

Towards eradication of discards in the Baltic Sea

DRAFT

Synopsis

The Council of the European Union and the European Commission agreed at the 2009 October Fisheries Council, to develop a roadmap and to set up Terms of Reference for a technical working group to assess and recommend additional measures to eradicate discards in the Baltic Sea.

The purpose of this paper is to propose a strategy for a future eradication of cod discards in the Baltic Sea fisheries by giving an overview of the issues relating to discarding in the Baltic Sea and on possible ways to reach the objective of eliminating discards over time. It is based on FAO draft International Guidelines for By-catch Management and Reduction of Discards¹ and on the conclusions of the "Technical Working Group to eradicate discards in the Baltic Sea fisheries" (WG) (Annex I) and the working paper proposed by DK as a flagship project coordinator.

Content of this consultation paper does not prejudge the definite views or positions or final form of any decision to be taken by the Commission on the subject matters in issue. The Commission cannot be held responsible for any use which might be made of the information contained therein.

Comments should be submitted by **31.12.2010** at the latest, by e-mail to MARE-E2@ec.europa.eu.

Please, with copy to:

agnes.boros@ec.europa.eu

Or by mail at the following address:

Unit "E2"

DG for Fisheries and Maritime Affairs

European Commission

99 rue Joseph II

B – 1049 Brussels

¹ DRAFT Report of the Expert Consultation on International Guidelines for Bycatch Management and Reduction of Discards. 30 November – 3 December 2009, Rome, Italy. FAO Fisheries Report No. 934. 22 p.

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1. INTRODUCTION

The Council of the European Union and the European Commission agreed at the 2009 October Fisheries Council, to develop a roadmap and to set up Terms of Reference for a technical working group to assess and recommend additional measures to eradicate discards in the Baltic Sea. This decision is in line with the agreement reached by Member States in Stockholm on the 1st of October 2009 and the strategic actions to reinforce sustainability of fisheries in the Baltic Sea Strategy. Five ministers of the North Sea coastal states reiterated the work on eradication of discards in Aberdeen signing a joint declaration in September 2010.

The purpose of this paper is to propose a strategy for a future eradication of cod discards in the Baltic Sea fisheries by giving an overview of the issues relating to discarding in the Baltic Sea and on possible ways to reach the objective of eliminating discards over time. It is based on FAO draft International Guidelines for By-catch Management and Reduction of Discards² and on the conclusions of the "Technical Working Group to eradicate discards in the Baltic Sea fisheries" (WG) (Annex I) and the working paper proposed by DK as a flagship project coordinator.

It is important to state that a policy on discards in the Baltic, with its associated technical measures, does not prejudice policies in other areas or in the future Common Fisheries Policy. It should not be seen as a precedent for any management strategy, but as a strategy with the possible measures only applicable to the specificity of the region and its fisheries.

It is also important to refer that the multiannual plan for the cod stocks in the Baltic Sea and the fisheries exploiting those stocks is under review. Results of the review will provide the scientific bases for further considerations concerning cod management in the Baltic Sea.

2. THE ISSUE: COD DISCARDS IN THE BALTIC SEA

Before any management measure can be taken it is important to identify clearly the problem, namely by replying to the questions of how much, what, where and who.

In Subdivisions 22-24 the fishery is largely based on recruiting year classes. The positive perception of the stock development in the short-term is dependent upon only one strong year class (the 2008 year class) which is expected to contribute 50% of the total catch in 2010. The ICES has estimated discards in 2009 Subdivisions 22-24 to 5% (0.9 Ktonnes) of the total catch in weight. The majority of the discards are undersized cod (less than the Minimum Landing Size (MLS) of 38cm) and there is no indication of high grading.

In Subdivisions 25-32 the predicted discards for 2010 are based on the 2008 values, and these are likely to be minimum estimates (6% in weight (3.3 Ktonnes)) as discards are likely to be higher when the strong 2006 and 2007 year-class begins to enter the fishery.

In 2010 we introduced technical measures that would improve selectivity of the gear. The assessment of the impact of these technical measures on discard volumes will be possible only in 2011.

