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IMPACT ASSESSMENT

Accompanying the document

PROPOSAL FOR A REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the conservation of fishery resources and the protection of marine ecosystems through technical measures, amending Council Regulations (EC No 1967/2006, (EC) No1098/2007, (EC) No 1224/2009 and Regulations (EU) No 1343/2011 and (EU) No 1380/2013 of the European Parliament and of the Council, and repealing Council Regulations (EC) No 894/97, (EC) No 850/98, (EC) No 2549/2000, (EC) No 254/2002, (EC) No 812/2004 and (EC) No 2187/2005

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This report commits only the Commission's services involved in its preparation and does not prejudge the final form of any decision to be taken by the Commission

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Executive Summary Sheet

Impact assessment on a proposal for a regulation of the European Parliament and of the Council for the conservation of fishery resources and for the protection of marine organisms through technical measures

A. Need for action

Why? What is the problem being addressed?

The current technical measures regime (31 regulations) is no longer fit for achieving the sustainability objectives of the new CFP. Specifically the current measures are:

- based on negative, mostly coercive incentives in a top-down governance system creating mistrust amongst stakeholders as measures are seen as inequitable, leading to non-compliance;
- impossible to measure their impact on the achievement of the conservation objectives of the CFP;
- numerous and overly complex making compliance and control more difficult;
- controlling too many aspects of fishing operations undermining the sector's confidence in the measures;
- providing little incentive to fish selectively where there is no cost to discarding, or of catching vulnerable species or impacting adversely on the seabed; and
- sub-optimal in respect of achieving broader environmental and ecological policy objectives

The catching sector (around 82,000 vessels, employing 98,500 FTE) is most affected.

What is this initiative expected to achieve?

This initiative aims to:

(1) Optimise the contribution of technical measures to achieving the key objectives of the new CFP that came into force on 1 January 2014.

(2) Create the flexibility required to adjust technical measures by facilitating regionalised approaches (consistent with the objectives in EU law).

(3) Simplify the current rules in line with Commission's REFIT programme. The current rules are overly complex and difficult to enforce, and simplification will lead to reductions in administrative costs and burden. It also addresses the need for simplification of technical measures outlined in an earlier Commission Communication on the implementation of the CFP.

What is the value added of action at the EU level?

Provisions in the proposal relating to the conservation of marine biological resources falls under the exclusive competence of the EU according to Article 3(1d) of the Treaty on the Functioning of the European Union (TFEU). Therefore, the subsidiarity principle does not apply for those provisions. However, at the heart of this proposal is the concept of regionalisation whereby Member States should cooperate regionally to develop and implement conservation measures.

B. Solutions

What legislative and non-legislative policy options have been considered? Is there a preferred choice or not? Why?

The baseline scenario maintains the existing set of 31 Regulations.

Option 1: Consolidation – A new regulation with a limited scope which would bring together and consolidate in one Regulation for common rules with regionally specific rules remaining in the existing regulations. Regionalisation would happen if and where the Member States submit joint recommendations for multiannual plans.

Option 2: Framework – A framework regulation containing general provisions and corresponding standards; common rules and technical provisions; and baseline standards by region corresponding to identified results which would function as a default measures in the context of regionalisation. The baselines and default technical measures that correspond to the objectives would be applicable unless and until regionalised measures are designed and introduced into Union law. A sub-option (2.1) is a framework regulation without defined baselines.

Option 3: Elimination of existing rules – Repeal of the majority of the existing regulations (except for essential nature conservation measures). Any necessary technical measures in the longer term would be developed regionally under multiannual plans. This option assumes that the landing obligation is a result-driven measure in itself and will lead to clean fisheries.

Option 2 best meets the objectives set and provides a level of security that conservation objectives will continue to be met while regionalisation develops.

Who supports which option?

Retaining the baseline scenario was not considered an acceptable option by any of the stakeholders

Option 1 received very little support from any of the key stakeholders.

Option 2 was supported by some of the catching sector, Member States and NGOs. They were divergent views in the content of the framework amongst stakeholders. The catching sector argued for a framework without baselines (sub-option 2.1) but Member States, NGOs and some of the Advisory Councils argued against this.

Option 3 was favoured by certain sections of the catching sector but was rejected by Member States, NGOs and other parts of the catching sector who considered it a high-risk strategy.

C. Impacts of the preferred option

What are the benefits of the preferred option (if any, otherwise main ones)?

The economic impacts would be positive as the framework approach would drive regionalisation, leading to the delivery of MSY for all stocks and reductions in unwanted catches. This would lead to increased fishing opportunities and increase revenues from landing bigger more valuable fish (estimated at 10-40%). This would steadily improve over time.

Employment levels should stabilise quickly under this option and there is potential for increased employment. Once MSY levels are achieved, fishing opportunities will increase (by at least 20% by 2020). Such a significant increase has a potential to create new jobs in the catching sector. Fishing on sustainable stocks would also increase income and wages and therefore job attractiveness. Average wages will nearly double as a result of fishing sustainably.

Environmental impacts would be positive. The framework would manage the transition to regionalisation and ensure that the environmental sustainability objectives of the CFP are not jeopardised. In the longer-term there would be positive benefits to fish stocks and better protection for sensitive species and habitats.

What are the costs of the preferred option (if any, otherwise main ones)?

There will be some costs associated with the move to regionalisation for Member States and the Advisory Councils as key stakeholders as described below. Any other costs would be eligible for financing under the European Maritime and Fisheries Fund (EMFF).

How will businesses, SMEs and micro-enterprises be affected?

Administrative costs and burden would be reduced in that there would be immediate simplification of the current regulations and a greater role for the catching sector through the Advisory Councils in the development of technical measures. In addition the potential move to a results-based system in the longer-term would lead to further simplification of the technical rules but implies a shift in the burden of proof onto the catching sector.

Will there be significant impacts on national budgets and administrations?

The move to regionalisation will lead to increased costs for national administrations (estimated at €80,000-120,000) for the development of a single multiannual plan. Not all of these costs are directly associated with technical measures which form only part of such plans. These costs would be largely front-loaded during the development of these plans. In the short-term costs for control will reduce as a result of simplification although there will be some extra costs for implementation of the landing obligation. In the longer-term control costs should diminish considerably particularly if regions move towards results-based management where the need for enforcing prescriptive rules at sea diminishes. Currently costs for enforcing technical measures at sea are very high.

Will there be other significant impacts?

The approach simplifies the structure: One regulation will replace 6 Regulations, partially replace 3 Regulations and repeal 10 Commission Regulations. It provides a direct route to regionalisation in line with the CFP.

D. Follow up

When will the policy be reviewed?

An ex-post evaluation should be carried out before 2022 when the landing obligation should be fully operational, MSY achieved for all stocks and Good Environmental Status achieved for marine ecosystems. This evaluation would directly feed into the retrospective evaluation of the CFP scheduled to begin in 2022.

GLOSSARY

Acoustic Deterrent Device (ADD)	Devices to make species such as marine mammals aware and warn them from fishing gears
Advisory Council	The Advisory Councils were established under the CFP to promote a balanced representation of all stakeholders and to contribute to the achievement of the objectives of the CFP.
Biomass	Biomass refers to the size of the stock in unit of weight. Often, biomass refers to only one part of the stock (e.g. spawning biomass, recruited biomass or vulnerable biomass, the latter two of which are essentially equivalent).
Codend	The part of a trawl net where the catch is retained.
Demersal	Descriptive of a fish which lives at or near the bottom of the water column, e.g. cod or haddock.
Discards	Unwanted catches returned to the sea as a result of fishing operations.
Exploitation pattern	How fishing pressure is distributed across the age profile of a stock
Fishing mortality (F)	An expression of the rate at which fish are removed from the stock from fishing operations (including fish subsequently discarded). It is approximately the stock annual removal expressed in percentage.
Fishing Opportunities	Fishing opportunities or Total allowable catches (TACs), are catch limits (expressed in tonnes or numbers) that are set for most commercial fish stocks. The Commission prepares the proposals, based on scientific advice on the stock status from advisory bodies such as ICES and STECF.
F_{MSY}	A biological reference point. It is the fishing mortality rate that, if applied constantly, would result in an average catch corresponding to the Maximum Sustainable Yield (MSY) and an average biomass corresponding to B_{MSY}.
Good Environmental Status (GES)	The environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive
Highly migratory species	Fish species or stocks that carry out extensive migrations and can occur in both EEZs and high seas. (e.g. tuna and tuna-like species, marlins and swordfish)
Joint Deployment Plan (JDP)	A joint deployment plan (JDP) is a plan for coordinated joint deployment of national means (inspection vessels, surveillance aircraft, mobile mixed inspection teams, etc.) to monitor and inspect fishing activities that fall under the rules of the CFP. The JDP gives effect to a specific control and inspection programme which sets out the objectives, priorities and benchmarks for control and inspection by Member States.
Maximum Sustainable Yield (MSY)	Theoretically the largest yield (or catch) that can be taken from a species' stock over an indefinite period. It is the maximum use that a renewable resource can sustain without impairing its renewability through natural growth and reproduction.
Mesh size	Mesh size of a towed net refers to the mesh size of any codend or on board a fishing vessel and attached to or suitable for attachment to any towed net.

Minimum conservation reference size (mcrs)	The size of a living marine aquatic species taking into account maturity, as established by Union law, below which restrictions or incentives apply that aim to avoid capture through fishing activity; such size replaces, where relevant, the minimum landing size
Minimum landing size	The size of a marine organism below which, if caught must be returned to the sea.
Natura 2000	A network of nature protection areas in the territory of the European Union. It is made up of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated respectively under the Habitats Directive and Birds Directive
Pelagic	In relation to fish, the term 'pelagic' refers to fish which live in the upper layers of the water column, e.g. herring, sprat and mackerel.
Recruitment	The number of new fish added to the exploitable portion of the stock resulting from growth of juvenile fish into adults, or migration of smaller fish.
Regionalisation	The process by which the Member States with direct interest for fisheries of a given geographical region organize themselves with the aim to agree on common management measures. The agreed measures as joined recommendation are submitted to the Commission and after scientific assessment adopted as Commission delegated acts.
Remote Electronic Monitoring (REM)	An electronic system, that remotely monitors fishing vessels' catches through a system of sensors and CCTV cameras
Selective fishing	Refers to a fishing method's ability to target and capture organisms by size and species during the fishing operation allowing non-targets to be avoided or released unharmed.
Selectivity devices	Gear modifications or devices fitted which allow the escape of unwanted catches by species (i.e. species selectivity) or by size (i.e. size selectivity).
Spawning Stock Biomass	Numbers (weights) of individual fish which are old enough to reproduce. This generally corresponds to the minimum landing size and so defines the 'fishable' population.
Stock	The population of a given species that forms a reproductive unit and spawns little if at all with other units. The “total stock” refers to both juveniles and adults while “spawning stock” refers to the adult population (see above).
TAC	Total allowable catch; the maximum biomass of fish that can be caught from a given stock in a given year.
Technical measures	Measures that regulates the composition of catches by species and size and the impacts on components of the ecosystems resulting from fishing activities by establishing conditions for the use and structure of fishing gear and restrictions on access to fishing areas.

LIST OF ACRONYMS

AC	Advisory Council
ADD	Acoustic Deterrent Devices
BSAC	Baltic Sea Advisory Council
CC	Catch Composition
CCALMR	Convention on Conservation on Antarctic Living Marine Resources
CCTV	Closed-circuit television
CFA	Committee for Fisheries and Aquaculture
CFP	Common Fisheries Policy
CQM	Catch Quota Management
DCF	Data Collection Framework
EAPO	European Association of Producer Organisatins
EESC	The European Economic and Social Committee
EFCA	European Fisheries Control Agency
EFF	European Fisheries Fund
EMFF	European Maritime and Fisheries Fund
EP	Exploitation Pattern
ER	Exploitation rate
EWG	Expert Working Group
FMC	Fishery Monitoring Centre
F_{msy}	Fishing mortality that produces MSY
FTE	Full-time Equivalents
GES	Good Environmental Status
GVA	Gross Value Added
IA	Impact Assessment
ICCAT	International Convention for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
JDP	Joint Deployment Plan
LIFE	Low Impact Fishers of Europe
MCRS	Minimum Conservation Reference Size
MLS	Minimum Landing Size
MPA	Marine Protected Area
MS	Member States
MSFD	Marine Strategy Framework Directive

MSY	Maximum Sustainable Yield
NAFO	Northwest Atlantic Fisheries Organisation
NEAFC	Northeast Atlantic Fisheries Commission
NUTFA	New Under Ten Fishermen's Association
NWWAC	North Western Waters Advisory Council
NSAC	North Sea Advisory Council
PO	Producer Organisation
RBM	Results-based Management
REFIT	Regulatory Fitness and Performance programme
REM	Remote Electronic Monitoring
RFMO	Regional Fisheries Management Organisations
SAC	Special Area of Conservation
SME	Small and Medium-Sized Enterprises
SSB	Spawning Stock Biomass
STECF	Scientific, Technical and Economic Committee for Fisheries
SWFPA	Scottish Whitefish Producers Association
TAC	Total Allowable Catch
TFEU	Treaty on the Functioning of the European Union
VMS	Vessel Monitoring System

Lead DG: DG MARE

Other departments involved: SG, SJ**,** DG ENV, DG EMPL, DG FISMA, DG SANTE, DG RTD.

Agenda planning/WP reference: 2013/MARE/002

1. INTRODUCTION

This impact assessment (IA) concerns a proposal to simplify and modernise in light of the new Common Fisheries Policy (CFP[1]) a set of 31 regulations containing technical measures (such as minimum mesh sizes, closed areas and minimum landing sizes) that define where, when and how individual fishing operators can exploit and interact with marine resources and the wider marine ecosystem.

This initiative aims to:

(1) Optimise the contribution of technical measures to achieving the key objectives of the new CFP that came into force on 1 January 2014.

(2) Create the flexibility required to adjust technical measures by facilitating regionalised approaches (consistent with the objectives in EU law).

(3) Simplify the current rules in line with Commission's REFIT programme[2]. The current rules are overly complex and difficult to enforce, and simplification will lead to reductions in administrative costs and burden. It also addresses the need for simplification of technical measures outlined in an earlier Commission Communication on the implementation of the CFP[3].

2. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

2.1. Organisation and timing

The proposal for a new technical measures regulation is provided for in 'Agenda Planning' (2013/MARE/002), in the 2011 Management Plan of the Directorate-General for Maritime Affairs and Fisheries (DG MARE). It has been included since 2012 in the Commission Work Programme (CWP) as a policy output under the activity "*Conservation, management and exploitation of living aquatic resources",* as well as, since 2013, in the Commission's REFIT programme[4].

This IA has progressed in several steps following adoption by the Commission of the proposal for the new CFP "Basic Regulation"[5] in mid-2011. As a first step, an internal DG MARE Working Group made up of the relevant units was set up in July 2011 to carry out initial scoping work.

In December 2012, an evaluation of technical measures[6] was externally contracted to a consortium led by the consultancy firm MRAG. This study consisted of a retrospective evaluation of the existing technical measures regulations in place in terms of their relevance, effectiveness, efficiency, coherence and acceptance. During the course of this evaluation extensive consultations were held with representatives of the fishing industry, national administrations and the research agencies of seven Member States[7]. This was completed in June 2013[8]. It was followed by a prospective evaluation of the likely economic, social and environmental impacts as well as the effectiveness, efficiency, coherence and acceptability of different defined policy options. This study was completed in July 2014[8].

2.2. Internal consultations

An Impact Assessment Steering Group (IASG) was formed in January 2013, which in addition to DG MARE comprised of representatives from seven other Directorates-Generals (DG) and services - Secretariat General (SG), the Legal Services (SJ), DG Environment (DG ENV), DG Employment, Social Affairs and Inclusion (DG EMPL), DG Health & Food Safety (DG SANTE), DG Research & Innovation (DG RTD) and DG Financial Stability, Financial Services and Capital Markets Union (DG FISMA). The IASG met on five occasions - 14 February 2013, 9 July 2013, 10 January 2014, 28 February 2014 and 15 April 2015 and worked to finalise a draft of the IA by written consultation following the last meeting. Between these meetings regular contact was maintained with the members of the IASG.

2.3. Regulatory Srcutiny Board

The impact assessment report has been revised considerably following the opinion received from the Impact Assessment Board (IAB) on 19 June 2015. This opinion listed three main recommendations for improvement:

(1) The scope of the initiative: The policy context section has been redrafted to provide more detail on the governance structure of the current technical measures regulations as well as providing more detail on what has been decided in the CFP. A section on how regionalisation would work in practice and in particular the role of stakeholders in the process has also been added. Additional information has been provided in annexes (Annexes IV, V, VI and VII) to support this section of the report.

(2) Content of the technical measures proposed: The policy options section has been re-drafted to provide more detail on the different measures and structures that would be included under the different options. A table clarifying the difference between common and regional measures has been added. An annex (Annex X) describing the criteria for developing the baseline standards has also been included. A sub-option has been added to option 2 in line with the comments received from the stakeholders during the public consultation. This sub-option comprises a framework without baseline standards included. Further sub-options with different levels of baseline standards have not been considered as technical measures such as mesh sizes, closed and minimum sizes cannot be considered in isolation. In the context of regionalisation more detail on what incentives are foreseen to encourage compliance with the rules and ensure a level playing field have been included in the policy options section and also discussed further in section 8.2. Detail of how the framework would be monitored is included under section 10.

(3) The effectiveness of the options: The impacts section has been enhanced with additional examples illustrating the likely impacts. However, this remains very much a qualitative analysis. Section 9 comparing the options has been expanded to provide a more detailed description of the effectiveness of the options and sub-option and how they will tackle the sub-optimal performance of the current regulations. The table providing a qualitative assessment against the general, specific and operational objectives of each option has been revised to better explain the scoring for each option. The issue of uneven implementation or creation of an uneven playing field is addressed in section 8.3.

In addition to these points the objectives of the initiative have been revised to link better with the options and identified problems. A section assessing the likely impacts of the different options on the competitiveness of the catching sector has been added. The problem definition has been re-structured and the examples put into boxes as suggested. The examples in the impacts section have similarly been moved into boxes to improve readability. A glossary of

technical terms has also been added. The executive summary and executive summary sheet have been redrafted in line with the changes made to the new report.

On the basis of the second opinion received on the 30 October 2015 on a revised IA, several additional elements have been included to improve clarity. These relate to three aspects as follows:

(1) Content of the options: The options have been re-drafted in line with the comments of the RSB to avoid inconsistencies. A summary table has been added at the end of Section7 which summarises the main elements of the different options and sub-option and illustrates the differences between them in terms of content, structure, mechanisms for regionalisation and also the level of simplification introduced by each option and sub-option. Reference to measureable targets that will act as success indicators has been added into Section 7 for the different options (Options 1 and 2 and sub-option 2.1 would contain such targets). Additional clarifications have been added to sections 9.2 and 9.3 on the incentives that are foreseen under the preferred option to encourage compliance and also on the positives and negatives that would ensue in the event of uneven implementation across regions.

(2) Assessment of impacts: The analysis of impacts section (Section 8) has been screened and for the preferred option a justification for why there would be rapid improvements in the economic, social and environmental impacts compared to the baseline scenario. It is also highlighted that the positive benefits predicted will be dependent on the speed of regionalisation. There is likely to be period of adjustment to the new governance structure introduced by the framework regulation where economic impacts would be similar to the baseline scenario. After this transitional period regionalisation of technical measures should be accelerated provided Member States pro-actively embrace the regioanlisation process.

(3) Effectiveness of the options: In section 9, clarification is provided to explain how regionalisation will tackle the problems of poor effectiveness of the current technical measures. It is also clarifies that even if regionalisation is a slow process, the simplification introduced throughout the framework approach in the preferred option. There will be immediate benefits to the catching sector in complying with the technical rules remaining in place pending regionalisation and for Member States in controlling and monitoring compliance with these rules. In section 11 more detail on the operational monitoring arrangements to assess the effectiveness of the new framework has been provided.

In addition the IA has been checked for inconsistencies and grammatical errors. The Executive summary has also been revised in line with the changes detailed above.

2.4. Consultation with stakeholders

A 12-week internet-based public consultation was launched from January to May 2014[9]. A total of 59 detailed contributions were received from fifteen Member States, five of the seven Advisory Councils (ACs), the main industry representative organisations (covering more than 80% of the catching sector), eleven of the main NGOs dealing with fisheries issues, consumer protection groups and the general public. The contributions received have been published[11].

Annex I contains a summary of the findings from this consultation. The stakeholders' views are reflected throughout this report but the main conclusions were as follows:

(1) Any new technical measures regulation(s) should move away from micromanagement towards a results-based management approach.

(2) Fishermen should become more accountable for what they catch rather than the construction and operation of the fishing gears they deploy.

(3) Simplification of the rules is a fundamental objective but simplification should not create inequalities in the management systems across Member States ("maintaining a level playing field").

(4) Regionalisation is seen as an important opportunity to introduce simplification of technical measures regulations.

(5) A framework approach is preferred. This should contain overarching objectives and minimum common standards to be applied across the EU. It should also contain safeguards to ensure action can be taken if problems in fisheries emerge.

(6) Improvements in selectivity have been achieved in the past when incentive structures have been aligned with management objectives. Such structures need to be built-in to any new regulatory framework for techncial measures.

Apaprt from the public consultation, numerous workshops, consultations and meetings were held during the period from 2011 to early 2015 with the key stakeholders (i.e. Member States, European Parliament, Advisory Councils, the catching sector and NGOs). A full list of these meetings is provided in Annex II. The combination of the public consultation and the extensive follow-up dialogue with the key stakeholders (i.e. the catching sector, NGOs and Member States) have ensured that the views expressed fully represent the different stakeholder groups.

2.5. Expert advice

Two meetings of an Expert Working Group (EWG) of the Scientific, Technical and Economic Committee for Fisheries (STECF) were convened in October 2012[11] and March 2013[12]. These meetings explored the potential of technical measures as a management tool in the context of the reform of the CFP. The findings of these reports helped to define the options that were considered in the perspective evaluation carried out by the external consultants to support this IA. In addition to these meetings, several ad hoc requests were made to STECF and also the International Council for the Exploration of the Sea (ICES) on specifc issues relating to:

- Fishing gear selectivity[13]
- Replacing mesh size and catch composition rules[14]
- Bycatch of marine mammals and other protected species[15&16]
- Existing closed and restricted areas[17]

2.6. Other relevant studies

The findings from impact assessments carried out to support a previous revision of technical measures in 2008[18] (this proposal was subsequently withdrawn) and the CFP[19] have provided information for the preparation of this IA. In addition a number of externally contracted studies and several studies undertaken on behalf of the European Parliament have also provided background material on specific issues. These are listed in Annex III.

3. POLICY CONTEXT

3.1. What are technical measures?

Technical measures are rules governing how and where fishermen may fish. They aim to control the catch that can be taken with a given amount of fishing effort and also to minimise the impacts of fishing on the ecosystem. They form an integral part of most fishery management systems including the CFP.

Technical measures can be grouped into:

– measures that regulate the operation of the gear (e.g. prohibitions of certain gear types, maximum limits on how long or what type of gear can be deployed);

– measures that regulate the design characteristics of the gears that are deployed (e.g. mesh size and catch composition rules);

– minimum landing sizes below which fish must be returned to the sea (e.g. for cod the minimum landing size is set at 35cm);

– measures that set spatial and temporal controls (e.g. closed/limited entry areas and seasonal closures) to protect aggregations of juvenile or spawning fish; and

– measures that mitigate the impacts of fishing gears on sensitive species (e.g. cetaceans, seabirds or sea turtles) or closed areas to protect sensitive habitats (e.g. coldwater coral reefs) referred to hereafter as "nature conservation measures".

3.2. The history of technical measures in the CFP

The history of technical measures applying in European fisheries legislation within the framework of the CFP is one of numerous regulations, amendments, implementing rules and temporary technical measures introduced as stop-gaps to resolve emerging problems. Since 1980, no less than 90 different technical measures regulations or regulations containing technical measures have been enacted by the EU across the different sea basins and in non-EU waters[11]. Figure 3.2.1 shows the progression of these regulations over time. A full list of regulations enacted since 1980 is provided in Annex IV.

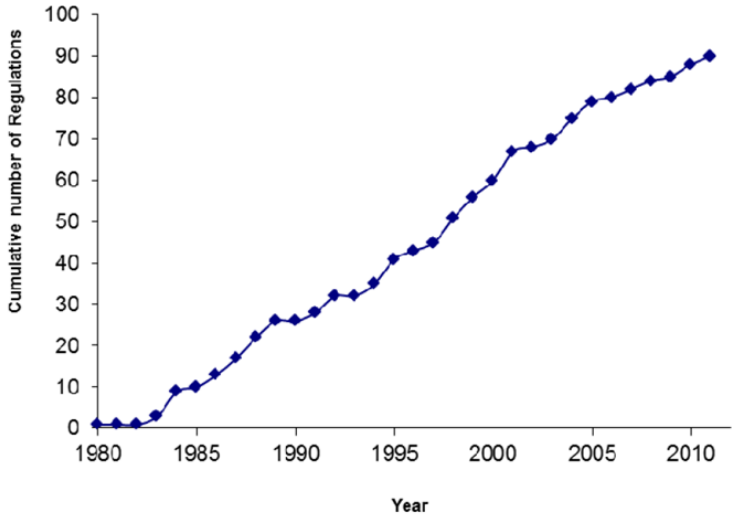

Figure 3.2.1: Cumulative number of technical measures regulations introduced since 1980 (Source: STECF 2012a page 18)

3.3. The current governance structure of technical measures

The regulatory structure of technical measures has become highly complex and somewhat dis-jointed. Across all EU sea basins and non-EU waters in which Union vessels operate there are 31 regulations which contain technical measures. Figure 3.3.1 illustrates the regulatory structure in place. Annex V provides more detailed information on the scope and content of these different regulations while Annex VI illustrates the governance structure across sea basins.

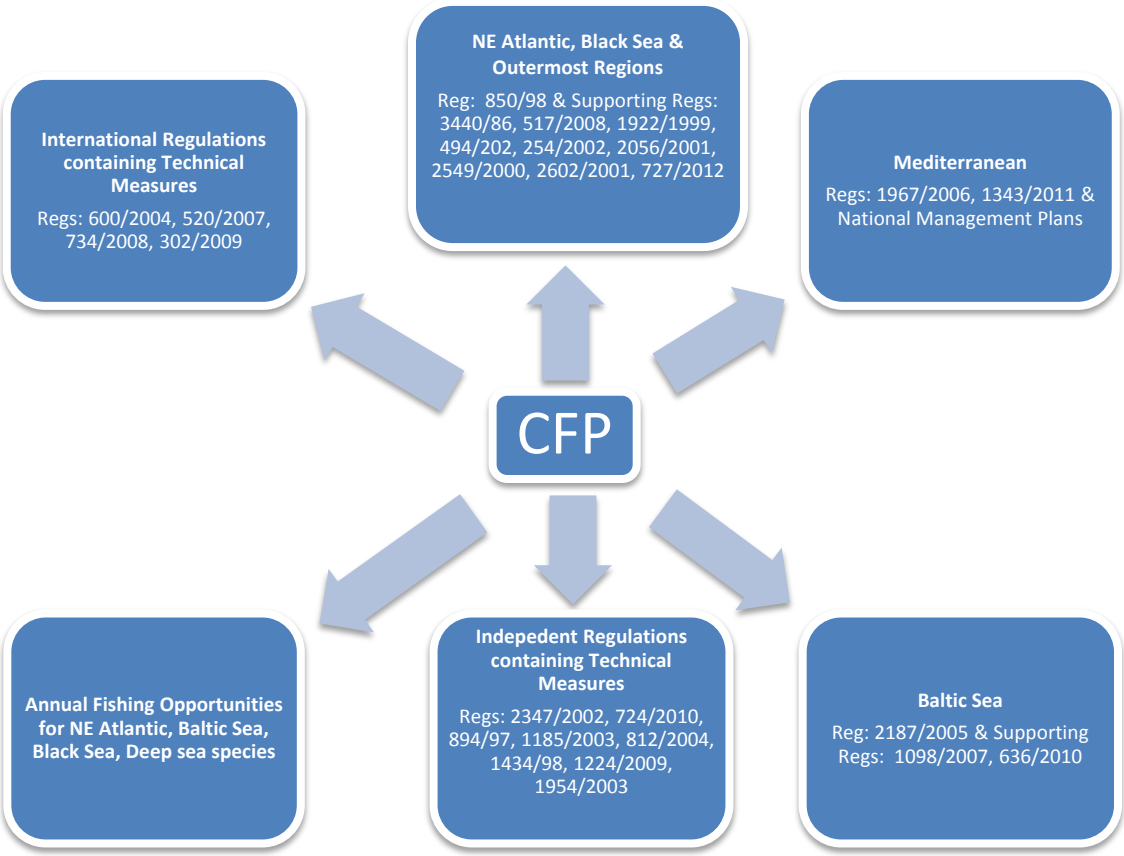

Figure 3.3.1: Current Regulatory Structure for Technical Measures (Source: Author)

Within this complex structure, there are three detailed technical measures regulations enacted under the ordinary legislative procedure covering the main sea basins as follows:

- Regulation (EC) No 850/98[20] covering the North-eastern Atlantic including the North Sea, Skagerrak and Kattegat; the outermost regions (e.g. Guyana, Martinique and Réunion) and the Black Sea (since 2013);
- Regulation (EC) No 1967/2006[21] covering the Mediterranean; and
- Regulation (EC) No 2187/2005[22] covering the Baltic Sea.

These regulations contain a mixture of common rules applying across sea basins which mainly relate to the operation of fishing gears and regionally specific rules that regulate the design characteristics of the gears used (e.g. mesh sizes), set minimum landing sizes and establish closed or restricted areas to protect juvenile and spawning aggregations of fish species. They also contain limited nature conservation measures which tend to be regionally specific although similar mitigation measures apply across sea basins in some cases.

Each of these regulations contained limited empowerments to allow the adoption of detailed rules relating to specific gears types or gear construction or relating to specific area closures. In addition Regulation (EC) 850/98 contains a specific empowerment for the Commission (Article 45) to adopt technical measures in cases where the conservation of specific stocks calls for immediate action (e.g. Regulation (EC) 2056/2001[23] which sets out emergency measures to protect cod in the North Sea).

The regulations in the Northeast Atlantic and Baltic also allow for Member States to implement technical measures applying to their own vessels under national law provided such

measures are more stringent than Union law. Member States have tended to use this empowerment to introduce technical measures into fisheries for shellfish (e.g. minimum sizes for crab, clam and lobster) inside their own territorial waters. However, there are examples of Member States introducing measures applying to their own vessels in fisheries outside their own territorial waters in response to specific stock conservation problems (e.g. Denmark have introduced a requirement for Danish vessels to use sorting grids in the industrial fishery for Norway Pout in the North Sea).

Specific to the Mediterranean, there are provisions allowing for the development of national management plans adopted under national law (Article 19). In most cases these national plans contain technical measures for certain fisheries and/or gears as well as rules for the protection of sensitive habitats and sensitive species. To date 28 such national management plans involving fisheries with trawl nets, purse seines and other type of surrounding nets, and boat seines have been adopted by Member States[24]. There is also an empowerment to allow the Council to adopt management plans for specific Mediterranean fisheries, in particular, in areas totally or partially beyond the territorial waters of Member States. They can include specific technical measures, including where appropriate temporary derogations to the common rules. No such plans have been adopted into Union law to date.

Additional flexibility for amending technical measures or introducing new measures was afforded in the past through the Fishing Opportunities Regulations setting annual TACs and quotas in the Northeast Atlantic, Baltic, Black Sea and for deepsea species. These were a mixture of supposedly temporary technical measures with a mixture of regionally specific measures and derogations from general provisions contained in other regulations. Following the entry into force of the Treaty on the Functioning of the European Union (TFEU)[25] such measures could no longer be included in the Fishing Opportunities Regulation except for those measures with a direct functional link to the catch limits of a particular stock or stocks. Therefore only a limited number of such measures are now contained in the Fishing Opportunities Regulations. For example there is a closed area off the west coast of Ireland to protect Norway lobster (*Nephrops norvegicus*) relating to the TAC for this species in this area[26].

There are several co-decided regulations that transpose technical measures agreed for third-country waters covered under Regional Fisheries Management Organisations (RFMOs) such as the Convention on Conservation on Antarctic Living Marine Resources (CCALMR) and the International Convention for the Conservation of Atlantic Tunas (ICCAT). Measures emanating from other RFMOS such as the Northeast Atlantic Fisheries Commission (NEAFC), Northwest Atlantic Fisheries Organization (NAFO) are also still included in the Fishing Opportunities Regulation for the North-east Atlantic as temporary measures.

3.4. Technical measures in the new CFP

Technical measures are considered an integral part of the new CFP. The CFP aims to ensure that fishing and aquaculture are environmentally, economically and socially sustainable and provide a source of healthy food for EU citizens. Its goal is to foster a dynamic fishing industry and ensure a fair standard of living for fishing communities. Annex VII presents the main elements of the CFP in more detail.

The CFP has three key objectives:

- Exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield (MSY) for all stocks by 2015 and by 2020 at the latest (Article 2.2).
- The gradual elimination of discards on a case-by-case basis, taking account of the best available scientific advice, by reducing unwanted catches and gradually ensuring that catches are landed (Article 2.5(a)).

– Coherence with Union environmental legislation, in particular the objective of achieving a good environmental status (GES) by 2020 under the Marine Strategy Framework Directive (MSFD[27]), as well as with other Union policies[28&29] (Article 2.5(g)).

