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# Assessment of the impacts of the policy options proposed for the Amendment of the Fishery Control System (SC1)

Final Report

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**EUROPEAN COMMISSION**

Directorate-General for Maritime Affairs and Fisheries  
Unit D4 Fisheries control and inspections

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# **Assessment of the impacts of the policy options proposed for the Amendment of the Fishery Control System (SC1)**

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## Acronyms / abbreviations

Acronyms/Abbreviations	Definition
BFT	Bluefin Tuna
CCTV	Closed Circuit TeleVision
CFP	Common Fisheries Policy
CFR	Community Fleet Register
DCF	Data Collection Framework
EASME	The Executive Agency for Small and Medium-sized Enterprises
EFCA	The European Fisheries Control Agency
EIF	European Interoperability Framework
EMFF	European Maritime and Fisheries Fund
EU	European Union
GVA	Gross Value Added
IA	Impact Assessment
ICCAT	The International Commission for the Conservation of Atlantic Tunas
ICT	Information and Communication Technology
IUU	Illegal, unreported and unregulated (fishing)
JDP	Joint Deployment Plan
JRC	Joint Research Centre
LO	Landing Obligation
MA	Managing Authority
MCA	Multi-Criteria Analysis
MCS	Monitoring, Control and Surveillance
MS	Member State (of the European Union)
MSY	Maximum Sustainable Yield
REFIT	Regulatory Fitness and Performance
REM	Remote Electronic Monitoring
SCIP	Specific Control and Inspection Programme
SCRS	Standing Committee for Research and Statistics (of ICCAT)
SG	Steering Group
SMEFF	Sustainable Management of the External Fishing Fleet
STECF	Scientific, Technical and Economic Committee for Fisheries
SWD	Staff Working Document
ToR	Terms of Reference
TRACES	TRAdE Control and Expert System

<b>EU Member States country code</b>	
<b>Country Code</b>	<b>Country Name</b>
BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom

## EXECUTIVE SUMMARY

A recent Commission REFIT evaluation<sup>1</sup>, a special report of the European Court of Auditors<sup>2</sup>, and a Resolution by the European Parliament<sup>3</sup> all showed that the Fisheries Control System (FCS) is not being fully enforced and is not fit for purpose. In June 2017, the European Commission launched an initiative to revise the FCS, to simplify it, to make it more effective and efficient, and to ensure full alignment with the reformed Common Fisheries Policy (CFP). The Commission will prepare an Impact Assessment (IA) accompanying its proposal for the revision.

This report, prepared under the framework contract for Better Regulation related activities "Lot 1: Common Fisheries Policy excluding its international dimension", provides analysis of the impacts of policy options, and a comparison of options, to inform and provide supporting information and technical analyses for section 6 and 7 of the Commission's IA<sup>4</sup>.

The Baseline for assessing the impacts of the policy options is the current legislative framework i.e. no policy change, but full enforcement of current rules. Two policy options defined by the Commission are assessed. Option 1 considers targeted amendments of the Control Regulation (CR) with actions related to: i) enforcement; ii) data availability, quality and sharing; iii) control of the landing obligation; and iv) synergies with other policies. Option 2 builds upon policy option 1. It considers all the actions proposed in policy option 1 plus: i) amendment of the EFCA founding Regulation, and the IUU Regulation about enforcement and the catch certificate; and ii) any related amendments of specific provisions in relevant legislation (e.g. the Mediterranean Regulation and the Baltic Regulation).

Impacts are assessed considering the objectives of the proposed amendments to the FCS. As the FCS is a tool that contributes to the CFP objectives, the general objectives of the amendments reflect those of the CFP. In addition, specific objectives of proposed amendments are to: i) remove obstacles that hinder equitable treatment of operators within and across Member States (MS); ii) simplify and reduce unnecessary administrative burden; iii) improve availability, reliability and completeness of fisheries data and information; and iv) bridge the gap with the reformed CFP adopted in 2013. In assessing the impacts of the proposed policy options, a range of quantitative and qualitative indicators are used, with consideration given to environmental, social, economic and administrative impacts over different timeframes, and how different stakeholders would be affected. The discussion of impacts and the importance of an effective and enforced FCS is informed by secondary information, and case studies of: i) sole in the Bay of Biscay and the North Sea, ii) Mediterranean bluefin tuna (BFT), iii) northern hake in the North Sea, the Celtic Sea and the northern Bay of Biscay, and iv) Mediterranean fisheries in general.

Under the Baseline, the environmental status of fish stocks has generally been improving in recent years, aided by the reformed CFP; fishing effort reductions to reach Maximum Sustainable Yield level; conservation measures; and implementation of the Control Regulation (CR). These improvements have been feeding through into improved economic performance (in gross value added, gross and net profits, and profit margins) and social performance (in the form of higher wages) for many segments of the EU fishing fleet, and indirect benefits in the downstream processing and marketing sectors. However, there is still considerable room for improvement, and significant regional differences remain with special challenges in the Mediterranean where many stocks are overexploited without any tangible signs of recovery. Some positive environmental, economic and social impacts would result under the fully enforced Baseline, however even with full implementation of

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<sup>1</sup> COM(2017) 192 final, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2017:192:FIN>.

<sup>2</sup> <https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=41459>.

<sup>3</sup> <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2016-0407+0+DOC+XML+V0//EN>.

<sup>4</sup> The scope of the assignment did not include supporting work on other sections of the Commission's IA

the existing FCS, positive benefits would mostly likely not be realised until the longer-term, and would be constrained by: i) weak and inconsistent enforcement (of sanctions systems) with no change in the culture of compliance and continuing imbalances in the playing field; ii) sub-optimal levels of data availability, quality and sharing; iii) no mandatory measures for control of the landing obligation; iv) low levels of synergy with other policies and legislation; and v) weak alignment of the EFCA founding regulation with current requirements to support control of CFP measures.

The impacts on the administrative burden under the fully enforced Baseline would be the change in burden reflective of a move from the current situation, to one of full enforcement of existing regulatory provisions in the CR. This would mean increased reporting and information, notably with regards to small vessels (under 12m), recreational fisheries, infringements and sanctions, and the landing obligation. For costs that can be estimated and monetised, the administrative burden under the Baseline is expected to increase significantly compared to the actual situation at present, at a total cost of EUR 168 million over a 5-year period (EUR 90.2 million to businesses, EUR 75.6 million to public authorities/MS, and EUR 2 million for the European Commission).

Case studies examined as part of the baseline for a few already well-controlled fisheries, show that when considering the costs of control compared to the benefits to the fleet in terms of gross value added, a positive cost-benefit ratio (i.e. costs of control vs. economic benefits) of a fully enforced and improved FCS more generally across the EU would be expected, with EUR 1 invested in control supporting the creation of EUR 2-3.7 for the EU economy. Full enforcement would also result in improved social benefits in the form of wages (c.a. 6-8% based on case studies of fisheries with well enforced FCS) in the EU fleet. The positive impacts on EU fleets would in turn generate positive indirect economic and social impacts in the downstream processing and marketing sectors.

Under option 1, amendments to four of the five main areas (harmonising sanctions systems; improving data availability and sharing with the removal of exemptions and digitalisation; controlling the landing obligation; and aligning the FCS with other policies and legislation [but not aligning the EFCA founding regulation and IUU regulation with current needs]) would serve to support positive environmental impacts given the wide-ranging and comprehensive policy changes that would be implemented in the short-term. The positive environmental impacts of the amendments would be likely to become visible from the medium-term onwards (i.e. not immediately, allowing time for stock improvements but before five years) and would feed through into positive economic and social impacts from increased fishing opportunities. Option 1 would contribute to positive economic impacts in the form of improved value-added and profits in the EU fleet. These impacts would serve to increase the competitiveness of EU businesses and would be impacts felt strongly by SMEs and micro enterprises given the size distribution of businesses in the sector, but would also by larger enterprises in the sector. The proposed amendments to the CR under option 1, removing exemptions for the under 12m fleet and supporting better data and control of recreational fisheries, would be expected to result in particularly significant environmental improvements in the Mediterranean (the region most in need of such improvements), resulting in improved economic and social performance where improvements are most needed.

The administrative burden on operators of option 1 from electronic reporting and tracking would increase costs by EUR 107 million over five years with respect to current status, with 127 million in investments for new equipment (almost certainly partly eligible for funding under a future EMFF and therefore with very little real impact on businesses and MS public authorities) and a savings of EUR 20 million in terms of time spent for reporting obligations. However, if compared to the baseline with full enforcement of the current CR, option 1 would result in estimated additional savings of EUR 90 million in terms of time spent for reporting obligations, which would almost entirely counterbalance the necessary investments, especially if considering the potentially supporting role of a future EMFF. Digitalisation of reporting and data sharing processes would result in savings to MS public authorities of an estimated EUR 106 million over five years compared to current status

(and an additional savings of EUR 76 million if compared to full enforcement of the current CR). Costs to the European Commission from option 1 and the development and maintenance of information technology tools are estimated at EUR 6 million if compared to the current situation and EUR 4 million compared to full enforcement of the current CR. The total administrative burden for all parties would thus be a cost of EUR 7 million over 5 years compared to the current situation, but a net saving of EUR 161 million compared to the fully enforced baseline. The compliance costs of option 1 over 5 years are estimated to be EUR 7 million for public authorities to monitor the landing obligation, and EUR 5 million for businesses to comply with the new provisions on monitoring of engine power, which, will however be counterbalanced by a reduction in costs to public authorities by EUR 4 million from reduced costs of physical engine verifications i.e. a net compliance costs for all parties of EUR 8 million over 5 years.

Option 2 includes some specific policy actions that would generate important improvements in environmental impacts additional to those from option 1. Additional actions would improve consistency in approach to infringement follow-up and sanctions. Clarification of EFCA's objective regarding the CFP and its external dimension, and the extension of the geographical coverage for its inspections, would support positive environmental impacts by allowing EFCA to carry out inspections in EU waters, and to coordinate among MS certain control schemes in RFMOs. The digitisation of IUU Catch Certificates would make it harder for third country fishermen to manipulate certificates and for any illegally caught fish to enter the supply chain, and improvements in traceability would thus contribute to the EU's international obligations and efforts to reduce IUU fishing and overfishing and thus contribute to the environmental objectives while supporting a level playing field. Additional economic and social benefits would be expected from the improved environmental impacts under option 2, a more rational use of MS control means through the enhanced role of EFCA, a more level playing field in enforcement, and positive changes in the behaviour by fishermen to operate within a culture of compliance. The digitisation of the electronic catch certificate in the IUU Regulation is expected to reduce the administrative burden for public authorities by about EUR 4 million over a five-year period, compared to option 1, while other administrative burden and compliance costs would remain the same as under Option 1.

The two options and the baseline are compared objectively using multi-criteria analysis (MCA) for their:

- Effectiveness – the extent to which different options would achieve the general and specific objectives (as earlier stated);
- Efficiency – the costs versus the environmental, social and economic benefits from changes in i) enforcement, ii) data availability, quality and sharing, iii) control of the landing obligation, iv) synergies with other policies, and v) the role of EFCA;
- Coherence – of each option with relevant horizontal legislation, overarching EU policy, and the objectives of the reformed CFP;
- Acceptability – in terms of stakeholder support and proportionality; and
- Action on the recommendations of The European Court of Auditors<sup>5</sup>, The European Parliament<sup>6</sup>, The EFCA Administrative Board<sup>7</sup>, The Council of the European Union<sup>8</sup>, and the Commission's Regulatory Fitness and Performance (REFIT) exercise<sup>9</sup>.

As the figure below shows, the fully enforced baseline in the coming years brings about little change compared to the current situation in terms of environmental, economic and social benefits, while the administrative burden will greatly increase. Both options 1 and 2

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<sup>5</sup> ECA, 2017

<sup>6</sup> European Parliament, 2016

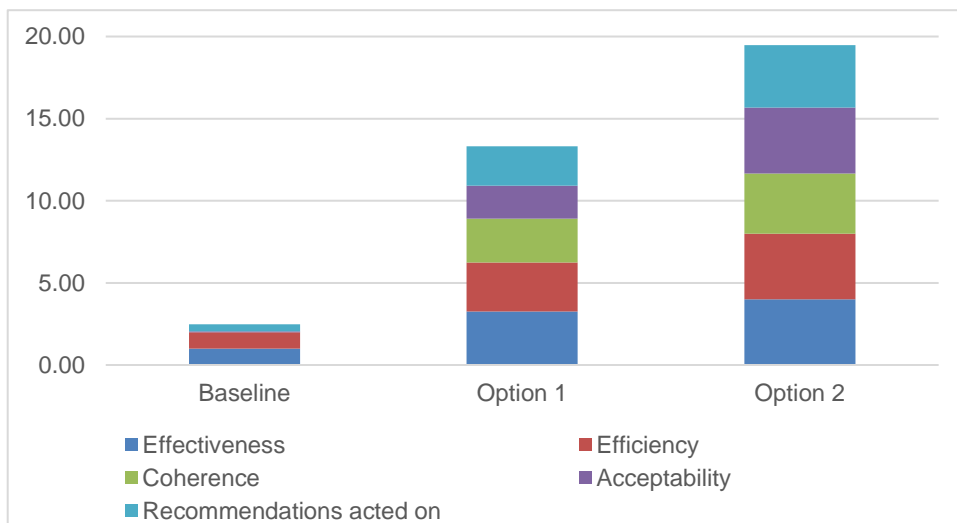
<sup>7</sup> EFCA, 2017c

<sup>8</sup> Council of the European Union, 2017

<sup>9</sup> European Commission 2017c, 2017d

perform well against the baseline and show improvements against the baseline for all five criteria. However, option 2 shows markedly better performance overall compared to Option 1, across all five evaluation criteria, and is the preferred choice. Option 2 would best: ensure coherence with the reformed CFP and synergies with other policies; modernise and ensure a compliant future-proof control system; simplify the legislative framework and decrease unnecessary administrative burden; increase the culture of compliance with the CFP; and ensure equal treatment of operators. It would also best: improve quality, exchange and sharing of fisheries data; improve data for stock assessment; and result in faster improvements in the status of the stocks, and thus competitiveness and increased profitability of vessels in the EU fleet and the wages of fishermen.

**Figure 1 : Summary comparison scores across all criteria in the multi-criteria analysis for the policy options**





## 1. BACKGROUND

### ***1.1. Introduction to the assignment***

On 19 October 2017, under the framework contract for Better Regulation related activities "Lot 1: Common Fisheries Policy, excluding its international dimension", the European Commission signed a contract (Specific Contract No. 1 under the framework) with the contractors to undertake an "**Assessment of the impacts of the policy options proposed for the Amendment<sup>10</sup> of the Fishery Control System**".

The assignment informed an Impact Assessment (IA) Report to be prepared by the European Commission of proposed amendments to the Fishery Control System (FCS) in the European Union (EU). The assignment was completed between October 2017 and February 2018, with a series of meetings and deliverables as follows:

- Kick off meeting between the contactor and the Commission, 23 October 2017
- Submission of minutes of the kick off meeting, 27 October 2017
- Participation as observer by the contractor in a Commission-organised workshop with Member State (MS) control authorities, 6 November 2017
- Participation as observer by the contractor in a Commission-organised workshop with stakeholders (Regional Advisory Councils, NGOs), 6 November 2017
- First progress report submitted, 17 November 2017
- Participation of the contractor in a meeting organised by Unit D4 with the IT services of DG MARE, 21 November 2017
- First progress report meeting between the contactor and the Commission, 22 November 2017
- Submission of minutes of the first progress report meeting, 23 November 2017
- Second progress report submitted, 4 December 2017
- Second progress report meeting between the contactor and the Commission, 7 December 2017
- Submission of minutes of the second progress report, 8 December 2017
- Draft Final Report submitted, 15 December 2017
- Final Report submitted, 28 February 2018

### ***1.2. Background to the impact assessment***

The Common Fisheries Policy (CFP)<sup>11</sup> objectives are to ensure that fishing and aquaculture activities are environmentally sustainable in the long term and are managed in a way that is consistent to achieve economic, social and employment benefits. The success of the CFP and achieving its objectives, depends considerably on the implementation of an effective control and enforcement system. The measures establishing a Union fisheries control system for ensuring compliance with rules of the CFP are provided for in the Council Regulation (EC) No 1224/2009 of 20 November 2009—hereinafter 'the Control Regulation'(CR)—, in the Regulation establishing a European Fisheries Control Agency (EFCA)<sup>12</sup>, and in the Regulation establishing a system to combat illegal, unreported and

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<sup>10</sup> Note actual contract title "Assessment of the impacts of the policy options proposed for the revision of the Fishery Control System"

<sup>11</sup> Regulation (EU) No 1380/2013 of the European Parliament and of the Council on the Common Fisheries Policy, OJ L 354 28.12.2013 p.22.

<sup>12</sup> Council Regulation (EC) No 768/2005, OJ L 128, 21.5.2005, p.1.

unregulated fishing (IUU fishing)<sup>13</sup>. They are complemented by the Regulation on the sustainable management of the external fishing fleet (SMEFF)<sup>14</sup>.

Following the results of an evaluation of the Control Regulation (CR) covering the period 2010-2016 as part of the Commission's Regulatory Fitness and Performance (REFIT) exercise for the Control Regulation, in June 2017 the Commission included on its agenda the item PLAN/2017/1111 'Revision of the Fisheries Control System', aimed at amending the Fisheries Control System to simplify it, to make it more effective and efficient, and to ensure full alignment with the reformed CFP. As required in the Commission's Better Regulation Guidelines (SWD(2015) 110, revised in 2017–SWD(2017) 350), for policy initiatives or action which include new or amended legislation and/or which are expected to have significant economic, social, or environmental impacts<sup>15</sup>, an Impact Assessment (IA) must be completed to support the changes. The Impact Assessment accompanying the Commission Proposal for a regulation amending the control regulation will thus complete the set of documents encompassing the revision exercise.

### **1.3.Objectives and scope of the assignment**

An IA is not an independent assessment prepared by contractors, but a report by the Commission. The objective of this assignment was therefore to support the Commission and provide outputs to inform the IA Report for the amendment of the Fisheries Control System prepared by the Commission. The outputs of the assignment as contained in this document are thus presented in a manner and structure designed to best facilitate the Commission's IA Report. The Better Regulation Guidelines Toolbox 12<sup>16</sup> requires a structure for IA Reports as follows:

1. The political and legal context
2. What is the problem and why is it a problem?
3. Why should the EU act?
4. What should be achieved *i.e.* definition of the objectives?
5. What are the various options to achieve the objectives?
6. What are the impacts of the different policy options and who will be affected?
7. How do the options compare?
8. The preferred option
9. How would actual impacts be monitored and evaluated?

The ToR for this assignment defined the scope as being to "...assess and compare the economic, environmental, and social, direct and indirect impacts, as well as the administrative burden, management costs and any other impacts that may be relevant, of the policy options" (*i.e.* points 6 and 7 only of the sections listed above). The written outputs of this assignment are thus limited to text of potential use by the Commission in completing items/sections 6 and 7 of the Commission's IA report, and do not cover items/sections 1-5, or items/sections 8 and 9. The Better Regulation Toolbox 12 also lists mandatory Annexes to be included in IA reports; support to the Commission's IA report on these Annexes was also not within the scope of this assignment, except for the preparation of the summary quantification tables for costs and benefits included as Annex 11 to this report.

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<sup>13</sup> Council Regulation (EC) No 1005/2008, OJ L 268, 29.10.200/, p.1.

<sup>14</sup> Regulation (EU) No 2017/2403, OJ L 347, 28.12.2017..

<sup>15</sup> [https://ec.europa.eu/info/files/better-regulation-toolbox-9\\_en](https://ec.europa.eu/info/files/better-regulation-toolbox-9_en)

<sup>16</sup> [https://ec.europa.eu/info/sites/info/files/file\\_import/better-regulation-toolbox-12\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-12_en_0.pdf)

The following two main sections of this document provide: i) an assessment of the impacts of the policy options (Section 2); and ii) a comparison of the options (Section 3). Both sections are based on the problem description, definition of objectives, and detailed specification of the different policy options prepared by the Commission and provided to the contractors. The actions contained in the policy options that are assessed for their impacts in this report, are presented in Annex 13, and relate to five main areas as follows: i) enforcement; ii) data availability, quality and sharing; iii) control of the landing obligation; iv) synergies with other policies; and v) the European Fisheries Control Agency (EFCA). Other Annexes to this document provide references, the methodology used, and a range of supporting information and data that is referenced in Section 2 and 3.

## **2. WHAT ARE THE IMPACTS OF THE DIFFERENT POLICY OPTIONS AND WHO WILL BE AFFECTED?**

### ***2.1. Introduction to assessment of environmental, economic and social impacts***

This short introduction to the assessment of impacts highlights important methodological considerations (in addition to the presentation of methodology provided in Annex 2).

#### **The need to consider impacts in light of the objectives**

Given that the Fishery Control System (FCS) can be considered a tool that contributes to the CFP objectives, the General Objectives (GO) of the proposed amendments to the FCS reflect those of the CFP, which are strongly focused on environmental sustainability, and are intended to make the FCS effective and efficient.

- GOs of the CFP *i.e.*
  - To ensure that fishing and aquaculture activities are environmentally sustainable in the long term and are managed in a way that is consistent to achieve economic, social and employment benefits;
  - To bring exploitation of living marine biological resources at MSY levels at the latest by 2020 for all stocks;
  - To contribute to the collection of scientific data; and
  - To eliminate discards; provide conditions for economically viable and competitive fishing capture industry; provide for measures to adjust the fishing capacity of the fleets to levels of fishing opportunities; contribute to an efficient and transparent internal market for fisheries and aquaculture products and contribute to ensuring a level-playing field for fisheries and aquaculture products marketed in the Union; promote coastal fishing activities; be coherent with the Union environmental legislation and other Union policies.
- The proposed amendments to the FCS also have four Specific Objectives (SOs) as follows:
  - SO1–To remove obstacles that hinder equitable treatment of operators within and across Member States;
  - SO2–To simplify and reduce unnecessary administrative burden;
  - SO3–To improve availability, reliability and completeness of fisheries data and information, in particular of catch data, which are key to monitor and deliver on the CFP objectives, and allow exchange and sharing of information;
  - SO4– To bridge the gap with the CFP.

Throughout the assessment of impacts, where impacts relate to the GOs or the SOs, reference to them is made (typically in brackets) to provide a strong link between the assessment of impacts and the later comparison of the options in Section 3.

#### **The use of appropriate indicators**

In assessing the impacts from the proposed policy amendments, a range of quantitative and qualitative indicators have been used. Indicators to assess the aggregated impacts of each policy option on environmental, economic and social status (*i.e.* GOs), include:

- Number of stocks for which there is scientific advice about fishing mortality compared to the fishing mortality that would lead to the maximum sustainable yield (environmental);
- Relative proportion of stocks assessed as not overfished (fishing mortality at or below  $F_{MSY}$ ) of the total assessed stocks (environmental);

- Proportion of TACs set without detailed scientific advice–data poor stocks (environmental);
- Average stock spawning biomass (SSB) evolution (environmental);
- Annual fleet net profits (economic);
- Annual fleet Gross Value Added (GVA) (economic);
- Annual vessel Gross Profit (GRP) (economic);
- GVA to income ratio (economic);
- Annual average crew wages (social);
- No. of FTE on vessels (social);

Case studies in Annexes 3-6 for: i) sole in the Bay of Biscay and the North Sea, ii) Mediterranean bluefin tuna (BFT), iii) northern hake in the North Sea, the Celtic Sea and the northern Bay of Biscay, and iv) Mediterranean fisheries globally, and a review of earlier IAs of the CR and the reform of the CFP (see Annex 7), also draw on these indicators, to consider the impacts of the different policy options.

The assessment of impacts in the environmental, economic and social domains also considers the impacts separately of the five main policy areas (and their actions) under the policy options assessed. These five policy areas are: i) enforcement (harmonising sanctions systems); ii) improving data availability and sharing; iii) controlling the landing obligation; iv) aligning the FCS with other policies and legislation; and v) aligning the EFCA founding regulation with current needs. When assessing the impacts of the options in the environmental, economic and social domains, a mix of quantitative and qualitative indicators are used to consider the impacts separately for these policy areas (and actions).

### **Considering impacts against ‘the baseline’**

Typically for an IA of a regulatory change, the baseline situation is characterised either as ‘option 1’ or ‘option 0’, and other potential policy options are assessed for their impacts against the baseline. In this case, the baseline for assessing the impacts of the other options is the current legislative framework, *i.e.* no policy change, but with full enforcement of the current rules (which is currently not the case). A description of the current status and of the baseline (projection under full enforcement) is provided below in Section 2.2, with regards to the key environmental, economic and social indicators, against which the assessment of impacts of the proposed regulatory changes are subsequently considered for two options: an option 1 (amended Control Regulation), and an option 2 (amended Fishery Control System). Section 2.2 below also considers the administrative burden associated with a fully enforced baseline.

Case studies included as part of this report (Annex 3-5) were selected to profile fisheries where improved control regimes might already have been expected to have generated improvements in environment, economic and social indicators. All three case studies completed (for sole in the Bay of Biscay and the North Sea, Mediterranean bluefin tuna (BFT), and northern hake) show fisheries operating under the existing CR, so they show more generally the improvements that can be generated by a robust and enforced FCS, rather than the results of a specific policy option. The case study of fisheries in the Mediterranean (Annex 6) more generally serves to highlight how a poor FCS can prevent positive impacts from being realised.

### **Attribution vs. contribution of impacts, and the role of other variables**

When assessing the impacts of the proposed policy options, it is critical to keep in mind that many other factors influence indicators of performance. Externalities in the form of climate change and natural stock fluctuations for example impact on environmental indicators, while macro-economic variables impact on economic and social indicators. Likewise, other aspects of the CFP, especially the role of conservation measures, have an impact. This means that it is difficult to quantify the impacts of the options on

environmental, economic and social indicators, even if it is indisputable that an effective and efficient control system contributes to positive impacts. It also means that it is not possible to clearly attribute the impact on the indicators listed above to the aggregated policy options. Discussion below should be considered in terms of the impacts of each policy option in contributing to impacts *i.e.* any benefits of the proposed policy options should not be over-stated. Discussion is thus presented more qualitatively as to how the options might impact on the indicators, and contribute to the GOs and SOs.

## **The question of timeframe**

When assessing impacts, consideration is given over the short (1-2 years), medium (within a period of five years) and long term (five+ years). Cost impacts are considered over a five-year period. This time-frame is appropriate in that following any amendments to the current framework that are approved based on this IA, subsequent evaluation of an amended regulatory framework might be expected again after another five years potentially resulting in further amendment or revision.

### **2.2. Baseline: environmental, economic, and social status and trends**

#### **2.2.1. Current and projected environmental status**

##### **Current situation**

Environmental status of stocks has generally been improving in recent years, aided by: the reformed CFP; fleet capacity reductions over 2008 to 2016 of an average of 2% per year in number and engine power (kW) and 3% in tonnage (GT)<sup>17</sup>; conservation measures; and implementation of the CR.

The number of stocks in the North-East Atlantic<sup>18</sup> for which there is scientific advice about fishing mortality compared to the fishing mortality that would lead to the maximum sustainable yield, has increased from 62 to 66 since 2003, but has generally remained stable. However, in the Mediterranean and the Black Sea only some commercial stocks undergo an annual biological assessment, and while the number of assessments increased from 2003 to 2009 and remained roughly stable afterwards at 37, significantly fewer stock assessments (11) are available for 2015 data<sup>19</sup>.

In terms of stocks overfished or fished within  $F_{MSY}$  by year, in the North-East Atlantic the number and proportion of stocks fished in accordance with the CFP  $F_{MSY}$  objective increased gradually, especially from 2009 to 2013 (coinciding with the introduction of the CR). This trend is probably strongly impacted by the corresponding share of TACs that have been set in line with MSY advice (volume), which has risen from 50% in 2010 to 61% in 2017, and the share of TACs without MSY advice which has fallen from 28% to 20%. However, the number of stocks overfished or fished within  $F_{MSY}$  by year has stabilised since 2013, and in 2015, 39 of 66 assessed stocks were exploited within  $F_{MSY}$  (equating to 59%). Due to the incomplete assessment coverage of stocks in the Mediterranean and Black Sea, no estimates are available for the number of stocks with respect to  $F_{MSY}$ . However, trends in  $F$  compared to  $F_{MSY}$  have been assessed and show that overfishing in the Mediterranean is very high (209% of  $F_{MSY}$  in 2014) and shows no sign of falling.

In terms of trends in stock biomass, in the North-East Atlantic there was a 35% increase in average biomass between 2003 and 2015, with trends suggesting further increases may

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<sup>17</sup> STECF, 2017a

<sup>18</sup> includes the waters of the Baltic Sea, North Sea, Irish Sea, Celtic Sea and adjacent waters

<sup>19</sup> European Commission, 2017b

be realised in coming years. By contrast, in the Mediterranean Sea average biomass declined by 20% between 2003 and 2014<sup>20</sup>.

What the data above show, is that while there have been improvements in the environmental status of stocks in recent years, there remain significant regional differences, and there is still considerable room for improvements in performance.

### **Situation under a fully enforced baseline**

The fully enforced baseline would not be an exact continuation of existing environmental trends (other things being equal) as discussed above, but would rather reflect a situation of full enforcement of existing regulations.

Some positive environmental impacts would result under the fully enforced baseline from full enforcement of the existing FCS. Areas of existing legal provisions not being fully implemented but which would be under the fully enforced baseline include:

- Implementation of the landing obligation—average discard rates over 2014-2016 for selected fisheries and gear types in the EU (see Annex 8) were 44.8% for beam trawls, 28.8% for bottom otter trawls, 2% for midwater otter trawls, 17.7% for set gillnets, and 1% for trammels nets. Under the fully enforced baseline with the phasing in of the landing obligation, these rates would be expected to decline.
- Provisions on catch data for the under 12m fleet through at least one of the options available to MS (sampling, monitoring of catches, or sales notes)—the ECA<sup>21</sup> for example noted that Italy was not compliant with any method;
- Requirements for MS to exchange data between themselves as they should do, for example sharing of all inspection data by coastal states with flag states; and
- Sampling plans for verification of engine power in line with Art 41(1) of the CR—only a few MS have such plans (e.g. ES, IE, UK).

With enforcement of current regulatory provisions on these issues, improvements in environmental performance would be expected and thus some contribution to the GOs. However, even if full implementation took place in the short- to medium-term, positive benefits would mostly likely not be realised until the longer-term.

Under the full baseline enforcement of provisions on catch data, data exchange and sampling plans would take place in the short-term. Full implementation of the landing obligation however could be expected not in the short-term but only in the medium-term because some MS are likely to use the lack of provisions in the existing regulation over the means of control of the landing obligation, to delay implementation. It could also mean that infringement proceedings by the Commission against MS might be necessary to arrive at full enforcement, which would take time, be uncertain in terms of outcome in the courts, and slow down the realisation of benefits. While positive environmental impacts would be expected under the fully enforced baseline given the time required for implementation of the landing obligation and enforcement of other regulatory provisions to bring about positive changes in the environmental indicators of stock status with the rebuilding of stocks, benefits would only be felt in the long-term. In addition, and as regards lost fishing gears, current rules on reporting are burdensome and inefficient, and do not take advantage of other existing reporting tools. As a result, they are hardly used, and certain categories of vessels are currently exempted from carrying on board equipment to retrieve lost gears.

The case studies in Annexes 3-5 show that even under the existing regulatory framework, where supported by a focus on implementing the FCS, improvements in environmental

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<sup>20</sup> European Commission, 2017a, and 2017b

<sup>21</sup> ECA, 2017

performance over the longer-term can be achieved (supporting the GOs). So, improvements under the fully enforced baseline could be realised as reflected in improvements in the relative proportion of stocks assessed as not overfished, and the average spawning biomass compared to reference values. Enforcement of existing regulatory provisions would also contribute to SO3 (on data), but not to other SOs. However, the extent of these improvements would be limited, because within the five main policy areas there would remain many weaknesses (discussed below), the impacts of which would be to compromise any greater/significant achievement of the GOs and the SOs. Annex 6 shows how in the Mediterranean a poor FCS can prevent positive environmental impacts.

One case study compares two sole fisheries, both under multiannual plans, but with only one subject to a Specific Control and Inspection Programme (SCIP) (see Annex 3). Based on the assumption that conservation and management rules are better enforced in the North Sea compared to the Bay of Biscay because of the application of a SCIP, the main results of the comparison are that stock recovery and MSY levels are likely to be attained more quickly in a situation where tighter control and monitoring of fishing activities are deployed. While the Bay of Biscay sole fishery is expected to be controlled as anticipated by the CR, albeit without EFCA involvement, the important stake of small-scale vessels in the fishery probably introduces more uncertainty in compliance due to the numerous exemptions benefiting this fleet. This may be also a reason why stock recovery is taking longer.

A case study of East Atlantic Bluefin (BFT) fishery (see Annex 4), shows that increased compliance with conservation and management rules from 2008, and in particular catch limits, as a consequence of a strengthened control scheme of the BFT fishery, supported the rebuilding of the stock. Evidence for positive environmental impacts is the clear improvement of stock indicators F and SSB over the 2008-2015 period. Assessed as in a healthier state compared to previous periods, ICCAT was able to increase the BFT TAC from 2015. Most recently, and based on scientific advice, ICCAT agreed to a gradual increase in the total allowed catches (TAC) reaching a maximum of 36 000 tonnes in 2020 (28 200 tonnes in 2018 and 32 240 tonnes in 2019). This increase reflects a widely-recognised improvement in the overall situation for Atlantic tuna stocks, compared to a decade ago<sup>22</sup>.

A third case study of the Northern hake (HKE) stock extending over the North Sea (see Annex 5), the Celtic Sea and the northern Bay of Biscay, shows that with improved control from 2008, decreasing fishing mortality supported the rebuilding of the spawning stock biomass which is now in the region of 260 000 tonnes, well in excess of MSY  $B_{trigger}$  (45 000 tonnes).

A review of the situation of EU fishing fleet operating in the Mediterranean (see Annex 6) shows that lack of enforcement can have detrimental impacts. In the Mediterranean, about 95% of stocks are overexploited without any tangible signs of recovery. Some commercially important stocks cannot be assessed, or are assessed only with large uncertainty, because of a lack of relevant data, in particular from small-scale fishing vessels and recreational fishers, both particularly numerous in this sea basin.

Earlier impact assessments of the CR and the reform of CFP<sup>23</sup> have also been examined, and suggest that environmental improvements modelled in 2008 and 2010 have been roughly in line with recent/actual developments (for more details see Annex 7). The actions proposed to address continuing problems as stated in the problem definition, imply that regulatory changes in the CR, coupled with improved conservation measures and overall

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<sup>22</sup> [https://ec.europa.eu/fisheries/eu-leads-international-efforts-restore-sustainable-tuna-stocks\\_en](https://ec.europa.eu/fisheries/eu-leads-international-efforts-restore-sustainable-tuna-stocks_en)

<sup>23</sup> MRAG et al, 2008 and 2010



implementation of the CFP, would serve both to improve the positive environmental impacts but could also result in more environmental benefits than those identified in earlier IAs over the longer term.

However, under the fully enforced baseline:

Weak and inconsistent enforcement (of sanctions systems) would compromise the GOs and SO1

- The level of consistency between MS over the approach to sanctions for infringements would remain weak. For example, analysis of six MS showed that the ratio between detected serious infringements and allocated points ranged from less than 10% to 100%<sup>24</sup>.

Current data availability, quality and sharing would compromise the GOs and SO3

- Only 801 under 12m vessels would be tracked with VMS mainly because of specific clauses introduced through multiannual plans, representing just 1.5% of the under 12m EU fishing fleet and 1.2% of the total EU fishing fleet, based on CFR records for active and licensed vessels<sup>25,26</sup> which provides data on those vessels currently with VMS<sup>27</sup>.
- Exemptions from reporting would remain in place for catches of under 50 kg per species per trip and sales of under 30 kg, meaning significant under-reporting of catches. Only those vessels under 12m in fisheries subject to multi-annual plans or from some MS (e.g. France, Scotland/UK with catch report, and Spain with electronic sales notes) would reliably report catches, providing a significant data gap of information needed for the assessment of resource status underpinning management decisions. As noted by the European Commission<sup>28</sup>, one of the contributory factors in the challenges in moving towards  $F_{MSY}$  in the Mediterranean and Black Sea, is the large number of small-scale fleet vessels, for which methods to monitor and report catches (landings and discards) are insufficient. But the lack of data from the under 12m also compromises resource assessments in other sea basins.
- Although Article 55 of the CR provides the basis for some sample-based monitoring and management measures if impacts of recreational fisheries so require, there are few recreational fisheries subject to fishing licences and reporting of catches, except in situations when the status of stocks is poor or species are covered by specific obligations to report (an example of recreational catches that are reported is bluefin tuna)<sup>29</sup>. Knowledge about recreational fisheries catches is therefore poor, while catches are likely to be significant for certain species and management units and have been estimated at more than 150 000 tonnes a year for 17 MS<sup>30</sup>, and as representing 2-72% of total catches for selected species<sup>31</sup>. This means that many

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<sup>24</sup> European Commission, 2016a

<sup>25</sup> Search of CFR 3 November 2017:

<http://ec.europa.eu/fisheries/fleet/index.cfm?method=Search.SearchAdvanced>

<sup>26</sup> Estimates rely on the total number of registered vessels under 12m from the fleet register (70 706 vessels) and applies a ratio of 76% to consider the STECF analysis on inactive vessels (24% of inactive vessels). Discrepancies between the Fleet register and STECF data do not allow to calculate precisely the ratio of inactive vessel per fleet segment but the 2017 AER indicates that 94% of inactive vessels are vessels under 12m, and the ratio therefore is only applied to this segment as the impact is less significant for vessels above 12m

<sup>27</sup> Note however that vessels currently tracked with VMS account for around 95% of the value of landings

<sup>28</sup> European Commission, 2017a

<sup>29</sup> Note that the DCF now requires collection of data on recreational catches

<sup>30</sup> Based on data provided under the DCF

<sup>31</sup> European Parliament, 2017

data needed for stock assessments are unavailable, undermining the robustness of those assessments and the ability to set catches at levels certain to ensure environmental sustainability as exemplified for the Baltic cod stocks for which recreational catches are estimated to represent 27% of total catches.

- Weaknesses would remain in the extent to which provisions related to post landing activities ensure that each quantity of each species landed is correctly accounted for by weighing and that results are recorded in catch registration. This would perpetuate weaknesses in quota uptake monitoring, and undermine environmental sustainability. Sampling and control plans, and common control programmes would continue to provide exemptions from the requirement to weigh all fishery products at landing, and particularly for pelagic and industrial species there would remain the risk of overfishing of quotas and unregistered catches on the market—examples of deficiencies in bulk weighing have been documented in confidential Commission audit reports.
- Problems would remain in correctly establishing/certifying engine power at MS level against capacity ceilings, which are so important to ensure environmental sustainability of fish stocks, even if sampling plans were used.
- Exchange of fisheries data between Member States, and access of the Commission to control-related data would remain unsatisfactory, impacting on the enforcement of regulations designed to ensure CFP objectives of environmental sustainability.

Control of the landing obligation and speed of implementation/enforcement of existing regulatory provisions would compromise the GOs and SO4

- As per the discussion above, enforcement would take time and be delayed.

Current levels of synergy with other policies and legislation would compromise the GOs

- Article 50 of the CR provides for control of fishing restricted areas adopted by the EU Council, but not for all marine protected areas delineated by Member States under Natura 2000 environmental legislation. Thus, 510,451 km<sup>2</sup> of marine protected areas<sup>32</sup> are not covered by the remit of the CR.
- Effectiveness, consistent implementation of approaches, and full information, for traceability of fishery products would remain compromised under the fully enforced baseline threatening effective and consistent control from 'net to plate'. Levels of infringements would be likely to remain frequent in both common marketing standards (741 infringements in 2011, 835 in 2012, 880 in 2013, and 990 in 2014), and traceability (2 129 in 2011, 2 692 in 2012, 2 763 in 2013, and 2 617 in 2014)<sup>33</sup>.
- Definitions (e.g. risk management or audit) and principles (cooperation rules, responsibility of operators) in the CR related to food and feed safety would remain poorly aligned with food law, creating risks of poor control of environmental and food safety standards.

No change to the EFCA founding regulation would compromise the GOs

- The level of alignment of EFCA founding Regulation with current requirements would remain poor in terms of EFCA's mandate to support control of CFP measures, thereby compromising its contribution to environmental sustainability of the EU's fish resources.

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<sup>32</sup> European Environment Agency data as at 06 April 2017. Based on declared percentage of Natura 2000 areas with marine content. Note that some MS (EL, FI, LV) do not report this, and are excluded from this figure

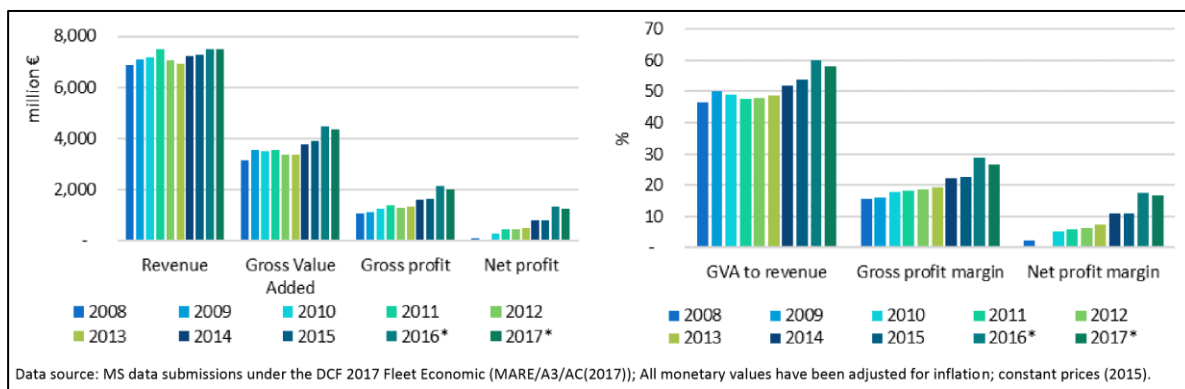
<sup>33</sup> European Commission, 2016a

## 2.2.2. Current and projected economic status

### Current situation

In 2015, the total income from landings generated by the EU fishing fleet (excluding Greece) was EUR 7.27 billion, of which EUR 7.1 billion was generated by the sale of fish and EUR 155 million from non-fishing income<sup>34</sup>. Revenue (income from landing and other income) increased only marginally over the period 2008-2015, but other economic indicators in Figure 2 show a marked improvement. These improvements coincide with better environmental performance as presented above (and resulting enhanced fishing opportunities), and are also driven by a decline to low stable fuel prices as from 2014 and lower fuel usage in recent years, and improvements in some first-sale fish prices. Notable examples of increased returns in the North Sea from fishing at MSY including the haddock, plaice and sole fisheries, while in the North-East Atlantic, recent trends for the Nephrops (ICES Sub-area VII–Irish and Celtic Seas) and Northern hake fishery suggest better economic returns from fishing at MSY<sup>35</sup>.

