COMITÉ DÉPARTEMENTAL
DES PÊCHES MARITIMES ET DES ÉLEVAGES MARINS
DU FINISTÈRE

SUMMARY REPORT ON THE DIFFICULTIES OF IMPLEMENTING THE LANDING OBLIGATION

From the difficulties encountered by the fishing fleets of Finistère

Landing in Douarnenez harbour. Copyright : CDPMEM29

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- Le Comité Départemental des Pêches Maritimes et des Elevages Marins du Finistère (CDPMEM29), June 2018.

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CDPMEM29, 22 avenue du Rouillen
29500 ERGUE-GABERIC - FRANCE
www.comitedespeches-finistere.fr
cdpmem29@gmail.com
Standard : +33 (0)2 98 10 58 09

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TANNEAU JOËL - ANITA-CONTI

FRANGOUDES KATIA - Senior researcher at AMURE
Center for Law and Economics of the Sea

FOREWORD

The "Comité Départemental des Pêches Maritimes et des Elevages Marins du Finistère (CDPMEM29)" was requested to produce a concise and educational document describing the difficulties encountered in the implementation of the Landing Obligation (LO). In order to meet this demand, the CDPMEM29 focused on the obstacles encountered by the Finisterian fleet that fish mainly in the North-Western and the South-Western waters.

First of all, a literature review with current regulations, conclusions of meetings held at national (National Fisheries Committee (CNPMEM) specific work group) and European level (NWW and SWWACs), and research on the subject was brought together. Then the literature review was completed by interviews with the professional fishermen.

These interviews enabled to assess the level of LO implementation and to identify the difficulties it has created for the professionals of the area. Thirty interviews of approximatively one hour each were held. Twenty of these were held with fishermen and shipowners chosen as being representative of the metiers practised (trawlers, netters, liners) and the types of fisheries encountered (small scale fishing*, inshore fishing*, offshore fishing*) in the main fishing areas of the Channel, Celtic Sea, Bay of Biscay. Ten other interviews were held with representatives of the Finisterian fishing sector, either from professional organisations (PO, CNPMEM) or from Administration (Regional Council, DDTM), scientists (IFREMER, IMP) or the downstream sector (fish auction, co-product industry, Chamber of Commerce and Industry).

The study aims to identify the difficulties created by the implementation of the LO. It also develops the measures proposed by the European bodies and the fisheries sector to address these difficulties. These difficulties are presented and measures proposed in a concise and comprehensive manner.

CONTENTS

INTRODUCTION

Fishing generates a practise of discards which involves returning to sea unwanted catches. The volume of discards depends on the type of fishery, the season, the fishing area, etc. Discards have several origins such as undersized fish, market demand, fishermen with no quota or licence, or a rule imposing catch composition. Essentially fishermen are not content with discards and find either regulated or informal ways of preventing them.

In order to sustainably manage the common good that are fisheries resources, the European Union (EU) has fixed the rules of distributing fisheries rights between Member States through its Common Fisheries Policy (CFP). To improve stock management, the 2013 reform provides a landing obligation (LO) which bans the discards at sea of certain species. For the Atlantic coast, the landing obligation applies to those species submitted to a European quota, also called TAC (Total Allowable Catch). Article 5 of the CFP ((EU) Regulation n°1380/2013) indicates that «*All catches of species which are subject to catch limits … caught during fishing activities in Union waters … shall be brought and retained on board the fishing vessels, recorded, landed and counted against the quotas where applicable…* »
The European institutions have foreseen to phase in the LO from 2015 through to 2019 by defining every year the fisheries and species that are concerned. This progressive phasing in appears in the delegated acts adopted at the EU level, founded on the "discard plans" based on joined recommendations from regional groups of Member States.

The LO which requires the landing of discards of species submitted to EU quotas, deeply affects fishing practices and strongly impacts European fleet activity. Professionals are thus taking action to try to adjust. Before 2013, research on selectivity to limit discards had already begun. Since then, other projects were initiated to understand the origins of discards, to evaluate the consequences of new organisations at sea and on land, to evaluate survival rates of certain species in order to be granted exemptions and ultimately improve the selectivity of fishing gear to limit discards (Appendix 1).
A work group named "Implementation of the landing obligation" (ILO) was created within the "Comité National des Pêches Maritimes et des Elevages Marins (CNPMEM)", in partnership with the "Direction des Pêches Maritimes et de l'Aquaculture (DPMA)" to help organize discussions at the national level. Since 2013, this work group brought together numerous professional, scientific and State service representatives. This instance enables representatives of the fishermen and the DPMA to exchange views and defend the position held by France and shared by all.

However, even if the phasing in of the regulation implementation avoids certain difficulties by delaying their appearance, numerous questions remain unanswered and the application of this obligation as it appears today already shows its limits.

Finistère is the leading department in France for fishing. It represents approximatively 25% of fishing production for mainland France. It is also very representative of all the metiers practised by a fleet of over 600 vessels (appendix 2). In the region's economic fabric, there were 2530 fishermen from Finistère in 2015, representing roughly 50% of the working fishermen in Brittany

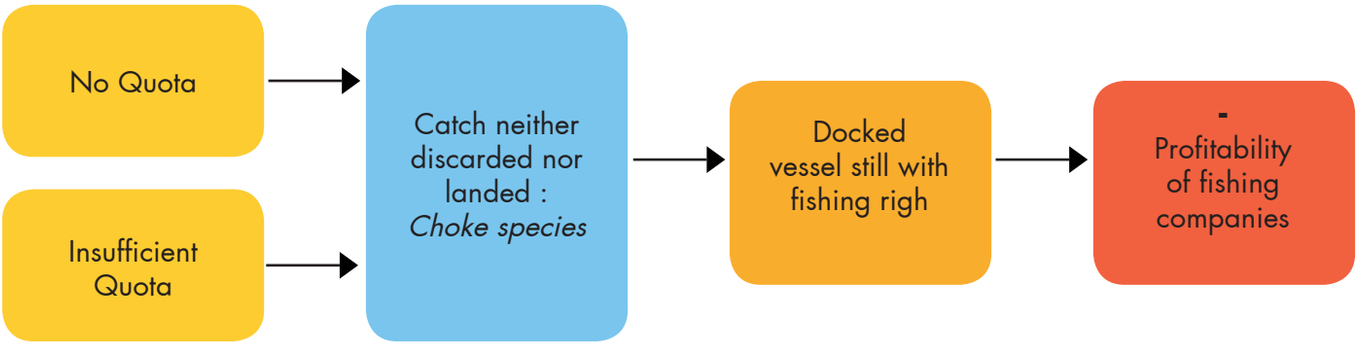
(DIRM NAMO). The main fishing areas for the Finisterian fleet cover two maritime regions : the North-Western Waters (NWW) and the South-Western Waters (SWW) separated by the 48° parallel North (Appendix 3).
Despite all the efforts already made, the professional fishermen from Finistère find it very difficult to implement the LO.

This document attempts to identify all these difficulties while presenting the realities of the situation and the specific consequences of this regulation. The measures proposed will be discussed and analysed in view of the total implementation of the LO scheduled for 2019.

Landing in Le Guilvinec harbour . Copyright : CDPMEM29

I - Difficulties for implementing the Landing Obligation

I.1 - Choke species, main difficulty in the Landing Obligation



The Total Allowable Catches (TAC), fixed by the EU commission, are the harvest limits for most commercial stocks of fish. This opportunity to fish is calculated every year for each species and fishing area in the aim of attaining for each stock the Maximum Sustainable Yield (MSY). The TACs are distributed amongst Member States as national quotas. Quotas are given out by applying a percentage respectively for each species and country which was defined on reference years that insured a relative stability. If needed, EU countries can swap quotas.

When a country has no quota (zero quota) or when a quota applicable to a certain stock has been exhausted ("exhausted" quota), vessels from that country can no longer land that species which has to be discarded at sea. Thus, **"exhausted" quotas or zero quotas** are an important source of discards. With the phasing in of the LO, the professionals will no longer be able to discard these "exhausted" quota or zero quota species, nor land them : they should be able to fish making sure not to catch any of these fishes. However, these catches are inevitable either because these species are captured with the other targeted species (mixed fishery) or because they are unwanted accidental catches. The species concerned by lack of quota or by zero quotas are called choke species. But the concern is that vessels might have to remain docked to avoid the risk of catching species for which there is no longer any quota, when in fact they still have rights to fish other species.

All the choke species are not listed here but some representative examples are described to illustrate its significant implications.

- Example : Haddock, a choke species in the Celtic Sea and the Western Channel for various fleets

The fleet of offshore trawlers that target gadoids in the Celtic Sea and the Western Channel also catch haddock, cod and whiting. It is impossible to exploit the 3 species at the same time to their respective MSY because the catch of one species leads to the catch of the two others even if avoidance strategies have already been deployed. The limiting stock will be the most abundant and catchable stock with regards to the allocated quota. Currently, it is the haddock stock for which a very high proportion of all sized haddocks are being discarded (Cornou 2017). Indeed, since 2012, professionals have observed an increasing number of haddocks in their catches whereas, in order to meet the MSY objectives, the TAC has been diminished by approximatively 55% over the same period. When the LO will be implemented, the rapid consumption of the haddock TAC will force vessels to remain docked when they still possess rights to fish cod and whiting.

- Furthermore, whereas vessels, fishing practices and targeted species are identical, the offshore trawling fleet targeting monkfish and megrim at the entrance of the Channel, today catch 20 to 40 times more haddock than they did between 2000-2010 (Producers Organization LPDB figures). The haddock area of distribution has changed and this species is fished in bigger quantities when its quotas continue to diminish. Haddock will also be a choke species for this fleet which has fishing rights for monkfish and megrim.

In this example, the exploitation of all the stock to the MSY and the implementation of the LO are contradictory.