Technical measures as tools to contribute to achieving the main objectives CFP have an important and significant role in attaining each of these objectives as follows:

- The **attainment of MSY** will be facilitated by the application of **technical measures** which regulate *exploitation pattern* (i.e. how fishing pressure is distributed across the age profile of a stock). Obtaining MSY from a given stock will require that the exploitation pattern avoids fishing on younger age groups. To achieve this will require a combination of effective technical measures (i.e. measures that regulate the operation and design of the gear, minimum conservation reference sizes (mcrs) and spatial/temporal closures).
- The **gradual elimination of discards and minimisation of unwanted catches** will require the application of technical **(**gear operation and design**)** as well as tactical changes (closed or restricted areas) to drive increased selectivity and avoidance of unwanted catches (i.e. fish below mcrs). The landing obligation (see section 3.5) introduced to achieve this objective will require a rethink on the current governance structure of **technical measures** to allow for more flexibility to achieve this goal.
- Ensuring fishing activities are consistent with wider ecological considerations will depend on the application of **technical measures that minimise the impacts of fishing gears on the ecosystem** (e.g. mitigation measures or closed areas**)**. Specifically technical measures can contribute to the attainment of Good Environmental Status (GES) with respect to 4 out of the 11 descriptors included under the MSFD - Biological diversity (Descriptor 1); Maintaining exploited populations within safe biological limits and with a healthy age-distribution (Descriptor 3); Maintaining all elements of marine food webs at normal abundance (Descriptor 4); and Maintaining sea-floor integrity (Descriptor 6).

The CFP "Basic Regulation" outlines a range of measures for the conservation and sustainable exploitation of marine biological resources which include technical measures (Article 7). The types of measures available are listed. Specific reference is made to fish stock recovery areas to protect juveniles or spawning aggregations (Article 8) and to minimum conservation reference sizes (mcrs) that replace minimum landing sizes (Article 15) in the context of regionalisation (as described in the following section).

The new CFP also acknowledges the contribution technical measures can make to sustainable fishing. Article 17[30] provides the opportunity for Member States to incentivise the use of selective fishing gear or using fishing techniques with reduced environmental impact through the allocation of increased fishing opportunities. This is the first time that a direct link between "responsible" fishing and fishing opportunities has been included in the CFP.

3.5. The landing obligation

The new CFP includes a new approach to solve the long-standing problems of overfishing and discarding, through an obligation to land all catches. This "landing obligation", which constitutes a ban on discarding, applies to all catches of species subject to catch limits (TACs) and, in the Mediterranean, also catches of species which are subject to minimum sizes (only blue-fin tuna is under TAC in this sea basin). It is to be introduced gradually over the period 2015 and 2019 and follow a fishery based approach. It is designed to trigger behavioural change and encourage fishermen to improve selectivity voluntarily to avoid catching small, low value fish that will now have to be landed and counted against quotas. The landing

obligation aims to trigger innovation in fishing gears, techniques and strategies, linking it directly with technical measures.

In addition to improvements in selectivity anticipated, the landing obligation comes with a set of potential exemptions and flexibility instruments to make the transition to, and timely implementation of, the landing obligation possible. These include quota flexibilities, exemptions for species that have a high survival rate and a de minimis exemption to cater for residual unwanted catches that are unavoidable and cannot be eliminated through improved selectivity.

3.6. Regionalisation

The concept of regionalisation

The new CFP promotes *regionalisation* as a new governance approach. It represents a fundamental shift in the governance structure of fisheries policy. It moves away from centralised micro-management to regionalised decision-making with direct involvement of stakeholders in developing specific conservation measures, tailored to the specificities of the fisheries in a region. Regionalisation provides an opportunity to utilise technical measures much more as a driver for the achievement of sustainable fisheries rather than simply as restrictive and coercive measures complementing TAC and quota and effort restrictions. However, regionalisation is an option that Member States can choose to use rather than an obligation.

The regionalisation process and role of stakeholders

Article 18 of the CFP "Basic Regulation" describes the process of *regionalisation.* It allows groups of Member States from the sea basin concerned to formulate "*joint recommendations*". These joint recommendations can contain technical measures, specific measures to implement the landing obligation allowed for in the CFP, as well as the establishment of nature conservation measures within Natura 2000 sites. Provided such measures are consistent with the objectives of the CFP, the Commission can transpose these joint recommendations into Union law through *delegated or implementing acts*.

The CFP recognises the *Advisory Councils* (AC) as the key stakeholder representative groups in the context of regionalisation. It contains an obligation for Member States to consult the AC on joint recommendations and for the advice of the AC to "*be taken into account*" in formulating regionalised measures[31]. Other stakeholders such as individual industry representative groups or NGOs do not have any formal role in regionalisation as the ACs are considered representative of these groups although they may be consulted informally by Member States in developing measures or assist the ACs in formulating their advice.

The main tools for regionalisation

The main tools for regionalisation are *multiannual management plans*. These plans aim to establish a framework for the sustainable exploitation of stocks or combinations of stocks and marine ecosystems concerned. Multiannual plans are established as separate co-decided regulations containing the objectives, quantifiable targets, clear time-frames to reach the quantifiable targets and safeguards to ensure that quantifiable targets are met. Within these plans, it is possible to include an empowerment for the Commission to adopt specific *technical measures* to facilitate the implementation of the plan by means of a *delegated/implementing act*. These technical measures are agreed as joint recommendations. The scope of what technical measures can be included is not defined so potentially any combination of measures deemed necessary for the implementation of the plan can be included.

Since the inception of the CFP the Commission has come forward with one proposal for a multiannual plan for fisheries in the Baltic Sea[32] and intends to adopt further proposal for

multiannual plans for demersal fisheries in the North Sea and Northeast Atlantic and pelagic fisheries in the Mediterranean during 2015 and 2016.

As a temporary measure in the absence of a multiannual plan, Member States may also choose to develop *discard plans* for the implementation of the landing obligation under regionalisation. These plans are limited in duration to 3 years and are implemented through a Commission Delegated act. Within discard plans technical measures that are specifically required to implement the landing obligation can be included. Principally these are derogations to existing measures that regulate the design and characteristics of fishing gears, minimum conservation reference sizes (that replace minimum landing sizes) and closed areas to protect juveniles or spawning grounds. Discard plans have been enacted for fisheries for pelagic species and for most fisheries in the Baltic Sea at the beginning of 2015 to implement the first timeline of the landing obligation[33]. However, these plans have contained only limited technical measures.

Regionalisation of *nature conservation measure*s necessary for compliance with obligations under Union environmental legislation (e.g. MSFD, Habitats and Birds Directives) is also envisaged under Article 11 of the CFP. These Directives impose certain legal obligations on Member States as regards Special Areas of Conservation (SACs) and Marine Protected Areas (MPAs) where specific technical measures may be needed. Such measures can be developed by way of joint recommendations agreed regionally by Member States and enacted into legislation through a delegated act. Principally these are closed or restricted areas where the use of certain fishing gears is restricted. The first of these delegated acts was recently adopted for several areas in the Baltic and Kattegat[34].

Figure 3.6.1 summarises the options for regionalising technical measures under the new CFP.

As a safeguard measure, in all cases where MS cannot agree on joint recommendations or the joint recommendations are incompatible with the objectives of the CFP, the Commission can step-in and propose measures under ordinary legislative procedure. Further safeguards to avoid the collapse of fisheries are provided in the CFP under Article 12 and Article 13 which allow the Commission or Member States respectively to adopt emergency measures on the basis of evidence of a serious threat to conservation of a stock or to the marine ecosystem from fishing which requires immediate action to alleviate the threat. Such measures can include technical measures (e.g. closure of a specific area) but they are strictly time limited.

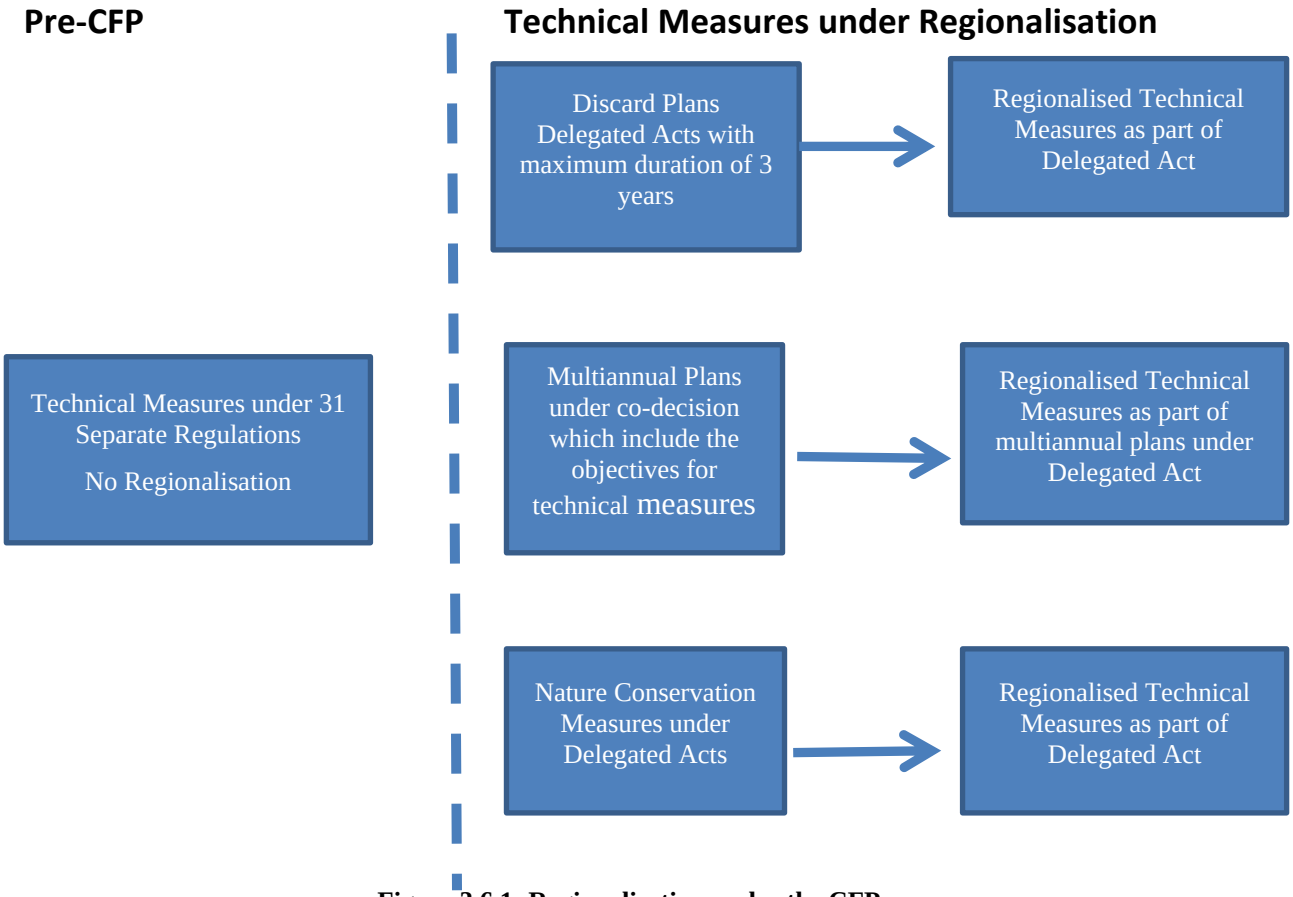

Figure 3.6.1: Regionalisation under the CFP
(Source: Author)

3.7. Technical measures and other elements of the CFP

Technical measures are inextricably linked to other elements of the CFP particularly control and enforcement and the provision of scientific data.

To ensure that the rules of the CFP are followed in practice, the policy includes a control system with the necessary tools to enforce them. The system is laid down in the Control Regulation[35] which entered into force on 1 January 2010. Under Article 118 of the Control Regulation an evaluation of the impact of this Regulation on the CFP must be undertaken by the Commission five years after its entry into force. This evaluation is currently being undertaken and the Commission are due to report by the end of 2015. The effectiveness of technical measures regulations in contributing to the objectives of the CFP is dependent on them being coherent and consistent with the control system and vice-versa. Therefore any future revision of the control Regulation arising from this evaluation needs to take account of changes to the technical measures and equally in revising the technical measures, controllability must be a central consideration.

Measuring the effectiveness of technical measures relies heavily on the provision of accurate scientific data. Article 25 of the CFP sets out the key principles for data collection and requires Member States to collect data on fleets and their fishing activities in particular biological data on catches and on the potential environmental impacts of fishing activities on the ecosystem under a Data Collection Framework (DCF) Regulation[36]. A Commission proposal to update and enhance the DCF is currently being prepared. Ensuring that data needs to monitor and measure the effectiveness of technical measures will be an integral part of this proposal.

4. PROBLEM DEFINITION

The main benefit of the current technical measures identified by stakeholders is that measures (e.g. minimum landing sizes) which are harmonised across EU fisheries have established a "level-playing field" amongst the catching sector of different Member States. However, this is in contrast to a number of studies, including the retrospective evaluation that show technical measures in their current format have largely not delivered on the objectives of the CFP effectively. This is more evident in some sea basins than others but the general perception is one of multiple complex and ineffective rules contained in an inflexible governance structure.

With the new challenges thrown up by the new CFP, including the move to fishing at MSY, the introduction of the landing obligation and the achievement of GES the current regulatory structure will continue to fail to deliver. The current structure is also out of line with the new governance approach introduced by regionalisation. In this context, there are five identifiable weaknesses with the existing technical measures.

4.1. Sub-optimal performance

Progress has been made in moving towards sustainably fisheries in the last decade. Currently 26 stocks (out of the MSY assessed total of 62) are being fished sustainably at or below MSY in the Atlantic EU waters, the North Sea and the Baltic Sea from only 5 stocks in 2009[37]. For many of these stocks the move to sustainable fishing has been as a result of a decrease in fishing pressure following from reductions in fishing opportunities or fishing effort or for economic reasons (market forces) fishermen have been forced out of business. However, there are stocks where technical measures collectively have contributed towards regulating exploitation pattern[8&11] (how fishing pressure is distribution across the age profile of a stock). One such example is provided in example 1.

Example 1: According to ICES, in the Baltic Sea there have been significant improvements in exploitation patterns for cod. This has been brought about largely through the use of more selective gears with larger mesh sizes and escape windows in fisheries for cod in combination with closed areas to protect juvenile cod. Discarding of undersize fish in these fisheries has been reduced significantly to less than 10% compared to 50-60% in the early 1990s[11].

In other fisheries, in combination with technical measures at Union level, Member States have taken their own measures to improve selectivity with good results. Such measures have been developed with direct consultation with the fishing industry giving them a level of legitimacy with the catching sector (See example 2).

Example 2: In the Norway Pout fishery in the North Sea, Danish fishermen are required to use sorting grids to reduce bycatch of non-target species such as haddock, whiting and saithe under national legislation. Discards of haddock and whiting in these fisheries have been reduced by 57% and 37% respectively following this initiative which resulted from an acceptance that catches of undersize cod and haddock in these fisheries were unacceptably high[38]. Similarly Swedish fishermen in the Skagerrak fishing for *Nephrops* are required to use sorting grids in this fishery to reduce bycatch of cod. Since their introduction unwanted catches of cod have been reduced by approximately 90% from previous levels[39].

Technical measures have also delivered positive benefits in reducing ecosystem impacts. For example the limited number of spatial measures taken to protect sensitive habitats such as coldwater corals in the Northeast Atlantic and seagrass beds in the Mediterranean have been effective[8], while some strict restrictions on the use of certain gear types have also provided protection to sensitive species such as cetaceans, seabirds and sea turtles as illustrated by example 3.

Example 3: Regulation (EU) No 894/97[40], which established a prohibition on the use of large-scale driftnets above 2.5km for highly migratory fish (e.g. tunas and swordfish) have also had positive benefits. This prohibition has succeeded in significantly reducing incidental catches of sensitive species such as cetaceans and seabirds which were frequently caught in these gears[41&42].

Technical measures have performed less well in other fisheries and sea basins as evidenced by the retrospective evaluation[6], the Green Paper on the Reform of the CFP[43], the IA report accompanying the Commission's proposal for the new CFP[19] as well as the reports from STECF[11&12]. Currently out of 176 assessed stocks there are 19 stocks in the North-east Atlantic, 88 stocks in the Mediterranean and 5 stocks in the Black Sea which are considered to be fished unsustainably (i.e. above MSY)[37]. For some of these, technical measures have failed to control exploitation patterns and discards for these stocks are generally high. Table 4.1.1 and Annex VIII provide some examples of fisheries where these problems are most acute. This information was collated in a study carried out as part of the IA to support the CFP[44].

Fishing Gear	Area	No of Vessels	Target Species	Discarded Species	Indicative Discard Rates
Beam Trawls	North Sea, English Channel, Irish Sea and Celtic Sea	~470	Sole, Plaice	Plaice dab, whiting, grey gurnard	60-90%
Beam Trawls	Southern North Sea	~450	Crangon shrimp	Plaice, dab, whiting	56-72%
Bottom Trawls	English Channel, Irish Sea, Celtic Sea, Bay of Biscay	~2500	*Nephrop*s & mixed demersal species and	Nephrops, whiting , haddock, anglerfish, megrim, cod, hake	36-70%
Bottom Trawls	Iberian Peninsula	~450	hake, horse mackerel, anglerfish, megrim	Hake, horse mackerel, blue whiting	30-60%
Bottom Trawls	Adriatic	~1000	Nephrops	Multiple species	40-50%
Bottom Trawls	Ionian Sea	~500	Red shrimp	Multiple species	20-50%

Table 4.1.1 Examples of fisheries with high discard rates
(Source: Vessel numbers extracted from STECF 2013b; Discard rates taken from IA report to support the CFP[44])

In these cases this *sub-optimal performance* is caused by a number of factors relating to the effectiveness of the measures themselves and the management framework they operate in as follows:

(1) Technical measures, particularly measures that regulate the operation and design characteristics of the gear (e.g. mesh size regulations) are viewed by fishermen as a way to restrict their activities and which result in losses of revenue through direct (loss of fish) and indirect costs (cost of gear replacement) with no apparent benefit. This is particularly prevalent in the demersal fisheries in the Northeast Atlantic and Mediterranean. Their reaction has been to mitigate the impacts of such measures through technical innovation as illustrated by example 4.

Example 4: The use of illegal gear attachments (so-called "blinders") which obstruct the mesh opening nets, contravening the mesh size rules has been widespread in fisheries heavily

reliant on young fish that may be close to or just above the minimum landing size (e.g. beam trawl fishery for sole and trawl fisheries for *Nephrops*). This is because the current mesh size results in loss of marketable catch of these fish above the minimum size providing an incentive to circumvent the mesh size rules[45].

(2) Despite there being many ways to improve selectivity through the use of selectivity devices such as square mesh panels, sorting grids or increases in mesh sizes, the innovation potential of the fishing industry has been directed away from the deployment of more selective fishing towards a sub-optimal harvesting strategy where the sole objective is to reduce losses. The result has been uptake of selective gears has been limited to fisheries where legislation making the use of such gears mandatory has been introduced, despite such gears providing the means to reduce unwanted catches. This is particularly the case in trawl fisheries in the Northeast Atlantic and the Mediterranean targeting a number of different species (i.e. mixed fisheries) where a range of species are caught together (e.g. cod, haddock and whiting). In these fisheries, fishermen often discard large amounts of both undersized and marketable fish species to remain legal as illustrated by example 5.

Example 5: In the North Sea flatfish fishery for which the legal gear (beam trawl with a mesh size of 80 mm) may be effective to support a relevant exploitation pattern for the target species, sole, this gear is unselective for other species caught during the same fishing operations such as plaice. This imbalance results in high rates of discards (for plaice greater than 60%[44]).

(3) The use of minimum landings size (mls) and catch composition (CC) regulations in the Northeast Atlantic, the North Sea and to a lesser extent in the Baltic Sea have created an obligation for fishermen to discard in some circumstances. As highlighted by STECF[11] these were introduced to act as coercive incentives to avoid areas with high concentrations of juveniles or unwanted species. There is no clear evidence to suggest that this has been the case. The predominant reaction by fishermen to both these rules has been to comply through discarding of fish below mls or in excess of permitted CC percentages, particularly if moving to other areas would result in a reduction in potential revenue (i.e. movement to an area with fewer marketable fish). See example 6.

Example 6: The catch composition rules require that catches of species which exceed the catch composition percentages laid down in the regulations must be discarded prior to each landing. A skipper is required to reconcile his catch with the catch composition rules and record it in the logbook within 24 hours. Depending on the species mix on any particular day, a skipper may be obliged to discard fish to meet the catch composition requirements for that day. A day later he may catch and keep on board more of the species he discarded the day before because it fits within the rules after the catch composition changed as a result of fishing that day, and so on during the rest of the trip. In practice fish in excess of the percentages are either discarded just before return to port or misreported and landed illegally.

(4) The effectiveness of nature conservation measures to minimise interactions with sensitive species or to reduce the impacts of fishing gears on vulnerable habitats (e.g. coldwater corals) has also been sub-optimal. This is not necessarily because the measures themselves are ineffective but more that coverage has been limited, the process to put such measures in place has been lengthy[6] or they have been rendered ineffective through the introduction of multiple derogations. In some cases they have been targeted in the wrong areas or fisheries or relied on unproven mitigation devices. This is illustrated by example 7.

Example 7: Regulation (EC) 812/2004[46] requiring the use of Acoustic Deterrent Devices (ADDs) to reduce the catches of cetaceans (i.e. dolphins and whales) in gillnet and pelagic fisheries has not delivered the desired results[47&48]. The devices have been shown to be effective at reducing incidental catches of one species in one gear type (i.e. harbour porpoise in gillnet fisheries) but ineffective for other cetacean species (e.g. common dolphins) or for other gear types (e.g. pelagic trawls). Additionally only vessels greater than 12m are required to use these devices yet scientific evidence[48] shows that significant numbers of cetaceans are incidentally caught by such vessels fishing in inshore waters. This has resulted in incidental catch of cetaceans remaining a problem in a number of fisheries[49].

4.2. Difficult to measure effectiveness

The objectives set for technical measures are broadly defined in legislation but quantifying the effectiveness of these measures individually or collectively in a Union context has proved difficult. This is for several reasons:

(1) There is an absence of any defined metrics on which to measure success as illustrated by example 8.

Example 8: Regulation (EC) 850/98, the overarching regulation covering the Northeast Atlantic states without specified targets that technical measures should "*ensure the protection of marine biological resources and the balanced exploitation of fishery resources in the interests of fishermen and consumers in line with the objective of the CFP*". This Regulation also includes a number of broad, rather non-specific sub-objectives such as "*reducing the capture of juveniles of marine organisms through mesh size and catch composition rules*". The result has been that it is impossible to measure the success of this Regulation due to the lack of quantifiable targets[11]. The Mediterranean Regulation (Reg. (EC) 1967/2006) is even less specific and in fact contains no specific objectives or targets whatsoever.

(2) In trying to assess effectiveness, it has only really been possible to compare the measures taken collectively with the outcomes observed and not to quantify what the linkages between these are in practice[6&11]. This is further confounded as technical measures are often part of an overall package of complex input and output controls including fishing effort and Total allowable catches (TACs) preventing any comparative analysis. It is often impossible to quantify whether specific measures have had any impact or contributed to the achievement of the overall conservation objectives of the CFP as illustrated by example 9.

Example 9: Closed areas put in place in the Celtic Sea to protect cod were assessed as part of a wider review of closed areas by STECF[17]. They concluded that while the closures had benefits for conservation of the cod stock, it was not possible to give a quantitative assessment of the impact of these closures area as it was difficult to disentangle the effect of the closure from other factors such as the impact of TAC reductions.

(3) From a political perspective, technical measures, particularly mesh sizes, restrictions on specific gears and closed areas often form part of a negotiation strategy, potentially leading to a dilution of the final measures agreed, rendering them sub-optimal. This can often be driven by perceived negative impacts (losses of marketable catches) in the fishery and the desire of managers to broker a deal, even though the measures agreed may prove ineffective. This results in measures being introduced without any scientific basis, making any judgment on how they may benefit the overarching policy objectives, impossible. See example 10.

Example 10: A closed area introduced into the Irish Sea to protect cod under Regulation (EC) No. 300/2000[50] has been diluted by multiple derogations for certain fleet segments to fish within the closure on economic grounds. The introduction of these derogations have negated

the benefits of the closure and reduced the protection provided to the cod stock, which was the original intention of the closure[17]. A similar assessment has been made of the plaice box in the North Sea[51].

4.3. Prescriptive and complex rules

The current management approach to technical measures as input tools (e.g. defining mesh sizes or imposing restriction on fishing gears) has resulted in a large number of complex and highly prescriptive rules particularly in the Northeast Atlantic and the Mediterranean. These rules attempt to control many technical aspects of fishing operations, rather than focusing on the desired outputs (e.g. a specific catch profile or level of fishing pressure). This has led to the following difficulties:

(1) The focus on regulating the technical inputs rather than the output has introduced a strong incentive to negate the regulations. This has led to the adoption of more legislation to counter circumvention of the rules, increasing complexity in the regulations. This is demonstrated by the cumulative growth in technical measures in the EU many of which are simply 'catch-up' regulations across the different sea basins. Figure 4.3.3.1 below illustrates how the current framework of technical measures in the EU has led to the introduction of more and more legislation, affecting control and enforcement activities and undermining confidence in the measures by the catching sector. Example 11 provides a practical example of what has occurred.

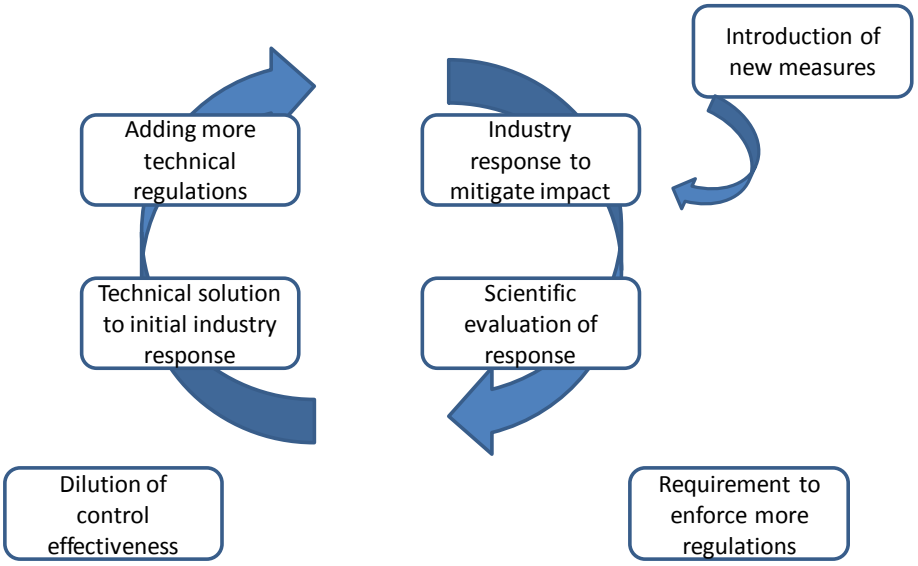

Figure 4.3.1: The effects of how the current framework of technical measures in the EU affects control and enforcement activities
(Source STECF 2012a page 25)

Example 11: The use of stiffer twine to offset previously introduced increases in mesh size from 90 to 100mm in the North Sea (Regulation (EC) No 345/92[52]) became widespread in the early 1990's. This subsequently led to research into the potential impact on codend selectivity. The results of the research were subsequently used as the basis to introduce additional legislation which limited the thickness of twine that could be used (Regulation (EC) 850/98). However, it took another five years to develop and objective method to measure twine thickness and implement this into legislation through Regulation (EC) 129/2003[53].

(2) Not enough attention has been given to the practicalities of control and enforcement when introducing technical measures or during the negotiation of particular measures, controllability considerations have been overlooked. This has resulted in the introduction of measures that have been difficult and costly to enforce. Most technical

rules can only be monitored effectively through seaborne or airborne inspections. The retrospective evaluation[6] estimates that the control costs for Denmark, Ireland, the UK, France and Spain combined to be around €163 million euros annually (an average of around EUR 33 million per Member State). Of these costs for these Member States, 25 % are land-based inspection, 57% seaborne, 6% airborne, 2% VMS/FMCs with 10% administration costs (i.e. approximately €102 million euros is spent on seaborne and airborne inspections). While all of this expenditure is not directly attributable to the enforcement of technical measures, interviews with inspectors carried out as part of the retrospective evaluation[6], showed the costs for measuring elements of fishing gear construction such as mesh size and twine thickness are questionable. The variation in measured selectivity associated with fishing gears is high while the actual conservation benefit of strictly controlling such measures is relatively low. Additionally according to fisheries inspectors monitoring technical measures at sea can be extremely challenging particularly in bad weather[6&11]. This has not been taken into account when defining the technical rules. The difficulties in controlling technical measures are illustrated in example 12.

Example 12: Under a broad objective of protecting deep-sea species (principally deep-sea sharks), regulations first introduced under the fishing opportunities regulations and now incorporated into Regulation (EC) 850/98 regulate the use of fixed nets likely to interact with these species. Whilst the legislation prohibits use of fixed nets at charted depths greater than 200 metres, derogations are possible for fishing with fixed nets in waters with a charted depth of more than 200 metres but less than 600 metres under certain conditions. The derogations also require prescriptions on the maximum height of nets, maximum length, maximum soaking time and hanging ratios. These conditions vary according to the mesh sizes used. In practice, Member State control authorities report that this legislation is not controllable; not only because the hanging ratio and procedures to measure it are not defined, but also because controlling compliance would require a disproportionate amount of time and effort at sea for determining the soak time, checking depths, and controlling dimensions of series of nets that can measure up to 100 km in length per vessel[6].

4.4. Lack of flexibility in the management framework

Although there are in-built flexibility mechanisms (section 3.3) in the current regulations, technical measures have tended to be adopted under ordinary legislative procedure. Prior to the adoption of the TFEU this was by the Council, and, now under co-decision, by the Council and European Parliament. This has created the following difficulties:

(1) The ordinary legislative procedure is a complex, lengthy and politically-driven process which is not well suited to defining detailed technical rules that may need frequent updating as illustrated by example 13.

Example 13: No political agreement for a new package of technical measures for the Northeast Atlantic has been reached in the last ten years. Previous Commission proposals in 2002[54] and in 2008[55] failed for a number of reasons even those these were presented by the Commission as consolidations. Member States argued that the text had grown too complicated and difficult to interpret. In addition, they did not reflect regional differences while the advantages of harmonising measures across different areas were questioned. More recently a recent amendment (Regulation (EU) No. 227/2013[54]), which was principally to make temporary measures introduced through the fishing opportunities regulation, permanent, took more than 9 months to complete due to disagreements between the co-legislators on the scope of this regulation.

(2) There is a lack of flexibility in the decision-making process for technical measures that has restricted the ability to adjust or revise them or to react to changes in fishing

conditions or to take advantage of innovation in gear technology. This has created frustration and a level of mistrust amongst the catching sector. The lack of in-built flexibility in the current legislative regime is demonstrated in example 14 concerning the haddock stock in the Celtic Sea.

Example 14: Scientific advisory bodies identified a strong recruitment of juvenile haddock at into the Celtic Sea at the end of 2009. This incoming year class was identified as being under threat if the selectivity of legal fishing gears was not modified to take account of this pulse in recruitment. However, following long discussions with Member States and the NWWAC it was not until the end of 2012 that the Commission was able to adopt an 'emergency act' to enforce more selective fishing techniques, Member States having failed to agree on national measures. By that time, this year class had been heavily fished, resulting in a failure to reap the long-term stock benefits that would have resulted if the strong year class had been protected[8].

(3) Stakeholders argue that measures brought in on a temporary basis either as in cases where the conservation of specific stocks calls for immediate action or under the Fishing Opportunities, have actually become permanent measures. They argue that the flexibility mechanisms have been used as a way to impose long-term restrictions on their operations under the guise of short term, reactionary measures. This is illustrated by example 15.

Example 15 Regulation (EC) 2056/2001 introduced technical measure to recovery the cod stock in the North Sea as short-term emergency measures. However, these measures which included increased mesh sizes significantly and the use of certain selectivity devices which resulted in losses of marketable catches have been in place for more than 14 years without amendment. Another example is a temporary derogation for use of an electric pulse trawl in the North Sea to catch flatfish. This was introduced to allow scientific research into the impacts of this fishing gear but 10 years later and despite extensive research being carried out it remains unchanged.

(4) Inflexibility is apparent in the implementation of nature conservation measures to protect sensitive habitats. There is little dispute amongst stakeholders[6] that such habitats need to be protected but the introduction of such measures has been slow and out of line with available knowledge. To designate an area closed to fishing currently requires a change to the technical measures regulations often resulting in lengthy negotiation and dilution of the final measures agreed, either through the introduction of derogations or a reduction in the size of the area protected. This is illustrated by example 16.

Example 16: The delineation of closed areas to protect coral reefs off the coast of Ireland took more than 3 years to negotiate[6] because Member States could not agree on the extent of the closures proposed. The main issues were related to the size of the areas and agreeing on continued access to vessels using fishing gears that have minimal or no impacts on the seabed.

4.5. Insufficient involvement of key stakeholders in the decision making process

Several independent reviews of the management framework of technical measures[57,58&59] have concluded that successful use of technical measures depends largely on their acceptance by fishermen. This is in contrast to the current technical measures which are mostly coercive resulting from a hierarchical governance system (i.e. top-down rather than bottom-up approach) with little or no incentive for fishermen to comply.

Fishermen and other stakeholders generally do not feel part of a participatory process where measures are agreed and often do not consider them as legitimate or equitable. Their hierarchical formulation lead fishermen to perceive that technical measures are impractical,

they do not represent current fishing practice and are sometimes contradictory as illustrated by example 17.

Example 17: Interviews with the fishing industry conducted as part of the retrospective evaluation[6] identified that the industry believe that many closed areas are "set in stone". They have highlighted closed areas to protect Norway Pout and herring in the North Sea which have remained unchanged since the 1980s yet the fishing patterns and fishing practices in these fisheries have changed significantly since their introduction and the closures now serve no conservation purpose.

4.6. Underlying drivers of the problems

The conclusion from the retrospective analysis[6], the public consultation[9], the previous IA on technical measures (2008 proposal[18]) and also from STECF[11&12] is that **technical measures have an important role to play in fisheries management but the governance framework in which they operate needs to be re-examined in light of the challenges generated by the new CFP**. The underlying drivers of the problems are regulatory rather than market driven. Table 4.4.1 summarises the identified problems, the drivers of these problems and their effects. The drivers are very much interlinked.