² DRAFT Report of the Expert Consultation on International Guidelines for Bycatch Management and Reduction of Discards. 30 November – 3 December 2009, Rome, Italy. FAO Fisheries Report No. 934. 22 p.

In Subdivisions 22-24 and 25-32 trawlers contribute about 70% to the total catch, the rest are gillnetters.

3. SOLUTION: DISCARD MANAGEMENT IN THE BALTIC SEA

Discard management can encompass a combination of several measures, including capacity and effort control, improving gear design and use, spatial and temporal fishing measures, direct limitations on by-catch and/or discards and economic incentives for reducing unwanted catch. In order to develop a discard policy a decision (including prioritisation) needs to be made between the possible management options. In this context, the draft FAO International Guidelines for By-catch Management and Reduction of Discards provides an excellent framework to assist in the decision making process.

The draft FAO guidelines have been developed in order to assist States and RFMO/As in implementing the FAO Code of Conduct for Responsible Fisheries, an ecosystem approach to fisheries and UNGA Resolution 63/112 for the specific proposes of managing by-catch and reducing discards of fish species and non-fish species. The guidelines have been developed to encourage better management of by-catch and reduction of discards and hence contribute towards optimal exploitation of aquatic resources.

The draft FAO guidelines follow a natural prioritisation of measures in view of stock conservation, and are the solutions presented below: not to be caught (solution 1 – avoid catching unwanted cod), not to be injured (solution 2 – reduce fishing mortality of unwanted cod), already dead (solution 3 – eliminate cod discards). These are also the options behind the Terms of Reference for the WG for the eradication of discards in the Baltic.

4. SOLUTION 1: AVOID CATCHING UNWANTED COD

4.1. Fisheries closures.

To protect spawning stocks the cod fisheries in the Western Baltic (Subdivisions 22-24) is regulated by a seasonal closure, from 1st to 30th of April in 2009. The cod fisheries in the Eastern Baltic with the same aim (Subdivisions 25-28) are regulated by a seasonal closure during 1 July to 31 August. Since 2008 in three specific areas - the Bornholm Deep, the Gotland Basin and the Gdansk Deep, all fisheries are closed from 1 May to 31 October aimed at reducing fishing mortality and protecting spawners.

Should the closed areas be evaluated and reviewed?
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Preliminary evaluations of long-term trends in spawning timing of cod in the Baltic suggest that *closures for the protection of spawners are at the appropriate time for the Eastern Baltic. For the Western Baltic however, there is evidence that the spawners could be more effectively protected if the temporal closures are moved to an earlier time in the west (Belt Sea, Subdivision 22) and to early summer in the east (Arkona Sea, Subdivision 24).* No information is available for the Sound (SD 23). Further verification of the results by the scientific community is needed to determine the inter-annual variability of spawning time, and the potential effects of a change in timing of closures for the stock and the fishery. The results of

these further investigations will feed into the STECF work on the evaluation of Baltic cod management plan at the end of 2010.

The three closed areas of the Bornholm Deep, the Gotland Basin and the Gdansk Deep may be maintained, as the closures may have contributed to potential spawning stock biomass and recruitment. The areas are recognised cod spawning areas, although with present hydrological conditions the eggs have a low probability of surviving in all areas.

The above mentioned evaluation suggests that further monitoring and research is needed to ensure that the right places and timing of closures deliver the desired results – protection of spawning stocks in order to maintain healthy cod stocks in the Baltic Sea.

4.2. "Moving on" provisions

At present there is no compulsory obligation to change fishing grounds when a trigger catch level of spawning or juvenile cod has been reached in the Baltic Sea. However, the Council Regulation (EC) No 1224/2009 establishing a "Community control system for ensuring compliance with the rules of the common fisheries policy"³ provides a legal basis for such obligation.

Should "moving on" provisions be introduced?

"Moving on" measures should be further investigated. To have an effect it is important that a vessel moves to a position where the size or catch composition is different. Elements such as the connection between depth/sediment and catch composition must thus be taken into account when the trigger catch level is determined.