- Example : Boarfish, a zero quota choke species

Boarfish is a species submitted to a TAC but for which France has no quota. Moreover, this species has no commercial value in France. Although this species is usually avoided by the entire French fleet, it is sometimes accidentally caught by French trawling fleets because of its abundance, resulting in several tons of catches with no commercial value, physical damage to the other catch and overcrowding of the trawl which becomes less efficient. Such trawl hauls are an economical loss to the vessel. With the LO, French vessels cannot discard the accidental catch of this species submitted to a TAC neither can they land it because of its zero quota. It is not possible to manage nor suppress the catch of boarfish because of the accidental nature of its catch. All the offshore trawlers fishing in the South part of the Celtic Sea are likely to make these accidental catches of boarfish which results in their being obliged to stay docked.

All the zero quota species are thus choke species at a European or national scale.

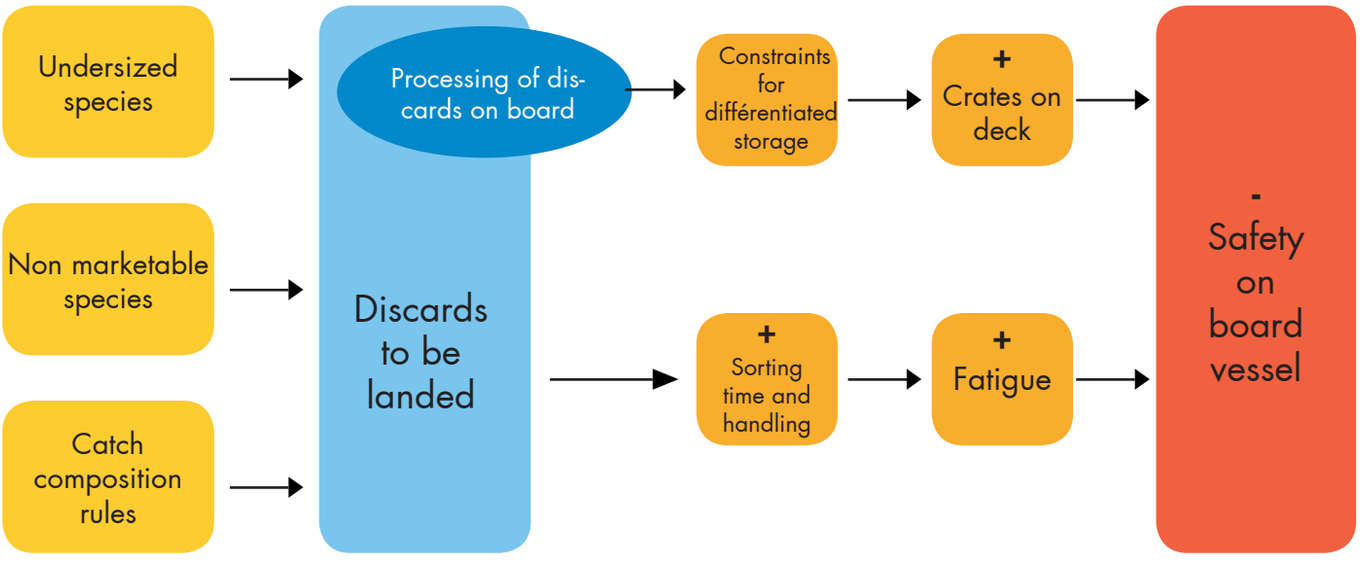
The management of choke species is a key issue and shows to what extent the LO, created to improve stock management, is complex in its implementation if the premature closure of certain fisheries is not wanted. Despite the adoption of the EU 2015/812 regulation aimed at lifting existing inconsistencies, **there remains contradictions between rules thus making them difficult to be implemented by fishermen.**

I.2 - Landing of discards and consequences to the industry

Besides quotas or "exhausted" quotas, other causes of discards exist. They can be regulatory or due to marketing.
From a regulatory point of view, **Minimum Conservation Reference Sizes (MCRS)** were defined in the EU for certain species to insure the protection of juvenile marine organisms ((EC) Regulation n°850/98). Undersized individuals in the catch become discards. The same regulation imposes rules of **catch composition** (percentage of a species weight not to be exceeded in the total catch) for the use of certain mesh sizes in fishing gear.

Quantities of marine organisms caught in excess of permitted composition rules also constitute discards.
From a marketing point of view, fishermen discard **species which are not valuable to the market.** As a consequence, all these discards that have to be landed result in a **considerable increase of catch to be landed**.

Impacts on safety and increase of work load at sea



On all fishing boats, whether they remain at sea for a single day or for several weeks, manoeuvres pace life on board. Crews must thus manage the available time to ensure the smooth run of the vessel (maintenance, repairs, processing the catch…), domestic chores, food supply, hygiene and also ensure rest periods.
When the fishing gear is hauled on board, the catch is brought to the deck to be sorted. Sorting consists in separating commercial species from the remaining species which constitute discards. With the LO, the discard of species under European TAC must be landed whereas the other species must be discarded at sea. Undeniably, **the time necessary to sort** out discards concerned by the LO from the remaining catch, **increases**. Rest time on board decreases in the same proportion.
On the other hand, (EU) Regulation n°1380/2013 (Paragraph 11, article 15) specifies that "*For the species subject to the Landing Obligation […] the use of catches […] shall be restricted to purposes other than direct human consumption […]*".

To respect traceability and elementary rules of hygiene, it is necessary to stock undersized discards in separate crates from the catch that will be marketed. Thus an increased number of crates are stored on board and landed, which **implies more handling for the crew.** Indeed, once the catch has been sorted it must be processed, stored (in ice, put in the hold or in tanks etc.) and then landed.

Example :

Within the scope of the REDRESSE project, trials carried out on board a 10.8 m Finisterian Nephrops vessel fishing in inshore waters, showed a 41% increase in sorting time. The two crew members handled 50% more weight. The extra weight stored on board was handled 6 to 8 times by the crew member (Le Roy, 2015).
Another study from the EODE project (trawlers under 18 m), concluded to an over 40 % shortened rest time (Balazuc et al., 2016).

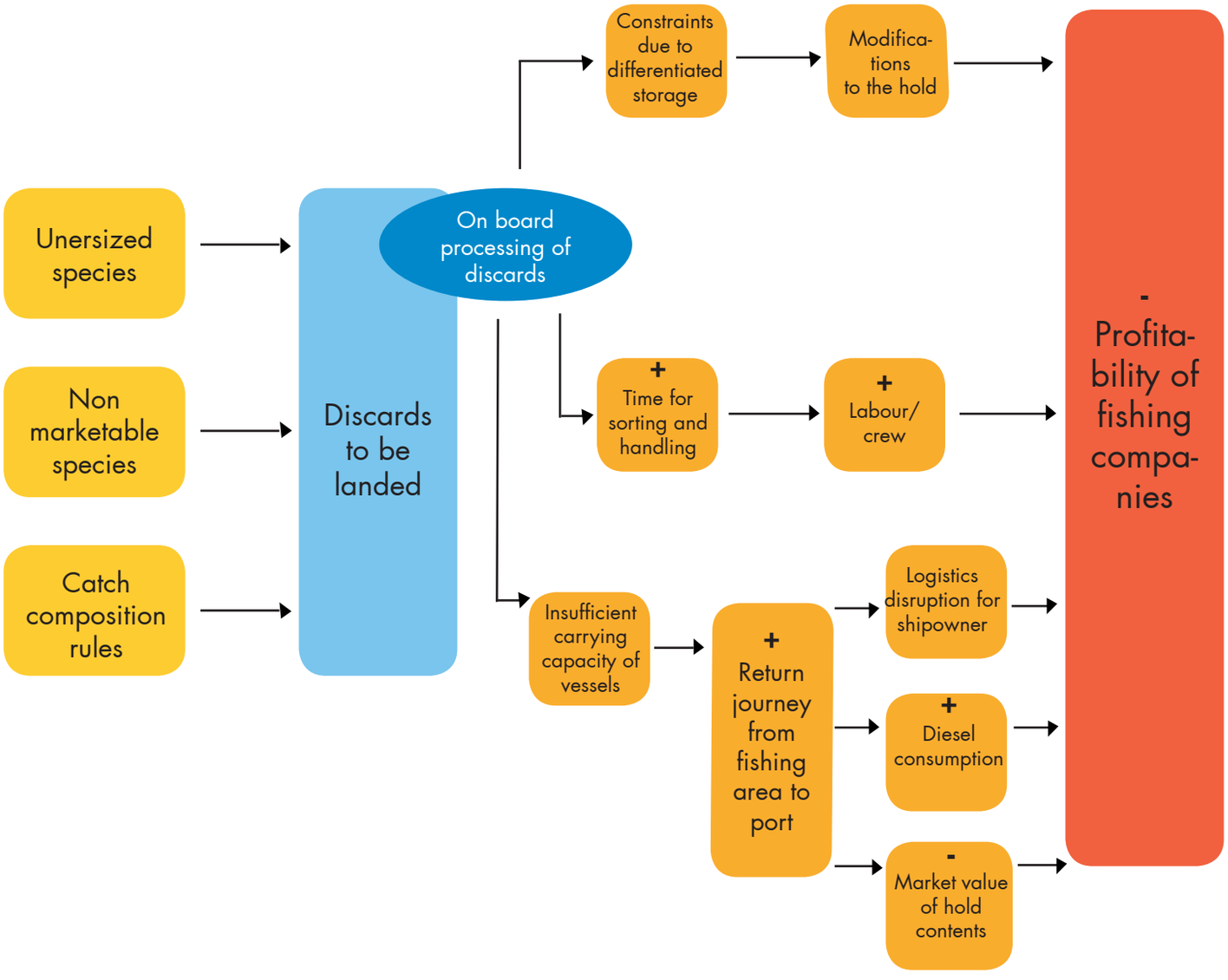
The problem is not just human, it is also a technical one when discards that have to be landed constitute an extra catch that must be stored. The "Institut Maritime de Prévention (IMP)" highlights the direct link between safety and how much a vessel is cluttered. Work on board is already **considered physically tedious, but a further deterioration will obviously lead to safety issues :** "*An accident is an indicator of the insecurity of the system […] in which it occurs. All the statistical studies carried out in France and abroad have shown that in all the countries considered, fishing can be classified as one of the most dangerous of activities, not only in terms of accident frequency but also gravity*" (Le Roy 2009).