Problems	Drivers	Effects
Sub-optimal performance	Technical measures are viewed by the catching sector as restrictive and provide little incentive to fish selectively.	Failure to control exploitation patterns leading to high levels of discards in mixed fisheries. Circumvention, both legally and illegally, of technical rules to minimize the economic impacts. Limited uptake of selective gears or mitigation measures to reduce incidental catches of sensitive species. Limited protection afforded to sensitive habitats Mitigation measures are targeted in the wrong areas or fisheries.
Difficult to measure effectiveness	There is an absence of any defined metrics on which to measure success. Technical measures are part of an overall package of complex input and output controls including effort and TACs.	Impossible to quantify whether the technical measures have had any impact or contributed to the achievement of the overall conservation objectives of the CFP. Dilution of the final measures agreed as they are the outcome of a political negotiation resulting in measures being introduced without any scientific basis making assessment of their effectiveness impossible

Prescriptive and complex rules	Technical measures attempt to control too many technical aspects of fishing operations.	Undermines the catching sector's (i.e. fishermen) confidence in the measures and provide a strong incentive to negate the regulations. Adoption of more legislation to counter circumvention of the rules Difficult for control authorities of Member States to enforce the measures and fishermen to comply with them. Imposes a high burden and administrative costs on the control authorities of Member States.
Lack of flexibility	Technical measures are decided following a complex, inflexible and lengthy politically-driven process which is not well suited to defining detailed technical rules that need frequent updating and periodic review.	Restricts the ability to adjust or revise technical measures to react to changes in fisheries, fishing conditions or to take advantage of innovation in gear technology. Supposedly temporary rules or derogations have remained in place unchanged for long periods.
Insufficient involvement of key stakeholders in the decision- making process	Technical measures are based on negative, mostly coercive incentives in a hierarchical governance system (i.e. top-down rather than bottom-up).	Fishermen and stakeholders do not feel part of a participatory process. Fishermen perceive that technical measures are impractical, they do not represent current fishing practice and are sometimes contradictory.

Table 4.4.1: Summary of problems underpinning the current technical measures (Source: Author)

4.7. The affected stakeholders

Technical measures are tools to support the CFP and contribute to achieving its objectives. Therefore the stakeholders directly affected are a sub-set of those identified in the CFP reform IA report as summarised in table 4.5.1.

Stakeholder	Description	Key interests
Catching sector in the EU	EU vessel owners, operators and crew	Maintaining profitability and livelihoods
Sector regulators	National, regional and local bodies regulating fishing	Ensuring an efficient, effective and practical management framework that balances a wide range of stakeholder needs
Sector research	Scientific research bodies contributing to the conservation and management of stocks; improvements in the selectivity of fishing gears; and reducing the ecosystem effects of fishing on the ecosystem	Contribution to an effective fisheries management regime through the timely access to fishing vessels to measure selectivity, impacts on the ecosystem and new low impact fishing.
NGOs	Non-governmental organizations advocating sustainable management of fisheries.	To maintain fish populations, marine biodiversity, and the amenity value of the oceans

Table 4.5.1: Summary of stakeholders affected by the reform of the technical measures regulation and of their respective key interests (adapted from the IA supporting the reform of the CFP) (Source: Author)

The catching sector comprising 82,047 vessels and employing 98,500 FTE[60] is the most affected by potential changes to the technical measures regulations. Of these approximate

82,000 fishing vessels, almost 98% of them would be classified as micro-enterprises employing fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed €2 million[61]. Annex IX provides a more detailed breakdown of the catching sector in terms of number of vessels, gears deployed and numbers employed.

Other stakeholders affected are the sector regulators in the Member States. This comprises national administrations, regional and local bodies with a fisheries management role and the control and enforcement agencies within the Member States. Any changes to the regulatory structure will require a re-adjustment of the management and control regime.

Sector research agencies within Member States as well as ICES and STECF who are the main providers of advice to the Commission will also be affected. Changes in technical measures will require experimentation and evaluation of any new measures.

NGOs have a direct interest in ensuring technical measures are effective given that they are one of the main tools of the CFP to regulate the impacts of fishing on the marine ecosystem. The main NGOs as members of the ACs will have a direct involvement in the development of technical measures under regionalisation.

Other sectors indirectly affected under this initiative include:

- Dependent business and communities;
- Processing and marketing sector;
- Third Countries fishing in Union waters (e.g. Norway, Faroes in the northeast Atlantic and Turkey, Morocco and Ukraine in the Mediterranean and the Black Sea); and
- Consumers.

4.8. Evolution of the problem

This section focuses on summarising the evolution of the presented problems in the context of the objectives of the CFP. The baseline scenario is based on the current regulatory structure illustrated in Figure 3.1.1 and presented in section 6.2. The evolution of the identified problems in terms of economic, social and environmental impacts is assessed in section 7.2.

For the purposes of this IA, two assumptions are made. Firstly, the three main technical measures Regulations (NE Atlantic[20], Mediterranean[21] and Baltic[22]) have been aligned with the TFEU concerning establishment of current Commission empowerments under delegated or implementing Acts. Commission proposals to make these alignments are currently under negotiation with the Council and European Parliament[62,63&64].

Secondly, it is assumed that certain provisions within the current regulations that run contrary to the landing obligation and oblige fishermen to discard fish have been removed or amended. This technical adjustment has been achieved through a recently adopted Regulation (EU) 812/2015 (the so-called "omnibus"[65]). The omnibus, which is very much a “quick fix” solution, amends a number of technical measures regulations by requiring all unintended catches (defined as incidental catches the fishing for which is prohibited in the relevant conditions) subject to the landing obligation caught in excess of legal provisions (catch composition rules, bycatch provisions) must be landed and counted against quota. It also requires the definition of minimum conservation reference sizes (mcrs) to replace the current minimum landing sizes and minimum catching sizes in the Mediterranean. This is a change in name only and the sizes remain as they are currently. All catches below the mcrs subject to the landing obligation must be landed and counted against quota.

Based on the history of technical measures over the last 25 years within successive CFPs[11], these changes alone are unlikely to improve the contribution of technical measures to achieving the objectives of the new CFP in a relevant and coherent way across sea basins. The

effectiveness and efficiency of the current measures will not improve without changes to the governance structure and simplification of the measures. There will continue to be a low level of acceptability of the measure amongst stakeholders and the identified weaknesses will continue or persist or even intensify over time. Specifically:

- Attainment of the MSY objective for overfished stocks will be impeded through a failure to improve selectivity in fisheries for these stocks. This will result in significant cuts in fishing opportunities for these stocks and in the Mediterranean, where there are no fishing opportunities, reductions in fishing effort or additional technical measures.
- Levels of unwanted catches will remain high in many mixed fisheries. Economic viability will be threatened because under the landing obligation those unwanted catches would have to be landed for non-human consumption purposes and counted against quota. Quotas are likely to be exhausted faster and vessels would risk having to tie-up earlier in the year even allowing for the flexibility mechanisms[66] included under the CFP (i.e. De minimis, high survivability and quota flexibilities) that will alleviate some of these problems.
- The adoption of nature conservation measures will continue to be a slow process. Delays in enacting such measures will likely result in damaging or even irreversible impacts on sensitive species and habitats and threatened the attainment of GES under the MSFD.
- The current regulatory structure will not create any new incentive for fishermen to improve selectivity. Any new measures introduced will continue to be mostly coercive that add new rules or impose increases in selectivity that lead to economic losses.
- Regionalisation of technical measures would be possible through discard plans and multiannual plans but is likely to only add on new rules that derogate from existing technical rules where applicable rather than simplify or introduce opportunities for adaptive management. The Advisory Councils as the key stakeholder in regionalisation are unlikely to engage openly with such an approach.
- The strong focus on control of technical measure *in situ* and the inflexible framework based on low regional specificity and acceptability will continue to undermine cost efficiency.

4.9. Necessity and subsidiarity

According to Article 3(1d) of the TFEU, the Union shall have exclusive competence in the conservation of marine biological resources under the CFP. Other aspects of fisheries are, under Article 4(2d) of the TFEU, share competences between the Union and the Member States. Article 43(2) of the TFEU establishes the Union's power to adopt the provisions necessary for the pursuit of the objectives of the CFP. As technical measures relate to the conservation of marine biological resources under the CFP (i.e. the Union has exclusive competence) there is no need therefore necessarily to justify measures with regards to the principles of subsidiarity and proportionality.

Under regionalisation the role of the co-legislators will change fundamentally. Focus will be much more on setting the objectives and targets centrally for managing fisheries, leaving the detailed rules needed to achieve these objectives to be set regionally by Member States and stakeholders. This has added value in that the role of the co-legislator in agreeing detailed technical measures has often been criticised by stakeholders. The catching sector believe the measures finally agreed usually lead to economic losses and are unrealistic and impractical, while NGOs claim the measures are often diluted during the political process rendering them ineffective. Leaving the definition of technical rules to the regional level has added value in giving certain legitimacy in the eyes of stakeholders.

5. OBJECTIVES

5.1. General objectives

As tools to support the implementation of the CFP, the general objectives of technical measures are to contribute to:

- the bringing of all European fish stocks to a state where they can produce the Maximum Sustainable Yield (MSY) by 2015 or 2020 at the latest;
- the reduction of unwanted catches and elimination of discards in fisheries subject to catch limits by 2019; and
- the achievement of Good Environmental Status (GES) by 2020, as established under the Marine Strategy Framework Directive (MSFD).

In achieving these general objectives the regulation of technical measures should be guided by the principles of good governance set out in Article 3 of the CFP. In particular point (b) which expresses the need to take account of "*regional specificities, through a regionalised approach*" and point (f) which states that "*appropriate involvement of stakeholders, in particular Advisory Councils, at all stages – from conception to implementation of the measures*" are important.

5.2. Specific and operational objectives

In order to achieve these general objectives and address the main problems identified a number of specific and operational objectives can be defined.

Specific objectives

Develop a regulatory structure for technical measures that:

- leads to an improvement in the effectiveness of technical measures;
- defines clear objectives, targets and success criteria for technical measures;
- eliminates over-regulation and simplifies the current technical measures;
- creates a more flexible legal framework and acts as a vehicle for regionalisation of technical measures; and
- promotes a transparent and participatory approach to the definition and specification of technical measures.

Operational Objectives

The following operational objectives will contribute to the achievement of these specific objectives:

- Establish incentive structures linked to the added flexibility offered by regionalisation and rewarding of "responsible fishing" in line with Article 17[30] of the CFP that will deliver improvements in the effectiveness of technical measures;
- Establish targets for the reduction of unwanted catches and for the reduction of the negative impacts of fishing on marine ecosystems that can be achieve through technical measures;
- Establish indicators to measure the success of technical measures in achieving these defined targets respecting the timelines contained in the CFP;

– Delete redundant rules and simplify other rules from the 31 regulations that currently contain technical measures to make them understandable and controllable in line with the Commission's REFIT programme[2];

– Manage the transition to regionlisation in the period up to 2020 by defining baseline standards based on current exploitation patterns and consolidate measures that will apply pending the development of regionalised plans;

– Establish the necessary legal architecture to allow deviation from these baseline standards and provide for the development of alternative measures to achieve the overarching objectives under regionalisation; and

– Establish linkages with the CFP to allow for stakeholder involvement in the development of technical measures at the regional level.

Figure 5.2.1 illustrates the problem tree with the links between problems, the drivers and the objectives.

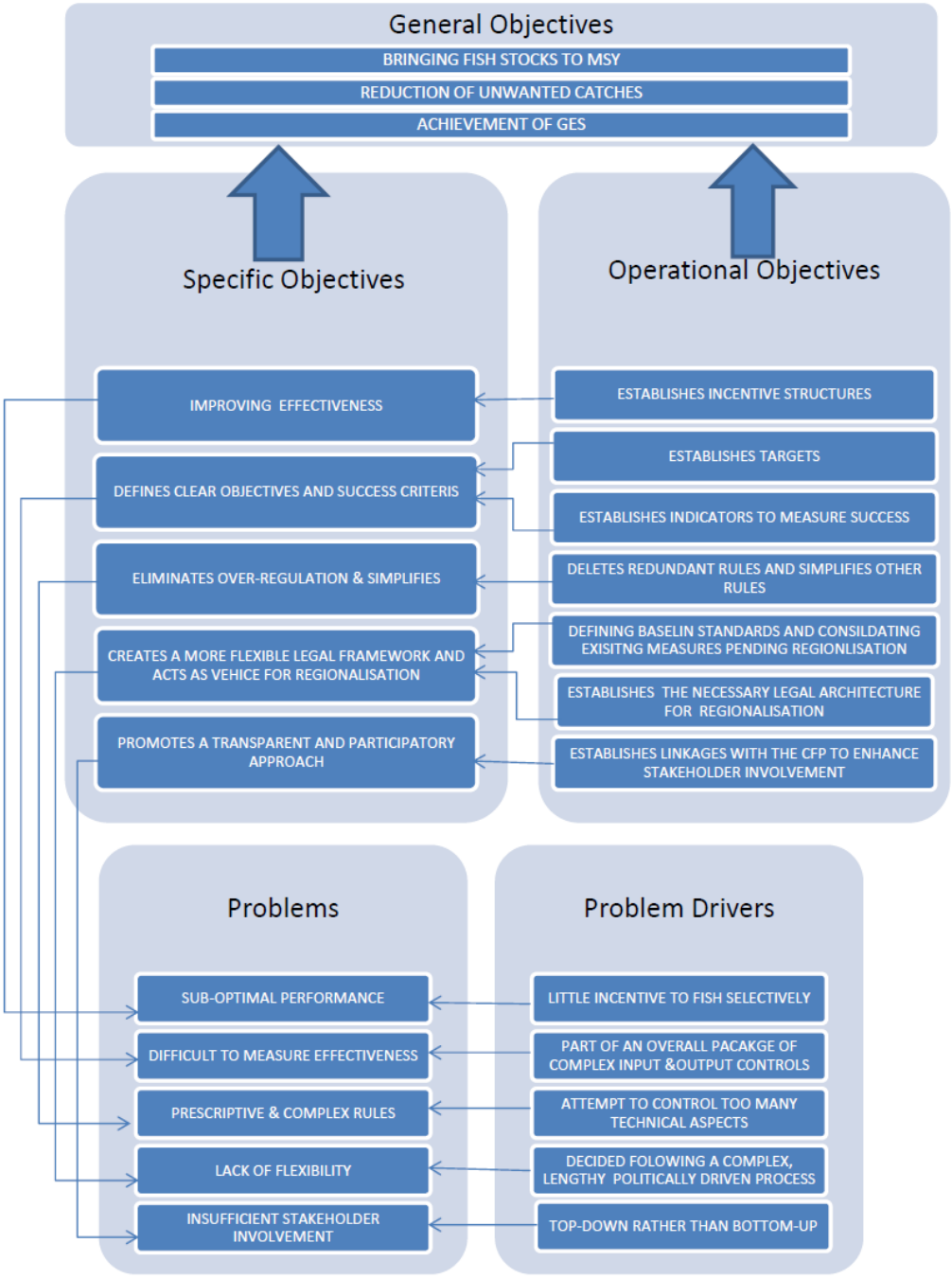

Figure 5.2.1 Problem tree with the links between problems, their drivers and the objectives

6. CONSISTENCY WITH OTHER EU POLICIES

Two of the specific objectives contained in the CFP are to:

- Implement the ecosystem-based approach to fisheries management so as to ensure that negative impacts of fishing activities are minimised (Article 2 paragraph 3); and
- Ensure coherence with Union environmental legislation (Article 2 paragraph 5(j)).

Given that implementation of the MSFD is a legal requirement under the Treaty, dedicated measures to reach GES for marine resources are implicitly required in compliance with the Directive. Technical measures, as tools to support the implementation of the CFP consitute an important element in achieving this objective.

Technical measures must also be coherent with other Union enviromental legislation notably the Birds[28] and the Habitats Directives[29]. The full implementation of these Directives is part of the EU's response to its commitments under the UN Convention on Biological Diversity, and is reinforced by the commitment made by EU Heads of State "*to halt the loss of biodiversity [in the EU] by 2010*"; it is further reiterated in the EU Biodiversity Strategy to 2020[67].

Technical measures have also the potential to contribute to the Europe 2020 strategy[68], in particular its resource efficiency flagship initiative through better use of fish stocks. In addition, the reform of technical measures will contribute to the REFIT programme[2] through the simplification and deletion of a number of existing regulations and specific measures.

7. POLICY OPTIONS

7.1. Selection of policy options

A screening of different policy options has led to the identification of a number of options that are most likely to meet the objectives and address the problems identified in section 4. An initial evaluation indicated that improving flexibility and creating incentive structures within the CFP to achieve improvements in the general effectiveness should be the focus rather than making wholesale changes to the measures themselves. This is for three reasons:

(1) Previous attempts in 2002[54] and 2008[55] made to introduce changes to the structure and the substance of the regulations failed to reach political agreement. Member States strongly argued that such changes would lead to negative socio-economic impacts on different fleets.

(2) Regionalised decision-making was introduced into the CFP by the co-legislators to avoid having to make frequent changes to the substance of technical measures contained in co-decided acts. Making changes to the substance under this initiative would go against this philosophy.

(3) The stakeholder consultations showed that changing the substance of the technical measures was clearly not an option preferred by the key stakeholders (i.e. the catching sector and the Advisory Councils) or the Member States. Adapting the regulatory structure and simplifying the rules should be the key objectives.

As a result of this initial evaluation, three policy options with one sub-option have been considered against the baseline scenario. It was decided that the policy options defined would cover all sea basins except non-Union waters, where technical measures would continue to be part of international agreements with the measures emanating from these agreements. Regionalisation is not applicable in non-Union waters.

7.2. Baseline scenario

The current regulatory architecture of the technical measures would be retained: a 'web' of regulations with the CFP as the central element, elaborated in a series of technical and other conservation regulations surrounding the CFP Regulation. See Figure 3.3.1.

The prescriptive, means-oriented architecture without clear expected outcomes or results would be retained. The Regulations would include recent adjustments that remove legal contradictions with new obligations under the new CFP (as described in Section 4.8), in

particular the landing obligation and that all of the existing Regulations on technical measures would be aligned with the TFEU concerning establishment of current Commission empowerments under delegated or implementing Acts. Changes to the principle regulations in the northeast Atlantic, Baltic and Mediterranean would continue to be under co-decision.

Flexibility would mainly be through the existing mechanisms and empowerments included in the current regulations (i.e. detailed rules to define gears, national measures or measures for stocks of immediate conservation concern).

Regionalisation would be possible through the mechanisms set out in the CFP (i.e. multiannual plans, discard plans and Article 11 for nature conservation measures within Natura 2000 Sites) but would be very much "piece meal" and essentially limited to adding on new rules at the regional level that derogate from existing measures, simply expanding the 'web' of regulations further.

Figure 6.2.1 illustrates the regulatory structure for technical measures under this option.

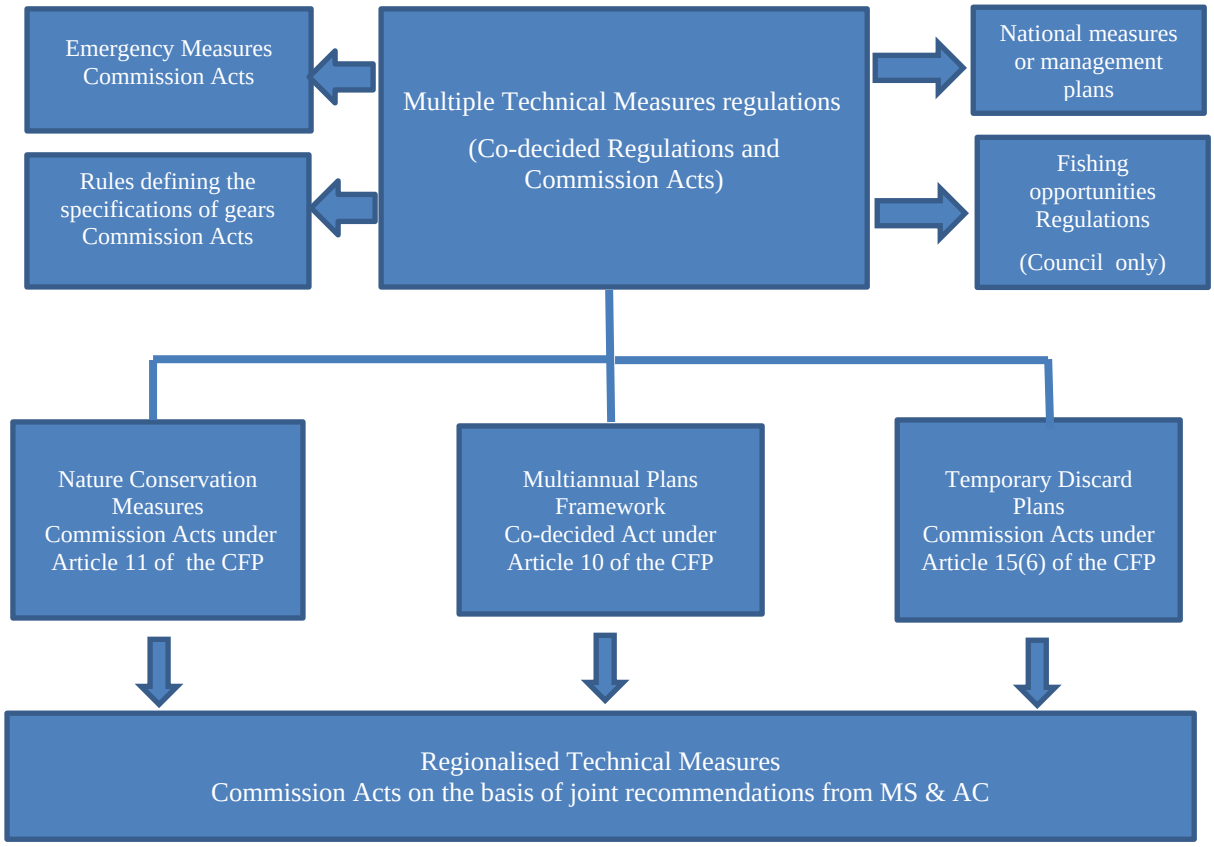

Figure 6.2.1: Regulatory Structure under Baseline Scenario
(Flexibility mainly provided through national measures and specific empowerments as well as to a limited extent under annual fishing opportunities regulations. Regionalisation is an alternative)
(Source: Author)

In the public consultation[9] there was no support for maintaining the current situation from the catching sector, the Member States or the NGOs. The *catching sector* gave a clear message that the complexity of the current regulations and their multiple amendments should serve as an example of "*what not to do*". Respondents from the *national administrations and control agencies of the Member States* pointed to enforcement issues with the current regulations (e.g. measuring twine thickness has proved problematic as the measuring instrument used is highly subjective). The *NGOs* highlighted the lack of compliance as a major weakness (e.g. the illegal landing of undersize fish). Member States and the catching sector also pointed to a range of unintended consequences that have in fact forced fishermen to discard and run

counter to the principal objective of the measures (i.e. to protect juveniles and minimise the impacts of fishing on the ecosystem) although some of these unintended consequences have been resolved through the omnibus regulation.

7.3. Option 1: Consolidation

This option implies a minor change in the governance structure and limited adaptation of the rules to the requirements of the CFP and to new conditions as they evolve.

It would involve a proposal for a new Regulation with a limited scope: to bring together and consolidate in one Regulation (under co-decision) the *common rules* for all fisheries in all areas (for instance generic prohibitions of a certain fishing method) as well as introducing specific objectives for technical measures and specific targets to be used for measuring success. The common rules would be considered as *de facto* permanent as there is no need or justification for changing them and would be separated from regionally specific rules (with potential for regionalisation). The latter regionally specific technical rules (the large majority of them) would remain in place in the existing regulations. These measures would constitute the baseline standards. This consolidation should take account of any recent amendments or changes to the regulations under the omnibus regulation, emergency measures taken to protect certain stocks (e.g. measures taken for sea bass) as well as alignment of the regulations with the TFEU

Splitting these measures into those that are common and those that are regionally specific is straightforward as it follows from the existing regulations (i.e. it is clear from the regulations which are common and which are regionally specific). Table 6.3.1 shows this differentiation.

Common Rules	Regionally Rules
Prohibited fishing gears and practices – e.g. fishing with explosives or poisons	Mesh sizes – mesh sizes linked to target species or groups of species that can be used in different sea basins
Restrictions on fishing gears and conditions for their use – e.g. common rules governing the construction of gears such as twine thickness, the circumference of codends or size of gears allowed to be used	Closed or restricted area to protect juveniles or pawning aggregations
Measurement of minimum conservation reference sizes – how to measure mcrs for different organisms and the treatment of marine organisms below mcrs	Minimum conservation reference sizes – setting sizes for marine organisms to apply in different sea basins
Common measures to reduce discarding in where the landing obligation does not apply – high-grading and slipping	Nature conservation measures – closed areas to protect sensitive habitats and mitigation measures to reduce capture of sensitive species
Conducting scientific research – derogation allowing scientific research for gears not complying with the common rules and the permissible uses for catches made during scientific research of selective gears	Other specific derogations or restrictions on the operation of gears and conditions for their use - allowance to use electric pulse trawls in the North Sea or restrictions on the use of gillnets below 600m in the North eat Atlantic
Restocking and transplantation - general derogation from the common rules to allow these practices	
On board processing - prohibition of certain processing on board fishing vessels	

Table 6.3.1 Differentiation of common and regional specific measures (Source Author)

As with the baseline scenario, flexibility would be mainly through the existing mechanisms contained in the Regulations. Regionalisation of technical measures would be possible through discard plans adopted by the Commission as Delegated Acts, and through Delegated Acts adopted by the Commission on the basis of the new multiannual plans adopted in co-decision in the longer-term. These would provide an additional opportunity for introducing flexibility but would be very much a means to introduce additional rules or derogate from existing rules rather than incentive-based with opportunities for adaptive management.

Regionalisation would happen if and where the Member States decided to submit joint recommendations for discard plans with technical measures included in the short-term. These changes, once incorporated into Delegated Acts by the Commission, would derogate from the existing body of rules for a maximum duration of 3 years. After that period, maintaining these derogations in place would require the adoption of Delegated Acts that are adopted by virtue of an EU multiannual plan that would ultimately replace these temporary plans. In light of the existing need for flexibility and adaptation of rules for a successful implementation of the CFP, this option requires to a certain degree a speedy adoption of discard plans and in the longer-term multiannual plans. As with the baseline scenario, technical measures relating to nature conservation measures could similarly be adopted under Article 11.

Figure 6.3.1 illustrates the regulatory for technical measures under this option.

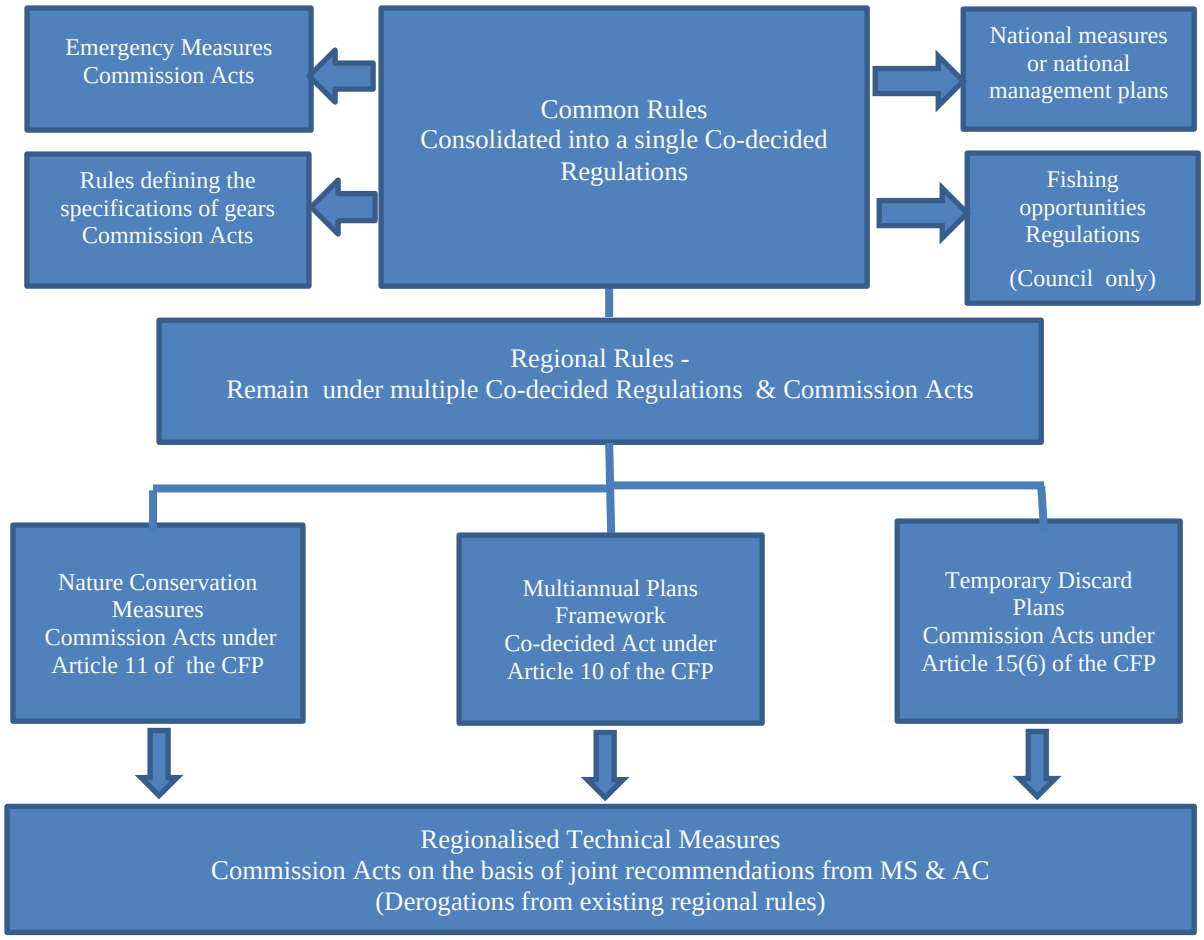

Figure 6.3.1: Regulatory Structure of Option 1
(Flexibility mainly provided through national measures and specific empowerments as well as to a limited extent under annual fishing opportunities regulations. Regionalisation is an alternative)
(Source: Author)

Stakeholder opinion

In the public consultation[9] there was little support for this approach from *Member States*, *the catching sector* or the *Advisory Councils*. They very much saw this as a re-working of the proposal tabled in 2008 by the Commission. Most advocated a complete overhaul of the regulatory structure of technical measures rather than a simple consolidation that does not depart too much from the status quo or link directly to regionalisation. They shared the view that simplification and flexibility cannot be achieved by maintaining the majority of technical

measures under ordinary legislative procedure even in the short-term. It is too cumbersome a process to be able to react to changes in fisheries. Nonetheless it carries a low-risk in the short-term that the current situation will not deteriorate further. It also provides potential for improvement in the longer-term through regionalisation and introduction of clear objectives and success indicators in the form of targets relating to the level of unwanted catches (linked to the landing obligation), thresholds for incidental catches of sensitive species such as cetaceans and seabirds and reductions in the impact of fishing gears on the seabed. These latter targets relate to the achievement of good environmental status under the MSFD.

7.4. Option 2: Framework Approach

This option implies a more radical change in the governance structure of technical measures involving the bringing to together of technical measures into one regulation rather than maintaining the multiple regulations that currently exist. It entails a proposal for a new framework Regulation with the following structure:

- General Provisions – *Scope, overarching objectives, principles of good governance success indicators in the form of concrete targets* as defined for option 1 and *definitions*. The definitions relate primarily to the definition of fishing gears and fishing operations and are common to all regions.
- Technical Provisions – *Common rules* currently contained in all of the primary technical measures regulations but applicable to all sea basins and considered as de facto permanent as there is no need or justification for changing them. These are the same rules outlined under option 1 (see table 6.3.1).
- Nature Conservation Measures – A mixture of *common rules across sea basins* and considered as de facto permanent (e.g. obligation to return incidental catches of rare fish species to the sea immediately) and *regionally specific closed or restricted area*s to protect NATURA 2000 sites.
- Baseline Measures by region – *Existing regionally specific measures* contained in the current regulations that would apply in the absence of plans regionally. These would be *baseline mesh sizes, minimum conservation reference sizes, closed or restricted areas to protect juvenile and spawning areas* and any *other regionally specific measures*. Further detail on the baselines and the criteria for their establishment including the basis for deleting redundant measures is provided in Annex X.
- Regionalisation – Empowerments for regionalisation from the *baseline mesh sizes* (e.g. different gear options that give the same result as the baselines in terms of selectivity), *changing minimum conservation reference sizes, amending or deleting existing closed areas or adding new closures* and *creation of other specific measures needed for the regions to meet the overarching objectives*.

Most of the existing regulations would be repealed and/or rationalised. It would recast the structure (one regulation instead of the numerous regulations in place) and it would give a new orientation to technical measures (clear standards, results orientation instead of prescriptive top-down approach with a large number of derogations) with regionalisation being the main tool to provide flexibility. At the same time, it would safeguard existing technical measures from being eliminated overnight – which would jeopardise the achievement of the objectives of the CFP. The existing empowerments relating to the definition of gears deemed necessary and national measures would be retained (i.e. those linked to measures that will remain in the framework regulation).

The baselines and default technical measures that correspond to these objectives would be applicable unless and until regionalised measures are designed and introduced into Union law (by the Commission through Delegated Acts). Where no regionalised action is developed, the baseline would continue to function as a default rule. Over time the importance of the default

measures would diminish and the weight of regionalised measures will increase, as multiannual plans are developed across the sea basins.

Member States would have options in choosing to move further away from more rigid technical rules (the default measures) and to move to a more flexible, results-based management approach to meet the projected results and objectives of a plan. As with the other options, nature conservation measures relating to Natura 2000 sites could be adopted under regionalisation. The baselines would be used to introduce an empowerment for the Commission to adopt Delegated Acts based on joint recommendations from the Member States containing detailed technical measures as part of multiannual plans or in the absence of such plans, temporary discard plans.

This option would allow a smooth transition from technical measures as a separate body of measures to a situation with multiannual plans that integrate technical measures as one of the management tools for a fishery in a region. The temporary discard plans would form a stop-gap and allow for a level of flexibility while multiannual plans are developed.

