it adequately if there are too many areas that create confusion. You state that the fleet included within the scope of this certification includes 3 vessels, and then provide a table (1) showing 4 vessels (is “Arosa Doce” one of a pair trawl team with Arosa Nueve?), and refer to two vessels on page 44. At this stage of the assessment process it should not be necessary to contact FCI for an up to date vessel list.

FCI Comment – error/s with respect to vessel numbers has been corrected. Any confusing/conflicting text has therefore been rectified in this regard.

This issue is, tediously, dealt with again on pages 54-55, which probably better explains why there are now 4 vessels in the UoC. Some simplification is required (i.e. just how many vessels are in the UoC, which they are, and to what company do they belong at the time of the assessment?).

FCI Comment: the issue is referred to again in page 54 under Principle 3 as it is of specific relevance to the evaluation of the fishery's performance against P3. Reference to vessel numbers and quota entitlement is therefore appropriate at this point of the report also. The matter concerning numbers of vessels is quite simply and clearly detailed in Section 3.2.2 under 'Fishing Practices'. Earlier error in this section has been corrected (see above) and no further clarification should be necessary and no further amendments are made.

Under **Status of stocks**, you state that TACs (the main control on exploitation) are set according to well-defined, agreed harvest control rules agreed by the JRNFC. However, this HCR is set against Fpa and Bpa, and not MSY, though stock status is assessed against B_{MSY} and F_{MSY} .

FCI Comment: This is correct. It is not a requirement that the HCR explicitly includes MSY reference points, but the HCR must achieve objectives based upon MSY. The interpretation we apply on stock status is based on MSY as required for certification.

I suggest that section **3.3.3 History of the Fisheries and Management** is redundant, and any information that is not presented elsewhere (very little) is moved to the appropriate section. It is all covered again on pages 53-55, which also needs to be streamlined.

FCI Response: Section 3.3.3 is a component of the FCI full assessment reporting template. The template has been developed in accordance with the CR and all pertinent information is presented at the appropriate stage in the report. This may lead to information being presented on more than one occasion.

P2. Ecosystem interactions: it seems out of place to start this section with lists of species with which the fishery may interact, and then to present detailed information as to how these lists were compiled (and repeat the lists).

FCI Comment: CB 3.1.1 and CB 3.1.2 set out the requirement to detail how each species that interacts with the fishery needs to be treated in the assessment. The layout explicitly addresses this and is therefore appropriate in design and point of insertion in the report.

You state here that no discard species have been identified during the assessment as all catches are landed. This is at odds with previous statements, which note that discarding may introduce uncertainty in the (cod) assessment, and that some species can legally be returned alive to the sea (though discarding of unwanted catch is considered unlikely to occur at significant levels).

FCI Comment: Principle 2 deals with discarding of species other than the target stock. Cod is the target stock hence reference to this stock is not relevant at P2. Some species may be legally discarded in the NEZ and SFPZ.

Under **3.4.2 Bycatch**, you state that section 48 of the 2012 *Regulations amending the regulations relating to sea-water fisheries* lists all species that must be landed, which infers that some species can be discarded at sea. Obviously, this list covers all species reported (landed) for the fishery under assessment, but what about those that are not?

FCI Comment: the assessment team received no information or indication from any stakeholder that any species that may not be discarded is actually discarded. Independent observer data provided to the assessment does not indicate that there is any significant level of discarding or that there are species that are on the list referred to as discarded.

You state here that the fishery has voluntarily elected to use 150mm in Norwegian and Svalbard waters, but say 145 mm elsewhere (the minimum legal mesh size permitted being 135mm). Which is it?

FCI Comment: 145mm generally but it may be up to 150mm. The text has been amended accordingly.

Note that Figure 11 - Location of known deepwater coral reefs in the northern Norwegian economic zone - appears to be the same as Figure 12 - Location of a range of vulnerable habitats in the south-western Barents Sea, and that Figure 13 - Location of known deep-water coral reefs *Lophelia pertusa* in the south western Barents Sea, actually shows deep-sea sponge aggregations. This needs sorting out.