Furthermore, the French and Finisterian fleets are relatively old ; three quarters of the Finisterian vessels are over 20 years old (DIRM, NAMO). These vessels that have modified their storing conditions to meet the quality needs of the market, are finding it increasingly difficult to meet the **regulatory obligations of ship stability** and safety standards. In order to land the same volume of marketable catch, numerous vessels should increase their tonnage to have sufficient deck space to accommodate the surplus catch represented by discards and that has to be landed.
However, the thresholds imposed by the tonnage measurement regulations, one of the main management tools for European fishing effort (paragraph 24, article 4, (EU) Regulation 1380/2013 & article 22 of the same regulation), **does not provision for vessels to adapt** to the Landing Obligation.

Example : Trial conclusions on the total implementation of the LO on a Nephrops inshore waters vessel (REDRESSE project)

"After very long days in arduous, harsh and non mechanized (handling) conditions, the shipowner and crew member manage to balance the company's results and preserve their health under the current fishing rules. The proposals of recommendations made in this document moving towards an increase in the handled/landed quantities without deteriorating the safety and health of seamen will be difficult to implement on smaller and older vessels which are nevertheless profitable in this fishery" (Le Roy, 2015).

Impacts on the profitability of fishing vessels

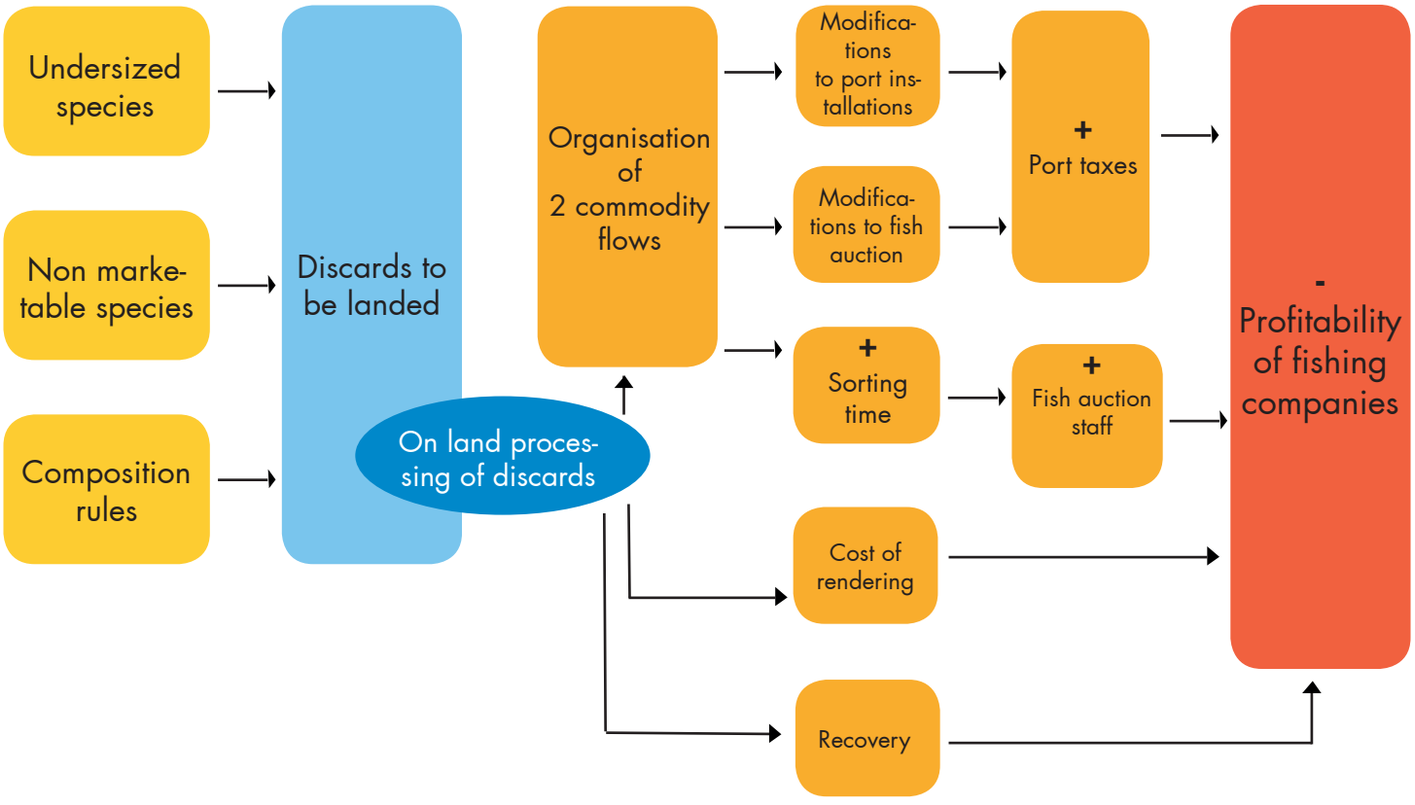


When the LO will be totally implemented as scheduled for 2019, **the increase in the catch to be landed** will oblige, for those who can, **to adapt the vessel's hold**. These structural modifications to the vessel will represent **important investments** for the fishing companies.

If vessels cannot be modified or their hold capacity be increased, the very low market value discards will occupy some of the space used for higher valued catch. For those vessels that return to port at the end of the day with a full hold, it will **represent a lower turnover after each day**. For those vessels working offshore, the LO will lead for many, to a hold filling faster. Thus the LO will oblige the vessel to return to port in the middle of its fishing time to land its catch before returning to the fishing grounds. This steaming time is a loss of fishing and the catch and turnover will consequently decrease. In the same way, vessels will have to spend more time at sea and will consume more fuel to land a similar market value catch.

For all these reasons, the **profitability of fishing companies will be strongly affected.**

The majority of fishermen are share-fishermen paid by sharing the proceeds of each fishing operation. **The increase in sorting time** will impose **additional work** to the fishermen who will spend time on fish of lesser or no value and for an **income that can be less** (i.e. : reduced turnover per run if the hold is full). To compensate this increase in work effort, it might be **necessary to employ an additional crew member** if the muster list* permits it. This increase in the number of crew members linked to a decrease in turnover will thus have a **negative consequence on the individual income of each seaman**.



The LO does not only involve producers. Once the fishing is over, it is necessary to land, store and market excess volumes which also causes problems for some fishery related downstream activities.

Since the undesirable catch cannot be used for direct human consumption, it is necessary to **organise two flows of commodities** as soon as it is landed. Traceability and hygiene conditions must be maintained while differentiating containers and storage. This new organisation will **increase production costs** (storage, ice, etc.) and **labour on land without any medium or long term increase in added value.**

Furthermore, it will be necessary to **upgrade port installations** such as cranes and quays when port infrastructures are sometimes described as insufficient. However, even if such investments can be supported by EU funds, it is difficult to foresee such modifications when the volumes to be processed are little known and can fluctuate. And since the aim of the LO is to reduce, if not to eliminate discards, it does not seem relevant to invest in equipment or in the processing sector.

Finally, for offshore vessels, the catch when landed is sorted again at the fish auction by its staff. The

increase in volumes landed caused by the landing of discards and their specific line of processing will induce an increase in the workload and thus an **increase in fish auction staff costs.**
This **increase** in the running costs of the fish auction will necessarily have an impact on port taxes paid by the fishing companies.

The landed discards will be difficult to value for the industry which will have difficulties in managing and investing to process inputs of which the volumes are difficult to estimate and which in time will decrease. These landings can also be sporadic and dispersed all along the coast. The low quality of this raw material and the constraining regulations are not favourable to develop a specific sector (Boixel et al. 2015) and which is anyhow already proscribed by the CFP : "*The CFP, shall in particular […]where necessary, make the best use of unwanted catches, without creating a market for such of those catches that are below the minimum conservation reference size*" (Paragraph 5, article 2, (EU) Regulation n°1380/2013). As a consequence, landed discards will not bring any benefits to fishing companies but only additional costs, namely for **financing the handling and processing of a product that cannot be valued** (rendering, etc.).

The landing obligation, scheduled in 2019, will **lead to a decrease in the profitability of fishing companies** and to a degradation of social conditions on board (**decrease in safety** and working conditions) (Figure 1).

