



DiscardLess

Strategies for the gradual elimination of discards in European fisheries

Deliverable 7.2

Year 2 of the Landing Obligation: Key Issues in Mediterranean Fisheries. DiscardLess Policy Brief Number 2.



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Summary of D7.2:

Policy Brief 2: Year 2 of the Landing Obligation, key issues in Mediterranean Fisheries.

Box 1: Report Highlights

- Communication is a critical factor in implementation success and the necessity for improved co-operation between Member States and MEDAC is clear. Some AC members feel that the LO has incentivised improved co-operation.
- Some NGOs feel that Member States have not been committed to improving selectivity, but focus instead on exemptions while at the same time relying too heavily on MEDAC's advice.
- Uncertainty about both the principle and the implementation of the LO is still a dominant feature across all stakeholders including managers.
- There is a significant information deficit regarding the LO among fishers. Where fishers are aware of it there is a pronounced lack of support for the policy.
- There is a strong perception across all stakeholders that the LO is tailored for quota fisheries in other regions.
- Some NGOs feel that the provisions of Article 7 of the CFP could provide preferential access to fishing grounds for selective or low impact fisheries.
- Discard rates for Mediterranean LO species are low in comparison to many quota regulated fisheries in other regions. However, the outstanding problem in the Mediterranean remains catches of small and immature fish and this may be a persistent issue.
- The economic costs of landing and handling discards and the lack of storage and processing infrastructure is a major barrier for the industry, particularly in small ports.
- How the LO will be monitored and enforced is still very unclear and the risk of the LO incentivising a black market for undersized fish was frequently highlighted.
- The need for further studies on selectivity, mapping of nursery areas and survivability are acknowledged by all parties.
- These issues point to the Article 15 implementation timescale being very ambitious. A significant feature of discard bans in non-EU countries is that they generally took much longer to become effective in changing behaviour than the 3 to 4 years stipulated in the LO.

Box 2: The methods/approaches followed

- Interviews with a broad range of stakeholders from Commission level, through national administrators, industry and NGO reps and individual fishermen.
- Attendance at relevant national, regional and EU meetings.
- Analysis of relevant policy statements, regulatory documents and academic literature.
- Organisation of a dedicated stakeholder workshop in Rome to discuss the Policy Brief and to ensure its collaborative finalisation.
- Review of first 2 years of LO and guidelines for improved implementation over coming years.

Box 3: How these results can be used and by who?

- The question of what issues are most prevalent with the LO in other fisheries and regions is asked constantly and is of interest to stakeholders at all levels in EU fisheries. The issues and perceptions reported in the policy brief were taken from interviews from fishermen, industry reps, control officers, NGO's and up to EU commission staff level.
- In addition the guidelines and future implications outlined in the policy brief are relevant to policy makers and higher level stakeholders as they seek to build on previous successes and avoid past mistakes with the broadening of the LO to other fisheries.
- The best practice guidelines emerging from Task 7.2 of the project will also have a similar role in informing policy makers and high level stakeholders of successes and failures in other countries.
- The policy briefs will be presented for selected target audiences and are available on the project website.

Year 2 of the Landing Obligation: key issues in Mediterranean Fisheries

1. Purpose and Scope of the Policy Brief

The Landing Obligation (LO) was introduced in the Common Fisheries Policy of 2014 and requires that all catches of certain fish species are landed. This Policy Brief provides an overview of the current status and initial experiences, barriers, and opportunities with regard to applying the LO in the Mediterranean. The Policy Brief is written for policy makers, the fishing industry, NGO's and citizens with an interest in fisheries management and is based on policy documents, stakeholder interviews, meetings and literature.

2. Key elements of the LO for Mediterranean Fisheries

Scope: In the Mediterranean the LO will apply to species with a Minimum Conservation Reference Size (20 fish, 4 crustacean and 3 bivalve mollusc species¹). Other species can still be discarded.

Minimum Conservation Reference Size (MCRS): Fish under MCRS must be landed but cannot be used for direct human consumption.

