

COLUMBUS - Life-iSEAS initiative for a science-policy dialogue with the European Fisheries Control Agency (EFCA) about recent research and monitoring activities on discards.

(EFCA Headquarters in Vigo, Spain; 2nd February 2017)

Table of contents

1. Executive summary.....	2
2. Introduction.....	3
3. EFCA activities supporting the implementation of the Landing Obligation (LO).....	3
4. Introduction to projects.....	4
5. Discussion topics.....	5
6. Identification of specific areas for further collaboration between EFCA, Life-iSEAS, DiscardLess and MINOUW (with knowledge transfer support from COLUMBUS).....	9

1. Executive summary

COLUMBUS project, in its aim to foster the capitalisation of efforts from European investment in marine and maritime research through increased knowledge accessibility and effective transfer, has triggered the set up of a science-policy dialogue between three relevant projects focused on fishing discards (Life-iSEAS, and H2020 DiscardLess and MINOUW) and the European Fisheries Control Agency (EFCA). This dialogue has formally started with the accomplishment of a first meeting in EFCA Headquarters in Vigo on the 2nd February 2017.

The meeting allowed a constructive debate between experts about the activities of EFCA for the LO implementation and about progress achieved so far by the three projects. Discussions provided an updated insight of the discards problem, research progress and solutions. Issues addressed ranged from discards causes, to access and accuracy of data, modelling and risk analysis, technologies and experiences about the full documentation of the catch, selectivity, and feasible alternatives for the use and marketability of products from unwanted catch.

The meeting allowed the identification of three major areas for further exchange and collaboration:

- 1- Data exchange.
- 2- Risk analysis.
- 3- Technical measures.
- 4- Stakeholder interaction and awareness.

COLUMBUS has committed efforts to continue supporting this process and, ultimately, to foster the uptake of knowledge generated by the three projects acting EFCA both as an end-user and as a target user, for leading the knowledge generated down to other users, contributing to maximise and spread its impact.

2. Introduction

According to Article 1 of Council Regulation No. 768/2005 (Amended by EU Reg. 1626/2016) the objective of the [European Fisheries Control Agency](#) (EFCA) is to organise operational coordination of fisheries control and inspection activities by the Member States (MS) and to assist them to cooperate so as to comply with the rules of the Common Fisheries Policy (CFP) in order to ensure its effective and uniform application.

The publication of the currently in force Common Fisheries Policy ([EU Regulation No 1380/2013](#)) and the specific provisions regarding the phase out of discard practices and the related Landing Obligation ([EU Regulation No. 810/2015](#)) have posed significant challenges, and multiplied EFCA activities to coordinate and assist both the Member States and the European Commission to support a coordinated implementation and promote compliance. In this regard, EFCA is involved in Joint Deployment Plans (JDP) activities that could benefit from integrating knowledge derived from ongoing research projects like H2020 [DiscardLess](#) and [MINOUW](#) and [Life-iSEAS](#); moreover, these projects could also find in EFCA a sound partner to reach the target users of the knowledge they are generating. The [COLUMBUS](#) project is facilitating the necessary linkages and has triggered the setup of a science-policy-dialogue between these projects and EFCA. The starting point of this dialogue has been the organisation of a workshop to set the scene and share the overall view of EFCA interests and the previously mentioned projects progress and achievements. The meeting took place at EFCA Headquarters in Vigo on the 2nd February 2017 and convened the attendance of the coordinators and technical staff from these projects together with EFCA relevant staff.

3. EFCA activities supporting the implementation of the Landing Obligation (LO)

EFCA coordinates efforts and assists the EC, MS and fisheries stakeholders for a uniform implementation of the CFP. They do this through:

1. Joint Deployment Plans (JDPs)
2. Providing assistance to formally constituted regional Control Expert Groups of MS (i.e. Baltfish, Scheveningen, NWW, SWW)
3. Fostering interregional cooperation and
4. Guiding the setup of a level playing field for all.

In JDPs EFCA coordinates MS means under a shared scheme for:

- Pooling and assessing data
- Assessing risks (for non-compliance)
- Coordinating and building shared capacity for control and inspection
- Assessing cost-effectiveness of technical measures.

The work carried out so far has already allowed EFCA to refine the inspection procedures, estimate sampling needs (no. of inspections and systems/procedures to gather data) estimate the reliability of the data; and to implement risk analysis combining the likelihood of occurrence

of discards and/or catches Below Minimum Size (BMS) with the impact from these catches (dependent on the situation of the stocks, catch volume, etc.). Data is a key issue for the risk analysis process. The experience with the JDPs currently in place shows that increased number of samples (N) increases the reliability of the results. The stability of the reliability is based on a uniform and robust sampling process, which is already a good achievement. Information intelligence combined with a good risk assessment is allowing EFCA and MS to identify needs for action.