Landing in Guilvinec harbour . Copyright : CPMEM29

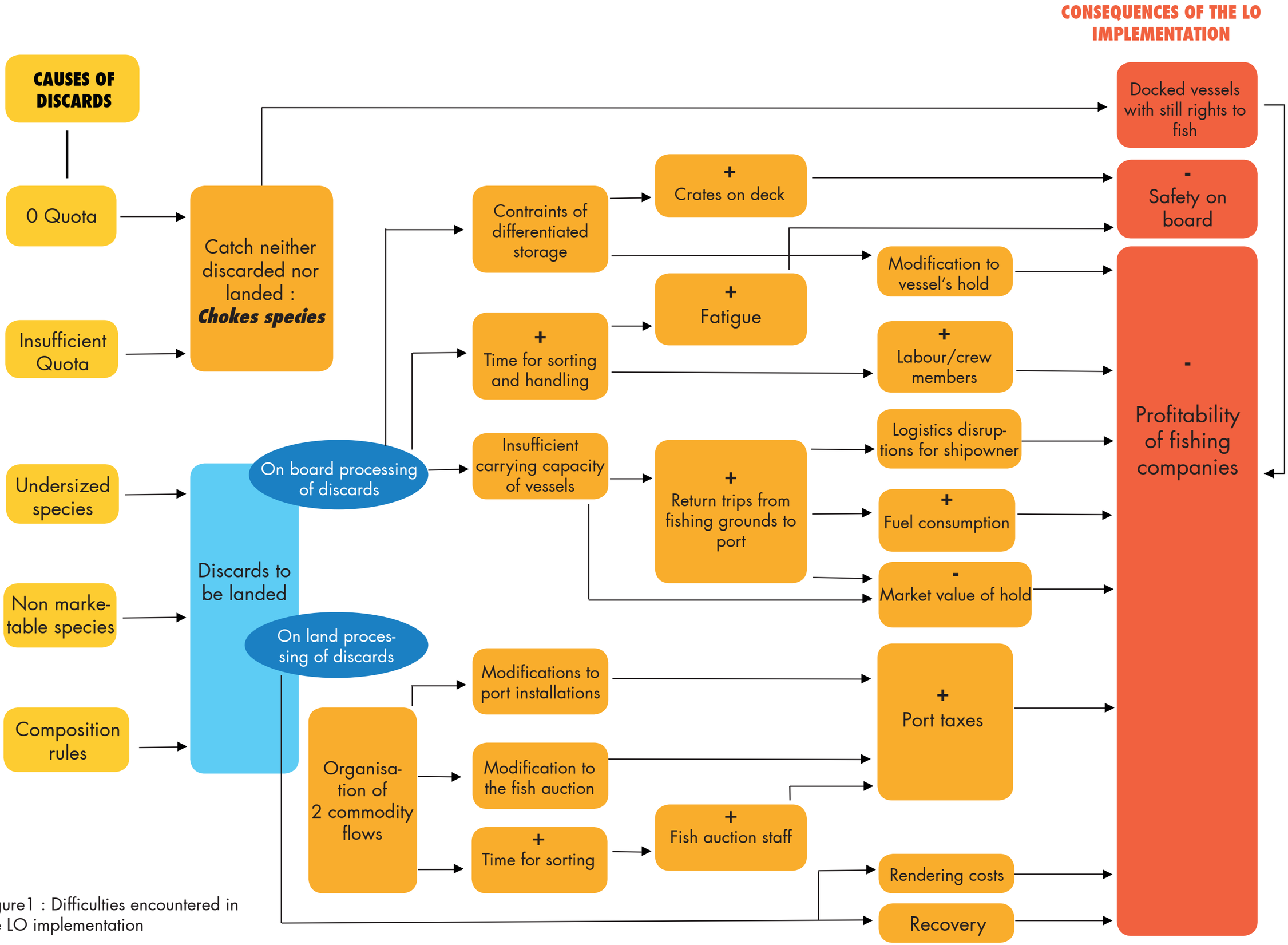


Figure1 : Difficulties encountered in the LO implementation

I.3 - Landing Obligation control in question

The implementation of a regulation can only be possible if there exists an efficient means of controlling it. The CFP offers several means to ensure LO enforcement : "*For the purpose of monitoring compliance with the landing obligation, Member States shall ensure detailed and accurate documentation of all fishing trips and adequate capacity and means, such as observers, closed-circuit television (CCTV) and others.*" (Paragraph 13, article 15, (EU) Regulation n°1380/2013).

The use of **cameras on board** is only provisioned for controlling the LO on freezer vessels. Moreover, fishing professionals have real difficulties in accepting control by cameras.
The most realistic control strategy was put forwards in 2015 by EOS control experts. It is based on the identification of high risk vessels by analysing comparative discard declarations between vessels of a same fleet. The vessels identified are likely to be controlled by **the boarding of a sworn officer**.

This control system might be a source of confusion between boarded scientific observers collecting catch data (OBSMER programme) and the controllers. If the fishermen refuse to take scientific observers on board because of a potential confusion with controllers, valid data acquisition will be impaired. "*The landing obligation,…, might lead to illegal discards and a potential to confuse scientific controllers with controls of discard practices. In France, an important increase in the refusal to board observers has already been observed for those fisheries submitted to the landing obligation since 2015 (pelagic fisheries)*" (Association Française Halieutique). Such behaviour could alter the quantity and the quality of scientific catch data which would be contrary to one of the aims of the LO and which consists in improving knowledge on catch.

More generally, the control issue leads to the debate of the landing obligation being perceived as a coercive measure for improving knowledge on catches.

Yet, a quality programme of observations at sea can perfectly generate data which is reliable and accurate while reinforcing the relationship between scientists and fishermen and promote the transfer of empirical knowledge. Appropriate incentive measures should then be set up to improve the already comprehensive level of landing declarations.

The cost generated by the control of this new regulation also worries the fishing companies already undermined by the implementation of the LO. Just like control systems such as VMS for which maintenance and transmission costs are theirs, shipowners fear that their companies shall support further expenses to insure the implementation of LO control.

Preliminary conclusion

The first reason for which fishing companies feel threatened by the implementation of the landing obligation as intended, is **the management of choke species induced by « exhausted quota » or zero quotas**. The threat is of having to dock certain vessels when they still have fishing rights for certain species. The negative social and economical repercussions will be critical.

If all vessels are not concerned by choke species, all will be, at various levels, by the **increase in catch volumes on board to be landed**. This increase in low market value catch volumes which need to be handled, stored and processed on land, **induce safety and profitability issues** for the vessels. **The social acceptance of this obligation** by professional fishermen **is all the more difficult** that it requires extra work for a lower income due to an increase in costs. Work conditions will worsen resulting in a degraded image and attractivity of fisherman as a profession.

We propose relevant measures to meet ecountered undertainties, particularly those due to choke species. However, these measures have limits which have been indentified by the profession.

II - Proposed measures and limits

Because Member States had expressed their concerns and difficulties before the implementation of the LO, **the (EU) Regulation 1380/2013 introduced various tools** to facilitate its implementation : methods to improve quota management, incentives to improve gear selectivity aimed at diminishing the number of unwanted catches ; exemptions to the LO, etc. Other measures were studied such as improving recovery, avoidance of certain fishing areas or financial assistance.

II.1 - Adjustement of quotas

As explained above, the main concern for professionals faced with the landing obligation is choke species management. The proposed adjustments of quota management can partially meet this issue.

Quota swaps between Member States

Quota swaps is a practice that already exists as it is identified in the CFP (29th point, (EU) Regulation n°1380/2013) and is used to better adjust the availability and the need for quota. These swaps take place early in the year and are readjusted later in the year. Each State thus guarantees sufficient quotas for its fleets. The optimisation of quota swaps is being considered.

Limits :

Presently, the adjustments of quota swaps takes place all year long and wouldn't unlock choke species situations which can occur early in the year. Furthermore, **it is not possible to foresee availabilities** and needs in the years to come, as it depends on TACs, species abundance, etc. Certain species can be choke species in an area and not in another, for a certain year and not for the next.
Besides, certain **TACs are insufficient to meet all the needs of EU fisheries** (such as Plaice, VII hjk).

Inter-annual flexibility

An **inter-annual flexibility**, in force since 2009, is **also often used by Member States** to modulate quota management over two consecutive years. An unused quota one year can be carried over to the next to mitigate a lack of quota.

Limits :

When a species is sufficiently abundant for its quota to be totally used before the end of the year (such as for choke species) it is quite likely that the previous year **its quota would also have been totally used**, implicating that this tool cannot be used.

Inter-specific flexibility

An inter-specific flexibility is also proposed by the CFP to meet problems related to choke species (paragraph 8, article15, (EU) Regulation n° 1380/2013). This flexibility is used for mixed fisheries. This provision enables to have quota for a by-catch species which no longer has available quota, by deducting the necessary quota from the target species as long as it does not exceed 9% of the latter's quota. The use of interspecific flexibility is a tool that enables multi specific management for certain well defined stocks and can only be used **within safe biological limits** of the stocks.

Limits :

This provision is limited to by-catch species for which stocks are within safe biological limits. Thus it can only be used for certain stocks and is relevant for multi-specific fisheries.

Inter-specific flexibility might occasionally avoid the premature closing of a fishery but will not solve the problems of choke species on the long term.

Quota *uplift*

Quota uplift is an increase in fishing possibilities that reassesses upwards the TAC while taking into account the catch of fish that was discarded. This quota is calculated without reconsidering fishing mortality and the objectives of attaining the MSY (32nd point of (EU) Regulation n°1380/2013). Quota uplift will be able to absorb part of the additional landings.

Limits :

However, quota uplift is **calculated to take into account the landing of discards**, but cannot meet the issue of landings of abundant species for which the quota is limiting in the context of the MSY.

In the same way, the quota uplift distribution per Member State takes place as for quotas and is thus based on a percentage of the global TAC. Quota uplift **will not solve the problems encountered with zero quotas**, the Member State lacking quota will not gain any this way.

Suppression of certain TACs

To reduce the number of choke species, it is suggested to suppress certain species from the TAC system. Hence, these species **would no longer be submitted to a TAC nor would they be to the landing obligation**. This solution could be envisaged for non targeted stocks in Europe and for which the species have a low market value.

Limits :

The CFP provides a scheme of TACs and quotas in the aim of attaining the MSY in 2020. Suppression of these TACs cannot only be reasonably suggested for **zero quota species** (for instance boarfish, common skate) or **for species for which there is no targeted fishery** (for example, plaice VIIhjk).

II.2 - Improvement of selectivity

Although the CFP provides for quota adjustments, one of its main objectives is to improve selectivity (29th point, (EU) Regulation n° 1380/2013) : "*In the management of the landing obligation, it is necessary that Member States do their utmost to reduce unwanted catches. To this end, improvements of selective fishing techniques to avoid and reduce, as far as possible, unwanted catches must have high priority*".