**Figure 2: Trends in economic performance of the EU fleet**



Source: STECF, 2017 (STECF 17-12)

However, despite this positive picture, in the immediate term, STECF forecast declines in net profit, gross profit, and GVA between 2016 and 2017, while in the longer term the EU fishing fleet could further improve its economic performance if the biomass of exploited stocks recovered to MSY levels, as supported by the reformed CFP and relevant conservation measures. Furthermore, despite recent overall economic progress at EU level, performance also varies considerably between regions, Member States and fisheries. Generally, economic performance trends are better in the North Sea, North-East Atlantic and Baltic fleets than those fleets fishing in the Mediterranean and Black Sea, although the latest economic data in the Baltic Sea suggest a poorer economic performance among certain fleets<sup>36</sup>.

The economic situation of certain small-scale coastal fleets, in particular in the Mediterranean, continues to be of concern, in contrast with the overall improvement in the EU large-scale and distant-water fleets. For the EU's small-scale coastal fleet, all indicators show a decline in performance over the period 2008-2013, but with improvements in 2014 and 2015 and predicted declines between 2016 and 2017. The small-scale coastal fleet (so prevalent in the Mediterranean compared to other areas) is exempted from numerous reporting and monitoring obligations by the CR.

<sup>34</sup> STECF, 2017a

<sup>35</sup> European Commission, 2017b

<sup>36</sup> European Commission, 2017b

The most recent data available on the 'current' status of the processing sector at EU-level is from 2014<sup>37</sup>. In 2012, the fish processing sector in the EU comprised approximately 3 500 firms with fish processing as their main activity, 5% less than in 2008. The industry was assessed as profitable in 2012, accounting for about EUR 27.9 billion of income and more than EUR 6.4 billion of Gross Added Value (GVA), and a net profit of EUR 1.6 billion<sup>38</sup>. However, the sector is characterised overall by low margins, owing particularly to increases in energy costs and availability of raw material<sup>39</sup>. A high reliance on imports means that linkages between the catches of EU fleets, and the economic performance of the EU processing sector should not be over-stated. Nevertheless, perhaps reflecting the weak environmental status in the Mediterranean, national data highlight very differentiated economic performance by country—the Croatian, Cypriot, and Greek fish processing industries (along with Germany), made net losses in 2012, while all the other MS generated a net profit. The extent to which these data changed between 2012 and the present is not known.

### **Situation under a fully enforced baseline**

Under the fully enforced baseline, the limited environmental improvements discussed above would be expected to feed through into some positive but limited economic impacts for the EU fleet. Yet, that would be only in the longer-term as the landing obligation became enforced and contributed to the GOs. In addition, and all other things being equal, recent positive environmental trends in some geographical areas/sea basins would be likely to support recent positive performance and trends in economic performance. However, in geographical areas where environmental and thus economic performance has been poor, e.g. the Mediterranean (see Annex 6), the limited environmental impacts under the fully enforced baseline would be unlikely to bring about any meaningful positive changes in economic performance. Indirect positive impacts on processors might also be realised under the fully enforced baseline for those valorising fish currently discarded.

Case studies have been completed to consider the potential economic impacts of improved control in a situation akin to a fully enforced baseline, and where possible to isolate the benefits specifically of improved control (see Annex 3-5). Collectively they show that the positive economic impacts of an improved FCS can be realised in the medium- to longer-term, and in periods of less than five years.

The case study on sole shows that, probably because of stock quicker recovery in the North Sea compared to the Bay of Biscay (supported by a reinforced control scheme), the North Sea fishing fleet segments targeting sole show higher economic performance indicators than the Bay of Biscay fishing fleet segments targeting sole. In absolute terms, GVA increased by  $\approx$  EUR 2 million per year or 8% per year on average over the 2008-2015 period for the North Sea sole fishery compared to EUR 0.5 million per year or 2% per year for the Bay of Biscay sole fishery. Fishing vessel profitability indicators increased by 2% on average per year, while they remained stable for the Bay of Biscay sole fishery. The assessment of costs of control as compared to the benefits in terms of GVA supports the conclusion that improved control under option 1 would result in positive economic impacts for the EU fleet with a clear cost-benefit ratio (*i.e.* costs of control vs. economic benefits). The case study suggests that the cost-benefit is positive with EUR 1 invested in control supporting the creation of EUR 3.7 for the EU economy (GVA estimates do not include economic benefits for ancillary industries (upstream, downstream), so in reality, the cost-benefit ratio is probably higher).

Concerning the BFT fishery, the lack of economic data on some EU fishing fleet segments targeting this species prevents a detailed analysis. In addition, the BFT market is especially exposed to external factors outside the remit of the EU (*i.e.* economic and societal situation

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<sup>37</sup> STECF, 2014. The next STECF report on the processing sector (with 2015 data) will not be ready until Feb 2018

<sup>38</sup> Excluding Portugal and Spain for which data were missing

<sup>39</sup> STECF, 2014

in Japan). Nonetheless, although deteriorating in 2014 and 2015 due to adverse economic conditions, the economic performance of the EU fishing fleet targeting BFT in the Mediterranean substantially improved on average over the past five years. GVA increased at an average of EUR 2.4 million per year, while vessel profitability indicators increased by 4-5% per year. With the increase in the BFT TAC from 2015, corresponding increases were made in fishing opportunities for the EU fleet and recreational fishers, increasing the economic (and social benefits) as a result of improved control. Again, the case study supports the view that improved control would be likely to generate positive economic impacts also with a positive cost-benefit ratio (with EUR 1 invested in control supporting creation of EUR 2 for the EU economy).

The northern hake fishery case study shows a clear improvement of fishing fleet economic results over the 2008-2015 period of increased control. Income doubled over the period with an average annual rate of EUR 6 million per year, while gross value added tripled with an average annual increase of EUR 4.4 million per year. Gross Profit (GRP) increased 6-fold between 2008 and 2015, with an average annual increase of EUR 1.7 million per year. Correspondingly, fishing fleet profitability ratios, as estimated by GVA/income and GRP/income ratios, also increased over the period, by 20% for GVA/income ratio and by 14% for GRP/income ratio, with average annual increase rates of 2.2% and 1.5% respectively. The benefit/cost of control appears also positive with EUR 1 invested in control supporting creation of EUR 2.2 for the EU economy.

A review of the situation of EU fishing fleet operating in the Mediterranean shows that lack of enforcement can have detrimental impacts. Many stocks are overexploited without any tangible signs of recovery. Some commercially important stocks cannot be assessed, or are assessed only with large uncertainty, because of a lack of relevant data, in particular from small-scale fishing vessels and recreational fishers, both particularly numerous in this sea basin. Therefore, economic (and social) indicators have been deteriorating over the past few years for the whole EU fleet, with some important fishing fleet segments nearing a situation of economic collapse and some Member States fishing fleets operating consistently with negative economic results.

However, under the fully enforced baseline many existing problems would also remain.

The illegal economic benefits gained by some fishermen from infringements would continue, in part due to the failure to define 'serious infringements' and the inconsistent application of the point system for serious infringements by Member States, which mean that even if fully enforced the existing CR sanctions are not a sufficient deterrent. This represents an economic cost to compliant fishermen as direct competitors to those non-compliant ones. SO1 (equitable treatment of operators) would thus be compromised. The economic benefits gained by non-compliant fishermen would also represent a direct negative environmental impact (*i.e.* compromising the GOs), as well as an indirect cost to society from the negative impact of illegal fishing behaviour on stocks and the resulting negative impacts on fish as a source of food for consumers.

The economic costs to operators and public authorities from the administrative burden discussed below in the section on cost impacts would remain. There would be costs associated with sampling plans for the under 12m fleet and for weighing, and particularly from the lack of digitalisation (compromising SO2). The level of digitalisation of catch certificates and processing statements under the CR and the IUU Regulation for example would remain poor, generating inefficiency. The fisheries sector would remain lagging behind other sectors which are using IT solutions for increased traceability and efficiency within TRACES<sup>40</sup> (*e.g.* health certificates related to Common Veterinary Entry Documents,

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<sup>40</sup> TRAdE Control and Expert System

certificates of inspection for imports of products from organic inspection, certificates in line with Forest Law Enforcement, Governance and Trade).

Definitions (e.g. risk management or audit) and principles (cooperation rules, responsibility of operators) in the CR related to food and feed safety would also remain poorly aligned with food law (compromising GOs), creating economic inefficiencies between agencies with competency for different regulatory areas.

### **2.2.3. Current and projected social status**

#### **Current situation**

In 2015, 152 720 fishers were directly employed in the EU fishing fleet (including Greece), corresponding to 114 863 FTEs. Six MS fleets employed 82% of the EU total, with the Spanish fleet employing 21% of the total, followed by the Italian (17%), Greek (16.6%), Portuguese (10.5%), French (9%) and UK (8%) fleets<sup>41</sup>.

Total employed and employment in FTE (excluding Greece and Croatia) decreased on average 1.3% per year (or overall since 2008 by 9%). This was to be expected given the needs to reduce fleet capacity and numbers to achieve the CFP MSY objective. On the other hand, and correspondingly, average wage per FTE, estimated at EUR 24.8 thousand in 2015, increased on average by 2.7% per year over 2008 to 2015, representing an overall increase of 18.6% since 2008. The contrasting picture between the Mediterranean basin and other areas described above for environment and economic status is repeated for social impacts status, with FTE wages in Mediterranean countries continuing to be lower than in other areas—at EUR 74.9 thousand, BE (FTE) fishers earned the highest annual wages on average in 2015, followed by Danish (EUR 72.8 thousand) and Dutch fishers (EUR 71.4 thousand). Cypriot fishers received the lowest average wage (EUR 1.4 thousand), and Maltese EUR 4.3 thousand. Respective performance is likely to have been the result of a combination of the size structure of the fleet (with more small-scale coastal vessels in the Mediterranean), economic conditions more generally in different areas affecting prices, but also potentially the effectiveness of the control system.

#### **Situation under fully enforced baseline**

Under the fully enforced baseline, the limited environmental improvements discussed above would feed through into limited positive social impacts for the EU fleet in terms of wages (if not employment), but only in the longer-term as the landing obligation became enforced and contributed to the GOs. In addition, and all other things being equal, recent positive environmental trends in some geographical areas/sea basins would be likely to support recent positive performance and trends in wages for crew on EU vessels. However, in geographical areas where environmental and thus social performance has been poor, e.g. the Mediterranean (see Annex 6), the limited environmental impacts under the fully enforced baseline would be unlikely to bring about any meaningful positive changes in social performance. Employment might also be created for the handling and processing of fish currently discarded, which would be landed under the fully enforced baseline.

Following a similar approach used for assessing environmental and economic impacts, data from case studies (North Sea sole/Bay of Biscay sole and BFT fishery) have been used to explore impacts on employment and wages from improved control (more generally rather than specifically attributable to option 1). In the case of the sole fisheries, data show that overall employment on board tended to decrease over the 2008-2015 period. This is probably attributable to reduced fleet capacity and levels of fishing opportunities over the period to reach the MSY objective, rather than specifically to increased control. However, in the case of BFT, significant quota increases underpinned by improved stock status

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<sup>41</sup> STECF, 2017a

resulting from improvements in control supported an increase in the number of jobs. Concerning crew remuneration and in the case of the two sole fisheries, average wages per crew member on fleet segments targeting sole increased in both cases, but more markedly (+7.9% per year) for North Sea fleet segments under SCIPs compared to Bay of Biscay fleet segments (+5.9% per year), lending weight to the argument that improvements in control supported social benefits in the form of employment over the longer-term. The hake fishery case study shows that over 2008-2015, the number of full time equivalent (FTE) on board the EU fishing fleet segment targeting Northern hake showed no clear trend—overall, the number of FTEs shows wide variations from one year to another. However, the average wage per FTE shows a positive evolution with yearly wage almost doubling over the period. The average wage per FTE increased by close to an annual EUR 50 000 per year, which reflects the increased profitability of the vessels concerned.

The impact of the fully enforced baseline would however be to retain current imbalances in the playing field regarding sanctions systems across MS, and different treatment of fishing operators with regards to the monitoring and reporting of over and under 12m vessels (compromising SO1). The impacts of the fully enforced baseline would also be to maintain current practices and problems with regards to: i) the sharing of, and access to, control-related information; and ii) risks of poor control of food safety standards.

Indirect impacts under the fully enforced baseline, other things being equal, would be to maintain the social impacts/benefits and recent trends in the upstream and downstream sectors that result from EU fishing activity, as the small environmental benefits that might result under this option would be unlikely to be significant enough to create many positive multiplier impacts.

#### **2.2.4. Administrative burden and other costs**

Administrative burdens are those one-off and recurrent costs borne by businesses, citizens, civil society organisations and public authorities because of administrative activities performed to comply with information obligations included in legal rules.

This section differentiates the administrative burden for operators and for public authorities. In both cases, the impacts on the administrative burden under the fully enforced baseline would be the change in burden reflective of a move from the current situation, to one of full enforcement of existing regulatory provisions in the CR. This would mean increased reporting and information notably with regards to small vessels (under 12m), recreational fisheries, infringements and sanctions, and the landing obligation, for which currently many MS do not comply with the existing regulatory framework as specified in the CR. The administrative burden is therefore expected to increase significantly under the fully enforced baseline compared to the actual situation at present.

#### **Administrative burden for operators**

The administrative burden for operators comes from the reporting obligations imposed by the Regulation, and includes the time spent to fulfil those obligations as well as the cost of equipment when it is required by the Regulation.

The following table shows the estimated additional administrative burden for operators for the costs that can be monetised.

**Table 1: Impacts on administrative burden of the fully enforced baseline for operators (in EUR)**

	<b>Annual Costs (Most likely)</b>	<b>Most likely 5-year Costs</b>
<b>Reporting and tracking under 12m vessels</b>		
Keeping and submit catch and landing data (e.g. simplified logbook data or sales notes)	18,064,000	90,320,000

### Catch reporting

The evaluation of the CR<sup>42</sup> provides information on the time spent by operators to keep operations logbooks and to submit landing declarations on paper or electronically. These two operations are the main administrative burden for vessel-owners under the current regulatory framework. All vessels above 12m of overall length are required to keep an electronic logbook and submit electronic landing declarations. Vessels between 10m and 12m—as well as vessels between 12m and 15m only fishing in their flag MS territorial waters and going to sea for less than 24 hours—are also required to keep logbooks and submit landing declarations, but do not have to do it electronically.

Under Article 164 of the CR, MS should establish sampling plans for vessels under 10m unless those vessels are required to submit fishing logbooks. By way of derogation, sales notes are accepted as an alternative to sampling plans. The 2017 ECA special report on EU fisheries control shows that the monitoring of vessels below 10m varies among MS. In France and Scotland, all vessels under 10m are required to submit simplified versions of logbooks. In Spain, monitoring is done through sales notes as all sales have to be done through auctions. In Italy, data collection is done through sampling, but without a sampling plan compliant with the CR.

It is difficult to estimate the overall administrative burden for under 10m vessel masters for the fully enforced baseline at the EU level due to a lack of relevant information at MS level on the different approaches that are, and would be taken with full enforcement of current regulatory provisions. In a country like Spain, where sales must take place through auctions, and where most are digitised and sent electronically to the public authorities, the impacts on administrative burden for vessels under 10m are assumed to be minimal. In France, where all vessels under 10m are required to submit simplified paper logbooks ("*fiches de pêche*"), it can be assumed that vessel-owners spend around one hour per trip to fill in and submit the required documents<sup>43</sup>. Based on the fleet register and STECF data, it is estimated that there are 3 749 active vessels under 10m in France (8% of total active vessels under 10m in the EU) and that the average number of fishing trips per vessel is 49/year (data for the SSCF). The administrative burden is estimated at about 49 hours per year per vessel or about EUR 2.13 million<sup>44</sup>, for France only. If Italy (assessed as not compliant with the CR by the ECA) were to apply the same requirements as France to comply with the current regulatory framework, the administrative burden for this country would amount to at least EUR 8.27 million<sup>45</sup> worth of fishers' time. In Scotland, however, simplified logbooks are only required to be sent once a week so the time cost is lower. In the examples analysed by the ECA (France, Spain, Scotland and Italy), the fleet assessed to be compliant with the CR represent about 60% of the fleet analysed, as far as vessels

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<sup>42</sup> European Commission, 2016b

<sup>43</sup> Per the ex-post evaluation of the CR data, it can be estimated that a full paper logbooks requires 50 min per day at sea to keep operation records and 35 min at landing to submit the declaration, since they are simplified logbooks, we assume 1 hour in total.

<sup>44</sup> 3 749 active vessels <10m x 49 trip /yr x 1 hr/ trip x 11.6 Euros / hr

<sup>45</sup> 6 640 active vessels <10m x 132 trip /yr x 1 hr/ trip x 9.44 Euros / hr



under 10m are concerned. If extrapolated at EU level, this would mean that the catches of 40% of vessels under 10m in the EU are not reported. It is assumed therefore that under the fully enforced baseline these vessels would report their catches, which would represent an additional administrative burden of about EUR 18 million/year<sup>46</sup> (or EUR 90 million over five years).

### **Weighing of fish**

The action of weighing fish at landing is not considered as an administrative burden for operators by the evaluation of the CR as it is assumed to be part of “business-as-usual”, *i.e.* operators must weigh fish as part of business practices not due to the CR. This assumption is considered logical, and correspondingly the fully enforced baseline is not considered as having any administrative burden on operators from the CR provisions related to weighing.

### **Monitoring fishing capacity**

The administrative burden related to the monitoring of fishing capacity (*i.e.* the time spent in cross-checking the data and physical verifications) is mostly borne by public authorities. However, there is a cost for fishers related to the fact that they must remain in port for physical verification—a cost not considered by the evaluation of the CR. Based on the STECF data for 2015, the average net profit per day at sea for the large-scale fleet is EUR 307. This could be considered as the cost of engine verifications for owners of larger vessels (assuming the day at sea is ‘lost’ to fishing and not made up on another day instead<sup>47</sup>). The 5-year report for the control regulation<sup>48</sup> showed that the number of physical verifications of engine power increased continuously between 2010 and 2014, to reach 684 verifications, which could represent a cost of about EUR 210 000. However, the number of infringements has remained stable despite the increased number of verifications. In addition, those engine verifications have proven to be largely ineffective with new types of engines<sup>49</sup>. Considering the cost and the lack of effectiveness of engine verifications, it is assumed that the existing number of verifications would remain the same rather than continue to increase under the fully enforced baseline and that there would be no additional administrative burden.

### **Recreational fisheries**

Under the current regulatory framework, MS are required to ensure that recreational fisheries are conducted “in a manner compatible with the objectives and rules of the common fisheries policy” but how this is implemented is up to MS. The European Parliament study on marine recreational fisheries published in 2017, highlights the diversity of practices and regulation in place in the MS. According to this study, 17 MS out of 22 currently have systems of authorisations or licences in place, but in most cases, they only cover specific types of recreational fisheries (*e.g.* only shore angling, only boat-based vessels). In France, for instance, authorisations are only issued for sport fishing for tuna. Overall, based on the partially qualitative information from the European Parliament study, it is estimated that about 30% of recreational fishers in the EU currently hold a licence. When there is a licence system, there is an administrative burden for recreational fishers as they spend time registering and obtaining the licence (licence fees themselves are considered as a cost but not as part of the administrative burden). The time spent varies depending on the information required and whether applications can be made online or

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<sup>46</sup> 20 000 active vessels x 80 days at sea /yr (EU average) x 1 hr/trip x 11.29 Euros /hr (EU average)

<sup>47</sup> Vessels do not spend 365 days at sea per year so the real impact of staying in port for the engine verification is difficult to estimate.

<sup>48</sup> European Commission, 2016a

<sup>49</sup> Until now, engines could be locked during the verification to ensure that capacity could not be exceeded afterwards. The seals put during engine verifications could be easily checked during standard inspections. This is not possible with some of the new engines.

must be done physically. Little information is available on systems in place in the MS and it is not possible to make assumptions on the means MS would use to better enforce the control regulation. It is likely that under the fully enforced baseline the administrative burden would increase in some recreational fisheries, to improve monitoring (e.g. through mandatory licencing or registration, mandatory catch reporting, etc.) in line with the CFP objectives, but there is no sound basis on which to monetise or even quantify such costs.

### **Administrative burden and other costs for public authorities**

The evaluation of the CR highlights that the structure of administrative costs in public authorities has already fundamentally changed with the current CR and the digitalisation of reporting for vessels over 12m. Administrative costs that were previously highly related to unit costs per logbook (for data entry and processing in particular) now depend more on fixed costs for ICT applications and management.

The following table shows the estimated additional administrative burden for MS and for the EU for the costs that can be monetised.

**Table 2: Impacts on administrative burden of the fully enforced baseline for public authorities (in EUR)**

	<b>Annual Costs (Most likely)</b>	<b>Most likely 5- year Costs</b>
<b>One-off costs</b>		
Develop New ICT tools for the fisheries data management system		
MS		4,600,000
EU		2,000,000
<b>Recurrent costs</b>		
Collect and process paper reports for vessels <12m and exempted vessels <15m		
MS	14,206,752	71,033,760
<b>Total costs</b>	<b>14,206,752</b>	<b>77,633,760</b>

### ICT costs related to the Fisheries Data Management System

According to the CR evaluation, MS have already invested over EUR 50 million for the development of new technologies and ICT networks for implementation of the CR, around 90% of which have been reimbursed by the EU under Regulation 861/2006<sup>50</sup>. Some MS are still in the process of developing the tools required by the current CR. It should also be noted that several MS have already gone beyond the requirements of the current regulation in terms of digitalisation of reporting and control operations (**e.g. Spain, Croatia**) or are planning to do so regardless of any possible amendments of the regulatory framework at the EU level.

ICT costs at the EU level are also significant. The Commission has identified 109 reporting obligations under the current CR, either initiated by MS or the Commission services itself<sup>51</sup>. Significant resources must be dedicated to data collection from MS, data validation, corrections, etc. The EU Integrated Fisheries Data Management system mainly receives aggregated reports and any further need for data requires specific calls. This generates

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<sup>50</sup> Evaluation of the CR, CapGemini et al. 2017

<sup>51</sup> These reporting obligations include reporting linked to specific events (e.g. in case of infringements) as well as recurrent reporting obligations.

inconsistencies and unnecessary costs. Between EFCA and DG MARE, it is estimated that about 25 FTEs are dedicated to data collection, validation and processing under the CR. DG MARE also estimates that the current CR requires about two FTEs per MS to maintain national databases and lists required by Article 116.

Under the fully enforced baseline, there will be an additional one-off cost to develop new ICT tools, estimated by DG MARE at EUR 2 million at EU level and EUR 0.2 million per MS at national level. Recurrent ICT management and maintenance costs are expected to remain stable, but the existence of multiple databases and the replication of the information in multiple places increases the risk of inconsistencies.

#### Cost of dealing with paper documents for small vessels

The current administrative burden resulting from reporting obligations for small vessels varies significantly between MS.

According to the CR, all vessels above 12m in overall length are required to keep an electronic logbook and submit logbook data and landing declarations electronically, except for some vessels between 12m and 15m, which can be exempted from using electronic transmission (mainly vessels that do not go at sea for more than 24 hours). The report from the ECA shows that in Spain and Italy, this results in 85% and 90% respectively of vessels between 12m and 15m exempted, while in France only 20% (42 vessels) are exempted. Derogations are not permitted at all in Scotland.

Vessels between 10m and 12m are required to keep a logbook and submit a landing declaration, but it does not have to be electronic. The level of digitisation of catch and landing data for this segment also varies among MS from inexistent to complete.

As no Member State has established a sampling plan, vessels under 10m should report their catches and landings or sales to public authorities, as explained earlier.

Spain and France offer two different examples of how reporting can be handled under the current regulation. In Spain, all fish sold goes through auctions. Sales notes can therefore be used as a source to monitor catches and landings from vessels under 10m and they are sent electronically by auctions to public authorities in the autonomous communities, which then transfer the data at national level. The administrative burden for public authorities comes from data quality controls done at the level of the autonomous community (in general by contractors) and from the work related to data compilation and validation at national level.

In France, all vessels under 10m keep simplified paper logbooks and all vessels under 12m send their logbook data on paper. New validation processes have been implemented in recent years and the quality of data obtained is good. Paper documents are sent by fishers after each trip to local authorities who do a first level of validation and quality check and may contact fishers for clarifications if necessary. Paper documents are then sent to the central administration where there is a second level of data quality control that can also result in asking clarifications to the fishers. Paper documents are then digitalised, entered in the database and archived. The third level of control, done automatically aims to detect further anomalies. At this stage, anomalies can either be corrected internally (e.g. erroneous vessel number that can be corrected with data available to the central administration) or documents are sent back to the local public authorities. Finally, data are processed (i.e. aggregated and used for reporting purposes). It is estimated by the French central administration that around 170 000 paper documents are processed per year, for an active fleet of about 4 500 vessels under 12m (based on fleet register and STECF data) representing about 220 000 fishing trips per year. In total, it is estimated that these operations require up to 20 FTEs at central level, including external contractors, plus possibly up to 1 FTE per 'department' (administrative areas) where the fisheries sector is important. This could result in a total of around 40 FTEs to deal with paper documents for

small vessels, or a cost of around EUR 2.5 million<sup>52</sup>. This cannot simply be extrapolated to all small vessels in the EU as there are other systems assessed to be compliant and the appropriate system partly depends on the organisation of landings and first sales in each MS. However, if the same workload per vessel was applied to Italy, where there are about 7 500 active vessels under 12m doing about 1 000 000 fishing trips per year<sup>53</sup> and where the current system has been assessed as not compliant with the CR by the ECA, it would require about 180 FTEs, and cost about EUR 8.5 million<sup>54</sup>. Extrapolated at EU level, using the hypothesis that 40% of the active vessels under 10m currently do not report but would have to under the fully enforced baseline (see section on operators). This would result in a total cost for MS of about EUR 14.2 million<sup>55</sup> (or about EUR 71 million over five years).

#### Weighing of fish

The weighing of fish is not considered to represent an administrative burden for public authorities, as it is the responsibility of operators.

#### Monitoring fishing capacity

Administrative burden for MS comes from the physical engine verifications completed to assess engine capacity. According to the 5-year report for the CR<sup>56</sup>, the number of physical engine verifications increased steadily between 2010 and 2014 to reach 684 verifications in 2014. It is estimated that each physical verification costs around EUR 2 000 to 3 000, representing about EUR 1.4 million to EUR 2 million for MS. Under the fully enforced baseline, it is unlikely that the number of engine verifications would increase. However, since engine verifications are mandatory if there are indications that the engine power of a fishing vessel is greater than the power stated on its fishing licence (Article 41 of the CR), the current number of verifications is assumed to remain stable.

#### Recreational fisheries

As mentioned above, 17 MS out of 22 coastal MS currently have licence systems in place, at least for some types of recreational fisheries. Based on available information, it is estimated that about 30% of all recreational fishers in the EU hold a licence, *i.e.* about 2.6 million. The administrative burden for MS depends on whether the public authorities bear the cost of managing a licence database, issuing cards, etc. to keep the activity free of charge for fishers, or whether they transfer the cost to fishers. Relevant information is not available to be able to allow for a sound basis on which to monetise such costs or potential additional costs under the fully enforced baseline.

#### Landing obligation

Article 15.13 of the CFP, on landing obligations, states that MS shall ensure detailed and accurate documentation of all fishing trips and adequate capacity and means, such as observers, CCTV and others. In doing so, MS shall respect the principles of efficiency and proportionality. Article 7 of Regulation 2015/812 ('Omnibus') Article 7 amends the CR to allow control observers on board for the landing obligation (new Article 73a) whereas

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<sup>52</sup> Labour costs, including social charges and 25% overheads are estimated at EUR 62,331/FTE based on Eurostat data on labour costs in France for administrative and support staff.

<sup>53</sup> The average number of fishing trip per year per vessel for the SSCF is 132 in Italy against 49 in France.

<sup>54</sup> Labour costs, including social charges and 25% overheads are estimated at EUR 47,241/FTE based on Eurostat data on labour costs in France for administrative and support staff.

<sup>55</sup> Labour costs, including social charges and 25% overheads are estimated at EUR 49 329/FTE based on Eurostat data on labour costs in average in the EU for administrative and support staff, the total number of fishing days is estimated for about 20 000 vessels with an average of 80 days at sea per year.

<sup>56</sup> European Commission, 2016a

previously control observers on board were only possibly where a Community control observer scheme had been established.

With the phasing in of the landing obligation to cover more species until 2019, the value of landings covered by the landing obligation (taking the value of landings for the relevant species in 2015) would rise from EUR 1.73 billion in 2015 to EUR 4.18 billion in 2019 (representing a rise from 24% in 2015 to 58% in 2019 of landed values<sup>57</sup>). However, this increase would not be uniform across MS, and BE, DK, IE, LV, PL and SE would all have a dependency on species covered by the landing obligation of over 80% by 2019 (See Annex 9, for more details).

Various studies have shown that the use of REM<sup>58</sup>/CCTV is the most effective and efficient tool to enforce the landing obligation. Based on the analyses carried out by Needle et al. (2015) and by the North Western Waters Control Fisheries Group, it can be estimated that using REM/CCTV would represent a cost of about EUR 50 per day at sea<sup>59</sup> while the cost of on-board control observers are estimated at EUR 400 per day at sea and up to EUR 2 000 per day for a 24-hour observation. In the absence of on-board observation capacity, MS will have to increase at-sea inspection controls. At-sea patrol vessels have been estimated to cost around EUR 8 000 per day<sup>60</sup>.

Theoretically, it could be expected that MS would thus use REM/CCTV, based on these analyses. However, the reluctance of the industry to install CCTV on board (in part due to concerns of privacy and in part because other MS have not and not all would impose it) and the lack of level-playing field at EU level, will mostly likely limit or slow down the installation of such tools, even under the fully enforced baseline. A mix of increased at-sea patrol vessels and CCTV might thus be expected under the fully enforced baseline with enforcement of control of the landing obligation, both of which would involve increased costs for MS administrations.

### **Simplification**

There would be no simplification of reporting obligations under this option, or clarification of any existing legal text through amendments.

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<sup>57</sup> Assumes a constant value of landings at 2015 levels

<sup>58</sup> Remote electronic monitoring

<sup>59</sup> This assumes an average cost of CCTV of EUR 12,000/vessel (including installation) with an annual depreciation of 5 years, 1-staff time per year to review CCTV footages for 7.5 vessels (studies show that one observer can monitor between 5 and 10 vessels), EU average labour costs for administrative staff of EUR 49,329/year/FTE and about EUR 5,700 of specific overheads per observer (software licence fees, specific computer equipment, etc.)

<sup>60</sup> European Commission, 2016a

## **2.3.Option 1: Amendment of the Fisheries Control Regulation**

### **2.3.1.Environmental impacts**

Under option 1, policy amendments to four of the five main areas (harmonising sanctions systems; improving data availability and sharing; controlling the landing obligation; aligning the FCS with other policies and legislation; but not aligning the EFCA founding regulation and IUU regulation with current needs) would serve to support and *contribute* to a range of positive environmental impacts that can be identified and assessed against both quantitative and qualitative indicators. The impacts would be expected to make important contributions to positive environmental impacts to all the specified environmental indicators of stock status (thus supporting GOs).

Given the wide-ranging and comprehensive way the changes discussed below would represent in the short-term, the positive environmental impacts of the amendments would likely become visible from the medium-term onwards (*i.e.* not immediately, allowing time for stock improvements but before five years).

More consistent enforcement (of sanctions systems) would support GOs and SO1

- The level of consistency between MS over the approach to sanctions for infringements would improve, and sanctions would be better set to act as a deterrent to infringements. All seven actions included in the specification of policy option 1 would serve to increase the ability of sanction systems to support positive environmental impacts through improved fisheries control.

Data availability, quality and sharing would support GOs and SO3, as well as SO1 (through removal of exemptions), SO2 (through digitalisation reducing administrative burden and promoting the use of harmonised and/or interoperable IT tools and centralisation of databases) and SO4 (through regionalisation of measures on recreational catches)

- The number of vessels tracked with either VMS or other lower-cost adapted solutions would rise from 1.2% of the total fleet to 100% under option 1, providing for improved control and positive environmental impacts.
- Exemptions from reporting catches of under 50 kg per species per trip (Article 65.1) would be removed and Article 65.2 changed from 30kg to 5kg, both of which would provide more complete data to be used in stock assessments. 100% of the fleet would report catches electronically, improving the quality and availability of data required for good resource assessments. Using data from Spain, where all catches are declared, and applying a volume of landings from the small-scale coastal fleet per kW in Spain to all EU small-scale vessels might imply additional data on catches of around 75 000 tonnes (representing around 25% of landings from the EU small-scale coastal fleet, and 1.5% of total landings, valued at around EUR 200 million). The share of the gross tonnage of the EU fleet reporting catches electronically would rise from just under 90%<sup>61</sup> to 100%. Given the large proportion of vessels in the Mediterranean that are from small-scale coastal fleets, particularly significant environmental improvements would be likely in the Mediterranean basin, where environmental status is currently especially poor and in most need of improvement.
- The use of e-reporting (in the form of ERS) would also have a positive impact on the environment through reducing the ability of fishers to manipulate catch reports, again improving the quality of data used in stock assessment.
- Better catch records for the under 12m fleet could also potentially pave the way for the introduction of TAC and quota in Mediterranean in the longer-term. On the assumption that many of the current problems in this region compared to others

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<sup>61</sup> European Commission, 2016a

are due to the fishing capacity-based management regime in place, the introduction of TAC and quota in the Mediterranean (facilitated by better data) could improve environmental benefits in the long-term.

- The new provisions for data management and sharing of data at the EU-level would result in more complete, consistent and better-quality data, in part through the associated digitalisation processes, thereby reducing uncertainties, creating environmental benefits and increasing efficiency when using data for decision-making on issues such as control strategies, quotas, multi-annual plans, etc.
- Option 1 would provide for national and regional decision-making over data collection and management of recreational fisheries, both factors that would be expected to contribute to positive environmental impacts.
- In terms of weighing of catches, the actions specified in option 1 would remove exemptions and close current loopholes, leading to improved data for the monitoring of quota uptake, also supporting more accurate data to feed into stock assessments.
- Improved data on engine power would contribute to positive environmental impacts under option 1, through enhanced ability to assess MS compliance with capacity ceilings set out in Annex 1 of the current CFP and existing effort regimes. Data on engine power at MS would become more accurate, available, and subject to verification through more efficient control means. The number of vessels being more accurately recorded would be all those with towed gear over 221kW (3 299 vessels) plus an estimated 50% of those vessels between 120 and 221 kW under the assumption that 50% might be covered by effort regime or specific measures for engine power (an additional 1 712 vessels). Option 1 would result in improved data for 5 111 vessels to be monitored—64% would be in 4 MS (IT 25%, UK and FR both 14%, and ES 11%).

Control of the landing obligation would contribute to GOs, and SO4

- The obligatory introduction of CCTV systems on vessels identified through risk assessments as being high risk for discarding, would significantly increase the effectiveness and efficiency of control and compliance, by moving towards 'fully documented fisheries' for those considered to be high risk. The obligation for such coverage would speed up and make more certain the environmental benefits described under the fully enforced baseline as there would be no ambiguity for MS as to their obligations.

Improved synergy with other policies and legislation would support GOs

- Option 1 would result in an additional 510 451 km<sup>2</sup> of marine protected areas<sup>62</sup> being fully covered by the remit of the CR compared to the baseline. This impact would be particularly beneficial in the Mediterranean, where the activities of recreational fleets, the increased use of spatial restrictions and the potential impact of non-EU fleets on MPA integrity were identified as issues in the recent evaluation of the Mediterranean Regulation<sup>63</sup>.
- Clarification of definitions and provisions on traceability and digitalisation to control the application of the rules of the CFP at all stages of the marketing of fisheries and aquaculture products, would help to reduce the ability of operators to introduce illegally caught fish into the supply chain.

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<sup>62</sup> European Environment Agency data as at 06 April 2017. Based on declared percentage of Natura 2000 areas with marine content. Note that some MS (EL, FI, LV) do not report this, and are excluded from this figure

<sup>63</sup> MRAG et al, 2016

- Definitions (e.g. risk management or audit) and principles (cooperation rules, responsibility of operators) in the CR related to food and feed safety would be aligned under option 1, increasing coherence and synergies with control of environmental and food safety standards.

In addition, to further explore the environmental impacts of a situation reflective of an improved FCS, case studies have been completed to consider the costs and benefits of improved control (see Annex 3, 4 and 5). Taken collectively, the case studies show how improvements in the FCS can bring about environmental benefits in the medium- to longer-term (see Annex 3-5), while a poor FCS (see Annex 6) can hamper the realisation of benefits.

Option 1 would support environmental benefits in some areas (e.g. for the Mediterranean) for which indicators suggest there has been little positive environmental change in recent years. It would also potentially accelerate environment improvements still further in other sea basins that have shown positive trends in recent years. The proposed amendments to the CR under option 1, removing exemptions for the under 12m fleet and supporting better data and control of recreational fisheries, would be expected to result in significant environmental improvements in the Mediterranean (the region most in need of such improvements) due to the high numbers of small-scale coastal vessels and recreational fishers in that region.

### **2.3.2. Economic impacts**

The economic impacts in terms of direct costs are assessed below (see Sections 2.3.4 and 2.3.5). Given that much of the EU fishing fleet are SMEs, the costs impacts relate mostly to SMEs and micro-enterprises, although larger enterprises would also be impacted. However, of special note is that any one-off administrative cost burdens on fishing operators would be likely to be eligible for support under the next EMFF post 2020.

Other things being equal, option 1 would contribute to positive economic impacts in the form of improved economic performance of the EU fleet and increased value-added and profits, from the improvements in the environmental status of stocks feeding through into increased fishing opportunities in the medium- to longer-term (supporting GOs). These impacts would increase the competitiveness of EU businesses and would be felt mostly by SMEs and micro enterprises.

The proposed amendments to the CR under option 1, removing exemptions for the under 12m fleet, and supporting better data and control of recreational fisheries, would be expected to result in particularly significant environmental improvements in the Mediterranean (the region most in need of such improvements) resulting in improved economic performance in this region, where it is most needed (see Annex 6).

Also, potentially of considerable importance to the small-scale coastal fleet is that it typically does not have historical data, which it would need if TAC and quota were introduced to demonstrate historical record. Improving data on catches for the under 12m segment under option 1 would assist with generating historical time series of 'track record', and thus potentially longer-term economic benefits if TAC and quota were to be introduced at some stage in the future providing the basis for improved management, environmental benefits, and resulting economic improvements in fleet performance.

An additional economic benefit under option 1 would be the mandatory use of CCTV to control the landing obligation, as this would obligate MS to use the most effective and cost-efficient means of control of the landing obligation.

Case studies (see annex 3-5) show that the positive impacts of an improved FCS can be realised in the medium to longer term, and in periods of less than five years.



In addition to the direct economic impacts discussed above, indirect costs for consumers could occur if any direct costs for operators were to be passed on to consumers in the form of higher prices. If this were to happen, even if all the direct costs to commercial operators were passed on to consumers in the form of higher prices the total annual indirect costs (most likely case) would be EUR 21.5 million, compared to EU consumer spend of EUR 54 billion in 2015 on fisheries and aquaculture products<sup>64</sup>. However, more likely is that potential indirect costs to consumers would not occur at all, due to a combination of the strong negotiating power of the multiple retailers over processing companies<sup>65</sup>, but more importantly because capital costs to operators (EUR 12.7 million) would be eligible for EMFF support.

What does seem more certain, is that the positive economic impacts on EU fleets could in turn generate positive indirect economic impacts in the downstream processing and marketing sectors (*i.e.* for the 3 454 processing sector firms in the EU), again in the medium- to longer-term, to the extent that processors rely on EU catches as opposed to imports of raw material from outside the EU. STECF (2014) note that low margins in the sector are partly due to the availability of raw material. Under option 1, increased availability of fish would be expected for the processing sector, both from improvements in stocks that would result from the positive environmental impacts, but also specifically from the reduced levels of discards which policy option 1 would contribute to through its actions related to the landing obligation. However, quantification of impacts on profits and value added is not possible as it cannot be known what impact increased supply of raw material fish inputs would have on fixed and operational costs, or what impact increased volumes on the market would have on prices. Given the potential for the proposed amendments to generate environmental benefits in the Mediterranean basin, and the poor current economic performance of the processing sector in some Mediterranean countries, indirect economic benefits for the processing sector in this region might be expected to be especially notable.

### **2.3.3.Social impacts**

Earlier studies<sup>66</sup> have shown how the level at which sanctions are set, coupled with the likelihood of being inspected and of infringements being detected, is a critical factor in affecting compliance with regulations intended to ensure environmental sustainability. Under option 1, the increased consistency and clarity with regards to sanctions systems would be expected to have a significant and positive impact on the social behaviour of fishermen in the short-term and thereafter, providing support for a culture of compliance (supporting GOs). Under option 1, the change in sanctions systems would be likely to impact on the social behaviour of fishermen with increased control leading to fewer infringements.

Social impacts would also include a more level playing field regarding sanctions systems across MS, and consistent treatment of fishing operators with regards to the monitoring and reporting of over and under 12m vessels (SO1). This impact would be realised in the short-term and thereafter.

Other positive social impacts would include: i) enhanced sharing of, and access to, control-related information, and increased visibility (supervision) of the Commission over the CR through the amended provisions for the exchange of data, and increased transparency supporting level playing field; and ii) reduced risks of poor control of food safety standards.

Potentially of considerable importance to the small-scale coastal fleet is that it typically does not have historical data, which it would need if TAC and quota were introduced to demonstrate 'track record'. Improving data on catches for the under 12m segment under

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<sup>64</sup> EUMOFA, 2016

<sup>65</sup> STECF, 2014

<sup>66</sup> Oceanic Development, 2001. Cost benefit comparison of different control strategies. Final report

option 1 would assist with generating historical time series of 'track record', and thus potentially supporting a fair allocation of fishing opportunities and therefore fostering fishers' adherence to a new management system. Longer-term social benefits can be expected if TAC and quota were to be introduced at some stage in the future providing the basis for improved management, environmental benefits, and resulting social improvements in the form of crew wages.

