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Reports of the Scientific, Technical and
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The application of the landing
obligation on the fisheries targeting
Venus clams in the Northern Adriatic
Sea (STECF-16-06)

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Report EUR 27758 EN

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JRC 101340
EUR – Scientific and Technical Research series – ISSN 1831-9424
ISSN 2467-0715
ISBN 978-92-79-56783-4
doi:10.2788/512295

Luxembourg: Publications Office of the European Union, 2016

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How to cite this report:

Reports of the Scientific, Technical and Economic Committee for Fisheries (STECF) – The application of the landing obligation on the fisheries targeting Venus clams in the Northern Adriatic Sea (STECF-16-06). 2016. Publications Office of the European Union, Luxembourg, EUR 27758 EN, JRC 101340, 12 pp.

Abstract

Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries, C(2016) 1084, OJ C 74, 26.2.2016, p. 4–10. The Commission may consult the group on any matter relating to marine and fisheries biology, fishing gear technology, fisheries economics, fisheries governance, ecosystem effects of fisheries, aquaculture or similar disciplines. This report focuses on the application of the landing obligation on the fisheries targeting Venus clams in the Northern Adriatic Sea.

TABLE OF CONTENTS

The application of the landing obligation on the fisheries targeting Venus clams in the Northern Adriatic Sea (STECF-16-06).....	4
Background	4
Request to the STECF	4
STECF comments	5
STECF Conclusions	7
Contact details of STECF members and meeting participants	9
List of Annexes	13

SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF)

The application of the landing obligation on the fisheries targeting Venus clams in the Northern Adriatic Sea (STECF-16-06)

THIS REPORT WAS ISSUED DURING THE PLENARY MEETING HELD IN BRUSSELS, 10-15 APRIL 2016

Background

The landing obligation will be compulsory, as from 1 January 2017, for the species that define the fisheries (other than small pelagics) and that are subject to a minimum conservation reference size (MCRS) according to Annex III of the "Mediterranean Regulation"¹. The fisheries targeting the mollusc bivalve Venus clams (*Venus gallina* – as originally described – or *Chamelea gallina*)² are therefore subject to this provision.

In light of this, Italy submitted to the European Commission a proposal of a three-year discard plan for the fisheries targeting Venus clams by hydraulic dredges in the Northern Adriatic Sea (see Annexes of the present report). The main elements of the plan are: the setting of a new MCRS; the introduction of a tolerance of 5% (weight) from the proposed MCRS and; provisions for the re-stocking of undersized individuals caught alive. The draft discard plan is accompanied by a study which evaluates the possible effects of re-defining the MCRS.

Request to the STECF

STECF is requested to review and make any appropriate comments and recommendations on the draft discard plan for the fisheries targeting Venus clams in the Northern Adriatic Sea and its supporting study. In particular, STECF is requested to:

- Provide an opinion whether the survivability of Venus clams has been scientifically underpinned in the discard plan, and assess the potential survivability rates of Venus clams, taking into account the characteristics of the fishing gear, the fishing operations, the biological state of the Venus clams after the fishing operations, and the environmental conditions of the re-stocking area.
- Assess the potential impacts on the stock of the proposed change in the MCRS for Venus clams from 25 mm to 22 mm on exploitation rates and stock biomass.
- Assess whether the proposed scientific monitoring programme is likely to provide adequate data and information to evaluate the effects of the discard plan

¹ Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94.

² The Annex III sets a minimum conservation reference size of 25 mm for the *Venus spp.*

In making this evaluation, STECF is asked to take into account the recent works of the STECF-EWG 15-14³ and of the European Parliament⁴.

NOTE: The Commission requests the STECF to provide its advise on this item by 13 April cob or 14 April at the latest.

STECF comments

STECF reviewed the draft Venus clam discard plan (DP) together with the supporting technical documentation. The DP contains detailed information on the fishery and on the biological characteristics of Venus clam.

