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DiscardLess

Newsletter No. 3, February 2017

Coordinator's welcome Clara Ulrich, DTU Aqua, Denmark 	Welcome to the third newsletter of *DiscardLess*! We are approaching the end of the first half of the project, which we will celebrate in March 2017. We are driven by our quest to providing an answer to the question "***What can Science do to help with the Landing Obligation?***. We believe that Science cannot force changes, but **Science can gather and share useful knowledge to inform changes**. These first two years have been very productive, and we are collecting a great deal of knowledge on all aspects associated with the implementation of the Landing Obligation (LO). Some of this is already published, and our website http://www.discardless.eu and twitter account @DISCARDLESS are regularly updated. Check our publications list, conference activities and deliverables! This autumn, our progress was presented to the DG Research of the European Commission. The next major milestone for us is our Mid-Term event that will take place in FAO headquarters in Rome in early March 2017. Check out our **stakeholders conference on March 9-10th 2017**, where we invite you to hear and discuss the outcomes of our work. In this newsletter, we have summarised the main results achieved so far after 20 months of research. These are presented according to the various themes and topics which form the backbone of our project. They will also be presented in more details at the conference. I wish you a pleasant reading and do not hesitate to contact us if you have any questions!

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Ecosystem-Scale impact assessment

(Work Package 1)

Leader: Marie Savina, IFREMER, France

What? Here we evaluate the ecological consequences of the LO and subsequent changes in fishing practices

- on fish stock dynamics and advice and
- other components of marine ecosystems.

End Products? We aim to produce :

- Reviews of the current knowledge on discarding practices and the effects of discards on the environment
- For each region, annual updates of the effects of the LO's implementation on the status and management of the main fish stocks,
- An assessment of the impact of alternative Discard Mitigation Strategies on ecosystems.

Results so far? Ecosystem models are being parameterised and run for all our regions. Results are still preliminary but they point out that the role of discards in the ecosystem may be quite limited. Seabirds and benthic scavengers are the main populations feeding on discards, but many of these populations are opportunistic so their actual sensitivity to reducing discards is unclear. This means that the most important ecological benefits are likely to be obtained by avoiding the capture of discards in the first place, primarily by limiting fishing mortality. But the ecological effects of leaving dead or dying discards in the sea may be limited compared to bringing them ashore.

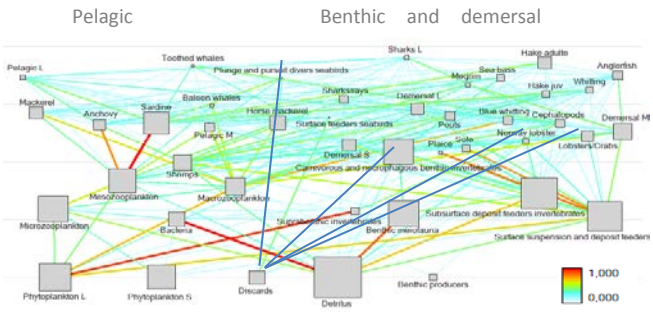

Figure 1: example of trophic relationships in an ecosystem model

These results will be finalised and completed over the next year.

Fishery-Scale impact assessment

(Work Package 2)

Leader: Peder Andersen, Ayoe Hoff, IFRO, Denmark

What? Here we provide best estimates of the likely economic and social impacts of the implementation of the LO at the fishery scale (individual and fleet). This work emphasizes that discarding is a choice motivated by economic and social incentives, which must be addressed when implementing such a significant policy.

End Products? We aim to produce:

- An estimation of socio-economic effects of the implementation of the LO under different scenarios for various fleets.

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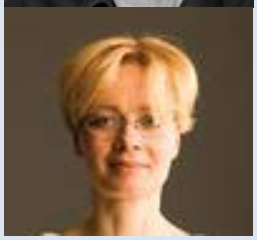

- Monitoring of changes in economic and social factors during and after the actual implementation of the LO.

Results so far? This work progresses using complex bioeconomic models parameterised for the various regions. The preliminary results point to a complex picture, where the short-term economic consequences of the LO are real if nothing changes, especially for small-medium vessels and if one stock is an obvious "choke species". However, there are many mechanisms that can mitigate these short-term effects, using the provisions of the basic regulation and/or the appropriate distribution of national quotas and TAC top-ups.

We have performed numerous interviews with different groups of stakeholders (fishers, administrators, EnvNGO's, auction houses and processing industries) throughout Europe. There is a general view that the LO as it has been designed and promoted is not satisfactory. Fishers are very sceptical about the feasibility and the legitimacy of the LO. They often also feel poorly informed about it. In contrast, EnvNGO groups consider that the LO does respond to their original expectations and that it can be the initial point for improving gear selectivity to reduce discards.