Positive environmental impacts assessed in option 1 could also generate indirect positive social impacts in the downstream processing and marketing sectors in the medium- to longer-term through the availability of increased volumes of fish for processing and sale. These impacts (not quantifiable) could be in the form of increased employment and/or increased wages, depending on changes in profitability resulting from the handling and sale of increased quantities of fish, the ability of existing labour to deal with increases in raw material inputs, and the business and employment strategies employed by processing sector operators. One positive impact that might be expected from the increased available of raw material would be an increase in the use of FTEs, rather than part-time and seasonal work.

Case studies (see annex 3-5) show that although the number of full time equivalent (FTE) onboard EU fishing vessels tend to decrease under option 1, average crew remuneration show a positive evolution which reflects the increased profitability of the vessels concerned. Assessment of social impacts in the 2010 CFP IA compared to those that have been realised in recent years (see Annex 7) shows that social impacts modelled in the 2010 IA appear broadly in line with those realised. Under option 1, the actions proposed to address continuing problems as stated in the problem definition, imply that regulatory changes in the CR, coupled with improved conservation measures and overall implementation of the CFP, would serve both to improve social impacts from the fully enforced baseline but could also result in social benefits even more than those identified in earlier IAs. As the BFT case study showed, significant improvements in environmental performance from better control could lead in the longer term to increases in FTEs as well as wages.

#### **2.3.4. Administrative burden**

The assessment of impacts includes consideration of both costs and cost savings, as well as a sensitivity analysis of burdens that are: i) significant in terms of amount, and ii) considered to be uncertain. It also considers who would be impacted.

#### **Administrative burden for operators**

The following table shows the impact of option 1 on administrative burden for the costs that can be monetised. The methodology is provided partly in the text and supported by additional information in Annex 2. All investment costs are depreciated by the life-span of the asset to generate yearly data on costs. The estimates provided below refer to expected new costs and savings from the current situation and do not consider expected costs of full enforcement of the CR.

**Table 3: Impacts on administrative burden of option 1 for operators (in EUR)**

	Annual Costs (Most likely)	Most likely 5-year Costs	Annual Costs (Best case)	Annual Costs (Worst case)
<b>Reporting and tracking under 12m vessels</b>				
<b>F-operators under 10m vessels</b>				
Equip vessels <10 m with tracking and e-reporting devices	19,363,110	96,815,550	16,458,644	22,267,577
Keep and submit logbook data and landing declarations electronically	26,905,786	134,528,930	26,905,786	26,905,786
End keeping and submitting paper catch and landing data (e.g. simplified logbook data or sales notes)	-22,580,000	-112,900,000	40,644,000	-4,516,000
<b>F-operators 10-12m vessels</b>				
Equip vessels 10-12 m with tracking and e-reporting devices	1,594,320	7,971,600	1,355,172	1,833,468
Keep and submit logbook data and landing declarations electronically	2,215,369	11,076,845	2,215,369	2,215,369
End keeping and submitting paper logbook data and landing declarations	-5,230,732	-26,153,660	-5,230,732	-5,230,732
<b>F-operators between 12m and 15m vessels, currently exempted</b>				
Equip exempted vessels 12-15m with VMS/ERS devices	4,451,350	22,256,750	4,451,350	4,451,350
Keep and submit logbook data and landing declarations electronically	3,858,216	19,291,080	4,748,574	2,967,859
End keeping and submitting paper logbook data and landing declarations	-9,109,678	-45,548,390	11,211,911	-7,007,444
<b>Total Reporting and tracking of small vessels</b>	<b>21,467,742</b>	<b>107,338,708</b>	<b>-951,749</b>	<b>43,887,232</b>

Notes: F-operators = fishing vessel owners

### Reporting and tracking for small vessels

The full digitisation of monitoring and reporting for vessels under 12m would generate increased monetary costs (equipment, maintenance, transmission costs). Yet, it can be assumed that it would be partially reimbursed under the next/future EMFF post 2020, although the specific details with regards to eligibility and percentage contributions cannot yet be known. Specific equipment for small vessels has been tested in several MS with lower costs than equipment used for the large-scale fisheries (estimated annual cost of EUR 390 +/-15%<sup>67</sup>). Those costs include capital costs and installation (which can be subsidised under the current EMFF, with a 90% contribution from the EU<sup>68</sup>), licence fees and transmission costs<sup>69</sup>.

Based on the CR evaluation, fishermen would save time if using e-reporting rather than logbook paper and paper landing declarations. This would be the case for all vessels over 10m, and for the vessels under 10m in MS that require them to send catch and landing data (e.g. in France and Scotland). In MS where data collection for vessels under 10m is done through sales notes, there would be an additional time cost for operators to fill in and

<sup>67</sup> Annual costs are estimated at EUR 1,270 for the large-scale fleet, based on the CR evaluation for computer depreciation, licence fees and transmission costs and on a Sea fish analysis on costs of VMS systems in the UK (2009)

<sup>68</sup> With MS contribution, the subsidy can cover 100% of the capital costs under the current EMFF, but this depends on MS choices, and the conditions and content of a future EMFF are not yet known, so it is not taken into account in the estimates

<sup>69</sup> Based on data provided by the industry, capital costs and installation costs are estimated at EUR 1200 and depreciated over 5 years and transmission costs and software licence fees are estimated at EUR 150 /year (this corresponds to transmission costs that only cover short distances away from shore, e.g. 15 to 20 miles)

submit electronic reports. The sensitivity analysis reflects the range of possible situations. The most likely scenario assumes that the countries analysed by the ECA are representative of the situation at EU level, which would mean that about 25% of all vessels under 10m would be currently reporting on paper. The best-case scenario (*i.e.* highest savings) assumes that all MS for which the ECA report does not provide information require paper reporting for small vessels as none has a sampling plan. This would mean that about 75% of all vessels under 10m would have to report on paper currently. The worst-case scenario (*i.e.* lowest savings) assumes that none of the MS for which the ECA report does not provide information requires paper reporting for vessels under 10 m (*i.e.* data are collected through sales notes or other means, compliant or not with the CR). This would mean that about 10% of all vessels under 10m currently must report on paper. It is estimated that it would take 1 hour per trip (instead of 1.5 hour for a full logbook, based on the CR evaluation data).

The time saved by fishers would compensate for the additional fixed costs for vessels currently subject to paper reporting. However, vessel masters who do not currently report on paper will bear an additional time cost and additional fixed costs. The total cost resulting from option 1 depends on the number of vessels currently reporting on paper, which is not known, but the most likely scenario shows a net cost overall for operators due to the large number of vessels under 10m assuming not to report currently. It should also be noted that time saved by fishers does not necessarily translate into additional revenues, and that they could be reluctant to use electronic means at first, especially in the SSCF. However, the fact that capital costs could be expected to be reimbursed under a future EMFF (with the percentage depending on MS contributions), and that the applications are often designed to be used for purposes other than just control (*e.g.* to provide weekly or monthly statistics on vessels' catches to the vessel's masters), could also be perceived as an opportunity and benefit for fishers.

### **Recreational fisheries**

There will be an additional administrative burden for recreational fisheries under option 1 as monitoring and reporting should increase. However, as the implementation of the monitoring of recreational fisheries will take place at regional level under delegated acts and proposals are not yet known, it is not possible to monetise or even quantify the administrative burden.

### **Administrative burden for public authorities**

The following tables show expected costs in terms of administrative burden for MS (Table 4) and for the EU (Table 5) under option 1. Following the table, explanation is provided on the figures under each main category of burden.

**Table 4: Impacts on administrative burden of option 1 for MS (in EUR)**

	Annual Costs (Most likely)	Most likely 5- year Costs	Annual Costs (Best case)	Annual Costs (Worst case)
<b>One-off costs</b>				
Data management and sharing (Develop New IT tools)		2,300,000		
<b>Recurrent costs</b>				
Data management and sharing				
Maintain IT tools	-1,134,567	-5,672,835	-1,134,567	-1,134,567
Exchange data and report to EU	-567,284	-2,836,418	-567,284	-567,284
Enforcement				
Equip inspectors with electronic devices	662,000	3,310,000	662,000	662,000
End paper report for inspections	-3,811,516	-19,057,579	-5,082,021	-2,541,011
Reporting and tracking <12m vessels				
End collection and digitisation of paper reports for vessels <12m and exempted vessels <15m	-16,724,504	-83,622,521	-26,984,936	-6,464,072
<b>Total</b>	<b>-21,575,870</b>	<b>-105,579,352</b>	<b>-33,106,808</b>	<b>-10,044,933</b>

**Table 5: Impacts on administrative burden of option 1 for the EU (in EUR)**

	Annual Costs (Most likely)	Most likely 5-year Costs	Annual Costs (Best case)	Annual Costs (Worst case)
<b>One-off costs</b>				
Data management and sharing (Develop New IT tools)		2,000,000		
<b>Recurrent costs</b>				
Data management and sharing (Maintain IT tools)	700,000	3,500,000	700,000	700,000
<b>Total</b>	<b>700,000</b>	<b>5,500,000</b>	<b>700,000</b>	<b>700,000</b>

#### Data management and sharing at EU level

The major part of the ICT tools foreseen at EU level has already been developed or are being developed. The fully enforced baseline already implies a standardisation of data flows. So, option 1 is not a complete overhaul of the ICT system, but rather a step further from the fully enforced baseline. The major difference between the two options is that under option 1 the Commission will have direct access to fisheries data, avoiding therefore making specific queries to Member states to get them or manually download them from national databases. The CR amendment would also ensure that MS comply with the centralised EU registers implemented at EU level. ICT development costs under option 1 would include the EUR 2 million of one-off costs estimated under the fully enforced baseline, plus an additional recurrent cost of EUR 0.7 million at EU level for ICT management and maintenance. However, one-off ICT development costs would be lower at national level as part of the applications would be centralised (EUR 0.1 million per MS instead of 0.2 million).

Recurrent time costs related to data management would decrease both at EU level, due to savings from data collection and duplicated validation processes, and at national level, due to centralisation of some applications at EU level and the reduction of data calls. The

decrease is estimated at about 1 FTE per MS<sup>70</sup>, which would represent a saving of about EUR 1.1 million<sup>71</sup>.

In addition to savings from centralised data management and sharing at EU level, the amendments of the CR will bring streamlining and simplification of the reporting obligations between MS and the EU which is expected to result in savings equivalent to 0.5 FTE per year per MS, or about EUR 0.6 million in total.

### Enforcement

The existing number of inspections is provided by the CR evaluation, based on the 5-year report<sup>72</sup>, and there would be savings from these inspections becoming digitalised. However, according to DG MARE, partial data available at national level indicate that this figure is largely under-estimated. The sensitivity analysis therefore uses the data provided by the CR evaluation as a worst-case scenario (*i.e.* lowest savings) and twice as much as a best-case scenario<sup>73</sup>. The most likely scenario represents the average between the worst- and best-case scenarios. As there is no available information on actual time spent on the different reporting obligations, it is based on reasonable assumptions (1 hour per report/notification for inspection reports). The number of inspectors is provided by the CR and the cost per device is estimated at about EUR 1 000 (depreciated over three years<sup>74</sup>).

Additional savings in terms of enforcement would come from the centralisation of data exchange systems at EU level. This is accounted for in the savings under the previous section on data management.

### Reporting and tracking for small vessels

The most important savings will come from the implementation of e-reporting for small vessels. Estimates are based on the information available for the administrative burden in France (see detailed explanation for the fully enforced baseline). It is estimated that under option 1 about 40 FTEs are necessary between the national administration and local authorities to collect, validate, enter the required data, and manage anomalies for small vessels, and that about half of those could be saved at national level and most of those in local authorities under a fully electronic system. The sensitivity analysis relies on the same assumptions as those used to estimate the administrative burden resulting from option 1 for operators and detailed above.

### Recreational fisheries

There would be an additional administrative burden related to the control of recreational fisheries because of improved monitoring and reporting. However, specific measures would be decided at regional level under delegated acts. It is therefore not possible to quantify the administrative burden here.

### Traceability

The administrative burden of MS related to the traceability system should be reduced as a result of the digitisation of the reporting systems. This should represent hundreds of thousands of paper-documents per year (sales notes, transport documents, take-over declarations), but there is no sound basis to monetise the savings.

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<sup>70</sup> Estimates provided by DG MARE

<sup>71</sup> Labour costs, including social charges and 25% overheads are estimated at EUR 49,329/FTE based on Eurostat data on labour costs in average in the EU for administrative and support staff

<sup>72</sup> European Commission, 2016a

<sup>73</sup> Assumption provided by DG MARE

<sup>74</sup> Standard depreciation rate for IT equipment

## **Simplification of reporting obligations**

Simplification would mainly come from: i) clarification of terms and the content of some of the legal text of the CR which is open to interpretation; and ii) the removal of unnecessary reporting obligations, due to the generalisation of electronic reporting and data management and sharing at EU level, including:

- removal of fishing reports and reporting exemptions on fishing effort (Articles 28 and 29) and reporting on lost gears (Article 48) for fishers as the information will be recorded in electronic logbooks;
- removal of sampling plans for the reporting of small vessels (Articles 16, 25 and 28)–MS do not currently establish those sampling plans, so there would be no reduction of the administrative burden but it would simplify the legislative framework;
- streamlining and simplification of reporting obligations from MS to the Commission;
- simplification of data exchanges between MS.

From the operators' standpoint, digitisation would also save time in reporting and avoid having to provide the same information repeatedly (e.g. a vessel's number would be automatically recorded in all reporting applications, data on catches and fishing effort would be entered in the application only once, etc.). Simplification of reporting obligations would apply to operators along the whole supply chain (e.g. with the simplification of sales notes and transport documents). However, the actual level of simplification would depend to a large extent on detailed implementation rules, on the exact content of data required from operators, and the quality of the user interfaces.

For the public authorities, digitisation would also remove the need for manual data entry, archiving paper documents, etc. Beyond that, it would reduce the number of anomalies in reporting as validation rules can already be implemented in the users' applications and it would facilitate cross checking with other data sources (e.g. the Community Fleet Register). In addition, if it is easier for operators to report, they would be more likely to do it better and more systematically, which would facilitate data collection for public authorities.

Option 1 implies that the Commission would deal with non-aggregated data rather than aggregated data, which would increase the volume of data to manage. It should also reduce the amount of data checks and corrections, and explanations after requests by MS, as it would make sure that validation and aggregation rules are implemented consistently. The implementation improved data exchange would also avoid duplicating data validation tasks in different services and remove the risk of inconsistencies (and therefore the workload related to dealing with inconsistencies in EU data).

Finally, data management and sharing at EU level would facilitate EU reporting obligations to international organisations.

### **2.3.5. Other direct cost impacts**

Other direct costs which are assessed for their impacts on different stakeholders by the proposed amendments include:

- Compliance costs–one-off investments and recurrent expenses that would be faced by businesses, citizens, and public administrations to comply with substantive obligations or requirements contained in the policy options and the resulting regulatory amendments;

- Regulatory charges–new fees, levies, taxes, etc., that would result from the policy options;
- Enforcement costs–those associated with activities linked to the implementation of an initiative such as monitoring, enforcement and adjudication. These are different from the direct costs related to the policy changes. Unlike direct costs, enforcement costs do not come from actions explicitly described in the policy options but would be necessary to guarantee that operators comply with the regulatory amendments and that sanctions are applied if they do not.

Enforcement costs could occur especially in the first years after the entry into force of any regulatory amendments, and decrease progressively as stakeholders become familiar with new rules. The two areas that are expected to be the most important in terms of 'enforcement costs' are the monitoring of amendments related to reporting from vessels under 10m in MS where they currently do not report, and of the implementation of the new obligations regarding weighing at landing, as those involve daily operations and many stakeholders. These costs would depend to a large extent on the detailed implementing rules of the amended regulation and on MS choices, but it is assumed for the sake of this analysis that overall, control means would be *allocated* differently under option 1 but that global spending will not change as a direct consequence of the regulatory amendments.

### **Regulatory charges and compliance costs for operators**

#### Monitoring fishing capacity

The following table shows the estimated annual cost of equipping vessels with 'black boxes' to monitor engine power.

**Table 6: Impacts on compliance costs of option 1 for operators (in EUR)**

	Annual Costs (Most likely)	Most likely 5-year Costs	Annual Costs (Best case)	Annual Costs (Worst case)
<b>Monitoring fishing capacity</b>				
<b>Equip vessels with black boxes</b>	<b>1,022,200</b>	<b>5,111,000</b>	<b>1,022,200</b>	<b>1,022,200</b>

The estimates are based on the equipment of 5 111<sup>75</sup> vessels over 221kW using active gears and vessels over 120 kW using active gears and covered by fishing effort regime or specific engine power measures and an approximate price of EUR 1 000 per black box including installation costs. The total cost is estimated at about EUR 5 million over 5 years. There may be additional time spent before going to sea to verify that black boxes are correctly functioning, but vessels with black boxes would not have to stay in port for engine verifications, potentially reducing the lost days at sea considered under the baseline.

#### Weighing, transport and sales

Under Option 1, registered weighers (*i.e.* current registered auctions and buyers plus additional possible "weighers") would have to spend more time weighing fish products at landing, as sampling methods and derogations currently allowed would be removed. Derogations would remain in place for unsorted bulk landings for which it would be nearly impossible to weigh all fish sorted at landings. The weighing of each quantity of each species of frozen fisheries products, landed in boxes or blocks, may also be conducted by multiplying the total number of boxes or blocks by a net average weight for a box or block calculated according to a specified methodology. However, in all other cases, all fish would

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<sup>75</sup> Data provided by DG MARE



have to be weighted by species, immediately after landings, on approved systems by a registered weigher.

Approved scaling systems are available in ports and vessel masters would be able to be registered as a “registered weigher” to do the weighing themselves if they do not sell through a “registered buyer”. There would therefore be an additional cost for auctions and buyers as on average, weighing operations would take more time. There would also be an additional cost for fishers who sell their products directly, in quantities below 30kg as they would have to spend time to weigh all their fish sorted at landing, and submit the data to public authorities, whereas at present, they are exempted from carrying out these operations.

However, there is no sound basis to monetise those costs as the proportion of fish currently not entirely weighed and sorted at landing is unknown.

### Compliance costs for public authorities

**Table 7: Impacts on compliance costs of option 1 for MS (in EUR)**

	Annual Costs (Most likely)	Most likely 5-year Costs	Annual Costs (Best case)	Annual Costs (Worst case)
<b>Control of the landing obligation</b>				
Equip targeted vessels with CCTV/REM equipment*	1,440,000	7,200,000	600,000	3,200,000
<b>Monitoring fishing capacity</b>				
Reduce physical engine verifications	-850,000	-4,250,000	-1,530,000	-340,000
<b>Total</b>	<b>590,000</b>	<b>2,950,000</b>	<b>-930,000</b>	<b>2,860,000</b>

\* It is assumed that CCTV/REM equipment will be the property of Control Authorities rather than the operators as vessels may be selected on a dynamic basis, but if they must be purchased by vessel-owners, then the cost would be for operators.

### Landing obligation

The estimates for the installation costs of CCTV/REM equipment are based on various scientific studies and the analysis from the NWW fisheries control expert group for the 83 vessels with “highest inherent risks” in their geographic area. The different sources show a variety of equipment costs.

The sensitivity analysis uses the following assumptions (CCTV costs include installation costs), noting that the exact number of vessels would be selected by MS based on risk assessment as it would possibly reward compliant operators and would also require the authorities to regularly update their control strategies:

- Worst-case scenario—about 1 000 vessels and average CCTV costs of EUR 15 000
- Best-case scenario—about 300 vessels and average CCTV costs = EUR 10 000
- Most likely scenario—about 600 vessels and average CCTV costs = 12 000

In addition to the equipment costs, there would be a time cost for reviewing CCTV footages. However, it would not be an additional cost for MS as they already have time costs to enforce the landing obligation under the current regulatory framework. As analysed under the fully enforced baseline, it is more effective and efficient to rely on CCTV/REM than on control observers on board or sea-patrol vessels. Based on available data, reviewing CCTV footage for 600 vessels for a year would require between 60 and 120 observers full-time<sup>76</sup>, which would represent a cost between EUR 3.3 million and EUR 6.6 million (including

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<sup>76</sup> Assessment from North Wester Waters Group Fisheries Control Expert Group: 1-staff year for 5 to 10 vessels

specific hardware and software)<sup>77</sup>. The same budget would only allow to fund between 2 and 4 at-sea patrol vessels per year for the EU as a whole<sup>78</sup>.

#### Monitoring fishing capacity

MS would be able to reduce the number of physical engine verifications, which are estimated to cost between EUR 2 000 and EUR 3 000 per engine verification<sup>79</sup>. The sensitivity analysis in the table above assumes a reduction of 50% in the most likely scenario, 25% in the worst-case scenario and 75% in the best-case scenario.

#### Traceability

The digitisation of traceability documents will allow a reduction of the administrative burden, but will involve compliance costs to develop and manage ICT tools. However, there is no sound basis to monetise those costs.

### **2.4. Option 2: Amendment of the Fisheries Control System**

#### **2.4.1. Environmental impacts**

Option 2 includes some specific policy actions that would generate marginal, but important, improvements in environmental impacts (supporting GOs) compared to option 1, and significant improvements compared to the baseline.

With regards to enforcement (sanctions systems), option 2 includes four additional actions over those in option 1 that would considerably improve consistency in approach to infringement follow-up and sanctions (supporting SO1). The requirement to treat infringements of the CFP under administrative law, and the setting of common rules on the levels of sanctions (based on the definition of concepts such as 'economic benefit from the infringement' to ensure that sanctions better act as a deterrent), would further increase compliance with the control system compared to option 1, thus supporting additional positive environmental impacts on the stocks that the CFP requires to be sustainably exploited (*i.e.* support for the GOs).

With regards to EFCA, option 2 includes amendments to its founding Regulation, which would further support the GOs. Clarification of EFCA's objective regarding the CFP and its external dimension, and the extension of the geographical coverage for its inspections, would support positive environmental impacts by allowing EFCA to carry out inspections also in EU waters, in addition to international waters, and to coordinate among MS certain control schemes in RFMOs. The revision of rules for the adoption and participation to the Joint Deployment Plans, and provision for more flexible working arrangements to ease the participation of Third Countries under the coordination of EFCA, could also be expected to result in improvements in the control system and resulting positive environmental impacts.

The digitalisation of IUU Catch Certificates would make it harder for fishers to manipulate certificates and for any illegally caught fish to enter the supply chain. The improvements in traceability would also thus contribute to the EU's international obligations and efforts to reduce IUU fishing and overfishing and thus contribute to the GOs. These benefits would be felt both in third countries, and potentially in EU waters in cases where fish is caught in EU waters and exported from the EU for processing and later re-exported into the EU.

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<sup>77</sup> Labour costs, including social charges and 25% overheads are estimated at EUR 49,329/FTE based on Eurostat data on labour costs in average in the EU for administrative and support staff, and specific equipment is estimated at about EUR 5,700 per year per observer by Needle et al. (2015)

<sup>78</sup> At-sea patrol vessels are estimated to cost about EUR 8000/day (estimate provided by DG MARE) at sea and we assume 200 days at sea per vessel.

<sup>79</sup> Estimate provided by DG MARE

### **2.4.2. Economic impacts**

Economic impacts under option 2 (felt mostly by SMEs) would be largely consistent with those under option 1 because policy options 1 and 2 are identical in terms of the actions under the data and landing obligation areas. However, additional economic benefits would be expected from the improved environmental impacts under option 2 as discussed above, most notably from the four additional actions under the enforcement (sanctions systems) area, through the amendment of the IUU Regulation, and from the reinforced role of EFCA through the amendment of its founding Regulation. In addition, with the revision of its founding Regulation, EFCA should in future be able to carry out inspections with an extended geographical scope and not limited to international waters. This would allow a more effective control of fishing activities and a more rational use of Member States' control means.

Option 2 would support the GOs related to economic performance and competitiveness of the sector. While these additional actions would improve consistency in the approach to infringement follow-up and sanctions, quantifying the additional economic benefits from option 2 is not possible.

### **2.4.3. Social impacts**

Social impacts under option 2 would also be largely consistent with those under option 1 because policy options 1 and 2 are identical in terms of the actions under the data and landing obligation areas. However, additional social benefits would flow from the improved environmental impacts under option 2 as discussed above, most notably from the four additional actions under the enforcement (sanctions systems) area, and the clarified role of EFCA. As reported by stakeholders, EFCA involvement in fisheries control is considered as paramount in supporting a level playing field, with positive effects on the promotion of a culture of compliance.

The additional actions related to sanctions systems under option 2 would be especially beneficial in further supporting positive changes in the behaviour by fishers in the short-term to operate within a culture of compliance.

### **2.4.4. Administrative burden and other costs**

All administrative burden and other costs under option 1 would also apply under option 2, but some additional costs are also considered below based on the additional regulatory changes proposed under option 2.

The enhanced role of EFCA is not expected to bring about significant net cost changes, as it mostly addresses issues of governance, but would be specified as part of the EFCA's work programme. The only action under option 2 that would lead to an additional change of the administrative burden is the digitalisation of catch certificates and processing statements under the IUU policy area.

#### IUU Catch Certificates

Under the framework of the IUU regulation, the EU receives 200 000 paper catch certificates 25 000 paper processing statements per year. This has an administrative burden on Competent Authorities in the EU MS and in third countries, as well as on EU importers who must deliver these documents to the public authorities, and operators in third countries who have to complete the catch certificates and processing statements in hard copy.

IT tools for the digitalisation of catch certificates and processing statements are already being developed. IT development costs by the Commission have been estimated at EUR 915 000 (between 2017 and 2019). Based on DG SANTE's experience, additional running costs should be considered for IT support and maintenance. This would take place

regardless of the policy option chosen. However, option 2 would make the use of the electronic IUU-system mandatory, which would speed up the change from paper documents to electronic forms compared to the baseline.

### **Administrative burden for operators**

There are currently no estimates of the administrative costs on EU importers from the handling of these paper documents, so potential savings cannot be monetised.

### **Administrative burden for public authorities**

Savings for MS from not having to handle paper documents are estimated to reach about EUR 2.7 million per year<sup>80</sup> when all catch certificates are provided in electronic format.

The following table shows the savings that could result from option 2 if we consider that it would result in 100% catch certificates being electronic in two years instead of five years<sup>81</sup>.

**Table 8: Estimated savings from electronic IUU certificates for MS under option 2 (in EUR)**

	Year 1	Year 2	Year 3	Year 4	Year 5	5-Year savings
Baseline	-531,563	-1,063,125	-1,594,688	-2,126,250	-2,657,813	-7,973,438
Option 2	-1,328,906	-2,657,813	-2,657,813	-2,657,813	-2,657,813	-11,960,156
<b>Difference</b>	<b>-797,344</b>	<b>-1,594,688</b>	<b>-1,063,125</b>	<b>-531,563</b>	<b>0</b>	<b>-3,986,719</b>

No other direct costs are foreseen under option 2 in addition to those calculated for option 1.

### **Simplification**

Simplification of reporting obligations under this option would encompass all the simplification and clarification of option 1.

In addition, harmonisation of the sanctions system and common definitions at EU level would also lead to simplification and clarification for both MS and the operators.

The digitisation of IUU catch certificates would simplify procedures for both MS and the operators.

Finally, the revision of the EFCA founding Regulation would clarify the respective roles of EFCA and of the Commission in the implementation and enforcement of the CR.

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<sup>80</sup> As a rough estimate, it can be assumed that it would save about 30 min per document for the Competent Authorities and labour costs, including social charges and 25% overheads are estimated at EUR 49,329/FTE based on Eurostat data on labour costs in average in the EU for administrative and support staff.

<sup>81</sup> Historic data from TRACES show that TRACES reached about 600 000 documents processed in only two years, so it seems reasonable to assume a good up-take even in the baseline scenario.

### 3. HOW DO THE DIFFERENT OPTIONS COMPARE?

#### 3.1. Introduction

In comparing the options, information is presented to allow policymakers to make a choice, but also to identify the preferred option. The options are compared objectively using multi-criteria analysis (MCA) for their:

- Effectiveness—the extent to which different options would achieve the objectives;
- Efficiency—the environmental, social and economic benefits versus the costs;
- Coherence—the coherence of each option with the objectives of EU policies;
- Acceptability—in terms of stakeholder support and proportionality; and
- Action on the recommendations of relevant EU institutions.

Options 1 and 2 are compared against the baseline with options compared by scoring criteria using the scale shown below (see Table 9).

**Table 9: MCA scoring system**

Performance score	Legend
0	Does not improve and/or worsens the situation compared to the baseline scenario
1	Small improvements compared to the baseline scenario
2	Moderate improvements compared to the baseline scenario
3	Large improvements compared to the baseline scenario
4	Very large improvements compared to the baseline scenario

#### 3.2. Effectiveness

Effectiveness<sup>82</sup> considers how successful EU action<sup>82</sup> would be in achieving or progressing towards the objectives.

The evaluation of the CR<sup>83</sup> considered its effectiveness. It found that the CR is effective in introducing a framework for control, inspection and enforcement, which contributes to the achievement of its objectives. However, full effectiveness is not achieved, and the evaluation identified a range of problems associated with the effectiveness of the existing regulatory framework for the FCS, and its implementation. The resulting problem definition for this IA, based in part on evaluation of the CR, led to the articulation of General Objectives (GOs) and four Specific Objectives (SOs) of amending the regulatory framework as follows, which seek to correct and increase the effectiveness of regulations.

- GOs as per the CFP *i.e.*
  - To ensure that fishing and aquaculture activities are environmentally sustainable in the long term and are managed in a way that is consistent to achieve economic, social and employment benefits;
  - To bring exploitation of living marine biological resources at MSY levels at the latest by 2020 for all stocks;
  - To contribute to the collection of scientific data; and

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<sup>82</sup> [https://ec.europa.eu/info/sites/info/files/file\\_import/better-regulation-toolbox-47\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-47_en_0.pdf)

<sup>83</sup> European Commission 2016a, 2016b

- To eliminate discards; provide conditions for economically viable and competitive fishing capture industry; provide for measures to adjust the fishing capacity of the fleets to levels of fishing opportunities; contribute to an efficient and transparent internal market for fisheries and aquaculture products and contribute to ensuring a level-playing field for fisheries and aquaculture products marketed in the Union; promote coastal fishing activities; be coherent with the Union environmental legislation and other Union policies.
- SO1: To remove obstacles that hinder equitable treatment of operators within and across Member States.
- SO2: To simplify and reduce unnecessary administrative burden.
- SO3: To improve availability, reliability and completeness of fisheries data and information, in particular of catch data, which are key to monitor and deliver on the CFP objectives, and allow exchange and sharing of information.
- SO4: To bridge the gap with the CFP.

The effectiveness of the fully enforced baseline and policy option 1 and 2 in meeting these objectives is compared in the table below (Table 10). The table, and its scoring, has been completed, and is justified, based on the assessment of impacts presented in Section 2 which articulated how different impacts of the two options contributed to the GOs and individual SOs. The table includes references to the stakeholders impacted.

**Table 10: Comparison of the effectiveness of the baseline, option 1 and option 2**

Criteria	Fully enforced baseline	Policy Option 1	Policy Option 2
	Performance score	Performance score	Performance score
SO1: Remove obstacles that hinder equitable treatment of operators within and across MS	1	3	4
	Some small improvements would result in the equitable treatment of operators and a more level playing field from ensuring that all MS fully implement existing regulations, which is presently not the case. At present, there is uneven adherence to all CR provisions by all MS (for example with regards to reporting of catches by under 12m vessels, sampling plans for engine verification, and exchange of data on inspections and infringements).	Immediate enforcement measures (or preventive measures) in case of serious infringements more uniformly applied for fishing operators. Equitable treatment of fishermen further supported through criteria to define the gravity of the infringements, maintaining the common list of points to be attributed for serious infringements, all MS using points in addition to main sanctions, and common/minimum rules for the masters' point system. Removal of exemptions (for example on monitoring and reporting of under 12m vessels and weighing, and the use of sampling plans in these cases), would also standardise implementation of FCS provisions between different vessel sizes. Type and level of traceability more evenly implemented through clarification of definition and provisions. All high-risk vessels equitably treated for control of the landing obligation with all using CCTV, rather than being subject to different levels and types of inspection.	As for option 1, however consistency in implementation of provisions on fishing operators further enhanced through: i) the introduction of the obligation to treat infringements of CFP under administrative law; ii) common rules on administrative sanctions for infringements; iii) definition of concepts such as 'economic benefit from the infringement' so that MS use consistent definitions; and iv) role of EFCA in an EU-wide system to exchange data on infringements and sanctions beyond JDPs supporting more consistent reporting. Removal of exemptions on third country imports/traceability would also further support this SO.
SO2: Simplify and reduce unnecessary administrative burden	0	3	4
	Potential increase in administrative burden for those MS not fully complying with existing provisions (e.g. on conducting sampling plans, control of the landing obligation, reporting on under 12m vessel catches). These increases in costs would be borne by both operators and public authorities. No simplification or reduction in any admin burden for operators or public authorities.	Removes different provisions for multiple vessel classes under CR (<10m, 10-12m, 12-15m,) through the removal of derogations and exemptions and a shift to two main classes (<12m and >12m). Definitions clarified on serious infringements, and traceability. Introduction of e-reporting for under 12m vessels so no requirement for sampling plans. Removal of exemption on weighing eradicates need for Commission-approved sampling plans. Promotion of the use of harmonised and/or interoperable IT tools, centralisation of databases. All the above reductions in administrative burden and simplification benefitting public authorities.	As for option 1, but additional simplification through the removal of derogations for products from third countries from application of the CR, and reduction in admin burden through digitalisation of IUU catch certificates.

<p>SO3: Improve availability, reliability and completeness of fisheries data and information, in particular of catch data, which are key to monitor and deliver on the CFP objectives, and allow exchange and sharing of information</p>	1	4	4
<p>SO4: Bridge the gap with the CFP (principally the landing obligation and regionalisation)</p>	2	3	4

Some very limited/small improvements in data would be realised for public authorities and EU institutions as a result of those MS that do not implement currently implement all provisions on data provision and exchange, doing so.

Quality of catch data improved very significantly through electronic reporting and requirement for 100% coverage for under 12m vessels.  
 Significant improvements in catch data for recreational fisheries.  
 Quantity of each species landed correctly accounted for by weighing.  
 Accurate data on engine power for larger vessels.  
 New data exchange requirements/arrangements would significantly improve the quality of control data by ensuring it is more complete and subject to validation, through harmonised and/or interoperable IT tools and centralisation of databases.  
 All the above would benefit ACs, MS public authorities, and the Commission and support production of more accurate scientific advice on which management measures should be based according to the CFP.

No actions under option 2 to further improve quality of data compared to those in option 1.

Moderate improvements would be realised from control of the landing obligation, but improvements would be delayed due to possible inaction by MS and the potential need for lengthy infringement processes against MS by the Commission.

While the text of the Control Regulation was partially amended in 2015 through the Omnibus regulation, the alignment did not introduce new provisions, tools and methods enabling the Member States to properly control and enforce new policy elements introduced by the reformed CFP. Option 1 provides for more effective control of the landing obligation through CCTV (based on risk assessment) with CCTV having been shown to be more effective than at sea patrols/observers in controlling the landing obligation.  
 Improved data would allow for better data to be used in multiannual plans under regionalisation  
 Amendments related to recreational fisheries would also provide for regional action and delegated acts

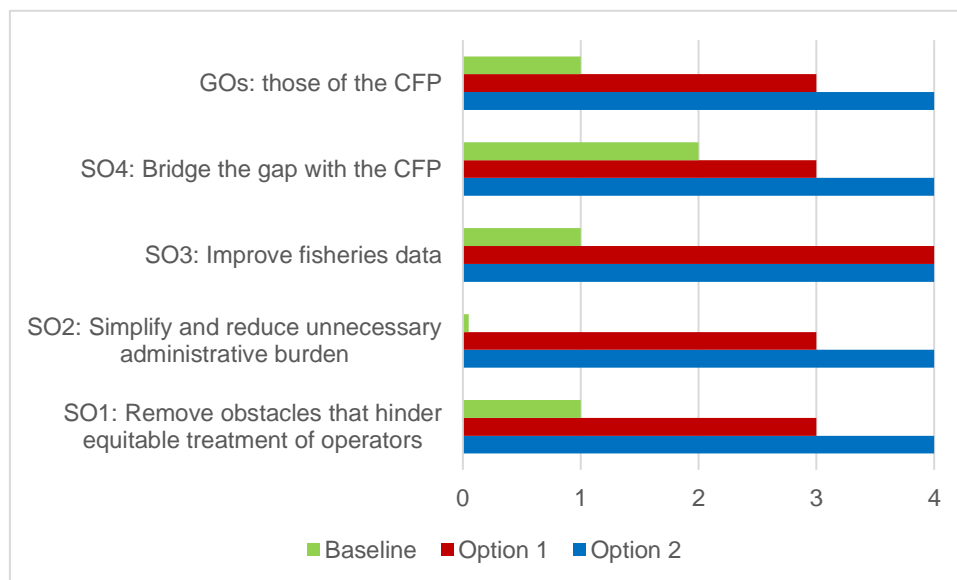
Clarification of EFCA's mission and tasks as regards external CFP policy, and amendment of rules for JDPs to increase effectiveness of JDPs and thus better support CFP sustainability objectives. Option 2 would address the fact that the EFCA Regulation was amended in 2016 but exclusively to align it to the new coastguard functions, and not to the reformed CFP. Thus, amendments could include specific references to control of the landing obligation and support for regionally agreed action. In addition, would allow for related amendments of specific provisions in relevant legislation (*i.e.* the Mediterranean Regulation and the Baltic Regulation)



GOs: those of the CFP	1	3	4
	<p>Some improvements (delayed) in control of the landing obligation would serve to reduce discards thus supporting CFP environmental objectives, and environmental benefits from improved fish stocks would create some limited economic and social benefits for operators, which would also support CFP objective.</p> <p>But the failure to address problems, in particular those with current sanctions systems and data needed for scientific assessments, might undermine the specified CFP objectives.</p>	<p>This option would create large improvements in the way that the FCS supports CFP objectives. Environmental impacts would be considerable, control of the landing obligation would be more effective (than the baseline), data would be improved supporting better scientific assessments, and positive environmental impacts (supporting CFP environmental objectives) would feed through in the medium- to longer-term to economic and social benefits for fishing (and processing) operators, thus supporting the CFP objectives related to economic and social sustainability and competitiveness. Synergies with other legislation would also be enhanced, supporting the CFP objective of coherence of the CFP with Union environmental legislation and other policies.</p>	<p>Same comments as above for SO4. But in addition, improved traceability, removal of exemptions related to third country imports, and additional actions on sanctions systems would all further support the environmental objectives of the CFP, contribute to ensuring a level-playing field for fisheries and aquaculture products marketed in the Union, and support longer-term economic and social performance in line with CFP objectives.</p>

The figure below (Figure 3) summarises the scoring of the different options against the effectiveness criteria. As the figure shows, both options make contributions to the GOs. Options 1 and 2 make contributions to all four SOs. Of more importance are the relative scores for the options. Option 1 brings about large improvements in the way that the FCS contributes to objectives. Option 2 brings about very large improvements in the way that the FCS contributes to both the SOs and the GOs, and out-performs option 2. Option 2 is the most effective as it better supports all SOs and the GOs than option 1 except for SO3 which is equally supported by options 1 and 2.

**Figure 3: Effectiveness of the baseline, and options 1 and 2**



Source: contractor's compilation

### **3.3. Efficiency: consideration of benefits and costs**

Efficiency (or cost effectiveness) considers the relationship between the resources used [*i.e.* costs] and the changes generated [*i.e.* benefits] (which may be positive or negative)<sup>84</sup>.

In considering benefits, case studies in Annex 3-5 show that considerable economic benefits can be realised through a fully enforced FCS (*i.e.* baseline). However, a failure to address the problems with the current regulatory environment (in terms of sanctions, data [resulting from exemptions], coherence with other policies, and EFCAs founding regulation), and the delayed control of the landing obligation, would mean that benefits from the fully enforced baseline would in all likely be limited, and would only occur in the longer-term.

Under option 1 a very wide range of environmental, economic and social benefits (primarily direct, but some indirect in the downstream processing sector) would be expected compared to option 2 because:

1. Many of the problems identified with the current regulatory environment would be addressed by the actions included.
2. The impacts from option 1 of the five main policy areas (enforcement (sanctions systems), data, etc.) on environmental, economic and social domains, would be significantly improved compared to the baseline as discussed in the assessment of impacts.

<sup>84</sup> [http://ec.europa.eu/smart-regulation/guidelines/docs/br\\_toolbox\\_en.pdf](http://ec.europa.eu/smart-regulation/guidelines/docs/br_toolbox_en.pdf)

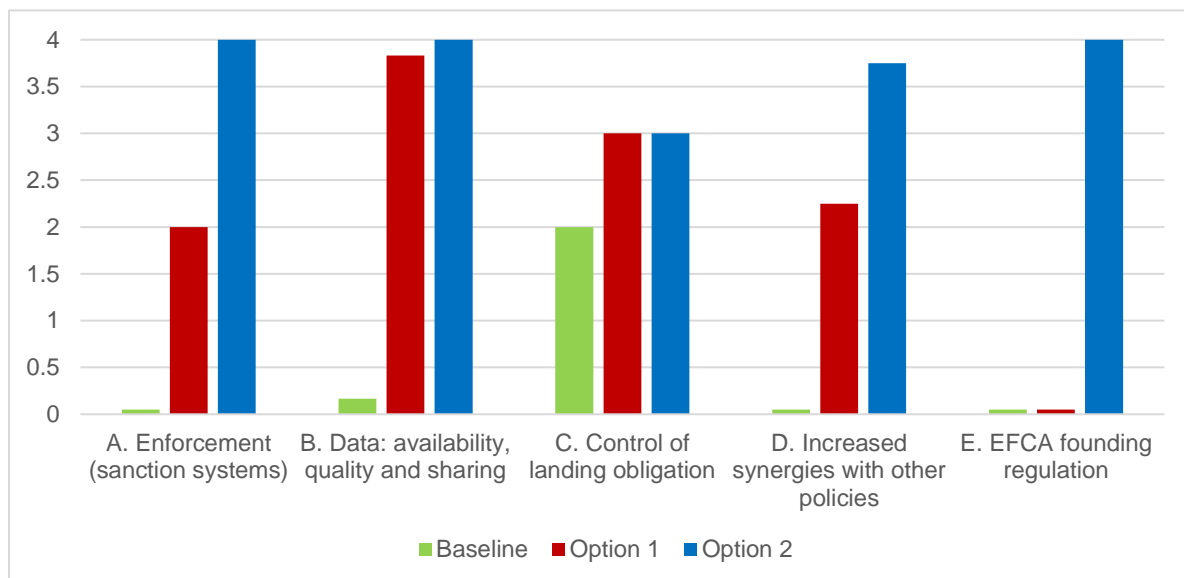
3. Case studies provide evidence of the positive impacts of improved control on environmental, economic and social indicators, that would be enabled under option 1, as discussed earlier and in the relevant Annexes.