At regional and interregional levels, EFCA is boosting the exchange of good practices, seeking harmonisation of procedures when possible, building capacity and working with stakeholders to foster compliance.

For 2017, ECFA challenges pose continuity to the activity developed so far:

- Continue data collection in cooperation with MS. Exchange good practices.
- Consolidate knowledge about BMS catches and discards
- Strengthen cooperation with MS and Stakeholders
- Make full use of JDPs as a vehicle to promote compliance with the LO.

4. Introduction to projects.

- **DiscardLess: Strategies for a gradual elimination of discards in European fisheries**

Lead by DTU-Aqua, this project involves a consortium of 31 partners in 12 countries. DiscardLess is planned to address the problem of discards in all the fishing regions in Europe, through different case studies. The project started in March 2015 and will run until the end of February 2019. DiscardLess embraces the different perspectives of the discards problem and project outputs being produced include data and analysis allowing a better understanding of the relevance of discards to fisheries and their impact on the marine ecosystem; comparison of the performance of different alternatives to avoid discards (selectivity, fishing strategies, etc.); and development of solutions to make best possible use of the unwanted catch. On a cross-cutting approach the project involves the stakeholders' perspective and their direct engagement, the provision of technological innovations for different purposes (including control and enforcement) and cost-effectiveness assessment.

- **MINOUW: Science, Technology, and Society Initiative to minimise Unwanted Catches in European Fisheries**

Lead by the Instituto de Ciencias del Mar (ICM-CSIC), MINOUW comprises a total of 16 partners, most of them major Mediterranean fishing countries, being this sea basin the focus of the project. Nevertheless, it has also integrated partners from the Atlantic, Baltic and North Sea basins to guarantee exchange of knowledge and experiences among major European fishing regions. The project is strongly based on stakeholder engagement and interaction and, through 17 case studies in 7 countries, applies a case-by-case analysis and testing of promising technologies to avoid discards. The project also includes the analysis of social, economic and market incentives to phase out discards. MINOUW outputs are very focused on providing technical solutions that suit the specific conditions of the fisheries being targeted and on

identifying those that are more likely to be taken up by the stakeholders in each case to improve regulation compliance.

- **Life-iSEAS: Knowledge-Based Innovative Solutions to Enhance Adding-Value Mechanisms towards Healthy and Sustainable EU Fisheries**

Page | 5

Lead by the Instituto de Investigaciones Marinas (IIM-CSIC), it involves a total of 7 partners and focuses on the mixed coastal trawl fishery with base in the port of Marín, in Galicia (Spain). The main objective of Life-iSEAS is to demonstrate that a sustainable scenario, in biological and socio-economic terms, of the EU fisheries is possible through the enhancement of the real application on the fishing sector of existent knowledge and innovative solutions for discards reduction and management. Therefore, Life-iSEAS is mostly an innovation lead and demonstration project. Expected outputs comprise a system for the automated identification and quantification of the total catch; modeling tools to support more efficient and sustainable fishing strategies; a Spatial Data Infrastructure to improve resource assessment, improved management and policy-making; demonstrated uses and market pathways for unwanted captures.

5. Discussion topics

- *Recent research progress about the problem of discards: motivations, data, etc.*

There are several causes or motivations for fishing discards and these causes vary in time and across fishing areas and *métiers* but the main reasons for discards are economic reasons. Discards happen because it is a practice that is profitable or at least it is perceived as profitable. ‘Perception’ is one of the key words at the heart of the discard problem. Discards is the result of a conflict of three complex systems: economy, policy (social) and environment. There is a need to upgrade and integrate knowledge about the three systems to clearly understand the areas of intersection and conflict and bridge possible solutions. Knowledge should progressively facilitate solutions but discarding is a complex problem and there will always remain barriers such as the natural human resistance to change.

Despite of a general acknowledgement of the wastefulness of fishing discards, the perception of fishers about the discard ban and the landing obligation is still negative, regardless of the fishing ground. However, looking at the problem under a case-by-case approach may shed some light as to the reasoning behind this opposition.