For over 10 years, the French fleet has applied the principle of "**sorting on the bottom rather than on deck**" to prevent unwanted landings. With the help of scientists, fishermen constantly improve their fishing gear to meet their objective of sustainably exploiting the resource. **Previous to the 2013 CFP** and to the landing obligation policy, fishermen initiated programmes **to develop selective devices which have since been included in various regulations**.

- Example of selective devices for the Bay of Biscay Nephrops fleet previous to 2013 CFP

  The French National Authorization to Fish (NAF) for Nephrops in the ICES area VIIIabde can only be delivered to vessels equipped with a selective device "100 mm square mesh panel" which allows small hakes to escape and one of the 3 mandatory devices for improving Nephrops selectivity (Nephrops grid, square mesh panels or 80 mm cod-end) (Annex VIII, 27th May 2016 Decree).
  The selective device for hake, implemented by the ASCGG programme (Appendix 1) enables to reduce the undersized catch of hakes by 25% in the Bay of Biscay Nephrops fleet (Rimaud 2015). This selective device became mandatory in Europe in 2004.
  Research on selective devices for Nephrops was carried out by the "Association du Grand Littoral Atlantique (AGLIA)" (Appendix 1) in 2006 and 2007. The use of these devices was made mandatory in 2006 (Annex III in EU Regulation n°51/2006).

The landing obligation has encouraged professionals to continue their investment in research programmes aimed at improving fishing gear selectivity and consolidating the data (Appendix 1).

- Example of selectivity programmes implemented to respond to the LO (Appendix 1)

  CELSELEC : Celtic-Selectivity. Project to improve the selectivity of offshore trawlers (2013-2016). The "T90"* mesh in 100 mm test for the entire bottom part of the trawl has shown convincing results in terms of haddock and boarfish selectivity (Lamothe et al., 2017).
  REDRESSE Project : Discard reduction and selectivity improvement in the Bay of Biscay. Tests of a semi rigid grid have shown interesting results still to be confirmed on Nephrops selectivity.
  REJEMCELEC : Discard reduction in the English Channel and Celtic Sea on offshore trawlers targeting gadoids and cephalopods. For the Channel, encouraging preliminary results were observed on the 80 mm in T90 with square mesh panel for a reduction of discards in horse mackerel, whiting and haddock. But for the square mesh, market losses on whiting were still recorded. In the Celtic Sea, the T90 in 100 mm as an alternative to the regulatory 120 mm panel presents very satisfactory results of undersized haddock and hake escapes.

The profession invests in selectivity because it seems to be a key factor for improving fishing practices and stock management. The aim is to reach the **delicate balance between the escape of unwanted species and minimizing commercial losses**. In fact, even if a device can be efficient on a species, it can lead to significant commercial losses on one or several other species, thus weakening the economic viability of the activity. This is all the more true in a mixed fishery largely represented in the French fisheries sector.

The great diversity of fisheries does not allow to find a device transferable to all types of fishing and to all vessels. Indeed, each vessel and each metier has its own specificities (targeted species of various morphologies, size and engine power of vessels, fishing area) which imply constraints and various adjustments of the fishing gear. The aim is to **propose a tool box that offers several selective devices** that skippers can use to meet their constraints and their particular situation.
However, it must be noted that by introducing technical measures that are too drastic into regulations might demobilize the professionals implicated in selectivity programmes.

Limits :

Not one device exists that could be fitted to all vessels to meet all the selectivity issues. The way forwards would be **to give time** to the fishermen and scientists to discover, adapt and adopt new tools which will be selective and **economically viable**.
The improvements made on gear selectivity lead to a **clear decrease in unwanted catches but does not allow to totally eliminate them**.

II.3 - Exemptions to the LO

The CFP provides for exemptions thus authorising discards in some strictly controlled conditions, such as high survival rates and *de minimis* exemptions (paragraph 4, article 15, (EU) Regulation n° 1380/2013).

Exemptions for a high survival rate

Exemptions for "s*pecies for which scientific evidence demonstrates high survival rates, taking into account the characteristics of the gear, of the fishing practices and of the ecosystem*" are not submitted to the landing obligation (paragraph 4, article 15, (EU) Regulation n°1380/2013). Those catches can be returned to sea and **contribute to the renewal and support of the resource**.

Therefore, an exemption to the landing obligation for anchovy, horse mackerel, jack mackerel and mackerel was granted when they are fished with a purse seine (art. 2, EU delegated regulation n°1394/2014). The purse seine catch is actually evaluated before hauling it on deck and can be returned alive if the catch does not correspond to the species or to the sizes targeted by the fisherman. This practice is called "slipping".
An exemption for a high survival rate was also granted in the Bay of Biscay for the fishing of Nephrops using bottom trawls (article 2, EU delegated regulation n°2016/2374). To improve the survival rate of Nephrops, professional fishermen have installed and made compulsory devices that enable their quick return to sea (Annex VIII, 27th May 2016 Order).

Example of the SURTINE programme for the survival evaluation of undersized Nephrops fished with bottom trawls in the Bay of Biscay.

The SURTINE programme was carried out in close collaboration with professional fishermen. It showed a survival rate in Nephrops discards of 36.9% [21.1 – 52.7] which can reach 51.2% [30,9 – 71,3] when a specific device that enables their quick return to sea is used (Rimaud, 2015).

Other projects are currently underway to evaluate survival rates of certain species and obtain an exemption for high survival rates (for instance, the ENSURE programme intends to assess the resistance to exposure of 10 species in order to prioritise the best candidates for further studies on survival rates). The ENSURE project concludes that bass, plaice, sole and rays are good candidates (Morfin et al., 2016).

However, an **exemption for a high survival rate must be evaluated and requested by each metier** for each species, each specific fishing area and any particular fishing gear. Today, the lack of data does not allow to apply this exemption to species that have a high survival rate such as sole, plaice, rays… (Morfin et al. 2016).

Limits :

Exemptions for a high survival rate cannot meet the issues raised by fleets for which species caught do not truly survive when returned to sea.

Furthermore, to grant any exemptions, the European Commission requires as many scientific studies as there are "fishing gear*species*fishing area*" combinations. These studies are time consuming and costly because they require either tagging or captivity in tanks. **Time and funding are absolutely necessary** to evaluate and meet the requirements needed for obtaining these exemptions.

Sorting on a Nephrops trawler (SURTINE). Copyright : CDPMEM29

De minimis exemptions

In the context of the LO, the CFP provides for *de minimis* exemptions of up to 5% discards of total annual catches for any specific metier. The *de minimis* exemption will be justified :

"*i) where scientific evidence indicates that increases in selectivity are very difficult to achieve; or*

(ii) to avoid disproportionate costs of handling unwanted catches" (paragraph 5, article 15, (EU) Regulation n°1380/2013)."

In the context of *de minimis* exemptions, all discarded catches must be fully recorded.

Currently, *de minimis* exemptions are determined mainly for a given species and fishery (delegated (EU) Regulation n°2016/2374, n°2016/2375, etc). These provisions minimize the difficulties encountered with the LO but will not totally solve the problem of choke species.
To provide more flexibility, **de minimis exemptions** should combine **several stocks in a single exemption** and apply the calculated percentage to a combination of species as is provisioned by the CFP.

Limits :

De minimis exemptions are not suitable to solve all the problems due to **choke species** because of an "exhausted" quota. A solution might be to **combine several de minimis exempted species** but it seems unrealistic to find species combinations that would suit all Member States and all producer organisations as not all countries are confronted with the same «exhausted» quotas.

Moreover, when producing a *de minimis* exemption combining several species, the STECF (Scientific, Technical and Economic Committee for Fisheries) takes into consideration the maximum risk of volume potentially discarded for these species and adjusts it so the MSY can be reached.

II.4 - Avoidance of areas

To diminish unwanted catch, certain fishing areas can be avoided. The **avoidance of areas is already informally practised by fishermen** when a species is banned (ex : spiny dogfish, common skate, undulate ray, etc.) or when a species which quota has been used is too abundant or when too many of the fish caught are under the Minimum Conservation Reference Sizes (MCRS). The aim of the skipper is to fish as many marketable fish as posible while not spending too much time sorting the fish on board.

Regulated closures of certain areas also exist.

Example of a regulated area closure : “the cod box”

In 2004, the producer organisation « Les Pêcheurs de Bretagne » and its members introduced a “cod box” in the Celtic Sea. Every year, an area as large as Brittany is banned from any fishing activities between the 1st February to the 31st March which limits fishing effort in areas where cods aggregate for reproduction. This proposal was developed with the active support of IFREMER and was included in the 2005 European management plan and has consequently improved the management of the Celtic Sea cod stock.

Limits :

Avoidance of areas is already practised by fishermen, so it seems **difficult to propose new regulatory areas closed to fishing** as they would add to the ones already informally in use.

This practise of area avoidance can **reduce discards at a given time** and for a given species but **in no way will permit to totally eliminate them**.

II.5 - To improve the value of unwanted catch

To improve the value of discards would allow the professionals to ensure the profitability of their activity. However, the CFP indicates that "*the use of catches of species below the minimum conservation reference size shall be restricted to purposes other than direct human consumption, including fish meal, fish oil, pet food, food additives, pharmaceuticals and cosmetics.*" (Paragraph 11, article15, (EU) Regulation n° 1380/2013).

The French fishing fleet currently only fishes for the human consumption market. In Finistère, the processing plants recovering co-products use the products issued from the processing of high-valued species.
The **potential recovery of discards** will require **either high quality raw material** (products for pharmaceuticals, cosmetics, etc.) so the producer will be sufficiently paid, or a product with a very small margin that becomes economically interesting only if **big volumes** are available (animal meal) or a combination of these two possibilities (Boixel 2015).

Limits :

The economic recovery of discards in **high added value sectors** (pharmaceuticals, cosmetics, etc.) necessitates **high storage capacities**, equivalent to those of products intended for human consumption. These requirements will request even more work than the simple storage of discards. Furthermore, few species will meet this type of recovery (Boixel, 2015).