These benefits (as discussed in Section 0 when assessing impacts) would mostly occur in the medium- to longer-term as improvements in environmental status resulted in improvements in economic and social performance. However, unlike the baseline, some benefits, such as changes in the behaviour of fishers and an improved culture of compliance, would take place immediately from the short-term onwards.

Under option 2, the benefits would be marginally increased through the additional actions included in the policy option related to enforcement (sanctions systems), synergies with other policies (especially improved traceability and the introduction of electronic catch certificates), and amendment of the EFCA founding regulation, which would support additional environmental, economic and social benefits as discussed in Section 2.4.

While it is not possible to quantify the benefits from the fully enforced baseline or options 1 and 2, at the level of the *aggregated policy option* and therefore to provide a direct quantitative comparison at the aggregated policy level, the extent of beneficial impacts from the amendments in the five main policy areas can be scored against a range of quantitative and qualitative indicators, to provide a quantitative basis for the comparison of the options for their benefits/impacts. This scoring, and its justification, is presented in detail in Annex 10, and summarised below in Figure 4. The figure shows that the benefits across the five policy areas (which link strongly with the SOs) vary for option 1 but are moderate on average, while option 2 brings about significant improvements in all five individual policy areas and on average across the policy area.

**Figure 4: Comparison of changes in the five main policy areas under the baseline, option 1 and 2**



Source: contractor’s compilation.

Note: Uses a range of quantitative and qualitative indicators as shown in Annex 10, and scores each indicator on the same basis as other criteria, with the average scores for all the indicators under each of the five areas shown above.

With regards to costs, these are summarised in the table below for those items that have been monetised (noting earlier text which highlighted several additional cost items that cannot be monetised).

Costs are shown for a 5-year period and include one-off ICT development costs and annualised costs.

**Table 11: Summary table of annual monetised administrative burden and other costs for the baseline, option 1 and 2 (EUR '000s) for 5 years**

	Fully enforced baseline				Policy Option 1				Policy Option 2			
	F-operators	MS	EU	Total	F-operators	MS	EU	Total	F-operators	MS	EU	Total
<b>Administrative burden</b>												
Reporting and tracking <12m vessels	90,320	71,034	0	161,354	107,339	-83,623	0	23,716	107,339	-83,623	0	23,716
Enforcement	0	0	0	0	0	-15,748	0	-15,748	0	-15,748	0	-15,748
IUU	0	0	0	0	0	0	0	0	0	-3,987	0	-3,987
Data management and sharing at EU level	0	4,600	2,000	6,600	0	-6,209	5,500	-709	0	-6,209	5,500	-709
<b>Total Administrative burden</b>	<b>90,320</b>	<b>75,634</b>	<b>2,000</b>	<b>167,954</b>	<b>107,339</b>	<b>-105,579</b>	<b>5,500</b>	<b>7,259</b>	<b>107,339</b>	<b>-109,566</b>	<b>5,500</b>	<b>3,273</b>
<b>Compliance costs</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Control of the landing obligation	0	0	0	0	0	7,200	0	7,200	0	7,200	0	7,200
Monitoring fishing capacity	0	0	0	0	5,111	-4,250	0	861	5,111	-4,250	0	861
<b>Total Compliance costs</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,111</b>	<b>2,950</b>	<b>0</b>	<b>8,061</b>	<b>5,111</b>	<b>2,950</b>	<b>0</b>	<b>8,061</b>
<b>Total direct costs monetised</b>	<b>90,320</b>	<b>75,634</b>	<b>2,000</b>	<b>167,954</b>	<b>112,450</b>	<b>-102,629</b>	<b>5,500</b>	<b>15,320</b>	<b>112,450</b>	<b>-106,616</b>	<b>5,500</b>	<b>11,334</b>

NB: The costs and savings for the different types of stakeholders come from different actions and do not imply transfers from one type of stakeholders to the other (e.g. dealing with paper reporting represents a cost for all operators while going from paper to reporting represent a savings for all types of operators). The differences in costs and savings mainly come from necessary investments (e.g. black boxes for operators and ICT tools for public authorities) and the fact that some operators who do not currently report would have to under the different policy options.

Under the fully enforced baseline, both fishing operators and MS would incur significant administrative costs from fully enforcing the existing regulatory framework, of EUR 90 million and EUR 76 million respectively over a five-year period. Those costs mainly come from the time that would have to be spent to handle paper reporting for small vessels. The European Commission would also incur one-off costs of EUR 2 million over the same period for ICT development. Under the fully enforced baseline there would also be a significant compliance cost related to the enforcement of the landing obligation although it cannot be monetised.

Under option 1 there would also be changes in costs. The most likely estimates of annual administrative burden would be annual costs to private sector commercial fishers of EUR 21.5 million (EUR 107 million over five years) as all vessels under 10m would have to report—but this cost would be mitigated using efficient and low-cost electronic reporting applications—, and annual cost savings for public authorities of around EUR 21 million (EUR 106 million over five years), as a result of the digitalisation of reporting obligations. Data management and sharing would cost about EUR 6 million to the EU (mostly in on-off ICT investments). Other annual costs in the form of 'compliance' costs would be EUR 1 million for commercial fishers (EUR 5 million over 5 years) related to the investment in black boxes for the monitoring of fishing capacity and about EUR 1.4 million in annual cost (EUR 7.2 million over 5 years) for MS to invest in CCTV/REM equipment. However, MS would save over EUR 1 million per year (EUR 4.3 million over 5 years) from the reduction of engine verifications to monitor fishing capacity. There would be additional savings under option 1 from the digitisation of the traceability documents, but these cannot be monetised.

Under option 2, additional cost changes would primarily reflect cost savings from the digitalisation of the IUU catch certificates, which are estimated at EUR 4 million over 5 years for public authorities in the EU, meaning the total administrative savings for MS would rise to EUR 110 million over five years. Indirect savings as an unintended consequence of the digitalisation of the IUU catch certificates would almost certainly arise for third countries, as they would choose to use electronic certificates and the existing TRACES system so as to be able to continue to export fish to the EU for import to MS, but these savings have not been quantified.

In comparing benefits against costs, while a comparison cannot be made in monetary terms to allow for a cost benefit analysis, when taken 'in the round', the comparison of benefits vs. costs for both options 1 and 2, costs would be 'proportionate' to the benefits achieved (especially considering cost savings), and cost effective with considerable benefits outweighing the relatively modest changes in costs. In addition, it is likely that there would be minimal costs on commercial operators which would not be eligible for support under a future EMFF post 2020, and thus affordable by them, while these private sector operators would be the recipient of environmental, economic and social benefits. MS public authorities would also benefit from cost savings under this option through simplification and inter-operability. The case studies also suggest that the benefits of an improved FCS can significantly outweigh costs: benefit/cost ratios estimated for the sole, BFT and hake case studies in Annexes 3-5 showed ratios of 3.7, 1.96, and 2.2 respectively over longer-term periods of 7 years when considering GVA benefits against the costs of control<sup>85</sup>.

Under option 2, the benefits would be marginally increased over those in option 1, with costs decreased, indicating increased efficiency (cost effectiveness) of option 2 over option 1.

Based on the above discussion, Table 12 below provides a score to compare the baseline, options 1 and 2 for the efficiency criterion.

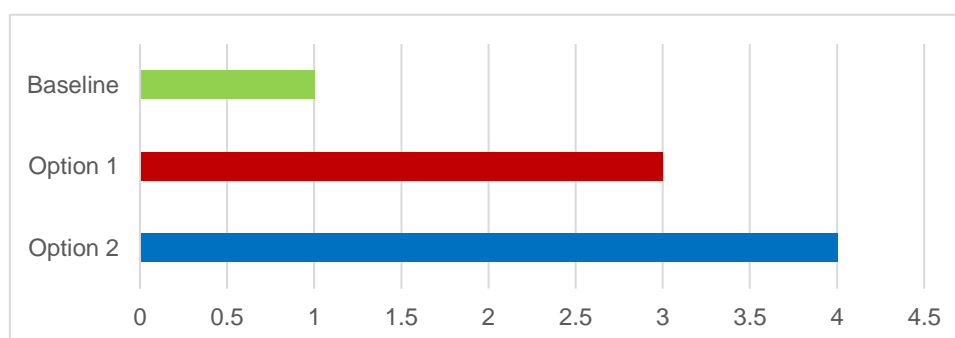
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<sup>85</sup> Note, control costs are those estimated by EFCA for JDPs.

**Table 12: Comparison of the efficiency of the baseline, options 1 and 2**

Criteria	Fully enforced baseline	Policy Option 1	Policy Option 2
	Performance score	Performance score	Performance score
Benefits vs. costs	1	3	4
	Some minor benefits, no cost savings, and some potential costs of full enforcement of existing regulations	Benefits expected to be significant and to outweigh costs	Some further marginal benefits over option 1 while at the same time some additional marginal reductions in costs

**Figure 5: Efficiency of the baseline and options 1 and 2**



Source: contractor's compilation

### 3.4. Coherence

The assessment of coherence involves looking at how well or not different actions work together<sup>86</sup>. The table below (Table 13) compares the options for their coherence with:

1. Relevant horizontal legislation–IUU Regulation<sup>87</sup>, EFCA founding regulation<sup>88</sup>, CMO<sup>89</sup>, food law;
2. Overarching EU policy in the form of environmental legislation and policy<sup>90</sup>, Europe 2020 (the EU's agenda for growth and jobs)<sup>91</sup>, simplification of EU acquis, the new European Interoperability Framework (EIF)<sup>92</sup>, the Plastics Strategy, the Ocean Governance agenda, and the Strategic partnership with the EU's outermost regions;

The objectives of the reformed CFP (*i.e.* the internal coherence reflecting the fact that the FCS is a tool supporting CFP objectives) *i.e.* stocks at MSY levels, the landing obligation, regionalisation of the decision-making process and multi-annual plans.

<sup>86</sup> [https://ec.europa.eu/info/sites/info/files/file\\_import/better-regulation-toolbox-47\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-47_en_0.pdf)

<sup>87</sup> Council Regulation (EC) No 1005/2008, OJ L 268, 29.10.2008, p.1

<sup>88</sup> Council Regulation (EC) No 768/2005, OJ L 128, 21.5.2005, p.1.

<sup>89</sup> Regulation (EU) 1379/2013 on the Common Organisation of the Markets of Fishery and Aquaculture Products (CMO)

<sup>90</sup> Natura 2000 ([http://ec.europa.eu/environment/nature/natura2000/index\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/index_en.htm)), the the Joint Communication on Ocean Governance (JOIN(2016) 49 final), and the European Strategy for Plastics in a Circular Economy (COM(2018) 28 final 16.01.2018)

<sup>91</sup> [https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy\\_en](https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy_en)

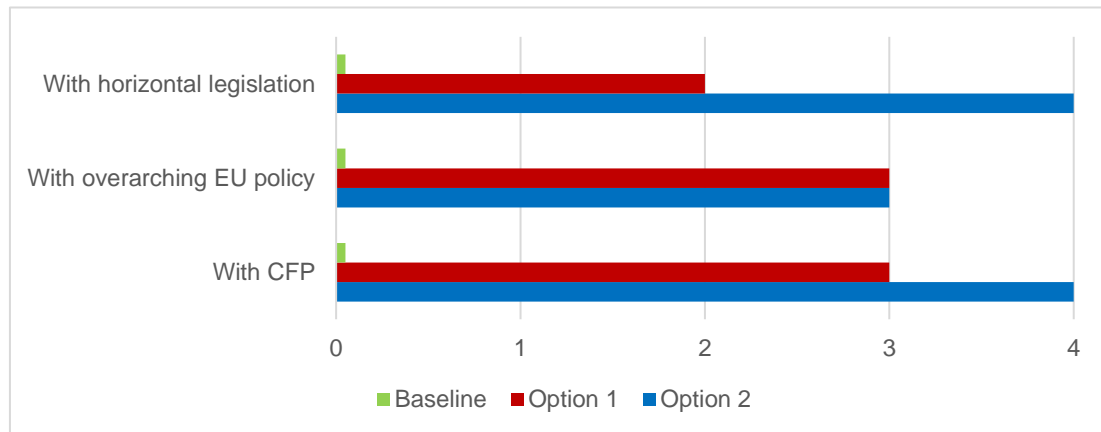
<sup>92</sup> [https://ec.europa.eu/isa2/eif\\_en](https://ec.europa.eu/isa2/eif_en). The new European Interoperability Framework (EIF) is part of the Communication (COM(2017)134) from the European Commission adopted on 23 March 2017

**Table 13: Comparison of the coherence of the baseline, options 1 and 2**

Criteria	Fully enforced baseline	Policy Option 1	Policy Option 2
	Performance score	Performance score	Performance score
Coherence with horizontal legislation: IUU regulation, EFCA found regulation, CMO, food and feed legislation	0	2	4
	No improvements in coherence as no regulatory amendments.	Option would create some improvements in market control in relation to traceability, enhancing coherence with the CMO. It would also increase coherence with food and feed law through alignment of terminology and principles in the CR with the food law, and minimum cooperation rules and procedures between Member States and definition of responsibilities of the food chain operators using the same register as under food and feed law. It would not however increase coherence with the IUU regulation, or with the EFCA founding regulation.	Additional coherence of CR with the CMO and IUU regulation through digitalisation of IUU catch certificates, and improved coherence between CR and EFCA founding regulation with amendments to the latter.
Coherence with overarching EU policy: environmental legislation, Europe 2020, simplification of EU acquis, plastics strategy, ocean governance agenda, and the European Interoperability Framework	0	3	3
	No improvements in coherence as no regulatory amendments.	<p><u>Natural 2000</u>: increased coherence with Natura 2020 by expanding remit of CR to ensure fisheries control in marine protected areas</p> <p><u>Europe 2020</u>: option 1 supports Europe 2020 objectives of smart growth through low cost technological solutions for tracking and reporting of &lt;12m fleet, of sustainable growth through the benefits profiled in assessing impacts as discussed earlier, and inclusive growth through more uniform and greater coverage of control resulting in benefits in geographical areas (e.g. Mediterranean) where benefits are currently lower than in other areas. The option would not however contribute directly to any of the Europe 2020 targets (employment, R&amp;D, climate change and energy, education, poverty and social exclusion).</p> <p><u>Plastics strategy</u>: simplified and more effective and digitised system for the reporting of lost fishing gear</p> <p><u>Simplification</u>: Same comment as in Table 10 on effectiveness when considering simplification (SO2).</p> <p><u>European Interoperability Framework</u>: exchange of data and digitalisation (e.g. electronic reporting of catches, electronic catch certificates, traceability from 'net to plate', and the use of TRACES) would be coherent with the EIF to improve the quality of European public services and will create an environment where public administrations can collaborate digitally. Interactions between administrations would be supported, as would interactions between administrations and businesses (in line with the framework). Many of the EIF principles and 47 recommendations would be supported.</p>	Same as for option 1, but would bring about some additional coherence with the EIF and the international ocean governance agenda through the electronic catch certificates introduced ( <i>i.e.</i> supporting interoperability through digitalisation).
Coherence with the CFP	0	3	4
	No improvements in coherence as no regulatory amendments.	Same comment as in Table 10 on effectiveness when considering bridging the gap with the CFP.	Same comment as in Table 10 on effectiveness when considering bridging the gap with the CFP.

The figure below (Figure 6) shows that both options 1 and 2 support improved coherence. However, option 2 performs better than option 1 due mainly to the greater coherence with other horizontal legislation—not surprisingly given that this option includes amendments to two other pieces of horizontal legislation in addition to the amendments to the CR under both options.

**Figure 6: Coherence of the baseline and options 1 and 2**



Source: contractor's compilation

### **3.5. Acceptability**

The policy options are compared for their acceptability, both in terms of stakeholder support and proportionality.

#### **Stakeholders' views**

The result of stakeholders' views on the policy options, as provided to the European Commission, is presented in the Commission's IA. All stakeholders, including the Member States, the Advisory Councils, the fishing sector, the processing sectors and NGOs stated that a revision of the current legislative framework is necessary. When asked for the preference between the baseline and the two policy options, most of them agreed that an amendment of the Fisheries Control System, encompassing the revision of the Control Regulation, of the IUU Regulation (regarding the sanctioning system and IUU catch certificate only) and of the EFCA Regulation (option 2) was preferable to the amendment of solely the Control Regulation (option 1). The stakeholders' specific views on each of the proposed actions for the five different thematic areas are reported in Annex 2 of the Commission's IA.

#### **Proportionality**

The options also need to be considered for their proportionality, not just their relative and positive changes compared to the baseline. Of particular importance is the proportionality under both options 1 and 2 of including amendments related to: i) the under 12m fleet, given that catches represent a relatively small proportion of the total value of EU catches, and that the Council of the European Union underlined the need to find a balance between the benefits of monitoring and evaluation of small-scale vessels and the costs and administrative burden related to it<sup>93</sup>; and ii) the recreational sector, given the very large number of recreational fishers that would be impacted and some concerns as expressed by stakeholders over the inclusion of recreational fisheries in the amendments<sup>94</sup>.

<sup>93</sup> Council of the European Union, 2017

<sup>94</sup> For example, as discussed at the workshop between the Commission and MS control experts in Brussels, 6 November 2017



Both options 1 and 2 may be considered proportional in terms of the specific actions they include when considering that one of the specific objectives of the amendments as articulated is to improve the quality of fisheries data. The current poor quality and partial nature of data from both the under 12m fleet segments and recreational fisheries, which is required for robust scientific assessment of the status of stocks, seriously compromises not just the achievement of the specific objective to improve the quality of fisheries data, but also of the CFP sustainability objectives more generally. As has been demonstrated in earlier text when assessing impacts, the benefits of improvements in the quality of data would be significant, and these benefits would likely be realised most strongly in the Mediterranean, where current environmental and economic performance is especially poor compared to other sea basins, and where there is an especially high predominance of under 12m vessels, *i.e.* where the need for improvements is the greatest. In addition, the argument does not seem compelling that provisions for recreational fisheries should not be included in regulatory amendments because the current extent of recreational catches is so poorly known. Therefore, more studies should be completed on recreational catches before amendments to the regulatory framework are made. Rather, the current poor data on recreational catches lends weight to the argument that urgent action is needed at regional level to improve data from recreational fishers, especially when the few data sets and reports that are available clearly indicate the very significant impacts that recreational fishers could potentially be having on stocks.

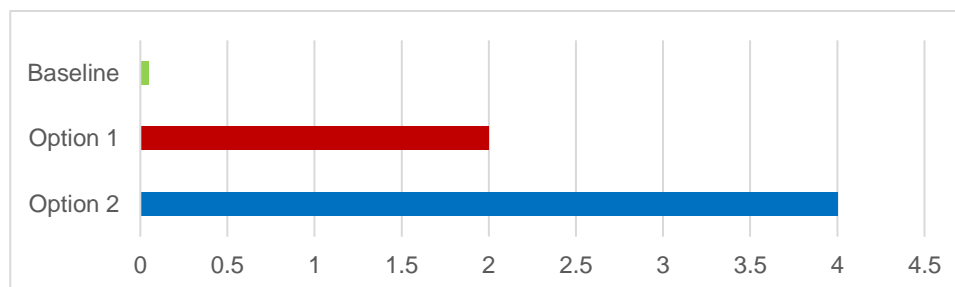
Both options 1 and 2 also appear proportional in terms of addressing aspects that MS have not proven to be able to achieve to date. For example, amendments proposed for the sanctions systems would address the failure by some MS to generate a strong culture of compliance through the setting and implementation of sanctions for serious infringements that act as a deterrent, while the new data exchange arrangements would address the failure by MS to share and provide access to control-related data as they are required to do.

Content and actions of both options 1 and 2 would serve to address all current problems identified, without going beyond the issues of the problem statement.

**Table 14: Comparison of the acceptability of the baseline, options 1 and 2**

Criteria	Fully enforced baseline	Policy Option 1	Policy Option 2
	Performance score	Performance score	Performance score
Acceptability	0	2	4
	Not supported by stakeholders at all	Proportional but very little stakeholder support	Proportional and very high levels of stakeholder support

**Figure 7: Acceptability of baseline, options 1 and 2**



Source: contractor's compilation

### **3.6. Action on the recommendations of relevant EU institutions**

This criterion to compare options is additional to those suggested in the Better Regulation Guidelines (effectiveness, efficiency, and coherence) and acceptability considered above.

The proposed amendments to the CR (option 1) and the FCS (option 2) are compared in Table 15 for the extent to which they act on the recommendations and suggestions made by:

- The European Court of Auditors (with actions on the recommendations being mandatory)<sup>95</sup>;
- The European Parliament<sup>96</sup>;
- The EFCA Administrative Board<sup>97</sup>;
- Council of the European Union<sup>98</sup>; and
- The Commission's Regulatory Fitness and Performance (REFIT) exercise<sup>99</sup>.

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<sup>95</sup> ECA, 2017

<sup>96</sup> European Parliament, 2016

<sup>97</sup> EFCA, 2017c

<sup>98</sup> Council of the European Union, 2017

<sup>99</sup> European Commission 2017c, 2017d

**Table 15: Comparison of the action on recommendations of relevant EU institutions in the baseline and options 1 and 2**

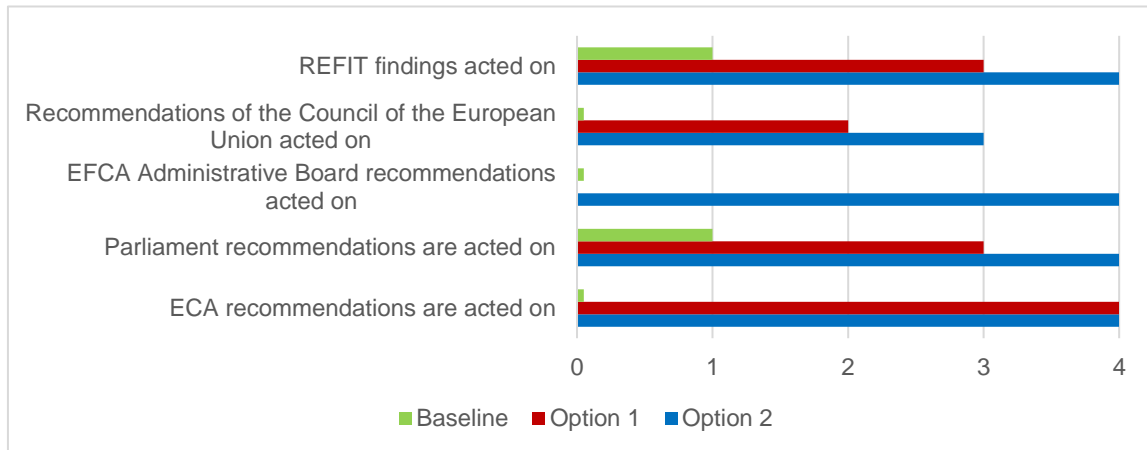
Criteria	Fully enforced baseline	Policy Option 1	Policy Option 2
	Performance score	Performance score	Performance score
	0	4	4
Recommendations of the ECA are acted on	Would not respond to any of the four ECA recommendations	Includes action on all four of the ECA recommendations related to the CR: i) improving the reliability of information on fishing fleets (through monitoring of engine power); ii) improving the monitoring of fisheries management measures (through removal of VMS exemptions and use of localisation systems on <12m vessels); iii) improving the reliability of fisheries data (through reliable data on the under 10m sector, an EU data exchange, removal of e-reporting exemptions); iv) improving inspections and sanctions (through use of the Electronic Inspection Report System, fully implement the point systems and ensure its consistent application, a system to exchange data on infringements and sanctions).	As for option 1
	1	3	4
Recommendations of the Parliament are acted on	Some limited action in terms of better enforcing existing regulations, and control of the landing obligation and exchange of data as already required by the CR	Many of the long list of proposals for improvement relate to the <i>processes</i> for improvements (e.g. consultation) and more effective control <i>in general</i> rather than specific amendments to the regulatory framework needed, but through regulatory amendments option 1 addresses: i) simplification and improvement of Union legislation focusing primarily on better implementation of norms between different Member States and greater harmonisation; ii) a more equal footing as regards controls on fishermen, simpler more comprehensive and consistent rules on control; iii) control and assessment of the effectiveness of the implementation of the landing obligation; iv) cooperation to exchange data and support interoperability of control systems; v) standardisation of sanctions; vi) increased use of electronic reporting and electronic monitoring systems; vii) and controls on recreational fishing; viii) EU-wide data exchange system; and ix) making information available from MS on infringements and sanctions Option 1 is however not in line with the opposition of the Parliament to mandatory video surveillance system on board.	As for option 1, but option 2 further: i) includes additional amendments to the CR to strengthen consistency through the additional actions on sanctions systems and a harmonised minimum-level penalty applicable to serious infringements; ii) makes changes in the IUU regulation to improve controls to prevent the importation of fish from illegal, unreported and unregulated fisheries, advocated by the Parliament; iii) through the amendment of EFCA's founding regulation supports suggestions by the Parliament on strengthening the role of EFCA.

Assessment of the impacts of the policy options proposed for  
the Amendment of the Fishery Control System (SC1) – Final Report

Criteria	Fully enforced baseline	Policy Option 1	Policy Option 2
	Performance score	Performance score	Performance score
Recommendations of the EFCA Administrative Board are acted on	0	0	4
	Neither of baseline or option 1 would provide for any of the Board's recommendations with regards to: i) amendment of Regulation (EC) No. 768/2005 and its amendment to align EFCA's mission and tasks with recent and possible future developments in the CFP; ii) EFCA working practices (e.g. extension of JDPs in wider contexts, EFCA's involvement in the international dimension, and functioning of the Administrative Board).		Subject to the detailed amendments and changes proposed, option 2 would potentially provide for full alignment and implementation of the EFCA Board recommendations.
	0	2	3
Recommendations of the Council of the European Union acted on	No action on any of the Council recommendations	Acts on: i) the importance as noted by the Council of having reliable information on the fishing capacity in the Union fleet register; and ii) encouragement by the Council for electronic reporting to achieve control and compliance objectives. Option 1 consistent with the opportunities highlighted by the Council for improvement through reliable catch reporting, simplification, and the use of new technologies. As demonstrated by the assessment of administrative burden, option 1 reflects the opportunities noted by the Council for minimizing administrative burden (through e-reporting, monitoring of engine capacity, and the use of CCTV), although there would be an administrative burden from the provisions relating to recreational fisheries (to be compared against the benefits). Option 1 however runs counter to the observation by the Council that different sanction practices are due to divergences in national legal systems and legal traditions and that the establishment of sanctions is exclusively Member States' competence (even though the Council also encouraged a level playing field).	As for option 1, but administrative burden reduced in option 2 compared to option 1 through digitalisation of IUU catch certificates
	1	3	4
Findings of the Commission's REFIT exercise are acted on	Only very limited action to support level playing field, and a culture of compliance through control of landing obligation and some improved data exchange. But no simplification or reduction in administrative burden	Includes action on all the major findings of the REFIT exercise aimed at ensuring a level playing field, a culture of compliance, simplification and reduction in administrative burden, by addressing current deficiencies and potential for improvements in provisions of the Control Regulation relating to: sanctions and point system, follow up of infringements, data exchange and sharing between Member States, traceability, control of weighing practices, monitoring and catch reporting tools for vessels below 12 meters.	As for option 1, but additional actions on sanctions systems, removal of derogations for some information on imported products available in the catch certificate, and digitalisation of IUU catch certificates, provide greater and more complete action on findings.

The figure below summarises the scoring of the different options in terms of the criterion of how well they serve to act on the recommendations of EU institutions. As the figure shows, both options 1 and 2 perform well in acting on these recommendations. However, option 2 out-performs option 1 quite significantly, largely due to failure of option 1 to address the recommendations of the EFCA Administrative Board. It should also be noted that while the scoring is not weighted, acting on the ECA recommendations is the most important as those recommendations are binding/mandatory, and both options 1 and 2 serve to comply with the ECA recommendations.

**Figure 8: Comparison of action on the recommendations of EU institutions in the baseline, options 1 and 2**



Source: contractor's compilation

### **3.7. Conclusion – the preferred option**

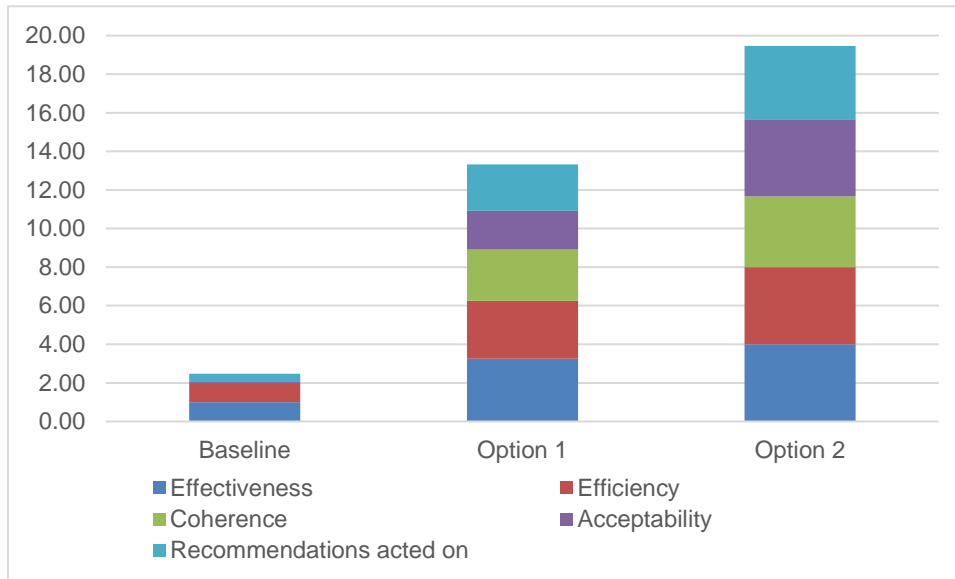
A summary of the average scores presented above for the criteria (effectiveness, efficiency, coherence, acceptability, and action on recommendations) is presented in Figure 9 overleaf (with a summary of the numeric scores provided in Annex 12).

The fully enforced baseline brings about little change compared to the current situation. Both options 1 and 2 perform well against the baseline, with 13.3 and 19.5 points respectively, and show improvements against the baseline for all five criteria.

Option 2 shows markedly better performance overall compared to option 1, across all five criteria. The analysis completed suggests that option 2 is the preferred option. Option 2 would best:

- Ensure coherence with the reformed CFP;
- Modernise and ensure a compliant future-proof control system;
- Simplify the legislative framework and decrease unnecessary administrative burden;
- Increase the culture of compliance with the CFP;
- Ensure equal treatment of operators;
- Improve quality, exchange and sharing of fisheries data;
- Improve data for stock assessment;
- Increase synergies with other policies;
- Increase competitiveness of the European industry;
- Result in positive revenues to the EU economy from investments made in control;
- Increase creation of new jobs in information technology;
- Result in faster improvement of the status of the stocks and thus in increased profitability of the vessels concerned and the wages of fishers.

**Figure 9: Summary comparison scores across all criteria in the multi-criteria analysis**



Source: contractor's compilation

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## ANNEX 2 - METHODOLOGY

### Risk Assessment

The risk assessment presented below (Table 16) identifies risks to the successful completion of the assignment, and informed the overall methodology for the assignment. For each risk identified, assessment was made of their likelihood and impact, and mitigating strategies articulated.

**Table 16: Assignment risk assessment**

Risk	Assessment	Mitigating strategies
<p><b>Unforeseen delays/changes in the (final) definition of the problem and/or policy options</b></p>	<p><b>Likelihood:</b> Low/Medium</p> <p><b>Impact:</b> High</p> <p>Delays or changes in the (final) problem definition and/or content of policy options may require amendments to the methodology (including to the indicators/variables for the assessment of impacts). Late finalisation of the content of the options would have a serious impact on the contractors' ability to deliver the desired results within the limited project timeframe.</p>	<p>Countermeasures:</p> <ul style="list-style-type: none"> <li>• Maintain regular updates and briefings with client on progress in their discussions with stakeholders which may have an impact on the content of policy options</li> </ul> <p>Contingencies:</p> <ul style="list-style-type: none"> <li>• Analyse the impact of delays / changes on the methodology and timescales and inform the client</li> <li>• Client to ensure timely finalisation and communication of the options</li> </ul>
<p><b>Incomplete/limited data sources available for assessing costs and benefits of the different policy options</b></p>	<p><b>Likelihood:</b> Medium</p> <p><b>Impact:</b> Medium</p> <p>Incomplete/limited data would affect the analysis of impact of policy options.</p>	<p>Countermeasures:</p> <ul style="list-style-type: none"> <li>• Request cost and benefit data sources from Commission early and examine the extent and quality of data available</li> <li>• Identify data gaps/inconstancies and delineate ways of addressing them during data collection from existing sources</li> </ul> <p>Contingencies:</p> <ul style="list-style-type: none"> <li>• Discuss with client the impact of having limited data, and review the methodology design accordingly</li> </ul>
<p><b>Difficulty in quantifying/monetising costs and benefits of policy options</b></p>	<p><b>Likelihood:</b> High</p> <p><b>Impact:</b> High</p> <p>Data available may not allow the robust quantification of (all/some) impacts</p>	<p>Countermeasures:</p> <ul style="list-style-type: none"> <li>• Based on the assessment of data available (see above), determine the level of quantification that may be possible for the different costs and benefits identified for each policy option and set expectations with client</li> </ul> <p>Contingencies:</p> <ul style="list-style-type: none"> <li>• If limited/no quantification/monetisation is possible for certain costs/benefits, work to find creative solutions (e.g. estimate based on past/other research), and complement quantitative analysis with qualitative assessment</li> </ul>

Risk	Assessment	Mitigating strategies
<b>Difficulty in attributing benefits to regulatory changes in the control framework</b>	<p><b>Likelihood:</b> High</p> <p><b>Impact:</b> High</p> <p>Improvements in environmental, economic and social domains will be impacted not just by regulatory changes proposed in policy options, but by conservation policy and structural funds</p>	<p>Countermeasures:</p> <ul style="list-style-type: none"> <li>Case studies to benchmark improvements covered/not covered by JPDs and assessment of importance of conservation measures</li> </ul> <p>Contingencies:</p> <ul style="list-style-type: none"> <li>If attribution not possible, assessment of impacts to acknowledge that regulatory changes contributing to benefits and not the sole cause</li> </ul>
<b>Estimates of time and resources needed internally to complete tasks within the expected timeframe not adequately assessed</b>	<p><b>Likelihood:</b> Low</p> <p><b>Impact:</b> Medium</p> <p>Work plan and allocation of resources proves inadequate to meet the deadlines set by the client and the assessment of impacts is delayed or remains limited/incomplete.</p>	<p>Countermeasures:</p> <ul style="list-style-type: none"> <li>Agree detailed timetable at start of assignment - and revisit at regular intervals throughout the duration of the contract (i.e. progress reports)</li> <li>Diligent planning and effective project management by Team Leader. Frequently revised work plan, budget tracking and risk management</li> <li>Maintain regular interaction with client on the progress of the assignment and assumed rapid response to queries by client</li> </ul> <p>Contingencies:</p> <ul style="list-style-type: none"> <li>Inform client of any foreseen delays early and discuss effect on assignment process and reporting</li> <li>Draw on additional staff if needed</li> </ul>
<b>Limited time/budget for the assignment</b>	<p><b>Likelihood:</b> High</p> <p><b>Impact:</b> Medium</p> <p>Time and budget available preclude any primary data collection and stakeholder consultations</p>	<p>Countermeasures:</p> <ul style="list-style-type: none"> <li>Creative use of wide range of secondary data/literature as identified by contractors and with sources provided by client</li> </ul> <p>Contingencies:</p> <ul style="list-style-type: none"> <li>Participation in MS and sector stakeholder meetings organised by client on 6 and 16 November to collect views/perceptions on the impacts of policy options</li> </ul>

### **Methodology for assessing impacts**

#### General approach

Impacts were assessed for two policy options along with the fully enforced baseline:

- Policy option 1: Amendment of the Fisheries Control Regulation (CR)
- Policy option 2: Amendment of the Fisheries Control System (FCS)

Within the policy options there were five key areas as follows: i) enforcement rules (sanctions systems); ii) data: quality, availability and sharing; iii) control of the landing obligation; iv) increased synergies with other policies; and v) the EFCA Founding Regulation. A range of technical sub-options were discarded by the Commission, in line

with the Better Regulation Guidelines for Impact Assessment<sup>100</sup>, but included in the Commission's IA for the sake of transparency. The specification of policy options 1 and 2 thus included the list of actions as provided in Annex 13 of this report under one or more of the five key areas, which were assessed for impacts. The assessment of impacts did not cover the range of technical sub-options discarded by the Commission.

The methodology for assessing impacts took as its starting point the need to:

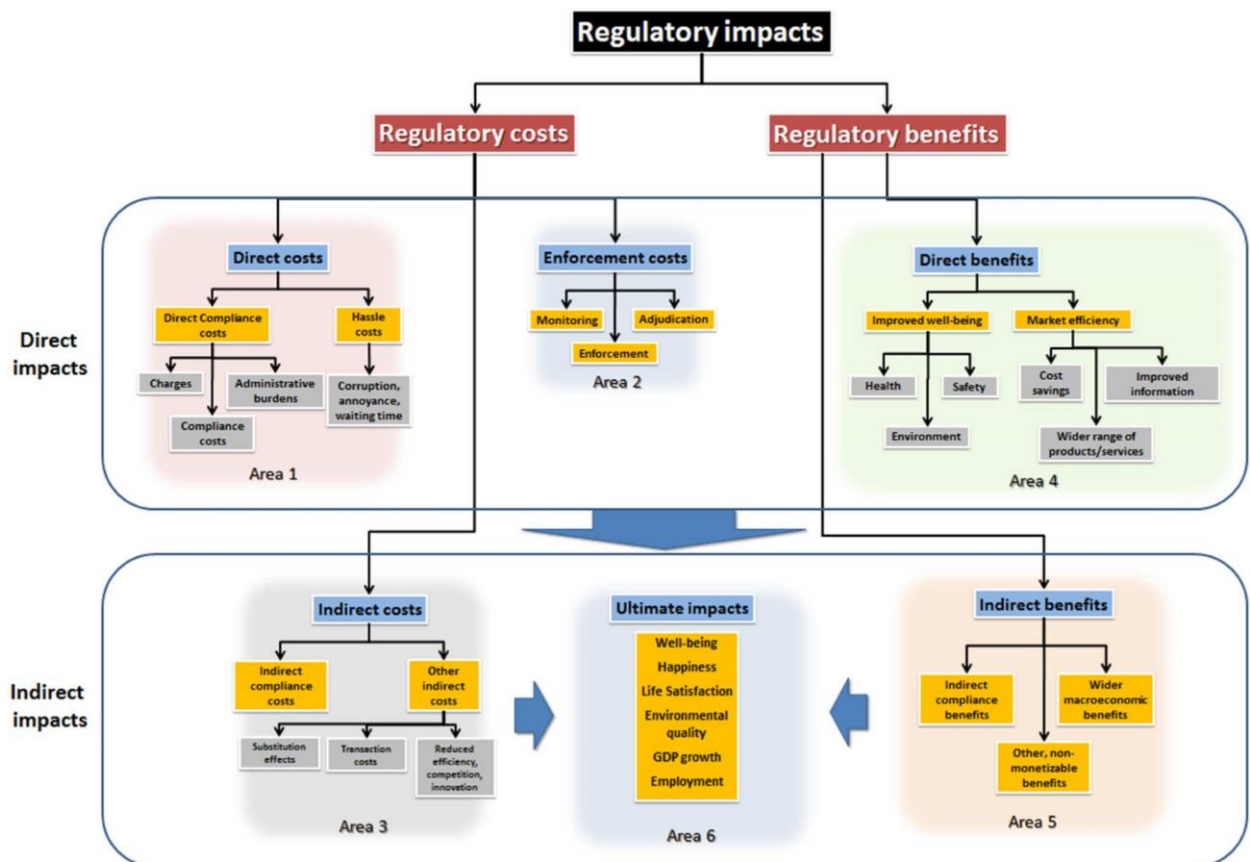
- Understand the differences between the baseline, and the content and actions included as part of the options for which impacts were to be assessed. This recognised that option 1 would only be concerned an amendment of the CR without amendments of the IUU Regulation and of the EFCA founding regulation, while option 2 would involve amendment of all three core regulations;
- Consider economic, social and environmental impacts, as well as the impacts in terms of simplification and administrative burden and other costs;
- Use the conceptual framework for assessing impacts (costs and benefits, both direct and indirect) as articulated in the Better Regulation Toolbox #58<sup>101</sup> and shown in Figure 10 below;
- Determine who would be affected by the impacts with specific consideration of impacts on SMEs; and
- Quantify (and monetise) impacts wherever possible, but also use qualitative analysis.

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<sup>100</sup> Page 21 and 22 of: <https://ec.europa.eu/info/sites/info/files/better-regulation-guidelines-impact-assessment.pdf>

<sup>101</sup> [https://ec.europa.eu/info/sites/info/files/file\\_import/better-regulation-toolbox-58\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-58_en_0.pdf)

Figure 10: Impacts, Costs and Benefits from Regulatory Proposals



Source: Better Regulation Toolbox #58

The assessment recognised that impacts:

- Would be felt principally by: a) businesses directly concerned by the EU control policy (vessels owners, and crew, processors, transporters - typically SMEs); b) public administrations in charge of the implementation of the EU control policy (the Commission, Member State Authorities, EFCA<sup>102</sup>); c) consumers (of fish); and d) parties having an interest in the EU control policy (civil society with interest in environmental protection);
- Are easily monetised for some actions contained in the policy options, but not for others;
- May result in costs (or savings) that are either one-off or recurrent;
- May arise immediately following amendments to the CR, the EFCA founding Regulation and the IUU Regulation depending on the options (e.g. some types of direct costs), or be felt over the medium- to longer-term (e.g. ongoing recurrent costs/savings, environmental benefits and the knock-on economic and social benefits); and

<sup>102</sup> Impacts of amendments to the IUU Regulation on third countries will not be considered, as the IUU Regulation can place no legal/mandatory obligations on third countries, and the requirement under policy option 3 to digitalise catch certificates would place an obligation on MS at the EU border to digitalise all catch certificates if provided by third countries in paper form.