4.3. Effort restrictions

Effort restrictions (days absent from port) have been in place for both cod stocks in the Baltic, associated to the reduction of fishing mortality to the targets specified in the management plan. While the fishing mortality continues to be higher than the target, fishing effort will be reduced annually by 10%.

Should the effort regime be revived?

The question is whether further effort restrictions, either by reducing the number of days absent from port or to make a restriction on fishing of a day per week, can reduce discards.

The multiannual plan for the cod stocks in the Baltic Sea and the fisheries exploiting those stocks is presently under evaluation. STECF will provide the scientific evaluation of the plan in the nearest future.

Following the joint Council and Commission resolution agreed in October 2010 a working group will be established to look in to effort management options and to propose an efficient scheme for its management.

³ OJ L 343, 22.12.2009, p.1

5. SOLUTION 2: REDUCE FISHING MORTALITY OF UNVONTED COD

5.1. Gear selectivity

Until 2010 selection parameters for cod differed between gillnet (L50= \sim 44 cm), Bacoma-Trawl (110 mm mesh size; L50=38 cm) and T90-Trawl (110 mm mesh size; only T90-codend, L50=41 cm), (ICES, 2009)⁴.

In 2010 mesh size was increased gradually starting from the Western Baltic (1st January 2010) and followed by the Eastern Baltic (1st of March).

What was the effect of the increase in mesh size entering into force in 2010?

There is scientific evidence that the increase in mesh size (to 120 mm) has increased the selectivity of the Bacoma and T90 codends. The results presented at the WG suggest that the Bacoma window has a wider selection range than the T90 codend. It results in higher losses of marketable cod but in slightly lower reduction in cod discards when compared to the T90 codend.

Should mesh size be increased further?

The WG concluded that further increases in mesh sizes and or other changes to the Bacoma and T90 codends should be avoided in the short term. There is the need to give time for the industry to adapt to the new gears. The gears now being used are both selective and further changes in the short term would probably not yield significant reductions in discards over and above what has already been achieved. Therefore it would seem appropriate to consider *on a phased basis an increase in mesh size in the medium term*, taking account that the average lifespan of a codend/Bacoma window is around 2–3 years.

ICES (2009) could not advise on a particular change that will be *the* option to achieve an improvement in selectivity. Technically, there is a large range of options that can be used to improve selectivity. However, ICES was unable to identify a particular change that drastically improves the exploitation pattern. A range of gear designs exist that all will meet the requirement of an L50 \sim 41 cm and an L25 > 38 cm (the minimum landing size).

5.2. Exploration of new selectivity measures

The BSRAC has made a proposal to further investigate the selectivity of the Baltic Sea cod fisheries. This may include, among other technical changes, the dual selection in the BACOMA window (testing an increase in the mesh size of the bottom section of the diamond mesh codend from 105 to 120 mm), the strength of the BACOMA window with the current 120 mm mesh size, and the material used for the BACOMA netting.

Should selectivity, other than by mesh size, be explored further?

⁴ ICES. 2009. Report of the ICES Advisory Committee on Fishery Management, Advisory Committee on the Marine Environment and Advisory Committee on Ecosystems. ICES Advice. Book 8. Section 8.3.3.2 Answer to the European Commission on: Ways to improve selectivity in Baltic cod fisheries for which cod is recognised as target species. 14 pp.

Any experimental work to test alterations to the existing gears and possible alternatives should consider not only the selectivity of the gears tested but also the practicalities of introducing such alterations, including the economic impacts. It could potentially incorporate and further investigate some of the elements included in the present paper to eradicate discards.

6. SOLUTION 3: ELIMINATE COD DISCARDS IN THE BALTIC SEA

6.1. Reduction of minimum landing size

There is strong evidence to conclude that both Bacoma windows and T90 codends both have an L50 of 38–40cm, equivalent to the minimum landing size for cod of 38 cm (ICES, 2009). However, with the increase in mesh size in 2010 it is likely that the selection pattern has increased to close to a L25 of 38 cm.

Should the MLS be reviewed?

Although a reduction of MLS, associated with the increase in selectivity, would further reduce discards there are concerns that a decrease in MLS may create a market for small cod and in some MS a consumer awareness campaign may be required to justify the measure.