Exemptions: Species and fisheries can be exempted based on evidence of high survival rates for discarded fish. Further, up to 5% of the total catch of a species may be discarded if it is shown that selectivity increases are difficult to achieve or that handling of unwanted catches is overly costly (*de minimis* exemptions).

Discard plans: Regional Member State groups develop discard plans in consultation with Advisory Councils. The plans detail species and timelines for the LO implementation and may propose exemptions. Discard plans are adopted by the European Commission (with or without amendments) following a review by the Scientific, Technical and Economic Committee for Fisheries (STECF).

3. Description of the main fisheries, fleets and discard issues in the Mediterranean

There are twenty-one Mediterranean coastal states of which eight are EU Member States (MS)(France, Italy, Greece, Spain, Cyprus, Malta, Slovenia & Croatia), four are candidate or potential EU MS (Albania, Montenegro, Turkey & Bosnia-Herzegovina) and 9 are non-EU MS (Algeria, Egypt, Israel, Lebanon, Libya, Morocco, Palestine, Syria & Tunisia). By comparison, the Baltic has 9 countries of which 8 are EU members. The General Fisheries Commission for the Mediterranean (GFCM) conservatively estimates that the total Mediterranean fishing fleet comprises 91,425 vessels² of which the main segments are listed in Table 1.

Table 1: The main Mediterranean fishing fleet sectors (Source: GFCM²)

Fleet	Main gears	Target Species
Polyvalent small scale (<12m)	Set nets, traps, hooks & lines	Coastal demersal & pelagic fish, molluscs & crustaceans
Trawlers (6 to >24m)	Trawls & entangling or surrounding nets	Misc. shelf & slope demersal fish, molluscs & crustaceans
Purse seiners (6 to >24m)	Seine nets, surrounding nets	Misc. small pelagic fish
Long Liners (>6m)	Hooks and lines, surrounding nets	Demersal shelf & slope species, large pelagics
Pelagic trawlers (>6m)	>50% effort with pelagic trawl	Misc. small pelagics, tuna, bonito, billfish
Tuna seiners	Surrounding nets	Tuna, bonito, billfish
Dredgers (>6m)	Dredges, surrounding nets	Benthic molluscs & crustaceans

Landings in the Mediterranean have declined to 787,000t in 2013 from a peak of 1,087,000t in 1994³. 13 main fish species account for about 65% of landings, with anchovy (393,500t; 26%) and sardine (186,100t; 12%) being the largest³**Error! Bookmark not defined.** Turkey is by far the largest contributor to landings in the Mediterranean and Black Sea (yearly average of 459,400t or 31%), which is close to the combined figures for all EU MS in the region (524,614t, 36%).

Recreational fisheries are very important in some Mediterranean areas but little scientific information exists about them. Recreational fisheries can involve large numbers of fishers (e.g. up to 5-10% of population in the Balearic Islands⁴), who use a high diversity of fishing gears (hand lines, pelagic or bottom troll lines, pots and traps, jigging) depending on the fishing methods (shore fishing, boat fishing and spear fishing), season and species (up to 60 fish and cephalopod species⁵). In the few areas where recreational fishing has been assessed, catches of recreational fishers have been estimated in the same order of magnitude as official commercial landings⁶. Despite their importance, recreational catches have neither been included in the assessment of fishing resources of the Mediterranean nor has their interaction with commercial fisheries been explored.

The Mediterranean is characterised by high species diversity (approximately 714 fish⁷, 2,239 crustacean and 2,113 mollusc species⁸). From 300 species regularly caught, around 10% are consistently marketed and 30% are occasionally retained (depending on size and demand)⁹. Discard rates vary depending on the region, depth and season and are highest on the shelf, lowest on the middle slope and significantly higher in summer¹⁰. Previous projects¹¹ in the Western Mediterranean found that the bulk of discards were composed of non-commercial species while high commercial value species (e.g. octopus, shrimp, Nephrops) had very low discard rates. Minimum and maximum discard rates for species subject to the LO are given in Table 2 below. These rates are significantly lower than those for many species subject to the LO in other regional seas (e.g. whiting by French trawlers with mesh size <100mm in Area VII d - 46%¹²; horse mackerel in North Sea by pelagic vessels - 77%¹³).