- May in some cases (*e.g.* impacts on some types of direct costs) be easily linked to specific actions in the policy options, but not in others (*e.g.* environmental benefits would result from multiple actions in the options combining together and overall from the effectiveness of the EU conservation policy, and it is not feasible to distinguish specific environmental benefits from specific actions contained in the policy options nor is it readily feasible to disentangle effects from different EU initiatives having effects on stocks conservation).

### Assessing cost impacts

Data on existing costs (*i.e.* option 1/no policy change), where available, were drawn principally from the evaluation of the CR (European Commission 2016a), as well as other documentation listed in Annex 1. In addition, a meeting was organised by DG MARE with the IT services to discuss the current situation and possible evolutions under the fully enforced baseline compared to options 1 and 2. Some additional data was collected through phone calls with the industry (cost of equipment for small vessels, Spain) and public authorities (reporting for small vessels in France).

With respect to the analysis of impacts on these costs in the fully enforced baseline and options 1 and 2, the methodology first considered individually all actions specified in the policy options to map affected parties and to screen them for whether monetisation of cost impacts was feasible. In terms of Toolbox #58 terminology, direct costs assessed relate to: i) substantive compliance costs; ii) administrative burden; iii) regulatory charges; and iv) hassle costs. The definition of these costs and what is included in the different categories is as follows<sup>103</sup>:

- Substantive compliance costs are those investments and expenses that are faced by businesses, citizens, and public administrations to comply with substantive obligations or requirements contained in a legal rule;
- Administrative burdens are those costs borne by businesses, citizens, civil society organizations and public authorities because of administrative activities performed to comply with information obligations included in legal rules;
- Regulatory charges include fees, levies, taxes, etc.: those costs already exist for the commercial fisheries and therefore are not analysed here but they should be considered for the new obligations for recreational fisheries; and
- Hassle costs are associated with delays, redundant legal provisions, corruption etc.: these types of costs will not be analysed; although the regulatory change may generate additional delays in the beginning, it is assumed that the main impacts in terms of hassle costs will be related to the simplification of procedures and increased effectiveness of control, but it cannot be measured at this stage;

The analysis was informed by a description of no policy change but full enforcement of the current regulatory framework provided by DG MARE, which outlined existing obligations mandated under current regulations<sup>104</sup>, and other supporting information provided by the Commission, including on existing reporting obligations under the CR<sup>105</sup> and data on costs and savings related to ICT development under the fully enforced baseline and option 1<sup>106</sup>. This ensured that all costs/savings (*i.e.* a reduction of the above-mentioned costs) from option 1 and 3 represent the change from the current regulatory framework, and that

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<sup>103</sup> [https://ec.europa.eu/info/sites/info/files/file\\_import/better-regulation-toolbox-58\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-58_en_0.pdf)

<sup>104</sup> Document 'description measures CR.docx' provided to the contractor 31 October 2017

<sup>105</sup> As contained in the excel file 'Reporting-Obligations-ControlReg-clean.xlsx' provided to the contractor 31 October 2017

<sup>106</sup> Estimates provided on 11 December 2017

savings resulting from the digitalisation of the existing information obligations are also included.

The result of the screening articulated which stakeholder group would be affected by costs (or savings), and the reasons for the cost impacts.

Those actions with an expected direct cost (or saving) that could be monetised, were entered to an excel spreadsheet. For the sake of full transparency, the excel spreadsheet noted the data sources used in all calculations, and provided all assumptions about the basis for monetising the impacts for each specific action. The Excel spreadsheet was shared with DG MARE and amended through an iterative process.

The Better Regulation Guidelines require that whenever an assumption is particularly important (in terms of quantum) or uncertain, sensitivity analysis should be used to check whether changing it would lead to significantly different results. A sensitivity analysis of the assessment of direct costs was completed to provide a partial, worst/best case scenario sensitivity analysis. This was completed during the assessment of direct costs (and savings) with the estimation of three monetised values: most likely scenario, worst case scenario, and best-case scenario. For variables not treated to the sensitivity analysis, costs/savings were kept the same under the most likely scenario, worst case scenario, and best-case scenario.

The objective of those analyses was to provide an order of magnitude and inform about the degree of uncertainty as regards the costs and savings involved with the policy options in comparison of the baseline scenario (option 1). Despite available data from previous studies, in particular the impact assessment and the ex-post evaluation of the current CR, it is largely based on estimates and should be considered as such. The main interest of this exercise was to identify the main cost drivers and the risks related to the policy option as well as the main expected savings and the assumptions on which they rely.

Two types of costs/savings were analysed:

- Time costs: they relied on assumptions about the additional time or time savings related to information obligations (*i.e.* activities that must be carried out under the regulation, such as filling in the landing declaration, weighing fish at landing, etc.), the number of stakeholders involved, the frequency of those operations, and a tariff (*i.e.* an hourly rate for the time spent on those activities);
- Monetary costs–equipment, maintenance, IT expenses, etc.: they relied on assumptions on the cost of equipment, depreciation rates, and average annual expenses for the different items.

The excel spreadsheet allowed for aggregation of data by type of costs and type of stakeholders, and to show the sensitivity analyses on the estimate of direct costs.

The excel spreadsheet included three types of fields:

1. Descriptive fields:

- a. Action number;
- b. Action label: as per the policy options document provided by DG MARE;
- c. Activities/information obligation: detailed cost items (e.g. report electronically on landings)
- d. Stakeholders: detailed information on stakeholders (e.g. All Fishing operators < 12m and exempted F-operators >12 m and <15 m)
- e. Methodological notes: detailed methodology and explanatory notes
- f. Sources: detailed sources for each figure used in the calculation

2. Dimension fields: used to aggregate data in a pivot table:
  - a. Policy option (2 or 3), policy option 1 is not included as we are looking at changes from policy option 1;
  - b. Policy area: Enforcement, Reporting and tracking <12m vessels, control of non-commercial fisheries, etc.
  - c. Type of cost: Compliance, Regulatory charges, or Administrative burden
  - d. Type of stakeholders: Fishing operators, other operators, MS, Commission
3. Calculation fields for time costs and monetary costs for the most likely scenario (ML), worst case scenario (WC) and best case scenario (BC): worst case and best case will only be calculated for items with a high level of sensitivity (in terms of quantum/significance or uncertainty), otherwise the three scenarios will have the same figures:
  - a. Staff category
  - b. ML- Average Staff cost (€/hour)
  - c. ML - Total hours/year
  - d. ML - Time costs
  - e. ML - Unit for Monetary cost
  - f. ML - Average Amount/unit
  - g. ML - Quantity
  - h. ML - Monetary Costs
  - i. ML - Total Costs
  - j. Sensitivity (Significant / uncertainty / ok)
  - k. WC - Average Staff cost (€/hour)
  - l. WC - Total hours/year
  - m. WC - Time costs
  - n. WC - Average Amount/unit
  - o. WC - Quantity
  - p. WC - Monetary Costs
  - q. WC - Total Costs
  - r. BC- Average Staff cost (€/hour)
  - s. BC - Total hours/year
  - t. BC - Time costs
  - u. BC - Average Amount/unit
  - v. BC - Quantity
  - w. BC - Monetary Costs
  - x. BC - Total Costs



### Assessing benefit impacts

The policy options were assessed for their environmental, economic and social impacts, using a dual approach.

First was to assess impacts in these three domains that could be linked directly to the five different areas in policy option 2 and 3 that would change compared to the baseline. A range of indicators was specified as shown in the table below (Table 17), along with the methodological approach to be used.

**Table 17: Impact indicators for the five main areas impacted by the policy options**

Policy area impact	Indicators	Type of indicator	Methodological approach to assessing performance in meeting outcomes
<b>Enforcement (sanction systems)</b>			
Improved consistency between MS over approach to sanctions for infringements	Level of consistency between MS over approach to sanctions for infringements	Qualitative and Quantitative	Expert judgement, with reference to data, when available
<b>Data: availability, quality and sharing</b>			
Improved monitoring and control of fishing activities and catches of vessels below 12m	Number of vessels under 12m tracked & Share of landings from vessels tracked by VMS and/or other lower cost solutions	Quantitative	Data extracted from CFR
	No. of vessels under 12m reporting catches through electronic means & Proportion of fleet gross tonnage reporting electronically	Quantitative	Data extracted from CFR
Improved monitoring and control of recreational fisheries	Control of technical measures on recreational catches (e.g. bag limits, closed seasons)	Qualitative	Expert judgement
Quantities of each species landed are correctly accounted for through weighing, and recorded in catch registration documents,	Extent to which provisions related to post landing activities ensure that each quantity of each species landed is correctly accounted for by weighing and that results are recorded in catch registration	Qualitative	Expert judgement

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Policy area impact	Indicators	Type of indicator	Methodological approach to assessing performance in meeting outcomes
enhancing quota uptake monitoring			
Engine power correctly recorded in line with licences, and when used to assess engine power at MS level against capacity ceilings	Number of vessels over 221 kW (or above 120 kW if covered by fishing effort or specific measures for engine power) using active gears with a continuous monitoring system and transmission of the maximum power developed by the engines when the vessels are active	Quantitative	Data extracted from CFR
Improved exchange of fisheries data between Member States and better access to data by the Commission	Exchange of fisheries data between Member States, and access of the Commission to disaggregated fisheries data	Qualitative	Expert judgement
<b>Control of the landing obligation</b>			
Increased effectiveness of control and compliance of the landing obligation	Number of vessels with highest risk of non-compliance and those with the potential to discard high quantities of fish in a short period (factory vessels, freezer vessels, refrigerated seawater tank vessels, vessels otherwise equipped to pump fish in bulk) covered by CCTV	Quantitative	List of highest risk vessels, and from CFR Results of EFCA risk assessments for fisheries subject to SCIP and fleet segment categorised as high or very high risk
	Discard rates	Qualitative	Supposition about relative impacts of policy options on known quantitative discard rates
<b>Increased synergies with other policies</b>			
Extension of fisheries control to all marine restricted areas under environmental legislation	Marine area under Natura 2000 legislation also covered by the remit of the CR	Quantitative	Analysis of areas covered
Increased traceability of fishery products (including from	Extent of effectiveness, even implementation approaches, and full information, for	Quantitative & Qualitative	EU import figures <i>vis-à-vis</i> EU landings Expert judgement

Assessment of the impacts of the policy options proposed for  
the Amendment of the Fishery Control System (SC1) – Final Report

Policy area impact	Indicators	Type of indicator	Methodological approach to assessing performance in meeting outcomes
third countries) and even implementation across MS	traceability of fishery products		
Definitions and general principles related to food and feed safety aligned with food law	Level of alignment of definitions (e.g. risk management or audit) and general principles (cooperation rules, responsibility of operators) with the food law	Qualitative	Expert judgement
Digitalisation of IUU catch certification scheme at EU level	Level of digitalisation of catch certificates and processing statements	Quantitative/Qualitative	Numbers of catch certificates and processing statements Expert judgement
<b>EFCA founding Regulation</b>			
EFCA founding regulation aligned with current needs	Level of alignment of EFCA founding regulation with current requirements	Qualitative	Expert judgement

Second was to assess environmental, economic, and social impacts that would result from the combined effect of actions on a specific impact domain, but which could not be disaggregated to the level of the five areas contained within the policy options or their detailed actions. These impacts were treated as resulting from each policy option at the aggregated level. For these types of impacts a second set of indicators in each impact domain was identified to be used to describe the assessment of option 1/no policy change impacts (see Table 18), and to be referenced when assessing the impacts of options the baseline and options 1 and 2. The assessment of the baseline impacts included an assessment of trends in the indicators where data allowed, to consider how things might evolve in the absence of any amendments to the FCS. Rather than providing a direct comparison at EU level for all the indicators under the baseline and options 1 and 2, the approach taken was to explore and justify through case studies and review of other reports/information, and with specific reference to the indicators, what the impacts of the policy options would be. Specific case studies were selected to consider the impacts of improvements in fisheries control on environmental, economic and social status/indicators. The specific methodology used in the preparation of the case studies is contained within them, as provided in later annexes.

**Table 18: Indicators of direct environmental, economic and social impacts/benefits**

Indicator	Stakeholders impacted		
<b>Environmental</b>			
Number of stocks for which there is scientific advice about fishing mortality compared to the fishing mortality that would lead to the maximum sustainable yield	All	EU	citizens/fishers/Managing Authorities
Relative proportion of stocks assessed as not overfished (fishing mortality at or below $F_{MSY}$ ) of the total assessed stocks	All	EU	citizens/fishers/Managing Authorities
Proportion of TACs set without detailed scientific advice (data poor stocks)	All	EU	citizens/fishers/Managing Authorities
Average stock spawning biomass (SSB)	All	EU	citizens/fishers/Managing Authorities
<b>Economic</b>			
Annual fleet net profits	Fishers		
Annual fleet Gross Value Added (GVA)	Fishers		
Annual vessel Gross Profit (GRP)	Fishers		
GVA to income ratio	Fishers		
<b>Social</b>			
Annual average crew wages	Fishers		
Number of FTE on vessels	Fishers		

The methodology:

- Recognised the challenge in being able to attribute any benefits to the policy options for a revised FCS as distinct from benefits that would be brought about by conservation measures;
- Assumed that all other external factors (e.g. climate change, macro-economic conditions, etc.) would remain unchanged and have no substantial impact on benefits; and
- Assumed that as almost most of the catching sector and processing sector businesses in the EU are SMEs, there is no requirement for a specific assessment of SME impacts, and SMEs are not disproportionately affected or disadvantaged compared to large companies.

### **Methodology for comparing the options**

In comparing the options, information is presented in such a way as to allow policymakers to make a choice, but also to identify the preferred option. Text fully justifying the preferred option (*i.e.* section 8 of the IA report structure as suggested by the Better Regulation Toolbox<sup>107</sup>) is not however provided and is the responsibility of the Commission. However, this report provides some text for the preferred option on the proportionality principle.

The options were compared objectively (through scores as explained below) for their:

- Effectiveness: the extent to which different options would achieve the objectives;
- Efficiency: the benefits versus the costs;
- Coherence: the coherence of each option with the objectives of EU policies;
- Acceptability: based on a combination of stakeholder views and proportionality; and
- Adherence to the recommendations of the relevant EU institutions/organisations.

<sup>107</sup> Page 71 of [https://ec.europa.eu/info/sites/info/files/file\\_import/better-regulation-toolbox-12\\_en\\_0.pdf](https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-12_en_0.pdf)

Possible methods to compare the options were considered as presented in Table 19 below, with Multi-Criteria Analysis (MCA) selected as the preferred (and only suitable) methodological approach.

**Table 19: Selection of methodological approach(es) to comparing options**

Possible Method	Selected/Not selected	Reason
Cost benefit analysis	Not Selected	Not possible to monetise all impacts, as would be required for this method to be applicable
Multi-criteria analysis	Selected	Appropriate as IA needs to be reconciled with specific policy objectives not just monetary costs/benefits, and impacts likely to be diverse, quantified in different units, and contain a mix of quantitative and qualitative impacts.
Least cost analysis	Not Selected	Benefits not fixed and/or standard across policy options, as would be required for this method
Cost-effectiveness analysis	Not Selected	Not possible to quantify all impacts, and FCS amendments have more than one main objective making the method potential misleading and inappropriate
Counterfactual analysis	Not Selected	More appropriate for ex post evaluations than impact assessment, challenge in finding a credible approximation of what would occur in the absence of the intervention, insufficient budget/time

MCA was used to assess and rank the options, with criteria used to compare the relative changes that would result from policy option 2 and 3 compared to the baseline option.

Each option was assessed for its performance against a range of criteria, using performance scoring as shown below (Table 20). The criteria, along with the method of presenting the comparison of options, were discussed and agreed between the contractors and the Steering Committee during the assignment.

**Table 20: Scoring of impacts**

Performance score	Legend
0	Does not improve and/or worsens the situation compared to the baseline scenario
1	Small improvements compared to the baseline scenario
2	Moderate improvements compared to the baseline scenario
3	Large improvements compared to the baseline scenario
4	Very significant improvements compared to the baseline scenario

Further consideration was given to refinement of the scoring by allocating a weighting to the different criteria. However, it was considered that weighting would provide little additional value and it would be difficult to justify different weightings to different criteria, so weighting scores as a methodological option was discarded.

The sum of the performance figures for each criterion were added for each option to compare the baseline and options 1 and 2 to the current situation, and to rank the two options. The sum of performance figures is presented across all criteria (*i.e.* one total sum), as well as disaggregated with separate summed scores for effectiveness, efficiency, coherence, and action on recommendations of the EU institutions.

### **ANNEX 3 – ASSESSING IMPACTS: CASE STUDY OF COMPARATIVE EVOLUTION OF THE NORTH SEA AND BAY OF BISCAY SOLE FISHERIES**

#### ***Rationale for selecting these two sole fisheries***

The overall rationale for selecting these fisheries for analysis is their common characteristics in many regards, except for a different approach to fisheries control. This enables an analysis of the specific impacts of fisheries control in the fishery in which the control regime is more robust.

Although present in two different sea basins, common features across both fisheries are:

1. Biological and stock dynamic patterns of the species, and hence a comparable response to fishing pressure which can be assumed to be the desired output of conservation and management measures.
2. The existence of multi-annual plans for both fisheries: Regulation (EC) 676/2007 establishing a multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea; and Regulation (EC) 388/2006 establishing a multiannual plan for the sustainable exploitation of the stock of sole in the Bay of Biscay. Both multiannual plans set control harvest rules underpinning quotas, with additional measures concerning *inter alia* effort management, reduced margins of tolerance<sup>108</sup> for logbook declarations, and mandatory weighing of all landings above a defined threshold.

From a control perspective, the fisheries are different. The main difference between the two fisheries is that the North Sea fishery is concerned by a Specific Control and Inspection Programme (SCIP), which has been operating since 2007<sup>109</sup>. The SCIP imposes control obligations to concerned Member States additional to those imposed through Regulation (EC) 1224/2009) including participation to Joint Development Plans organized under EFCA coordination. In addition to the fact that the stocks exploited are regulated according to a multiannual plan (see above, the rationale for adopting a SCIP for the North Sea fishery is in relation to the transnational nature of the exploitation with fishing fleets of several Member States involved (*i.e.* BE, DE, NL, DK, SE, UK). By contrast, no specific reinforced control scheme applies to the Bay of Biscay fishery and Member States concerned (FR and BE) are expected to discharge their control and enforcement duties as mandated by the Control Regulation.

The risk analysis conducted under EFCA coordination for the North Sea fisheries shows that mis-recording and non-compliance with the landing obligation are the main risks applying across all fishing fleet segments concerned. Use of illegal gears, and more broadly, infringements to technical measures regulations, is less of an issue, except for a couple of fleet segments. A similar risk analysis for the Bay of Biscay fisheries is not available, but it can be assumed that mis-recording and non-compliance with the LO are also the two main compliance issues.

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<sup>108</sup> Concerning discrepancies between quantities declared in the logbooks and actual quantities onboard

<sup>109</sup> As from 2013, the North Sea SCIP is framed by Commission Implementing Decision of 25 June 2013 establishing a specific control and inspection programme for certain demersal and pelagic fisheries in the Union waters of the North Sea and in the Union waters of ICES Division IIa (2013/328/EU)

**Table 21: Results of the risk-analysis on North Sea demersal fisheries (EFCA, 2017)**

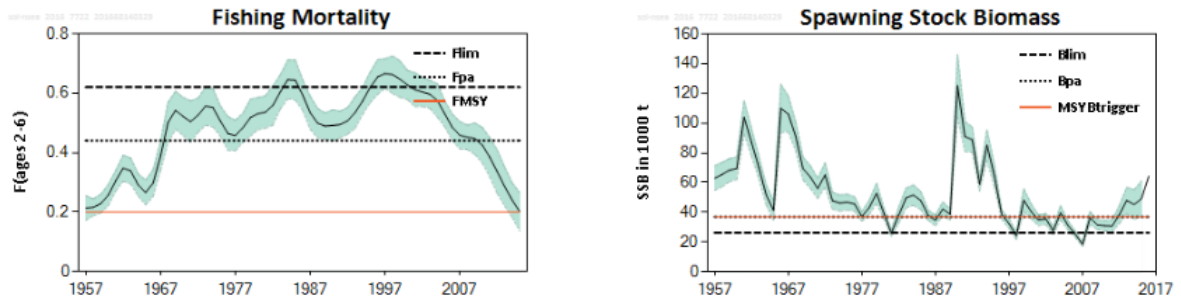
North Sea						
Fleet seg.	Gear	Area	Species <sup>31</sup>	Non-compliance with LO	Misrecording	Illegal gear
NS01	Otter trawl and Seines $\geq 100\text{mm}$	IVa	COD HADDOCK WHITING SAITHE PLAICE	●	●	●
		IVb	HAKE NEPHROPS Sole Northern prawns	●	●	
NS02	Otter trawl / Seines $\geq 70 - < 100 \text{ mm}$	IVa	COD HADDOCK PLAICE	●	●	
		IVb	NEPHROPS Sole	●	●	
NS03	Otter trawl / Seines $\geq 32 - < 70 \text{ mm}$	IIIa	NORTHERN PRAWNS	●	●	
NS04	Otter trawl / Seines $\geq 90\text{mm}$	IIIa	Cod PLAICE	●	●	
NS07	Beam trawl, $\geq 80 - < 120\text{mm}$	IVb	PLAICE SOLE	●	●	●
		IVc		●	●	●

Arguably, the application of the SCIP to the North Sea fisheries ensures a high level of compliance with conservation and management rules. In fact, EFCA analysis of JDP indicators does show decreasing infringement rates for fisheries concerned over the 2012-2016 period (source: EFCA, 2017). No comparable compliance indicators are available for the Bay of Biscay sole fishery.

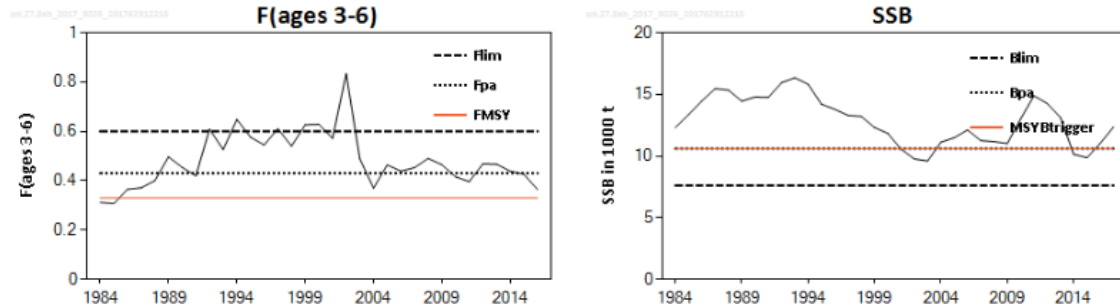
### Environmental impacts: stocks trajectories

The following graphs (Figure 11 and Figure 12) show the long-term evolution of the stock status indicators for sole stock in the North Sea and sole in the Bay of Biscay.

**Figure 11: Stock status indicators, sole in North Sea**



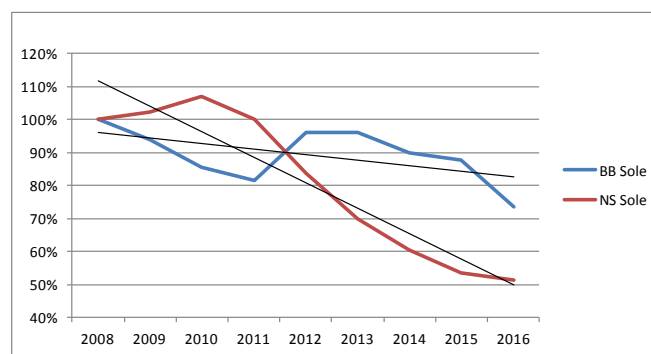
**Figure 12: Stock status indicators, sole in Bay of Biscay**



## Fishing mortality

For both stocks, fishing mortality was significantly higher than  $F_{MSY}$  in 2008, respectively 0.43 vs  $F_{MSY}$  of 0.2 for the North Sea sole stock, and 0.49 vs  $F_{MSY}$  of 0.33 for the Bay of Biscay sole stock. For the North Sea sole stock, a 47% decrease of fishing mortality was required to reach the MSY level, and a 67% decrease for the Bay of Biscay stock. Over the 2008-2016 period, the fishing mortality for the North Sea sole stock decreased at a higher rate on average than the Bay of Biscay sole stock (average annual decreasing rate of -7.7% for the North Sea sole stock as opposed to -1.7% for the Bay of Biscay sole stock). In 2016, neither of the two stocks were at MSY levels (respectively  $F/F_{MSY}$  of 95% for the North Sea sole stock, and  $F/F_{MSY}$  of 91% for the Bay of Biscay sole stock). However, the faster  $F$  average decreasing rate for the North Sea stock indicates that MSY level could be reached in a year or two while it will take longer (4 to 5 years) for the Bay of Biscay sole stock, other things being equal.

**Figure 13: F values compared to  $F_{2008}$  value with linear regression slope**

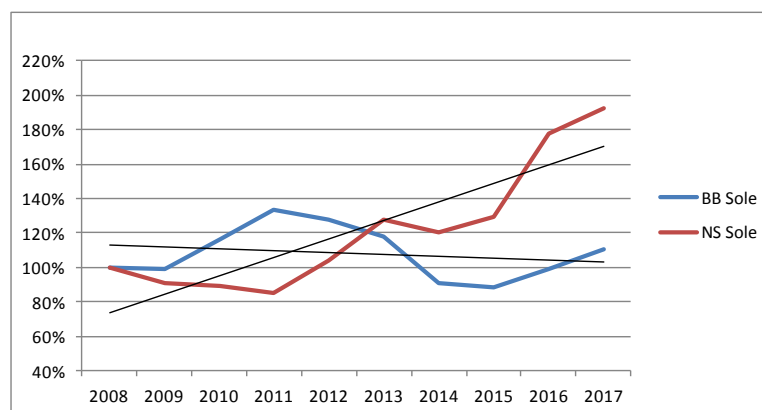


Source: based on ICES data

## Spawning stock biomasses

According to ICES data, the North Sea sole spawning stock biomass has been consistently above MSY trigger levels since 2013. For the Bay of Biscay sole fishery, spawning stock biomass was above MSY trigger levels between 2008 and 2013, then passed below MSY trigger level in 2014 and 2015, with levels again surpassing MSY trigger levels in 2016 and 2017. The comparative evolution of spawning stock biomasses for both stocks (Figure 14 below) shows a clear positive trend concerning SSB reconstitution for the North Sea sole stock (+11% per year on average), and a somewhat flat trend on average for the Bay of Biscay sole stock. In 2017, the North Sea sole stock SSB was equivalent to 183% of SSB MSY trigger level (37 000 tonnes), meaning that the stock could be largely considered as in full reproductive capacity. For the Bay of Biscay sole stock, the 2017 SSB value was 116% of SSB MSY trigger level, meaning a stock in full reproductive capacity but with less margins and therefore more vulnerable to recruitment variations.

**Figure 14: SSB value compared to SSB2008 value with linear regression slope**



Source: based on ICES data



## Summary of environmental impacts

The North Sea sole stock recovered at a quicker pace than the Bay of Biscay sole stock. All other things being equal, the North Sea sole stock may reach MSY level in a year or two, while it may take longer for the Bay of Biscay sole stock. The rebuilding of the spawning stock biomass has also been faster for the North Sea sole stock compared to the Bay of Biscay sole stock meaning that the reproductive capacity of the North Sea sole stock is better protected than that of the Bay of Biscay sole stock.

## Economic impacts: fishing vessels economic performances

Impacts on vessels profitability is estimated based on the following steps:

1. Identification of main fishing fleet segments exploiting sole stocks in the two regions (from STECF 17-12 landing data) according to the contribution to total landing value of sole.
2. Extraction of economic profitability indicators for concerned fishing fleet segments: gross value added (GVA), gross profit (GRP), GVA to income, and GRP to income (from STECF 17-12 economic data)
3. Cumulated fishing fleet economic performances estimated pro-rata respective shares of segment in the total value of landings of sole (as per step 1).

Result of step 1 is shown in the following table. The main fishing fleet segments identified represent cumulatively 88% of the value of North Sea sole landings and 82% of the value of Bay of Biscay sole landings. North Sea fleet segments include mostly large scale fleet segments (vessel length greater than 18m). In contrast, the Bay of Biscay selected fishing fleet segments are dominated by vessels of less than 12m and vessels in the 12-18m length range. According to the control regulation, fishing vessels up to 15m can be applied derogatory conditions concerning monitoring (logbooks, VMS).

**Table 22: Fishing fleet segments exploiting sole stocks in North Sea (NS) and Bay of Biscay (BB)**

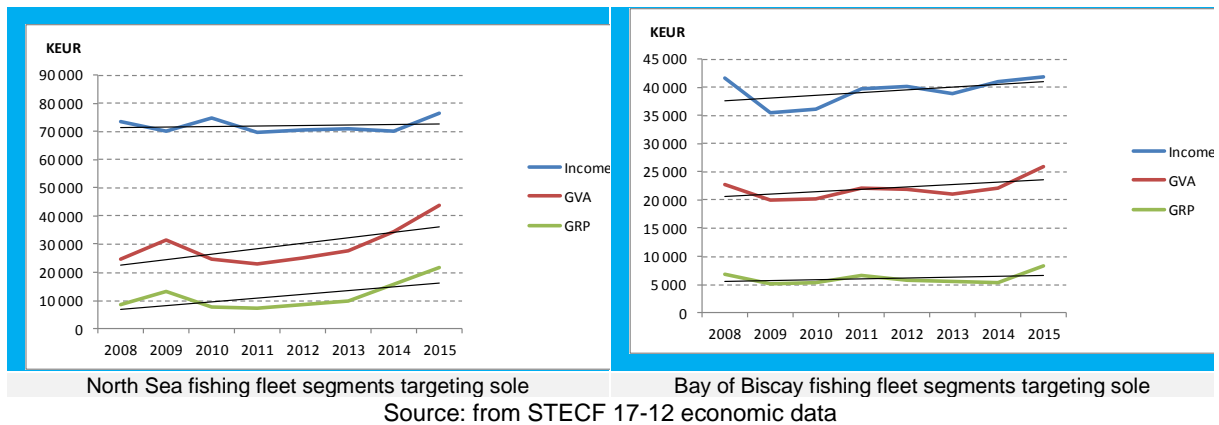
NS SOLE	% Value of SOL landings	BB Sole	% Value of SOL landings
NLD-TBBVL40XX	52%	FRA-DFNVL1218	29%
NLD-TBBVL2440	11%	FRA-DFNVL1012	17%
NLD-TBBVL1824	9%	FRA-DFNVL1824	17%
BEL-TBBVL2440	5%	FRA-DTSVL1218	12%
DEU-TBBVL2440	5%	BEL-TBBVL2440	8%
GBR-TBBVL40XX	4%		
FRA-DFNVL1012	2%		
<b>Total</b>	<b>88%</b>	<b>Total</b>	<b>82%</b>

Details of step 2 are not shown here (economic datasets for several fishing fleet segments).

Results (step 3) indicate higher economic performance of the North Sea fishing segments targeting sole compared to the Bay of Biscay fishing segments. While income for both fisheries remained stable, gross value added (GVA) generated by the North Sea fishing fleet segments shows an increased rate of  $\approx$  EUR 2 million per year on average over the 2008-2015 period, while the average GVA increase rate for Bay of Biscay fishing segments is 4 times lower ( $\approx$  EUR 0.5 million per year). The same applies for the gross profit indicator

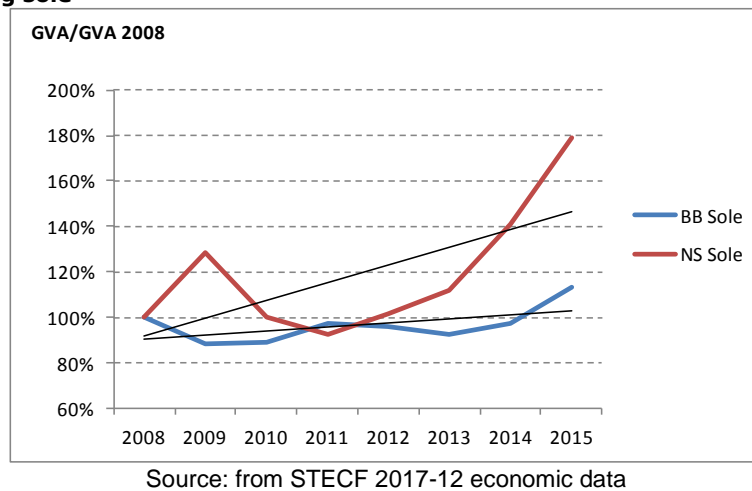
(GRP) which shows a positive average increase rate of EUR 1.3 million per year, contrasting with a much lower average increase rate of EUR 0.1 million per year.

**Figure 15: Evolution of cumulated income, GVA and GRP for the North Sea (left) and Bay of Biscay (right) fishing fleet segments targeting sole**



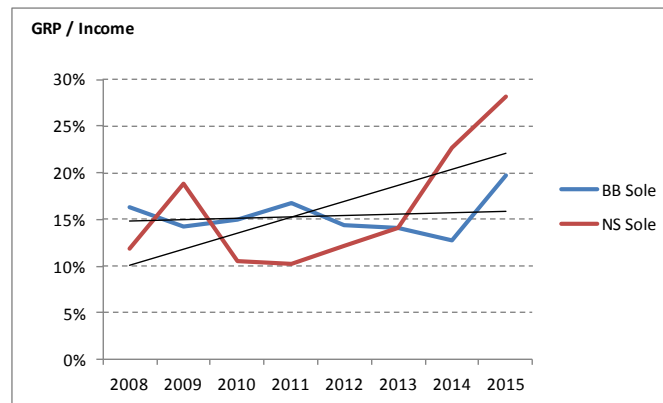
In relative terms compared to GVA estimated for 2008, the average increase rate for the North Sea fishing fleet segments is close to 8% per year, while it is close to 2% for the Bay of Biscay fishing fleet segments.

**Figure 16: GVA index (GVA year n / GVA 2008) for the North Sea and Bay of Biscay fishing fleet segments targeting sole**



The evolution of the GRP/income ratio, which can be used as a proxy for measuring fishing fleet profitability, is positive on average over the 2008-2015 period for the North Sea fishing fleet segments ( $\approx 2\%$  increase per year on average), while it remained stable for the Bay of Biscay fishing fleet segments.

**Figure 17: Evolution of GRP to income ratio for the North Sea and Bay of Biscay fishing fleet segments targeting sole**



Source: from STECF 2017-12 economic data

### Summary of economic impacts

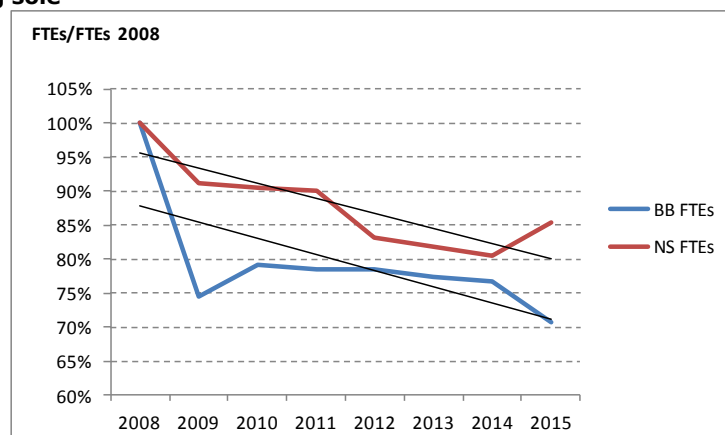
The North Sea fishing fleet segments targeting sole show higher economic performance indicators than the Bay of Biscay fishing fleet segments targeting sole. In absolute terms, GVA increased by  $\approx$  EUR 2 million per year or 8% per year on average over the 2008-2015 period for the North Sea sole fishery compared to EUR 0.5 million per year or 2% per year for the Bay of Biscay sole fishery. Fishing fleet profitability increased by 2% on average per year, while it remained stable for the Bay of Biscay sole fishery.

### Social impacts: onboard employment and wages

The methodology used for estimating impacts on employment is broadly similar to the methodology used for estimating economic impacts. The selected fishing fleet segments are those contributing the most to the value of sole landings. The variables used in this case are: i) the number of jobs expressed in harmonised full time equivalent (FTEs) according to STECF methodology; and ii) wages per FTE.

The result shows a somewhat parallel evolution of the number of FTEs in the two fisheries. In both fisheries, the number of FTEs employed on the fishing vessels targeting sole tends to decrease over the 2008 -2015 period at a rate close to 2.2% per year.

**Figure 18: FTEs index (FTEs year n / FTEs 2008) for the North Sea and Bay of Biscay fishing fleet segments targeting sole**

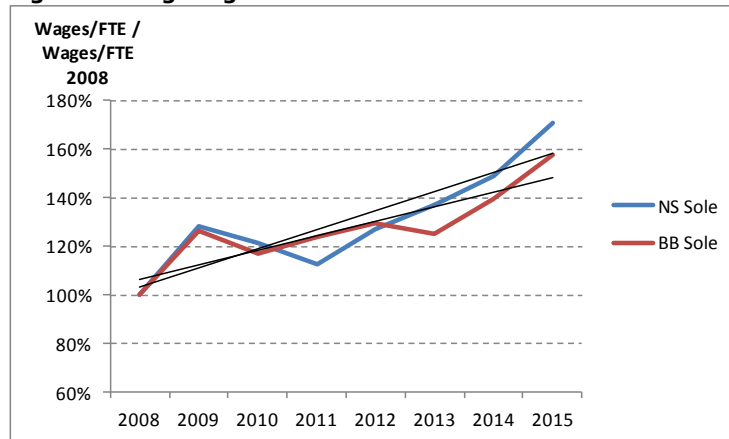


Source: from STECF 2017-12 economic data

In terms of wages per FTE, there was a steady increase for both fisheries over the 2008-2015 period. However, wages per FTE increased faster by an average of 7.9% per year for

the North Sea sole fishery compared to a 5.9% per year increase for the Bay of Biscay fishery.

**Figure 19: Wages per FTE index (Wages/FTE year n / Wages/FTE 2008) for the North Sea and Bay of Biscay fishing fleet segments targeting sole**



Source: from STECF 2017-12 economic data

### Summary of social impacts

In both sole fisheries, the number of FTEs employed onboard the fishing vessels targeting sole decreased at a similar pace of -2.2% per year. Average wages per crew member on fleet segments targeting sole increased in both cases, but more markedly (+7.9%) for North Sea fleet segments compared to the Bay of Biscay fleet segments (+5.9%).

### Cost-benefit of control

The EFCA estimated the costs of North Sea JDPs at EUR 17 million for 2016<sup>110</sup>, including EUR 15.8 million for sea patrols alone (92%). North Sea JDPs consider several North Sea fisheries: the cod, plaice and sole fisheries. Arguably, plaice and sole fisheries can be considered as a same unit to be controlled since the two species are exploited by the same fleet segments. Cod is another unit of control since the fisheries concerned (several stocks are included in the North Sea fishery) involve different fleet segments spread over a larger area. A conservative estimate could be to estimate the costs of sole and plaice JDPs as half of the total JDPs costs, *i.e.* EUR 7.9 million.

Costs of JDPs represent only a part of total control operations. Member States are expected to discharge their regular control obligations in the absence of JDPs, and these have also a cost. However, in the absence of detailed MS activity indicators, the costs borne by MS to control this fishery cannot be estimated.

The cost-benefit ratio can be approximated by comparing the cost of control to the value-added generated in NS Sole fishery. Value added represents the net economic wealth supported by fishing activities, and therefore, the economic benefits for the EU economy. As shown in the following table, GVA accumulated over the 2008-2015 period is estimated at EUR 234.8 million (from Figure 15) with an estimated cost of control of EUR 35 million over the same period. The cost-benefit is therefore positive with EUR 1 invested in control supporting the creation of EUR 3.7 for the EU economy. GVA estimates do not include economic benefits for ancillary industries (upstream, downstream), so cost-benefit ratio is probably even higher.

<sup>110</sup> EFCA estimates of JDP costs include coordination costs, land, sea and air inspections costs.

**Table 23 : Cost benefit ratio of control of the NS sole fishery**

	2008	2009	2010	2011	2012	2013	2014	2015	Cumulated
<b>GVA</b>	24 601	31 560	24 703	22 783	25 020	27 578	34 618	43 989	234 850
<b>Cost of control</b>	7 900	7 900	7 900	7 900	7 900	7 900	7 900	7 900	63 200
<b>Ratio</b>									<b>3.7</b>

*Source: contractor's own estimates*

### **Overall Conclusion**

Based on the strong assumption that conservation and management rules are better enforced in the North Sea compared to the Bay of Biscay because of the application of a Specific Control and Inspection Programme in the North Sea, the main results of the comparison are that stock recovery and MSY levels are likely to be attained more quickly in a situation where tighter control and monitoring of fishing activities are deployed. While the Bay of Biscay sole fishery is expected to be controlled as expected by the CR, the important stake of small-scale vessels in the fishery probably introduces more uncertainty in compliance due to the numerous exemptions benefiting to this fleet. This may be a reason why stock recovery takes longer. It also highlights the benefits of the proposed amendments to the Control Regulation that would serve to support better control of, and data provision from, the small-scale fleets in Europe.

Economic and social impacts estimated are very much aligned with those estimated in the CFP reform impact assessment. The CFP impact assessment estimated that stocks at MSY support creation of increased GVA while having a somewhat adverse impact of the number of jobs onboard fishing vessels because of reduced fishing effort (but also therefore resulting in increased earnings per crew member as evidenced by the increase in average wages per FTE).

In summary, a strengthened EU control framework would ensure quicker stock rebuilding at MSY levels through better compliance with conservation and management rules, with expected economic and social benefits commensurate with those estimated by the CFP reform impact assessment in relation to the MSY objective.