Adaptation of gear technology

(Work Package 3)

Leader: Barry O' Neill, MSS, UK

What? It is better to avoid unwanted catch in the first place rather than have to deal with its consequences on deck or ashore. In this package, we encourage and promote the avoidance of unwanted catches through technological means.

End Products? We aim to review the introduction, evaluate the performance, and increase awareness about existing technological solutions; enhance real-time decision making; and explore the use of innovative technologies to improve fishing gear selectivity.

Results so far? Our primary outcome so far is the recent publication of a comprehensive Selectivity Manual, which has gathered the knowledge collected over decades of selectivity trials and research on gear technology and translated it all into an easy-to-read document. This manual has just been published by MSS (Marine Scotland Science), find it also on DiscardLess website in electronic version!

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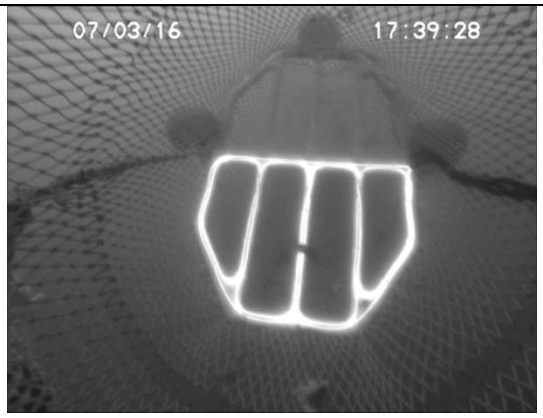


Additionally, we are making progress in experiments to assess how various fish species react to light, and whether various types and colors of LED lights can enhance the escape behaviour of unwanted species. The first results are promising, and the technology also seems to perform well, being simple, cheap and robust. So we have great expectations that light emitters could be a possible solution to decrease discards in the future.

Adaptation of fishing strategies

(Work Package 4)

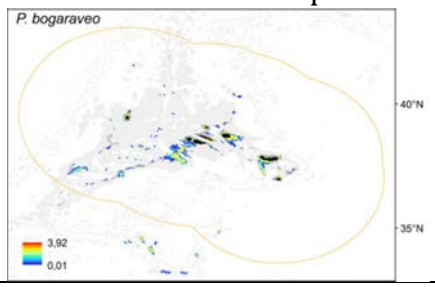
Leader: Dave Reid, MI, Ireland

Figure 3: an example of an „hot spot map" for blackspot sea bream in the Azores

What? Here we formalise both fishers' and scientists' knowledge into the understanding of where and when to fish, and we investigate options to use this knowledge to avoid unwanted catches.

End Products? We conducted some "challenge experiments" - where fishers try to reduce discards by their own means, and we develop state-of-the-art scientific models to provide spatial information on, for example, "discard risk hot spots" - areas of potentially high or low densities of unwanted catches.

Results so far? Our "Challenge experiments" have already been conducted in Ireland, France and Denmark. Avoiding unwanted catches has been achieved with varying degrees of success. This highlights that avoidance is a difficult mindshift for fishers, that will take time to develop. This is confirmed by the outcomes of numerous interviews. Fishers have quite wide opinions on which changes might work best for them. Also, progress is ongoing in the fine-scale analysis of logbooks and observer data to investigate their suitability in detecting „"hot spots".



From deck to first sale

(Work Package 5)

Leader: Jonas R.

What? Here we aim to identify applicable onboard solutions for fishermen to meet with requirements of the LO. We explore, develop and validate alternatives for onboard handling and onboard Monitoring, Control & Surveillance of Unavoidable Unwanted Catches (UCC).

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Vidarsson, MATIS, Iceland

End Products? We aim to provide a list of tools and technologies that allow fishermen to bring unwanted catches ashore in a fully documented manner.

Results so far? We have learnt that in countries with a long history of a LO like Iceland and Norway, it took several decades to reduce discards significantly, but it is now largely accepted by the industry and the society. In these countries, the LO has also led to an improvement in the full utilisation of all catches, including heads, viscera, etc.

We have also progressed in studying options for the onboard handling of fish that was previously discarded (the UCC) for a variety of vessel types and sizes. A number of options already exist for medium to large vessels, and the initial rough cost-benefit analysis performed suggested that the necessary investment onboard may be recovered within one to two years.