Table 2: Minimum and maximum discard rates of species subject to the Landing Obligation in the Mediterranean¹².

	Western Mediterranean		Central-Eastern Mediterranean		Adriatic Sea	
	Trawl	Set gears	Trawl	Set gears	Trawl	Set gears
Hake <i>Merluccius merluccius</i>	3.6 – 20.8	0 – 4.9	3.0 – 5.7	5.5	3.8 – 15.7	0
Red Mullet <i>Mullus barbatus</i>	2.2 – 14.7	1.4 – 1.8	0.1 – 2.2	3.1	1.6 – 13.1	3
Striped Red Mullet <i>Mullus surmuletus</i>	1.0 – 10.3	1.0 – 3.0	0	0	0	4.5
Rose Shrimp <i>Parapenaeus longirostris</i>			6.1	0		
Common Sole <i>Solea solea</i>					1.3	0.5 – 2.4

Reasons for discarding are highly variable and can be economic, sociological, environmental or biological and often act together especially in multispecies fisheries. The main drivers of discards in the Mediterranean include¹⁰ (see DiscardLess case study factsheets for more details¹⁴):

1. Compliance with regulations on minimum conservation reference sizes (MCRS).
2. High-grading (retention only of larger sizes of catch) of small pelagic species (e.g. *S. pilchardus*, *E. encrasicolus*, *Trachurus* spp.) to avoid lower prices.
3. Non-commercial value of a significant proportion of the catch.

Recent reviews reveal serious overfishing of most Mediterranean stocks^{15 16 17}. Effective reforms in the Mediterranean should not only focus on reducing the exploitation rate and on improving selectivity, but also on the political and socioeconomic changes beyond fishery management¹⁸. Mediterranean EU fisheries represent about 10.5% of the total fisheries production of the EU. However, because 80% of Mediterranean vessels are less than 12m in length¹⁹, this production derives from 46% of the EU fishing vessels and more than 50% of the EU fishers.

4. Governance context

The GFCM was established in 1952 to promote rational management of living marine resources (including aquaculture) in the Mediterranean, Black Sea and connecting waters. Currently, 23 Member countries and the EU participate in the GFCM, which has the authority to adopt binding recommendations. The GFCM participates in scientific projects and plays a critical role in fisheries governance in the Mediterranean.

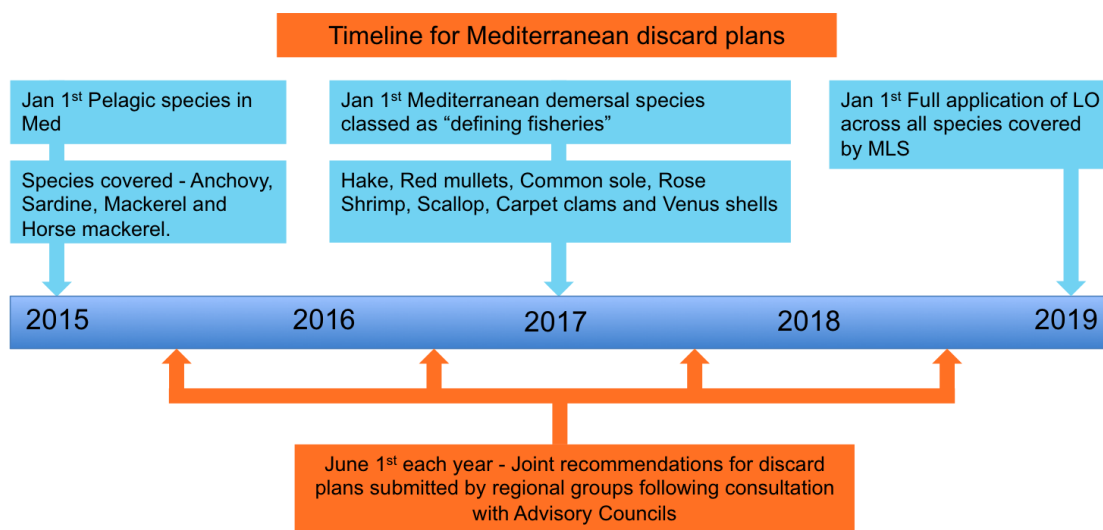
The International Commission for the Conservation of Atlantic Tuna (ICCAT) is an inter-governmental fisheries management organisation for large pelagic migratory species in the Atlantic Ocean, including the Mediterranean.