## ANNEX 4 – ASSESSING IMPACTS: CASE STUDY ON EVOLUTION OF THE EAST ATLANTIC BLUEFIN TUNA FISHERY

### *Rationale for selecting this fishery*

East Atlantic Bluefin tuna (BFT) is exploited in the East Atlantic (FAO area 27) and in the Mediterranean (FAO area 37) by different fishing fleets flying various flags, including third country flags. The EU has an important stake in the fishery, in particular in Mediterranean waters. Given its transnational dimension, the BFT fishery is managed by The International Commission for the Conservation of Atlantic Tunas (ICCAT) which can adopt conservation and management measures mandatory for all its parties, including the EU.

In the early 2000, the ICCAT Standing Committee for Research and Statistics (SCRS) raised concerns over the status of the BFT stock and the likely misreporting of catches by most fishing nations, including the EU. It was assumed that the TAC of 32 000 tonnes set by ICCAT was significantly exceeded with likely real catches in the region of 50 000 tonnes. A weak control regime of BFT fishing vessels by almost all flag States concerned facilitated non-compliance with applicable rules, in particular catch limits and the use of planes to locate BFT schools. Therefore, BFT stock status had been deteriorating continuously over the years and in 2000 the stock was near collapse according to the ICCAT SCRS.

In 2006, the EU adopted a multi-annual recovery plan for BFT mainly to transpose into EU law the recovery plan adopted by ICCAT aimed at closing loopholes in the regional control system. The EU multi-annual recovery plan for BFT was subsequently amended in 2009, 2012 and 2016 to include in EU law the strengthened control measures adopted by successive ICCAT recommendations.

Soon after its creation, EFCA was mandated by the EU to coordinate joint deployment plans to control the BFT fishery under the general framework of Commission Decision 2008/323/EC establishing a specific control and inspection programme related to the recovery of bluefin tuna in the Eastern Atlantic and the Mediterranean. EFCA interventions started in 2008 and have been continued since. The SCIP framework was renewed in 2014 through Decision 2014/156<sup>111</sup>. As Figure 20 shows, risks of non-compliance are still high and could materialize in the absence of a SCIP.

**Figure 20: EFCA compliance risk-assessment for the BFT fishery**

Fleet segment	Misrecording	Technical measures
Purse seiners targeting bluefin tuna for farming, associated vessels and farms	●	●
Pelagic trawlers	●	●
Bait boats (poles and lines)	●	●
Line vessels	●	●
Fixed traps	●	●
Sport and recreational fisheries	●	●
Other catch fleet	●	●

Source: EFCA (2017)

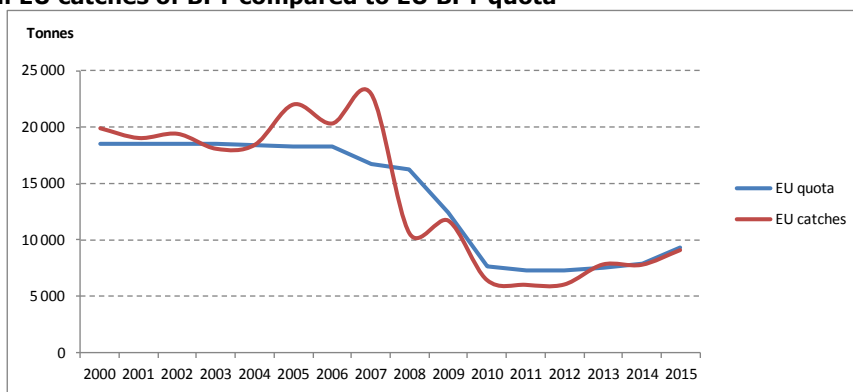
<sup>111</sup> Commission Implementing Decision of 19 March 2014 establishing a specific control and inspection programme for fisheries exploiting stocks of bluefin tuna in the Eastern Atlantic and the Mediterranean, swordfish in the Mediterranean and for fisheries exploiting stocks of sardine and anchovy in the Northern Adriatic Sea

In summary, the BFT fishery presents an interesting situation with a somewhat weak control framework until 2007, substantially and markedly improved as from 2008, with the involvement of EFCA.

### **Effects of a strengthened control framework on the BFT fishery**

As far as the EU is concerned, the changes introduced in 2007 in the control strategy had clear effects on the level of compliance with BFT catch limits. As shown in the figure below (Figure 21), EU catches were consistently above the catch limits allocated by ICCAT until 2007, and in particular over the 2004-2007 period. The situation changed from 2008, with real catches below or aligned with the ICCAT quota. Note that the main reason for the apparent EU quota under-usage in 2010-2012 was the repayment of previous year quota over-usage.

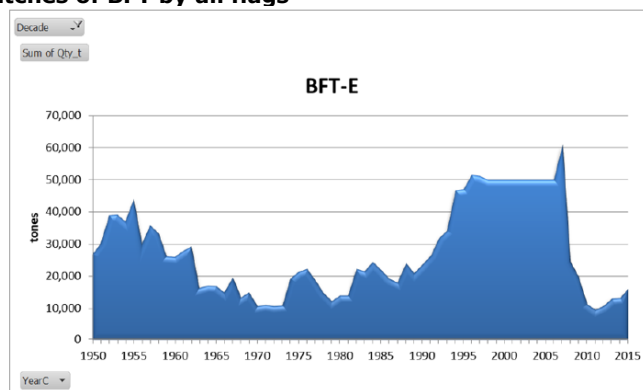
**Figure 21: Real EU catches of BFT compared to EU BFT quota**



Source: real EU catches extracted from ICCAT Task 1 ("inflated" tuna catches considered for stock assessment). EU quota: from ICCAT relevant recommendations.

Quota over-usage was not an EU specificity. Most other third country vessels did not comply either with catch limits. As shown in the following figure, total BFT catches in the year 2000 were in the region of 50 000 tonnes per year, as opposed to a TAC of  $\approx$  30 000 tonnes, culminating in catches of 60 000 tonnes in 2007. The strengthening of the international BFT control framework from 2008 resulted in a substantial decrease of real catches at stock level, with total catches reasonably aligned with the TAC (Figure 22 below).

**Figure 22: Real total catches of BFT by all flags**



Source: ICCAT Report of the BFT 2017 stock assessment meeting.

### Environmental impacts: stock trajectory

The preliminary results of the 2017 BFT stock assessment confirm the results obtained in 2014 with a clear rebuilding of the BFT stock. As shown in the figure below (Figure 23), preliminary results indicate a dramatic decrease in fishing mortality (lower left figure) and a substantial increase in the spawning stock biomass (top right figure).

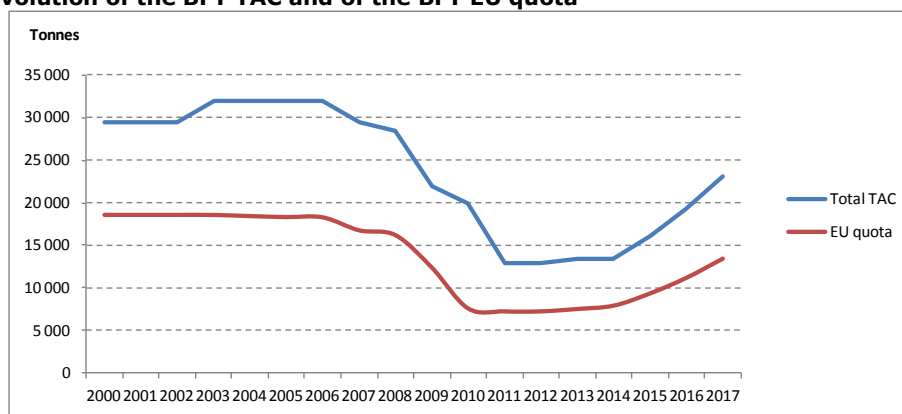
Figure 23: BFT stock status indicators



Source: ICCAT Report of the BFT 2017 stock assessment meeting

The rebuilding of the stock has supported increases in the TAC following years of reductions. In 2014, the total BFT TAC was 13 400 tonnes. It was increased gradually to reach 23 155 tonnes in 2017, i.e. an increase of 73% in just three years. The EU quota increased in proportion from  $\approx$  7 200 tonnes in 2011-2012 to a projected 13 400 tonnes in 2017, providing the EU BFT fishing fleet and recreational fishermen with higher fishing opportunities.

Figure 24: Evolution of the BFT TAC and of the BFT EU quota



Source: ICCAT relevant recommendations

### Summary of environmental impacts

Increased compliance with conservation and management rules from 2008, in particular catch limits, as a consequence of a strengthened control scheme of the BFT fishery supported the rebuilding of the stock as evidenced by the clear improvement in stock indicators F and SSB from that year onwards. Assessed as in a healthier state compared to previous periods, ICCAT was able to increase the TAC from 2015, with corresponding fishing opportunities for the EU fleet and recreational fishermen increasing in parallel.



### **Economic impacts: fishing vessels economic performances**

Impacts on vessel profitability is estimated based on the following steps:

1. Identification of main fishing fleet segments exploiting BFT in the Mediterranean (from STECF 17-12 landing data) according to the contribution to total landing value of BFT.
2. Extraction of economic profitability indicators for concerned fishing fleet segments: gross value added (GVA), gross profit (GRP), GVA to income, and GRP to income (from STECF 17-12 economic data)
3. Cumulated fishing fleet economic performances estimated pro-rata for respective shares of the segment in the total value of landings of BFT (as per step 1).

Results of step 1 are shown in the following table (Table 24). The main fishing fleet segments targeting BFT are large scale purse seiners (FR, IT, ES) of 24-40m and 40+m length classes. The French longline fleet segment of 12-18m length class appears in the list of main segments selected. No EU small-scale fleet segments are among the main fishing fleet segments targeting BFT. Unfortunately, economic data for some important fishing fleet segments are not available. Therefore, results only cover around 54% of the EU fleet BFT landing values.

**Table 24: Main EU fishing fleet segments targeting BFT in the Mediterranean**

Fleet segment	Share of EU BFT landing value
FRA-PSVL40xx*	22.8%
FRA-PSVL2440	22.8%
ITA-PSVL40xx	21.4%
ESP-PSVL2440	10.1%
ESP-PSVL40xx*	6.2%
FRA-HOKVL1218*	4.5%
Total selected	87.8%

Source: from STECF 17-12 landing data

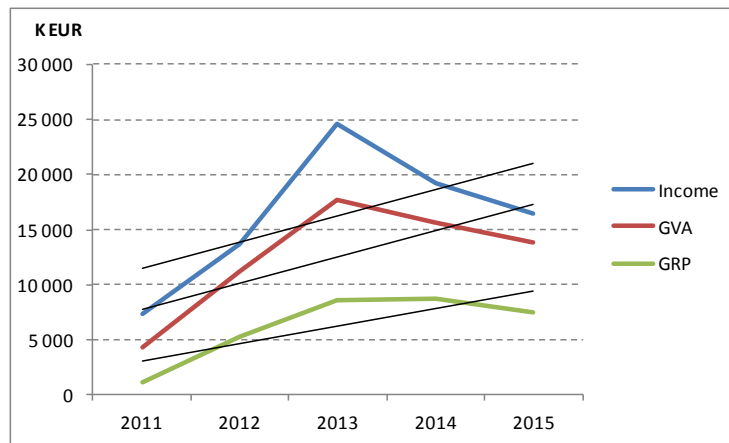
Note: \*segment economic data not available (not reported or not published for confidentiality reasons)

The overall quality of EU fleet economic data on the fishing segments targeting BFT in the Mediterranean is somewhat poor. Data are only available for some segments, and for those segments, time-series are often not available with data gaps. For example, economic data for the FRA-PSVL2440 segment are missing for 2009, as are economic data for the ITA-PSVL40xx segment for 2010. It should also be mentioned that EU BFT vessel profitability is largely dependent on external factors impacting BFT prices. In particular, the situation in Japan, the main market for BFT, which is a main factor driving BFT market prices. The 2011 tsunami and the subsequent 2012-2016 economic crisis probably had adverse impacts on BFT prices and hence, on EU fishing fleet segment profitability.

Details of step 2 are not shown here (economic datasets for several fishing fleet segments).

Bearing in mind all limitations in relation to the robustness of STECF economic data concerning EU fishing fleet segments targeting BFT in the Mediterranean, results (step 3) indicate improved economic performances for all economic indicators (income, GVA and GRP), increasing on average over the 2011-2015 period (note: prior economic data are ignored due to discontinuous time-series). The decreases from 2013 are probably attributable to the adverse economic situation in Japan. Between 2011 and 2015, both income and GVA increased at an average rate of EUR 2.4 million per year, and GRP at an average rate of EUR 1.6 million per year.

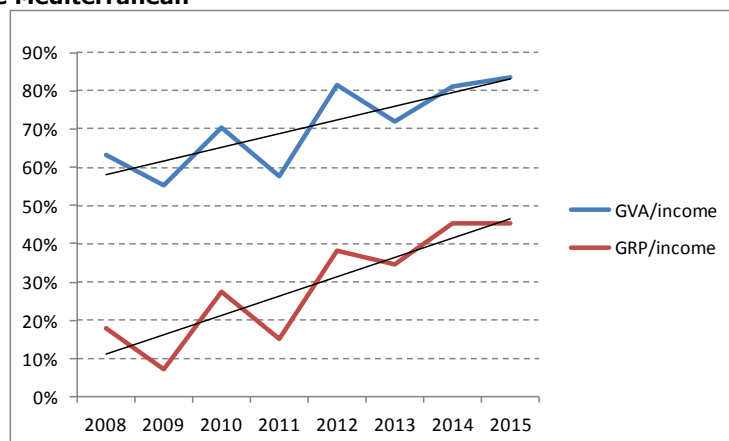
**Figure 25: Evolution of cumulated income, GVA and GRP for EU fishing segments targeting BFT in the Mediterranean**



Source: from STECF 17-12 economic data

At the fleet segment level, the ratios GVA to income and GRP to income, which can be used as a proxy for measuring vessels profitability, steadily increased over the 2008-2015 period at an average rate of 4% per year for GVA/income ratio, and 5% for GRP/income ratio.

**Figure 26: Evolution of the GVA to income and GRP to income ratios for the EU fishing fleet segments targeting BFT in the Mediterranean**



Source: from STECF 17-12 economic data

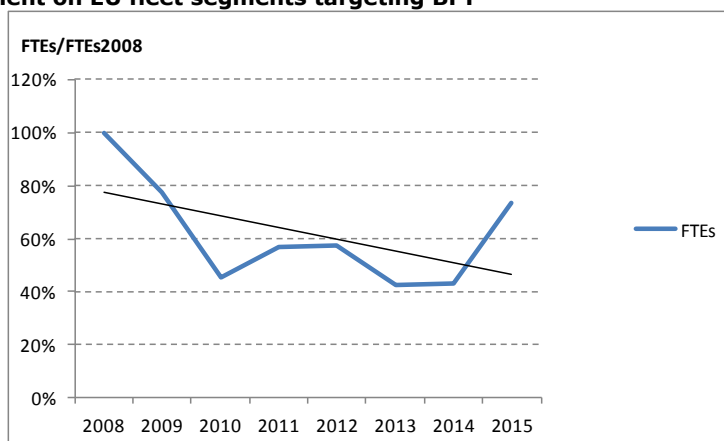
### Summary of economic impacts

Although deteriorating in 2014 and 2015 due to adverse economic conditions in Japan, the economic performance of the EU fishing fleet targeting BFT in the Mediterranean substantially improved on average in recent years coinciding with the introduction of improved fisheries control. GVA increased at an average of EUR 2.4 million per year, while vessel profitability indicators increased by 4-5% per year.

### ***Social impacts: onboard employment and wages***

The number of full time employees (FTEs) onboard the EU fishing fleet segments targeting BFT in the Mediterranean generally decreased over the 2008-2015 period as shown in Figure 27. The relative improvement between 2014 and 2015 is probably underpinned by the 18% EU BFT quota increase between these two years which supported an extension of the duration of the fishing season and hence, increased working time for crew members.

**Figure 27: Employment on EU fleet segments targeting BFT**



Source: from STECF 17-12 economic data

Because of an incomplete dataset on crew remuneration, it is not possible to present the evolution of the average wage per FTE in the EU BFT fishery. However, since GVA tended to increase over the period with a decreasing number of FTEs employed, it can be assumed that average crew remuneration increased.

### **Cost-benefit of control**

Costs of control of the BFT fishery can be approximated by adding the costs of JDPs coordinated by EFCA and the costs of the ICCAT mandated observer programme on BFT vessels, ranching units and traps.

Costs of JDPs: according to EFCA estimates (unpublished), BFT Mediterranean JDPs cost is approximately EUR 4.2 million per year including EUR 2.9 million for control at sea and EUR 1 million for coordination of controls for the main cost items.

ICCAT Observer programme: indications from the ICCAT biennale administrative report suggests that the average annual cost of observer deployment is in the region of EUR 650 000 EUR per year (data not detailed).

In total, cost of control can be rounded up to EUR 5 million per year on average. This total does not include regular expenses committed by Member States to discharge their obligations under the Control Regulation. It is not possible to estimate these costs in the absence of detailed activity indicators.

The cost-benefit ratio can be approximated by comparing the cost of control to the value-added generated by BFT fishery. Value added represents the net economic wealth supported by fishing activities, and therefore, the economic benefits for the EU economy. As shown in the following table, GVA accumulated over the 2009-2015 period is estimated to EUR 68.5 million (from Figure 25) with an estimated cost of control of EUR 35 million over the same period. The cost-benefit is therefore positive with EUR 1 invested in control supporting creation of EUR 2 for the EU economy. GVA estimates do not include economic benefits for ancillary industries (upstream, downstream including BFT ranching), so cost-benefit ratio is probably even higher.

**Table 25: Cost-benefit estimate of control of the BFT fishery**

(KEUR)	2009	2010	2011	2012	2013	2014	2015	Total
<b>GVA</b>	2 558	3 399	4 240	11 162	17 743	15 644	13 766	68 511
<b>Cost of control</b>	5 000	5 000	5 000	5 000	5 000	5 000	5 000	35000
<b>Ratio</b>								<b>1.96</b>

Source: own estimates

### **Overall Conclusion**

The improved control framework of the BFT fishery, coupled with EFCA involvement under the umbrella of a SCIP, appears to have produced positive results. One of the main results is that compliance with catch limits has substantially improved as evidenced by the enhanced alignment between EU real catches and EU catch limits as from 2008 (Figure 21). Increased compliance supported the recovery of the BFT stock with stock status indicators (F and SSB) improving dramatically (Figure 23) compared to the situation prevailing before 2008. Cost-benefit ratio of control appears positive with at minimum EUR 1 invested in control supporting creation of EUR 2 net benefits for the EU economy.

Economic and social impacts are less clear due to external factors and poor data. Because of the high exposure of the fishery on external factors, and in particular on the economic and societal situation in Japan, it is difficult to establish a clear link between the recovery of the stock and the economic performances of the fishing fleet concerned. However, economic indicators available reflect a globally improving situation compared to the past with an overall increase in GVA and an improvement of vessel efficiency indexes.

## **ANNEX 5 – ASSESSING IMPACTS: CASE STUDY ON THE NORTHERN HAKE FISHERY**

### ***Rationale for selecting this fishery***

The Northern hake (HKE) stock extends over a large area comprising the North Sea, the Celtic Sea and the northern Bay of Biscay. The Northern hake fishery is exploited by fishing vessels from 10 Member States (but predominantly vessels from France, Spain and the United Kingdom) using trawls, longlines and gillnets

In the late 90's, ICES assessed the Northern hake stock as being outside safe biological limits and recommended a dramatic reduction in fishing mortality through TAC adaptation and increased protection of juveniles. The lowest TAC in the history of this stock was set at 22 600 tonnes in 2001 but it was poorly enforced as evidenced by the level of reconstituted catches which was consistently above 40 000 tonnes during this period.

In 2004, the EU Council adopted a recovery plan<sup>112</sup> for the Northern hake stock. The recovery plan sets rules for setting the TACs according to targeted fishing mortality levels. It also included additional control measures that were not considered in the scope of the control regulation in force at that time<sup>113</sup> (*inter alia*: recording and accounting of time spent in the areas covered, prior notification before entry into ports, reduced margin of tolerance in logbooks records, separate stowage of hake, weighting provisions). The additional control measures were eventually removed from the recovery plan after the entry into force at the end of 2009 of the current control regulation.

For some reason, the Northern hake fishery is not covered by a Specific Control and Inspection Programme (SCIP) triggering EFCA involvement in JDPs. Monitoring and control of fishing fleet activities are therefore applied as foreseen by the Control Regulation with no value addition in relation to EFCA involvement.

However, the implementation of the Northern hake recovery plan coincided with the ruling of the European Court of Justice (ECJ) against France for the lack of enforcement of prohibition on the marketing of juvenile hake and a lack of effective sanctions against those found breaking the law between 1984 and 1987. In a ruling adopted on 12 July 2005, the ECJ ordered France to pay a lump sum of EUR 20 million and a periodic 6-month penalty of EUR 57 million running from that day, for failing to comply with a 1991 Court ruling<sup>114</sup>. This ruling sent a strong signal to France and other Member States to improve their control framework through proper enforcement of EU rules, including application of effective sanctions to offenders.

In summary, the Northern hake fishery is an interesting case of a fishery for which control provisions have been improved and placed under particular scrutiny from the Commission to evaluate the extent to which France, and other Member States, enforced control measures in view of the outcomes of the 2015 ECJ ruling.

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<sup>112</sup> Council Regulation (EC) No 811/2004 of 21.4.2004 establishing measures for the recovery of the Northern hake stock. OJ L 150, 30.4.2004, p. 1–11

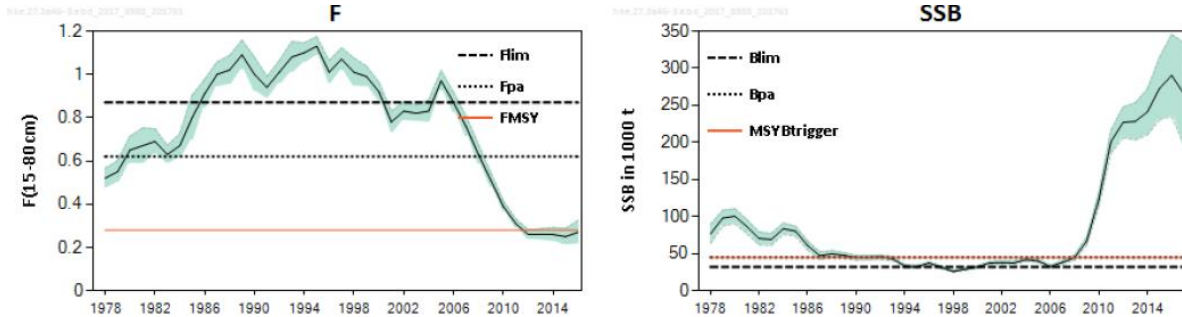
<sup>113</sup> Council Regulation (EEC) No 2847/93 of 12 October 1993 establishing a control system applicable to the common fisheries policy

<sup>114</sup> France eventually paid a penalty for the first six months (€ 57 million) for still not having complied with the 1991 ruling. By end of 2015, the situation was assessed as satisfactory and no second 6-month penalty has been applied.

### Environmental impacts: stock trajectory

According to the latest ICES advice, the Northern hake stock is now at the MSY objective. Fishing mortality dramatically decreased dramatically with the spawning stock biomass (SSB) increasing to levels largely in excess of minimum levels envisaged by the 2004 recovery plan.

**Figure 28: Hake in subareas 4, 6, and 7, and in divisions 3.a, 8.a–b, and 8.d, Northern stock. Summary of the stock assessment. F, and SSB plots show 95% confidence intervals (shaded area).**

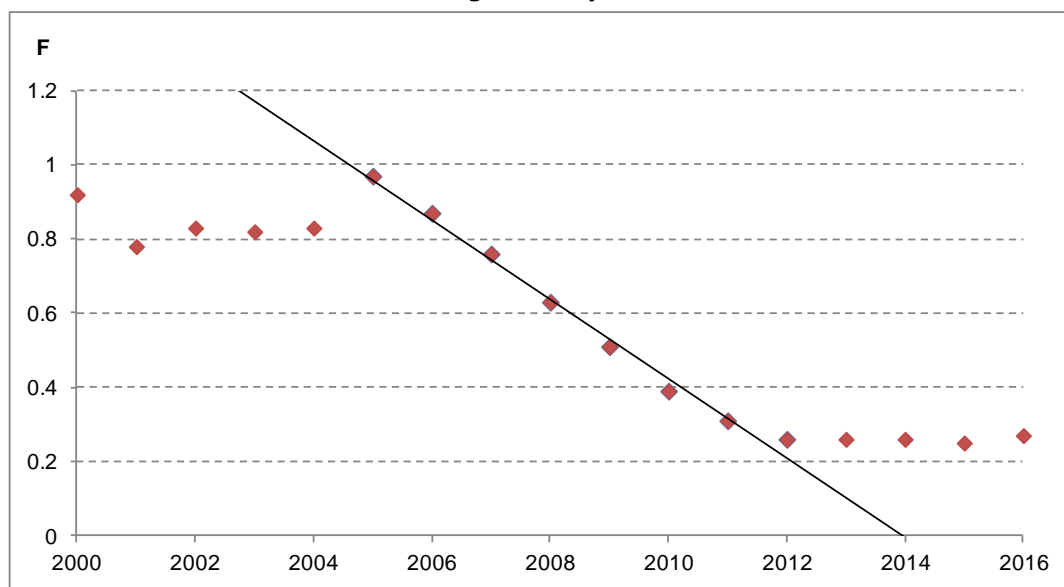


Source: ICES (2017)

A closer examination of fishing mortality shows three distinct periods:

- the period until 2005 during which fishing mortality remained at high values well above sustainability targets;
- the 2005-2012 period during which fishing mortality regularly decreased at an average rate of -0.1 per year while remaining most of the time above target level; and
- the 2012-2016 period during which fishing mortality stabilised at or below  $F_{MSY}$  level (0.28).

**Figure 29: 2000-2016 evolution of the fishing mortality for the Northern hake stock**

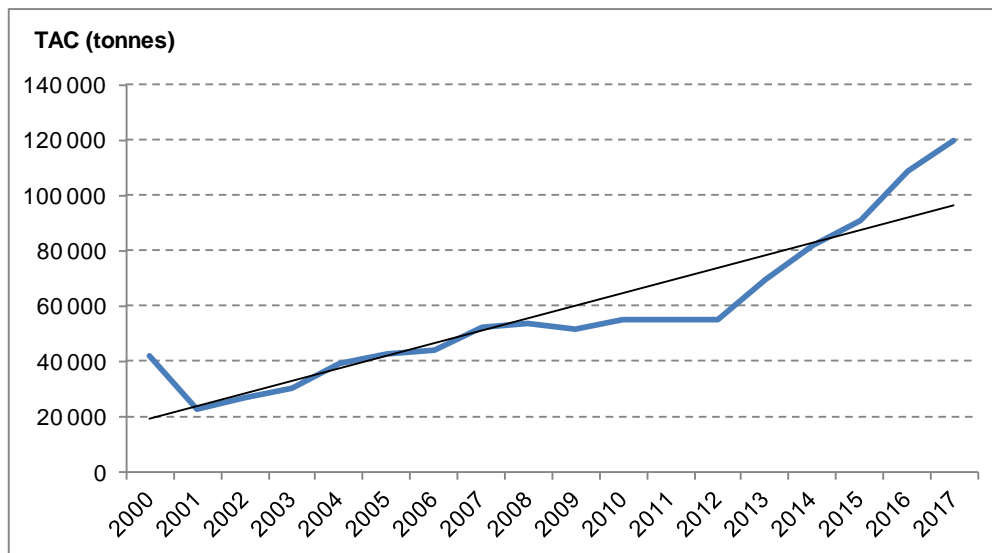


Source: ICES (2017) for fishing mortality values (average F year-1).

The decreasing fishing mortality supported the rebuilding of the spawning stock biomass which is now in the region of 260 000 tonnes, well in excess of MSY  $B_{trigger}$  (45 000 tonnes).

The successful recovery of the Northern hake stocks supported Council decisions to increase the fishing opportunities available for the EU fishing fleet. As shown in the following figure, the Total Allowable Catch (TAC) for the Northern hake stock increased from a low of 22 600 tonnes in 2002 to nearly 120 000 tonnes for 2017, *i.e.* nearly a six-fold increase.

**Figure 30: Evolution of the Northern hake TAC (tonnes)**



Source: ICES (2017)

### **Summary of environmental impacts**

The improvement of the control regime of the Northern hake fishery underpinned by the entry into force of the control regulation and the 'stick' effect of the financial penalty, supported the dramatic recovery of the Northern hake stock, in particular over the 2005-2012 period during which fishing mortality decreased at an average pace of -0.1 per year, enabling reconstitution of the spawning stock biomass to levels well above sustainability threshold. As a consequence of the stock recovery, fishing opportunities available to EU fishermen could be multiplied by a factor of 6 over a 15-year period.

### **Economic impacts: fishing vessels economic performances**

Impacts on vessels profitability is estimated based on the following steps:

1. Identification of main fishing fleet segments exploiting Northern hake (from STECF 17-12 landing data) according to the contribution to total landing value of Northern hake.
2. Extraction of economic profitability indicators for concerned fishing fleet segments: gross value added (GVA), gross profit (GRP), GVA to income, and GRP to income (from STECF 17-12 economic data)
3. Cumulated fishing fleet economic performances estimated pro-rata respective shares of segment in the total value of landings of sole (as per step 1).

Since STECF economic data cover the 2008-2015 period, the evolution of the economic situation of the EU fishing fleet targeting Northern hake can be assessed over this period only.

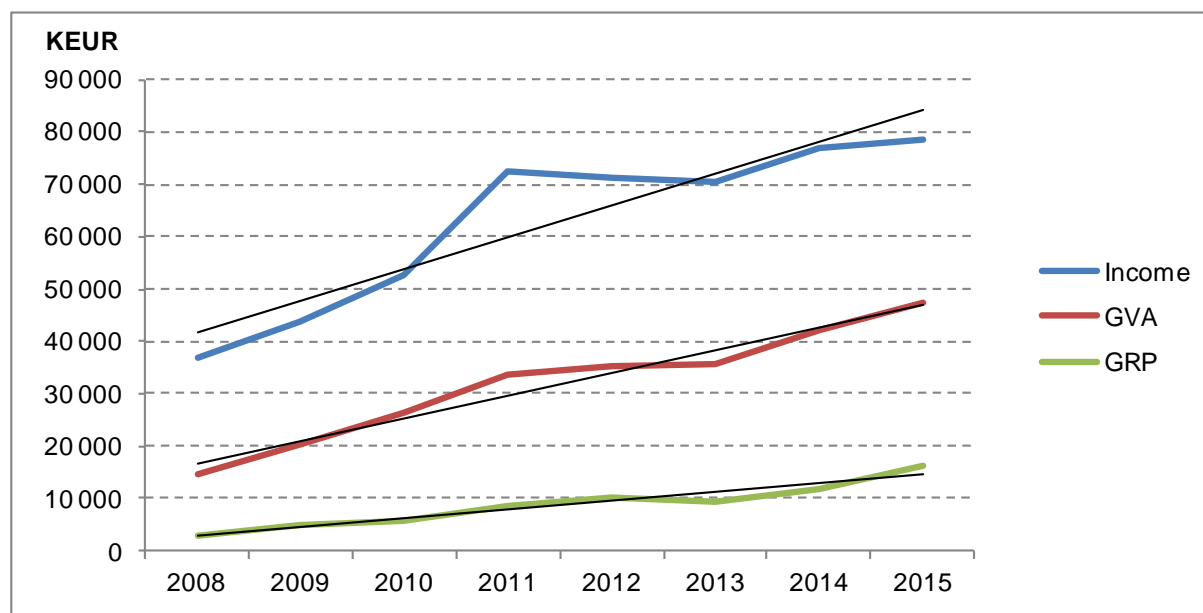
**Table 26: Top-ten EU fleet segments contributing to total Northern hake landing value**

Fishing fleet segment	% total value HKE landings (base 2015)
ESP-PGPVL2440	26%
FRA-DFNVL2440	15%
GBR-HOKVL2440	9%
ESP-DTSVL2440	8%
FRA-HOKVL2440	8%
FRA-DFNVL1824	5%
GBR-DTSVL2440	3%
FRA-DTSVL2440	2%
FRA-TMVL1824	2%
DNK-PMPVL1824	1%
<b>TOTAL</b>	<b>79%</b>

Source: STECF 17-12 EU fleet landings

Results (step 3) indicate a clear improvement of fishing fleet economic results over the 2008-2015 period. Income doubled over the period with an average annual rate of EUR 6 million per year, while gross value added tripled with an average annual increase of EUR 4.4 million per year. Gross Profit (GRP) shows a 6-fold increase between 2008 and 2015, with an average annual increase of EUR 1.7 million per year.

**Figure 31: Evolution of cumulated income, GVA and GRP for EU fishing segments targeting Northern hake**

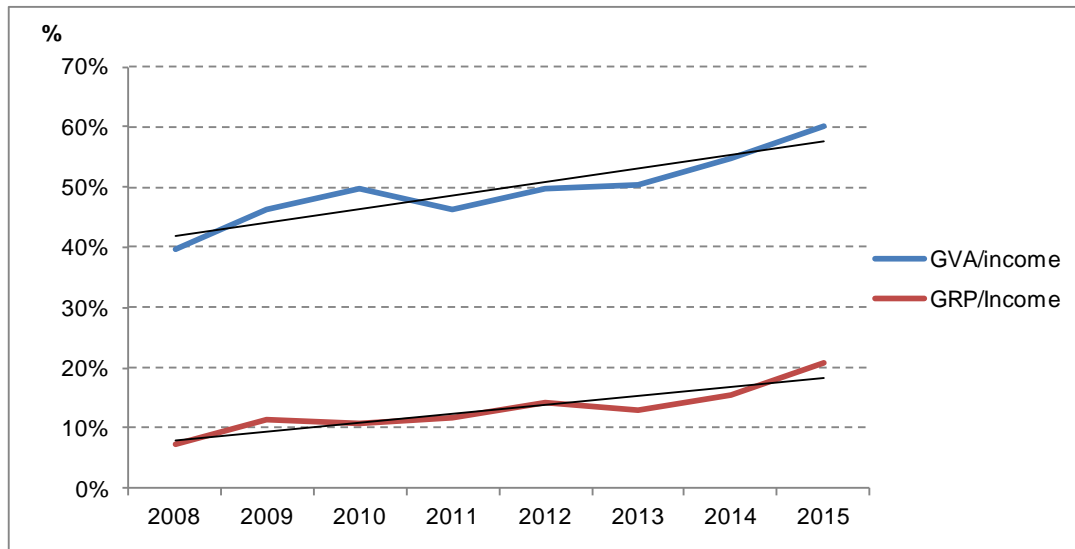


Source: from STECF 17-12 economic data

Correspondingly, fishing fleet profitability ratios as estimated by GVA/income and GRP/income ratios increased over the period, increasing by 20% for GVA/income ratio and by 14% for GRP/income ratio, with average annual increase rates of 2.2% and 1.5% respectively.



**Figure 32: Evolution of the GVA to income and GRP to income ratios for the EU fishing fleet segments targeting Northern hake**



Source: from STECF 17-12 economic data

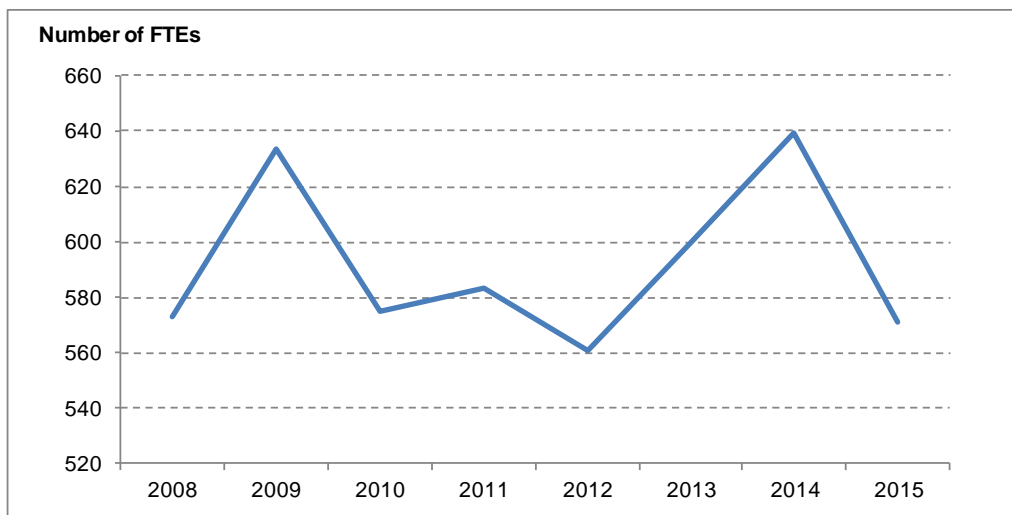
### Summary of economic impacts

EU fishing fleets targeting Northern hake consistently improved their economic performances over the 2008-2015 period which corresponded to the improvement of the stocks. All economic indicators show a greater contribution of the Northern hake fishery to the EU economy, as evidenced by the tripling of GVA generated, while vessel profitability also considerably improved.

### Social impacts: onboard employment and wages

The number of full time equivalent (FTE) onboard the EU fishing fleet segment targeting Northern hake do not show a clear trend. Overall, the number of FTEs appear to remain stable over the period with however wide variations from one year to another.

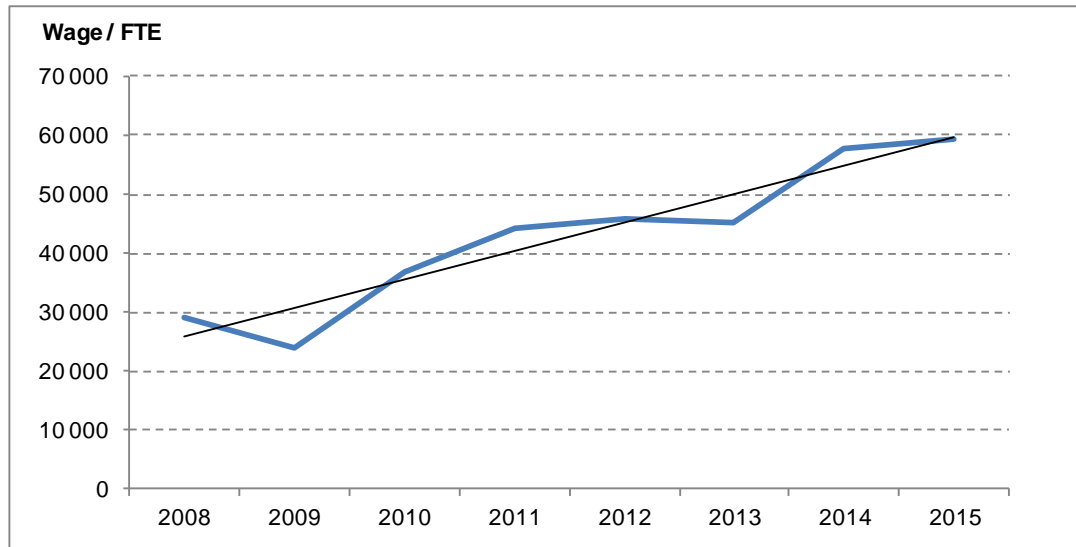
**Figure 33: Number of Full-Time Equivalent (FTEs) employed onboard EU fishing vessels targeting Northern hake**



Source: from STECF 17-12 economic data

However, the average wage per FTE shows a positive evolution with average yearly wage almost doubling over the period. On average, the average wage per FTE increased by close to an annual average of EUR 5 000 per year, which reflect the increased profitability of concerned vessels.

**Figure 34: Average wage by Full-Time Equivalent (FTEs) employed onboard EU fishing vessels targeting Northern hake. Data in EUR**



Source: from STECF 17-12 economic data

### **Summary of social impacts**

The recovery of the Northern hake stock does not appear to translate into higher employment. This is somewhat logical and attributable to fishing effort restrictions needed to support stock recovery up to MSY level. However, the increased fishing fleet profitability had clear effects on average remuneration of fishermen which almost doubled over the 2008-2015 period.

### **Costs of control**

The costs of control of the Northern hake fishery are difficult to obtain. There are no activity indicators available from MS inspectorates that could support an accurate estimate. In addition, controls are probably not specifically targeted at hake, but encompass all fishing activities targeting demersal species.

However, a rough estimate can be obtained from some activity indicators reported by the French FMC for the Atlantic shore line of France (thus excluding Eastern Channel, the North Sea and the Mediterranean). Costs of control are approximated using EFCA estimates of unit costs of land, sea and air patrol means.

**Table 27: Estimates of costs of fisheries control deployed by the French Authorities in the Atlantic part of national waters (excluding Eastern English Channel and North Sea)**

	Number	Units	Unit costs (EUR)	Total costs (EUR)	Assumptions/Comments
<b>Land inspections</b>	178	FTEs / year	46 700*	8 312 600	Half of the 356 FTEs employed by France for fisheries control
<b>Sea inspections</b>	529**	days	7 800*	4 126 200	Unit costs comprise staff, running expenses and depreciation
<b>Air inspections</b>	57**	hours	985*	56 145	Unit costs comprise staff, running expenses and depreciation
<b>Subtotal</b>				12 494 945	
<b>Overheads</b>	15%	Lumped		1 874 242	Own assumption (cover consumables and other running expenses not accounted for)
<b>Total</b>				14 369 187	

Source: own estimates based on FR FMC activity report and EFCA costs estimates of JDP (unpublished)

\* EFCA estimates of average operational costs (include manning and depreciation). \*\* Activity indicators reported by French FMC for Atlantic area<sup>115</sup>

Annual costs of control borne by French authorities for the whole Atlantic area (excluding Eastern Channel, North Sea and outermost regions) are estimated at around EUR 14.3 million per year. This estimate covers the cost of control of all fisheries, not only the hake fishery. Whilst hake is caught mostly in the waters of France, the Northern hake stock extends also in the waters of Ireland and of the United Kingdom. These two Member States share the control burden with France (the involvement of other Member States in the control of this fishery is presumably relatively marginal). As a conservative estimate, it is assumed that the total cost of control of the Northern hake fishery is EUR 14.5 million per year considering as rough assumption that costs of control deployed by France which are not targeted to Northern hake are equivalent to costs of control of this fishery deployed by Ireland and the United Kingdom.

The benefit/cost ratio can be approximated by comparing the cost of control to the value-added generated in the Northern hake fishery. Value added represents the net economic wealth generated by fishing activities, and therefore, the economic benefits for the EU economy. As shown in the following table, GVA accumulated over the 2008-2015 period is estimated at EUR 255 million (from Figure 31) with an estimated cost of control of EUR 116 million over the same period. The cost-benefit is therefore positive with the creation of EUR 2.2 for the EU economy from every EUR 1 invested in control supporting. GVA estimates do not include economic benefits for ancillary industries (upstream, downstream), so the benefit/cost ratio is probably even higher.