FCI Comment: Figures renumbered, duplication has been removed.

P3. Management: on page 22 you state that the international TAC for Northeast Arctic cod in 2012 was agreed by the JNRFC at 715,000t, and at page 53 that total quota (TAC) for NEA cod in 2013 has been set at 1,000,000 t, 40% above the 2012 TAC and 60,000 t above the level advised by ICES calculated on the basis of the joint management strategy previously set by the JNRFC. However, the HCR for this stock does not allow the TAC to be changed by more than +/- 10% compared with the previous year's TAC, unless F is lower than 0.30, in which case the TAC should be increased to a level corresponding to F of 0.30. Is this the case for 2013 (as you later suggest), or is the HCR not effective?

FCI Comment: Yes, it is the case for 2013. The HCR can be considered effective and, as stated on page 53, "This condition applies for 2013"

Under **3.5.4 Incentives for sustainable fishing**, you say that linking the fishing opportunities for foreign vessels to negotiations in which an assessment is made considering external issues to the management of the resource does nothing to encourage the sector to act sustainably. You seem to be concerned here with the stability for the AGARBA fleet because of the quota assignment mechanism under EU-Norway agreements. Is this actually a threat to sustainable fishing with respect to the status of the stock?

FCI Comment: We do not consider this as a threat to sustainable fishing. Under PI 3.1.4. "Incentives for Sustainable Fishing" we have to consider, among other issues, if the system have attributes, policies or principles that engender a sense of stewardship of the resources (i.e. policies that attempt to provide stability and/or security for fishers). This is not the case but, as stated on the report, the management system also includes other mechanism that ensures that fishers do not fish unsustainably.

Under **3.5.7 Compliance and enforcement**, you explain the system but do not provide any evidence that the client vessels comply. Have you checked this with the Norwegian authorities, who were not included in the site visit or in your list of stakeholders consulted?

FCI Comment: the assessment team had the opportunity to check the reports of the inspections on board during the site visit and also to discuss about infringements with the Spanish fisheries authorities responsible for AGARBA vessels. No evidences of noncompliance by AGARBA vessels arose. The Directorate of Fisheries in Norway was contacted during this process.

At **6.3 Summary of Conditions** it would be useful to present the conditions, or at least refer to Appendix 1.3.

FCI Comment: reference has been added to the relevant Appendix (Appendix 1.3).

Performance Indicator Review

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.1.1	Yes	Yes	NA		FCI Comment: No response required.
1.1.2	Yes	Yes	NA		FCI Comment: No response required.
1.1.3	NA	NA	NA		FCI Comment: No response required.
1.2.1	Yes	Yes	NA		FCI Comment: No response required.
1.2.2	No	Yes	NA	I agree with the score given, but in view of the comments against SG100 at 1.1.2, and my comments above with respect to the HCR being relaxed if $F < 0.3$, I think that the comments here could be strengthened.	FCI Comment: The text has been changed to improve the comments.
1.2.3	Yes	Yes	NA	Note that much of the evidence presented against SG80b more properly belongs to PI 1.2.4.	FCI Comment: Data and the stock assessment method are closely related. Here we are trying to consider the link between them: whether the data are sufficient for the assessment.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.2.4	No	No	NA	SG100a requires that the assessment is appropriate for the stock and for the HCR, which centres at high stock abundance around the accuracy of the estimate of F. Given the number of (admittedly minor) uncertainties you mention, is the assessment sufficiently robust (in estimating F)?	FCI Comment: We do not carry out a technical review, and are guided in scoring by the working group and assessment reviewers' comments. We also compare to best practice rather than absolute performance. What makes this assessment unusual is the incorporation of predation information of a key predator – cod itself. This allows the assessment to include a more accurate estimate of M, which should lead to a more accurate estimate of F. There are always problems in stock assessments, but we believe this attribute does lead to a better assessment, more accurate F estimate and deserves recognition here.
2.1.1	Yes	Yes	NA		FCI Comment: No response required.
2.1.2	No	No	NA	It is not clear from the comments against SG80a that SG100a is not satisfied. Appropriate comments are needed to justify the No score here, and for SG100d.	FCI Comments: Scoring at SG100 considers ALL retained species not just main so scoring at SG100 has not been possible. Comments added for SI and at SG100.
2.1.3	Yes	No	Yes	SG60 and SG80 are concerned with main retained species only, and your comments with respect to wolfish and redfish catches are only relevant to	FCI: the assessment team concluded that there were vulnerable components in the retained catch that warranted consideration as main retained. GCB3.5.2