The Mediterranean Advisory Council (MEDAC) was established in 2008 and is a stakeholder-led organisation composed of representatives of the fishing industry, environmental organizations, consumers and recreational fishers. Utilising knowledge and experience of stakeholders, the MEDAC provides advice on fisheries management under the CFP. It cooperates with the GFCM and benefits from its scientific work.

Three High Level Groups (HLGs) of EU Member States were established to develop regional management measures in the Mediterranean: the PESCAMED group (France, Italy & Spain); the Adriatica group (Croatia, Italy & Slovenia); and the SudEstMed group (Cyprus, Greece, Italy and Malta). The HLGs make Joint Recommendations (JRs) for discard plans following consultation with MEDAC.

The Mediterranean pelagic discard plan was largely based on MEDAC proposals rather than on a JR from the HLGs. Similarly, in 2016 the 3 HLGs endorsed the MEDAC proposal for a JR in its entirety. This reflects a much higher level of devolution of competence to the advisory council than is the case in other regions. However, the MEDAC position on the JR was not unanimous as two member organizations were dissatisfied that the proposal did not contain clear mechanisms for reducing unwanted catches, nor for discouraging their possible illegal commercialization and because *de minimis* percentages were not based on data.

5. Mediterranean discard plans adopted under CFP Article 15



The LO in the Mediterranean applied to small pelagics from January 2015 and to 7 demersal species that define a fishery from January 2017. It will apply to all other species with minimum size from 1st January 2019.

The high survivability exemptions in the Mediterranean demersal discard plan (86/2017) for common sole, scallop, carpet clams and Venus shells apply only for 2017 and further information on survivability studies is to be submitted to STECF for further review¹². The demersal discard plan

requires Member States to produce a list of vessels subject to the LO based on specified catch thresholds. For example, Spain should produce a list of vessels which will be required to land all catches of Hake based on the fact that more than 25% of their total catches in 2014 and 2015 were made up of Hake.

Among others, the STECF raised the following issues in their evaluation of the demersal JR:

- It is unclear why additional species defining fisheries were not included.
- The two red mullet species should be treated separately as distinct fisheries target them
- The plans in the three areas are based on patchy discard data and therefore may not truly represent the discard situation.
- Application of *de minimis* exemptions should be more spatially specific and detailed and should be supported by evidence that selectivity improvements are difficult to achieve.
- Member States should identify additional nursery areas.
- Member States should conduct pilot selectivity improvement projects and report on ongoing trials.
- The commercialisation of undersized fish is of particular concern in the Mediterranean.

Table 3: Adopted Mediterranean pelagic and demersal discard plans

	Western Mediterranean	Adriatic	South-Eastern Mediterranean	Pelagics
Regulation	86/2017, 2376/2016			1392/2014
	All cover species subject to minimum sizes			
Dates covered	1/1/2017 – 31/12/2019			1/1/2015–31/12/2017
Spatial coverage	GFCM Sub-Areas 1, 2, 5, 6, 7, 8, 9, 10 and 11	GFCM Sub-Areas 17 and 18	GFCM Sub-Areas 15, 16, 19, 20, 22, 23 and 25	Mediterranean Sea
Countries	France, Italy, Spain	Croatia, Italy, Slovenia	Cyprus, Greece, Italy, Malta	Greece, Spain, France, Croatia, Italy, Malta, Slovenia
Species*	Hake, red-mulletts, scallop, carpet clams and Venus shells.	Hake, red-mulletts and common sole	Hake, red-mulletts and deep water rose shrimp	Anchovy, sardine, mackerel and horse mackerel.
High Survival exemptions (under	Scallop, carpet clams and Venus shells caught with dredges in	Common sole caught rapido (beam trawl)	None	None