**Table 28: Cost benefit ratio of control of the Northern hake fishery**

	2008	2009	2010	2011	2012	2013	2014	2015	Cumulated
<b>GVA</b>	14 735	20 203	26 281	33 624	35 411	35 461	42 050	47 247	255 014
<b>Costs of control</b>	14 500	14 500	14 500	14 500	14 500	14 500	14 500	14 500	116 000
<b>Ratio</b>									<b>2.2</b>

Source: contractor's own estimates

<sup>115</sup> Bilan d'activité CROSSA Etel - 2016 - DIRM NAMO

## **Overall Conclusion**

The Northern hake case study shows that when MS have a strong incentive to enforce control rules, in this case a high fine imposed to one Member State for failing to comply with EU rules, this can support stock recovery up to the expected MSY level. Improved stock status enabled the EU Council to increase fishing opportunities available to EU fishermen, with associated economic and social positive impacts.

## **ANNEX 6 – ASSESSING IMPACTS: CASE STUDY ON MEDITERRANEAN FISHERIES (EXCLUDING THE BFT FISHERY)**

### ***Rationale for selecting this fishery***

Most of the eleven Mediterranean (incl. the Black Sea) Member States<sup>116</sup> fleets are wholly dependent on the region. The exceptions are Spain and France which also have major parts of their fleets operating in the Atlantic and other fishing regions. The main species fished in this sea basin include small pelagic species (e.g. anchovy, sardine), and demersal species (e.g. hake, shrimps).

The EU fleet fishing in the Mediterranean & Black Sea consisted in 2015 of 20 709 active vessels (excluding the Greek fleet) representing 30% of the EU total fleet. The Small-Scale Coastal Fleet (SSCF) comprised 14 316 vessels, or 69% of the regional fleet. With 14 400 vessels, Greece would comprise 41% of the Mediterranean & Black Sea fleet.

The weight and value of landings generated by the Mediterranean fleet (excluding Greece) in 2015 amounted to approximately 368 000 tonnes for a value of EUR 1.33 billion. Large-scale vessels generated the highest landed weight (88% of the total), equivalent to 78% of the landed value. Although over 65% of the effort was deployed by the SSCF, these vessels landed only 12% by weight and 22% by value. However, this fleet segment is more important from a social point of view as it represents almost 50% of the FTE employment in the Mediterranean and Black Sea fleet (excluding Greece).

In part, due to the tourism attractiveness of the Mediterranean Sea, recreational fisheries represent an important source of fishing mortality on exploited stocks. According to a recent study<sup>117</sup>, recreational fishing in the Mediterranean could represent between 10% and 50% of total catches of the small-scale fishing fleet depending on the species. No precise figures are available on the impact of non-commercial fisheries since the sector remains largely unmonitored except for Slovenia.

So far, Mediterranean fisheries have not been subject to much improved control strategies supported by the EU. The JDPs organised under EFCA coordination have so far concerned the Bluefin and swordfish fisheries which needed swift action given the seriousness of the situation compounded by the shared nature of the resource, and the Northern Adriatic small pelagic fishery (sardine and anchovy), also in need for improved control. In the Black Sea, EFCA has worked mostly on the improved coordination between Romania and Bulgaria under a specific PACT<sup>118</sup> programme. Most of demersal and other small pelagic fisheries in the Mediterranean have not been subject to JDPs or other specific control arrangements. Member States were expected to discharge their regular control obligations as set out by the CR, with increased complexity due to the large proportion of small-scale fishing vessels in the region compared to other regions in the Atlantic Ocean. Small-scale fishing vessels are in particular exempted from vessel monitoring system and electronic communication systems.

In its 2017-08 Special Report, the European Court of Auditors pinpointed an overall lack of control in the Mediterranean Sea with little effort deployed by Member States to ensure compliance with fishing rules. As an example, ECA cites major discrepancies between different sources of landing data in some Member States mostly attributable to the absence of reliable data on catches of vessels under 10m, and lack of verification of engine power data for large-scale fleets. Other weaknesses identified by ECA included lack of relevant

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<sup>116</sup> Bulgaria, Croatia, Cyprus, France, Greece, Italy, Malta, Portugal, Romania, Slovenia and Spain

<sup>117</sup> Toni, T. Font and Lloret, J. - Biological and Ecological impacts derived from Recreational Fishing in Mediterranean Coastal Areas Reviews in Fisheries Science & Aquaculture 22(1): 73-96 (2014)

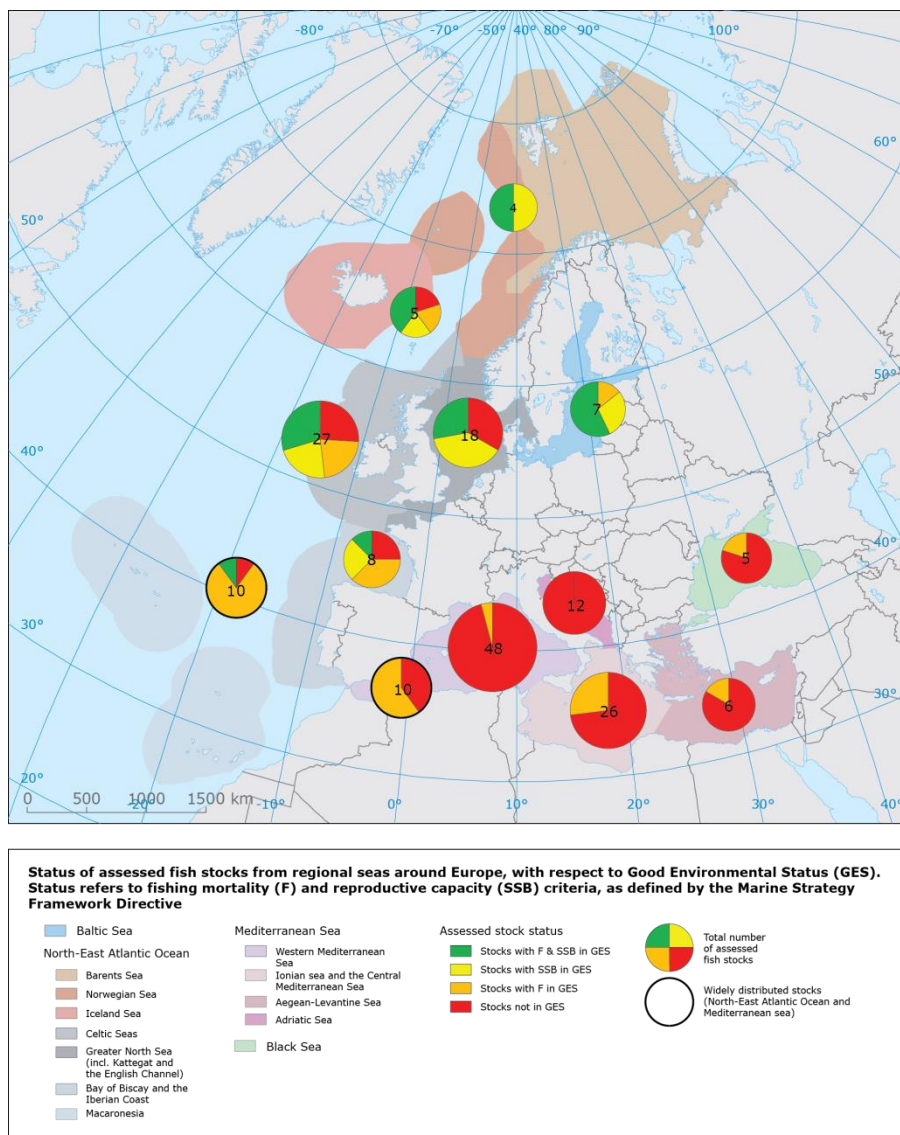
<sup>118</sup> PACT: Partnership, Accountability (compliance), Cooperation and Transparency

risk analysis and mismatches between the fishing fleet registered in the EU register and the fishing fleet in operation.

### Environmental impacts: stocks status

The latest stock assessment (*i.e.* STECF 17-15) confirmed an almost general overexploitation status of fisheries resources in the Mediterranean. Out of 65 stocks assessed, 61 (94%) are exploited above sustainability reference points with current fishing mortality exceeding  $F_{MSY}$  often by a factor 2 or 3, and even more in some cases (*e.g.* monkfish, hake). Figure 35 maps the Mediterranean stocks for which scientific advice is available, and provides some grounds for comparison with the status of fish resources in other parts of EU waters, where broadly speaking, stocks situation can be estimated as better than in the Mediterranean.

**Figure 35: Summary of information available on stock status in EU waters**



Source: European Environment Agency - 2017 (web publication)

The seriousness of the Mediterranean situation is compounded by at least two issues:

- Most of the stocks currently assessed as overexploited have been assessed as in a similar state in previous evaluations. This means that stocks do not show signs of recovery despite improved conservation national frameworks (*i.e.* management

plans) adopted under the Mediterranean Regulation 1967/2006<sup>119</sup> providing the legal basis for managing EU Mediterranean fisheries.

- For several exploited stocks, including important stocks from a socioeconomic perspective (e.g. sole), no assessment of their status can be finalized due to a lack of relevant data, in particular from the small-scale fleet or from non-commercial fishers. This means that for some stocks, there is no scientific basis for designing and implementing appropriate conservation measures, including technical measures.

### Summary of environmental impacts

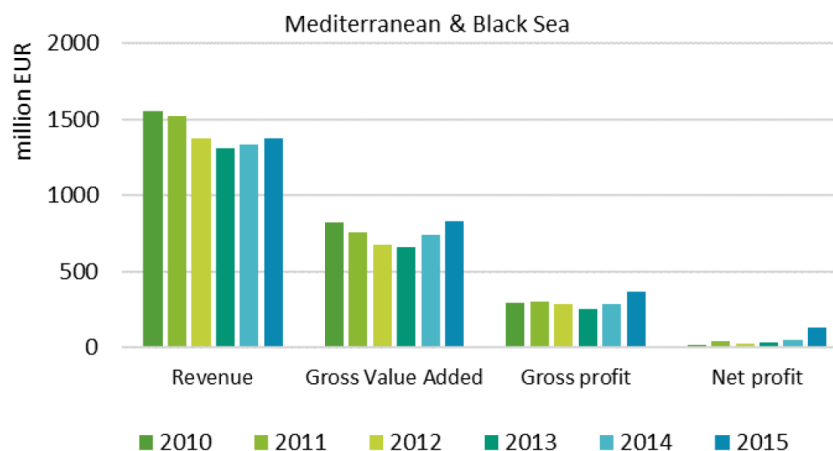
About 95% of exploited stocks in the Mediterranean are exploited beyond MSY reference points. In addition, some important commercial stocks could not be assessed due to a lack of relevant information on catches of certain sector sources of fishing mortality. The overexploitation situation is not new and main stocks do not show signs of recovery despite efforts to improve the effectiveness of the conservation framework.

### Economic impacts: fishing vessels economic performances

Excluding Greece, revenue (income from landings and other income) generated by the Mediterranean & Black Sea fleet in 2015 was an estimated EUR 1.4 billion, 65% of which was generated by the Italian fleet (EUR 895 million). In terms of economic performance, the amount of Gross Value Added (GVA), generated by the EU Mediterranean & Black Sea fleet was EUR 828 million. Total Gross profit for the region was estimated at EUR 365 million (Figure 36).

In terms of revenue (income from landings and other income), STECF data show that revenue tended to decrease between 2010 and 2013. Revenue increased in 2014 and 2015 mostly due to higher fish prices, but it remained below 2010 levels in excess of EUR 1.5 billion. GVA followed a similar pattern but 2015 GVA levels were above 2010 levels with sharp decrease in energy costs as from 2014 as main supporting factor. Net profit tended to increase but this was mostly a consequence of a lack of investments in fishing fleets underpinned by the poor visibility on the status of fisheries resources.

**Figure 36: Evolution of the main economic indicators for EU fleet operating in the Mediterranean**

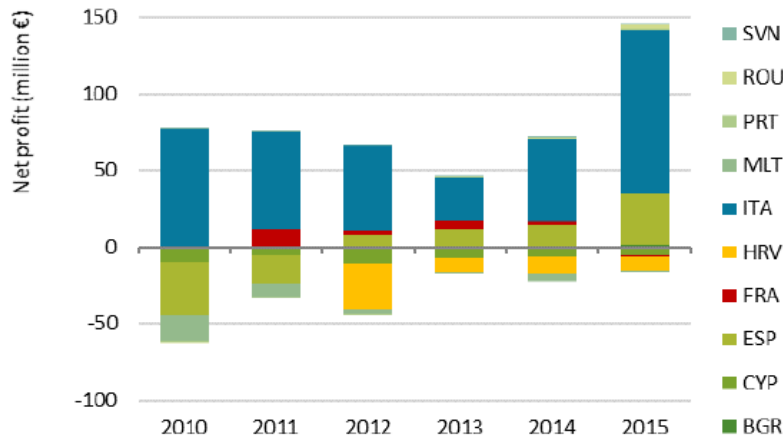


Source: STECF 17-12 Economic data

<sup>119</sup> Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94. OJ L 409, 30.12.2006

A detailed analysis by EU MS of net profit shows that the positive performance of the Mediterranean EU fleet is largely driven by the positive results obtained by the Italian fishing fleet. Some MS fleets (see Figure below) consistently report negative profit figures over the period (*i.e.* Cyprus, Croatia, Malta, and France to a lesser extent).

**Figure 37: Details by EU Member State of Net Profit value of fishing fleets**



Source: STECF 17-12 Economic data

These global figures hide the particularly alarming situation of some fishing fleets. In the box below, the results of a detailed analysis of the economic situation of the Italian fishing sector provide a good summary of the socio-economic effects of stock depletion.

### Overview of the economic situation of the Italian fishing fleet

A particularly worrying situation for Italian fisheries was brought to light when, in 2013, a fleet of 12 635 vessels, corresponding to 164 000 GT and about 1 019 000 kW, produced about 173 000 tonnes. In the same year, the value of annual landings totalled about EUR 834 million. Both the quantity and value of the annual landings had decreased respectively by 24% and 32% respectively since 2008 without a corresponding contraction of the fleet (-8%). The number of employees also declined (-10% since 2008). The poor performance in the Italian fishing sector during the period 2008–2013 was highlighted by the decrease of the Gross Value Added (GVA, -32%), the gross profit (-44%) and the net profit (-77%). The general crisis in the sector was also confirmed by the trend observed in profitability indicators, such as net profit margin and the RoFTA (Return on Fixed Tangible Assets) indicators, which decreased respectively by 67.3% and 54% in the same period.

Source: Pipitone and Colloca (2018)<sup>120</sup>

### Summary of economic impacts

Revenue and economic wealth (GVA) from fishing activities tended to decrease between 2010 and 2013. The situation improved as from 2014 under a favorable conjunction of increasing fish prices and decreasing fuel prices which may or may not last. However, 2015 revenue remained below levels estimated in 2010 and 2011. Some MS fleets are unprofitable with some important fishing segments at risk of economic collapse.

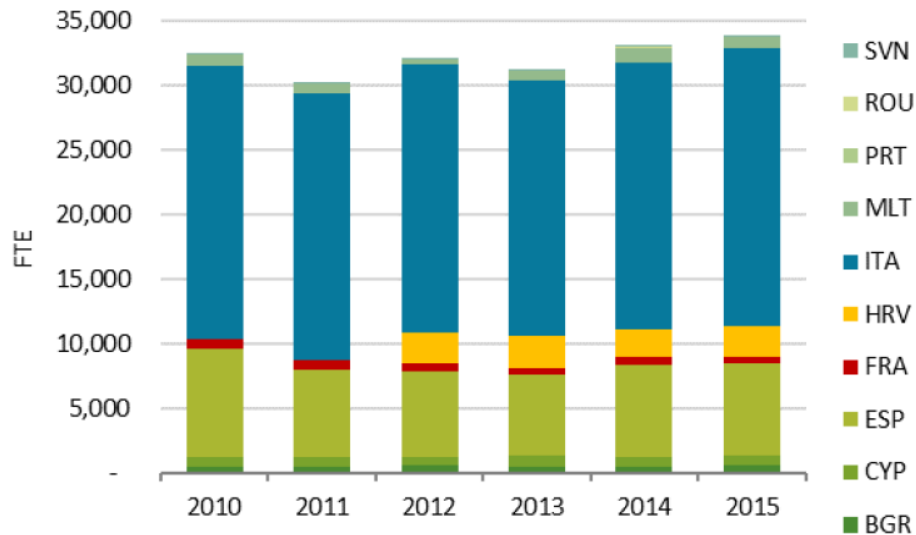
<sup>120</sup> Pipitone, V., Colloca, F. (2018)



### Social impacts: onboard employment and wages

According to STECF 2017-12, the number of jobs (in FTEs) has remained fairly stable over the 2010-2015 period. The apparent increase as from 2012 is attributable to the inclusion of Croatia in the perimeter of the EU fleet as from this year. Data for Greece are not available.

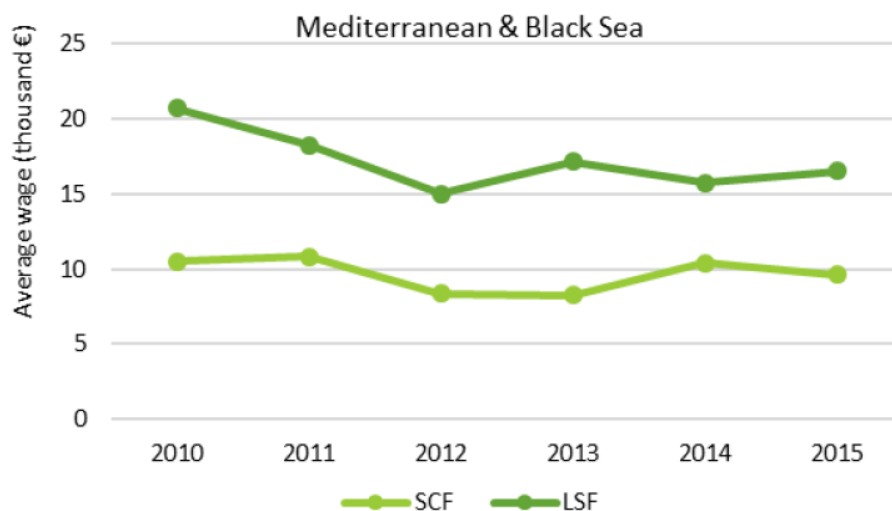
**Figure 38: Evolution of the number of jobs (in FTE) on EU fishing vessels operating in the Mediterranean**



Source: STECF 17-12 Economic data

In terms of crew remuneration, the evolution of the average wage per FTEs shows a global declining trend for large scale fishing vessels with current levels of remuneration below 2010 levels. For the small-scale fleets, average wages are stable over the 2010-2015 period with however a slight deterioration in 2012 and 2013. A negative signal is that the average remuneration of fishermen in the Mediterranean is low compared to fishermen remuneration in other EU sea basins (EU average fishermen remuneration is EUR 25 000 per year). Low remuneration negatively impacts on attractiveness of the sector for young entrants.

**Figure 39: Evolution of the average wage per crew member on fishing vessel operating in the Mediterranean**



Source: STECF 17-12 Economic data

## **Summary of social impacts**

Whilst the number of jobs on board EU fishing vessels operating in the Mediterranean remained stable over the 2010-2015 period, the average remuneration of fishermen tended to decrease for employees on board large scale vessels since 2010 while remaining stable for small-scale fishermen. The low average level of remuneration on large scale vessels ( $\approx$  EUR 16 000 per year) and on small-scale vessels ( $\approx$  EUR 10 000 per year) clearly undermines the attractiveness of the sector for young entrants.

## **Cost-benefit of control**

Fisheries in the Mediterranean include a large component of small-scale fishing vessels (69% not including Greece) which are exempted from most of the monitoring and reporting obligations foreseen in the Control Regulation. In addition, the Mediterranean context supports a probably large, yet unknown, recreational fishing sector which remains largely unregulated and unmonitored. Therefore, and as noted by the ECA in its special report, control of fishing activities in the Mediterranean is particularly difficult for concerned Member States which do not benefit from EFCA coordination and support outside the framework of the specific programmes developed for bluefin tuna or Northern Adriatic small pelagic fisheries.

The situation in the Mediterranean clearly calls for an improved control framework. Almost all exploited stocks are overexploited, underpinning poor economic results for the EU fleets concerned and inadequate remunerations of fishermen. Another issue of concern is the inability of scientific institutes to produce stock assessment of certain important stocks due to a lack of relevant data. According to CFP principles, management measures must be based on best scientific advice available.

## **Conclusion**

Fisheries in the Mediterranean include a large component of small-scale fishing vessels (69% not including Greece) which are exempted from most of the monitoring and reporting obligations foreseen in the Control Regulation. In addition, the Mediterranean context supports a probably large, yet unknown, recreational fishing sector which remains largely unregulated and unmonitored. Consequently, and as noted by the ECA in its special report, control of fishing activities in the Mediterranean is particularly difficult for concerned Member States which do not benefit from EFCA coordination and support outside the framework of the specific programmes developed for bluefin tuna or Northern Adriatic small pelagic fisheries.

The situation in the Mediterranean clearly calls for an improved control framework. Almost all exploited stocks are overexploited, underpinning poor economic results for the EU fleets concerned and inadequate remunerations of fishermen. Another issue of concern is the inability of scientific institutes to produce stock assessment of certain important stocks due to a lack of relevant data. According to CFP principles, management measures must be based on best scientific advice available.

## **ANNEX 7 – ASSESSING IMPACTS: MODELLING COMPLETED FOR IMPACT ASSESSMENTS OF THE CONTROL REGULATION, AND OF REFORM OF THE CFP**

To assist with the assessment of environmental, economic and social impacts under this assignment, two recent impact assessments have reviewed, in particular the bio-economic modelling, to assess their potential relevance to this impact assessment:

1. Impact Assessment of a Proposal to Reform and Modernise the Control System applicable to the Common Fisheries Policy (MRAG *et al*, 2008)<sup>121</sup>; and
2. Environmental, Economic, Social and Governance impacts of the 2012 CFP revision (MRAG *et al*, 2010)<sup>122</sup>

### **Impact Assessment (IA) of a Proposal to Reform and Modernise the Control System applicable to the Common Fisheries Policy (MRAG *et al*, 2008)**

This IA examined several potential environmental/economic/social impacts as shown in Table 29.

**Table 29: Impacts and costs examined by the 2008 control system impact assessment (MRAG, 2008)**

<b>Area</b>	<b>Impacts (+/-)</b>	<b>Costs</b>
<b>Environment</b>	Displacement of fishing pressure to other fisheries Stock recovery Improved trophic levels Improved age structure in fish stocks Improved legal framework	
<b>Economic</b>	Loss of earnings from non-compliance (lower catches/prices) Higher prices (legit catches/consumer confidence) Higher returns to fishing effort ( <i>e.g.</i> cost efficiency)	Initial increased compliance costs to fishers Reduced costs to POs Initial implementation costs to MAs
<b>Social</b>	Less efficient fishers removed, leading to a short-term reduction of shore side businesses Loss of leisure time due to higher compliance/regulatory burden (but reduced by e-log use)	Uniform interpretation and application of the rules facilitates inspection.

### **Methodology**

This IA used bio-economic modelling of seven case study fisheries<sup>123</sup> linking biological population models with an economic model of fleet performance was used to (i) identify costs and (ii) support the calculation of benefits resulting from a change in EU fisheries control strategy:

<sup>121</sup> MRAG, *et al*, 2008

<sup>122</sup> MRAG, *et al*, 2010

<sup>123</sup> North Sea cod, Baltic cod, North Sea plaice & sole, Northern hake, Southern hake, Western mackerel, & Mediterranean hake.

- The costs were determined by identifying specific control actions and linking these to the each of the options; and
- The benefits were determined by extrapolating the retained catches based on varying levels of compliance, as determined by the options, determining revenues by linking these to fish prices, and determining fleet, processing and ancillary sector value added by applying costs, profits and income multipliers to the results.

The timeline was over 2010-2019 (10 years) with age-structured biological models derived from ICES WG (and assumed constant target fishing mortality).

Indicators used were as follows:

- Biological and environmental:
  - Fish stocks (SSB).
  - Over capacity.
  - Trophic level
- Economic indicators
  - Economic benefits. Net additional profit per vessel
  - Economic costs.
  - Deployment costs (case studies)
  - Inspection commitments
  - MCS expenditure
- Social indicators:
  - Employment (fish catching, processing and ancillary)
  - Welfare improvement (linked to employment)

### ***Analysis of 2008 indicators and relevance to the current Impact Assessment***

#### Environment

This 2008 impact assessment on modernising the control system under the CFP concluded that it was difficult to disaggregate environmental impacts and attribute them to specific elements of the proposed regulatory changes being assessed at that time, or to measure the specific effect of compliance on environmental impacts. However, it also concluded that since high compliance can generally be equated with more positive impacts, it was possible based on expert judgement to suggest through informed qualitative analysis that improved control would result in progress in achieving *sustainable stock levels* (measured by the year the modelled stocks would achieve  $B_{pa}$ ). However, aspects such as stocks under recovery plans or specific control actions need to be considered.

The study also looked at the impact of control measures on *fleet over-capacity* by reducing fish catches over the short-term. With the capacity of EU fleets better matched now with fishing opportunities than in 2008, this indicator is less relevant than in 2008, and is therefore not considered further. The 2008 study also looked at changes in the *trophic level* of modelled stocks resulting from improved control, seeing improvements (in the case of North Sea stocks) of 2.5% in the case of non-regulatory control measures being imposed and 3% if a control regulation was imposed. Whilst a useful indicator, the marginal difference between the non-regulatory and regulatory approach suggests that the impact of an amendment of the CR under Option 1 would also be marginal.

## Economic

It was also concluded by the 2008 study that it was difficult to disaggregate economic impacts amongst the proposed elements of the reform being proposed at that time, and to measure their specific effect from compliance. It looked at fleet *gross value added* as a primary economic benefit, examining changes in additional wages, crew numbers and net profit per vessel, and in the IA, saw short-term falls with longer term (10 year) gains in net profits for both the non-regulatory and regulatory scenarios. It is considered that this straightforward approach to measuring direct economic impact on case studies would also reflect the changes in the control regime under Option 1 in the current IA, with similar caveats applied to measuring environmental benefits stated above, e.g. aspects such as stocks under recovery plans or specific control actions need to be considered.

## Social

It was concluded by the 2008 IA that it was difficult to disaggregate social impacts amongst the proposed elements and to measure their specific effect from compliance. Two key social impact indicators were used, *employment* (fish catching, processing and ancillary) and *welfare improvement* (linked to employment). The bio-economic modelling showed growth in employment across all three scenarios, with principal gains in the regulatory option, especially in processing, although this was dependent upon the fisheries being modelled (strong gains in Western mackerel processing were particularly prominent). Employment levels are also likely to be strongly linked to the current amendments being considered and assessed, and thus would be a useful indicator for the current assessment.

### ***Comparison of results from the 2008 bio-economic modelling against the current situation, and the lessons learned for the current IA***

This brief section attempts to compare the predictions made by the bio-economic modelling conducted in 2008 with the current situation, based on the indicators considered in the text above as being useful for comparison.

## Environmental

The bio-economic modelling in the 2008 assessment was conducted over 10 years (2010-2019) for seven case study fisheries. Table 30 compares the result of this modelling, undertaken in 2008, with the situation at the end of 2016 according to STECF's report on the 'Monitoring the performance of the CFP (STECF-17-04). Option 3 of the 2008 IA relates to introduction of a Regulatory Instrument.

**Table 30: Comparison of predicted year stocks reach BPA and current situation**

Stock	Year B <sub>PA</sub> reached (2008 IA)			Year B <sub>PA</sub> reached (actual)	Situation in 2016		Progress
	Op 1	Op 2	Op 3		SSB	B <sub>PA</sub>	
North Sea cod	2012	2011	2011	2018?	161,135	165,000	Stock still below B <sub>PA</sub>
Western Baltic cod	2017	2014	2013	Not reached	20,737	38,400	Stock still below B <sub>PA</sub>
North Sea plaice	-	2014	2011	2007	945,709	230,000	Stock substantially above B <sub>PA</sub>
North Sea sole	2010	2010	2010	2013	62,636	37,000	Stock above B <sub>PA</sub>
Northern hake	2010	2010	2010	2009	290,234	45,000	Stock substantially above B <sub>PA</sub>
Southern hake	-	-	2019	2007	18,856	11,100	Stock above B <sub>PA</sub>
Western mackerel	2010	2010	2010	2009	4,113,187	3,000,000	Stock substantially above B <sub>PA</sub>

Source: MRAG et al, 2008 and ICES stock status reports (2017). 2006 = base year in 2008 IA

Many of the stocks which were predicted to reach  $B_{PA}$  in 2010-2011 have comfortably done so, and are now substantially above this precautionary limit. The exceptions are cod in the North Sea (which are recovering rapidly and should exceed  $B_{PA}$  in 2018) and Western Baltic cod, where fishing mortality remains well above  $F_{MSY}$ .

### Economic and Social

GVA and employment have not been further considered as specific fleet segments were not identified and reported on in the 2008 IA for the stocks listed in the table above, benefits reported instead in terms of numbers of vessels.

### **Environmental, Economic, Social and Governance impacts of the 2012 CFP revision (MRAG et al, 2010)**

#### ***Introduction and analysis of relevance of selected indicators in the 2010 IA to the current Impact Assessment***

This impact assessment examined the impact of the CFP reform over 2012 – 2022, and used case studies in Galicia, Brittany, Sicily and Scotland. It also used bio-economic modelling, covering 21 stocks in the Baltic, North Sea and NE Atlantic. Indicators included and their potential use in the current IA are considered below.

### Environment

Stock situation in terms of fishing mortality in relation to  $MSY$  & Average size (length and weight) of fish. Assessed the number of stocks that would reach  $F_{MSY}$  by 2022, and the rate at which they would reach this point. Amendments to the FCS currently being assessed could only speed up this process, or at least mitigate risks of 2010 modelled results being delayed.

Percentage of stocks and/or catches covered by Long-term Management Plans. Unlikely to change significantly under amendments to the FCS currently being assessed, so will not be considered for the current IA.

Fleet evolution. Similar to the capacity indicator in the 2008 IA, this quantified the number of vessels as unprofitable fleet elements that fall out of the fishery. This indicator is not considered relevant to the amendments to the FCS currently being assessed.

Area covered by protection regimes (Natura 2000) or special measures EU EEZ. This indicator, although used for a different purpose under this 2010 IA (it looked mainly at the rate of MPA designations) would be useful in terms of addressing one of the major weaknesses in MPA management, enforcement of potentially damaging activities in these areas.

### Economic

<p><u>Gross valued added (GVA).</u></p> <p><u>Economic sustainability:</u> ratio current revenue-break even revenue point.</p> <p><u>Net profit margin.</u></p> <p><u>Economic performance:</u> return on investment.</p>	<p>In the 2010 IA, income rose in line with the projected stock trajectories, although this did vary by fleet segment and region (e.g. in GSA 16 larger demersal trawl GVA dropped substantially as effort restrictions came into effect). As with the 2008 study that also used GVA as an indicator, this is also likely to be a useful comparison for the assessment of impacts from the amendments to the FCS currently being considered.</p>
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Fish prices. Limited impact on prices (e.g. via EFF-funded market promotions) were found, although improved stocks could result in fishery certification and other market-based tools. Given the strong influence of external, largely supply-based factors, and the limited influence of prices from control-related activities, this indicator is not appropriate for consideration.

Level of subsidies. Was based on EFF support. With the EMFF programme in place, this indicator is not appropriate for this impact assessment.

### Social

Employment. Included FTE per vessel for different Member States and vessel length classes, and in selected fisheries, by fleet segment. As per the comments in the 2008 control IA above, this indicator is relevant to the current IA.

Status of fisheries dependent communities/regions/MS/EU. Was mainly responding to the transfer of fishing rights within the EU, so is not relevant to this current IA.

<p><u>Value-added dependency levels.</u></p> <p><u>Social sustainability:</u> gross value-added per employee.</p> <p><u>Attractiveness of the sector / distribution of incomes.</u></p>	<p>Indirect short- and long-term impacts that followed changes in environmental and economic indicators e.g. declining fleet capacity to all sub-sectors in the short-term may reduce employment and GVA</p>
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Evaluation of the bio-economic modelling against the current situation, and the lessons learned for the current IA

### Environmental

The single-species bio-economic modelling element in this assessment was conducted over 14 years (2009 – 2022) for 21 stocks in the Baltic, North Sea and NE Atlantic. This section compares the predicted number of stocks being fished at  $F_{MSY}$  as assessed in 2010, with the actual situation in 2017 (according to STECF’s report on the ‘Monitoring the performance of the CFP (STECF-17-04)'). Only Option 1 (no deviation from the 4-year implementation of  $F_{MSY}$  policy allowed) of the original IA is considered.

**Table 31: Comparison of the number of stocks fished at  $F_{MSY}$  and the current situation**

Stock	No. of stocks at $F_{MSY}$	
	IA estimate for 2017 <sup>1</sup>	Current status (2017) <sup>2</sup>
Northern stocks (ICES)	52 / 89 (58%)	40 / 66 (61%)
Deepwater stocks (ICES)	7 / 29 (24%)	
Southern stocks (SGMED)	11 / 18 (61%)	
<b>TOTAL</b>	<b>70 / 136 (51%)</b>	

Notes: 1 MRAG et al, 2010. 2 STECF-17-04

Due to difficulties in ensuring a like for like comparison, this table is indicative only. However, it does echo the results of the comparison of the 2008 CR impact evaluation (see Table 30), suggesting that progress may have been slightly more rapid than predicted in the 2010 IA.

### Economic

*Caution is noted throughout this section and the tables below about comparing AER economic and social data between years due to different datasets in use.*

**Table 32: Gross-value added (million EUR)**

MS	2010 IA estimates (MRAG, 2010) <sup>1</sup>				AER Actual results				Comparison of change 2012-2017 (IA estimate and actual )
	2012	2017	Change	%	2012 <sup>2</sup>	2017 <sup>3</sup>	Change	%	
BEL	16	32	16	100%	30	42	12	40%	60%
DEU	96	123	27	28%	74	93	19	26%	9%
EST	171	226	55	32%	8	10	2	30%	7%
DNK	7	11	4	57%	243	314	72	30%	48%
ESP.	416	593	177	43%	838	1,165	327	39%	8%
FIN	2	5	3	150%	20	15	-5	-25%	117%
FRA	461	550	89	19%	532	700	167	31%	-63%
GBR	275	414	139	51%	436	641	205	47%	7%
IRL	109	138	29	27%	178	113	-65	-36%	237%
LTU	3	5	2	67%	13	33	20	157%	-135%
LVA	5	7	2	40%	9	11	2	27%	32%
NLD	114	177	63	55%	130	209	79	60%	-9%
POL	17	24	7	41%	27	30	3	11%	74%
PRT	139	163	24	17%	260	251	-8	-3%	119%
SWE	24	36	12	50%	57	90	33	59%	-18%

Sources: <sup>1</sup> MRAG et al, 2010 (Option 2, see Table 70)

<sup>2</sup> Scientific, Technical and Economic Committee for Fisheries (STECF) – The 2014 Annual Economic Report on the EU Fishing Fleet (STECF-14-16). 2014. Publications Office of the European Union, Luxembourg, EUR 26901 EN, JRC 92507, 363 pp.

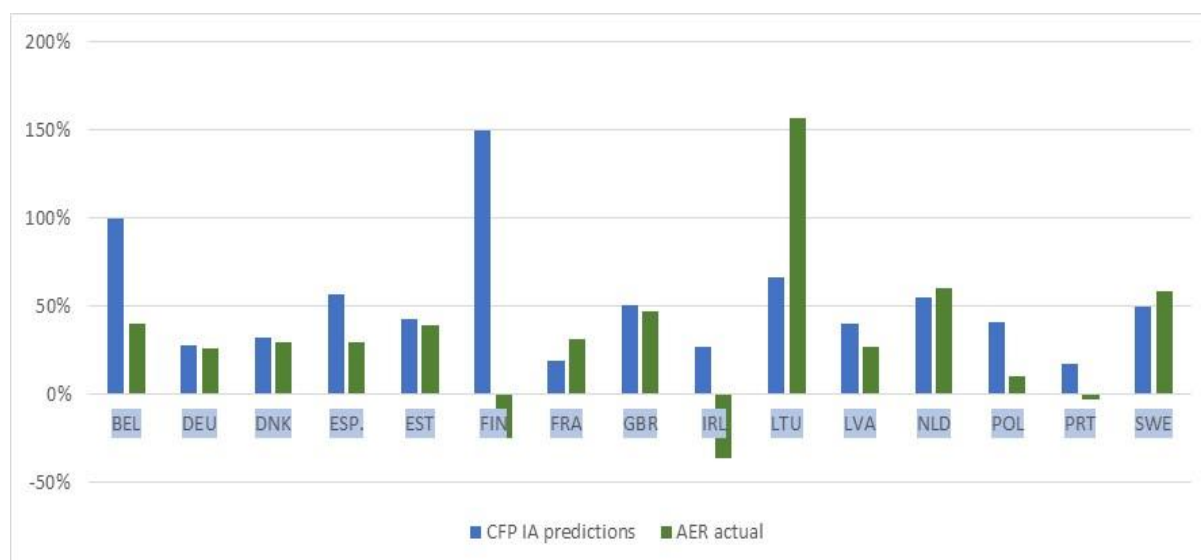
on the EU Fishing Fleet (STECF-17-12). 2017. Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-73426-7, doi:10.2760/36154, PUBSY No. JRC107883. Note that 2017 values are actually values predicted by STECF for 2017 so as to be able to compare with the 2017 data in the 2010 IA (which is

<sup>3</sup> only available for 2012 and 2017)

Whilst both the 2010 IA model and reality show an increase in GVA over 2012 – 2017 for the combined MS, the IA predicted a major improvement (35% increase over 2012 – 2017 for the combined GVA for the selected MS) which was slightly in excess of achieved in reality (30%). A comparison of the net percentage change (e.g. from 2012 – 2017) suggests that in the case of 11 out of 15 Member States GVA has not increased to the extent predicted by the CFP impact assessment in 2010.



**Figure 40: Net change in GVA (2012 – 2017) of CFP Impact Assessment predictions and AER actual results**



## Social

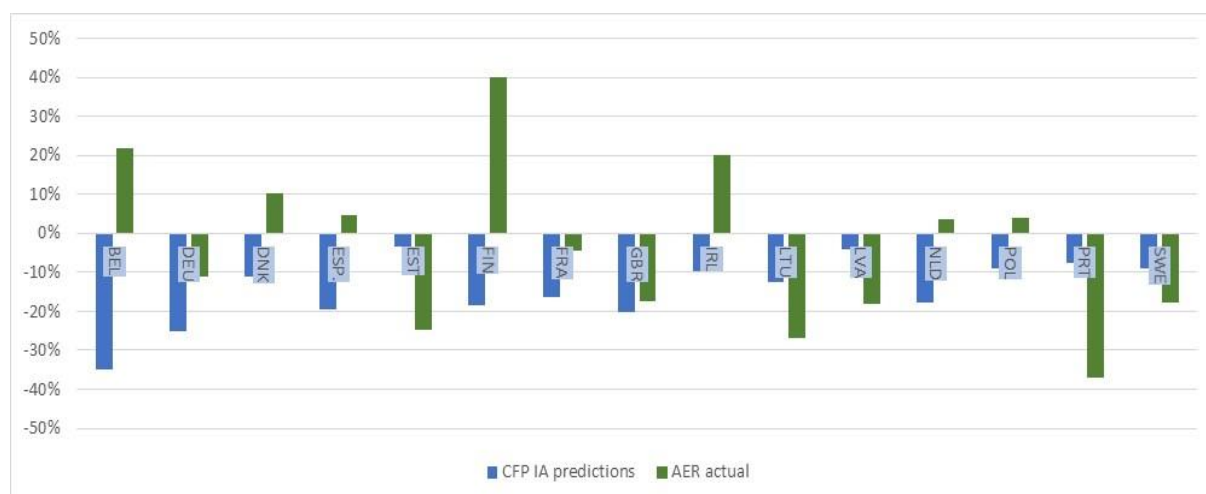
**Table 33: Net change in FTE (2012 – 2017) of CFP Impact Assessment predictions and AER actual results**

MS	2010 IA estimates (MRAG, 2010)*				AER Actual results				Comparison of change 2012-2017 (IA estimate and actual )
	2012	2017	Change	%	2012 <sup>2</sup>	2017 <sup>3</sup>	Change	%	
BEL	444	289	-155	-35%	334	407	73	22%	163%
DEU	674	506	-168	-25%	1,372	1,219	-153	-11%	55%
DNK	1,265	1,125	-140	-11%	1,556	1,719	163	10%	195%
ESP.	24,519	19,763	-4756	-19%	30,302	31,728	1426	5%	124%
EST	2,475	2,393	-82	-3%	540	407	-133	-25%	-643%
FIN	1,640	1,339	-301	-18%	282	395	113	40%	318%
FRA	8,475	7,090	-1385	-16%	7,375	7,052	-323	-4%	73%
GBR	4,811	3,832	-979	-20%	9,868	8,155	-1713	-17%	15%
IRL	2,402	2,174	-228	-9%	2,233	2,684	451	20%	313%
LTU	40	35	-5	-13%	566	414	-152	-27%	-115%
LVA	1,212	1,161	-51	-4%	353	289	-64	-18%	-331%
NLD	1,423	1,173	-250	-18%	1,769	1,831	62	4%	120%
POL	1,398	1,272	-126	-9%	1,737	1,809	72	4%	146%
PRT	8,408	7,767	-641	-8%	14,931	9,379	-5552	-37%	-388%
SWE	1,002	911	-91	-9%	942	774	-168	-18%	-96%

- Sources: <sup>1</sup> MRAG et al, 2010 (Option 2, see Table 82)  
Report on the EU Fishing Fleet (STECF-14-16). 2014. Publications Office of the European Union, Luxembourg, EUR 26901 EN, JRC 92507, 363 pp.  
<sup>2</sup> Report on the EU Fishing Fleet (STECF-17-12). 2017. Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-73426-7, doi:10.2760/36154, PUBSY No. JRC107883. Note 2017 figures are estimates. Note that 2017 values are actually values predicted by STECF for 2017 so as to

Both the modelling and reality show a fall in FTEs over 2012 – 2017, although the 2010 impact assessment suggests this would be twice as great (-16% combined employment for the MS over the period) than the AER shows (-8%).