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				SG100. In which case, a score of 80 and no condition is indicated. By all means include a recommendation, even if catches of these species by the client fleet are so low that they do not pose a threat to the respective stocks. It is not necessary to mirror conditions in other similar assessments.	refers. No change is appropriate.
2.2.1	Yes	Yes	NA		FCI Comment: No response required.
2.2.2	No	No	NA	I fail to see how, with a score of 100 for 2.2.1 and the reasoning behind this, that any of the SG100 PIs are not satisfied. There is a clear strategy for managing and minimising bycatch, and evidence that it is working, implemented, and achieving its objectives (i.e. no discards). What more is required?	FCI Comment: The assessment team that there was no clear strategy for managing bycatch by the certified fleet, although there was a partial strategy. GCB3.3. A strategy requires a cohesive and strategic arrangement. There is no Code of Conduct in place within the fishery and no reference is made anywhere within the fisheries management policy to managing bycatch explicitly. Scoring at SG100
2.2.3	No	No	NA	You provide no information or evidence that SG100 is or is not satisfied, and appropriate comments are required here. Comments against 2.2.1 suggest that a higher score is warranted.	FCI Comment: SG 100 refers to all bycatch species, not just main. Information is not collected with appropriate frequency or all potentially discarded species including those that can be legally discarded. Levels of discarding are not verifiable for the most part, although there is general understanding

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					supported by some evidence. Comment added at SG100.
2.3.1	Yes	No	NA	Once again you fail to provide commentry against SG100 when the corresponding SG80 criteria are judged to be satisfied and your comments provide no evidence with respect to SG100 criteria.	FCI Comment: SG100 has been scored. Some additional comments have been added however.
2.3.2	Yes	No	Yes	You say that, while the scale of the interaction with vulnerable elasmobranch species is believed to be small, there is an incomplete management strategy identified through the absence of an appropriate Code of Conduct, which means that the fishery falls short of SG80a. If there is no strategy in place for managing the fishery's impact on ETP species, how can SG80b&c be satisfied (requiring the strategy to work, and be implemented)? Again, evidence is not presented to justify the scores at SG100.	FCI Comment: we have judged that that there is a partial strategy that is in place (GCB3.3) which is expected to deliver the results in accordance with a full strategy as the fishery present as low risk overall to ETP species. However, to meet with a strategy there must a strategy that is cohesive and strategic in its arrangement and which is appropriate to the scale, intensity and cultural context of the fishery. A large commercial fishery of this nature can reasonably be expected to have an operational Code of Conduct that explicitly refers to ETP species management, irrespective of the understood performance of the fishery with respect to outcome.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.3.3	No	No	Yes	No evidence is presented to justify the scores at SG100.	FCI Comment: All issues have not achieved SG80 so scoring is not necessary at SG100.
2.4.1	Yes	Yes	Yes		FCI Comment: No response required.
2.4.2	Yes	No	Yes	No evidence is presented to justify the scores at SG100.	FCI Comment: All issues have not achieved SG80 so scoring is not necessary at SG100.
2.4.3	Yes	No	Yes	SG80: You do not provide evidence that there is reliable information on the location of use of the fishing gear (e.g. VMS charts of fishing activity for all vessels). It is doubtful is knowledge of cod stock status can be used an indicator of risk to seabed communities and habitats. Effort could intensify, or be reduced as quotas fall. Evidence needs to be presented to justify the scores at SG100 when SG80 is satisfied.	FCI Comment: A VMS plot for 2012 for the only vessel that was operating in the fishery at the time of assessment has been provided in the report. Cod stock status change can indicate change in risk to seabed communities and habitats – if effort intensifies due to quota increases the risk likely increases for some habitats and communities. The converse may be true in periods of quota reduction. SG80 has not been satisfied so scoring at SG100 is not required. CR27.10.5.3
2.5.1	Yes	No	NA	Please give reasons for the score of 90, rather than 100.	FCI Comment: The PI contains a single scoring issue, it has been partially scored. The assessment team determined that a score of 90 was appropriate having reviewed information provided and the assessment team judge that the justification supports a score of