Figure 6.4.1 illustrates the regulatory structure under this option.

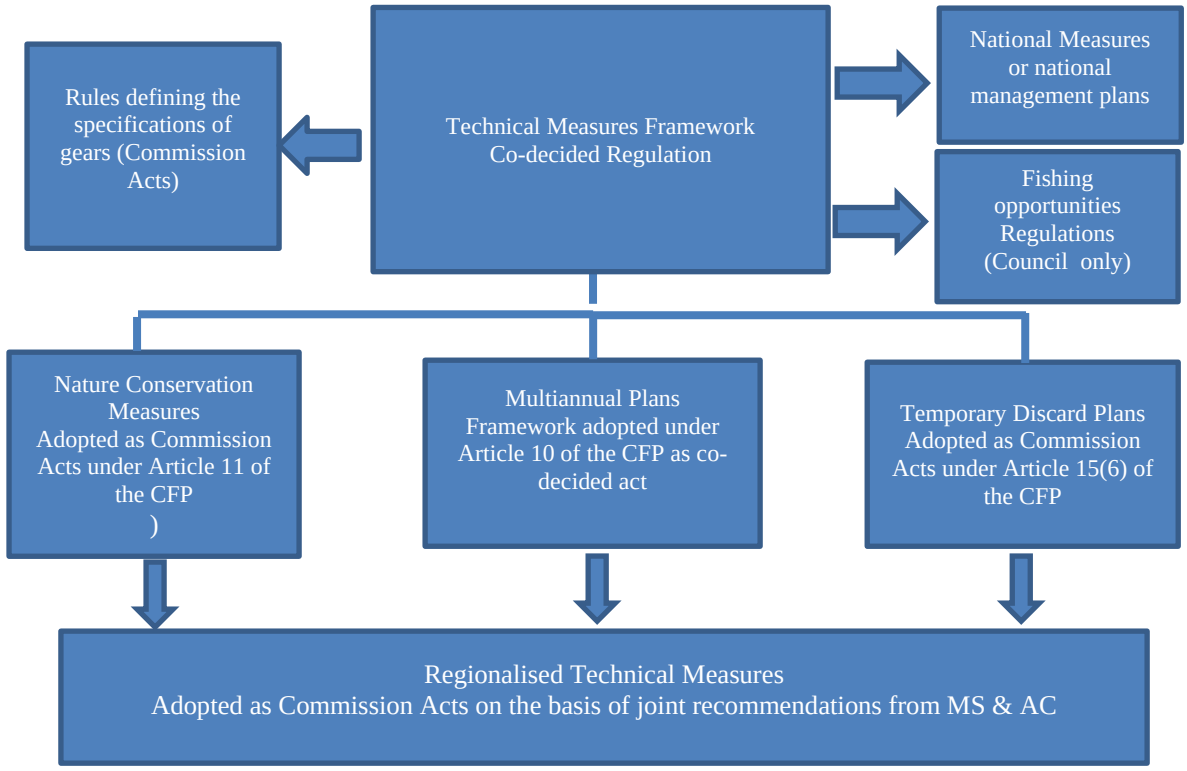

Figure 6.4.1: Regulatory Structure of Option 2
(Focus is on regioanlisation of technical measures. Flexibility provided through national measures and specific empowerments relating to definition of gears and to a limited extent through the fishing opportunities regulations)
(Source: Author)

Stakeholder opinion

The public consultation[9] showed that *the catching sector, Member States* and *NGOs* favoured a framework approach, covering all sea basins. There were divergent views on the content of the framework. Some of the industry groups (Europeche and EAPO), while accepting the merit of a framework, advocated a minimalistic approach with few (if any) rules under the framework and any detailed rules that are required to be developed at regional level. Particularly they queried the need for baseline measures (mesh sizes, mcrs or closed areas) to be included in the framework. The NGOs highlighted the strong need for some high-level overarching objectives and minimum common standards that should apply across the EU to

ensure no gaps in management occur. Simplification should not happen at the expense of the environmental protection. Many NGOs also advocated the inclusion of safeguards to react to emerging conservation problems. Most Member States and the AC agreed on a framework type approach with baseline measures but highlighted the importance of simplifying the rules while insisting on maintaining a level playing field. They accepted this will result in some rules (e.g. existing closed areas) remaining under co-decision.

7.4.1. Sub-option 2.1 – Framework Approach without baselines

Given certain sectors of the catching sector queried the need for the baseline measures, a possible sub-option of option 2 – **Sub-option 2.1** - is also considered.

As with Option 2, the *general provisions, objectives, targets, technical provisions, nature conservation measures and empowerment for regionalisation* would be maintained. These empowerments would allow for the establishment of measures that regulate the design and operation of fishing gears, closed areas, minimum conservation reference sizes and other specific measures required regionally to meet the objective of the CFP through Delegated Acts as part of the discard and multiannual plans. However, the *baseline measures* relating to mesh sizes, minimum conservation reference sizes and closed areas defined in Option 2 would be omitted.

In effect, this is a results-based approach. The framework regulation would constitute a basic set of rules and overarching objectives as well as essential nature conservation measures relating to prohibitions of fishing for certain species or with certain gears and closed areas for the protection of sensitive habitats. As under option 2, any detailed measures required would be developed regionally under discard plans in the short-term or through multiannual plans in the longer-term and nature conservation measures relating to Natura 2000 sites adopted under Article 11 of the CFP. .

This option relies on multiannual plans being developed swiftly and in the intervening period detailed technical measures included in temporary discard plans to ensure the objectives of the CFP would be met.

7.5. Option 3: Elimination of technical measures

This option is similar to sub-option 2.1. It assumes that the objectives of the CFP (e.g. MSY, landing obligation and GES) are result-driven measures and as such will lead to clean fisheries. They would thus provide enough incentives for fishermen in the short-term to fish selectively and to adapt fishing strategies that avoid and reduce unwanted catches. Under these assumptions, in this option there is no need for most of the existing technical rules in EU legislation (other than some very basic notions already expressed in the CFP Regulation).

This option would imply repealing all of the existing technical measures regulations immediately with the exception of essential nature conservation measures relating to protection for sensitive habitats and species. Progress in reaching the objectives of the CFP and, MSFD in the case of GES, would be used to assess effectiveness but there would be no defined objectives or targets specifically for technical measures. These would be defined in the multiannual plans.

It would be based on an identified and agreed result (minimise unwanted catches, clean fisheries) and it would provide maximum flexibility for fishermen individually, and also for Member States to decide regionally what technical rules, if any, are required. Any technical measures needed in the longer term would be developed regionally under multiannual plans (with the possibility of temporarily incorporating technical measures into discard plans as a short-term option). Technical measures relating to Natura 2000 sites could be adopted under Article 11 of the CFP as with the other options.

In effect, the development of new technical measures would start from scratch, under the assumption that the fishermen and Member States respond to the CFP with the adequate actions and measures – simply effectuated by fishermen themselves in their daily fishing practice, or where considered necessary and to a limited extent deposited in regionally decided measures.

This approach would represent a complete change in governance. It would imply a shift in the burden of proof to fishermen and Member States to document that they are meeting the general objectives and agreed results of the CFP and specific objectives and results identified in multiannual plans. It would be entirely dependent on significant change of behaviour of fishermen and it would strongly rely on peer pressure and self-regulation to ensure that unselective fishing does not prevail and clean fishing becomes the daily norm.

Figure 6.5.1 illustrates the regulatory structure under this option.

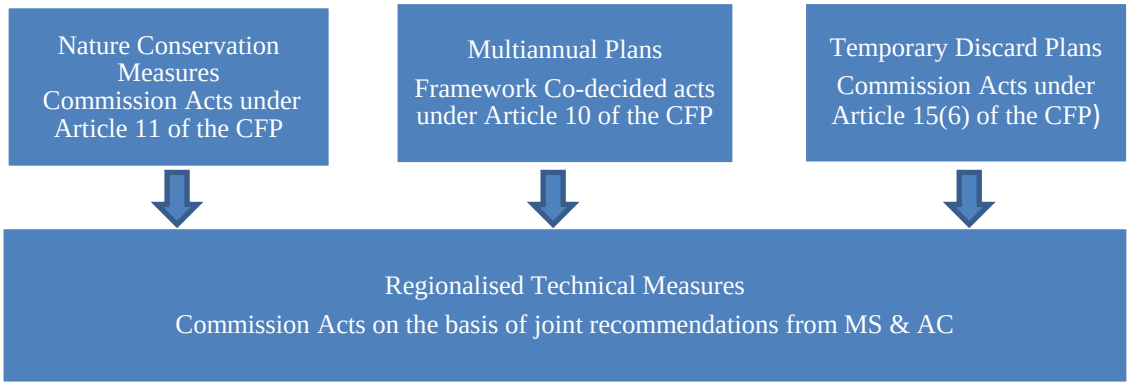

Figure 6.5.1: Regulatory Structure of Option 3
(Flexibility through de-regulation and regionalisation)
(Source: Author)

Stakeholder opinion

This approach was advocated by some of *the catching sector* (representatives of EUROPECHE, EAPO and LIFE) who did not see the need for a framework regulation[9] or only a very limited one. With the landing obligation, in particular, as a driver for improved selectivity they suggested it should be possible to repeal immediately the vast majority of the existing regulations. Other parts of the catching sector including several of the ACs (North Sea and Mediterranean) did not agree that this was an approach that could be followed in the short-term, seeing the need for some rules while regionalisation evolves. Member States and NGOs were similarly negative about this option as a short-term option as they considered it risky. They saw de-regulation or partial de-regulation of technical measures as an objective to work towards in the longer-term.

7.6. Summary of policy options

Table 7.6.1 summarises the structure, content, mechanisms for regionalisation and level of simplification for each of the policy options and sub-option 2.1.

	Baseline Scenario	Option 1	Option 2	Sub-option 2.1	Option 3
Structure	All existing regulations remain in place	Consolidation of common rules under one regulation. All other regulations containing regional rules remain in place.	Existing measures brought together into one framework regulation with a set of regionally specific annexes containing baseline measures	Same as option 2 except the framework would not contain the regional annexes	Most of the existing regulations would be totally or partially repealed immediately. Only essential nature conservation measures (protection of sensitive habitats and species) would be maintained in the existing regulations.
Content	No change other than technical adjustment to remove legal inconsistences and alignment with the TFEU	Limited adaptation and consolidation of the rules to the requirements of the CFP. Technical adjustment to remove legal inconsistences and alignment with the TFEU. The regionally specific rules would constitute the baseline standards	Clear objective linked to targets would be defined. Common provisions would be maintained and specific empowerments to allow for regionalisation would be included. The existing technical measures would be retained as baseline measures in the regional annexes to apply in the absence of regional measures being in place.	Clear objective linked to targets would be defined. Common provisions would be maintained and specific empowerments to allow for regionalisation would be included	Only nature conservation measures would remain in place
Regionalisation	Possible through discard plans, multiannual plans and Article 11 for environmental measures. Limited to adding new rules that would derogate from existing rules. No specific driver or linkage to regionalisation other than what is in the CFP.	As baseline scenario	Possible through discard plans, multiannual plans and Article 11 for environmental measures. Specific empowerments allowing for regionalisation from the baseline technical measures included in the framework. Measures could be amended or derogate or deleted entirely. New	Possible through discard plans, multiannual plans and Article 11 for environmental measures. Empowerments allowing for the development of specific technical measures at regional level included in the framework	Possible through discard plans, multiannual plans and Article 11 for environmental measures. Empowerments allowing for the development of specific technical measures at regional level included in the plans

			measures could also be introduced.		
Simplification	All existing regulations remain in place	Common provisions from Regulations (EC) 850/98, 2187/2005 and 1967/2006 would be moved into one new regulation. Regionally specific measures would remain in these regulations and all other regionally specific measures contained in Council and Commission regulations would remain in place	Regulations (EC) 850/98 and 2187/2005 would be repealed. Regulation (EC) 1967/2005 would be partially repealed. Supporting regulations (EC) 254/2002, 894/97, 2549/2000 and 812/2004 would be repealed. Regulations 1098/2007 and 1224/2009 would be amended. Commission Regulations (EC) 2056/2001, 3440/86, 1922/1999, 494/2002, 2549/200, 727/2012, 636/2010, 724/2010 would be repealed. The provisions from all of these regulations where required would be incorporated into the new framework regulation	Regulations (EC) 850/98 and 2187/2005 would be repealed. Regulation (EC) 1967/2005 would be partially repealed. Regulations (EC) 254/2002, 894/97, 2549/2000 and 812/2004 would be repealed. Regulations 1098/2007 and 1224/2009 would be amended. Commission Regulations (EC) 2056/2001, 3440/86, 1922/1999, 494/2002, 2549/200, 727/2012, 636/2010, 724/2010 would be repealed entirely. The common provisions from all of these regulations where required would be incorporated into the new framework regulation. The regionally specific measures would be repealed.	Regulations (EC) 850/98 and 2187/2005 would be repealed except for nature conservation measures contained in these regulations. Regulation (EC) 1967/2005 would be partially repealed except for non-technical measures provisions and any nature conservation measures contained in this Regulation. Regulations (EC) 254/2002, and 2549/2000 would be repealed. Regulations 1098/2007 and 1224/2009 would be amended. Commission Regulations (EC) 2056/2001, 3440/86, 1922/1999, 494/2002, 2549/200, 727/2012, 636/2010, 724/2010 would be repealed entirely

Table 7.6.1 Summary of structure, content, mechanisms for regionalisation and level of simplification

(Source: Author)

8. ANALYSIS OF IMPACTS

8.1. Methodology

The following sections present an analysis of the potential impacts of the different policy options described on the key stakeholders identified in section 4.5. The impacts on other stakeholder groups indirectly are also indicated where relevant.

The different options largely present different governance structures for the specification and implementation of technical measures. Changes to the substance are primarily restricted to deletion or simplification of existing measures or the establishment of baselines based on existing rules.

Regionalisation is a new concept and other than the first discard plans adopted earlier this year there is little experience as to what impact it will actually have. Therefore how the different governance options, and the possibilities they provide for specification of different technical measures under regionalisation, might actually translate under the different options is based on the limited experience of regionalisation to date.

Determining or disentangling whether, and to what extent, a specific technical measure such as a closed area or a mesh size would impact on a particular stock, compared to an output type measure such as quota management, which may also be in place for the same stock, is challenging. Isolating the costs of enforcing technical rules is similarly not straightforward as monitoring tends to be carried out as part of routine inspections monitoring a range of rules including checking for valid fishing licences and catch reporting.

For this reason the analysis is based on a qualitative assessment of the impacts, supported with an evaluation of the likely risks of the different options (section 8.3). It describes the potential expected direction of change (i.e. will the situation deteriorate, stay the same, or improve under the different options). The assessment of environmental impacts and related indicators such as stock status, a monetisation of economic impacts, and a numerical assessment of social impacts in terms of jobs, is qualitative and largely based on specific examples or case studies. The impacts of the policy options considered in the IA to support the CFP[19] remain valid and where relevant are used to support the analysis.

The options are assessed in terms of the short-term impacts up to 2019 corresponding to the full implementation of the landing obligation and in the longer-term covering the period up to 2022 and beyond when the CFP is due to be reviewed[69].

The key impacts considered are:

Economic impacts

Economic sustainability is assessed using as indicators the contribution that technical measures under the different options can make to reaching the MSY objective and to reducing unwanted catches under the landing obligation. Economically these two core elements of the CFP will have a huge bearing on future economic viability in terms of growth and investment, sectoral competitiveness and also providing stability for SMEs. The costs for the adaptation of gears to adjust to any new approach to technical measures is also considered along with the likley impacts of the different options on the competitveness of the catching sector.

Social impact

Social sustainability is assessed in terms of the contribution of technical measures to employment evolution in fisheries and the attractivenesses of the catching sector measured by the likely impacts on wages and working conditions of the different options.

Environmental impacts

Environmental sustainability is assessed in terms of protecting biodiversity, preserving the quality of natutral resources and fostering the sustainable use of resources. The contribution technical measures can make to the achievement of GES for MSFD Decriptor 1,3 and 4 (i.e. biological impacts on fish stocks and vulnerable species such as marine mammals and seabirds) and Descriptor 6 (i.e. physical impacts on the seabed) are used as indicators.

Simplification, Administrative Burden and Costs

Governance issues are considered in terms of the degree of simplification achieveable; the involvement of the catching sector and national administrations in the decision-making process under regionalisation. The increase in workload and costs for national research institutes as well as STECF and ICES; and the costs for the catching sector and national administrations incurred as a result of regionalisation are also assessed as well as the costs for controlling technical measures under the differing governance structures.

Impacts on SMEs

Impacts on SMEs are broken down into economic impacts as a result of additional costs and responsibilities associated with regionalisation.

8.2. Baseline scenario

8.2.1. Economic impacts

MSY and the landing obligation

The economic impacts will continue to be negative. No improvements in current exploitation patterns are likely in the short-term for stocks currently fished above MSY. This will result in significant reductions in fishing opportunities or fishing effort for stocks in the Mediterranean where there are no TACs will be required to bring fishing mortality to MSY levels. Currently out of 176 assessed stocks there are 19 stocks in the North-east Atlantic, 88 stocks in the Mediterranean and 5 stocks in the Black Sea which are considered to be fished unsustainably above MSY[37]. Some of these are highly depleted and even if the timeframe for reaching MSY is pushed out to 2020, the adjustments required to reach Fishing mortality corresponding to MSY (i.e. $F_{msy)}$) will be significant[70]. Example 18 provides an example of the scale of the economic impacts for such stocks.

Example 18: The cod stock in the west of Scotland has been overfished for many years with low spawning stock biomass (SSB) and low recruitment of young fish into the stock. ICES has advised that catches should be reduced to the lowest possible level and further technical measures should be implemented to improve the exploitation pattern[71] in all fisheries catching cod. Large reductions in fishing mortality will be required to bring the stock to MSY by 2020. Leaving aside the economic impacts of a prolonged period of low TACs for this species, this will have knock-on effects on other stocks. The Scottish White fish Producers Association (SWFPA) estimated that to recover the cod stock to a TAC aligned to MSY (ICES advised a quota of 38 tonnes for 2015) would result in catches of only around one fifth of the tonnage required to maintain and fully prosecute the target fishery of anglerfish[72]. The anglerfish fishery in this area is worth approximately €25 million euros to the Member States concerned. In practice these knock-on effects on associated species have provided fishermen with a strong incentive to discard legal sized cod caught as bycatch while fishing for other species such as anglerfish to continue fishing. ICES reported in 2014 that discards of cod were roughly four times greater than landings[72]. It will no longer be possible to discard this fish once cod comes under the landing obligation meaning the fishery is likely to close very early in the year with substantial losses.

The current levels of unwanted catches will continue and under the landing obligation these catches will have to be landed but only sold for non-human consumption purposes. For some species (e.g. plaice in the sole fishery in the North Sea) these unwanted catches will remain at high levels. Table 4.1.1 provides examples of fisheries with similarly high levels of unwanted catches. Economic returns will reduce given the low value of such unwanted catches. The scale of the economic impacts arising from unwanted catches is illustrated in example 19.

Example 19: A study[73] which looked at the economic effects of the landing obligation for Dutch fisheries showed the scale of economic losses that could be expected. The study assumed that selectivity and all fishing activities are the same as in the baseline year (2011). The implementation of the landing obligation results in projected additional costs for the entire Dutch offshore fishing fleet (around 315 vessels) of €21 million euros. This fleet had total landings of €306 million and a Gross Value Added (GVA) of €41.6 million in 2011. These additional costs were offset by additional revenues from the unwanted catches sold for non-human consumption estimated at €8 - €15 million euro, assuming a cost for the unwanted catches of €0.15 - €0.30/kg (based on current market prices for fish meal). This results in net losses of between €6 to €14 million euros across the Dutch fleet. The study concludes that such losses are likely to be unsustainable given that according to STECF a large proportion of this offshore fleet segment (54%) made losses in 2011[60]. While not entirely representative of other fleets in the North Sea or elsewhere, the costs and revenues for the landing of unwanted catches are considered indicative. The impacts would depend on the profitability of the other fleets concerned but would in all likelihood be negative.

Fishing opportunities will also be exhausted more quickly in fisheries in the Northeast Atlantic and Baltic. Unwanted catches which will have to be landed and counted against quotas will accelerate quota uptake. Exhausted fishing opportunities will force vessels to stop fishing earlier in the year with related negative impacts on their financial performance as shown by example 20.

Example 20: In the Irish Sea, a UK study[74] suggests that the whiting fishing opportunities available to Northern Ireland *Nephrops* trawlers would be exhausted after only 10 days at sea before all the UK quota is used up if steps to improve selectivity or avoidance measures are not taken. This would result in closure of the *Nephrops* fishery in early January. Landings from this fishery are valued at approximately €42 million euros and involve 140 boats from the UK and Ireland[60].

Adaptation costs

Given the baseline option does not envisage any changes in the existing measures then no additional costs for adapting gears would be expected, at least in the short-term. Research into developing and testing selective gears would continue at current levels but without changes to the regulatory structure the uptake of such gears by the catching sector would remain low based on past experiences. Any additional costs that would be incurred would not be directly related to technical measures but as a result of adaptations to vessels to handle unwanted catches as a consequence of the landing obligation.

In the longer term such costs may increase as the economic impacts associated with moving to MSY, the landing obligation and meeting environmental targets under the MSFD would eventually force fishermen to adapt their gears and fishing practices or go out of business. Such costs could be offset through funding under the European Maritime and Fisheries Fund (EMFF[75]) in the short term so would not necessarily be significant. This may change in the longer-term after the end of the EMFF in 2020 if there is no such funding mechanism in the future.

Competitiveness

There will be no change in the competitiveness of the catching sector. Fishermen will continue to be governed by the same sets of detailed rules with limited flexibility.

Other stakeholders

Related impacts in downstream business could be expected to result from the landing of unwanted catches. These costs are not directly related to technical measures but to the implementation of the landing obligation. This will have negative impacts on the wider economy and will have knock-on impacts on other enterprises providing inputs to fishing, and processing, marketing and trading catches.

There are likely to be gains for non-human consumption outlets that can utilise and profit from previously discarded catches. There are also likely to be economic benefits for transport companies and storage companies (including markets) that will handle the previously discarded catches. These gains are difficult to estimate given the uncertainty regarding the actual level of unwanted catches that may result once the landing obligation is introduced and are short-term (see example 21).

Example 21: A UK study[76] showed that additional staff time and equipment is expected to be required at the markets to handle the previously discarded fish, as well as investment in additional storage facilities. Up to three additional staff and an additional forklift truck would be required to deal with the extra material landed in one specific port. Fish markets focus on the sale of human-consumption fish and the receipt of large volumes of low value material do not fit well with their business models.

Any costs of handling material for non-human consumption would likely be passed onto vessel operators although some of these costs could be partially offset by funding through the EMFF.

Third countries, particularly Norway and the Faroe Islands will be impacted in that reduced fishing opportunities arising from a failure to reach MSY will result in lower fishing opportunities for these countries in Union waters. They will have to comply with the landing obligation when fishing in Union waters which may lead to increased costs depending on the species being targeted. Third countries fishing in Union waters in the Mediterranean will be impacted in that a failure to reduce overfishing and the level of unwanted catches will impact on available resources.

For consumers, the need to halt biodiversity loss is of increasing importance and this has created a demand for sustainably and responsibly caught fish products. This was apparent from some of the submissions in the public consultation. Failure to revise the technical measures could indirectly lead to increasing difficulties for the catching sector to sell products in the market because of reduced demand for products not considered to be caught in an environmentally friendly manner.

8.2.2. Social impacts

The social impacts will continue to be negative. They will be most acute for fleet segments having significant levels of unwanted catches (typically the vessels highlighted in table 7.2.1). In the short-term, extra crew will be required to handle unwanted catches onboard which will have to be stowed onboard separately from marketable catches. The study referred to in section 7.2.1[73] estimated in the Dutch fleet an additional 1-2 FTE's would be required to account for the additional work load on board (approximately 300-400 FTEs for the Dutch fleet) in the short-term. However, these increased levels of employment would be short-lived as the increase in costs for extra crew would be unsustainable when combined with the reductions in fishing opportunities forecasted with the move to MSY.

In the longer term, the number of FTEs in the catching sector would reduce further in these fleet segments. The most affected groups of workers will be those which are employed on fishing fleet segments currently discarding the most. In the fisheries in the Northeast Atlantic (including the North Sea) this would be the beam trawl fleets exploiting flatfish species and otter trawls targeting *Nephrops* and demersal fish in mixed fisheries. These fleets would consist of approximately 3,500 vessels, employing around 17,200 FTE[60]. This is around 34% of the total workforce employed on fishing vessels working in the North East Atlantic[6]. All of these are micro-enterprises.

In the Mediterranean the demersal trawl, shellfish dredge and beam trawl fleets have the highest discards. These fleets consist of approximately 4,200 vessels, employing around 10,586 FTE. This represents around 34% of the total workforce employed on fishing vessels in the Mediterranean[60]. In other fleet segments the impacts are likely to be less significant as the levels of unwanted catches are much lower and employment levels would remain at current levels. Taking the projection made under the baseline scenario in the IA supporting the CFP[19] of a 20% reduction in employment by 2022, which remain valid for this analysis, would mean a loss of FTEs of around 5,560 FTEs in these fleet segments.

The increased workload and reduction in wages that will result from moving to MSY and from the handling and landing of unwanted catches under the landing obligation will result in deterioration in job quality for most sectors of the catching sector. The attractiveness of the sector will reduce. This was identified as the outcome under the baseline scenario considered in the CFP IA[19] where crew wages were expected to continue below national averages leading to the attractiveness of the sector remaining constant at best or more likely declining. The scale of decline in wages predicted is further illustrated by example 22:

Example 22: A UK study[77] estimated that *Nephrops* trawlers would have to reduce the annual number of trips undertaken by 52% compared to 2008–2010 if unwanted catches of other species (e.g. cod and whiting) were not avoided, leading to a 38% reduction in income. This fleet segment is estimated to currently discard ≈ 76% of its cod catches. Failure to improve the selectivity of fishing practices under the landing obligation would lead to substantial decrease in the number of trips (typically between -30% and -50%) and to a corresponding decrease of income (between -15% and -30%) compared to the 2008-2010 situation.

Other stakeholders

Indirect impacts on downstream business are expected to result from the landing obligation. With increased incomes likely for non-human consumption outlets that can utilise and profit from unwanted catches, employment will increase in the short-term. There are also likely to be employment benefits for transport companies and storage companies (including markets) that will handle the previously discarded catches. The actual extent of any increases in employment numbers is difficult to quantify as it will depend entirely on the level of unwanted catches that would be landed. In the longer term as with the catching sector it is doubtful whether these increased levels of employment are sustainable.

Other ancillary businesses such as gear suppliers and net manufacturers would be negatively impacted under the baseline scenario. Reductions in income for the catching sector will have a knock-on effect on such businesses as fishermen will try to increase cost efficiencies by reducing gear maintenance and replacement gear costs.Overall reductions in downstream and ancillary businesses are likely to be in line with the projections in the CFP IA[19] of -15% by 2022.

8.2.3. Environmental impacts

Environmental impacts on fish stocks will continue to be mostly negative in the short-term and at best may stabilise in the longer-term. Any improvements in selectivity will develop

only when the economic impacts force fishermen to react. Exploitation patterns for stocks will not change and those stocks that are overfished (as indicated in section 7.2.1) will remain under pressure. Reaching MSY and GES under the MSFD (descriptor 3) within the target timeframe will be extremely difficult without significant cuts in fishing opportunities and reductions in fishing pressure.

The impacts on incidental catches of protected species including marine mammals and seabirds (MSFD descriptor 1) will be neutral in the short-term. Existing mitigation measures will remain in place but continue to be rather piecemeal and not necessarily targeted in the right fisheries or areas.

For cetaceans, ICES[16,47&48] have concluded that in a number of fisheries incidental catches remain of concern. These include:

- harbour porpoises in static nets in the Baltic, Kattegat, North Sea and Skagerrak, Atlantic and Black Sea;
- common and striped dolphins in static nets in the Atlantic and Black Sea;
- common dolphins in pelagic trawls for bass and tuna in the Atlantic; and
- bottlenose dolphins in both pelagic trawl and static net fisheries in the Mediterranean.

For seabirds[16&78] an ICES report classified bycatch by the EU fishing fleet at c.a. 200,000 seabirds annually in EU waters with at least 25 species of seabirds in EU waters as being of conservation concern either globally or at a local population level. Incidental catches of other marine mammals such as seals and marine reptiles such as sea turtles are also frequently reported.

The Natura 2000 sites already established to protect vulnerable deep-sea ecosystem both inside the waters under Union jurisdiction as well as non-EU waters would remain in place. However, the creation of new closed areas, although possible, will continue to be a slow process (no new areas have been adopted outside territorial waters since 2009). For such habitats delays in taking protection measures could lead to significant or irreversible impacts[79]. Failure to protect areas will impair the achievement of objectives relating to descriptors 1 and 6 of the MSFD.

Other stakeholders

Media campaigns by NGOs have undoubtedly raised awareness on discards and the environmental impacts of fishing in general. Therefore failure to revise the technical measures leading to environmental sustainability objectives not being met will provoke a negative reaction from the general public as a result of such media campaigns.

8.2.4. Simplification, administrative costs and burden

There would be no simplification of the regulations. Regionalisation of technical measures through multiannual and discard plans would be minimal and even if did happen in the longer-term would merely add additional rules rather than simplifying the current ones.

Administrative costs and burden will remain high for the Member States. Amending the technical measures legislation will remain a costly and lengthy process. There will be additional costs to Member States managing authorities related to the development of discard plans that may contain technical measures. In the longer term, pressure to minimise economic impacts may drive the sectors of the catching sector indicated with the highest level of unwanted catches to actively press Member States and the Commission to develop regionalised measures as part of multiannual plans. This will result in additional costs for Member States.

Costs to the scientific community would not be expected to change as there would be no additional workload expected related to technical measures in the short-term. Scientists would continue to have to develop, test and evaluate technical measures in response to requests from the catching sector, Member States, the Commission and the European Parliament.

Costs for enforcement of technical measures would remain extremely high due to the continued need for a high level of monitoring at sea. The retrospective analysis estimated costs of control of around €33 million per Member State of which 57% is spent on control at sea. Any additional costs over and above this would not be directly related to technical measures but to implementation of the CFP and in particular the landing obligation.

Other stakeholders

There are no indirect administrative costs or burden on other stakeholders.

8.2.5. Impacts on SMEs

Administrative burden and costs on the catching sector, most of which would be classified as micro-enterprises (98%), would remain high. The current complex regulatory structure would remain in place requiring fishermen to comply with multiple technical rules. There would be also additional burden and costs resulting from the landing obligation, which would be indirectly linked to technical measures. These costs would mainly be associated with handling and storing unwanted catches on board, as well as for the landing, storage and transport of such unwanted catches ashore prior to disposal or sale for non-human consumption purposes. Costs will vary considerably from fleet segment to fleet segment depending upon the extent of unwanted catches and the reaction of the vessel owners to deal with these problems. Reactions could vary between hiring additional crew members, to choosing to voluntarily improve selectivity to reduce the level of unwanted catches, choosing to illegal discards such catches or downsizing their business.

8.3. Option 1: Consolidation

8.3.1. Economic impacts

MSY and the landing obligation

In the short-term the economic impacts will be similarly negative to the baseline scenario. Any immediate changes to the regulations under discard plans or the existing legislation would see the introduction of additional measures to reduce unwanted catches. These measures would result in consequential short-term economic losses from reductions in marketable catches. Past experience has shown that if these economic losses are significant then there will be little industry buy-in and fishermen will explore ways to minimise these losses once the measures are introduced. This is illustrated by example 23 below:

Example 23: Several changes in codend mesh size and construction were introduced in the Baltic cod fishery in the early 2000s to improve exploitation patterns. One of these changes was the introduction of a BACOMA escape window of 120mm mesh size (previously a BACOMA window of 105mm had been the legal requirement). Based on simulations and experimental studies this gear modification was forecasted to reduce discarding by 30-40%. On this basis it was introduced into legislation in 2002. However, no assessment was carried out prior to introduction as to the short-term economic losses. Soon afterwards, losses of up to 40-50% were reported by fishermen with the result that widespread gear manipulation, legal and illegal occurred. There was no improvement in the catch profile and in September 2003 the size of the BACMA window was reduced to 110mm[57].

In the longer term, it is possible that driven by the need to maintain stocks at MSY and reduce unwanted catches under the landing obligation, the catching sector will explore how different

technical measures could contribute to achieving better selectivity under regionalisation. Shifts of exploitation patterns towards the most valuable target size classes/species would optimise the economic returns for the catching sector associated with fishing opportunities. Larger fish will tend to achieve a higher price and this will focus selectivity in such a way as to avoid the capture of younger age classes. The economic gains will be dependent on whether the incentives are big enough to encourage the catching sector to accept these losses in the short-term and adjust exploitation patterns[12] for potential gains in the longer-term.

Adaptation costs

In the short-term, costs for adapting gears to new legislation will be the same as the baseline given this option only consolidates the current regulations. In the longer-term the move to regionalisation where fishermen may be forced to adopt more selective gears under legislation implies costs for adapting their fishing gears. Improving the selectivity of fishing gears by adding specific devices into existing gears is not necessarily expensive. The retrospective evaluation indicated that the direct cost of modifying the gears of trawlers of 12-16 m is typically less than €1,000 and for larger vessels may be higher (€2,000-€3,000), depending on the gear modification required[6].

Considering a conservative average estimate of a one-off payment of €3,000 per vessel (based on discussions with fishermen and net manufactures carried out as part of the retrospective analysis) for purchasing and rigging into the trawl, the total cost borne by the catching sector in the North East Atlantic and in the North Sea would be in the region of €16.4 million, if only vessels operating active gears, the most in need of selectivity improvements, are considered[6]. This represents ≈ 0.9 % of the annual value of their landings (See table 7.3.1). Funding is available through the EMFF for grant aid towards those costs. Direct costs for the catching sector can therefore be assumed to be negligible compared to the amounts to be disbursed and the long-term benefits of improved selectivity.