6.2. Fully documented fisheries

"Fully documented fisheries" projects are based on the principle that the quota accounts for all fish caught (both landed and discarded). Since project participation is voluntary, the project relies on an incentive scheme, where fishers are allowed extra quota. This incentive is translated in two aspects: a) no actual reduction of quota with inclusion of discards, since the extra quota will account for the discards; or b) possible increase in quota if discards are reduced by changing fishing patterns. Fishing activities of the participating vessels are monitored at sea by electronic monitoring (CCTV & sensors system).

Should CCTV become a compulsory control measure or should it be used on reference vessels in order to monitor discard avoidance measures?

Since the projects' fishing activity, namely the whole catch, is accountable due to the continuous monitoring at sea scheme, it may induce a change in fishers behaviour for a reduction of discards, and in this way may provide for a future discard management tool. Therefore, *fully documented fisheries may be introduced in the near future in order to further assess the model's potential in fisheries management under the condition that the annual report on discards is submitted to the STECF for further evaluation in order to assess its effectiveness.*

6.3. Discard ban

If minimum landing size is abolished, the high grading ban which is in place today could be transformed in a discard ban. Landing quotas should then be replaced by catch quotas, where all fish is accounted against the quota. In this case, minimum landing size should be replaced by minimum market size, to make a clear distinction between adult cod and juvenile cod landed, and avoid an incentive to develop a market for small cod.

What would be the cost of a discard ban?
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In a discard ban scenario, it has to be investigated how undersized cod could be utilized (e.g. fish meal or oil production) and how it will influence market prices and fishing pattern. Further, controlling a discard ban will shift the effort of inspection from land to sea which may increase the costs of fisheries control, and therefore a cost/benefit analysis of such a management measure should be investigated.

7. CONCLUSIONS: THE WAY FORWARD IN THE BALTIC SEA

At present measures are in place to avoid catching unwanted cod and to reduce fishing mortality of unwanted cod and the fisheries are selective to their target species and size to a significant extent.

Further development of clean fisheries relies heavily on the changes of behaviour and fishing methods and on solutions brought about by the fishing sector. It should contribute to improve the governance of fisheries policy and management at the regional level. This could in turn enhance the sense of participation and ownership and make all stakeholders conscious of their common responsibility for the resource and its sustainable exploitation. Furthermore, the reduction and gradual elimination of discards is thought to generate added value to fish products originating from the region since there is clearly a strong consumer interest in fish and seafood that is fished sustainably and in a way where the impact on ecosystems and on the environment is minimised.

The proposed way forward follows the tabled schedule below:

2011	<ul style="list-style-type: none"> a. "Fully documented fisheries" projects starts (if a positive evaluation is received from STECF). b. Evaluation of the multiannual cod plan. c. Moving-on provisions investigated. d. WG on effort management established e. By-catch data from pelagic fisheries investigated
	<ul style="list-style-type: none"> f. Effect of enlarged mesh size introduction assessed
2012	<ul style="list-style-type: none"> g. Moving-on provisions if deemed applicable established. h. Study on development of more selective gear and methods concluded and results disseminated to the sector. i. Comprehensive analysis and assessment of fully documented fisheries method.
From 2013	<ul style="list-style-type: none"> j. Transition from landing TACs to catch TACs. k. Implementation of a discard ban control system. l. Logistics in place to manage the landed by-catch.

It is important to point out again that a policy on discards in the Baltic, with its associated technical measures, does not prejudge policies in other areas or in the future Common Fisheries Policy. It should not be seen as a precedent for any management strategy, but as a strategy with the possible measures only applicable to the specificity of the region and its fisheries.

8. POSSIBLE ASSISTANCE UNDER THE EUROPEAN FISHERIES FUND

One of the main objectives of the European Fisheries Fund (EFF) is to ensure sustainable exploitation of fisheries resources and to minimise the impact of fishing on the aquatic flora and fauna or environment. Member States and the fishing sector are invited to use all possibilities offered by the EFF to support the implementation of a policy to eradicate discards. The EFF may support appropriated investments on board fishing vessels and measures of common interest, for example,

- the fishing gear replacement resulting in a reduction of discards,
- the equipment and modernisation works to keep on board catches which fishers are no longer authorised to discard,
- logistics for collection and management of undersized cod,
- the professional training for fishers and owners of fishing vessels,
- the measure or technological innovation encouraging voluntary steps to reduce discards,
- the collective actions aiming at the elimination of discards as well as pilot projects aiming at developing and testing methods to reduce discards.