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					90. Score unchanged.
2.5.2	Yes	No		I fail to see any evidence presented against SG80 that leads to the conclusion that SG100c,d are not satisfied. This needs to be clearly presented at SG100	FCI Comment: evidence has been provided at SG100 in respect of both scoring issues. No specific information has been provided to the assessment team in order to score this issue at SG100. This scoring issue refers to measures while at SG80 it refers to a partial strategy. The CR is unclear in this regard.
2.5.3	No	No		If PI 2.5.2 SG100 a,b (there is strategy in place, which -- is based on well-understood functional relationships between the fishery and the Components and elements of the ecosystem) is satisfied, there must be information that is sufficient to support the development of strategies to manage ecosystem impacts (SG100d).	FCI Comment: While there are strategies in place to manage the ecosystem impacts of fishing, information collection is not considered adequate to allow for on-going assessment of risk and modification of existing strategies in light of uncertainty and change, for example climate change.
3.1.1	Yes	Yes	NA		FCI Comment: No response required.
3.1.2	Yes	Yes	NA	The concerns about the consultation process, expressed at SG100b,c appear to be specific to the Spanish	FCI Comment: This concern is not specific to the Spanish cod fishery but to the European fleet operating in Norwegian waters. Under the Common

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				cod fishery operating in Norwegian waters. Is there evidence that other "external" fisheries have the same problem?	Fisheries Policy, the only valid interlocutor for fisheries agreements is the EC and not the different Member States.
3.1.3	Yes	Yes	NA		FCI Comment: No response required.
3.1.4	Yes	No	NA	Whilst the score of 80 might be justified here, a clearer explanation of the reasons is required. I would have thought that responsibility, peer pressure, fear of sanctions, etc. all result from operation of the management system. In which countries are fuel tax exemptions for fishing vessels thought to contribute to unsustainable fishing? I have the impression that the assessment team is not sufficiently objective in this respect.	FCI Comment: the assessment team has reflected different facts that are considered relevant to scoring this PI in accordance with the Guidance to the MSC Certification Requirements. There are some positive issues underlined and others that do not "act as positive incentives". Of course, no "obviously perverse incentives" were found. Following the recommendations of the Guidance to MSC Certification Requirement, the team does not pretend to identify and classify all subsidies in the fishery under evaluation.
3.2.1	Yes	Yes	NA		FCI Comment: No response required.
3.2.2	Yes	No	NA	Against SG80b, you suggest that the regulatory system for fisheries management in Norway cannot be	FCI Comment: This is not a Spanish point of view at all. In fact, the unequal distribution of haddock quota does not affect Spain. This issue comes from the