Gear	Number of vessels	Need	Cost of selectivity (€ Million)	Landing value (€ Million)
Beam trawlers	739	Y	2.2	377.5
Demersal trawlers and/or demersal seiners	2 792	Y	8.4	1 297.3
Dredgers	1 109	N	0.0	140.5
Drift and/or fixed netters	2 637	N	0.0	217.7
Inactive	2 177	N	0.0	346.9
Pelagic trawlers	449	N	0.0	243.7
Purse seiners	290	N	0.0	5.5
Vessel using other active gears	162	Y	0.5	85.1
Vessels using active and passive gears	1 627	Y	4.9	86.4
Vessels using hooks	1 250	N	0.0	1.4
Vessels using other passive gears	119	N	0.0	38.4
Vessels using passive gears only for vessels < 12m	4 841	N	0.0	35.9
Vessels using polyvalent active gears only	144	Y	0.4	72.1
Vessels using polyvalent passive gears only	3 571	N	0.0	181.8
Vessels using pots and/or traps	3 655	N	0.0	377.5
TOTAL (need = Y)			**16.4**	**1 801.3**

Table 7.3.1: Estimate of direct cost of purchasing and rigging selectivity devices into existing gears (NE Atlantic). The "Need" column reflects the need of fleet segments to improve their current selectivity performances
(Source: MRAG et al 2014 page 47 of prospective evaluation)

The EMFF may also support gear adaptations that limit and, where possible, eliminate the physical and biological impacts of fishing on the ecosystem or the sea bed and equipment that protects gear and catches from mammals and birds protected by environmental legislation. The costs are estimated to be similar to the above although will vary greatly from sector to sector (e.g. incidental catch cetaceans and seabirds are higher in passive gear fisheries compared to demersal trawl fisheries).

Competitiveness

In the short-term there will be no change in competitiveness amongst the catching sector. In the longer-term regionalisation may introduce a degree of competiveness into the sector between regions. Fishermen operating in those fisheries where regional measures are in place may gain a competitive advantage over operators in other sea basins continuing under the detailed rules imposed at Union level. This is dependent on industry buy-in into the regional measures on the basis that they result in improved economic returns.

Other stakeholders

Impacts on downstream businesses such as fish processors, transport, storage companies and gear suppliers would be similar to the baseline (i.e. positive for some, negative for others) in the short-term and longer term.

The catching sector from third countries will be negatively impacted on the short-term as the under the baseline scenario. However, they may benefit in the longer term from stable or increased fishing opportunities if there are improvements in stock levels.

8.3.2. Social impacts

Short-term social impacts will be negative as under the baseline. The simple change to the governance structure of technical measures envisaged will not halt the general decline forecasted as a result of implementation of the CFP. As with the baseline, projected declines in employment of 10-20% by 2020 are the most likely scenario based on the IA supporting the CFP[19].

In the longer-term the general decline in employment is likely to stabilise. If regionalisation evolves leading to more effective technical measures then the negative impacts should be lessened over-time. However, this is reliant on such measures having a level of industry buy-in.

This will be similarly the case in terms of job quality and satisfaction. Wages will decline in line with the baseline scenario in the short-term with a gradual improvement as regionalisation evolves. Provided reductions in unwanted catches and sustainable fishing mortalities are achieved through regionalisation then, job quality and attractiveness of the sector will stabilise much more quickly than under the baseline.

Other stakeholders

The social impacts on downstream and ancillary businesses will very much mirror the impacts in the catching sector.

8.3.3. Environmental impacts

In the short-term the environmental impacts on fish stocks would be similar to the baseline scenario. Discard plans would provide the opportunity to introduce measures to improve exploitation patterns for fisheries and species falling under the landing obligation in the period up to 2016-2019. Such measures may lead to reductions in unwanted catches for those species. The impacts on other species caught as bycatch species in those fisheries may also benefit depending on the nature of the fishery and the gears used. Example 24 from the Celtic Sea illustrates the reductions in unwanted catches that could be expected in a mixed fishery

for cod, haddock and whiting. Given such measures are likely to result in economic losses, positive environmental impacts will depend on compliance with these measures.

Example 24: Based on predictions by STECF[80], increasing the codend mesh size from 100mm to 120mm in the Celtic Sea mixed demersal fishery targeting cod, haddock and whiting would result in reductions in discards of 2%, 14% and 15% respectively, with corresponding reductions in marketable landings of 28%, 47% and 45%.

In the longer-term there are further benefits from including technical measures within multi-species multiannual plans. Example 25 illustrates these potential long-term benefits achievable through improvements in exploitation patterns.

Example 25: The impact of improving the exploitation patterns of certain fish stocks exploited by French fleets has been evaluated in a study by Henichart et al. (2011)[82]. For each of the studied stocks, the F_{msy} (relative to current levels of fishing mortality in 2010) was evaluated under three assumptions: *i) SQ* - status quo (no change in current selectivity), *ii)* catches of individuals aged 2 and less not fished and *iii)* catches of individuals aged 3 and less not fished. The resulting catches and changes in spawning stock biomass (SSB) were also projected. The results are shown in table 7.3.3.1.

This analysis shows that stocks generally respond well to improvements in selectivity although the benefits vary according to the stock concerned. For Northern hake and sole in the Bay of Biscay, a change in the exploitation pattern to target older fish significantly increases the F_{msy}. For overexploited stocks (i.e. *Nephrops* in the Bay of Biscay, Celtic Sea cod and plaice), fished above F_{msy} the difference between current fishing mortality and F_{msy} is narrowed by improving selectivity. For example targeting age 2+ *Nephrops* results in the reduction of 44% required at the current level of fishing mortality to reach F_{msy} being reduced to a 19% reduction. For plaice in the Celtic Sea selectivity improvements have little influence on target F_{msy}, probably because the current exploitation pattern is already close to the optimum exploitation pattern. Changes in F_{msy} also translate into increased catches and higher SSBs. For most of these stocks the benefits are seen most when fishing is targeted at 3 year old fish and above.

	Fishing mortality at F_{msv} (relative to current F)			**Catches**			**SSB**		
	SQ	Age 2+	Age 3+	SQ	Age 2+	Age 3+	SQ	Age 2+	Age 3+
Northen Hake	0%	11%	45%	0%	7%	25%	0%	2%	6%
Sole Biscay	-19%	-7%	30%	1%	4%	10%	18%	22%	35%
Nephrops Biscay	-44%	-19%	101%	11%	33%	64%	88%	64%	28%
Cod Celtic Sea	-45%	-41%	8%	10%	14%	46%	143%	135%	106%
Plaice Celtic Sea	-64%	-62%	-56%	109%	112%	122%	437%	436%	462%

Table 7.3.3.1: Quantifiable impacts of exploitation pattern on long-term MSY objective compared to current exploitation pattern
(Source: Adapted from Henichart et al. (2011))

In the Mediterranean it will be more difficult to reduce negative environmental impacts. A study carried out for the European Parliament[83] suggested that one possible consequence of the landing obligation may be an increase in illegal marketing of fish below the mcrs. Landing, storage and transportation of juveniles will be legal and this could simplify commercialisation in the black market and incentivise the targeting of juveniles instead of the

converse as anticipated in the northeast Atlantic. This is a long-standing problem in the Mediterranean and not necessarily related to technical measures but could create an unwanted incentive to drive non-compliance. Fishermen may choose to fish unselectively and target small fish if the revenues from such catches are significant. As there are no fishing opportunities set in the Mediterranean, Article 17 of the CFP cannot be used to counteract these potential negative impacts.

For sensitive species and habitats the impacts will be at best neutral or negative. Existing nature conservation measures will remain in place. Regionalisation of environmental protection measures would provide Member States with more flexibility to develop effective measures to achieve environmental objectives. Flexibility will allow the consideration of trade-offs and complementarities between measures focusing on environmental requirements under these Directives and measures aimed at the conservation of fish stocks (MSFD descriptor 3). The identification of environmental measures contributing to MSFD descriptors at a regional scale would better take into account the effects of certain measures which could negatively impact other environmental requirements. For example, fishing effort displacement as a consequence of closures adopted to contribute to descriptors 1, 4 or 6 and which could negatively impact stock conservation (descriptor 3) can be anticipated and counteracted from the outset.

Other stakeholders

As with the baseline scenario if perceived negatively in the short-term by NGOs this may translate into a negative reaction from consumers.

8.3.4. Simplification, administrative costs and burden

A degree of simplification is achieved through the consolidation of the common rules into one Regulation. Consolidation would allow specific common provisions of some existing co-decided regulations to be repealed to avoid duplication. Regulations containing regionally specific measures and implementing rules would remain in place without change. In the longer-term regionalisation of technical measures is envisaged by way of derogations to the technical measures. It is unlikely to lead to any major simplification of the rules and may in fact add new rules.

In the short-term as with the baseline administrative costs and burden on Member States will remain high. There will be additional short-term costs for developing temporary discard plans which may include technical measures. By way of example of the projected costs for developing a temporary discard plan for pelagic fisheries in North Western waters are shown below in example 26.

Example 26: The development of a discard plan for pelagic fisheries in the North Western Waters, (which contained no technical measures) required 6-8 meetings over an 8 month period. These meetings involved representatives from 6 MS and two ACs (Pelagic Advisory Council and North Western Waters AC). The cost of these meetings is estimated at around €10,000-€15,000 per meeting primarily to cover travel and subsistence costs[83]. Assuming the same level of engagement in the future this implies additional costs of around €80,000-€120,000 for the development of a plan. These costs would likely reduce once the plans are in place as focus would shift to monitoring and evaluation requiring a lot less formal engagement between Member States.

In the longer-term the gradual move towards multiannual plans will lead to increasing costs for Member States administrations. The scale of these costs will depend upon the number of Member States involved, the number and nature of the fisheries, the complexity of the plan and the role of technical measures within the plans. The costs for individual Member States associated with regionalisation will also vary depending on the number of sea basins in which

a Member State has a fisheries interest. France for instance are involved in fisheries in the Northwestern waters, Southwestern waters, North Sea and Mediterranean so would have a higher level of costs compared to Ireland who principally have only an interest in Northwestern waters. The IA supporting the CFP[19] estimated the move to regionalisation is likely to increase overall costs in the region of 20-50%, although the total direct cost to stakeholders would depend on the allocation of funding and in particular increased contributions from Member States as well as how the Advisory Councils structure their work programme to take account of regionalisation. These costs would be largely front-loaded during the development phase of multiannual and discard plans.

In the short-term costs for scientific agencies will be similar to the baseline scenario and be at similar levels illustrated by example 27. In the longer-term to support the development of regionalised plans that include technical measures would lead to increased costs dependent on the detail and content of the plan. For instance a plan for pelagic fisheries would have a lot less need for technical measures to ensure effective implementation compared to a demersal fisheries plan where the role of technical measures has much more importance.

Example 27: The level of funding for research that may be incurred, France allocated €2 million between 2008 and 2012 to support 11 selectivity projects (€0.9 million from the EFF and €1.1 million national contribution[6]). Such funding possibilities will continue under the EMFF.

Regionalisation will also involve STECF and ICES in the provision to i) the regions with information to determine the effectiveness and relevance of regionally-specific technical measures proposed (channelled through the Commission), and ii) the Commission with scientific advice to determine whether to approve the proposals made at the regional level. Provision of this advice will not necessarily result in increased costs for the Commission for contracting STECF or ICES to provide this advice but would require adjustments to the work programmes of both organisations to accommodate these assessments.

The costs for controlling technical measures will remain high as under the baseline scenario. Control authorities will have to enforce the existing technical measure regulations. Any small reductions in costs arising from the simplification of the common technical rules into one Regulation would be offset by increased costs for monitoring the landing obligation.

In the longer term regionalisation should lead to greater acceptability (as a result of increased participation from stakeholders in the specification of measures relevant to them in their regions). This may result in reductions in control costs compared to the baseline if regionalised measures under this option introduce an incentive for compliance. It can be expected that regional measures will be more focused and streamlined, leading to improved controllability.

Other stakeholders

The move to regionalisation should not necessarily impact on third countries fishing in Union waters to any degree. Fishing opportunities and supporting rules including technical measures are already subject to negotiation annually between the Union and third countries[84].

8.3.5. Impacts on SMEs

Regionalisation of technical measures under this option would have positive and negative impacts on the catching sector as the main group of SMEs involved. In the short-term administrative burden and costs would remain high for the catching sector. In the longer-term regionalisation may lead to benefits in terms of reduced administrative burden and, through, the Advisory Councils, much greater involvement in the decision-making process (i.e. in the development and implementation of the multiannual and temporary discard plans). However, there are costs associated with regionalisation as indicated which indirectly impact on SMEs

as members of the Advisory Councils. There will also be short - and longer-term direct costs for adaptation of gears to regionally developed measures established under multiannual or discard plans. These costs can be offset from funding from the EMFF in the short-term.

8.4. Option 2: Framework Approach

8.4.1. Economic impacts

MSY and the landing obligation

The economic impacts will be positive after a short period of adjustment to the new governance structure introduced by the framework regulation where economic impacts would be similar to option 1. After this transitional period regionalisation of technical measures should be accelerated provided Member States pro-actively embrace the process.

Tailor-made technical measures developed as part of multiannual and discard plans should lead to the optimisation of exploitation patterns and facilitate the move to sustainable levels of fishing mortality and reduction in unwanted catches as indicated under option 1. Integrating technical measures (gear/spatial/temporal) as drivers for changes in exploitation patterns as part of multiannual plans will have a significant bearing on the yield that can be achieved from a given stock[12]. Using technical measures in this way will incentivise selective fishing. There will be a strong driver for the catching sector to focus on catch profiles that are economically optimal[12].

These increases will not be uniform across fleet segments and are dependent on the scale of the fisheries, the target species and the relative impact of technical measures. Regionalisation of technical measures will be more beneficial for towed gear fisheries as improving selectivity in these fisheries is much more critical than static gear fisheries (i.e. gillnet and longline) which are more selective. Towed gear fisheries currently comprise around 16% (14,000 vessels) of the total EU fleet.

The IA supporting the CFP[19] estimated improvements in exploitation pattern as a result of moving to MSY and the introduction of discard reduction strategies could lead to significant increases (10-40%) in retained and sold catches of some species currently subject to significant discarding depending on the fishery.

This option will also provide opportunities to move away from prescriptive rules to a more results-based and adaptive approach using the associated selectivity associated of baseline standards as the objective to be achieved. Such a results-based approach has shown to deliver positive benefits in leading to the voluntary use of selective gears. This is best illustrated in the context of the long-term management plan for cod[85] (example 26).

Example 26: Articles 11 and 13 of the Long Term Management Plan for Cod[85] are based on an results based approach and have resulted in largely positive outcomes[6,11&12]. They provide the possibility for vessels to avoid future restrictions on fishing opportunities in terms of TAC and effort adjustments (article 13) or to be exempted from effort restrictions provided that catch rates of cod are demonstrated to be below certain thresholds (article 11). This has had a number of substantive impacts in terms of the application of technical measures and the development role of industry as well as on the financial viability of the sectors most impacted. It has led to innovation in the development and testing of new and novel approaches to minimising cod catches. Fishermen operating availing of this option within the regulation have reacted positively to the reward of additional days at sea in return for reducing cod mortality in ways other than applying punitive reductions in fishing effort and fishing opportunities that would have applied. It has managed to focus gear innovation in the right way and has instilled some sense of ownership on the fishermen involved in the fisheries[12]. According to ICES, fishing mortality on the cod stock in the North Sea has reduced and the stock (SSB) has increased

significantly from a historical low levels in 2006[86]. While these outcomes are not solely as a result of improved selectivity, the use of such gears has undoubtedly contributed significantly.

Given that the number of overfished stocks in the Mediterranean far outweigh others regions, it is likely that the economic situation will not be as positive. The transition to sustainable fishing will take longer to achieve and therefore the short-term economic impacts are likely to significant on these fleets in the Mediterranean targeting highly depleted stocks – fleets targeting mixed demersal species as identified previously. For these fleets, improving the effectiveness of technical measures will help to cushion these impacts but will not alleviate them altogether.

Adaptation costs

In the short term there would be adjustments to the technical measures currently in place through the creation of baseline standards which would function as default measures while regionalisation evolves. These baseline standards would be linked to the current rules and take account of existing exploitation patterns (as described in section 6.4) but some sectors of the catching sector may face marginal costs associated with adaptation to these baselines. These could be largely offset by financial support under the EMFF.

In the longer-term with the move to a more results-based approach, where focus is more on achieving a result, the decision of whether to change gears will be left largely to the fishermen themselves. It would become a business decision driven by economics rather than by changes in legislation as under option 1.

Competitiveness

The impact on the competitiveness will be similar to option 1. The advantages provided by regionalisation in terms of flexibility will create a competitive advantage over those continuing under the more rigid rules (e.g. common provisions and baselines) contained in the framework regulation. This should act as a strong driver for regionalisation.

Other stakeholders

The impacts on downstream and ancillary industries will be similar to option 1 but will depend on regionalisation affecting change in regulating technical measures quickly.

The catching sector of third countries would benefit from increased fishing opportunities as a result of reaching MSY targets in the northeast Atlantic. Any benefits will depend indirectly on the actions of the catching sector of the Member States.

8.4.2. Social impacts

In the immediate short-term the social impacts on employment would be similar to the baseline scenario as the catching sector adjusts to the challenges of moving to MSY and the landing obligation. However, assuming that regionalisation is accelerated and the most concerned fleet segments notably those targeting mixed demersal species, would strive quickly to improve selectivity, any negative impacts on jobs in would be counteracted more quickly than under the baseline. Employment levels would stabilise. The framework would manage the hard transition period much better than option 1, where additional short-term job losses are to be expected in EU fleets dependent on overfished stocks.

Achieving environmental sustainability as quickly as possible is a precondition for social sustainability. The simulations in the CFP IA[19] showed that once MSY levels are achieved, fishing opportunities will increase (by at least 20% by 2020). Such a significant increase has a potential to create new jobs in the catching sector, as shown by the fact that, according to the simulations, employment per vessel increases already after 2017. This is also in line with experience of countries such as New Zealand, where the use of management instruments allowing for the transition to sustainable fishing, very similar to those proposed by CFP

reform, ultimately resulted in increases in catches and, consequently, in employing more capital and manpower in the fleets[87].

It is also in line with the EU's own experience that stocks already fished sustainably have benefited from TAC increases. It is these TAC increases that help to maintain employment in the sector and represent a significant source of additional income for fishermen. As examples, the increases (based on 2012) represented additional incomes of €10 million for herring fishermen in the Celtic Sea and €12 million more income for anglerfish fishermen in the West Atlantic[87].

Fishing sustainably will lead to increase income and wages and therefore job attractiveness. Simulations carried out for the IA of the CFP show that the average wages under the new CFP will nearly double in comparison to what would happen in the absence of reform as a result of fishing at MSY. In addition reducing unwanted catches will decrease the workloads on board associated with sorting and storing such catches, improving work conditions for crews.

As with the economic impacts the situation will not be as positive in the Mediterranean, where a large number of stocks are depleted.

Other stakeholders

The impacts on downstream businesses would mirror the situation in the catching sector. If regionalisation is effective then the impacts on these sectors will be lessened.

8.4.3. Environmental impacts

The benefits in terms of stock sustainability would be positive compared to the baseline. In the short-term the framework approach would manage the transition to regionalisation and, through the inclusion of baseline standards and retention of existing measures that are still necessary, environmental sustainability objectives would continue to be met. The benefits are likely to be marginal but in the longer-term once plans are developed further positive benefits to stock sustainability should accrue as fishermen strive to optimise exploitation patterns to maximise economic returns.

In the terms of impacts on sensitive species and habitats, existing nature conservation measures would be maintained under the framework Regulation so the impacts would be neutral in the short-term. In the longer-term regionalisation under multiannual plans and under Article 11 of the CFP would provide the possibility to adapt measures to be more responsive and anticipatory to threats to marine ecosystems and to take such measures expediently.

Other stakeholders

Assuming this option is perceived positively by NGOs as indicated in the public consultation then the certification of fisheries (such as under the Marine Stewardship Council) could follow from sustainable and responsible fishing. Certification may lead to an improved perception by consumers who are becoming increasingly aware of such schemes.

8.4.4. Simplification, Administrative Costs and Burden

The current regulatory structure will be simplified significantly and provide a direct route to regionalisation. The three overarching regulations (or most of them) would be repealed or rationalised immediately. The current mesh size and catch composition rules contained in the annexes to the current regulations would be converted into a smaller number of results-orientated baseline mesh sizes while the number of closed areas would be reduced by the removal of redundant or ineffective closures. Many of the other implementing and technical measures contained in other regulations would be incorporated into the framework and these regulations or provisions would be repealed. Further simplification is likely under multiannual plans in the longer-term with the move to a results-based approach.

There will be increased administration costs for Member States in the short-term associated with regionalisation but this is balanced by the reduction in administrative burden as a result of the simplification of the regulations and less time spent negotiation of regulations centrally. These costs will stabilise in the longer term once plans are established and the focus shifts from development to monitoring and evaluation of the plans and finding solutions to emerging problems. The costs of regionalisation would be as projected under option 1.

Costs and changes in workloads for research institutes and scientific bodies (i.e. STECF and ICES) would be the same as under option 1.

In the short-term control costs would reduce as a result of simplification but costs for enforcing the remaining technical rules at sea will remain and will be significant. In the longer term there is potential to reduce control costs considerably particularly if regions move towards a result-based approach and widen the use of Joint Deployment Plans (JDPs). JDPs will lead to improve coordination of monitoring and control amongst Member States within regions. If aligned to multiannual plans they would have the potential to ensure the best use of human and material resources pooled by Member States in a coordinated way[88] for monitoring and control. This has been the case with a JDP introduced in 2008 which established specific control and inspection programme for the recovery of cod stocks in the Northeast Atlantic and the North Sea to support the implementation of the long-term management plan for cod[85]. The total estimated cost of all six JDP[89] operations during 2013 were €43.4 million of which €34.9 million was spent on at sea inspections. This compares favourably with the costs for individual Member States historically for at sea control.

Once there is confidence in the documentation of catches in the longer-term resulting from the full implementation of the landing obligation (i.e. by 2019), the need for prescriptive technical rules would diminish further and in fact once plans (and JDPs) are in place in all regions it could be envisaged that the number of technical rules required could further reduce if Member States chose to move in this direction. The focus of control would be shifted to monitoring catches rather than controlling and measuring detailed gear construction and operation resulting in substantial reductions as the need to monitor technical rules at sea would be diminished. Based on the retrospective evaluation[6] and assuming a 10% reduction in at sea monitoring with the use of alternative monitoring techniques such as CCTV[90], savings in the order of €10.2 million for the Member States in the Northeast Atlantic (based on total costs of €102 million euros[6]) could be achieved. This shift should also act an incentive for compliance for the catching sector given the greater flexibility it provides fishermen in how they operate.

Other stakeholders

The move to regionalisation should not impact on third countries.

8.4.5. Impacts on SMEs

The impact on SMEs in terms of administrative costs and burden would be positive in that there would be immediate simplification of the current regulations and a greater role for the catching sector through the ACs in the development of technical measures. In addition the potential move to a results-based system in the longer-term would lead to further simplification of the technical rules but implies a shift in the burden of proof onto the catching sector. This will put the onus on the catching sector to demonstrate and document catches accurately. Potentially this may increase costs associated with documentation of catches although the costs incurred would depend on the approach of the Member States to "regionalised control" and offset against the greater flexibility such an approach would afford. Member States may attempt to past some of the control costs onto the catching sector as a trade-off for flexibility although equally they may choose to continue to bear the costs for control themselves with support from the EMFF.

8.5. Sub-option 2.1: Framework approach without baselines

8.5.1. Economic impacts

MSY and the landing obligation

Based on past experiences the short-term economic impacts are likely to be negative as a result of partial "de-regulation". Partial de-regulation will introduce uncertainty and create a legal vacuum. With no baseline standards in place there will be no measures directly controlling exploitation patterns (i.e. mesh sizes, minimum conservation reference sizes or closed areas would be deleted). There is a high risk that exploitation patterns will deteriorate and fishing mortality will increase to unsustainable levels as fishermen attempt to adapt to de-regulation. To compensate for overfishing will require downward adjustments of fishing opportunities leading to significant reductions in incomes across the catching sector. In a worst case scenario widespread overfishing could lead to the total closure of a fishery with significant economic consequences. Example 27 concerning the fishery for haddock in Rockall illustrates the potential impacts caused in a fishery with partial de-regulation.

Example 27: The fishery for haddock around Rockall (ICES Division VIb) was traditionally exploited by EU vessels from UK and Ireland with catches of around 6,000 tonnes valued at around €8 million[91]. The fishery was managed under a TAC with technical measures regulating mesh size and minimum landing size. In the late 1990s part of division VIb was designated as being in international waters where non-EU vessels were not subject to any TAC or technical measures. This allowed part of the fishery to be unregulated and resulted in a fleet of Russian vessels entering the fishery. These were large vessels fishing unselectively with small mesh codends[92]. Catches by the EU vessels began to decline following the entry of the Russian vessels into the fishery and soon after the stock collapsed resulting in a reduction of catches by EU vessels from 5,000 tonnes in 1999 to 430 tonnes in 2004, a reduction of 90%[91] representing a loss of revenue of around €6 million. The Russian vessels left the fishery and since then the stock situation has steadily improved.

This sub-option may also introduce an incentive to misreport catches or alternatively discard illegally unwanted catches to minimise economic impacts. Without adequate independent monitoring at the level of an individual business, it could result in 'free-rider' effects. In the absence of appropriate monitoring, some businesses may choose to adopt measures to minimise unwanted catches, resulting in short-term losses while other 'free-riders' (those who don't change behaviour) may then benefit without paying for the cost. If there are sufficient 'free-riders', then no benefit is accrued and the individuals who have acted in a responsible manner are effectively penalised twice[12]. The use of Article 17 to reward responsible fishing with increased fishing opportunities may counteract these free-rider effects to a certain extent.

These negative economic impacts, however, are likely to be temporary as the risks associated will act as a driver for Member States to put in place regional measures rapidly, in the short-term, under discard plans and in the longer-term, under multiannual plans. At this stage the positive impacts projected under option 2 would be the more likely outcome depending on the scale of any impacts they may have occurred in the transition period.

Adaptation costs

The costs would be similar to option 2 but very-much dependent on the above-mentioned "free-rider" effects.

Competitiveness

The impact on the competitiveness of the catching sector would be similar to option 2 although would be even more dependent on the speed and effectiveness of regionalisation.

Other stakeholders

The impacts on downstream and ancillary businesses are dependent on the reaction of the catching sector. The reaction of third countries to limited regulation is harder to assess. Some countries may see the benefits of such an approach (e.g. in the Mediterranean) whereas in the northeast Atlantic countries such as Norway may not agree with such an approach.

8.5.2. Social impacts

As with the economic impacts, the short-term social impacts are likely to be negative. Overfishing in the short-term would lead to job losses, particularly in those sectors targeting depleted stocks in line with the reductions in employment forecast under the baseline scenario. In the longer-term stabilisation of employment and improvement in job quality through reductions in unwanted catches and increases in wages from landing bigger more valuable fish is likely. Under this scenario job quality would improve in line with option 2.

Other stakeholders

The degree to which downstream and ancillary businesses are impacted will be dependent on the reaction of the catching sector to partial de-regulation.

8.5.3. Environmental impacts

As with the economic impacts based on previous experiences of fisheries with limited technical measures regulations in place, the environmental impacts will be negative in the short-term with the high risk of overfishing. The scale of impacts is illustrated in example 28 concerning the sea bass stock for which there have only been very limited technical measures in place in the past but which have seen rapid increases in fishing pressure.

Example 28: Sea bass are a valuable fish species targeted by pelagic pair trawlers on offshore spawning grounds and as a seasonal target and bycatch by a large fleet of inshore vessels from many Member States. Sea bass is also an important species for recreational anglers. Despite its importance up until 2015, apart from some national rules mainly regulating recreational fisheries only a minimum landing size applied to the commercial fisheries at Union level. Following a rapid increase in biomass throughout the stock area in the early 1990s there has been a steady increase in fishing mortality and landings. During the mid-2000s recruitment of young fish declined and has been very poor since 2008[93]. Despite this, mainly because of the lack of any meaningful measures either nationally or at Union level to control exploitation patterns the stock has declined dramatically. ICES advised in 2014 that fishing mortality needs to be reduced substantially to recover the stock. In response to this the Commission has come forward with a series of emergency technical measures including increasing the minimum size, introducing a closed area as well as restricting fishing effort in order to recover the stock[94].

The negative environmental impacts are likely to be temporary and in the longer-term provided effective measures are in place through regionalisation then the impacts should be reduced. The speed of recovery is dependent on the scale of negative impacts caused from overfishing.

Regarding sensitive species and habitats, the environmental impacts will be similar to option 2. Existing environmental protection measures would remain in place and in the longer-term new measures would introduce under regionalisation to alleviate threats to such species.

Other stakeholders

Evidence from the public consultation showed that NGOs would not be in favour of partial de-regulation. They indicated this to be a risky strategy that could lead to unsustainable

fishing. This may translate into a negative reaction from consumers on the basis of information from NGOs.

8.5.4. Simplification, administrative costs and burden

There would be immediate repeal of many of the existing Regulations as well as the deletion of specific articles from several others. Only common technical provisions and essential nature conservation measures would remain in place.

The deletion of multiple regulations and measures would have obvious benefits in reducing administrative burden for Member State administrations but would infer extra responsibility for ensuring accurate catch reporting pending technical measures being put in place at regional level. This additional responsibility would probably create additional costs for Member States in putting in place accurate catch reporting systems although these are not related to regulating technical measures. Member State managing authorities would incur additional costs associated with regionalisation as described under option 2.

Costs and workloads for national/regional scientists, STECF and ICES would be similar to those projected under option 2.

Costs for controlling technical measures will reduce in the short-term as a result of partial de-regulation. However, reductions in costs for monitoring technical rules would be offset by the need for increased monitoring of catches that would be required under the results-based approach envisaged under this option. As with option 2 once there is confidence in catch reporting then the level of control at sea could be reduced and costs are likely to reduce. Conversely a lack of trust in catch reporting by the catching sector may lead to increased costs for catch monitoring in the short-term. Accurate catch reporting will be harder to achieve for towed gear demersal fisheries.

Other stakeholders

Third countries would benefit from reduced administrative burden under this option to the same degree as the EU catching sector. However, similarly the shift in the burden of proof would result in increased responsibilities for fishermen from third countries operating in Union waters. This could make negotiation of third country agreements problematic.

8.5.5. Impacts on SMEs

The catching sector would benefit from the reduction of administrative burden and costs associated with partial de-regulation. In addition the move to a results-based approach would be positive for the catching sector as under option 2 in providing greater flexibility in how they operate. Regionalisation will bring increased costs through the involvement of the catching sector with the ACs but has the benefit of increased their participation in developing technical measures. The risks of overfishing are high which would negatively impact on the catching sector.

8.6. Option 3: Elimination of technical measures

8.6.1. Economic impacts

MSY and the landing obligation

The economic impacts are likely to be similarly negative as sub-option 2.1 in the short-term. The impacts are critically dependent on the degree of compliance and reaction of the catching sector to “de-regulation”. "De-regulation" as envisaged could lead to widespread overfishing with knock-on economic impacts which would be significant and likely to be longer-term than under sub-option 2.1 without any direct linkage to regionalisation.

Adaptation costs

The costs would be similar to sub-option 2.1.

Competitiveness

"De-regulation" would introduce a high degree of competitiveness amongst the catching sector as individual operators would have almost complete freedom to decide on how to operate in the short-term. This could lead to "Olympic fisheries" as fishermen strive to catch available fishing opportunities as quickly as possible to maximise economic efficiency without necessarily having any regard for the environmental impacts on the stocks that could result (i.e. fishing unselectively and illegally discarding low-vale unwanted catches). In a worst case scenario this will result in the least efficient operators or fishermen choosing to fish responsibly being driven out of the industry before Member States have had time to react with regionally rules or the introduction of rules at Union level. Incentives in the form of additional fishing opportunities to those who fish responsibly allowed for under Article 17 of the CFP may help to alleviate these impacts.

Other stakeholders

The reaction of third countries to "de-regulation" is uncertain. Some countries may see the benefits of such an approach (e.g. in the Mediterranean) whereas in the northeast Atlantic countries such as Norway may be negative towards such a management strategy.

8.6.2. Social impacts

The social impacts would be similar to sub-option 2.1.

Other stakeholders

The impacts on downstream and ancillary businesses will be dependent on the reaction of the catching sector.

8.6.3. Environmental impacts

The environmental impacts are most likely to be negative as under sub-option 2.1. There is an even higher risk of overfishing with corresponding negative impacts on stock sustainability, which may be difficult to reverse in the short-term. If the catching sector reacted positively and move to sustainable fishing then the impacts would be alleviated reasonably quickly. However, past experience prior to the CFP would suggest that some level of technical rules is required otherwise sustainability is threatened. In the Mediterranean there is a risk under this option of fishermen targeting small fish without no minimum conservation reference sizes in place in the short-term. This would have significant negative impacts on stocks in the Mediterranean[13].

Essential environmental protection measures (e.g. closed areas) would remain in place. Therefore in the short-term the impacts would be neutral as per the baseline scenario. In the longer-term environmental impacts may reduce but will depend on Member States on introducing effective measures regionally.

Other stakeholders

There is likely to be a negative reaction to "de-regulation" from the NGOs. This evidenced by the public consultation and may translate into a negative reaction from consumers affecting prices and economic viability.

8.6.4. Simplification, administrative costs and burden

The removal of virtually all technical rules and also a significant reduction of administrative costs and burden is the major advantage. Most of the existing regulations would be repealed

as well as specific articles relating to technical measures would be deleted. The deletion of multiple regulations and measures would have obvious benefits for Member State administrations in cutting red-tape but the immediate move to a fully-fledged results-based approach would infer extra responsibility for accurate catch reporting. In the longer-term, some level of regulation may actually be re-introduced to prevent or reverse the damage caused by unsustainable fishing.

Administrative burden and costs for national/regional scientists, STECF and ICES would be similar to those described for sub-option 2.1.