STECF notes that DP relates to the entire Adriatic Sea and some Tyrrhenian areas and not only to the Northern portion of the Adriatic. Furthermore, the DP proposes to remove the request of tolerance of 5% by weight of undersized individuals providing the proposed MCRS of 22mm is adopted Plan

- *Request 1: Provide an opinion whether the survivability of Venus clams has been scientifically underpinned in the discard plan, and assess the potential survivability rates of Venus clams, taking into account the characteristics of the fishing gear, the fishing operations, the biological state of the Venus clams after the fishing operations, and the environmental conditions of the re-stocking area.*

STECF acknowledges that clams are among the species for which a high survival after the catch be considered as likely. High survival rate of discarded at sea individuals is an argument for justifying a request for derogation from the landing obligation for the discarded fraction of the catch.

The survival rates of individuals discarded at sea after sorting on the deck is not addressed in detail but references to survivability studies on Venus clams are cited in the plan.

STECF reviewed the study on clam survivability by Moschino et al. (2008). Authors provided estimates of impact of experimental hydraulic dredging on *Chamelea gallina* in two sites along the north-western Adriatic coast (Jesolo and Lido) by detecting and quantifying shell damage caused by fishing operations on both captured and discarded clams. A positive relationship was observed between damage level and clam size: small-sized samples (length <17 mm) were less damaged than medium-sized ones (17mm < length <25 mm) and commercial size clams (>25 mm) showed the highest damage level. The mortality of dredging at high water pressure (inlet pressure ~2.5 bar) and mechanical sieving for sorting, as in commercial fishing was significantly higher at Jesolo than at Lido reaching 19.6% in February. Generally mortality ranges between 2-20% with an average around 10 %. This corresponds thus to a survival rate of at least 80%.

³ Scientific, Technical and Economic Committee for Fisheries (STECF) – Landing Obligation - Part 6 (Fisheries targeting demersal species in the Mediterranean Sea) (STECF-15-19) 2015. Publications Office of the European Union, Luxembourg, EUR 27600 EN, JRC 98678, 268 pp. [doi:10.2788/65549](https://doi.org/10.2788/65549).

⁴ Scarcella G. & Cabanelas A.M. (2016) Research for PECH Committee - The clam fisheries sector in the EU - The Adriatic Sea case. Directorate-General for Internal Policies, Policy Department B: Structural and Cohesion Policies, Fisheries, 60 pp. [doi:10.2861/401646](https://doi.org/10.2861/401646).

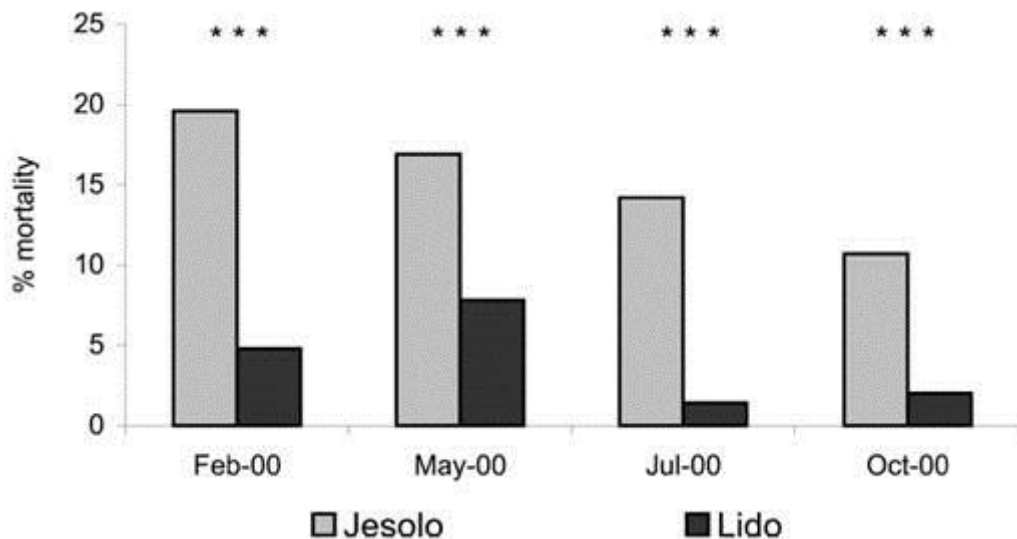


Figure 1. Mortality values, calculated on the basis of the percentage of crushed umbos or shells, in *C. gallina* collected at Lido and Jesolo (Northern Adriatic Sea) using high water pressure and mechanised sorting as in commercial fishing (Moschino et al. (2008)).