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				considered that respond to "all issues" (SG100) with transparency due to the recent experiences of unequal distribution of haddock quotas without consultation or explanations. Is this simply a Spanish viewpoint?	need of harmonisation with other overlapping certifications (Fishery for Northeast Arctic cod (<i>Gadus morhua</i>), haddock (<i>Melanogrammus aeglefinus</i>) and saithe (<i>Pollachius virens</i>) by UK Fisheries, DFFU and Doggerbank. May 2012)
3.2.3	Yes	No	NA	There is nothing in the comments against SG80a that indicate SG100a is not satisfied.	FCI Comment: Some additional comments have now been added in SG100a on page 145.
3.2.4	Yes	Yes	NA		FCI Comment: No response required.
3.2.5	Yes	No	NA	Against SG100a, you mention the lack of discussions about equal access to the resources (quota opportunities), an issue which you have raised against several PIs. This seems to be inappropriate here, where there do appear to be mechanisms that evaluate all parts of the management system, even if the client fleet is no happy with	FCI Comment: As a relevant part of the management system different fishery-specific, research plan, feedback and response could be included. Therefore the assessment team do not consider inappropriate here to mention the lack of discussion about quota opportunities (lack of exchange of information between the community and the management institution). Again the assessment team have

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				the outcome.	considered the need of harmonisation with other overlapping certifications (<i>UK Fisheries DFFU and Doggerbank NEA cod, haddock and saithe</i>)

Any Other Comments

Comments	Certification Body Response
As can be seen above, I am concerned that scoring against the SG100 PIs in many elements of the scoring table has not been justified by specific comments. This is OK for SG60 PIs if they are clearly satisfied and reference is made to SG80 or even SG100 comments, but where SG80 is satisfied, specific comments are needed against SG100 to demonstrate why the fishery fails at that level.	FCI Comment: comments are not required in all cases referred to where scoring has not achieved SG100. Text has been added in those places where it is appropriate.

Appendix 3. Stakeholder submissions

a. Written submissions from stakeholders received during consultation opportunities on the announcement of full assessment, proposed assessment team membership, proposed peer reviewers, proposal on the use or modification of the default assessment tree and use of the RBF.

None received.

b. All written and a detailed summary of verbal submissions received during site visits pertaining to issues of concern material to the outcome of the assessment regarding the specific assessment.

None received.

c. Explicit responses from the assessment team to submissions described in **a.** and **b.** above.

None received.

Appendix 3.1 Amendments made to the PCDR following stakeholder consultation

MSC

Received: Thu 29/08/2013 14:50

From: Sergio Cansado

Subject: Updated Version - Technical Oversight - PCDR - AGARBA Spain Barents Sea Cod Fishery

Please consider attached version as definitive MSC Technical Oversight of AGARBA Spain Barents Sea Cod Fishery with comments regarding to PCDR

TO comment 3830 from previous version has been removed.

Sorry for any inconvenience.

Sergio Cansado

Fisheries Assessment Manager

Marine Stewardship Council

Ref.	Type of Finding	Page	Requirement	Reference	Details	PI
1	3811 Major	145	CR-CB4.10 v1.2	Teams should consider the achievement of a strategic approach (at SG80) and a coherent and strategic approach (at SG100) to research within the fishery-specific management system. CB4.10.1.1 A strategic approach is pro-active, anticipatory and identifies gaps in knowledge in advance driven by management needs. CB4.10.1.2 Coherent includes all aspects of the system and how they are integrated together.	The elements of a strategic approach are not explicitly mentioned in rationale at SG80a and SG100a. It is suggested to provide specific details on how the approach is pro-active, anticipatory and identifies gaps in knowledge in advance driven by management needs, as well as describing all aspects of the system and how they are integrated together.	3.2.4
FCI Response: Appropriate text has been inserted.						