certain conditions)	GSA 1, 2, 5 & 6 (valid for 2017 only)	(valid for 2017 only)		
	2376/2016 covers Venus fisheries in Italian waters only and a derogation based on high survivability of this species covers 2017-2019			
de minimis exemptions (under certain conditions)	Hake & red mullets on the basis of disproportionate costs of handling unwanted catches	Hake, red mullets & Sole on the basis of disproportionate costs of handling unwanted catches	Hake, red mullets & rose shrimp on the basis of disproportionate costs of handling unwanted catches	Between 3 and 7% of total annual catches of small pelagics in purse seine and mid-water trawl fisheries.
Other points:				
See Regulations 1392 of 2014 (pelagic) and 86 of 2017 (demersal) for details relating to exemptions.				
*In the cases of Hake, Red Mullet, Common Sole and Rose Shrimp 25% of a vessel's catch in 2014 and 2015 must have been made up of the respective species in order for them to be subject to the LO for that species.				

6. Stakeholder perspectives on application of the LO in the Mediterranean

Project partners conducted interviews, held workshops and attended meetings with policy makers at EU and national level, industry (reps, fishers, processors), NGO's and scientists in order to assess the views and perceptions of the application of the LO.

6.1 First impressions of the Landing Obligation principle

Fishing Industry

Individual fishers knowledge of the LO or its implementation was very limited and the majority of them, when provided an explanation, expressed a very negative opinion towards it. Mediterranean fishers feel that the LO is tailored for the quota system in Atlantic fisheries and that it does not account for fishery management issues in the Mediterranean. Having participated in numerous national or MEDAC meetings, fishers representatives have good knowledge about the LO and its implementation process. The overall attitude of industry representatives towards the LO, as expressed in the MEDAC proposal for a JR, is one of concern about economic costs, a short implementation timescale and difficulties in improving selectivity.

NGOs

NGO representatives consider that the industry, with the support of national administrations, prioritised exemptions over avoidance of unwanted catches through more selective gears. During the discussion and vote on demersal discard plans within MEDAC two organisations voted against the MEDAC proposal.

Administration

National administrations support the LO as a tool to reduce discards and resource waste. However, LO implementation is time consuming and demands flexibility which possibly explains the high number of exemptions. For national administrations consider exemptions as a mean of adapting to the LO. Exemptions are a possibility provided for in Article 15; from a legal perspective, approval of exemptions mean that the LO is applied. According to some local authorities, it seems that the EU has realized that the LO creates implementation difficulties in the Mediterranean. At meetings between the EU and regional fisheries directors the emphasis has been on reductions in fishing effort as a more effective measure in improving management efficacy than the LO.

For administrators and some fishers, the LO creates a risk of developing a market for undersized fish. This reversal of previous policies counters efforts made over the last few decades to reduce the commercialization of small-sized fish. In some areas, local administrations have expressed concern that “landings of below minimum size fish have been confiscated up to now, and we now have to let them go”. Administration, fishermen and NGOs have also commented that the LO should be used as an opportunity for a decrease in all discards and not only for species with minimum landing sizes.

Experiences to date with the Pelagic LO

The pelagic discard plan in the Mediterranean came into force on 1st January 2015 and runs until 31st Dec 2017. Mediterranean pelagic fishers, occasionally, in order to avoid discards under certain conditions, practice “slipping” (i.e. fish caught in a net and subsequently released into the sea without being brought on board the vessel), a practice that is forbidden in other EU marine regions but still permitted by some Member States in the Mediterranean. This, in combination with the *de minimis* exemptions, means that there have not been major consequences for most pelagic fishers. There are administrative uncertainties about how discard percentages will be recorded and controlled.

There is a derogation for bluefin tuna (BFT) and swordfish, as the management of these species is regulated by ICCAT²⁰. Licensed vessels targeting tuna can land and use for human consumption BFT of up to 5% of undersized individuals. Also, 5% incidental catch by vessels not licensed to target BFT is allowed.