STECF has previously described in detail how survival studies should be undertaken and evaluated in order to support proposed exemptions from the LO (ref to STECF LO part 1 2013, and examples in LO part 6 2015). In particular, aspects such as the duration of the survivability studies (medium-term survivability analysis beyond the first few minutes/hours after the catch) as well as the representativeness of the studies compared to standard fisheries practices have been highlighted as important. It is not clear whether the studies above meet these standards. Nevertheless, they provide an indication that survival is potentially high. Additionally, STECF notes that the study above was performed with a jet pressure of 2.5 bar, whereas the fisheries operate now with lower pressure (1.8 bar), which may infer lower mortality.

The undersized fraction of the retained catch is proposed to be utilized for re-stocking. The members of the management consortium should be committed to do so, and should be continuously informed regarding the distribution of the more suitable areas for this action. As re-stocking is done, such areas need to be protected from fishing allowing individuals to reach a commercial size. A rotation system is proposed. The plan states that a special attention will be dedicated to the discarding at sea procedures aimed at maximizing the expected positive effects (related to choices in timing, identification of suitable grounds for restocking, the way undersized individuals are stored on board and on the deck and the procedures for the successive restocking).

STECF cannot assess the added value of the proposed re-stocking procedure. The expected costs and benefits need to be assessed and compared with other options, for example the potential effects of releasing live animals where they have been caught. The identification of the best practices aimed at granting benefits for the stock derived from such measure would be helpful. In particular, it is necessary to find suitable grounds for settlement (where population density is currently low but conditions result favorable for growth and survival).

STECF also notes that the proportion of the catch that is intended for re-stocking (under 22 mm) is relatively small with the current size of the grid.

- Request 2. Assess the potential impacts on the stock of the proposed change in the MCRS for Venus clams from 25 mm to 22 mm on exploitation rates and stock biomass.

The main argument for requesting the change in MCRS is the limited occurrence of large individuals (>25mm) in the catches, and there is thus a potential economic loss for the fleets. A reduction in the MCRS would increase the catch that can be retained per unit time of fishing activity and thereby reduce the fishing time required to take the daily quota. The DP states that the absence of large sized individuals is mainly related to a reduction of growth rates that occurred in recent years due to changes in the environmental conditions. There is though no evidence presented to support this statement. While the influence of environmental conditions cannot be discounted, STECF notes that reported landings have declined dramatically from 100,000 t in the 1980s to 14,000 tons in recent years. This can be linked to a major reduction in the fleet capacity as well as improved management. Nevertheless, the results of exploratory stock assessments submitted in support the DP show that fishing mortality is really high for this stock and is estimated to be 6-7 times the estimated natural mortality rate. Such high exploitation rates indicate that pronounced growth overfishing may be taking place. Therefore, the reduction of MCRS may not be compatible with the objectives of achieving MSY.

The DP has investigated whether the change in MCRS could be argued on the basis of maturity size. The DP has presented a comprehensive literature review, collating many different studies related to clams growth and maturity. Some studies have documented length at first maturity to be about 15 mm, corresponding to individuals aged 1. Other studies have estimated that only a small proportion of age 1 individuals contribute to the spawning population. Full maturity occurs at larger sizes (about 20-25 mm = 2 years old individuals). The current MCRS at 25 mm is within the range given in these studies. If MCRS is set to be above L50, the size where half of the individuals are mature, then 25 mm is likely to be on the upper end of L50 estimate. If that is the case, reducing MCRS to 22 mm may not be incompatible with the requirement of being above L50. Nevertheless STECF notes that other studies have showed a power relationship between fecundity and size, implying that it is likely that significantly more eggs are produced with animals at 25mm compared to 22 mm (see a list of such studies in the EP report by Scarcella and Cabanelas, 2016).