Ref.	Type of Finding	Page	Requirement	Reference	Details	PI
2	3819 Guidance	12	*NA v n/a		Description of the Organisational Structure refers to AGARBA as "Asociación Gallega de Armadores de Bacalao" instead of "Asociación Nacional de Armadores de Buques de Pesca de Bacalao"	
					FCI Response: Clarification has been inserted	
3	3820 Guidance	6, 32	*NA v n/a		Minimum mesh size seems to be 130 mm. However it is said to be 135mm in pages 6 and 32	
					FCI Response: Issue raised has been clarified at relevant points in the report	
4	3821 Major	several	CR-27.10.6.2 v.1.3	The rationale shall make direct reference to every scoring issue and whether or not it is fully met.	In several PIs where scoring issue is NOT met at SG100 level, rationale given makes not direct reference to the scoring issue itself, but use a cross reference to the rationale provided at a lower level (SG80 or SG60), which in fact has been scored as the opposite (Met). It is confusing, as the same rationale is used while supporting opposite outcomes ("met" and "nor met"), requiring the reader to discern which part of the rationale is actually supporting the outcome of the scoring issue.	1.2.4, 2.1.1, 2.1.2, 2.1.3, 2.2.2, 2.2.3, 2.3.1, 2.3.2, 2.3.3, 2.4.1, 2.4.2, 2.4.3
					FCI Response: Where it is accurate (for PI's 1.2.4,2.1.1 and 2.1.2), the provisions of this technical oversight comment have been addressed in the assessment tree and cross referencing has been removed, despite the fact that the issues referred to has been addressed in exactly the same manner in many previous and existing certifications. Furthermore, the most recent version of the assessment tree template has removed the requirement for providing rationale for each scoring issue against all scoring guides, regardless of whether they have been met or not and rationale now only needs to be given for a single scoring guide (the one that is met). The previous requirement (which is the subject of this technical oversight comment) made it more difficult for readers to determine which scoring guideposts have been met and which have not by forcing the reader to consult all of the text. Aside from this, for 2.1.3, 2.3.2, 2.3.3, 2.4.1, 2.4.2 and 2.4.3 it is not necessary to provide rationale at SG100 for any issues not achieved as not all issues have been met at SG80 for these PI's and so scoring at SG100 is not possible in the first place according to the provisions of 27.10.5.3. Therefore cross referencing is appropriate in these cases at SG100 – to add text rationale in its place would be misleading as it would suggest that scoring at SG100 was a possibility, whereas in fact it is precluded by 27.10.5.3 because not ALL issues have been met at SG80 – necessary for considering ANY issues at SG100.	
5	3822 Major	116	CR-27.10.6.3 v.1.2	An exception to 27.10.6.2 is permitted only for those PIs that include a single scoring issue at each SG level.	PI 2.4.1. SG 80a has been partially scored. However rationale provided (cross-reference to SG 60) does not clearly explain which aspects of the scoring issue are met.	2.4.1
					FCI Response: Appropriate text has been inserted.	
6	3827 Minor	33, 65	CR-27.12.1.3 v.1.3	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products. The opportunity of substitution of certified with non-certified fish prior or at landing.	It is not fully clear how species substitution is prevented during at sea processing when a variety of white fish are caught as listed on page 33.	
					FCI Response: Additional explanation and description of controls has been provided in the relevant section.	

Ref.	Type of Finding	Page	Requirement	Reference	Details	PI
7	3828 Minor	66, 64, 65	CR-27.12.2.1.b v.1.3	<p>If the CAB determines the systems are sufficient, fish and fish products from the fishery may enter into further certified chains of custody and be eligible to carry the MSC ecolabel.</p> <p>The CAB shall determine: The scope of the fishery certificate, including the parties and categories of parties eligible to use the certificate and the point (s) at which chain of custody is needed.</p> <p>b. Chain of custody certification may be required at an earlier stage than change of ownership if the team determined that the systems within the fishery are not sufficient to make sure all fish and fish products identified as such by the fishery originate from the certified fishery</p>	It is not clear why the fishery client needs Chain of Custody, when processing on-board is covered by the fishery certificate and CoC is only needed from point of landing.	
FCI Response: The report does not state that the fishery client needs separate chain of custody. The report explicitly states that CoC is only required from point of landing onwards and that landed certified product is eligible to enter the CoC.						
8	3829 Guidance	64, 18	CR-27.12.2.1 v.1.3	<p>If the CAB determines the systems are sufficient, fish and fish products from the fishery may enter into further certified chains of custody and be eligible to carry the MSC ecolabel. The CAB shall determine:</p> <p>The scope of the fishery certificate, including the parties and categories of parties eligible to use the certificate and the point (s) at which chain of custody is needed.</p>	<p>It would be helpful to copy Table 1 on page 17 listing eligible vessels within the client group to section 5 for the benefit of buyers reading the report.</p> <p>There is a typo on page 18 where the the up to date vessels list can be obtained from MSC Fisheries Department, but gives FCI contact details.</p>	
FCI Response: Table 1 has been duplicated under Section 5. Typo has been amended.						
9	3831 Minor	64, 65	CR-27.12.1.3 v.1.3	<p>The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products. The opportunity of substitution of certified with non-certified fish prior or at landing.</p>	<p>It is not clear exactly how the cod and cod-products caught by the UoC are physically identified as originating from that certified fishery.</p> <p>Section 5.2 refers to the low risk of the vessels landing product caught outside the UoC as Barents Sea Cod or NE Arctic cod (first and fifth paragraphs on page 65). These statements should instead refer to the low risk of vessels landing product caught outside the UoC being landed as from the certified fishery.</p>	
FCI Response: Text has been clarified as suggested.						