Costs for control would follow a similar evolution as predicted under sub-option 2.1. There would be significant reductions in control costs for at sea enforcement of technical rules but this would be offset to some extent by increased catch monitoring.

Other stakeholders

Impacts would be the same as those predicted under option 2 and sub-option 2.1.

8.6.5. Impacts on SMEs

This option has obvious benefits for the catching sector in terms of reductions in administrative burden and costs associated with complying with technical rules. However, de-regulation would introduce uncertainty into the industry and create an uneven playing field at the level of individual fishermen. Free –rider effects are likely to be significant.

8.7. Summary of impacts

Table 8.7.1 summarises the economic, social and environmental impacts on the key stakeholders of the different policy options compared to the baseline scenario.

Impacts		Baseline Scenario	Option 1 Consolidation	Option 2 Framework Regulation		Option 3 Elimination of Technical Measures
				With Baselines Standards	Without Baselines Standards (Sub-option 2.1)	
Economic (catching sector)	MSY and the landing obligation	**Neutral –** No change in number of overfished stocks. Unwanted catches remain high. Impacts most acute in mixed demersal fisheries.	**Neutral –** Same as baseline in the short-term. Longer-term situation may improve.	**Neutral or Positive –** After initial transitional period framework will accelerate regionalisation leading to the optimisation of exploitation patterns and facilitate movement to sustainable fishing	**Negative –** Very much dependent on the reaction of the catching sector to partial de-regulation but overfishing in the short-term likely lead to reductions in fishing opportunities. In the longer-term regionalisation should improve the situation.	**Negative –**Critically dependent on the reaction of the catching sector to de-regulation
	Adaptation costs	**Neutral -** No additional costs.	**Neutral –** Similar to the baseline. In the longer-term costs may increase as fishermen are forced to adapt gears due to economic losses.	**Neutral –** Short-term costs to adjust to baselines. Longer-term gear adaptation becomes a business decision rather than driven by legislation	**Neutral –** Short-term costs to adjust to baselines. Longer-term gear adaptation becomes a business decision rather than driven by legislation	**Neutral –** Short-term costs to adjust to baselines. Longer-term gear adaptation becomes a business decision rather than driven by legislation
	Competitiveness (catching sector)	**Neutral –**No change	**Neutral –** Same as baseline.	**Positive –** Regionalisation may introduce competitiveness between catching sectors in different regions	**Positive –** regionalisation may give a competitive advantage but dependent on reaction to partial de-regulation and potential	**Negative or Positive –** De-regulation will introduce competitiveness but free-rider effects and Olympic fishing may result.
Social (catching sector)	Employment & Working conditions	**Neutral –** employment likely to continue to decline with a general deterioration in job quality likely.	**Neutral –** Same as baseline. In the longer-term situation should stabilise with the move to regionalisation.	**Neutral or Positive –** Similar to baseline in the short-term but fishing sustainably will lead to stabilise employment and increase income and wages.	**Negative –** Very much dependent on the reaction of the catching sector to partial de-regulation dependent on the reaction of the catching sector to partial de-regulation	**Negative –** Very much dependent on the reaction of the catching sector to partial de-regulation dependent on the reaction of the catching sector to de-regulation.
Environmental impacts	Biological & Physical impacts	**Neutral –** No improvement in levels of overfishing or impacts on sensitive species or habitats	**Neutral –** Same as baseline. In the longer-term the situation may improve	**Positive –** Regionalisation should lead to improve exploitation patterns reducing overfishing and effective measures introduce for	**Negative/Positive –** Partial de-regulation may lead to overfishing. In the longer-term situation should improve and overfishing reduced. Impacts on sensitive species and	**Negative –** De-regulation may lead to overfishing and negative impacts on sensitive species that may hard to reverse.

				sensitive species and habitats	habitats will be unchanged in the short-term but improve in the longer-term.	
Simplification		**Neutral -** no simplification	**Slightly Positive** - Common rules incorporated into one Regulation	**Positive -** Rules incorporated into one Framework regulation	**Positive –** Common rules incorporated into one Framework regulation without baselines standards	**Positive -** most regulations would be deleted immediately
Administrative Costs & Burden	National Administrations	**Neutral –** no increase in workload or costs. Multiple regulations will still need to be administered.	**Neutral –** Same as baseline	**Neutral –** Simplification of rules will reduce administrative burden but balanced against increased workload and costs for managing regionalisation	**Neutral –** Simplification of rules will reduce administrative burden but balanced against increased workload and costs for managing regionalisation.	**Neutral -** Simplification of rules will reduce administrative costs and burden but additional workload and costs arise if overfishing occurs as a result of de-regulation
	Scientific Community	**Neutral –** no change	**Neutral –** Same as baseline. In the longer-term costs may increase to support the development of regionalised plans	**Neutral –** Same as option 1	**Neutral –** Same as option 1	**Neutral** – Same as sub-option 2.1
Control Costs	Control and Enforcement Agencies	**Neutral –** High costs of control will continue	**Neutral –** Same as baseline. In the longer-term regionalisation may lead to reduced control costs.	**Neutral or Positive –** Move towards a focus on catch based management reduces the need for control of detailed technical rules and therefore reduce costs	**Neutral or Positive –** Move towards a focus on catch based management reduces the need for control of detailed technical rules and therefore reduce costs	**Positive or Negative–** Costs for control will decrease in the short-term as a result of de-regulation but may increase to compensate for increased costs for monitoring catches
SMEs	Catching Sector	**Neutral –** Costs &Admin burden remain high	**Negative or Positive –** Admin burden & costs remain high but greater involvement in decision-making through regionalisation	**Positive –**Costs associated with regionalisation balanced against greater participation in decision-making process & simplification	**Positive –**Costs associated with regionalisation balanced against greater participation in decision-making process & simplification but de-dependent on reaction of catching sector to partial de-regulation	**Positive or Negative –** Costs associated with regionalisation balanced against greater participation in decision-making process & simplification but free-rider effects likely

Table 7.6.1: Summary of impacts for the different policyoptions
(Source: Author)

9. COMPARING THE OPTIONS

9.1. Qualitative assessment against the general, specific and operational objectives

Table 8.1.1 provides a comparison of options in terms of achieving the objectives of revising the technical measures compared to the baseline.

	Options	Baseline Scenario	Option 1 - Consolidation	Option 2 Framework		Option 3 –Elimination
				With baselines standards	Without baseline standards	
General Objectives	Bringing all European fish stocks to MSY by 2015 or 2020 at the latest Reduction of unwanted catches and elimination of discards in fisheries subject to catch limits by 2019 Achievement of GES by 2020, as established under the MSFD	**0** No new measures or change in regulatory structure envisaged.	**0** No new measures or change in regulatory structure envisaged in the short-term.	**+** Introduces flexibility through regionalisation which provides the potential for improvements in exploitation patterns	**-/+** Introduces flexibility through regionalisation which provides the potential for improvements in exploitation patterns but dependent on the reaction of the catching sector to partial de-regulation	**-/+** Introduces flexibility but fully dependent on the reaction of the catching sector to full de-regulation.
Specific Objectives	Improvement in the effectiveness of technical measures;	0 No change	0 Only minimal change in structure in the short-term.	+ Flexibility provided by regionalisation combined with simplification should improve effectiveness	+/- Flexibility provided by regionalisation combined with simplification should improve effectiveness but there is risk partial de-regulation leading to overfishing	+/- De-regulation provides maximum flexibility and shifts the burden of proof to the catching sector to demonstrate targets and objectives of the CFP are being met but de-regulation runs the risk of widespread overfishing
	Defines clear objectives and success criteria	0 Uses the overarching objectives of the CFP	+ Specific targets and indicators are established in the framework	+ Specific targets and indicators are established in the framework	+ Specific targets and indicators are established in the framework regulation to	0 Uses the overarching objectives of the CFP

			regulation to complement CFP	regulation to complement CFP	complement CFP	
	Eliminates over-regulation and simplifies .	**0** Existing 'web' of regulations remain in place	**+** Level of simplification through consolidation of common measures into one regulation	**++** Measures consolidated into one framework regulation.	**++** Measures consolidated into one framework regulation	**++** De-regulation most measures and regulations deleted
	Flexible legal framework for technical measures and acts as a vehicle for regionalisation	**0** No added flexibility provided. Regionalisation is an option but not the focus	**0** As baseline	**+** Increased flexibility and provides direct linkage to regionalisation	**+** Increased flexibility and provides direct linkage to regionalisation	**+/-** As sub-option 2.1
	Promotes a transparent and participatory approach to the definition and specification of technical measures.	**0** Relies on role for stakeholders established in the CFP.	**0** As baseline	**+** Clear role for stakeholders defined in framework	**+** Clear role for stakeholders defined in framework	**0** As baseline
Operational Objectives	Establish incentive structures linked to the added flexibility offered by regionalisation and rewarding of "responsible fishing"	**0** No new incentives created over and above what is already included in the CFP	**0** No new incentives created over and above what is already included in the CFP	**+** Increased flexibility and opportunities to move towards a results-based approach under regionalisation included in framework	**+/-** Increased flexibility and opportunities to move towards a results-based approach under regionalisation included in framework	**+/-** Increased flexibility and opportunities to move towards a results-based approach created through de-regulation but danger of "free-rider" effects negating positive incentives
	Establish clear targets	**0** Uses the overarching targets defined in the CFP	**0** Targets defined in overarching regulation	**+** Targets defined in the framework regulation	**+** Targets defined in the framework regulation	**0** As baseline
	Establish indicators to measure success	**0** No indicators defined	**0** Indicators defined in overarching regulation	+ Indicators defined in the framework	+ Indicators defined in the framework	**0** As baseline
	Delete redundant rules and simplify other rules to make them understandable and controllable;	**0** Existing 'web' of regulations remain in place	**+** Level of simplification through consolidation of common measures	**++** Measures consolidated into one framework regulation	**++** Measures consolidated into one framework regulation	**++** De-regulation with most measures and regulations deleted

			into one regulation			
	Manage the transition to regionlisation in the period up to 2020 by defining baseline standards	**0** Relies on existing measures to act as baselines	**0** Relies on existing measures to act as baseline standards	**+** Establishes baselines based on existing measures	**-** Relies on measures to be developed under regionalisation	**-** No baseline standards included. Relies on the CFP to drive improvements in selectivity
	Establish the necessary legal architecture to allow deviation from these baseline standards and provide for the development of alternative measures	0 Relies on the existing empowerments included in the CFP	0 As baseline	**++** Establishes legal architecture in the framework regulation	**+** Establishes legal architecture in the framework regulation but without defined baselines	**0** As baseline
	Establish linkages with the CFP to allow for stakeholder involvement in the development of technical measures	**0** Relies on role for stakeholders established in the CFP.	**0** As baseline	**+** Clear role for stakeholder defined in framework	**+** Clear role for stakeholder defined in framework	**0** As baseline

Table 8.1.1 Comparison of options in terms of achieving the objectives of revising the technical measures
(Source: Author)
Key: 0 = neutral impact, + = positive impact, ++ = very positive impact, - = negative impact, -/+ = both positive and negative impacts,

9.2. Effectiveness, efficiency, coherence and acceptability

Effectiveness[95]

Given this initiative concentrate on changes in governance with only limited to changes to the substance of the regulations, the analysis of effectiveness centres on the benefits of introducing flexibility, simplifying the regulatory structure, creating incentives for behavioural change and compliance and through greater stakeholder participation instilling a sense of ownership with the measures put in place.

Option 1 is not likely to enhance the contribution of technical measures to the achievement of the general objectives of the CFP compared to the baseline scenario, at least in the short-term. The minimal changes in the regulatory structure through splitting common measures from regional rules only partially address the specific and operational objectives. Technical measures are still very much prescriptive and restrictive and there is no direct driver for regionalisation. Amendments to technical measures would be principally under co-decision with only the existing empowerments in the regulations providing a degree of flexibility. This would result in more regulations being added to the regulatory framework (i.e. still very much a top-down prescriptive approach) or derogations, diluting effectiveness as is currently the case. There would be little no added incentives over and above what is included in the CFP and the weaknesses relating to the lack of involvement of stakeholders would continue. The definition of clear objectives and indicators to measures success would be beneficial and even if the use of regionalisation under this option may not necessarily translate into simpler rules, it can be expected that regional measures will be more focused and streamlined, leading to improved effectiveness and controllability in the longer-term.

Option 2 would be more effective than the baseline and option 1. The degree to which effectiveness would be improved is related to the speed of regionalisation (as outlined in Section 9.3). The quicker regionalisation evolves across the region, the more effective the framework will become. In this regard by providing clear and direct linkage to regionalisation it would act driver for regionalisation. It would provide *flexibility* and the opportunity in the longer-term to move towards a *results-based approach* where the need for detailed rules is reduced. Under such an approach the stakeholders have a much greater sense of ownership of the fisheries. This combined with the copper fastening of the *clearly defined role for stakeholders* provided by the CFP through the Advisory Councils in the development of technical measures regionally should provide a *greater incentive for compliance* and to fish selectively.

In addition, even without the swift development of technical measures at regional level this option provides for a level of *simplification* through the repealing of a number of existing regulations and the deletion of redundant measures (i.e. addresses the weakness of prescriptive and complex rules). This will have immediate benefit for the catching sector in reducing and simplifying the rules that must be complied with but also for control authorities who will have to monitor compliance. This option provides for the *smooth transition to regionalisation*, while it also allows for the review and consolidation of existing measures that may be needed in the short-term to ensure the sustainability objectives of the CFP continue to be met while regionalisation evolves. As with option 1 the definition of clear and measurable objectives and indicators in the form of targets to measure success will address one of the five main weaknesses identified with the current regulatory structure. Option 2 will benefit fisheries in the NE Atlantic and Baltic the most. In the Mediterranean, without TAC and quotas based on current experiences, regionalisation is likely to be much slower to develop. It will be harder for Member States to incentivise the use of more selective gears in the absence

of fishing opportunities to allocate to reward good practice. The existence of "black" markets for undersize fish will also provide a dis-incentive in the short-term for improved selectivity.

Sub-option 2.1 provides many of the same benefits as option 2. However, it introduces uncertainty and creates a partial legal vacuum in the short-term without baseline standards to act as safeguards in the transitional period up to 2020. There is a risk it will not deliver on the general objectives of the CFP as partial de-regulation may lead to "free-rider" effects with fishermen choosing to fish unselectively to gain advantage over their competitors. It relies heavily on Member States and stakeholders pro-actively embracing regionalisation and regionalisation being immediately effective. There is a risk of over-fishing particularly in the short-term with these options although it is likely these negative impacts will be reversed once regionalisation "kicks-in".

Option 3 has clear benefits in *eliminating over-regulation and simplification* through immediate de-regulation. As sub-option 2.1 it is an entirely results-based approach where the burden of proof is shifted to the catching sector to demonstrate compliance which some sections of the catching sector have argued for. However, the same risk of overfishing exists and it is doubtful under this option that the Commission or Member States would be able to react in time to prevent significant negative impacts which may be hard to reverse without having to resort to significant cuts in fishing opportunities and fishing effort. De-regulation may create an incentive for fishermen to discard illegally rather than fish selectively, if there are costs associated with selective fishing in terms of lost catches. In turn the costs for control could increase significantly if there is no trust that the catching sector is reporting catches accurately.

Efficiency[96]

Option 1 would provide no advantage over the baseline in terms of cost efficiency in the short-term. The costs for enforcement of technical measures would continue to be very high, as Member States would still be required to enforce the existing raft of technical rules in addition to the increased levels of catch monitoring that would be required to implement the landing obligation. In the longer –term cost efficiency may improve as regionalisation evolves but this is dependent on what measures are introduced at the regional level

Options 2 and sub-option 2.1 potentially will lead to cost efficiencies in the short to longer term as both of these options are based on the development of regionally specific measures. Through simplification and moving towards a results-based approach would result in the focus of control switching to the monitoring of control of catches with less emphasis on regulating technical rules. In addition as confidence builds that fishermen are complying with the rules in place the need for costly sea based monitoring would diminish, lowering costs. Member States and stakeholders (i.e. the ACs) would, though incur increased costs in the short-term as a result of regionalisation. These costs could be minimised if the ACs are successful at adjusting their work programmes to the requirements of the regionalisation process. With the move to fishing at MSY and the introduction of the landing obligation the CFP has moved in this direction so aligning the regulatory structure of technical measures to a catch based approach will help to achieve the objectives more cost efficiently than the current regulatory structure. Aligning the technical measures with regionally based JDP programmes may also help to reduce costs of enforcement.

The cost efficiency of option 3 is dependent on the speed of behavioural change. If in the short-term there is no confidence that the catching sector is accurately reporting catches then the increases costs for controlling and monitoring catches will outweigh any savings from "de-regulation". If confidence is greater, then cost-efficiency will increase as with option 2 and sub-option 2.1.

Coherence[97]

Option 1 is coherent with the overarching sustainability objectives of the CFP but not fully coherent with regionalised decision-making. Regionalisation is likely to be very much piece-meal rather than targeted. This option provides only limited scope for simplification and so does not fully correspond to the objectives for Better Regulation under the REFIT programme[2]. It does not further the linkage with EU environmental policy at least in the short-term.

Option 2 and sub-option 2.1 are coherent with the objectives of the CFP and provide a governance structure that is fully in line with regionalisation. They represent a high level of simplification through the creation of one single framework Regulation rather than retaining multiple Regulations as with the baseline so are coherent with the REFIT programme[2]. Both will establish much better linkage of environmental policy with technical measures. However, there is a risk with sub-option 2.1 that the sustainability objectives of the CFP could be compromised if the catching sector does not choose to fish responsibly in the transition towards regionalisation.

As with sub-option 2.1 the absence of any technical rules in the short-term under option 3 may jeopardise meeting the sustainability objectives of the CFP. It does not necessarily promote regionalisation. Simplification is achieved by the immediate deletion of the majority of technical measures regulations. As with option 1 it does not further the linkage with EU environmental policy at least in the short-term.

Acceptability

Option 1 would be the least acceptable of the options put forward. It represents a consolidation rather than an overhaul of the current regulatory structure. Member States, the Advisory Councils, NGOs nor the catching sector felt this was a good option. It also limits the role of the co-legislators because there would be only minor changes to the current regulatory structure and any future changes would simply add on additional rules. There would be little or no pressure form stakeholders or added incentive for Member States to develop regionalised technical measures strategically as part of multiannual plans or any real incentive for the ACs to engage proactively.

Option 2 was the preferred option for Member States, several of the Advisory Councils, NGOs and most of the catching sector. They saw it as the best way to manage the transition to full implementation of the landing obligation, reaching MSY and implementing the MSFD. Institutionally this option is more balanced than option 1 in that it provides the co-legislators with an opportunity to establish a new structure for technical measures. It also allows them to fix overarching objectives and targets as well the baseline standards that will be the default option in the absence of measures at regional level. It also promotes a bottom-up approach by providing stakeholders with a clear role in the development of tailored made measures for their particular sea basin. The other advantage is that it has the added safeguard in the form of existing measures that need to remain in place pending regionalisation.

Sub-option 2.1 was favoured by certain sectors of the fishing industry that did not see the need for baseline measures to be included under the framework. Member States, the NGOs and some of Advisory Groups were less in favour seeing this as a riskier option, which would introduce uncertainty. Institutionally it is weaker than Option 2 as the co-legislators have much less of a direct role in shaping technical measures. They have input into setting the objectives and principles and agreeing on common measures but would have no say in the describing of the major implementing measures such as mesh size, minimum conservation reference sizes and closures which would be agreed regionally. It is also riskier in that it is

reliant on multiannual plans being developed quickly and on technical measures contained in temporary discard plans to form a stop-gap in this transitional period.

Option 3 would seem to be unacceptable to the Member States and NGOs as it does not have any in built safeguards to deal with conservation problems that emerge. Several of the Advisory Councils were similarly negative. However, as mentioned above, some of the catching sector preferred this option mainly as it does away with most technical rules. It relies on the introduction of technical measures largely through other instruments of the CFP or on a voluntary basis so instructionally it gives the co-legislators little role in defining technical measures.

Table 8.2.1 summarises the options in terms of effectiveness, efficiency, coherence and acceptability by stakeholders in achieving the objectives.

	Effectiveness	**Efficiency**	**Coherence**	**Acceptability**
Option 1	+	0	0	0
Option 2	++	-/+	++	+
Sub-Option 2.1	?	-/+	+	-/+
Option 3	?	-/+	-/+	-/+

Table 8.2.1 Comparison of the options in terms of effectiveness, efficiency, coherence and acceptability in achieving the objectives
(Source: Author)
Key: 0 = neutral impact, + = positive impact, ++ = very positive impact (relative to other options), - = negative impact, -/+ = both positive and negative impacts, ? = impact unknown

9.3. Risk Assessment

The impacts of the different options compared to the baseline, as well as their effectiveness, efficiency, coherence and acceptability by stakeholders are assessed assuming regionalisation is effective. This assumption is not free of risks, and in selecting a preferred option the extent to which they may affect the different options need to be considered.

Four main risk factors exist:

The speed of regionalisation

Option 1 is not impacted directly by the speed of regionalisation. However, it carries a high risk that if regionalisation is slow to evolve then the current technical measures will remain in place for much longer. Acceptance of such a regulatory structure would be low. The incentive for compliance would remain similarly low as in would remain "top-down" rather than "bottom-up".

Option 2 provides for a smooth transition to regionalisation by acting as a central storage facility for existing measures that should remain in place while regionalisation evolves. It allows for the risk of regionalisation being slower and uneven across regions. It clearly triggers regionalisation where directly involved stakeholders see merits to it.

Sub-option 2.1 relies heavily on regionalisation evolving quickly than envisaged under option 2. In this regard it carries a higher risk than option 2.

Although *option 3* is a high risk strategy, it is not necessarily impacted by the speed of regionalisation. It relies on the incentive generated by the landing obligation to affect change and much is left to Member States and stakeholders to decide whether technical measures will be needed under plans in the future.

Managing the transition to regionalisation

While regionalisation develops it is important to ensure there is no legal vacuum during the transition and that conservation objectives continue to be met.

Option 1, which assumes regionalisation will be slow to develop, carries a low risk. The governance structure envisaged means the existing rules will be in place, which provides some guarantee that the current situation will not deteriorate any further.

Option 2 provides for a smooth transition so the risk of a legal vacuum or conservation issues is relatively low.

Sub-option 2.1 and *option 3* are higher risk strategies as in the short-term there would be fewer technical rules in place to directly control exploitation patterns. The transition from the current management approach to regionalisation is very much left to Member States and the catching sector. There is no guarantee that by the time regionalised plans are developed the situation economically and environmentally would not have deteriorated beyond repair.

Risk of non-compliance and incentive for change

Regionalisation instils a sense of ownership in that the measures put in place will have originated from the Member States themselves with the direct input of the fishing industry through the Advisory Councils. There is a far bigger incentive for Member States to enforce their own rules and much more likelihood of compliance with rules in which the industry has had a direct say in developing. This is compared to the current top-down system where the rules emanated from the Commission and agreed on by the Member States with little or no direct involvement of the stakeholders. Developing this ownership should create more of an incentive for local management and peer pressure amongst fishermen to actively report on other fishermen breaking the rules. Currently there is a perception that those who break the rules are those who benefit most. Regionalisation should minimise this.

Added to this, regionalisation should introduce much more flexibility into the system providing rules tailored to the specific fisheries and that can be changed relatively quickly to react to evolving problems. Rules under co-decision lack this flexibility and specificity as they tend to be "one size fits all" solutions.

The EMFF provides clear financial incentives for fishermen to develop and test new gears or management approaches developed as part of regionalisation, to adapt existing gears to improve selectivity or diversify to gears with lower ecosystem impacts. Article 17 of the CFP also provides Member States with the possibility of rewarding responsible fishing with increased fishing opportunities.

In this context, *option 1* does not provide any new incentive for compliance compared to the baseline scenario. There is a high risk that the current low levels of compliance with some technical measures (e.g. the use of illegal attachments to the codends of trawls and the use of acoustic deterrent devices to mitigate against cetacean bycatch) and the incentive for fishermen to minimise the impacts of the rules would continue. This may improve in the longer term as rules that are better adapted to meet the needs of the regions are developed.

The governance framework under *option 2* is better suited to addressing the shortcomings of the current technical measures regulations compared to the baseline situation. It should

produce positive impacts on sustainability of exploitation, and contribute to a decrease in control costs and burden as well simplification of existing rules. Incentives are provided through increased flexibility, greater ownership and simpler rules in addition to the existing mechanisms.

The lack of rules under *sub-option 2.1* and *option 3* could act as a strong driver for non-compliance and has the risk that fishermen, within regions and between regions, would adopt different strategies or in a worst case scenario, fishermen would exploit the lack of technical rules to fish unselectively and irresponsibly - "free-rider" effects. This would create tensions between fishermen and Member States. However, if these options were accepted then they would drive self-regulation and the use of peer pressure amongst fishermen.

Risk of uneven implementation or creation of uneven playing field

Regionalisation as envisaged in the CFP will lead to a certain degree of uneven implementation but this a policy choice made by the co-legislators in the CFP. They have already accepted this risk when agreeing on regionalisation. Uneven implementation may create tensions between Member States in the short-term as different rules are developed between different regions. However, this may in fact act as an incentive for Member States in regions where regionalisation is slower to evolve and it is anticipated that this will help Member States to "learn" from "doing". For example based on the experiences to date with regionalisation in respect of temporary discard plans it is clear that Member States in the Northeast Atlantic and the Baltic have been more effective at working collectively at the regional level than in the Mediterranean where there has been only minimal contact between the Member States. However, there are indications that the Member States in the Mediterranean have recognised this and have begun to explore and establish mechanisms to facilitate work regionally taking from the examples of the regional groups of Member States established in other regions (e.g. the Scheveningen group in the North Sea).

The risk of uneven implementation is highest with *sub-option 2.1* and *option 3* which rely heavily on regionalisation to succeed.

The inclusion of baseline measures on *option 2* lessens this risk, while the framework is designed to act directly as a vehicle to encourage regionalisation.

Option 1 is less reliant on regionalisation and so less susceptible to any problems generated through uneven implementation across regions.

Regarding the disturbance of the creation of level playing field for technical measures felt important by stakeholders, again this is a risk associated with regionalisation which has been accepted by the co-legislators.

Under *option 2* and *sub-option 2.1*, clear objectives will be set in the framework regulation, and agreed on by the co-legislators. These will apply across all regions ensuring a level-playing field at the highest level. Operationally how Member States and stakeholders choose to achieve these objectives is left open so there is possibility that different measures will apply in different areas. However, free-rider effects under sub-option 2.1 would negate any concept of a "level playing field".

Option 1 carries a lower risk of uneven measures as this option envisages less latitude for Member States to adapt measures regionally but also defines objective at the level of the co-legislator.

Option 3 runs the highest risk of creating an uneven playing field. Under such a de-regulated approach there is a danger of widely different approaches emerging across regions. There is a risk of "Olympic fishing".

10. RANKING THE OPTIONS

Retaining the current technical measures under the baseline scenario is not an option.

Option 2 best meets the objectives set and provides a level of security that conservation objectives will continue to be met while regionalisation develops. In the longer-term (at the latest by 2022) option 2 aims to have most technical measures required included under regional plans. Option 2 is best geared to managing the transition to regionalisation.

Sub-option 2.1 and *option 3* would bring about simplification of technical measures immediately which would find favour with the catching sector but are riskier. They rely in the short-term on significant behavioural change of fishermen and on peer-pressure and self-regulation to ensure unselective fishing practices do not prevail. Member States, some sections of the catching sector and NGOs seem reluctant to move in this direction. However, in the longer-term most Member States, the catching sector and the NGOs see this as a management approach to work towards.

Option 1 is the least favoured and received very little support by stakeholders as an acceptable option. In the short-term it essentially keeps the current complex regulatory structure in place and does not provide any clear incentives for stakeholders over and above the baseline scenario. It is also not fully coherent with the spirit of regionalisation as envisaged under the CFP. It does not directly manage the transition to regionalisation but is a low risk option in the sense that it assumes that by maintaining the current rules in place until regionalisation develops, the current situation will not deteriorate further.

Option 2 is the preferred option.

11. MONITORING AND EVALUATION

11.1. Monitoring

Under the preferred option clear targets that would act as success indicators would be established for the reduction and as far as possible the elimination of unwanted catches by 2019 and fishing at MSY for all stocks by 2020. Targets for the reduction of the negative impacts of fishing on marine ecosystems to contribute to the achievement of GES by 2020 would also be established. In order to measure achievement of these targets the following environmental, economic, social and compliance indicators are proposed:

Environmental

- **Evolution of catch profiles (from DCF data**): catch profiles in terms of mean lengths or proportion of fish larger than mcrs will be used to monitor improvements of the selectivity properties of fishing gears.
- **Number of stocks at MSY (from ICES advice**): the number of stocks fished at F_{msy} will be used to monitor the success of technical measures of increasing selectivity leading to improved exploitation patterns.
- **Evolution of incidental catches (from DCF data)**: the level of bycatch compared to overall population levels will be used to monitor the effectiveness of mitigation measures introduced to reduce incidental catches.
- **Evolution of protection of sensitive habitats or seabed integrity (from DCF data):** the number of closed areas crated to protect sensitive habitats, as well as the effectiveness of mitigation measures developed to allow low impact fishing in such areas.

Economic

- **Income, GVA, revenue/breakeven revenue and net profit margins (from DCF data):** the success of technical measures in contributing to revenues remaining stable following the introduction of the landing obligation and the move to MSY.

Social

- **Employment (FTE) and crew wages per FTE (from DCF data):** the success of technical measures in ensuring employment and crew wages do not deteriorate.

Compliance

- **Number of infringements related to technical rules (from control agencies and EFCA)**: compliance and acceptability of the catching sector with technical measures.
- **At sea patrol days (from control agencies and EFCA** the amount of time spent at sea monitoring technical rules.

At the operational level technical measures will be monitored principally through catch profile data collected under the DCF. This will be collected through observers on board vessels as well as port sampling of landings. Routine inspections at sea and ashore will also allow assessment of the effectiveness of technical measures through observation of compliance with measures in place and also from catch monitoring which will also provide information on catch profiles. In this regard an initiative taken by EFCA in sampling the "last haul"[98] during routine monitoring of fishing vessels by fisheries protection vessel is an important tool to provide information on catch composition and estimated discards). Other monitoring measures such as the use of reference fleets may also be considered as operational monitoring tools which will provide supplementary information on catch profiles. A reference fleet is a pre-defined selection of vessels where the actual sampling is usually carried out by the fishermen themselves or in some cases by observers. The reference fleet is within the population of all active vessels within a given fleet. Reference fleets have the ability to provide documentation on entire catches, especially discards at a fine spatial scale. They also provide a platform for cross-referencing official catch and data collecting systems and procedures (e.g., electronic logbooks, reporting- and grading systems, discards).

11.2. Evaluation

An ex-post evaluation discussing the key evaluation questions (i.e. effectiveness, efficiency, coherence and relevance) of technical measures should be carried out by 2022 when the landing obligation should be fully operational for several years, MSY achieved for all stocks and Good Environmental Status achieved for marine ecosystems under the MSFD. It would directly also feed into the retrospective evaluation of the CFP scheduled to begin in 2022 in preparation for the next reform.

The new multiannual plans will be assessed by STECF 5 years after entry into force whether sustainability objectives are being achieved. These evaluations will provide indications of whether technical measures included as part of these plans are effective.

Reporting requirements under Articles 49 (functioning of the CFP) and Article 50 of the CFP[99] (progress on achieving MSY), while not directly related to technical measures will also provide insight into the effectiveness of technical measures.

Evaluation of measures developed regionally will also have to be carried out on a regular basis by STECF or ICES to ensure such measures are consistent with objectives of the CFP.

Annual Reporting of the EFCA in relation to Joint Deployment Programmes (JDPs) which document the number and reasons for infringements detected compared to the number and nature of inspections carried out. This will provide an indication of the level of compliance with the technical measures regulations.

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[95] The effectiveness of each option in terms of the general, specific and operational objectives has been assessed where effectiveness is defined "*as the extent to which options achieve the defined objectives of the proposal*".

[96] The efficiency of the different options has been compared to the baseline scenario where efficiency is defined as "*the extent to which the objectives can be achieved for a given level of resources/at least cost*".

[97] Coherence, defined as "*the extent to which options are coherent with the overarching objectives of EU policy, and the extent to which they are likely to limit trade-offs across economic, social and environmental domain*" has also been assessed.

[99]http://www.europarl.europa.eu/document/activities/cont/201404/20140408ATT82472/20140408ATT82472EN.pdf

[98] As technical measures fall under exclusive competence the evaluation question of EU added value is not applicable.

LIST OF ANNEXES

ANNEX I - SUMMARY OF PUBLIC CONSULTATION

Introduction

The Common Fisheries Policy (CFP) includes as a management instrument the regulation of technical aspects of fishing operations, through so-called technical measures. These define and condition where, when and how a fishing enterprise can exploit and interact with marine resources and the wider marine ecosystem. These rules are laid down in a series of Union Regulations on technical measures for the different sea basins of the Union waters.

The European Commission, in a supporting consultation document, has indicated that current technical measures regulations are too complex, and difficult to understand, control and enforce. Therefore a comprehensive revision is required to look at the technical measures in light of the new CFP which has just entered into force. This revision will also provide an opportunity to bring about a general improvement in the technical rules to facilitate the implementation of the landing obligation and the ecosystem-based approach, which are key objectives in the new CFP. In this context the Commission has signalled its intention to review and revise the current technical measures.

Through the public consultation the views of stakeholders and the public in general were sought on the best way forward to modernise and rationalise technical measures in the context of the new CFP. This document reports on the outcome of this consultation.

The overview of the contributions presented is based on the written contributions received. It is neither intended to draw conclusions regarding the options proposed nor does it represent the position of the Commission. It will support the preparation of the Impact Assessment report, which in turn will be the basis for developing the Commission's proposal for a new framework for technical measures.

Contributions received

The public consultation took place between the 24 January and the 16 May 2014, with a total of 59 written contributions received. Individual contributions are available on the dedicated website to this consultation[1]. **Table 1** provides a summary of the submissions by stakeholder grouping.