To be economically interesting, a low margin recovery will require big volumes. However, **it doesn't seem timely for plants to invest today in processing big volumes of discards that are bound to decrease later on**. In addition, numerous points of landing and irregular landings (in species, tonnage and quality) make it difficult to build an economically viable model.

Furthermore, French fishing vessels are not adapted to land important volumes of discards without impacting the survival of the company and the working conditions of the fishermen.

Conclusion of the second part

The **complexity of the landing obligation implementation** generates an important national and European mobilisation. **Professional fishermen are invested in many projects** to improve the selectivity of their fishing gear, to increase the survival of discarded species and prove their high survival, etc.. **hoping to respond and adapt to this new policy**. However, the tools available such as quota adjustment, selectivity, exemptions for high survival, de minimis exemptions, avoidance measures, use of financial aid or the recovery of landed discards, whether they are listed in the CFP basic text or not, **all present a great number of limits**. Thus they cannot guarantee the flexibility needed for a pragmatic implementation of this obligation.

A more flexible application of the CFP would make its implementation more serene, more acceptable economically and socially, while nevertheless meeting the environmental objectives it has set.

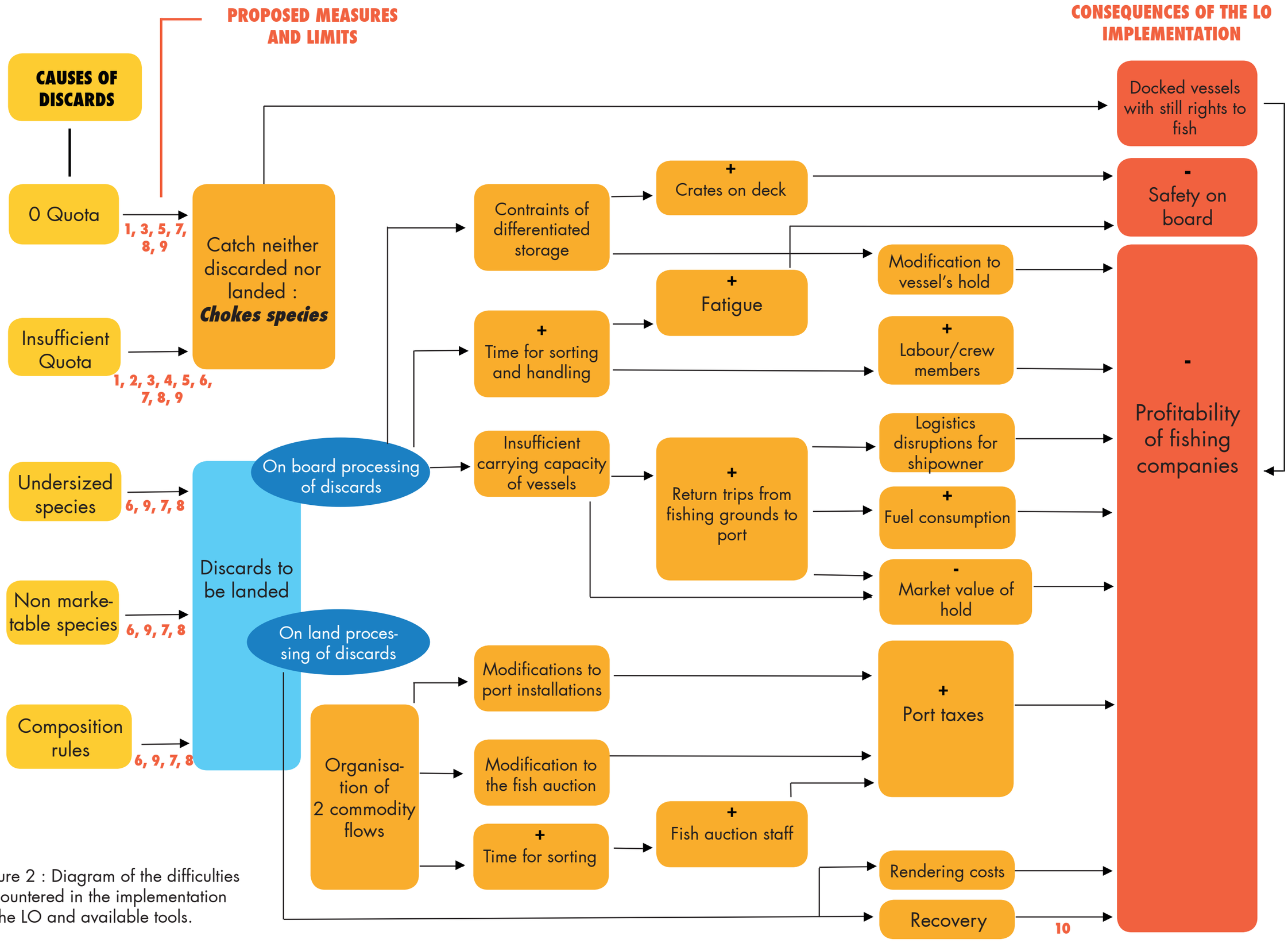


Figure 2 : Diagram of the difficulties encountered in the implementation of the LO and available tools.

Figure 2 legend : summary of proposals and limits

	PROPOSED TOOLS/ MEASURES	LIMITS
ADAPTATION OF QUOTAS	**1** Quota swapping between Member States	- Little visibility and anticipation - Limiting TACs in the EU
	2 Inter-annual flexibility	- To be adjusted according to quota left
	3 Inter-species flexibility	- Only for stocks within safe biological limits and by-catch species - MSY will be reached more slowly
	4 Uplift of quotas	- Will not totally compensate for discards - Not applicable to zero quota species
	5 Suppression of certain TACs	- Zero quota or non targeted species
SELECTIVITY	**6** Improving fishing gear selectivity	- No unique device - Balance to be found between selectivity and market losses - Will not reach zero discards - Needs time and R&D funding - Difficult to adjust gear for mixed fisheries
EXEMPTIONS	**7** Exemption for high survival rates	- Applicable to a small number of species - Needs time and funding for survival studies
	8 De minimis exemptions and De minimis in combination	- De minimis exemption not applicable to choke species - Combined de minimis exemption calculated in relation to the MSY - Different species combinations depending on Member State and PO
AVOIDANCES	**9** Avoidance & closed areas	- Not applicable to all species - Avoidance of unwanted catches but cannot reach zero discards
VALORISATION	**10** Developing a downstream sector to recover waste	- Needs storage for high value sector - Needs tonnage for low value sector - Not economically viable for the downstream segment

CONCLUSIONS AND PROPOSALS

The landing obligation was a preoccupying subject for all the people we met. The measures relative to its implementation are very complex and its progressive implementation leaves many questions unanswered, such as the outcome of choke species. In this context, the whole sector needs clarifications and is encouraging administration bodies to delay the complete implementation of this regulation.

The **objectives of the CFP** such as the sustainable management of resources, the reduction of discards, improved selectivity and more knowledge on catch, are all **shared and supported by the profession**. This is shown by the numerous projects and partnerships engaged by the professionals to improve knowledge on stocks (LANGOLF TV), to improve knowledge on discards (OBSMER), to improve catch data and fishing activity spatialisation (TELECAPECHE, VALPENA), to improve selectivity (REDRESSE, CELSELEC), to improve survival (SURTINE), etc. and their application in regulations (selective device or slide made compulsory, etc.).

However, professionals fear a perverse effect in the implementation of the LO as scheduled for 2019, as it could lead to the landing of increasing volumes of discards to supply a new sector, or be detrimental to data acquisition programmes or harm healthy stocks by landing species that could survive. The consequences of a strict application of the LO often seems in contradiction with one of the main aims of the CFP and which consists in reaching the maximum sustainable yield.

These are the reasons why the implementation of the landing obligation as it stands is not acceptable to professionals and unmanageable with current means. **To reach the objectives of the CFP** which joins the sustainability of marine resources to those of the companies exploiting them, the use of the adjustments already introduced into the CFP should be broadened so as to give **the flexibility needed for a more conscious and appropriate implementation of the landing obligation**.

To authorise a minimum percentage of discards (for a given species or a group of species) calculated on the total annual catch of all species submitted to the LO would avoid several cases of choke species and the premature closures of certain fisheries. To obtain exemptions for species known to have a high survival (plaice, sole, ray, etc.) would encourage the profession in waiting for the results of scientific studies. Furthermore, it would be wiser to expect a real **obligation of results** in the new EU technical measures framework which would let professionals adapt their fishing practices depending on their activity and obligation. Finally, the optimisation of stock management to reach the MSY does not require the landing of all the catches, but the full **record of the whole catch** which should be feasible without having to land it all (intensification of observation programmes, incentives for full recording, etc.). For those stocks that have no analytical assessment, a more practical managerial approach may be more useful ; these stocks are often considered less important in management and will benefit from the progresses made in selectivity for analytical stocks (Advice 114, SWWAC).

The evolution of fishing practices and regulations takes time and adjustments to fit the realities of the field. In the implementation of the LO, the stability of the whole sector is at stake, a stability already challenged by future uncertainties such as Brexit and which threat its economic viability.

LIST OF FIGURES

TABLE OF ACRONYMS AND ABBREVIATIONS

AGLIA : Association du Grand Littoral Atlantique

CCI : Chamber of Commerce and Industry

CDPMEM29 : Comité Départemental des Pêches Maritimes et des Elevages Marins du Finistère

CFP : Common Fisheries Policy

CNPMEM : Comité National des Pêches Maritimes et des Elevages Marins

DDTM : Direction Départementale des Territoires et de la Mer

DPMA : Direction des Pêches Maritimes et de l'Aquaculture

EU : European Union

IMP : Institut Maritime de Prévention

LO : Landing Obligation

MCRS : Minimum Conservation Reference Size

MSY : Maximum Sustainable Yield

NAF : National Authorisation to Fish

NWWAC : North-Western Waters Regional Advisory Council

PO : Producer Organisation

STECF: Scientific, Technical and Economic Committee for Fisheries

SWWAC : South-Western Waters Regional Advisory Council

TAC : Total Allowable Catch

WG MOOD : Work Group for the implementation of the landing obligation

IFREMER : Institut Français de Recherche pour l'Exploitation de la MER

VOCABULARY

DIRM NAMO : Direction Inter-régionale de la Mer Nord Atlantique Manche Ouest.