Sent: Mon 30/09/2013 09:43
To: Sergio Cansado
Subject: LH to SG - Response to comments - AgarbaBSC - 30 09 13 (att)

Dear Sergio

Please find attached the responses from the Assessment Team to the comments submitted by the MSC for the AGARBA Spain Barents Sea cod fishery for inclusion in the Final Report.

Many thanks, kind regards

Lesley Hamilton

Food Certification International Ltd

WWF

Received: Fri 30/08/2013 14:20
From: Annika Mackensen, WWF
Subject: WWF input AGARBA Fishery PCDR

Dear Mrs Kabut,

please find attached the WWF input to the AGARBA Spain Barents Sea cod Public Comment Draft Report. We would very much appreciate your consideration besides the passing of the deadline as of yesterday.

Kind regards

Annika Mackensen | WWF Smart Fishing Initiative | Global Fisheries Programme

Sent: Fri 20/09/2013 16:58
To: Annika Mackensen (cc. Philipp Kanstinger)
Subject: LH to WWF - Re: Late submission of stakeholder comms - AgarbaBSC - 20 09 13

After very careful consideration by the assessment team, a decision has been made that as your comments were received after the 30 day consultation deadline they will not be considered by the assessment team for the AGARBA Barents Sea cod fishery assessment.

Raul Garcia, WWF participated in the site visit and provided input to our assessors on behalf of WWF.

I have added your details to the stakeholder distribution list so that you can receive updates to the full assessment process for this fishery.

Many thanks, kind regards

Lesley Hamilton

Food Certification International Ltd

Appendix 4. Surveillance Frequency

Determination of surveillance score:

Criteria	Surveillance Score	This fishery
1. Default Assessment Tree used		
Yes	0	0
No	2	
2. Number of conditions		
Zero conditions	0	
Between 1-5 conditions	1	
More than 5	2	2
3. Principle level scores		
greater than or equal to 85	0	
less than 85	2	2
4. Conditions on outcome PIs?		
Yes	2	2
No	0	
TOTAL		6

Table A4: Fishery Surveillance Plan

Score from CR Table C3	Surveillance Category	Year 1	Year 2	Year 3	Year 4
[e.g. 2 or more]	[e.g Normal Surveillance]	On site	On site	On site	On site

Source: FCI assessment team

Conclusion and rationale, following Table C4 (page C39), and section 27.22.2 from the MSC Certification Requirements:

Surveillance rationale follows 27.22.2. Surveillances are indicated for annual on-site surveillance due to the number of conditions on the fishery, the expected timeline for closing out on conditions and the ongoing surveillance score which is predicted to be greater than two for the duration of the certification.

Appendix 5. Client Agreement

FCI confirm that the client has reviewed the Public Certification Report and is in full agreement with the terms of certification detailed therein.