ANNEX I

MINUTES OF THE TECHNICAL WORKING GROUP TO ERADICATE DISCARDS IN THE BALTIC SEA FISHERIES OF 19-21 MAY, DG MARE, BRUSSELS, BELGIUM

Participants: Baltic Member States (DE: Esther Winterhoff, Lutz Wessendorf, Christopher Zimmermann DK: Ole Poulsen, Stina Gmür, Jorgen Dalskov, Ludvig Ahm Krag SE: Marcus Ohman, Anders Bogelius, Peter Funegard, Daniel Valentinsson LV: Maris Berzins, Janis Stepanovs PL: Marcin Rucinski, Ewa Stadnik, Zbigniew Karnicki); Baltic Sea RAC (Reine Johansson, Michael Andersen, Kim Kær Hansen); invited experts (Dominic Rihan, Tomas Nilsson, Vesa Tschernij) and DG MARE (Lisa Borges).

1. Measures to avoid catching unwanted cod

Preliminary evaluations of long-term trends in spawning timing of cod in the Baltic suggest that closures for the protection of spawners are at the appropriate time for the Eastern Baltic. For the Western Baltic however, there is evidence that the spawners could be more effectively protected if the temporal closures are moved to an earlier time in the west (Belt Sea, Subdivision 22) and to early summer in the east (Arkona Sea, Subdivision 24). No data was available for the Sound (SD 23). Further verification of the results is needed to determine the inter-annual variability of spawning timing, and the potential effects of a change in timing of closures for the stock and the fishery. The results of these further investigations will feed into the STECF work on the evaluation of Baltic cod management plans conducted from June 2010.

The group agreed that:

- a. Marine Protected Areas do not seem applicable as a management measure to decrease cod discards in the Baltic. They would undoubtedly lead to closure of the main fishing grounds, given both marketable and discarded cod are present over a wide area meaning MPAs would have to be large. Measures to improve selectivity are therefore preferred.
- b. Maintenance of the three closed areas of the Bornholm Deep, the Gotland Basin and the Gdansk Deep, as they may have contributed to potential spawning stock biomass and recruitment was recommended. They are recognised cod spawning areas, although with present hydrological conditions the eggs have a low probability of surviving in all areas
- c. Russia should be included in the discussions and setting of closed areas.
- d. Real Time Closures and “moving on” provisions should be further investigated to reduce discards
- e. Bycatch data from pelagic fisheries should be investigated as there is no scientific data currently to assess cod catches in these fisheries. There is also a perception that an increased cod stock will probably result in an increase in cod bycatch and discards in pelagic fisheries.
- f. Further fishing effort restrictions to the ones required by the management plan should not be implemented, since fishing mortality is already low in the Eastern Baltic cod stock. A further reduction of fishing effort would probably result in a change of behaviour by fishers in that they would optimise their catch opportunities at the expense of selectivity and respecting discards avoidance measures such as moving on and highgrading ban.

2. Measures to reduce fishing mortality of unwanted cod

There is scientific evidence that the increase in mesh size has increased the selectivity of the Bacoma and T90 codends. The results presented suggest that the Bacoma window has a wider selection range than the T90 codend. This results in higher losses of marketable cod but slightly less of a reduction in cod discards when compared to the T90 codend. There is an indication of dual selection in the Bacoma window which should be further investigated. This difference could be rectified by increasing the mesh size of the bottom section of the diamond mesh codend from 105mm to 120mm. This would also simplify the construction of the Bacoma window.