Table 1 - Breakdown of contributions

Stakeholder Group	Number of contributions	Examples
Advisory Councils	5 (9%)	MED AC, SWW AC, NS AC, NWW AC, BS AC
MS administrations	15 (25%)	Ministries, Local government
Civil society organisations	11 (19%)	Environmental NGOs
Industry/interest groups stakeholder organisations	22 (37%)	Fishermen's representative organisations, , consumer groups, European transport workers federation, anglers organisations, fisheries consultants
General Public	6 (10%)	Citizens with differing backgrounds (e.g. retired fisherman, anglers, member of NGO)

[1] http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/technical-measures/index_en.htm

Five of the seven operational Advisory Councils (ACs) - the North Western Waters (NWW AC), North Sea (NS AC), Baltic (BS AC), South Western Waters (SWW AC) and Mediterranean (MED AC) - submitted comments. Three ACs (NS, SWW & MED) provided detailed comments covering the main principles and challenges outlined in the consultation document. The two other ACs (NWW & BS) indicated they had difficulties in agreeing a common position amongst the AC membership and therefore their comments were restricted to endorsing the need for a revision of the technical measures regulations and requesting further dialogue.

Fifteen submissions were received from national administrations and regional governmental agencies covering the North Atlantic, North Sea, Baltic and Mediterranean. These submissions either related to the challenges highlighted in the consultation document or dealt with regional issues relating to specific measures that created difficulties at a national level. Two Member States supplied an outline of their vision of the structure and content of a new technical measures framework. No submissions were received from the Member States or industry groups from the Black Sea.

Eleven environmental NGOs submitted contributions. These contributions largely dealt with the main issues included in the consultation document and tended to focus on environmental issues and the linkage of technical measures with environmental rules. Many of these submissions were detailed and provided examples to support their point of view.

Twenty two contributions were submitted by a range of industry interest groups and other stakeholder organisations. The majority of these were from fishermen's representative bodies (sixteen). Other submissions were received from a range of different stakeholder and business organisations representing anglers, consumer groups, workers' rights and one from a fisheries consultancy. The industry groups tended to follow the same line as the ACs although some of these groups concentrated on specific issue or issues relating to their particular region. Most of the remaining submissions tended to be more general in nature concentrating on one or more of the specific challenges highlighted in the consultation document. A fisheries consultant put forward an alternative strategy for technical measures.

There were six submissions from members of general public. Most of these concentrated on a particular issue or issues of interest to that respective individual.

General Comments

There is general support across stakeholders and Member States for the broad approach outlined in the consultation paper (i.e. move away from micromanagement and towards a regionalised, results-based approach). It is clear that the complexity of the current regulations and their multiple amendments should serve as an example to the Commission of "what not to do". Many respondents also point to enforcement issues with the current regulations and the lack of compliance with the complex rules. The current regulations are highlighted as having produced a range of unintended consequences that have in fact forced fishermen to discard and run counter to the principal objective of the measures (i.e. to protect juveniles). There is a generalised, clear message that this should not be repeated in any new framework for technical measures, given the change of approach (i.e. principle of management by result) within the new CFP and the introduction of the landing obligation. There is overwhelming support for a complete overhaul of technical measures not limited to just a re-casting or cleaning-up of the current measures.

Main Challenges

In the consultation document four major principles were identified for the revision of technical measures:

- Simplification and enabling regionalisation
- Creation of incentives for the industry to take more responsibility
- Reduction and avoidance of unwanted catches
- Minimisation of the ecosystem impacts of fishing gears

Under each of these principles, stakeholders were requested to respond to some specific questions. The comments received are summarised below. For some questions more detailed comments were received than for others and there was a certain amount of duplication of points across the different questions.

Simplification and regionalisation

Many respondents advocate that the most simple and clear rules will be those created at the lowest level possible, which in the case of the new CFP equates to the regional level. Regionalisation is seen by many as an important opportunity to introduce simplification and flexibility of the technical measures rules and regulations. Multiannual plans are identified by the majority of respondents as the appropriate vehicle for the development of specific technical measures at the regional level. Such measures should be adaptive and open to periodic review. The majority of stakeholders share the view that this cannot be achieved by maintaining the majority of technical measures under normal legislative procedure (i.e. co-decision) as it is too cumbersome a process to be able to react to changes in fisheries.

The ACs and industry groups stress the need for stakeholder involvement in developing technical measures as part of multiannual plans. They see this as essential to the successful implementation of the landing obligation. However, they underscore that dialogue between stakeholders and Member States as envisaged in the CFP must be meaningful. Several Member States acknowledge the involvement of stakeholders in developing regional rules.

There are diverging opinions on the content of any future legislative framework for technical measures. Many of the industry groups (including small-scale fisheries) advocate a minimalistic approach with few (if any) rules under co-decision and any detailed rules that are required to be developed at regional level. One submission describes this as the Commission having to take a "leap of faith", and is not convinced by the argument that EU technical measures should be retained on a transitional basis until multiannual plans are adopted to activate regionalisation for technical measures. Several submissions do advocate for some safeguards (e.g. limits on the amount off undersized fish a vessel may catch), which would act as a safety net against continuing bad practices.

The NGOs consider there remains a strong need for some high-level overarching objectives and minimum common standards that should apply across the EU to ensure no gaps in management occur. Simplification should not happen at the expense of the environmental protection. Many also advocate safeguards. The majority of the NGOs also indicate that additional measures may be needed for the full integration of the ecosystem-based approach in the new CFP and the interaction with the Marine Strategy Framework Directive (MSFD). These follow from the high level objectives but should be implemented regionally.

The position of Member States is not uniform on the structure of a new framework. Most highlight the importance of simplifying the rules while insisting on maintaining a level playing field which will result in some rules remaining under co-decision. Regionalisation is seen as important although Member States express mixed views as to what shape regional

measures should take. Most Member States believe that the level of risk that we are prepared to accept should define the number and definition of rules at both Union and regional level. This should be strongly linked to the level of confidence in the control and monitoring system to detect illegal discarding or bad practice in general.

On the inclusion into the framework of reference gears or minimum standards linked to selectivity, most industry groups and some Member States and NGOs see this as unnecessary and likely to stifle regionalisation and innovation. Whereas some other NGOs and Member States indicate that such elements should indeed be included in the framework regulation. From the NGOs perspective this would provide a fall-back position should alternative measures not be developed and agreed regionally. One Member State advocates defining reference gears but at a regional level with provision for alternative highly selective gears that meet agreed standards for certification and monitoring to be used.

Incentivising industry and stakeholders

The industry groups and ACs emphasise that stakeholder involvement in the decision-making process, leading to clear and simple rules will act as a strong incentive for compliance with rules.

The majority of respondents point to the landing obligation as the major incentive to drive selectivity, obviating the need for the current prescriptive approach to technical measures. They point to the problems, both economically and biologically, inadvertently created in the past by the imposition of over-prescriptive rules. Many strongly advocate that to implement the landing obligation will require that fishermen be given the maximum possible liberty to decide on selective measures. However, in return, NGOs and other stakeholders stress that accountability is a critical prerequisite for allowing fishermen flexibility to find innovative ways to meet environmental standards. This is acknowledged by the ACs and industry groups as important.

The ACs, NGOs and some Member States highlight that improvements in selectivity have been achieved in the past when incentives have been aligned with management objectives. This approach should be broadened, extended and deepened. In this context an industry group representing small-scale fishermen, several Member States (Mediterranean countries) as well as the NGOs point to the rewarding of the use of low-impact fishing methods with increased fishing opportunities or privileged access as another way of incentivising fishermen to act responsibly.

The removal of measures that are deemed redundant under the landing obligation, including catch composition rules and effort restrictions, are highlighted by the ACs, industry groups and Member States. This is considered another important incentive to improve compliance with technical rules and to improve selectivity. In this context several Member States and industry groups highlight that a move to fully documented fisheries will allow a much higher degree of simplification of the technical rules and removal of others. The NGOs while accepting this stress the need for stringent monitoring requirements to allow for the relaxing of rules. Fully documented fisheries must amount to what the name implies.

Encouraging innovation will act as an incentive to improve selectivity and responsible fishing and the ACs, NGOs and the industry highlight that funding and additional quota to undertake vital research and pilot projects must be granted by fast track. Innovation needs to be given a very high priority by Member States in developing their national programmes under the European Maritime and Fisheries Fund.

Opinions on the use of "soft law" are split. Some industry groups and NGOs very much advocate soft law as a way of supporting technical measures rules. However, others suggest that voluntary measures under soft law are not sufficient in themselves to ensure high level objectives are achieved, and also can lead to the use of unselective gears and fishing techniques. Some industry groups highlight that even such voluntary measures will be superfluous because the landing obligation will provide adequate incentive for selective fishing.

Reduction and avoidance of unwanted catches

The ACs and industry groups stress that measures to reduce and avoid unwanted catches should be developed regionally under multiannual plans. In no circumstances do they advocate developing measures at Union level to address specific bycatch issues. Several industry groups also highlight that what is important is not identifying the worst fisheries in terms of unwanted bycatch and applying stricter measures, but rather identifying those with the biggest hurdles and ensuring the management structure provides the flexibility and freedom for appropriate solutions to be found. In this context regional bodies (i.e. the ACs) are best placed to identify fisheries that require special assistance.

The majority of NGOs highlight the need to improve selectivity in many fisheries and several identify specific fisheries (e.g. mixed demersal and *Nephrop*s fisheries) and sea basins (e.g. Irish Sea, Skagerrak and eastern Baltic) where particular problems exist. They include bycatch of vulnerable or sensitive species in the context of unwanted catches and stress the need to address such issues as a matter of urgency.

One NGO indicates that "institutionalised" overfishing and tolerated use of non-selective and destructive gears is a bigger problem than discarding of unwanted catches. Several others advocate that certain gears and fisheries should be subject to very restrictive measures or phased out altogether if reductions in unwanted catches cannot be achieved quickly.

The ACs, several NGOs, industry groups and Member States advocate the use of avoidance measures such as real-time closures and moving-on provisions. There are divergent views on whether this should be defined at Union or regional level. Some advocate a twin-track approach with the overarching principles for such measures defined in a framework regulation with detailed implementing rules at regional level.

There is broad consensus that minimum landing size, catch composition rules and by-catch provisions generally prevent fishermen from fishing selectively and even induce discards. All advocate and welcome the moves to neutralise the negative impacts of these rules through the Commission's omnibus proposal[2].

Minimising the ecosystem impact of fishing gears

The majority of stakeholders advocate that detailed ecosystem protection measures should be developed at the regional level. Most agree that only prohibitions of destructive practices or measures to protect rare or vulnerable species and existing closures to protect sensitive habitats should be included in an overarching framework under co-decision. Several NGOs and Member States suggest that performance targets relating to environmental directives could also be established in the framework. These are commonly used in other states to manage marine mammal bycatch.

[2] COM(2013) 889 FINAL

The majority of NGOs specifically highlight the need for the new technical measures framework to signal a shift towards low-impact fishing and to the achievement of Good Environmental Status under the Marine Strategy Framework Directive. Several advocate the inclusion of a requirement for impact assessments of fishing activities, which would help to identify potential concerns and to propose appropriate mitigation measures. Such measures highlighted include mapping of vulnerable habitats and species, restrictions of fishing in vulnerable habitats, compulsory use of proven mitigation measures to reduce unwanted catches of vulnerable species and more extensive spatial or depth limitations.

An industry group representing small-scale fishermen points to the need for genuine interaction between all stakeholders in defining ecosystem protection measures. Decisions should be made on scientific grounds and not be made at the expense of small-scale fishermen. They point to a number of examples where fishermen and NGOs have developed Marine Protected Areas that meet the aims and aspirations concerned but without creating economic hardship on fishermen.

Member States mainly advocate for a regionalised approach to minimise the ecosystem impacts of fishing gears to ensure that the right fisheries are monitored and required to take appropriate mitigation measures. This will deliver greater benefits in a more targeted way. Some Member States perceive ecosystem measures in quite a negative light indicating that they are disproportionate to the scale of the problem - measures to protect cetaceans in the Baltic are highlighted. These Member States stress the importance of balancing legitimate economic expectations with the broader expectations in society of providing protection for the ecosystem. This view is shared by a stakeholder group representing workers' rights and several industry groups.

Scope of a framework for technical measures

In addition to the four principles detailed, the consultation paper included a question regarding the scope of any new framework regulation. Currently technical measures are contained in separate regulations covering different regions. The question posed was whether the current situation should be maintained or should there be a common framework.

The majority of NGOs very much favour a common technical measures framework covering all sea basins. It should include overarching objectives, common baseline measures, definitions and governance rules that define how technical measures should be designed and implemented regionally.

The ACs and industry groups strongly argue for a minimalistic approach at Union level through a framework regulation. Many question the need for any framework at all while others accept that to ensure a level playing field in terms of direction and goals a common framework may be needed which sets realistic high-level objectives across the various sea basins. Many industry groups advocate that it is not logical to start with the development of a general framework at Union level. Work should focus very much at regional level in the first instance and from this it can be established whether common rules are needed.

Member States have divergent opinions on whether there should be one common framework or different frameworks for different sea basins. Several Member States advocate a separate framework for the Mediterranean because of the particular characteristics of the fisheries in this sea basin.

Other issues raised

A number of submissions dealt with issues outside the scope of the questions contained in the consultation document although nonetheless linked to technical measures.

One fisheries consultation advocates the concept of "balanced harvesting" as a possible "wild-card" policy option. Balanced harvesting changes the technical measures objective, and would aim to make fishing unselective for species. Instead, a defined proportion of natural production per unit area, by size class, of all species, would be removed from the ecosystem. A consumer group also referred to this concept in a positive light.

Several submissions from industry groups supported by one local administration body dealt with a specific issue relating to the size of Japanese calms in the Bay of Arcachon They highlight the need for more flexibility within technical measures regulations to allow the setting of rules (in this case a minimum size) of sedentary shellfish species at local level, rather than at Union level.

Several submissions from industry group relate to the Commission's omnibus proposal to amend certain technical measures regulation and the control regulation (the so-called "omnibus regulation"). These submissions detailed a number of issues and difficulties with the Commission's proposal.

Several submissions from Member States and industry groups highlight specific issues. These include measures in the Mediterranean on the use of purse seines and restrictions on trawling within 3 nautical miles off the coast that requires immediate amendment or deletion. The general ban on fisheries using electricity which has hampered the introduction of sustainable alternatives to the beam trawl was also raised as well as issues relating to the definition of drift nets and the need for clearer rules and conditional derogations for commercial activities outside normal fishing operations (e.g. provision of fish for aquariums).

Citizen’s contributions

A limited number of responses were received from members of the general public reflecting the subject matter of this consultation which is highly technical. Three were from anglers, two from small-scale fishermen (one retired) and one from an active member of an environmental NGO.

These cover a range of issues. The submissions from anglers relate to the setting of minimum landing sizes, specifically for bass. These submissions also put forward other specific measures relating to bass fishing including the banning of pair trawling for this species. More extensive use of temporary or permanently closed areas is advocated in the other responses, either as general comments or in one case specifically in Greek waters. The banning of trawling in inshore waters (inside 6 miles) along with the use of effort control rather than TACs and quotas is also advocated by two of the respondents.

ANNEX II LIST OF MEETINGS, WORKSHOPS & CONSULTATIONS

2011

	Details	Date	Location
MS Administrations			
1	Experts Meeting Technical Measures (Skagerrak)	27-28 April	Gothenburg
2	Experts Meeting Technical Measures (Skagerrak)	25-26 August	Copenhagen
3	Experts Meeting Technical Measures (Skagerrak)	5-6 October	Copenhagen
4	Experts Meeting Technical Measures (Skagerrak)	26-28 October	Bergen
Advisory Councils			
5	Inter AC	6 March	Brussels
6	NWWAC	5 July	Dublin
7	NWWAC	16 November	Madrid
Other Events			
8	ICES Workshop on Seine Net Selectivity	22-24 February	Aberdeen
9	AGLIA Seminar on Selectivity and Discards	15 November	Lorient

2012

	Details	Date	Location
MS Administrations			
1	Experts Meeting Technical Measures (Skagerrak)	1 February	Copenhagen
2	Experts Meeting Technical Measures (Skagerrak)	21-22 March	Stockholm
3	Bilateral NL	29 August	Brussels
4	Bilateral UK	13 September	Brussels
5	Experts Meeting Technical Measures (Baltic Sea)	17 October	Brussels
6	Bilateral UK	4 December	Brussels
Advisory Councils			
7	Inter AC	21 February	Brussels
8	NWWAC	29 February	Paris

9	NSAC	26 June	Brussels
10	SWWAC	11 July	Lisbon
11	SWWAC	22 November	Paris
European Parliament			
12	PECH Committee	8 October	Brussels
13	PECH Committee	8 November	Brussels
Other Events			
14	ICES WGBYC	8 February	Copenhagen
15	Capecure Conference on Discards and Selectivity	29-30 March	Boulogne-sur-Mer
16	Workshop on Baltic Sea Selectivity	23-25 May	Karlskrona
17	STECF EWG	1-4 October	Dublin
18	DAG Meeting	20 November	Brussels

2013

	Details	Date	Location
MS Administrations			
1	Bilateral UK	1 February	Brussels
2	Bilateral BE	16 April	Brussels
3	EU/Norway	11 September	Edinburgh
Advisory Councils			
4	SWWAC	7 February	Brussels
5	Inter AC	1 March	Brussels
6	SWWAC	13 March	Madrid
7	NWWAC	18 April	Bilbao
8	BSAC	6 May	Copenhagen
9	NWWAC	7 June	Dublin
10	NWWAC	17-19 June	Dublin
11	NSAC	9 July	London
12	NWWAC	23-24 September	Dublin
13	NSAC	12 November	Edinburgh
NGOS			
14	Birdlife	19 February	Brussels
15	Birdlife	25 November	Brussels
Other Events			
16	ICES WGBYC	4-7 February	Copenhagen
17	STECF EWG	4-8 March	Dublin
18	EU/Norway Workshop on Technical Measures in the	17-19 April	Bergen

	North Sea		
19	EU/Norway Workshop on Technical Measures in the North Sea	6-8 May	Edinburgh
20	EU Seabirds Workshop	16 May	Brussels
21	EU BENTHIS Project Workshop	4-5 June	Haarlem
22	NSAC Discards Workshop	19 June	Brussels
23	Baltic Cod Selectivity Workshop	4 September	Brussels
24	EU ECOFISHMANN Project Workshop	15-16 October	Brussels

2014

	Details	Date	Location
MS Administrations			
1	Bilateral NL	31 January	Brussels
2	Bilateral SE	21 February	Brussels
3	Committee for Fisheries & Aquaculture	24 February	Brussels
4	Fisheries Council	28 May	Brussels
5	Bilateral SE	24 June	Brussels
6	Bilateral IE	25 June	Brussels
7	Bilateral DK	25 September	Brussels
8	Informal meeting of Directors-general for Fisheries	29 September	Naples
9	Committee for Fisheries & Aquaculture	28 October	Brussels
Advisory Councils			
10	BSAC	25 February	Copenhagen
11	NSAC	25 February	London
12	MEDAC	4-5 March	Barcelona
13	Inter AC	19 March	Brussels
14	LDAC	21 March	Brussels
15	NWWAC	25-26 March	Dublin
16	SWWAC	27-28 March	Dublin
17	BSAC	31 March	Copenhagen
18	NSAC	9 April	Paris
19	PELAC	10 April	The Hague
20	SWWAC	12 June	Paris
21	NSAC	8 July	Amsterdam

22	SWWAC	9 July	Vigo
23	NWWAC	17-18 September	Dublin
24	Inter AC	30 October	Brussels
25	NSAC	12 November	Brussels
European Parliament			
26	Greens	20 February	Brussels
27	S&D	2 April	Brussels
28	PECH Committee	7 April	Brussels
29	PECH Committee	4 September	Brussels
30	PECH Committee	23 September	Brussels
31	PECH Committee	6 November	Brussels
Industry Groups			
32	CRPMEM (FR)	27 January	Brussels
33	CRPMEM	3 April	Brussels
34	LIFE/NUFTA	4 April	Brussels
35	EUROPECHE	7 April	Brussels
36	SFF	29 April	Brussels
37	EUROPECHE	26 September	Brussels
38	EAPO	3 October	Westport
39	EUROPECHE	6 November	Brussels
40	LIFE/NUFTA	13 November	Brussels
NGOS			
41	Client Earth	7 March	Brussels
42	NGOs	16 April	Brussels
43	WWF & Client Earth	24 April	Brussels
44	EDF	25 April	Brussels
45	Client Earth	14 June	Brussels
46	Oceana	25 September	Brussels
47	Client Earth	20 November	Brussels
48	EDF	5 December	Brussels
49	WWF	16 December	Brussels
50	Oceana	17 December	Brussels
Other Events			
51	North Sea Mixed Fisheries Multiannual Plan	27 February	Brussels
52	EESC	4 April	Brussels
53	North Sea Mixed Fisheries Workshop	29-20 September	Brussels

54	Workshop on best practices in selectivity	4 December	Brussels

2015

	Details	Date	Location
MS Administrations			
1	Committee for Fisheries & Aquaculture	26 February	Brussels
2	Bilateral NL	18 March	Brussels
EFCA			
3	EFCA	9-10 February	Vigo
Advisory Councils			
	SWWAC	21 January	Lisbon
4	NSAC	4 February	Copenhagen
5	NSAC	11 March	Copenhagen
European Parliament			
6	PECH Committee	22 January	Brussels
Industry Groups			
7	EAPO	19 March	Brussels
NGOS			
8	WWF	27 January	Brussels
9	Oceana	18 March	Brussels
Other Events			
10	EU SOCIOECO Project Workshop	18 February	Brussels
11	STECF EWG	2-6 March	Dublin

ANNEX III LIST OF STUDIES

COFREPECHE, IFREMER and SCAPECHE, 2014. Reduction of gear impact and discards in deep sea fisheries (Contract MARE/2011/07 – Studies on the common fisheries policy Lot 1). Brussels, 202pp.

CIBM, COISPA, CNR-IAMC, HCMR, CONSIMA (2013). Identification and characterization of thesmall-scale driftnets fisheries in Mediterranean (DRIFTMED). Brussels, 287pp.

MRAG et al. (2014). Study in support of the review of the EU regime on the small-scale driftnet fisheries. Brussels. 295pp + Annexes

Sala, A. (2015). Alternative solutions for driftnet fisheries. IP/B/PECH/IC/2014-082. Brussels. 90pp.

SLU, DTU, Thunen, MIR (2013). Collaboration between the scientific community and the fishing sector to minimize discards in the Baltic cod fisheries. Brussels. 76pp+ Annexes.

MRAG Ltd, Poseidon & Lamans s.a. (2011). Contribution to the preparation of a Plan of Action for Seabirds. Bruusels. 290pp.

MEDISEH, ARCHIMEDES, BERNTOOL, MYGEAR & MEDPEL projects

Ulecia, R.C., (2013). Summary of the Implementation of EU Regulation 1967/2006. IP/B/PECH/NT/2013_06. Brussels. 16pp.

IEO (2014). The obligation to land all catches – Consequences for the Mediterranean. IP/B/PECH/IC/2013-168. Brussels. 52pp.

IMARES (2010). Study for the Revision of the plaice box – Final Report. Brussels. 250pp.

Kaiser, M.J. (2014). The conflict between static gear and mobile gear in inshore fisheries. IP/B/PECH/IC/2014-018. Brussels. 68pp.

MRAG, IFM, CEFAS, AZTI Tecnalia & PolEM (2009). An analysis of existing Rights Based Management (RBM) instruments in Member States and on setting up best practices in the EU. Final Report. London: MRAG Ltd. Brussels. 117pp.

ANNEX IV INVENTORY OF EU TECHNICAL MEASURES REGULATIONS

(Regulations currently in force are in bold)

1980 1ST Regulation

Council Regulation (EEC) No 2527/80 of 30 September 1980 laying down technical measures for the conservation of fishery resources Official Journal L 258, 01.10.1980 P. 0001 - 0015 (Repealed)

1983 New Regulation 171/83

Council Regulation (EEC) No 171/83 of 25 January 1983 laying down certain technical measures for the conservation of fishery resources. Official Journal L 024, 27.01.1983 p. 0014 – 0029 (Repealed)

Amendments to 171/83

Council Regulation (EEC) No 2931/83 of 4 October 1983 amending Regulation (EEC) No 171/83 laying down certain technical measures for the conservation of fishery resources. Official Journal L 288, 21.10.1983 p 1 (Repealed)

Council Regulation (EEC) No 1637/84 of 7 June 1984amending for the second time Regulation (EEC) No 171/83 laying down certain technical measures for the conservation of fishery resources. Official Journal L 156, 13.06.1984 p. 1 (Repealed)

Council Regulation (EEC) No 2184/84 of 23 July 1984 amending for the third time Regulation (EEC) No 171/83 laying down certain technical measures for the conservation of fishery resources. Official Journal L 199, 28.07.1984 p.1 (Repealed)

Council Regulation (EEC) No 2664/84 of 18 September 1984 amending for the fourth time Regulation (EEC) No 171/83 laying down certain technical measures for the conservation of fishery resources. Official Journal L 253, 21.09.1984 p.1 (Repealed)

Council Regulation (EEC) No 3625/84 of 18 December 1984 amending for the fifth time Regulation (EEC) No 171/83 laying down certain technical measures for the conservation of fishery resources. Official Journal L 353, 21.12.1984 p.3 (Repealed)

Council Regulation (EEC) No 3625/84 of 18 December 1984 amending for the sixth time Regulation (EEC) No 171/83 in particular by the addition of technical conservation measures applicable to maritime waters falling within the sovereignty or jurisdiction of Spain and Portugal. Official Journal L 363, 31.12.1985 p.21 (Repealed)

1986 New Regulation 3094/86

Council Regulation (EEC) No 3094/86 of 7 October 1986 laying down certain technical measures for the conservation of fishery resources. Official Journal L 288, 11.10.1986 p. 0001 – 0020 (Repealed)

Amendments to 3094/86

Council Regulation (EEC) No 4026/86 of 18 December 1986 amending Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 376, 31.12.1986 p. 0001 – 0003(Repealed)

Council Regulation (EEC) No 2968/87 of 29 September 1987 amending Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 280, 03.10.1987 p. 0001 - 0002 (Repealed)

Council Regulation (EEC) No 3953/87 of 21 December 1987 amending for the third time Regulation (EEC) No 3094/86 laying down certain technical measures for the conversion of fishery resources. Official Journal L 371, 30.12.1987 p. 0009 - 0010 56 (Repealed)

Council Regulation (EEC) No 1555/88 of 31 May 1988 amending for the fourth time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 140, 07.06.1988 p. 0001 – 0002 (Repealed)

Council Regulation (EEC) No 2024/88 of 23 June 1988 amending for the fifth time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 179, 09.07.1988 p. 0001 - 0002 (Repealed)

Council Regulation (EEC) No 3287/88 of 20 October 1988 amending for the sixth time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 292, 26.10.1988 p. 0005 - 0005 (Repealed)

Council Regulation (EEC) No 4193/88 of 21 December 1988 amending for the seventh time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 369, 31.12.1988 p. 0001 - 0002 (Repealed)

Council Regulation (EEC) No 2220/89 of 18 July 1989 amending for the eighth time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 211, 22.07.1989 p. 0006 - 0006 (Repealed)

Council Regulation (EEC) No 4056/89 of 19 December 1989 amending for the ninth time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 389, 30.12.1989 p. 0075 - 0077 (Repealed)

1991. Council Regulation (EEC) No 3500/91 of 28 November 1991 amending for the tenth time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 331, 03.12.1991 p. 0002 - 0002 (Repealed)

Council Regulation (EEC) No 345/92 of 27 January 1992 amending for the eleventh time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 042, 18.01.1992 p. 0015 - 0023 (Repealed)

Council Regulation (EEC) No 1465/92 of 1 June 1992 amending for the twelfth time Regulation (EEC) No 3094/86 laying down certain technical measures for the conversion of fishery resources. Official Journal L 155, 06.06.1992 p. 0001 - 0002 (Repealed)

Council Regulation (EEC) No 2120/92 of 20 July 1992 amending, for the 13th time, Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 213, 29.07.1992 p. 0003 - 0004 (Repealed)

Council Regulation (EEC) No 3034/92 of 19 October 1992 amending, for the fourteenth time, Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 307, 23.10.1992 p. 0001 - 0002 (Repealed)

Council Regulation (EC) No 1796/94 of 18 July 1994 amending, for the fifteenth time, Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 187, 22.07.1994 p. 0001 - 0002 (Repealed)

Council Regulation (EC) No 1173/95 of 22 May 1995 amending, for the sixteenth time, Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 118, 25.05.1995 p. 0015 - 0015 (Repealed)

Council Regulation (EC) No 1909/95 of 24 July 1995 amending, for the 17th time, Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 184, 03.08.1995 p. 0001 - 0002 (Repealed)

Council Regulation (EC) No 2251/95 of 18 September 1995 amending for the 18th time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 230, 27.09.1995 p. 0011 - 0011 (Repealed)

Council Regulation (EC) No 3071/95 of 22 December 1995 amending, for the 19th time, Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources. Official Journal L 329, 30.12.1995 p. 0014 - 0017 (Repealed)

1997 New Regulation 894/97

Council Regulation (EC) No 894/97 of 29 April 1997 laying down certain technical measures for the conservation of fishery resources. Official Journal L 132, 23.05.1997 p. 0001 - 0027 (In force)

Amendments to 894/97

Council Regulation (EC) No 1239/98 of 8 June 1998 amending Regulation (EC) No 894/97 laying down certain technical measures for the conservation of fishery resources. Official Journal L 171, 17.06.1998 p. 0001 – 0004 (In force)

1998 New Regulation 850/98

Council Regulation (EC) No 850/98 of 30 March 1998 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 125, 27.04.1998 p. 0001 – 0036 (In force)

Amendments to 850/98

Council Regulation (EC) No 308/1999 of 8 February 1999 amending Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 038, 12.02.1999 p. 0006 - 0009 (In force)

Council Regulation (EC) No 1459/1999 of 24 June 1999 amending Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 168, 03.07.1999 p. 0001 - 0005 (In force)

Council Regulation (EC) No 2723/1999 of 17 December 1999 amending Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 328, 22.12.1999 p. 0009 - 0011 (In force)

Council Regulation (EC) No 812/2000 of 17 April 2000 amending Regulation (EC) No 1626/94 laying down certain technical measures for the conservation of fishery resources in the Mediterranean and Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 100, 20.04.2000 p. 0003 - 0004 (In force)

Council Regulation (EC) No 1298/2000 of 8 June 2000 amending for the fifth time Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 148, 22.06.2000 p. 0001 - 0002 (In force)

Council Regulation (EC) No 724/2001 of 4 April 2001 amending Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 102, 12.04.2001 p. 0016 - 0019 (In force)

Council Regulation (EC) No 1298/2000 of 8 June 2000 amending for the fifth time Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 148, 22.6.2000, p. 1–2 (In force)

Council Regulation (EC) No 602/2004 of 22 March 2004 amending Regulation (EC) No 850/98 as regards the protection of deepwater coral reefs from the effects of trawling in an area north west of Scotland. Official Journal L 097, 01.04.2004 p. 0030 - 0031 (In force)

Council Regulation (EC) No 1568/2005 of 20 September 2005 amending Regulation (EC) No 850/98 as regards the protection of deep-water coral reefs from the effects of fishing in certain areas of the Atlantic Ocean. Official Journal L 252, 28.09.2005 p. 0002 - 0003 (In force)

Council Regulation (EC) No 734/2008 of 15 July 2008 on the protection of vulnerable marine ecosystems in the high seas from the adverse impacts of bottom fishing gears. Official Journal L 201 30.07.2008 p. 8. (In force)

Regulation (EU) No 227/2013 of the European Parliament and of the Council of 13 March 2013 amending Council Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms and Council Regulation (EC) No 1434/98 specifying conditions under which herring may be landed for industrial purposes other than direct human consumption. Official Journal L 78 20.03.2013 p. 1. (In force)

Transitional Technical Measures

Council Regulation (EC) No 1288/2009 of 27 November 2009 establishing transitional technical measures from 1 January 2010 to 30 June 2011. Official Journal L 347 24.12.2009, p.6 (Repealed)

Regulation (EU) No 579/2011 of the European Parliament and of the Council of 8 June 2011 amending Council Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms and Council Regulation (EC) No 1288/2009 establishing transitional technical measures from 1 January 2010 to 30 June 2011. Official Journal L 165 24.06.2011, p.1 (Repealed)

Recovery measures containing technical measures:

Irish Sea cod

Commission Regulation (EC) No 304/2000 of 9 February 2000 establishing measures for the recovery of the stock of cod in the Irish Sea (ICES division VIIa).Official Journal L 035, 10.02.2000 p. 0010 - 0011 (Repealed)

Commission Regulation (EC) No 660/2000 of 30 March 2000 amending Regulation (EC) No 304/2000 establishing measures for the recovery of the stock of cod in the Irish Sea (ICES Division VIIa).Official Journal L 080, 31.03.2000 p. 0014 – 0014 (Repealed)

Council Regulation (EC) No 2549/2000 of 17 November 2000 establishing additional technical measures for the recovery of the stock of cod in the Irish Sea (ICES Division VIIa). Official Journal L 292, 21.11.2000 p. 0005 - 0006 (In force)

Council Regulation (EC) No 300/2001 of 14 February 2001 establishing measures to be applied in 2001 for the recovery of the stock of cod in the Irish Sea (ICES division VIIa). Official Journal L 044, 15.02.2001 p. 0012 - 0014 (Repealed)

Council Regulation (EC) No 1456/2001 of 16 July 2001 amending Regulation (EC) No 2549/2000 establishing additional technical measures for the recovery of the stock of cod in the Irish Sea (ICES Division VIIa). Official Journal L 194, 18.07.2001 p. 0001 – 0001(In force)

Council Regulation (EC) No 254/2002 of 12 February 2002 establishing measures to be applicable in 2002 for the recovery of the stock of cod in the Irish Sea (ICES division VIIa). Official Journal L 041, 13.02.2002 p 0001 - 0003 (In force)