6.2. Looking ahead from 2017: Main Issues Identified by stakeholders

6.2.1 Handling unwanted catches

Contrary to Greek bottom trawl fishers, French, Catalan and Balearic fishers said that the storage room onboard is insufficient for retaining unwanted catch, especially on vessels targeting small pelagics. The extra cost (ice, boxes, additional crew and crew effort) entailed by LO implementation is a concern identified by all fishers. Further, transport of unwanted catch will make the boat heavier, reducing boat safety.

Some fishers are against the use of unwanted catch for aquaculture, which is perceived as a competing sector.

There is a general lack of infrastructure to handle discards in mainland and island ports. A fish processing industry for discards doesn't exist in the Mediterranean and in many areas even cold storage facilities are lacking. MEDAC have raised the issue of disproportionate cost of transport between widely separated small ports of small quantities of discards. Investment in infrastructure would be needed and may be difficult to justify as the objective of the LO is to reduce quantities of discards over time.

For ENV-NGOs this desired reduction in quantity of unwanted catch implies that there is no sense in developing new industrial sectors based on discards. They also stress that incomes which potentially could be obtained from the sale of discards should benefit community purposes (e.g. research, social funds) rather than individual fishers.

6.2.2 Technical measures

In all cases, the mitigation strategy most often mentioned is to reduce discards by improving selectivity. Western Mediterranean (Spanish, French) and Eastern Mediterranean (Greek) fishers said that gear selectivity can be improved greatly with the introduction of the 40mm square mesh cod-end by trawlers²¹. However, this measure has not been well implemented in all areas as noted in an EU report which found that most Mediterranean vessels still use 50mm diamond mesh cod-end²². Reports from Greek industry sources and a collaborative research project²³ are that trawlers are using the 40mm square mesh cod-end. The use of 50mm diamond mesh cod-end is authorised only after proving that its *size selectivity is equivalent to or higher than that of 40 mm square mesh cod-end*, no scientific information exists to justify it.

Fishers felt that the 40mm square mesh cod-end should be used in all Mediterranean trawl fleets not just EU-MS ones. The MEDAC JR proposal outlines how further improvements to gear selectivity may be explored with European Maritime and Fisheries Fund financial support. In some cases, small-scale gill and trammel net fishers have been using mesh sizes larger than legally required in the red mullet and cuttlefish fisheries to avoid discards. In the Balearic picarel fishery, fishers agreed to implement daily quotas per vessel (200 kg) to avoid low prices owing to market saturation, which also helps to reduce discards. This scheme may be expanded to cover horse mackerel as this species also has high discard rates in the Balearic Islands.

Spatial management is widely used and supported in the Mediterranean as another strategy to reduce unwanted catches. Fishers highly support the mapping of juvenile hotspots, which should be based on scientific knowledge. Better identification of discards by area, by gear and by species would significantly assist with LO implementation and some projects are already addressing this issue. Fishers mentioned the use of enforceable real time closures to avoid undersize hake in the trawl and purse seine fisheries. Spatial closures are widely used in Greece, where trawlers and purse seiners face year long closures in inshore areas and additional seasonal (2 to 4 month) closures. Greek trawl fishers also suggested the implementation of real time spatial closures. New permanent closures are not supported by fishers as the presence of undersized fish is seasonal and a network of MPAs already exists.

6.2.3 Control issues

Some fishers said that logbooks did not have any specific cell to record discards. In practice, even where logbooks have been updated, unwanted catch, discards or the number of slipping operations are not registered. This attitude may be due to the fact that fishers have only a poor knowledge of the LO while all stakeholders are still learning about its implementation.

7. Relevant information from the DiscardLess and MINOUW projects

- Policy Brief on LO implementation in Baltic and pelagic fisheries²⁴.
- Case study descriptions with further detail on discard issues in the West and East Mediterranean¹⁴.
- Selectivity manual including 64 factsheets, which provide brief descriptions of many of the catch comparison and selectivity trials that have taken place in European fisheries including the Mediterranean²⁵.
- Discardless Deliverable 4.1 Initial avoidance manuals by case study including tactical, strategic and gear based approaches agreed by scientists and fishers²⁶.
- Discardless Deliverable 5.1 “Report on current practices in the handling of unavoidable, unwanted catches” which describes evolution of discard bans in non-EU countries²⁷.
- MINOUW project outputs and ongoing work²⁸.