The group agreed that:

- a. Further increases in mesh sizes and or other changes to the Bacoma and T90 codends should be avoided in the short term. There is the need to give time for the industry to adapt to the new gears and to allow assessment of the effect of the increase in mesh size to 120 mm. The gears now being used are both selective and further changes in the short term would probably not yield significant reductions in discards over and above what has already been achieved.
- b. In the short term the use of knotted netting for Bacoma windows should not be allowed, as there is no scientific evidence that a change of material will not decrease selectivity (no change in text of Council Regulation (EC) No 2187/2005 Appendix 1, point 1.d.ii); There is a need to investigate other netting materials.
- c. The provisions describing the lifting strap in both Bacoma and T90 codends (Council Regulation (EC) No 2187/2005 Appendix 1, point 1.e.ii and Appendix 2, point g) should be deleted. For reference: the use of one lifting strap is allowed in Art 5, point 4.d for mesh size equal to or larger than 90 mm;
- d. Similarly there is no need to specify the back strap, except that it should not encircle the Bacoma exit window (Council Regulation (EC) No 2187/2005 Appendix 1, point 1.e.iii delete last phrase). For reference: the use of a back strap is allowed in Council Regulation (EC) No 2187/2005 Art 5, point 4.f;
- e. Text for T90 length of the codend corrected to at least 50 meshes (Council Regulation (EC) No 2187/2005 Appendix 2, point d.1 changed according to distributed text), and last phrase deleted.
- f. All the conditions for the repair of square mesh panels should be deleted (Council Regulation (EC) No 2187/2005 Appendix 1, point 2 deleted);
- g. The use of a codend buoy should be maintained (Council Regulation (EC) No 2187/2005 Appendix 1, point 1.e.iv and Appendix 2, point h; original text).
- h. Specification of joining square mesh panel to diamond mesh panel in the mounting of the Bacoma window should be deleted (Council Regulation (EC) No 2187/2005 Appendix 1, figure 3 and figure 4, point C deleted).
- i. Potential issues relating to the strength of the Bacoma window as of result of the increase mesh size should be investigated.

3. Measures to eliminate cod discards

The group agreed that:

- a. "fully documented fisheries" projects should continue in 2011 to test new management option;

- b. fully documented fisheries projects may, in the future, be used to decrease the administrative burden of fisher by simplifying reporting obligations;
- c. if a discard ban is introduced, discards should be landed and counted against the quota; issues regarding handling and use of landed cod otherwise discarded should be investigated.
- d. if a discard ban is introduced, landings quotas should be replaced by catch quotas, where discards are included in the landings quota.

The majority of the group agreed that:

- e. 5% should be added to the Baltic cod TACs in 2011 and made available to Member States for further testing fully documented fisheries projects;
- f. a discard ban should be the management objective in the medium term but a step wise roadmap is required to reach it, as it represents a significant change in policy;
- g. if a discard ban is introduced, a minimum landing size should be replaced by minimum market size, to make a clear distinction between cod landed for human consumption and cod landed for other uses, and avoid an incentive for develop a market for small cod;
- h. there is a need to decrease the minimum landing size of cod from 38 cm to 35 cm to reduce discarding of individuals between this size ranges. However, there are some concerns that the decrease in mls may create a market for small cod and in some countries a consumer awareness campaign may be required to justify the measure.

The group was divided:

- i. Regarding the benefits of a discard ban, to some its objective is to reduce discards but will only reduce discarding if controlled properly, while others see it as an educational and political measure.

4. Monitoring and control

The group agreed that:

- a. Control of the trawl cod fishery is made easier by the simplification of the technical specifications agreed in point 2 - measures to reduce fishing mortality of unwanted cod.
- b. To control a discard ban is technically challenging, but there are already techniques available, which must be tested and further developed.
- c. Controlling a discard ban will shift the effort of inspection from land to sea which may increase the costs of fisheries control, and therefore a cost/benefit analysis of such a management measure should be investigated.

BS RAC project

The group agreed that there is a need for future research, and as such the BSRAC project on selectivity in the Baltic cod fishery can be a platform for the necessary research. It is important for the BSRAC to develop the objectives of this project further. The project will investigate firstly defining the scale of the problem, and then develop gear design and practical solutions to further reduce discards. The project ideally should start as soon as possible.