North Sea and West of Scotland cod

Commission Regulation (EC) No 259/2001 of 7 February 2001 establishing measures for the recovery of the stock of cod in the North Sea (ICES subarea IV) and associated conditions for the control of activities of fishing vessels. Official Journal L 039, 09.02.2001 p. 0007 – 0010 (Repealed)

Commission Regulation (EC) No 456/2001 of 6 March 2001 establishing measures for the recovery of the stock of cod to the west of Scotland (ICES Division VIa) and associated conditions for the control of activities of fishing vessels. Official Journal L 065, 07.03.2001 p. 0013 - 0016 (Repealed)

Commission Regulation (EC) No 714/2001 of 10 April 2001 amending Regulation (EC) No 259/2001 establishing measures for the recovery of the stock of cod in the North Sea (ICES subarea IV) and associated conditions for the control of activities of fishing vessels. Official Journal L 100, 11.04.2001 p. 0005 - 0006 (Repealed)

Commission Regulation (EC) No 715/2001 of 10 April 2001 amending Regulation (EC) No 456/2001 establishing measures for the recovery of the stock of cod to the west of Scotland (ICES division VIa) and associated conditions for the control of activities of fishing vessels. Official Journal L 100, 11.04.2001 p. 0007 – 0008 (Repealed)

Commission Regulation (EC) No 2056/2001 of 19 October 2001 establishing additional technical measures for the recovery of the stocks of cod in the North Sea and to the west of Scotland.Official Journal L 277, 20.10.2001 p. 0013 - 0016 (In force)

Council Regulation (EC) No 1342/2008 of 18 December 2008 establishing a long-term plan for cod stocks and the fisheries exploiting those stocks and repealing Regulation (EC) No 423/2004. Official Journal L 348, 24.12.2008, p. 20–33 (In force)

Hake

Commission Regulation (EC) No 1162/2001 of 14 June 2001 establishing measures for the recovery of the stock of hake in ICES sub-areas III, IV, V, VI and VII and ICES divisions VIII a, b, d, e and associated conditions for the control of activities of fishing vessels. Official Journal L 159, 15.06.2001 p. 0004 – 0009 (Repealed)

Commission Regulation (EC) No 2602/2001 of 27 December 2001 establishing additional technical measures for the recovery of the stock of hake in ICES subareas III, IV, V, VI and

VII and ICES Divisions VIIIa, b, d, e. Official Journal L 345, 29.12.2001 p. 0049 - 0051 (Repealed)

Commission Regulation (EC) No 494/2002 of 19 March 2002 establishing additional technical measures for the recovery of the stock of hake in ICES sub-areas III, IV, V, VI and VII and ICES divisions VIII a, b, d, e. Official Journal L 077, 20.03.2002 p. 0008 - 0010 (In force)

Southern Hake and Norway lobster

Council Regulation (EC) No 2166/2005 of 20 December 2005 establishing measures for the recovery of the Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian peninsula and amending Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms. Official Journal L 345, 28.12.2005, p. 5–10 *(*In force)

Baltic Sea Technical Measures

Council Regulation (EC) No 1866/1986 of 12 June 1986 for the conservation of fishery resources through technical measures in the Baltic Sea, the Belts and the Sound. Official Journal L 162 18.06.86. p.1. (Repealed)

Council Regulation (EC) No 88/98 of 18 December 1997 laying down certain technical measures for the conservation of fishery resources in the waters of the Baltic Sea, the Belts and the Sound. Official Journal L 9, 15.1.1998, p. 1–16 (Repealed)

Council Regulation (EC) No 1520/98 of 13 July 1998 amending Regulation (EC) No 88/98 laying down certain technical measures for the conservation of fishery resources in the waters of the Baltic Sea, the Belts and the Sound. Official Journal L 201, 17.7.1998, p. 1–3 (Repealed)

Commission Regulation (EC) No 677/2003 of 14 April 2003 establishing emergency measures for the recovery of the cod stock in the Baltic Sea. Official Journal L 097 15.04.2003 p. 31 (Repealed)

Council Regulation (EC) No 289/2005 of 17 February 2005 amending Regulation (EC) No 88/98 as regards the extension of the trawling ban to Polish waters Official Journal L 49, 22.2.2005, p. 1–1 (Repealed)

Council Regulation (EC) No 2187/2005 of 21 December 2005 for the conservation of fishery resources through technical measures in the Baltic Sea, the Belts and the Sound, amending Regulation (EC) No 1434/98 and repealing Regulation (EC) No 88/98. Official Journal L349 31.12.2005.P.1. 60 (In force)

Commission Regulation (EU) No 686/2010 of 28 July 2010 amending Council Regulation (EC) No 2187/2005 as regards specifications of Bacoma window and T90 trawl in fisheries carried out in the Baltic Sea, the Belts and the Sound. Official Journal L 199, 31.7.2010, p. 4–11 (In force)

Mediterranean Technical Measures

Council Regulation (EC) No 1626/94 of 27 June 1994 laying down certain technical measures for the conservation of fishery resources in the Mediterranean. Official Journal L. 171 6.07.94. p.1 (Repealed)

Council Regulation (EC) No 1075/96 of 10 June 1996 amending Regulation (EC) No 1626/94 laying down certain technical measures for the conservation of fishery resources in the Mediterranean. Official Journal L 142, 15.6.1996, p. 1–2 (Repealed)

Council Regulation (EC) No 782/98 of 7 April 1998 amending Regulation (EC) No 1626/94 laying down certain technical measures for the conservation of fishery resources in the Mediterranean .Official Journal L 113, 15.4.1998, p. 6–7 (Repealed)

Council Regulation (EC) No 1448/1999 of 24 June 1999 introducing transitional measures for the management of certain Mediterranean fisheries and amending Regulation (EC) No 1626/94. Official Journal L 167, 2.7.1999, p. 7–8 (Repealed)

Council Regulation (EC) No 2550/2000 of 17 November 2000 amending Regulation (EC) No 1626/94 laying down certain technical measures for the conservation of marine resources in the Mediterranean. Official Journal L 292, 21.11.2000, p. 7–8 (Repealed)

Council Regulation (EC) No 813/2004 of 26.4.2004 amending Regulation (EC) No 1626/94 as regards certain conservation measures relating to waters around Malta. Official Journal L 150, 30.4.2004, p. 32–41 (Repealed)

Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation 9EC) No 1626/94. Official Journal L409 30.12.2006 p.11 (In force)

Regulation (EU) No 1343/2011 of the European Parliament and of the Council of 13 December 2011 on certain provisions for fishing in the GFCM (General Fisheries Commission for the Mediterranean) Agreement area and amending Council Regulation (EC) No 1967/2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea. Official Journal L 347, 30.12.2011, p. 44–61 (In force)

Non-EU waters Technical Measures

Council Regulation (EC) No 973/2001 of 14 May 2001 laying down certain technical measures for the conservation of certain stocks of highly migratory species. Official Journal L.137 19.05.2001.p.3. (In force)

Council Regulation (EC) No 600/2004 of 22 March 2004 laying down certain technical measures applicable to fishing activities in the area covered by the Convention on the conservation of Antarctic marine living resources. Official Journal L. 97 1.04.2004.p.1.(In force)

Council Regulation (EC) No 831/2004 of 26 April 2004 amending Regulation (EC) No 973/2001 laying down certain technical measures for the conservation of certain stocks of highly migratory species. Official Journal L 127 29.04.2004. p.33 (In force)

Council Regulation (EC) No 520/2007 of 7 May 2007 laying down technical measures for the conservation of certain stocks of highly migratory species and repealing Regulation (EC) No 973/2001. Official Journal L 123 12.05.2007 p.3 (In force)

Council Regulation (EC) No 302/2009of 6 April 2009 concerning a multiannual recovery plan for bluefin tuna in the eastern Atlantic and Mediterranean, amending Regulation (EC) No 43/2009 and repealing Regulation (EC) No 1559/2007. Official Journal L 96 15.04.2009. p.1. (In force)

Gear Specifications and Operational Measures

Commission Regulation (EEC) No 3440/84 of 6 December 1984 on the attachment of devices to trawls, Danish seines and similar nets. Official Journal L 318, 7.12.1984, p. 23(In force)

Commission Regulation (EEC) No 955/87 of 1April 1987 amending Regulation (EEC) No 3440/84 on the attachment of devices to trawls, Danish seines and similar nets. Official Journal L 90, 1.04.1987, p. 29 (In force)

Commission Regulation (EEC) No 2122/89 of 14July 1989 amending Regulation (EEC) No 3440/84 on the attachment of devices to trawls, Danish seines and similar nets. Official Journal L 203, 15.07.1989, p. 21 (In force)

Council Regulation (EC) No 1434/98 of 29 June 1998 specifying conditions under which herring may be landed for industrial purposes other than direct human consumption. Official Journal L 191, 7.7.1998, p. 10–12 (In force)

Commission Regulation (EC) No 1922/1999 of 8 September 1999 laying down detailed rules for the application of Council Regulation (EC) No 850/98 as regards conditions under which vessels exceeding eight metres length overall shall be permitted to use beam trawls within certain waters of the Community (In force)

Commission Regulation (EC) No 129/2003 of 24 January 2003 laying down detailed rules for determining the mesh size and thickness of twine of fishing nets. Official Journal L 022, 25/01/2003 P. 0005 - 0014 (Repealed)

Commission Regulation (EC) No 146/2007 of 15 February 2007 amending Regulation (EEC) No 3440/84 as regards conditions for certain trawls for vessels operating pump aboard systems. Official Journal L46 16.02.2007, p.9 (In force)

Council Regulation (EC) No 809/2007 of 28 June 2007 amending Regulations (EC) No 894/97, (EC) No 812/2004 and (EC) No 2187/2005 as concerns drift nets. Official Journal L 182, 12.7.2007, p. 1–2 (In force)

Commission Regulation (EC) No 517/2008 of 10 June 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 850/98 as regards the determination of the mesh size and assessing the thickness of twine of fishing nets (In force)

Commission Regulation (EU) No 724/2010 of 12 August 2010 laying down detailed rules for the implementation of real-time closures of certain fisheries in the North Sea and Skagerrak. Official Journal L 213, 13.8.2010, p. 1–5 (In force)

Nature Conservation Measures

Council Regulation (EC) No 1185/2003 of 26 June 2003 on the removal of fins of sharks on board vessels. Official Journal L 167, 4.07.2003. p.6 (In force)

Regulation (EU) No 605/2013 of the European Parliament And Of The Council of 12 June 2013 amending Council Regulation (EC) No 1185/2003 on the removal of fins of sharks on board vessels. Official Journal L 181 29.06.2013 p. 1 (In force)

Council Regulation (EC) No 812/2004 of 26 April 2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98. Official Journal L 150, 30.04.2004. p.12 (In force)

ANNEX V CURRENT REGULATORY STRUCTURE OF TECHNICAL MEASURES

Regulation	*Purpose of Regulation*	**Types of Technical Measures included*
COUNCIL REGULATION (EC) No 850/98	Establishes technical measures for the North-eastern Atlantic including the North Sea, Skagerrak and Kattegat, the outermost regions and Black Sea (since 2013)	1,2,3,4,5
COUNCIL REGULATION (EC) No 2187/2005	Establishes technical measures for the Baltic Sea	1,2,3,4,5
COUNCIL REGULATION (EC) No 1967/2006	Establishes technical measures for the Mediterranean	1,2,3,4,5
COMMISSION REGULATION (EEC) No 3440/84	Attachments to fishing gears	1,2
COMMISSION REGULATION (EC) No 517/2008	Measurement of mesh size and twine thickness	1,2
COMMISSION REGULATION (EC) No 1922/1999	Implementing rules relating to the closed are to protect plaice box in the North Sea	1,2
COMMISSION REGULATION (EC) No 494/2002	Recovery measures to protect hake in the North-east Atlantic excluding the North Sea (includes technical measures, control rules and reporting requirements)	1,2,3
COMMISSION REGULATION (EC) 2602/2001	Additional technical measures to protect hake stocks in the North-east Atlantic excluding the North Sea	1,2,3
COUNCIL REGULATION (EC) No 254/2002	Additional technical measures to protect cod stocks in the Irish Sea	1,2,3
COUNCIL REGULATION(EC) NO 2549/2000	Additional technical measures to protect cod in the Irish Sea	1,2
COMMISSION REGULATION (EC) No 2056/2001	Additional technical measures to protect cod stocks in the North Sea and West of Scotland	1,2,3
COMMISSION IMPLEMENTING REGULATION (EU) No 727/2012	Emergency measures to improve selectivity in demersal fisheries in the Celtic Sea	2
REGULATION (EU) No 1343/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL	Conservation measures applying in the Mediterranean & Black Sea(GFCM Regulatory Areas) includes control measures, effort restrictions, reporting requirements as well technical measures	1,2,4,5
COUNCIL REGULATION (EC) No 1098/2007	Multiannual plan for cod stocks in the Baltic Sea	3
COMMISSION REGULATION	Implementing rules for the use of selective	2

(EU) No 686/2010	gears in the Baltic Sea	
COUNCIL REGULATION (EC) No 2347/2002	Access requirements and associated conditions applicable to fishing for deepsea stocks by Union waters includes specific catch composition rule relating to fishing authorisations	2
COMMISSION REGULATION (EU) No 724/2010	Implementing rules to set up real-time closures in the North Sea & Skagerrak	4
COUNCIL REGULATION (EC) No 894/97	Restrictions on the use of driftnets for highly migratory species	1
COUNCIL REGULATION (EC) No 1185/2003	Prohibition on the removal of shark fins on board Union waters	1
COUNCIL REGULATION (EC) No 812/2004	Measures to reduce the incidental catches of cetaceans in gillnets and pelagic trawl fisheries in Union waters (includes reporting requirements as well technical measures)	5
COUNCIL REGULATION (EC) No 1434/98	Specific catch composition rules for industrial herring fisheries in the North-east Atlantic & Baltic	1
COUNCIL REGULATION (EC) No 1224/2009	Control regulation includes measures relating to real-time closures	1,4
COUNCIL REGULATION (EC) No 1954/2003	Effort regime for vessels in the North-east Atlantic excluding the North Sea includes closed area (Biologically sensitive area off the coast of Ireland)	4
COUNCIL REGULATION (EC) No 600/2004	Conservation measures for Union vessels operating in the Antarctic (CCAMLAR region) (includes control and reporting measures as well technical measures)	1,2,3,4,5
COUNCIL REGULATION (EC) No 520/2007	Conservation measures for Union vessels fishing for highly migratory species in ICCAT region (includes control, and reporting measures as well as technical measures)	1,2,3,4
COUNCIL REGULATION (EC) No 302/2009	Recovery plan for bluefin tuna in ICCAT region includes specific technical measures	1,2,3,4
COUNCIL REGULATION (EC) No 734/2008	Technical measures to protect vulnerable marine ecosystems in the high-seas	5
COUNCIL REGULATION (EU) 2015/104	Fishing opportunities for Union waters and Union vessels fishing in non-EU waters includes technical measure slinked to specific stocks and also technical measures for fisheries under RFMO agreements	1,3,4,5
COUNCIL REGULATION (EU) 2015/106	Fishing opportunities for Black Sea includes close area for turbot fisheries	4

COUNCIL REGULATION (EU) No 1221/2014	Fishing opportunities for the Baltic includes technical measures linked to specific stocks	2
COUNCIL REGULATION (EU) No 1367/2014	Fishing opportunities for deep-sea stocks includes technical measure slinked to specific stocks	2

Source: Author

***Key:**

1) **measures that regulate the operation of the gear (e.g. prohibitions of certain gear types, maximum limits on how long or what type of gear can be deployed);**
2) **measures that regulate the design characteristics of the gears that are deployed (e.g. mesh size and catch composition rules);**
3) **minimum landing sizes below which fish must be returned to the sea (e.g. for cod the minimum landing size is set at 35cm);**
4) **measures that set spatial and temporal controls (e.g. closed/limited entry areas and seasonal closures) to protect aggregations of juvenile or spawning fish; and**
5) **measures that mitigate the impacts of fishing gears on sensitive species (e.g. cetaceans, seabirds or sea turtles) or closed areas to protect sensitive habitats (e.g. coldwater coral reefs).**

ANNEX VI DIFFERENCES IN GOVERNENCE STRUCTURES FOR TECHNICAL MEASURES BY REGION

Region	Principal Regulations (Co-decided Acts)	Flexibility mechanisms/empowerments
NE Atlantic	Regulation (EC) No 850/98	- the division of regions into geographical areas; – to amend rules concerning the conditions for the use of certain mesh size combinations; – to adopt detailed rules for obtaining the percentage of target species taken by more than one fishing vessel,; - to adopt rules concerning the technical descriptions and method of use of authorised devices that might be attached to the fishing net, and which do not obstruct or diminish the effective mesh opening of the net; – conditions under which vessels exceeding eight meters length overall shall be permitted to use beam trawls within certain waters of the Union; – measures designed to address unexpectedly small or large recruitments of juveniles, changes in migration patterns or any other changes in the conservation status of fish stocks, with immediate effect.
Baltic	Regulation (EC) 2187/2005	to amend rules concerning the construction of certain gears.
Mediterranean	Regulation (EC) 1967/2006	the granting of derogations where they are specifically provided for in that Regulation; – the setting of criteria to be applied for the establishment and allocation of fish aggregating devices (FAD) course lines for dolphin fish fishery in the 25-mile management zone around Malta; – the adoption of detailed rules for further technical specifications of square mesh panels to be inserted into towed nets; the adoption of technical specifications limiting the maximum dimension of float line, ground rope, circumference or perimeter of trawl nets along with the maximum number of nets in multi-rig trawl nets, and – the amendments to the Annexes to Regulation (EC) No 1967/2006. National Management Plans

		Multi-annual plans
Black Sea	Regulation (EC) 850/98	Technical measures can be included in the annual Fishing opportunities regulation provided the measures have a functional link to a particular stock
Non-Union waters	Specific regulations transposing RFMO rules: Regulation (EC) 600/2004, (EC) 520/2007, (EC) 302/2009 High Seas: Regulation (EC) 734/2008	Additional technical measures transposing RFMO rules and recommendations are included under the annual fishing opportunities regulations.

ANNEX VII MAIN ELEMENTS OF THE COMMON FISHERIES POLICY

The new CFP, Regulation (EU) 138/2013 entered into force on 1 January 2014. It is based on the principle of management by result. The main elements of the new CFP are:

- **Maximum Sustainable Yield** is the best possible objective for renewable and profitable fisheries, harvesting the maximum amount of fish on a long term basis. The objective of the CFP is to ensure that MSY is achieved by 2015 where possible, and by 2020 at the latest. Not all stocks in the north-east Atlantic are MSY-assessed yet. Of the assessed stocks 60% of them are fished at MSY (up from 6 % only in 2005). In the Mediterranean only around 11% of assessed stocks are within MSY and there is little sign of improvement. For many stocks, particularly in the Mediterranean, we have no assessment of MSY.
- **Annual legislation on fixing fishing opportunities** (TACs and quotas, some are set on a two-yearly basis): to fix, based on scientific advice that is consistent with MSY and in accordance with multi-annual plans (where they exist), the amount of fishing for the stocks concerned, and to allocate quotas to the Member States following the so-called relative stability key. In turn, Member States deal with how to distribute their national quotas to their fishermen. Annually fishing opportunities are set for the Baltic, North Sea, Atlantic and deep-sea stock, by Council only, to determine the level of catches (before the landing obligation: landings), for each stock. The COM outlines its approach for the TAC in the Spring in a Policy Statement.
- The COM proposals are based on existing multi-annual plans (with certain provisions on TAC setting), or on annual biological advice. TACs are shared out to MS following fixed allocation keys (so-called relative stability, which differs among stocks). TACs (in tonnes) are a translation of fishing mortality (F, mortality caused by fishing as a ratio of the stock). In the context of multi-annual plans the COM will be seeking advice on MSY expressed in ranges of fishing mortality that correspond to sustainable fishing and MSY, for the target species.
- Under certain multi-annual plans TACs are accompanied by effort reduction schemes for certain fleets. These effort regimes are currently considered ineffective, causing red tape, and sometimes creating conflicts with the TACs. They are likely to disappear from future multi-annual plans, but are currently still part of the TAC proposals.
- **The landing obligation**: The new CFP includes a landing obligation for all catches of species subject to catch limits (TACs) and, in the Mediterranean, also catches of species which are subject to minimum sizes (only blue-fin tuna is under TAC in this sea basin).
- It applies to all Union vessels fishing in Union and non-Union waters. The landing obligation is applied in a gradual way and is fishery based. On 1 January 2015 pelagic fisheries and industrial fisheries everywhere in Union waters will be under the landing obligation, as will be all other fisheries (salmon and cod) in the Baltic.
- The landing obligation comes with a set of potential measures and flexibility instruments to make the transition and timely implementation possible. These include quota flexibilities, exemptions for species that have a high survival rate and a *de minimis* exemption to cater for unwanted catches that are unavoidable. The plans may also fix conservation reference sizes for fish. These measures should be developed

through multi-annual plans, but in the absence of such plans, *discard plans* can be adopted.

- The new CFP encourages regionalization, which basically allows Member States, in consultation with the relevant stakeholder Advisory Councils, to come forward with a proposal for a discard plan (joint recommendation) that the COM, after review, turns into Union legislation (through a Commission Regulation).
- **EU multi-annual plans**; national plans in the Mediterranean: they contain the framework for management of a stock or a combination of stocks (by fishery). Multi-annual plans are designed to ensure effective management of the fisheries and to bring conservation and management provisions for groups of stocks under plans. Plans contribute to stability and a long-term security for the industry. The main elements of plans are:
  - MSY-related targets (per target stock), deadlines for achieving MSY, and fishing mortality/exploitation ranges that are consistent with MSY (F_{msy} as a range of values);
  - Safeguard provisions if science indicates that stocks are in trouble; specific conservation measures for non-target species, so as to keep them within sustainable boundaries;
  - Mechanisms to allow for regionalization of implementing measures under the plan.
- **Fleet capacity rules**: these are provisions to support that the fleet capacity of a Member State matches with the fishing opportunities that are allocated to it; fleet overcapacity potentially leads to overfishing. Member States cannot increase the engine power or storage capacity of their fleets. Each Member State is subject to a maximum capacity threshold (in engine power (kW) and in vessel volume (gt)). Nominally, all Member States fleets are under these ceilings however, in many Member States the effective engine capacity may well outscore the numbers in the CFP. Despite intensified enforcement, this is a persistent and hard-to-tackle issue.
- Annually Member States must report on the balance between capacity and fishing opportunities. Historically this has not been linked to targeted actions. For the first time, under the new CFP Member States have to give follow-up to the identification of overcapacity with an action plan to eliminate it, in order to have access to funding for decommissioning of excess vessels. The assessment exercise by Member States on the balance between capacity and fishing opportunities is facilitated by common guidelines developed by the Commission. It includes technical and economic parameters. Member States will have to include in their reports an action plan for the fleet segments with identified imbalance. In the action plan, Member States have to set out the adjustment targets and tools to achieve the balance. The plan has to include a clear time frame for the implementation of the action plan as well.
- **The External Dimension**: The CFP reform enshrines for the first time the external dimension of the CFP (Part VI of the Basic Regulation: Articles 28-31). It calls for strong external action that follows externally the same principles and standards as internally while promoting a level-playing field for EU operators. Under the CFP ne international agreements should

  - Contribute to long term sustainability worldwide via stronger bilateral relations and tackling global issues such as IUU fishing and fishing overcapacity.
  - Up-hold and strengthen the global architecture for fisheries governance (UN, FAO, OECD, etc.).
  - Contribute towards a more effective functioning of RFMOs, more sustainable Fisheries Agreements and better coherence with other EU policies.

- **Data Collection Framework**: a set of requirements on collection by fishermen and Member States and management of biological and other data as input for biological, economic and other knowledge and advice in support of the policy. To align to the new CFP a Commission proposal for a revised Data Collection Framework Regulation is under preparation. It will introduce simplifications and more flexibility and adaptability, based on an evaluation3 of the previous framework.
- **Advisory Councils**: The Advisory Councils (ACs) were established since 2004 to advise the Commission on matters related to fisheries management in their respective areas of competence. Seven ACs were established for the Mediterranean Sea, the South Western Waters, the North Western Waters, the North Sea, the Baltic Sea, small pelagic species, and the Long Distance Fleet. The ACs are stakeholders' organisations that bring together the industry (fishing, processing and marketing sectors) and other interest groups, such as environmental and consumers' organisations. They receive an annual grant of up to 250.000 euros from the Commission to cover part of their operational costs. The new CFP foresees the creation of four new ACs for Aquaculture, Markets, the Black Sea and Outermost Regions. ACs are expected to expand their play in the regionalized CFP and are to be consulted by Member States when preparing joint recommendations on conservations measures.

ANNEX VIII TRENDS IN DISCARDING IN EU FISHERIES

(Source: http://ec.europa.eu/fisheries/documentation/studies/discards/annex_en.pdf)

ICES regions

	High Discards (>40%)		Medium Discards (15-39%)		Low Discards (<15%)
	Beam Trawls	Bottom trawls	Bottom trawls	Trammel nets	Pelagic trawls
Target species	Flatfish (sole, plaice)	*Nephrops* Horse mackerel, monkfish, megrim, hake Cod, haddock, Cephalopods Mullet	Hake, *Nephrops*, sardines	Herring, horse mackerel, mullets, whiting	Herring, mackerel, horse mackerel, blue whiting
Discard species	Plaice, sole, cod, haddock, whiting, dab	Target species	Target species and dab, gurnards, plaice, lesser-spotted dogfish, whiting, boar fish, poor cod, gt silver smelt horse-mackerel and dragonets	Target species	Target species
Discard characteristics	Undersize target species	Undersize target species Over quota target species Low commercial value	Undersize target species Over quota target species Low commercial value	Overquota, high-graded herring, Whiting below MLS	High-grading of low value individuals, below MLS

Mediterranean

	High Discards (>40%)			Medium Discards (15-39%)		Low Discards (<15%)
	Beam trawls	Longline	Hydraulic dredges	Bottom trawls	Bottom trawls	Pelagic trawls	Trammel nets/gillnets/lampara
Target species	Cephalopods and scallops (Adriatic)	Albacore, swordfish	Clams (Adriatic)	Mullet	Red mullet, red shrimp, octopus, horse mackerel	Anchovies, sardines, red mullet, jack mackerel, silver scabbards	Anchovies, striped red mullet, black scorpionfish
Discard species	Invertebrates, *Nephrops*	Swordfish, bluefin tuna, tope shark, turtles	Clams and other benthic invertebrates	Small commercial and non commercial invertebrates	Target species	Target species, sharks	Target species, Jack mackerel, sardines, macroinvertebrates

	High Discards (>40%)				Medium Discards (15-39%)		Low Discards (<15%)
	Beam trawls	Longline	Hydraulic dredges	Bottom trawls	Bottom trawls	Pelagic trawls	Trammel nets/gillnets/lampara
Discard characteristics	Undersize target species	Undersize target species, overquota (bluefin), endangered species	Undersize target species, species with low or no commercial value	Undersize target species Low commercial value High diversity (~135 spp. per trawl)	Under MLS, damaged or small	Below MLS, high grading of low values species and small individuals	High grading (small/damaged individuals), below MLS

ANNEX IX DETAILED BEAKDOWN OF CATCHING SECTOR BY MEMBER STATE AND BY GEAR TYPE

Member State	Number of vessels	Gross Tonnage (1000GT)	Kilowatts (1000kw)	Total jobs	FTEs
BEL	89	15.8	51.2	377	342
BGR	1010	5	33.7	3276	1668
CYP	n/a	n/a	n/a	n/a	n/a
DEU	1664	64.6	151.4	1639	1258
DNK	2663	67.5	238.8	1460	1661
ESP	10892	414.7	936.0	36294	32194
EST	934	14.7	39.6	n/a	n/a
FIN	3365	16.7	172.8	1722	316
FRA	6004	161.0	879.9	10713	7447
GBR	6467	207.2	825.9	12405	7192
GRC*	17168	88.3	506.4	n/a	n/a
IRL	2162	72.2	202.4	4714	3166
ITA	14715	185.0	1236.5	28726	20599
LTU	171	46.0	54.4	768	575
LVA	319	8.5	22.3	712	378
MLT	1087	12.1	83.4	225	155
NLD	738	130.5	290.1	2763	1768
POL	805	38.0	88.1	2411	1576
PRT	8557	102.5	377.4	17234	17188

ROU	488	1.0	7.0	454	28
SVN	186	1.0	10.9	114	77
SWE	1359	32.9	178.1	1679	974

***GRC data from 2010**

Table 1 Number of Vessels and Employment by Member State, 2011
(Source: STECF 2013b)

	Gear Type	Number of Vessels	Gross Tonnage (1000 GT)	Kilowatts (1000Kw)	Total Jobs	FTE
Active gears	**DRB**	1650	32.8	202.4	4298	2520
	DTS	6735	629.0	1794.8	28000	26461
	MGO	208	1.0	17.3	258	135
	MGP	117	4.7	21.1	423	350
	PS	1322	236.7	563.9	12059	11227
	TBB	757	89.6	308.1	2964	2094
	TM	564	232.5	365.0	4036	3050
Passive Gears	**DFN**	4073	45.8	329.5	11662	8091
	FPO	3893	23.6	263.6	8085	6498
	HOK	2978	97.7	364.4	9560	8669
	PG	4095	11.7	148.5	3917	1368
	PGP	13857	54.3	582.4	21245	17140
	PMP	9443	40.8	295.5	20358	14652
Total		**49690**	**1500.3**	**5256.6**	**126865**	**102256**

Table 2: Breakdown of EU fleet by gear type, 2011
Source: (STECF 2013b)

	Gear Type	North-east Atlantic		North Sea		Baltic Sea		Mediterranean	
		Number of Vessels	FTE	Number of Vessels	FTE	Number of Vessels	FTE	Number of Vessels	FTE
Active Gears	**DRB**	424	917	285	664	n/a	n/a	719	392
	DTS	1377	5453	1067	3884	322	906	3410	9968
	MGO	50	82	n/a	n/a	n/a	n/a	56	52
	MGP	37	57	48	96	n/a	n/a	8	14
	PS	247	2594	12	157	n/a	n/a	554	2473
	TBB	73	348	611	1572	n/a	n/a	71	174
	TM	78	499	12	181	180	687	188	474
Passive Gears	**DFN**	1662	4057	874	1260	555	390	610	1880
	FPO	1837	3762	1099	1870	n/a	n/a	197	98
	HOK	979	1993	136	202	27	49	744	1650
	PG	n/a	n/a	205	31	2973	1031	41	2
	PGO	118	122	n/a	n/a	n/a	n/a	131	88
	PGP	1817	3465	623	391	818	356	9809	11376
	PMP	1375	4936	68	162	35	41	2413	2167
Total		**10074**	**28285**	**5040**	**10470**	**4910**	**3460**	**18951**	**30808**

Table 2: Breakdown of EU fleet by gear type and sea basin (excluding international vessels), 2011 Source: (STECF 2013b)

Key - **DFN**: Drift and/or fixed netters; **DRB**: Dredgers; **DTS**: Demersal trawlers and/or demersal seiners; **FPO**: Vessels using pots and/or traps; **HOK**: Vessels using hooks; **MGO**: Vessel using other active gears; **MGP**: Vessels using polyvalent active gears only; **PG**: Vessels using passive gears only for vessels < 12m; **PGO**: Vessels using other passive gears; **PGP**: Vessels using polyvalent passive gears only; **PMP**: Vessels using active and passive gears; **PS**; Purse seiners; **TM**: Pelagic trawlers; **TBB**: Beam trawlers

ANNEX X DESCRIPTION OF BASELINES AND THE CRITERIA FOR THEIR ESTABLISHMENT

Baseline	Description	Criteria/Basis
Mesh size (as a replacement for the current mesh size and catch composition rules)	Mesh sizes by region based on existing mesh sizes contained in the following regulations: NE Atlantic: Annexes I to VII of Regulation (EC) 850/98 and associated regulations Baltic: Annexes II and III of Regulation (EC) 2187/2005 and Regulation (EC) 686/2010 Mediterranean: Article 9 and Annex II of Regulation (EC) 1967/2006 Black Sea: Article 15 of Regulation Regulation (EC) 1343/2011	Exploitation patterns for key driver species of commonly used mesh sizes (taking account of selective devices being used in fisheries (sorting grids, escape windows and also any national measures) based on STECF evaluation Spatial considerations of mesh sizes appropriate to the particular area of operation and fishery Whether existing derogations are still relevant **In the Baltic, Mediterranean and Black Sea** baseline mesh sizes are already defined in the regulations
Minimum Conservation Reference Size (replacing minimum landing sizes)	Based on current mcrs sizes contained in the following regulations: NE Atlantic: Annex XII of Regulation (EC) 850/98 Baltic: Annex IV of Regulation (EC) 2187/2005 Mediterranean: Annex III of Regulation (EC) 1967/2006 Black Sea: Annex XIIa of Regulation (EC) 850/98	No change in mcrs except for changes made in discard plans (i.e. Baltic cod, anchovy in Area) or where there is scientific evidence from STECF to support a change in the current size
Closed or restricted areas	Relevant closed areas contained in the following Regulations: NE Atlantic: Regulation (EC) 850/98; Regulation 494/2002; Annual Fishing Opportunities Baltic: Regulation (EC) 2187/2005; Regulation (EC) 1098/2007 Mediterranean: Regulation (EC) 1967/2006; Regulation (EC) 1343/2011 Black Sea: Annual fishing opportunities regulation	Whether the objective of the closure is still relevant, unclear or no longer relevant as the objective has been met. Whether the closure has been subject to a full or partial evaluation or evaluated indirectly as part of stock assessments or wider reviews of management measures. Whether the closure is effective or not based on available information based on assessment by STECF or ICES.
Other Measures	Regional rules restricting the use of specific fishing gears (e.g. prohibition of the use of beam trawls in the Kattegat; limit on	No change in measures unless there is an STECF evaluation to amend or delete

	the number of pots for deepwater crab that can be used in the Mediterranean) or derogations from the common rules (e.g. derogation to allow the use of electric pulse trawls in the southern south to catch flatfish)	

Table 1 Description of Baseline measures and the criteria for their establishment in the framework regulation under option 2
(Source Author)