Inshore fishing : The vessel equipped for inshore fishing can be out of harbour for anywhere between 24 and 96 hours.

Large-scale fishing : Applies to a) vessels of over 1000 gross registered tonnes (GRT) ; b) vessels of over 150 tonnes usually absent from its working or refuelling harbour for over 20 days ; c) Vessels of over 150 tonnes for which the registration harbour is over 20 days away from the working or refuelling harbours.

Maximum Sustainable Yield (MSY): The highest theoretical equilibrium yield that can be continuously taken (on average) from a stock under existing (average) environmental conditions without affecting significantly the reproduction process (FAO definition).

Muster list: Licence to sail delivered by the "Délégation de la Mer et du Littoral", that must be held by any seagoing vessel and which crew comprises professional seamen affiliated to the ENIM (Etablissement National des Invalides de la Marine – Specific Social Security Plan).

Offshore fishing : The vessel equipped for offshore fishing can be out of harbour for over 96 hours and when its fishing does not meet the definition of large-scale fishing.

Small-scale fishing : The vessel equipped for small-scale fishing can be out of harbour for 24 hours or less.

Total Allowable Catch (TAC) : Set at a EU level, it is the total catch allowed for most marketable fish species to reach the MSY.

T 90 : It is the mesh to which a 90° rotation is applied with regards to a normal mesh. Resistance to opening is changed into resistance to closure.

REFERENCES

Association Française Halieutique (AFH). Obligation de débarquement : évitons l'échec https://www.association-francaise-halieutique.fr/images/Obligation_de_d%C3%A9barquement___Une_analyse_de_lAFH.pdf

Balazuc A., Goffier E., Soulet E., Rochet M.J., et Leleu K. (2016). EODE – Expérimentation de l'Obligation de Débarquement à bord de chalutiers de fond artisans de Manche Est et mer du Nord, et essais de valorisation des captures non désirées sous quotas communautaires.

Boixel Y., Caillart B., et Giron Y., Les Pêcheurs de Bretagne (2015). Etude sur la valorisation des produits soumis à l'obligation de débarquement.

Conseil Départemental du Finistère, (2016). Atlas de la mer et du Littoral, édition 2016.

Cornou A.S., Goascoz N., Quinio-Scavinner M., Chassanite A., Dubroca L., Rochet M.J. (2017). Captures et rejets des métiers de pêche français – Résultats des observations à bord des navires.

DIRM NAMO. Monographie maritime de la façade NAMO 2015 - Finistère http://www.dirm.nord-atlantique-manche-ouest.developpement-durable.gouv.fr/IMG/pdf/finistere_cle044da2.pdf

Lamothe J., Larnaud P., Fiche M., Robert M., Morandeau F., Vacherot JP., Scavinner M., Simon J. (2017). Projet CELSELEC : Amélioration de la sélectivité des chalutiers hauturiers en mer Celtique.

Le Roy Y. (2015). Simulation de l'obligation de débarquement à bord d'un chalutier-langoustinier de 10,80 m, construit en 1976, armé par deux hommes et évaluation de l'impact sur la sécurité et les conditions de travail. (Embarquement et rapport réalisés dans le cadre du projet Redresse).

Le Roy Y., Conseil Régional de Bretagne, Institut Maritime de Prévention (2009). Nouvelles tendances en matière de rejets à bord des navires de pêche : impact sur les conditions de sécurité et de travail (cas de la pêche fraiche hauturière bretonne).

Morfin M., Méhault S., Benoît H.P. et Kopp D. (2016). Narrowing down the number of species requiring detailed study as candidates for the EU Common Fisheries Policy discard ban.

Rimaud T., Aglia (Association du Grand Littoral Atlantique) (2015). L'amélioration de la sélectivité en action (Golfe de Gascogne) Trier sur le fond plutôt que sur le pont Exemple du Projet REDRESSE (REDuction des REjets et amélioration de la SEléctivité dans le Golfe de Gascogne) .

European regulations (http://eur-lex.europa.eu) :

- Council Regulation (EC) n°850/98 of 30 March 1998 concerning the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms.

- Council Regulation (EC) n°51/2006 of 22 December 2005 fixing for 2006 the fishing opportunities and associated conditions for fish stocks and groups of fish stocks applicable to Community waters and, for Community vessels, in waters where catch limitations are required.

- Regulation (EU) n°1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy.

- Commission Delegated Regulation (EU) n°1394/2014 of 20 October 2014 establishing a discard plan for certain pelagic fisheries in south-western waters.

- Regulation (EU) 2015/812 of the European Parliament and of the Council of 20 May 2015 amending Council Regulations (EC) n°850/98, (EC) n°2187/2005, (EC) n°1967/2006, (EC) n° 1098/2007, (EC) n°254/2002, (EC) n°2347/2002 and (EC) n°1224/2009, and Regulations (EU) n° 1379/2013 and (EU) n°1380/2013 of the European Parliament and of the Council, as regards the landing obligation, and repealing Council Regulation (EC) n° 1434/98.

- Commission Delegated Regulation (EU) 2016/2374 of 12 October 2016 establishing a discard plan for certain demersal fisheries in South-Western waters.

National regulations (https://www.legifrance.gouv.fr) :

- 27 May 2016 decree fixing the management conditions of European and national fishing scheme authorisations for quota fishing in FAO area 27

APPENDICES

APPENDIX 1 : summary of French projects concerning the landing obligation (Completed MOOD work group document)

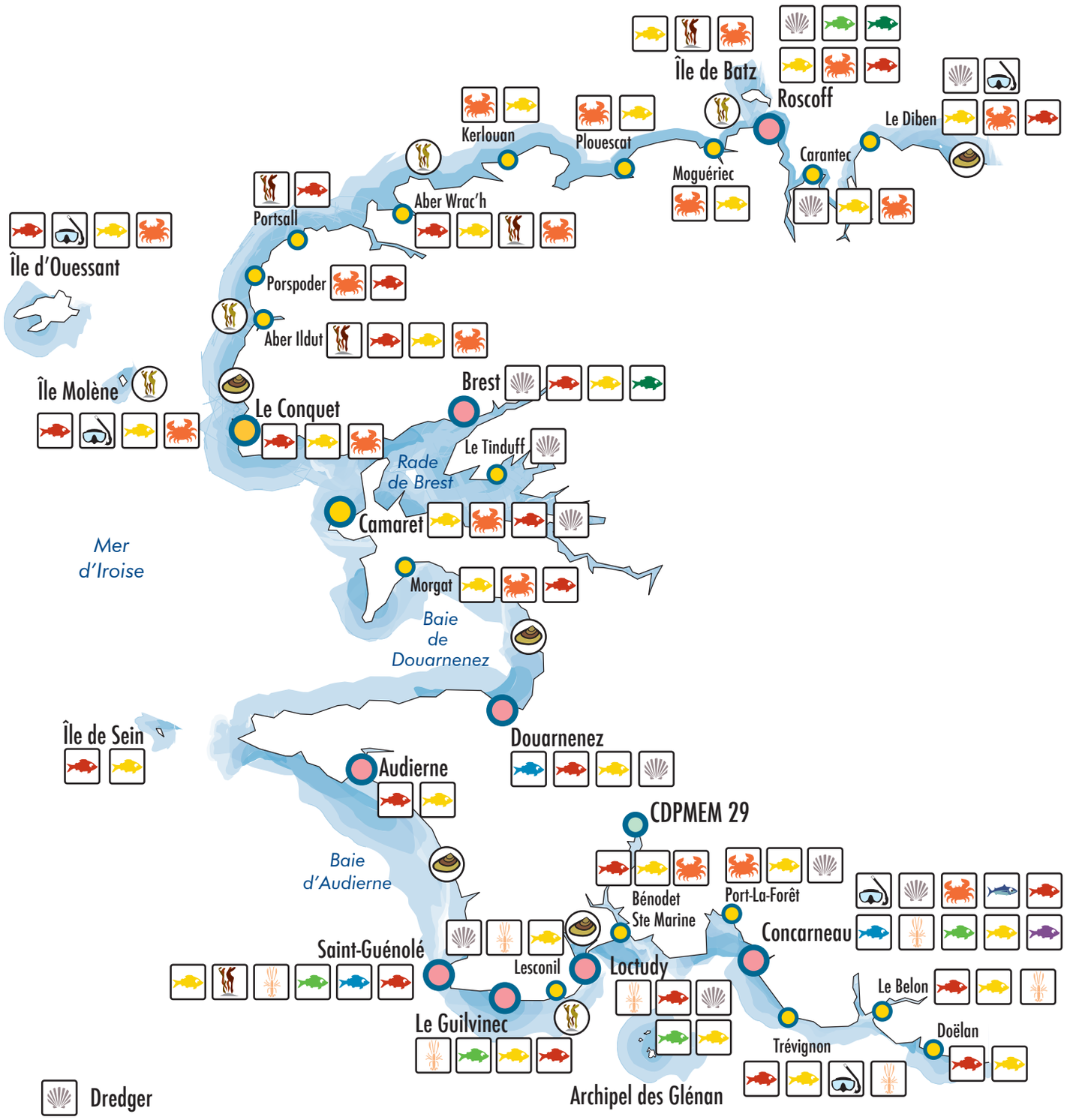
Type	Name of project	Name of project / Web reference	Fishing gear	Stocks	Fishing Zone	Calendar	Referring body
SELECTIVITY	**ASCGG**	Improving selectivity in the Bay of Biscay *-http://www.comite-peches.fr/nos-programmes/amelioration-de-la-selectivite-du-golfe-de-gascogne-ascg/*	Trawls	Hake	Bay of Biscay	Beg. 2002 - End 2004	CNPMEM
	CELSELEC	Improving selectivity in the Celtic Sea *-http://archimer.ifremer.fr/doc/00403/51488/*	Trawls	Various : monkfish, megrim, haddock…	Celtic Sea	Beg. 2014 - End 2016	OP Les pêcheurs de Bretagne Marion Fiche
	REDRESSE	Reduction of discards and selectivity in the Bay of Biscay *-http://www.aglia.org/projets/dossier-redresse*	Bottom trawls, pelagic trawls, Danish seine, nets	Various : Nephrops, megrim, rays, cephalopods	Bay of Biscay	Beg. 2014 - End 2016	AGLIA Thomas Rimaud
	REJEMCELEC	Reduction of discards in the Channel and Celtic Sea by fishing gear selectivity *-http://www.cobrenord.com/2017/10/18/rejemcelec-premiers-resultats-sur-la-selectivite/*	Bottom trawl for gadoids ; bottom trawls for cephalopods ; Semi-pelagic trawl for mackerel	Various : whiting, cod, haddock, mackerel…	Channel	December 2015 - December 2017	OP COBRE-NORD Gaël LAVIALLE