**Figure 41: Net change in FTE (2012 – 2017) of CFP Impact Assessment predictions and AER actual results**



A comparison of the net percentage change (e.g. from 2012 – 2017) in FTE suggests that in the case of 10 of 15 MS, employment (in terms of FTE) has declined slower than predicted by the CFP impact assessment in 2010 (or increased).

**Table 34: Crew wages (EUR per FTE)**

MS	2010 IA estimates (MRAG, 2010) <sup>1</sup>				Actual results (DCF)				Comparison of change 2012-2015 (IA estimate and actual)
	2012	2017	Change	%	2012 <sup>2</sup>	2015 <sup>3</sup>	Change	%	
BEL	49,883	127,953	78,070	157%	73,308	69,666	- 3,642	-5%	-3%
DEU	77,600	123,779	46,179	60%	28,158	33,713	5,556	20%	33%
DNK	81,853	119,429	37,576	46%	44,222	50,462	6,240	14%	31%
ESP.	15,899	25,249	9,350	59%	16,183	17,875	1,691	10%	18%
EST	1,039	1,512	473	46%	7,628	9,627	2,000	26%	58%
FIN	2,159	3,325	1,166	54%	16,035	14,629	- 1,406	-9%	-16%
FRA	37,442	51,171	13,729	37%	51,220	66,677	15,457	30%	82%
GBR	33,417	58,756	25,339	76%	22,677	34,269	11,591	51%	67%
IRL	24,482	32,506	8,024	33%	40,633	30,320	- 10,313	-25%	-77%
LTU	53,734	88,162	34,428	64%	7,745	15,079	7,335	95%	148%
LVA	1,484	1,508	24	2%	10,826	10,440	- 386	-4%	-221%
NLD	51,311	87,064	35,753	70%	49,957	66,169	16,212	32%	47%
POL	5,454	8,492	3,038	56%	7,207	4,427	- 2,780	-39%	-69%
PRT	9,008	12,835	3,827	42%	9,614	15,720	6,106	64%	149%
SWE	6,443	10,144	3,701	57%	17,092	23,531	6,438	38%	66%

Sources: <sup>1</sup> MRAG et al, 2010 (Option 2, see Table 82)

<sup>2</sup> Scientific, Technical and Economic Committee for Fisheries (STECF) – The 2014 Annual Economic Report on the EU Fishing Fleet (STECF-14-16). 2014. Publications Office of the European Union, Luxembourg, EUR

<sup>3</sup> EU fleet economic data. Predicted wages not available, hence use of 2015 actual data from DCF

The 2010 IA foresaw a substantial increase in wages per FTE (67% over 2012 -2017) which has not been realised (even on an annual basis) as reflected in the AER data, with a growth of 'only' 15% over the shorter period of 2012 – 2015.

**Figure 42: Net change in crew wages (per FTE) (2012 – 2017) of CFP Impact Assessment predictions and AER actual results**



A comparison of the net percentage change (e.g. from 2012 – 2017) in crew wages (expressed per FTE) suggests that in the case of 13 of 15 MS, crew wages (per FTE) have increased slower than predicted by the CFP impact assessment in 2010. Only in the case of Lithuania and Portugal is the reverse true.

## ANNEX 8 – DATA ON DISCARDS IN EU FLEETS

This annex provides a review of discard rates in several EU fisheries over 2014-2016, based on a database being developed by Poseidon Aquatic Resource Management for FAO, mainly using data from the DCF (n=54) and peer reviewed published papers (n=6).

**Table 35: Discard rates in selected EU fisheries over 2014 - 2016**

Gear type	Discard rate
<b>Beam trawls</b>	
UK grounds beam trawls	35.7%
North Sea beam trawls =>80<120mm	58.5%
<b>Beam trawls (average)</b>	<b>44.8%</b>
<b>Otter trawls, bottom</b>	
Adriatic Sea bottom trawls	33.0%
Balearic Islands bottom trawls	11.3%
Baltic Sea bottom trawls (>=90mm)	36.2%
UK bottom trawls	41.5%
UK bottom trawls =>100mm	22.0%
UK bottom trawls =>100mm	29.1%
UK bottom trawls =>70<100mm	28.1%
Central Mediterranean bottom trawls	11.0%
Gulf of Lions and Sardinia bottom trawls	21.0%
Gulf of Lions bottom trawls	19.7%
North Sea bottom trawls =>100mm	24.2%
North Sea bottom trawls =>70<100mm	58.2%
Western Mediterranean bottom trawls	15.5%
<b>Otter trawls, bottom (average)</b>	<b>28.8%</b>
<b>Otter trawls, midwater</b>	
Black Sea midwater trawls	1.0%
Gulf of Lions bottom trawls	3.0%
<b>Otter trawls, midwater (average)</b>	<b>2.0%</b>
<b>Set gillnets (anchored)</b>	
UK gillnets	19.7%
North Sea gillnets	1.0%
Sardinia trammel nets	31.5%
<b>Set gillnets (anchored) (average)</b>	<b>17.7%</b>
<b>Trammel nets</b>	
Western Mediterranean trammel nets	1.0%
<b>Trammel nets (average)</b>	<b>1.0%</b>

## ANNEX 9 – DATA ON VALUE OF EU LANDINGS COVERED BY THE LANDING OBLIGATION

Country	MS	2015	2016	2017	2019	Not covered	Grand Total	2015	2016	2017	2019	Not covered
BE	BEL Total	137,609	50,203,815		17,569,392	14,120,997	82,031,813	0%	61%	61%	83%	17%
BG	BGR Total	1,380,179			825,871	1,567,153	3,773,203	37%	37%	37%	58%	42%
CY	CYP Total	1,480,069			2,585,602	3,491,136	7,556,807	20%	20%	20%	54%	46%
DE	DEU Total	73,169,695	37,773,858	9,322,983	27,201,240	68,340,388	215,808,164	34%	51%	56%	68%	32%
DK	DNK Total	225,525,842	123,742,518	23,107,109	18,301,428	49,595,293	440,272,190	51%	79%	85%	89%	11%
ES	ESP Total	361,792,870	125,087,944		178,153,735	1,219,929,375	1,884,963,923	19%	26%	26%	35%	65%
EE	EST Total	10,751,228		371,460		3,407,821	14,530,509	74%	74%	77%	77%	23%
FI	FIN Total	25,973,789		515,464		7,152,012	33,641,265	77%	77%	79%	79%	21%
FR	FRA Total	130,604,282	297,909,437		254,176,217	465,059,334	1,147,749,270	11%	37%	37%	59%	41%
UK	GBR Total	276,585,662	342,409,931		133,211,309	315,699,439	1,067,906,340	26%	58%	58%	70%	30%
EL	GRC Total	25,638,409			60,272,715	42,071,453	127,982,577	20%	20%	20%	67%	33%
HR	HRV Total	30,954,322			17,064,260	12,902,698	60,921,280	51%	51%	51%	79%	21%
IE	IRL Total	86,949,292	76,459,685		29,966,019	44,069,957	237,444,953	37%	69%	69%	81%	19%
IT	ITA Total	164,175,960			290,330,303	439,527,264	894,033,527	18%	18%	18%	51%	49%
LT	LTU Total	24,807,659		1,484,536		36,136,012	62,428,207	40%	40%	42%	42%	58%
LV	LVA Total	15,462,944		2,896,112		1,417,045	19,776,101	78%	78%	93%	93%	7%
MT	MLT Total	5,522,579			1,615,762	4,437,955	11,576,296	48%	48%	48%	62%	38%
NL	NLD Total	91,386,326	153,876,912		37,809,866	91,916,346	374,989,450	24%	65%	65%	75%	25%
PL	POL Total	25,445,475		18,124,151		5,153,033	48,722,659	52%	52%	89%	89%	11%
PT	PRT Total	97,048,386	13,997,980		50,400,172	190,493,419	351,939,957	28%	32%	32%	46%	54%
RO	ROU Total	276,431			280,091	3,725,831	4,282,353	6%	6%	6%	13%	87%
SI	SVN Total	180,979			719,819	371,817	1,272,615	14%	14%	14%	71%	29%
SE	SWE Total	57,229,632	37,702,225	6,982,364	1,783,902	12,261,931	115,960,054	49%	82%	88%	89%	11%
<b>TOTAL</b>		<b>1,732,479,618</b>	<b>1,259,164,305</b>	<b>62,804,179</b>	<b>1,122,267,704</b>	<b>3,032,847,709</b>	<b>7,209,563,514</b>	<b>24%</b>	<b>41%</b>	<b>42%</b>	<b>58%</b>	<b>42%</b>

Source: analysis of AER/STECF EU fleet data completed by FAME Support Unit. Note: analysis takes 2015 landed values, and applies those landings to species that will be covered by the landing obligation over different years as the landing obligation is phased in, to demonstrate cumulative dependency on species covered.

## **ANNEX 10 – IMPACTS OF POLICY OPTIONS FROM FIVE MAIN POLICY AREAS**

The impacts from the five areas in the baseline and options 1 and 2 are presented below. The scoring system is the same as used when comparing the options under different criteria (effectiveness, efficiency, coherence, acceptability, and action on recommendation) i.e.

<b>Performance score</b>	<b>Legend</b>
0	Does not improve and/or worsens the situation compared to the baseline scenario
1	Small improvements compared to the baseline scenario
2	Moderate improvements compared to the baseline scenario
3	Large improvements compared to the baseline scenario
4	Very significant improvements compared to the baseline scenario

**Table 36: Impacts of policy options from five main policy areas**

Policy area	Indicators	Fully enforced baseline	Option 1	Option 2	Explanation
<b>Enforcement (sanction systems)</b>	Level of consistency between MS over approach to sanctions for infringements	No improvements (0)	Moderate improvements (2)	Very significant improvements (4)	The problem statement highlights the lack of consistency and effectiveness under the baseline, which is unsatisfactory and would not change. For example, analysis of six MS showed that the ratio between detected serious infringements and allocated points ranged from less than 10% to 100% <sup>124</sup> . Option 1 actions would result in improvements over option 1 in levels of consistency, but option 2 includes 4 additional actions that would considerably (rather than just marginally) improve consistency in approach to infringement follow-up and sanctions
<b>Data: availability, quality and sharing</b>	No. of vessels <12m, 12-15m, and >15m tracked	<12m: 801	<12m: 53 737 <sup>125</sup> >12m: 12 082 Total: 65 819	<12m: 53 737 >12m: 12 082 Total: 65 819	CFR records for active and licensed vessels <sup>126</sup> provide data on those vessels currently with VMS. Both options 1 and 2 would result in the proportion of the fleet in terms of numbers being tracked (through VMS or other low cost solutions) rising from 14% to 100%. The share of landings from vessels subject to VMS or other low cost solutions would rise from just over 95% in option 1, to 100% in option 1 and 3. And the increase in days at sea by the under 12m fleet that would be tracked and monitored under options 1 and 2 would be in the order of 3 million (63% of the total number of days at sea for the EU fleet). There would be no difference between options 1 and 2 as option 2 includes no additional related actions over and above those in option 1
	& Share of landings from vessels tracked by VMS and/or other lower cost solutions	c.a. 95%	100%	100%	
	No. of vessels <12m and >12m reporting catches through electronic means &	No improvements (0)	Very significant improvements (4)	Very significant improvements (4)	
	No. of vessels <12m and >12m reporting catches through electronic means &	<12m: ~0 >12m: 12 082 Total: 12 082	<12m: 53 737 >12m: 12 082 Total: 65 819	<12m: 53 737 >12m: 12 082 Total: 65 819	The CFR provides data for <12m and >12m active and licensed vessels <sup>127</sup> . Assuming that no/virtually no under 12m vessels currently report catches

<sup>124</sup> European Commission, 2016a

<sup>125</sup> Estimates rely on the total number of registered vessels <12m from the fleet register (70 706 vessels) and applies a ratio of 76% to take into account the STECF analysis on inactive vessels (24% of inactive vessels). Discrepancies between the Fleet register and STECF data do not allow to calculate precisely the ratio of inactive vessel per fleet segment but the 2017 AER indicates that 94% of inactive vessels are vessels <12m, and the ratio therefore is only applied to this segment as the impact is less significant for vessels >12m

<sup>126</sup> Search of CFR 3 November 2017: <http://ec.europa.eu/fisheries/fleet/index.cfm?method=Search.SearchAdvanced>

<sup>127</sup> Search of CFR 3 November 2017: <http://ec.europa.eu/fisheries/fleet/index.cfm?method=Search.SearchAdvanced>. Same approach taken to active number of <12m vessels as for indicator above

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Policy area	Indicators	Fully enforced baseline	Option 1	Option 2	Explanation
	Proportion of fleet tonnage reporting electronically	c.a. <90% (of gross tonnage)  No improvements (0)	100% (of gross tonnage)  Very significant improvements (4)	100% (of gross tonnage)  Very significant improvements (4)	electronically <sup>128</sup> , and all over 12m vessels do <sup>129</sup> , both options 1 and 2 would result in the proportion of the fleet reporting catches electronically rising from 18% to 100%. In terms of the share of the gross tonnage of the EU fleet reporting catches electronically, this would rise from just under 90% <sup>130</sup> to 100%. There would be no difference in the number of vessels or tonnage reporting under options 1 and 2, as option 2 includes no additional related actions over and above those in option 1
	Control measures on recreational catches	No improvements (0)	Large improvements (3)	Large improvements (3)	Under current rules MS must control and have sampling plan if there is a recovery plan. Options 1 and 2 would both enable/propose additional control measures on recreational catches at regional level under delegated acts, but not require them for all recreational catches (hence the scoring of 3 not 4 <sup>131</sup> ).
	Extent to which provisions related to post landing activities ensure that each quantity of each species landed is correctly accounted for by weighing and that results are recorded in catch registration	No improvements (0)	Very significant improvements (4)	Very significant improvements (4)	Under the baseline, Commission-approved sampling plans, control plans, and common control programmes would continue to provide exemptions from the requirement to weigh all fishery products at landing, and particularly for landings of pelagic and industrial species, there would remain the risk of overfishing of quotas and unregistered catches on the market - examples of deficiencies in bulk weighing have been documented in confidential Commission audit reports and other documents. Option 1 actions would remove exemptions and close current loopholes, leading to improved quota uptake monitoring. There would be no difference between options 1 and 2 as no additional related actions on weighing, transport and sales are included in option 2 over and above the actions specified in option 1.
	No. of vessels 221 kW using active gears with a continuous	No. of vessels: 0	No. of vessels: 5 111	No. of vessels: 5 111	Under the current status quo, the situation is unsatisfactory in terms of the ability to correctly establish / certify engine power at MS level against capacity ceilings. MS have developed sampling plans, but only a few (ES, IE, UK) have been

<sup>128</sup> i.e. not accounting for provisions within multiannual plans

<sup>129</sup> Vessels may be exempted from the obligation to use an electronic logbook (art. 15(4)). No numbers are available on the number of electronic logbook exemptions. Exemptions are thus not included

<sup>130</sup> European Commission, 2016a

<sup>131</sup> Even though the reason is to comply with the principle of proportionality.



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Policy area	Indicators	Fully enforced baseline	Option 1	Option 2	Explanation
	monitoring system and transmission of the maximum power developed by the engines when the vessels are active	No improvements (0)	Very significant improvements (4)	Very significant improvements (4)	implemented in line with Art 38(1) CR. Under both options 1 and 2 (which are the same in terms of policy content) data on engine power at MS would become more accurate, available, and subject to verification through controls. The number of vessels being more accurately recorded would be all those with towed gear over 221kW (3 299) plus an estimated 50% of those vessels between 120 and 221 kW under the assumption that 50% might be covered by effort regime or specific measures for engine power – an additional 1 712 vessels. Of the total 5 111 vessels that would be monitored, 64% would be in 4 MS (IT 25%, UK and FR both 14%, and ES 11%)
	Exchange of fisheries data between Member States, and access of the Commission to disaggregated fisheries data	Very limited improvements (1)	Very significant improvements (4)	Very significant improvements (4)	Under the baseline there are major shortcomings as outlined in the problem statement, resulting in poor exchange of data and access. Options 2 and 2 would result in digitalisation of the data system, and significantly enhanced availability and exchange of data through greater interoperability
<b>Control of the landing obligation</b>	Coverage by CCTV of vessels with the highest risk of non-compliance and those with the potential to discard high quantities of fish in a short period of time	No. of vessels unknown but less than 600 as not all MS would use CCTV as means of control  Moderate improvements (2)	No. of vessels covered: 600 Large improvements (3)	No. of vessels covered: 600 Large improvements (3)	Under the baseline high risk vessels would be covered by a mix of at sea patrols/observers and CCTV. Under option 1, the introduction of CCTV systems on pre-identified high-risk vessels (e.g. factory vessels, freezer vessels, etc) and vessels identified through risk assessments as being high risk for discarding, would significantly increase the effectiveness of control and compliance, by moving towards 'fully documented fisheries' for those considered to be high risk. Scores of 3 are provided rather than 4 under both options 1 and 2, as not all vessels would be covered (for the sake of proportionality). Scores for options 1 and 2 are the same as option 2 includes no additional actions to option 1.
	Discard rates	44.8% for beam trawls, 28.8% for bottom otter	Large improvements (3)	Large improvements (3)	Average discard rates over 2014 – 2016 are shown for selected fisheries and gear types in Annex 8. Under the baseline with the continuing phasing in of the landing obligation, these rates would be expected to decline. However, the continued mix of at sea patrols (less effective) and CCTV for high risk vessels would slow down

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Policy area	Indicators	Fully enforced baseline	Option 1	Option 2	Explanation
		trawls, 2% for midwater otter trawls, 17.7% for set gillnets, and 1% for trammels nets Moderate improvements (2)			decline in discards. Under options 1 and 2, the effectiveness of monitoring and controlling discarding would be increased (to the same extent under both options) through more cost-effective control using CCTV, allowing for greater coverage of control. Scores of 4 are not justified under either option 1 or 3 as some risk of discarding would remain even for vessels with CCTV, and because not all vessels would have CCTV (just those assessed as being high risk for discarding).
<b>Increased synergies with other policies</b>	Marine protected area under Natura 2000 legislation also covered by the remit of the CR	0 km <sup>2</sup> No improvements (0)	510 451 km <sup>2</sup> <sup>132</sup> Very significant improvements (4)	510 451 km <sup>2</sup> Very significant improvements (4)	Under the baseline, 0 km <sup>2</sup> of marine protected areas under Natura 2000 legislation fall within the CR. Options 1 and 2 would extend the scope of Article 50 of the CR to provide for control of fishing restrictions in these areas, and would result in 100% of marine protected areas under environmental legislation also falling within the remit of the CR. Option 1 and 3 are identical, hence similar scores. This outcome would be particularly beneficial in the Mediterranean, where the activities of recreational fleets, the increased use of spatial restrictions and the potential impact of non-EU fleets on MPA integrity were identified as issues in the recent evaluation of the Mediterranean Regulation <sup>133</sup> .
	Extent of effectiveness, even implementation approaches, and full information, for traceability of fishery products	No improvements (0)	Moderate improvements (2)	Very significant improvements (4)	CMO infringements: 741 in 2011, 835 in 2012, 880 in 2013, and 990 in 2014) Traceability: 2129 in 2011, 2692 in 2012, 2763 in 2013, and 2617 in 2014) <sup>134</sup> Under the baseline there would be no change in the current situation and the problems as specified in the problem statement would remain. Levels of infringements would be likely to remain frequent in both common marketing standards and traceability. Option 1 would result in improved outcomes through the requirement for a unique trip identifier, and digitalisation, but traceability of fish products from third countries would remain weak. Given the importance of

<sup>132</sup> European Environment Agency data as at 06 April 2017. Based on declared percentage of Natura 2000 areas with marine content. Note that some MS (EL, FI, LV) do not report this, and are excluded from this figure

<sup>133</sup> MRAG et al, 2016

<sup>134</sup> European Commission, 2016a

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Policy area	Indicators	Fully enforced baseline	Option 1	Option 2	Explanation
					imports of fish products (in 2015, imports were EUR 49.3 billion and 13.8 million tonnes <sup>135</sup> , compared to EU-28 catches of 5.1 million tonnes <sup>136</sup> ), the improved information on imports under option 2 and the additional actions under option 2 justify the increase in score from 2 to 4 given the removal of traceability exemptions for imported products
	Level of alignment of definitions and general principles with the food law	No improvements (0)	Large improvements (3)	Large improvements (3)	Under the baseline, definitions (e.g. risk management or audit) and principles (cooperation rules, responsibility of operators) in the CR related to food and feed safety would remain poorly aligned with food law. Alignment would be significantly increased (to the same extent under option 1 and 3), but a score of 3 is provided as both options would introduce <i>minimum</i> cooperation rules and procedures
	Level of digitalisation of catch certificates and processing statements	No improvements (0)	No improvements (0)	Very significant improvements (4)	Under both the baseline and option 1, around 200 000 paper catch certificates and 25 000 paper processing statements received per year in the EU would remain in paper form. Both options 1 and 2 would result in the fisheries sector lagging behind other sectors which are using IT solutions for increased traceability within TRACES <sup>137</sup> (e.g. health certificates related to Common Veterinary Entry Documents, certificates of inspection for imports of products from organic inspection, certificates in line with Forest Law Enforcement, Governance and Trade). Under option 2, amendments to the IUU Regulation would result in a requirement for 100% of catch certificates and processing statements to be digitalised (at the EU border by MS if not presented by third countries in digitalised format)
<b>EFCA founding Regulation</b>	Level of alignment of EFCA founding regulation with current requirements	No improvements (0)	No improvements (0)	Very significant improvements (4)	Under the baseline and 2, the Founding Regulation would remain in need of amendments to better align with: the common approach on decentralised agencies; the reformed CFP (LO, regionalisation, role of EFCA as regards the external dimension); the proposed amendments in the CR; and the recommendations of the Administrative Board <sup>138</sup> .

<sup>135</sup> EUMOFA, 2016

<sup>136</sup> [http://ec.europa.eu/eurostat/statistics-explained/index.php/Fishery\\_statistics#Catches](http://ec.europa.eu/eurostat/statistics-explained/index.php/Fishery_statistics#Catches)

<sup>137</sup> TRAdE Control and Expert System.

<sup>138</sup> [https://www.efca.europa.eu/sites/default/files/atoms/files/Press\\_Release\\_Board\\_Seminar.pdf](https://www.efca.europa.eu/sites/default/files/atoms/files/Press_Release_Board_Seminar.pdf)

## ANNEX 11 – SUMMARY QUANTIFICATION TABLES FOR COSTS AND BENEFITS

**Table 37: REFIT Cost savings – preferred option**

REFIT Cost savings – preferred option		
Description	Amount	Comments
Data management and sharing at EU level - recurrent	-1,701,851	MS: time savings in IT management and maintenance
Digitalisation of inspection reports through use of an Electronic Inspection Report System - recurrent	-3,149,516	MS: time savings in data collection and data entry
All vessels are monitored and report electronically their catches, irrespective of their size	-16,724,504	MS: time savings in data collection and data entry
All vessels are monitored and report electronically their catches, irrespective of their size	-1,421,043	Vessel-owners of vessels 10-12m: time savings in keeping and submitting paper reports - investment costs for electronic and tracking devices
All vessels are monitored and report electronically their catches, irrespective of their size	-800,111	Vessel-owners of vessels 12-15m, currently exempted from electronic reporting: time savings in keeping and submitting paper reports - investment costs for electronic and tracking devices
Mandate a continuous monitoring system of the power developed by the engines when the vessels are active for vessels >221kW using active gears and vessels >120 kW using active gears and covered by fishing effort regime or specific engine power measures	-850,000	MS: time savings from the reduction of the number of engine verifications
Weighing, transport and sales	cannot be monetised	MS: time saved in data collection and validation
Mandate the use of an EU-wide IUU IT system (already under development) for the electronic submission and collection of catch certificates and processing statements	-797,344	MS: time saved in data collection and validation
Mandate the use of an EU-wide IUU IT system (already under development) for the electronic submission and collection of catch certificates and processing statements	-797,344	MS: time saved in data collection and validation

Notes: 1/ estimates are with respect to baseline of unchanged legislation. 2/ stakeholder groups recipient of cost saving provided in comments sections. /3 description section used to describe the action giving rise to the cost saving and to identify if cost saving is recurrent

**Table 38: Summary of who is affected by the amendments and how - preferred option**

Overview of costs – preferred option							
		Citizens/consumers		Businesses		Administrations	
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
Data management and sharing at EU level - Develop the IT tools	Direct costs	n/a	n/a	n/a	n/a	4,300,000	700,000
	Indirect costs	n/a	n/a	n/a	n/a	n/a	n/a
Reporting and tracking <12m vessels - All vessels are monitored and report electronically their catches, irrespective of their size (for vessels < 10 m)	Direct costs	n/a	n/a	n/a	23,688,896	n/a	n/a
	Indirect costs	n/a	n/a	n/a	n/a	n/a	n/a
Weighing, transport and sales - Each quantity of each species weighed on approved systems and recorded in weighing records	Direct costs	n/a	n/a	n/a	cannot be monetised	n/a	n/a
	Indirect costs	n/a	n/a	n/a	n/a	n/a	n/a
Weighing, transport and sales-All quantities sold/dispensed for private consumption, to non-registered buyers, are recorded in landing declarations	Direct costs	n/a	n/a	n/a	cannot be monetised	n/a	n/a
	Indirect costs	n/a	n/a	n/a	n/a	n/a	n/a

Overview of costs – preferred option							
		Citizens/ consumers		Businesses		Administrations	
		One-off	Recurrent	One-off	Recurrent	One-off	Recurrent
Monitoring fishing capacity– Mandate a continuous monitoring system of the power developed by the engines when the vessels are active for vessels >221kW using active gears and vessels >120 kW using active gears and covered by fishing effort regime or specific engine power measures	Direct costs	n/a	n/a	n/a	1,022,200	n/a	n/a
	Indirect costs	n/a	n/a	n/a	n/a	n/a	n/a
Control of the landing obligation - 100% coverage of those vessels with an inherent highest risk of non-compliance and those with the potential to discard high quantities of fish in a short period	Direct costs	n/a	n/a	n/a	n/a	n/a	1,440,000
	Indirect costs	n/a	n/a	n/a	n/a	n/a	n/a

Notes: 1/ estimates are with respect to baseline. /2 costs provided for each identifiable action of preferred option. /3 costs identified by type according to standard typology (compliance, charges, administrative, enforcement, indirect)

**Table 39: Overview of benefits (total for all provisions) – preferred option**

Overview of benefits (total for all provisions) – preferred option		
Description	Amount	Comments
<b>Direct benefits</b>		
Environmental benefits	<ul style="list-style-type: none"> <li>Improved control of landing obligation for 620 high risk vessels</li> <li>65 819 fishing operators subject to improved sanctions systems supporting environmental improvements</li> <li>Improved tracking and catch data reporting for 53 737 small-scale coastal vessels</li> <li>Additional data on catches of c.a. 75 000 tonnes (representing around 25% of landings from the EU small-scale coastal fleet)</li> <li>3 299 &gt;220kW and 1 712 &gt;120kW vessels better monitored for engine capacity allowing for assessment of capacity ceilings</li> <li>Additional 510 451 km<sup>2</sup> of marine protected area under Natura 2000 legislation covered by remit of CR</li> <li>Improved verification that imports from third countries (of EUR 49.3 billion and 13.8 million tonnes) are legally caught</li> </ul>	<ul style="list-style-type: none"> <li>CCTV introduced as mandatory and more effective than other means</li> <li>All current and active licensed vessels in the EU</li> <li>No exemptions for under 12m vessels on tracking or catch reporting</li> <li>No exemptions for under 12m vessels on catch reporting</li> <li>All vessels over 220kW and 50% of those &gt;120kW that might be covered by effort regime or specific measures for engine power</li> <li>Through extension of the scope of Article 50 of the CR</li> <li>From the introduction of electronic catch certificates and removal of exemptions on third country imports</li> </ul>
Economic benefits	<ul style="list-style-type: none"> <li>Increases of c.a. EUR 2-3 of Gross Value Added for fishing operators for every EUR 1 of control costs possible</li> <li>65 819 vessel owners potentially benefit from improved economic performance</li> <li>High risk vessels for discarding controlled for EUR 30/day rather than by patrol vessels at EUR 8 000/day and associated observer costs</li> <li>Cost savings of EUR 107 million for MS public authorities</li> </ul>	<ul style="list-style-type: none"> <li>Suggested by case studies of robust Fisheries Control Systems</li> <li>Resulting from environmental improvements in fish stocks</li> <li>CCTV more cost effective and at sea patrols, and mandatory under preferred option</li> <li>Reduction of administrative burden resulting from digitalisation and simplification of reporting obligations, data management at EU level and the reduction of costly engine verifications</li> </ul>
Social benefits	<ul style="list-style-type: none"> <li>53 737 small-scale coastal vessel owners have better data potentially important to demonstrate 'historical record' of catches and to ensure their interests are represented</li> <li>Crew on 65 819 vessels potentially benefitting from improved wages</li> <li>152 720 fishers incentivized to change behaviour towards an improved culture of compliance</li> </ul>	<ul style="list-style-type: none"> <li>Due to improved catch reporting for the under 12m fleets</li> <li>Resulting from environmental improvements in fish stocks and increased catches</li> <li>Through action on sanctions systems</li> </ul>

Simplification	<ul style="list-style-type: none"> <li>• Streamlining and simplification of reporting obligations from MS to EU</li> <li>• Simplification of reporting processes for operators</li> </ul>	<ul style="list-style-type: none"> <li>• Articles removed: Art16 &amp; Art 25; Art 28; Art. 33.4; Art 34; Art 35.3; and Art 48.3</li> <li>• Electronic reporting will allow to reduce the number of reporting obligations for operators</li> </ul>
<b>Indirect benefits</b>		
Downstream multiplier impacts	<p>Benefits to processing operators from improved environmental status and stocks/catches from processing not quantifiable</p> <p>Cost savings to third country operators and authorities in the form of reduced admin burden from of electronic catch certificates not quantifiable</p>	n/a

Notes: /1 Estimates are relative to the baseline for option 2 as the preferred option. /2 Indication is provided of which stakeholder group is the main recipient of the benefit in the comment section. /3 For reductions in regulatory costs, description is provided in comments column as to how the saving arises (e.g. reductions in compliance costs, administrative costs, regulatory charges, enforcement costs)



## ANNEX 12 –SCORES FROM MULTI-CRITERIA ANALYSIS WHEN COMPARING OPTIONS

<b>Effectiveness criteria</b>	Baseline	Option 1	Option 2
Average for all objectives	1.00	3.25	4.00
SO1: Remove obstacles that hinder equitable treatment of operators	1	3	4
SO2: Simplify and reduce unnecessary administrative burden	0	3	4
SO3: Improve fisheries data	1	4	4
SO4: Bridge the gap with the CFP	2	3	4
GOs: those of the CFP	1	3	4
<b>Efficiency criteria</b>	Baseline	Option 1	Option 2
Efficiency	1	3	4
<b>Recommendations acted on criteria</b>	Baseline	Option 1	Option 2
Average	0.4	2.40	3.80
ECA recommendations are acted on	0	4	4
Parliament recommendations are acted on	1	3	4
EFCA Administrative Board recommendations acted on	0	0	4
Recommendations of the Council of the European Union acted on	0	2	3
REFIT findings acted on	1	3	4
<b>Coherence criteria</b>	Baseline	Option 1	Option 2
Average	0	2.67	3.67
With CFP	0	3	4
With overarching EU policy	0	3	3
With horizontal legislation	0	2	4
<b>Acceptability criteria</b>	Baseline	Option 1	Option 2
Acceptability	0	2	4
<b>Overall comparison across criteria</b>	Baseline	Option 1	Option 2
Effectiveness	1	3.25	4.00
Efficiency	1	3.00	4.00
Coherence	0	2.67	3.67
Acceptability	0	2	4
Recommendations acted on	0.4	2.40	3.80
<b>Total</b>	<b>2.4</b>	<b>13.3</b>	<b>19.5</b>

## **ANNEX 13 –SPECIFIC SUB-OPTIONS OF THE POLICY OPTIONS RETAINED AND ASSESSED IN THE IMPACT ASSESSMENT**

This Annex provides details on the specific actions foreseen under policy options 1 and 2.

### ***Option 1: Amendment of the Fisheries Control Regulation***

This option considers targeted amendments of the Fisheries Control Regulation (hereinafter "Control Regulation") limited to the following thematic areas:

- i) **Enforcement**, including sanctions and point systems and follow up of infringements;
- ii) **Data availability, quality and sharing**, regarding better reporting and tracking for vessels below 12m, data on recreational fisheries, weighing procedures and data, and monitoring of the fishing capacity, and data management and sharing at EU level;
- iii) **Control of the landing obligation**; and
- iv) **Synergies with other policies**, in particular with the environment, market, food and feed policies and with the policy on the fight against illegal, unregulated and unreported (IUU) fishing.

Those amendments will, among other things, clarify provisions currently prone to different interpretations and leading to uneven implementation by Member States and address numerous derogations that hinder the level playing field among EU fishermen. Overall, the legislative framework will be simplified and unnecessary administrative burden will be reduced by either removing certain reporting obligations or by streamlining them. Full digitisation of control data, setting the conditions for central EU databases and promoting the use of harmonised and/or interoperable ICT tools will be instrumental in this respect. Finally, the Regulation will be aligned with the Lisbon Treaty.

For each of the four thematic areas, different solutions to tackle the identified shortcomings were initially proposed. In this impact assessment, however, only those prone to achieve the set objectives with minimal administrative burden and that found most support from stakeholders were fully investigated. Those solutions are presented below in detail. A list of the technical alternatives discarded following stakeholder consultations (see Annex 2 for the process) is provided in Annex 6.

### **Enforcement**

The amendments proposed to the enforcement system relate to provisions laid down in Title VII (Inspection and Proceedings) and Title VIII (Enforcement) of the Control Regulation, and aim at clarifying, streamlining and increasing effectiveness and efficiency of the current rules and at easing and improving the exchange of information among the Member States involved in case of infringements (Coastal State, Flag State, Member States whose nationals committed infringement), EFCA and the European Commission.

This would result in the establishment of the following provisions:

#### **Sanctions (current Title VIII):**

- Define detailed criteria for the categorisation of serious infringements;
- Fix current mismatches between the rules for point system under the Control Regulation and the CFP;
- Provide Member States with common/minimum rules for the masters' point system;
- Clarify that points apply in addition to the main sanction(s);

- Clarify immediate enforcement measures (or preventive measures) to be taken by Member States in case of serious infringements;
- Enable Member States to exchange data on infringements and sanctions (ECA request).

### **Inspection and proceedings (current title VII)**

Digitisation of inspection reports with an Electronic Inspection Report System (ECA request).

### **Data availability, quality and sharing**

The shortcomings hindering data availability, quality and sharing are inherent to specific types of fisheries, specific vessels and intrinsic to the weighing measures. The underlying problems are either lack of provisions or too many derogations and exemptions, which render the provisions virtually impossible to be effectively controlled. The amendments proposed will therefore address the following areas:

- **Reporting and tracking for vessels below 12 m, logbook data:** ensure that vessels of this category can be monitored and have access to an easy and cost-effective electronic reporting system of their catches (e.g. using mobile phones technologies), as already in place and/or tested in several Member States. The exemption from reporting in logbooks catches of less than 50 kg is removed for all categories of vessels and the rules for the so-called "margin of tolerance" are clarified and tailored to specific situations/fisheries.
- **Control of recreational fisheries:** enhance control of recreational fisheries, establish mechanisms to have better and more accurate information on the pool of participants in these fisheries and on the quantity of associated catches. The conditions are set to further define more specific measures at EU and/or regional level, e.g. fishing authorisations, licenses, vessel registration, rules on fishing gears.
- **Weighing, transport and sales procedures and data:** current exemptions that undermine the accurate weighing and registration of landed fish will be streamlined and replaced by a simple and effective system to guarantee a good and accurate weight at landing. Under this scenario:
  - Each quantity of each species landed is weighed on approved systems, recorded in weighing records and weighing activities are conducted by authorised/permitted "registered weighers";
  - Targeted procedures are established for unsorted landings and for frozen products;
  - The results of weighing are used to complete landing declarations and transport documents;
  - All quantities sold/dispensed for private consumption, to non-registered buyers, are recorded in landing declarations.
  - The responsibilities and accountability of operators in the supply chain are clarified;
  - The reporting procedure of documents from operators to competent authorities (flag state, state of landing, state of sale) are simplified.
- **Monitoring of the fishing capacity:** provide a legal basis, in line with the recommendations of the ECA, to define implementing rules for the control of gross tonnage by Member States. In addition, ensure that the maximum power developed by the engines when the vessels are active can be measured and recorded. Under this scenario:

- Vessels having engines above 221kW and using active gears, and vessels having engines above 120kW and being covered by fishing efforts or power limitation and/or specific technical measures, have a continuous monitoring system of the maximum power developed by the engines when the vessels are active.
- The information on engine power is recorded and stored in a specific device, so that it can be directly accessible to the authorities when they are conducting an inspection at sea or in port.
- **Data management and sharing at EU level:** complete the digitisation of the data system, and enhance availability and exchange of data. Under this scenario:
  - All the control documents (e.g. logbook, sales notes, landing declarations, transport documents, taking over declarations, inspection reports) become digital (no more paper-based system).
  - The Commission has direct access to control and information data from the Member States. This will ease exchange among Member States and remove the requirement for a secure part of the website in each of them (Article 116 of the Control Regulation). The conditions are also set for merging at EU level certain current national lists and databases.

### **Control of the landing obligation**

The level of proof required to identify beyond reasonable doubt that suspected or observed discarding events contravene permitted discarding provisions is practically impossible to obtain using traditional means of control, such as aerial surveillance, inspections at sea and landing. Remote electronic monitoring technology (REM) incorporating closed-circuit television (CCTV), have demonstrated the potential to be an effective means to ensure control and enforcement of the landing obligation and provide a deterrent to illegal discarding. The introduction of mandatory measures for the application of such technology for specified sectors according to harmonised risk management under EFCA's coordinated "regional risk assessments", would be greatly beneficial to compliance and would ensure a level playing field for this key provision of the CFP.

The amendments proposed will mandate the use of remote electronic monitoring tools, including CCTV, for the control of the landing obligation. The new provisions will affect individual vessels and fleet segments according to risk assessment, and shall be implemented by Member States at regional level. Specifically, this scenario foresees:

- Vessels coverage levels should be determined per fleet segment in accordance with the regional risk assessment and in cooperation with EFCA, including with existing specific control and inspection programmes (SCIPs).
- Specific requirements on the installation and use of CCTVs should be laid down in secondary legislation.

### **Synergies with other policies**

The amendments proposed seek synergies with other policies and in particular with

- Environment:
  - Empower Member States to effectively control fisheries activities in marine protected areas. This can be easily achieved by revising the definition of "fishing restricted areas" and by clarifying the provisions of Article 50 (currently limited only to areas set in co-decision acts and not at national level).
  - Ease and improve the reporting of lost fishing gear, in line with the plastic strategy, by allowing fishermen to use the logbook for such reporting, and at the same time removing current unnecessary and ineffective reporting obligations.

- Remove the current derogation applicable to vessels < 12m to carry on board the necessary equipment for the retrieval of lost gear.
- Market control (and traceability):
  - Clarify current provisions on traceability, which resulted in difficult implementation and which were prone to different interpretations.
  - Ensure that traceability information is recorded electronically and that systems are interoperable, so that controls in the supply chain within the internal market are more effective and efficient.
- Food and feed safety:
  - Remove current inconsistencies by aligning as much as possible the terminology and principles of the Control Regulation with the Food Law.
  - Introduce minimum cooperation rules and procedures between Member States and better definition of responsibilities and accountability of the food chain operators (see also weighing, transport and sales chapter).

### **Option 2: Amendment of the Fisheries Control System**

Policy option 2 builds upon policy option 1, considering all the approaches proposed in the policy option 1 plus the following (not implementable in policy option 1 as they need amendment of IUU Regulation and/or of the EFCA Founding Regulation).

#### **Enforcement**

Amendments to the Control Regulation and to the IUU Regulation are here proposed to clarify, simplify, streamline and significantly improve the current rules. Enforcements rules will only be laid down in the Control Regulation to ensure one single enforcement system. Specifically, this scenario entails the following:

- Establish a common list of definitions of serious infringements of the CFP.
- Without excluding criminal law, provide that infringements of CFP shall be subject to administrative sanctions.
- Introduce common rules on administrative sanctions for infringements of the CFP rules by requiring Member States to set national sanctions, including their ranges, in accordance to clear benchmarks or minimum levels set in EU rules. This would also require defining concepts such as "economic benefit from the infringement"/"value of the prejudice to the fishing resources and the marine environment".

#### **Increased synergies with other policies**

To complement the amendments proposed in Option 1 here further modifications are proposed for the Control and IUU Regulations seeking synergies with the market control and the fight against IUU fishing. In particular, for the following policies, this scenario envisages:

- Market control (and traceability): fully extend traceability rules to products from third countries;
- Fight against IUU: amending the IUU Regulation to digitise the IUU catch certificate, in line with the commitments of the Joint Communication on Ocean Governance. Specifically, this will entail the use of an EU-wide IUU ICT system (already under development) for the electronic submission and collection of catch certificates and processing statements.

- Other fisheries legislation: control provisions that are currently spread over other legal texts are concentrated in one legal instrument or, if not up-to-date or consistent with other provisions, repealed. This is specifically the case for the control measures contained in the Mediterranean Regulation and in the Multiannual Plan for the Baltic Sea, which will thus be repealed.

### **European Fisheries Control Agency**

Amendment of the EFCA Founding Regulation is proposed to align EFCA's mission and tasks to the changed needs of the new CFP and adaptation of EFCA procedures and working practices to consider the Common Approach on decentralised agencies as adopted in the 2012 Joint Statement of the European Parliament the Council of the EU and the European Commission. In particular, this scenario envisages:

- Clarifying EFCA's objective, which does not fully reflect EFCA's mission and tasks, including as regards the external dimension of the CFP;
- Empower EFCA to also carry out inspections in EU waters as well as in international waters;
- Allow the participation of representatives of relevant Union Institutions to the EFCA's Administrative Board;
- Introduce more flexibility as regards sources of revenue, in line with provisions of other Agencies;

In general, align the EFCA's Founding Regulation to the Common approach on decentralised agencies, including by clarifying the tasks of the Advisory Body.

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