8. Conclusions

- A key insight of this Policy Brief is that communication between players at various levels and institutional responsiveness are critical factors in implementation success and in stimulating creative solutions. This resembles the situation observed in the Baltic and pelagic fisheries, but the governance dimension may be even more significant in the Mediterranean where the fisheries issues are, as we have described here, more complex in some respects. The necessity for improved co-operation and communication between Member States themselves and with MEDAC is clear. It will be interesting to see if MEDAC maintains the prominent role in the regional cooperation, a role which effectively was delegated to it by Member States while the HLGs in the region were being established. Some NGOs feel that Member States have not been committed to improving selectivity, particularly on juvenile fish, but focus instead on exemptions while at the same time relying too heavily on MEDAC's advice.
- Some MEDAC members feel that the LO has incentivised improved co-operation between MEDAC and the HLGs, which will also be beneficial with the evolution of regionalisation of EU fisheries governance.
- Uncertainty about both the principle and the implementation of the LO is still a dominant feature across all stakeholders including managers.
- There is a significant information deficit regarding the LO among fishers, and this is regarded an issue that has to be addressed shortly. Most fishers have more immediate priorities than the LO, such as implementation of management plans, fuel prices or access to quota for tuna. As a result, fishers have not significantly changed their discarding practices. Where fishers are aware of it there is strong resistance or lack of support for the policy.
- There is a strong perception across stakeholders at all levels that the LO is tailored for quota fisheries in other regions and that it does not account for the specificities of Mediterranean fisheries such as the fact that the fleet is significantly more small scale than fleets in other regions. Some NGOs feel that the provisions of Article 7 of the CFP could be utilised in the Mediterranean to provide preferential access to fishing grounds for selective or low impact fisheries.
- Discard rates for species subject to the Mediterranean LO are low in comparison to many LO regulated fisheries in other regions. This may be related to the fact that Mediterranean fisheries are not regulated by quotas. This gives some grounds for optimism that mitigation of discard rates in the Mediterranean may not require measures as radical as those that will be needed in fisheries with far higher discard rates. However, the outstanding problem in the Mediterranean remains catches of small and immature fish and this may be a persistent issue.
- The economic costs of landing and handling discards and the lack of storage and processing infrastructure is a major barrier for the industry, particularly in small ports. Investment in infrastructural improvements is needed, but obviously such investments go against the main goal of the LO (reducing discards).
- How the LO will be monitored and enforced is still very unclear and the risk of the LO incentivising a black market for undersized fish was frequently highlighted.
- The need for further studies on selectivity, mapping of nursery areas and survivability are acknowledged by all parties, but it is unclear where the budget for these will come from, particularly at a time of economic crisis in some member states.

- There is significant interaction between EU and non-EU fleets in many fisheries across the Mediterranean and the fact that only EU fleets are subject to the LO further complicates fisheries governance and perceptions of policy legitimacy among fishers.
- All of these issues point to the LO implementation timescale envisaged in Article 15 as being very ambitious. A significant feature of discard bans in non-EU countries is that they generally took much longer to become effective in changing behaviour than the 3 to 4 years stipulated in the LO²⁷.

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- ²⁴ Fitzpatrick, Mike, & Nielsen, Kåre Nolde. (2016). Policy Brief: Year 1 of the Landing Obligation, key issues from the Baltic and Pelagic fisheries. <https://zenodo.org/record/215155#.W0d7zBLSL-Q>
- ²⁵ Selectivity in Trawl Fishing Gears http://www.discardless.eu/selectivity_manual
- ²⁶ Discardless Deliverable 4.1 Initial avoidance manuals including tactical, strategic and gear based approaches agreed by scientists and fishers. www.discardless.eu/deliverables
- ²⁷ DiscardLess Deliverable 5.1 Report on current practices in the handling of unavoidable, unwanted catches. <http://www.discardless.eu/deliverables>.
- ²⁸ <http://minouw-project.eu/>