SELECTIVITY	**SELECMER** **SELECAB** **SELECFISH**	Improving trawler selectivity in the Eastern Channel / North Sea *-https://www.comitedes-peches-hautsdefrance.fr/nos-actions/gestion-de-ressource/selecmer-amelioration-de-selectivite-chalutiers-de-pecherie-multi-specifique-manche-mer-nord/* *-https://www.comitedes-peches-hautsdefrance.fr/nos-actions/gestion-de-ressource/seleccab/* *-https://www.comitedes-peches-hautsdefrance.fr/nos-actions/gestion-de-ressource/selecfish/*	Trawlers	Various (stocks under EU quota, cod…)	Easter Channel and North Sea	2008-2009 2009-2010 2013-2014	CRPMEM N-P-DC
	NEPHROPS SELECTIVITY	Improving selectivity in the Bay of Biscay	Trawlers	Nephrops	Bay of Biscay	2005 - 2006	AGLIA
	SMAC	Eastern Channel sole : Improving knowledge for a better management *-https://wwz.ifremer.fr/smac/Selectivite-et-strategie-de-peche*	Netters	Sole	Eastern Channel	2005-2006	IFREMER Marie Savina Rolland
	SUMMARY REPORT BY IFREMER	Litterature report on "Fishing gear selectivity" *-http://archimer.ifremer.fr/doc/00317/42869/42327.pdf*	All	-	All	2016	IFREMER Camille Vogel
SURVIVAL	**ENSURE**	Evaluation of discard survival *-http://www.francefiliere-peche.fr/projet/ensure-evaluation-de-la-survie-des-rejets/*	Bottom trawls, nets	Sole, plaice, turbot, rays, Norway lobster, bass, dogfish	Bay of Biscay and Eastern Channel	2014-2016	IFREMER Sonia Mehault

SURVIVAL	**SUMARIS**	Ray survival *-http://www.fromnord.fr/actus/83-sumaris-lancement-officiel-du-projet*	Bottom trawl nets	Ray	Eastern Channel South of North Sea	2018	FROM Nord
	SURTINE	Survival of Nephrops returned to sea after the catch *-https://wwz.ifremer.fr/peche/Le-role-de-l-Ifremer/Recherche/Projets/Description-projets/Surtine*	Nephrops trawls	Nephrops	Bay of Biscay	2016	AGLIA
LANDING OBLIGATION EXPERIMENTATION	**IMPACT STUDIES ON THE LO IN THE MEDITERRANEAN**	Work placement report on the impact of the LO on the Languedoc Roussillon fisheries	Trawls		Mediterranean	2015	OP du Sud Perrine Cuvillier
		Work placement report on the impact of the LO on the PACA fisheries	Trawls		Mediterranean	2015	CRPMEM PACA Deborah Mondain
	EVALUATION OF DISCARDS IN THE CELTIC SEA	Evaluation of discards and analysis of LO impact for the offshore fleet of the COBRENORD PO	Bottom trawls	Various : haddock, whiting, boarfish...	Celtic Sea	2014-2015	PO COBRENORD Gaël Lavialle
	DISCARDLESS (HORIZON 2020)	Strategies for the progressive elimination of discards in European fisheries *-http://www.discardless.eu/discardless-overview*			Europe	2014-2020	IFREMER Marie-Joëlle Rochet, Youen Vermard
	EODE	*Experimentation of the LO in the Nord - Pas de Calais region* *-https://www.comitedespeches-hautsdefrance.fr/nos-actions/gestion-de-ressource/eode/*	Bottom trawls	Various	Eastern Channel - North Sea	2014-2015	CRPMEM N-PDC-P

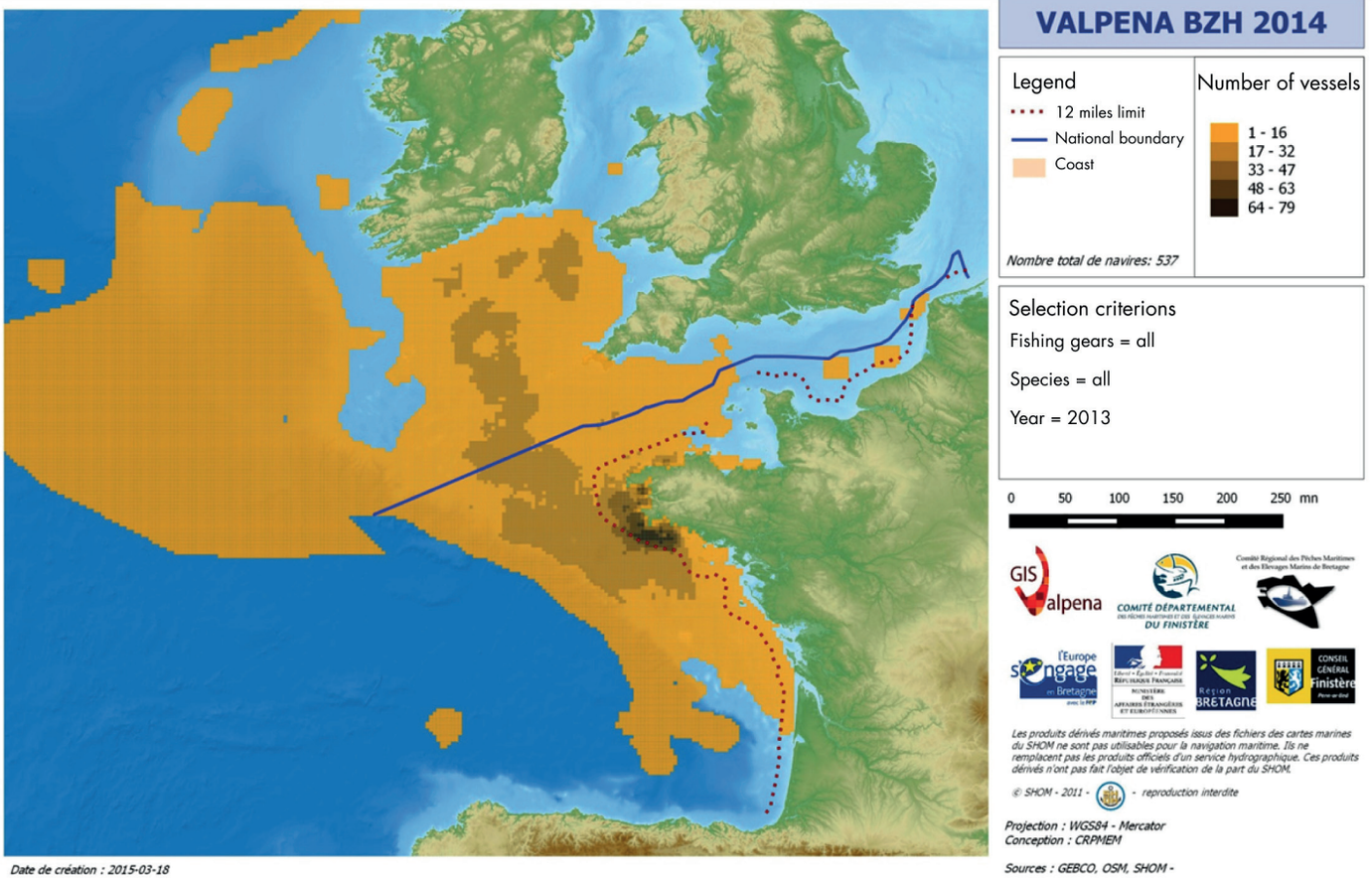
LANDING OBLIGATION EXPERIMENTA-TION	**GALION**	Study on new management methods for the offshore fishery in the Gulf of Lion *-http://galion.amop.fr/*	Trawls	Various	Gulf of lion	2015-2018	AMOP
	CIFRE THESIS	Strategies other than technological modifications of fishing gear for decreasing discards				Juillet 2015 - Juillet 2018	IFREMER - SINAY Marie-Joëlle Rochet

APPENDIX 2 : DIVERSITY OF PROFESSIONAL FISHING ACTIVITIES IN THE FINISTERE



APPENDIX 3 : MAIN FISHING AREAS OF FINISTERIAN FLEETS

MAIN FISHING AREAS OF FINISTERIAN FLEETS



COMITÉ DÉPARTEMENTAL
DES PÊCHES MARITIMES ET DES ÉLEVAGES MARINS
DU FINISTÈRE

22 avenue du Rouillen
29500 ERGUE-GABERIC - FRANCE
www.comitedespeches-finistere.fr/
cdpmem29@gmail.com
Standard : +33 (0)2 98 10 58 09