The variability of discards’ motivations is very high: lack of, or exhausted quota (especially for choke species), low value catch, damaged catch, BMS catch, high-grading and fishers behaviour have different weight on discards practices. The current TAC/Quota assignment system has been questioned as one of the reasons behind discarding but there is no evidence that alternatives such as Individual Transferrable Quota (ITQ) systems could deter fishers from discarding. The assessment of the real causes for discard practices is quite challenging. It requires a lot of collaboration from fishers and fishing companies. It also needs good quality data for the characterisation of each fishery. The experiences of the three projects, Life-iSEAS, DiscardLess and MINOUW suggest that focusing analysis on fishing *métiers* and establishing a strong

collaboration with fishers is the best way to address the motivational aspects. This approach has allowed the projects to estimate the probability of discarding which is the essential component of non-compliance risk analysis, which EFCA is also assessing.

A strong stakeholder interaction encouraging fishers' collaboration and compliance is essential for the success of the regulation but some important shortcomings have been identified in this regard. The difficulties for the stakeholders to understand the regulation, a certain feeling of insufficient hearing of their claims during the norm negotiation process, and the timeframe planned for its full implementation, considered too short, are, among other factors, hindering the perception of legitimacy of the discard ban and the LO regulation.

Stakeholders' motivations for discarding and their perception of the LO are also important matters for data collection processes. Since the publication of the discard ban regulation, the difficulties of getting good quality data for the estimation of reliable discard rates have increased. Fishers' willingness to carry observers onboard has decreased and fishers may change their behaviour when an observer is onboard. Thus, while in the past the fisheries assessment process was working quite well, the need to gather more data on discards has introduced some new technical challenges. More efforts to make more and reliable data available are needed but efficient incentives need to be developed to mobilise voluntary compliance. Otherwise coercive measures are more likely to be implemented, a situation that would further blur the lines between scientific observers and control observers and risk further loss of data quality.

There is a general consensus that the best scenario for increased data availability comes from increased voluntary compliance and collaboration from the industry. However, this needs efficient incentive measures and it is not always easy to design incentives that work well. The experience with Closed Circuit Television (CCTV) in the Baltic (Denmark) and North Sea (UK) is a good reference as more reporting has been rewarded with extra quota, as the control regulation allows to apply this kind of incentives. EFCA could benefit from anonymised data coming from research activities and from looking at the strategies and methodologies that different projects have used to collect discards data. This could potentially allow EFCA to observe more fluctuations or shared patterns and eventually feed the risk assessment process.

- *Technologies and strategies to reduce and avoid discards*

The problem with data, apart from data availability, is also a problem of reliability and accuracy. Reliability and accuracy increases with efficient sampling strategies (like the last haul inspection followed by EFCA). In fact, sufficient and unbiased sampling is needed to achieve the precision and accuracy required to underpin sensible management decisions. This happens when remote electronic systems for data collection and transmission are used, reducing the interference of operators, and when independent observers are the sources of these data. The primary use of the data is to inform on the possible risk for non-compliance or the probability for discards to occur considering the fishing targets, the environmental conditions, the characteristics of the fleet and motivational aspects. Geo-referenced datasets are leading to the development of Spatial-temporal Data Infrastructures (SDI) and predictive solutions. These may lead to decision support systems guiding the different actors to more sustainable and efficient fishing practices and strategies. Time- and geo-referenced data coupled with robust mathematical models enable

predictions to be made, the accuracy of which ultimately depend on the quality of the data and on the availability of the model to replicate biological/social processes. However, discards is a complex problem and in fisheries where multiple species are caught by multiple fleets, and where technical interactions and fleet diversity complicate matters (e.g. mixed trawl fisheries).

The full documentation of the catch is one of the mandates of the regulation in force. Fishers have frequently argued that changes in regulation are leading to additional costs derived from the new documentation and handling requirements of the total catch. Some cost-efficient technologies for the full documentation of the catch are being tested under operational conditions (CCTVs and the Blue Box in DiscardLess, the *iObserver* and Red Box in Life-iSEAS and a mobile App in MINOUW). All of them have some advantages and constraints but they all represent significant technical progress towards the automation of catch composition recordings. This information is essential not only in gathering more reliable data on the catch but also to estimate the actual impact of unwanted catch on the fleet economics, towards alternative measures for avoiding discards. These technologies may also become essential to get enough evidence on compliance and inform on compliance levels. The best future scenario led by a wider technological uptake should come from a voluntary adoption of these technologies by the fishing fleets. However, for this to happen there must be sufficient incentives in place. E.g. when the assigned quota has been exceeded and full documentation is being guaranteed because the industry is collaborating and using automatic full documentation systems, the Control regulation in force allows the use of extra quota or the use of deduction from future quota. DiscardLess is one of the projects looking at efficient incentives.