The DP asserts that maintaining the MCRS at 25 mm is of little ecological benefit for the population sustainability. STECF considers though that reducing MCRS will not bring a positive impact for the resource. In the medium-term, this is likely to result in a shift in the age structure in the retained catch towards smaller-sized individuals, more of which will need to be caught for a given weight of catch. This will lead to an increase in growth-overfishing and also reduce the spawning potential of the stock. The Technical Document presented an analysis on the likely *impacts of changes in legal landing size*. The potential for reproduction would be reduced by around 8 %. The report states that "The reduction of the minimum size is 22 mm can be associated with more intensive removal of intermediate sizes, which leads to an overall decrease of secondary production by the species as a major fraction is removed from an early stage and exported from the system"

- *Request 3. Assess whether the proposed scientific monitoring programme is likely to provide adequate data and information to evaluate the effects of the discard plan*
- STECF notes that the monitoring program foreseen in the DP is based on the Italian National Program for fisheries data collection under EU Reg. 199/08 (DCF). Under the revised DCF, the data collection activities will be further increased and additional surveys in both fished and restocking areas will be implemented at district level. Being based on DCF standards it is thus adequate to evaluate the effects of the discard plan.

STECF Conclusions

STECF agrees that there are indications from older studies that the part of the catch of Venus clam fishery which is under the legal size may survive to a high extent. Nevertheless, the information presented in the discard plan for Venus clams is insufficient to quantify with certainty the actual survivability of discarded catches. A full study following the agreed standards would be

needed to support the request for exemption. If restocking is implemented, such a survival study should distinguish the mortality processes between individuals discarded directly to the sea following automatic sorting and the undersized individuals from the retained catch which are sorted and restocked later on.

A reduction of MCRS from 25 to 22 mm is predicted to lead to a reduction of 8% of the reproductive potential, according to the simulations presented together with the plan. The data and information provided is not sufficient for STECF to quantify any associated change in the fishing mortality. The reduction in MCRS is expected to provide economic gains in the short-term. The medium and long-term effects are unknown. The stock appears as being highly exploited, and STECF notes therefore that while the MCRS at 22 mm may be compatible with the length at maturity, the change in MCRS will induce some reduction in the stock biomass.

STECF concludes also that the monitoring programme foreseen in the DP is based on DCF standards and thus it is likely adequate to evaluate the effects of the discard plan.

References

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Scarcella, G., Cabanelas, A.M. 2016. Research for pech committee – The Clam Fisheries Sector in the EU - the Adriatic Sea Case. Policy Department B: Structural and Cohesion Policies European Parliament B-1047 Brussels. 60 pp.

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List of Annexes

List of electronic annexes documents:

1. Italy proposal to the European Commission of a three-year discard plan for the fisheries targeting Venus clams by hydraulic dredges in the Northern Adriatic Sea - Italian
2. Italy proposal to the European Commission of a three-year discard plan for the fisheries targeting Venus clams by hydraulic dredges in the Northern Adriatic Sea - English

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EUR 27758 EN – Joint Research Centre – Institute for the Protection and Security of the Citizen

Title: Reports of the Scientific, Technical and Economic Committee for Fisheries. The application of the landing obligation on the fisheries targeting Venus clams in the Northern Adriatic Sea (STECF-16-06).

Authors:

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Ulrich, C., Abella, J. A., Andersen, J., Arrizabalaga, H., Bailey, N., Bertignac, M., Borges, L., Cardinale, M., Catchpole, T., Curtis, H., Daskalov, G., Döring, R., Gascuel, D., Knittweis, L., Malvarosa, L., Martin, P., Motova, A., Murua, H., Nord, J., Pastoors, M., Paulrud, A., Prellezo, R., Raid, T., Sabatella, E., Sala, A., Scarcella, G., Soldo, A., Somarakis, S., Stransky, C., van Hoof, L., Vanhee, W., Vrgoc, Nedo

JRC expert: Casey, J.

Luxembourg: Publications Office of the European Union

2016 – 12 pp. – 21 x 29.7 cm

EUR – Scientific and Technical Research series – 1831-9424

ISSN 2467-0715 (online)

ISBN 978-92-79-56783-4

doi:10.2788/512295

STECF

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doi:10.2788/512295

ISBN 978-92-79-56783-4