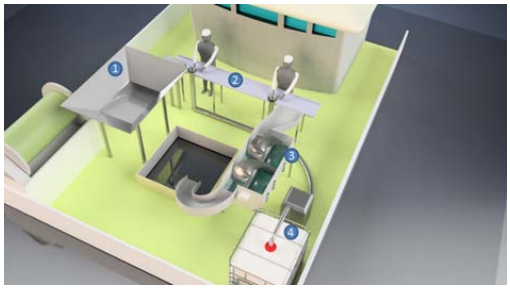

Figure 4: Possible handling onboard a medium size (24m) bottom trawler

We have also worked on technology for Monitoring, Control and Surveillance. Remote Electronic Monitoring with CCTV cameras perform comparatively better than some other options for monitoring compliance with the LO, but there is strong reluctance against such technology in many fisheries. Genetic tools to quantify species in, for example, a. silage mix are also progressing well, and the first results are encouraging.

Products to the value chain

(Work Package 6)

Leader: Begoña Perez Villareal, AZTI, Spain

What? Here we identify, develop, evaluate, select, demonstrate and validate an integral solution to make best use of unwanted catches without creating economic incentives and inadvertently developing markets for such products

End Products? We aim to document promising and cost-effective solutions that involve marine by-products

Results so far? We have mapped the potential supply of currently unwanted catches brought to shore. It is likely to be quite variable, with great variations in volume, species composition, size and flesh quality of the UUC, although large volumes would likely be concentrated on a few species that could be landed in relatively few harbours. Only the largest harbours have facilities than can easily be adapted to deal with undersize fish. Harbours and companies are

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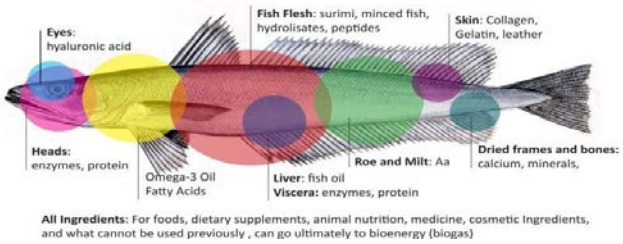
reluctant to invest in infrastructures for the collection and transformation of unwanted catches, not least because supply will probably decrease in the near future as selectivity of fishing fleets improves. Nevertheless, we have already found more than 30 different uses for discards - their relevance and cost-effectiveness are now being evaluated.



Framing and implementing the discard policy

(Work Package 7)

Leader: Kåre Nolde Nielsen, UiT, Norway

What? Here we analyse the in-depth institutional and policy aspects of the LO (background, objectives and tradeoffs), and identify good discard ban practices. This work also acts as the synthesis point of the whole project, bringing together the results of the other work packages.

End Products? We aim to issue regular policy briefs and syntheses about information regarding the implementation of the LO across the various regions.

Results so far? A major outcome has been the publication of our first Policy Brief: *"Year 1 of the Landing Obligation: key issues from the Baltic and Pelagic fisheries"*, published in June 2016, which assesses the achievements and perceptions after the first year of the implementation of the policy. The doomsday scenarios have not occurred, but a lot of issues have been revealed, not least regarding the lack of adequate facilities to deal with UCC onshore, inflexible governance processes, the difficulty to control compliance and a reduction of the acceptance of scientific observers onboard vessels. These effects are similar to those observed in other fisheries around the world. Discard bans require high levels of at-sea monitoring and effective control, and/or strong incentives to fish more selectively, neither of which apply in most of the cases examined. Many discussions on options for the future are being engaged at several levels within the European Union.

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Bringing results to users and spreading the word (Work Package 8) Leader: Carsten Meedom, Alphafilm, Denmark 	**What?** This part of the project is responsible for the communication and the dissemination of the project's results, both inside and outside the consortium. **End Products?** We aim to maintain a lively and updated website, where the progress of the project will be documented in various ways, and scientific results will be made available, including the deliverables. We are also building our DMS ToolBox (Discard Mitigation Strategies Toolbox), where the outcomes of the other work packages can be explored and compared in a dynamic and user-friendly way. **Results so far?** There is a great deal of information and updates already on our website, including videos that document the project, its aims and progress. Beside, most of the knowledge transfer takes place through the sustained participation of *DiscardLess* partners in numerous and diverse forums of discussion. This occurs with continuous direct exchanges with national/EU policy makers, fishers and their representatives, eNGOs and the scientific community. The result is that *DiscardLess* is recognised to be a credible and legitimate platform for conveying the scientific knowledge about discards and the LO to society. Every year we will produce regional syntheses of what is going on in our fisheries in relation to the LO, and in relation with our project itself. The first synthesis was produced in April 2016, which was the topic of Newsletter no 2. Additionally, a dynamic and interactive toolbox is being developed via a direct interface with the website, where data and results from previous work can be queried. As the first outcome, the selectivity factsheets described above are available online; and a dynamic Atlas is to be released soon.

All this work will continue over the next period. *DiscardLess* is running until February 2019.