Apart from Control purposes, georeferenced data systems combined with data gathering systems and predictive modelling can also be used to show fishers more sustainable fishing strategies, with less discards and no or minimum decrease in profits. Cost-benefit and calculation of pay-back periods for the investment in new technologies is something also being addressed by the different projects. All actors consider as a best-case scenario the use of knowledge and newly available technologies, in support to voluntary-compliance with the LO and the discard ban. The different projects have been exploring pathways to increase voluntary compliance. One interesting challenge for the future is how the new systems will combine the empirical knowledge from the fishers and the automated data from the activity and from the environment, to optimise the efficiency and sustainability of alternative fishing strategies.

Selective fishing strategies should, in some cases, be encompassed and/or complemented by the use of selective fishing gears and devices. From the three projects, DiscardLess and MINOUW are those having focused efforts on selective gears and devices, exploring both more conventional selectivity measures (alternative mesh sizes and shapes, new materials, grids and escape windows...) and new technologies such as acoustics and light based technologies. Projects are searching for alternatives that reduce, as much as possible, the fishing mortality of unwanted species and BMS individuals. The involvement of the fishers and the technology developers, with fisheries scientists to discuss selectivity solutions is also confirmed of key importance. Fishers buy-in for accomplishing field trials and for gathering reliable conclusions from these experiences is critical in the process towards a more smooth transition to the gradually implemented LO.

Another essential component of selectivity studies is the performance of fish behavioural studies. Field experiments and a case-by-case approach are very important for the selection of suitable technical measures and to demonstrate their efficacy. Quite frequently, one of the difficulties for the industry is how to select a suitable selective solution for them individually. Comparing performance of different alternatives and guiding the fishers and the gear developers on what could work and what not (based on field experiments) is one of the shared purposes of the on-going projects working on selectivity. Direct stakeholder consultation and engagement in the assessment of the new technologies is expected to be crucial to underpin the fishing firms' uptake of the new technologies. Information from successful field experiments is useful to promote the adoption of technical measures in certain cases, especially when yet unregulated technologies are being explored. EFCA showed interest in the reported selectivity field experiments in DiscardLess and MINOUW, and indicated that they will be discussed during the stakeholder meetings they promote.

- *Management, handling and use of the unwanted catch*

Different projects for the last decade have been exploring alternatives for the use of discarded biomass (from traditional fish oil and fishmeal, to nutraceuticals, cosmetics, textiles, pharmacological products or restructured seafood, among other options, all depending on the characteristics of the available raw material). The current regulation sets some important rules to determine which can be the uses for the fraction of the catch that will not be directly commercialised, but there may be some disparities in the interpretation made in different member states. DiscardLess and Life-iSEAS are exploring the possible utilisation pathways, infrastructure requirements and the cost-benefit analysis of each possible solution, putting the focus on the fishing industry as main beneficiary of these alternatives. Managing the unwanted catch involves some investment needs at different levels: on board and in land. Smaller fleets usually need less on-board investment than larger ones but it is, at the same time, more difficult to find feasible solutions for small-scale vessels, especially for old ones, due to limited space. Moreover, the port infrastructure and logistic facilities varies significantly between regions and Member States, and again, mid and large ports are those in better conditions to set up basic infrastructure and services.

In general, from the fishing sectors perspective, the solutions that are being explored are focused on how the integration of the managing and processing alternatives for fishing discards can mitigate the cost of implementing the LO. The demonstrative character of Life-iSEAS project will allow its partnership to run for a minimum of two years beyond the project duration, a pilot facility at the port of Marin (Galicia, Spain). This will be to demonstrate feasible pathways for the use of the unwanted fraction of the catch that actual port operators will be providing when the LO regulation is fully applied. A stimulus to set up the required logistics and infrastructure in ports would benefit, further than from evidence yield by the new projects, from a prioritisation discard management and use facilities funded by the EMFF.

6. Identification of specific areas for further collaboration between EFCA, Life-iSEAS, DiscardLess and MINOUW (with knowledge transfer support from COLUMBUS)

- 1- **Data exchange:** It is suggested to explore if and how the available data from the three projects can be anonymised and feed EFCA data sets.
- 2- **Risk analysis:** The models and indexes to estimate the probability of discards and the different approaches to understand the fluctuation of different motivation factors, can be relevant for the risk analysis made by EFCA. This could also constitute an area for mutual benefit.
- 3- **Technical measures:** any evidence on the results of the implementation of a given technical measure could be valuable to share the experience in stakeholder group meetings.
- 4- **Stakeholder interaction and awareness:** EFCA could facilitate channelling the efforts and results of the three public funded projects to the stakeholders during stakeholder meetings they promote, when relevant knowledge has been or is being produced.

7. Annexes

- **Attendants list**

Page | 10

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- Presentations can be downloaded at:

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- Roles

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